

ESG Scores Explained: Quantifying the degree of credit impact

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Four Components to MIS Integration of ESG

New ESG scores will assist in transparently and systematically demonstrating the impact of ESG on credit ratings



Credit Ratings & Research

How is ESG integrated into credit ratings?

ESG factors taken into consideration for all credit ratings. Greater transparency in PRs, as well as Credit opinions. Credit Impact Score (CIS) is an output of the rating process that indicates the extent, if any, to which ESG factors impact the rating of an issuer or transaction.



ESG Scores

How is a specific issuer exposed to ESG risks/benefits?

Issuer Profile Scores (IPS) are issuer-specific scores that assess an entity's exposure to the categories of risks in the ESG classification from a credit perspective. IPSs, where available, are inputs to credit ratings.



ESG Classification

What is ESG?



Our classification reports describe how we define and categorize E, S and G considerations that are material to credit quality. New environmental classification sharpens focus on physical climate risks.

Heat Maps

Is ESG material to credit quality?



Heat maps provide relative ranking of various sectors along the E and S classification of risks.

ESG Classification System Incorporates Credit Relevant Considerations

Categories which are the most material to credit



Environmental

Physical climate risks
Carbon transition
Water management
Waste and pollution
Natural capital



Social

Private sector	Public sector
Customer relations	Access to basic services
Demographic and societal trends	Demographics
Human capital	Education
Health and safety	Health and safety
Responsible production	Housing
	Labor and income



Governance

Private sector	Public sector
Financial strategy & risk management	Institutional structure
Management credibility & track record	Policy credibility and effectiveness
Organizational structure	Budget management
Board structure, policies & procedures	Transparency and disclosure
Compliance & reporting	

Source: Moody's Investors Service

Moody's Environmental Risk Heat Map

15 sectors have high or very high environmental risks overall

 89

Global industry sectors assessed

 \$79



























































































Trillion of US dollars in rated debt

 5

Subcategories of social risks

KEY  Very High Risk  High Risk  Moderate Risk  Low Risk

KEY:  Carbon transition  Physical climaterisks  Water management  Waste and pollution  Natural capital

Sector	Total Debt (\$ Billion)	Carbon transition	Physical climaterisks	Water management	Waste and pollution	Natural capital	Overall Environmental Risk Score
Airlines	86						
Automobile Manufacturers	555						
Building Materials	90						
Chemicals	536						
Coal Mining and Coal Terminals	10						
Mining - Metals and Other Materials, excluding Coal	253						
Oil & Gas - Independent Exploration & Production	365						
Oil & Gas - Integrated Oil Companies	799						
Oil & Gas - Midstream Energy	401						
Oil & Gas - Oilfield Services	141						
Oil & Gas - Refining & Marketing	68						
Shipping	15						
Steel	90						
Surface Transportation and Logistics	271						
Unregulated Utilities and Power Companies	542						

Source: [ESG – Global: Environmental heat map: Updates to scores for certain sectors](#), 04 February 2022

Moody's Social Risk Heat Map

21 sectors have high or very high social risks overall

 **85**
Global industry sectors assessed

 **\$79**
Trillion of US dollars in rated debt

 **11**
Subcategories of social risks

 Very High Risk  High Risk  Moderate Risk  Low Risk

PRIVATE SECTOR  Customer relations  Human capital  Health and safety  Responsible production  Demographic and Societal trends

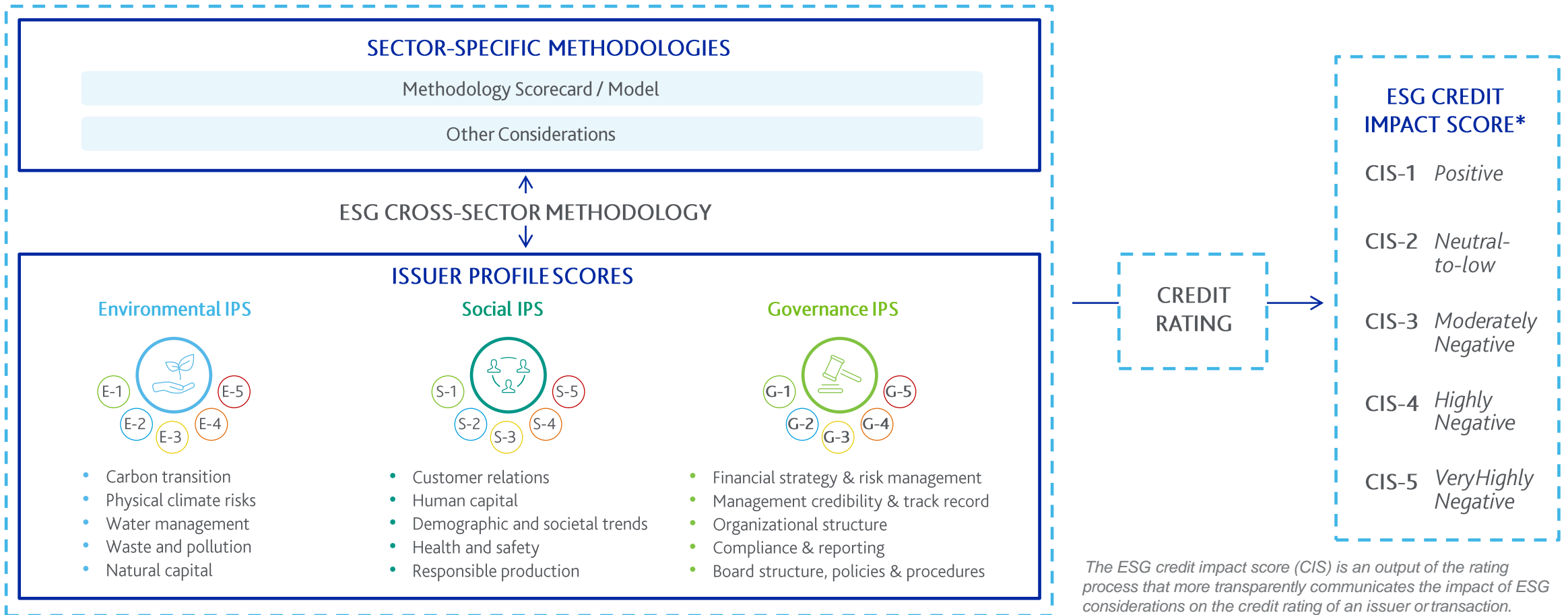
PUBLIC SECTOR  Demographics  Labor and Income  Education  Housing  Health and Safety  Access to basic Services

Sector	Total Debt (\$ Billion)	Customer relations	Human capital	Health and safety	Responsible production	Demographic and Societal trends	Overall Social Risk Score	Sector	Total Debt (\$ Billion)	Demographics	Labor and Income	Education	Housing	Health and Safety	Access to basic Services	Overall Social Risk Score
Asset Backed Securities - Tobacco Settlement	7	High Risk	Low Risk	Low Risk	Moderate Risk	Very High Risk	Very High Risk	Oil & Gas - Refining & Marketing	68	Low Risk	Low Risk	Low Risk	Low Risk	Low Risk	Very High Risk	High Risk
Tobacco	184	Very High Risk	Low Risk	Low Risk	Moderate Risk	Very High Risk	Very High Risk	Pharmaceuticals	782	Very High Risk	Moderate Risk	Low Risk	Low Risk	Low Risk	Very High Risk	High Risk
Coal Mining and Coal Terminals	10	Low Risk	Low Risk	Low Risk	Moderate Risk	Very High Risk	Very High Risk	Mining - Metals and Other Materials, excluding Coal	253	Low Risk	Low Risk	Low Risk	Low Risk	Low Risk	Moderate Risk	High Risk
Education and Not-for-Profits	320	Moderate Risk	Low Risk	Low Risk	Moderate Risk	Very High Risk	High Risk	Private Hospitals - Acute Care and Specialty	103	Moderate Risk	Low Risk	Low Risk	Low Risk	Low Risk	Very High Risk	High Risk
Gaming and Gambling Industry	98	Moderate Risk	Low Risk	Low Risk	Moderate Risk	Very High Risk	High Risk	Asset Backed Securities - Student Loans	222	Moderate Risk	Low Risk	Low Risk	Low Risk	Low Risk	Moderate Risk	High Risk
Health Insurance Companies	152	Moderate Risk	Low Risk	Low Risk	Moderate Risk	Very High Risk	High Risk	Automobile Manufacturers	555	Moderate Risk	Low Risk	Low Risk	Low Risk	Low Risk	Very High Risk	High Risk
Not for Profit Hospitals	270	Moderate Risk	Low Risk	Low Risk	Moderate Risk	Very High Risk	High Risk	Publishing	15	Low Risk	Low Risk	Low Risk	Low Risk	Low Risk	Very High Risk	High Risk
Oil & Gas - Independent Exploration & Production	365	Low Risk	Low Risk	Low Risk	Moderate Risk	Very High Risk	High Risk	Unregulated Utilities and Power Companies	542	Low Risk	Low Risk	Low Risk	Low Risk	Low Risk	Very High Risk	High Risk
Chemicals	536	Moderate Risk	Low Risk	Low Risk	Moderate Risk	Moderate Risk	High Risk	Regional and Local Governments - Emerging Markets	31	High Risk	High Risk	Low Risk	Low Risk	Low Risk	Low Risk	High Risk
Oil & Gas - Integrated Oil Companies	799	Low Risk	Low Risk	Low Risk	Moderate Risk	Very High Risk	High Risk	Sovereigns - Emerging Markets	3108	High Risk	High Risk	Low Risk	Low Risk	Low Risk	Low Risk	High Risk
Construction	43	Low Risk	Low Risk	Low Risk	Moderate Risk	Very High Risk	High Risk									High Risk

Source: [ESG – Global: Social heat map: Updates to scores for certain sectors](#), 04 February 2022

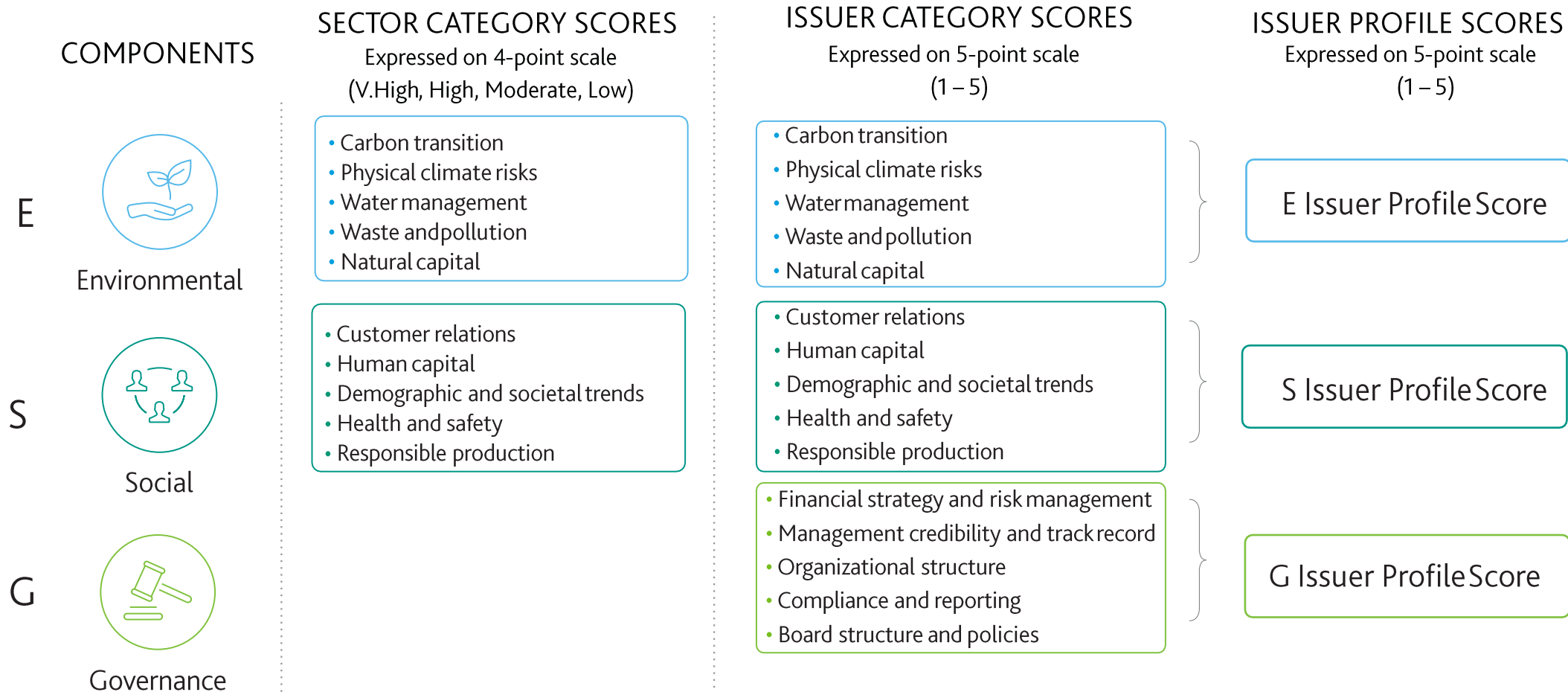
ESG Integration into Credit Analysis

Our rating analysis considers all material credit considerations, including ESG



Issuer Profile Score Framework – Private Issuers

The E, S and G profile scores assess an entity’s exposure to the categories of risk in the MIS ESG classification



* Category scores incorporate mitigants specifically related to that risk category

What the Moody's ESG scores are, and are not?

The Issuer Profile Scores incorporate:

- A credit perspective ✓
- Analysis of ESG issues material to credit risk ✓
- Emphasis on the most material credit risks ✓
- Global and cross-sector comparability ✓
- Management's actions to specifically address Issues ✓
- ESG risks and opportunities ✓

The Issuer Profile Score is not an opinion about:

- ✗ A company's sustainability performance
- ✗ The impact of sustainability practices on stakeholders
- ✗ The quality of a company's ESG disclosures
- ✗ Alignment with specific goals and targets such as the UN SDGs
- ✗ The impact of ESG on the credit rating. The CIS explains that

What the Moody's ESG scores are, and are not?

The Credit Impact Score:

Reflects the impact of ESG on the credit rating



Indicates the extent to which the credit rating would have been different in the absence of ESG issues



Places ESG in the context of other rating considerations



The Credit Impact Score:



Is not the combination of the E,S and G IPS scores



Does not have a systematic relationship to the credit rating

- i.e., a strong credit rating can go with a weak CIS score, and vice versa

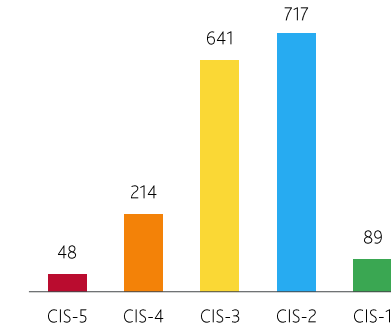


Does not have a systematic relationship to the IPS scores

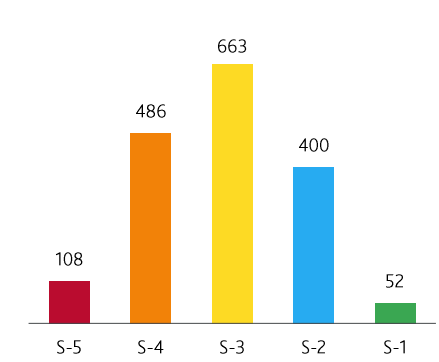
All Issuers Scored as of Jan 21, 2022

- » IPS and CIS scores for 1709 issuers so far
- » 20% have CIS 1,4 or 5 – meaning their ratings are different than they would otherwise be in the absence of ESG issues
- » CIS 1 shows that ESG considerations can also lead to a positive credit impact. Currently highly influenced by G factors, but there are also examples of E and S influencing positive credit considerations
- » CIS 1 heavily concentrated in state and local governments and advanced economies - Sovereigns
- » CIS 4 and 5 are concentrated in EM Sovereigns, Oil and Gas, Coal, Metals and Mining
- » CIS-3 implies that ESG has a moderately negative impact that could affect ratings in the future
- » E and S risks more heavily influence negative impact relative to G considerations

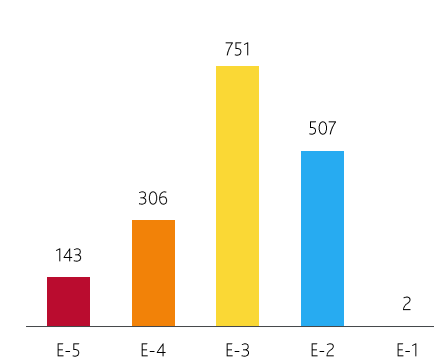
Credit Impact Score (CIS)



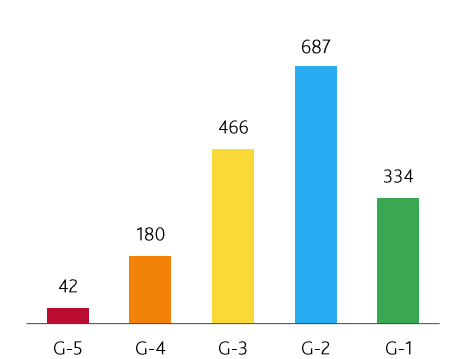
Social Issuer Profile Score



Environmental Issuer Profile Score



Governance Issuer Profile Score



Metals and Mining IPS and CIS Scores indicate negative impact of ESG

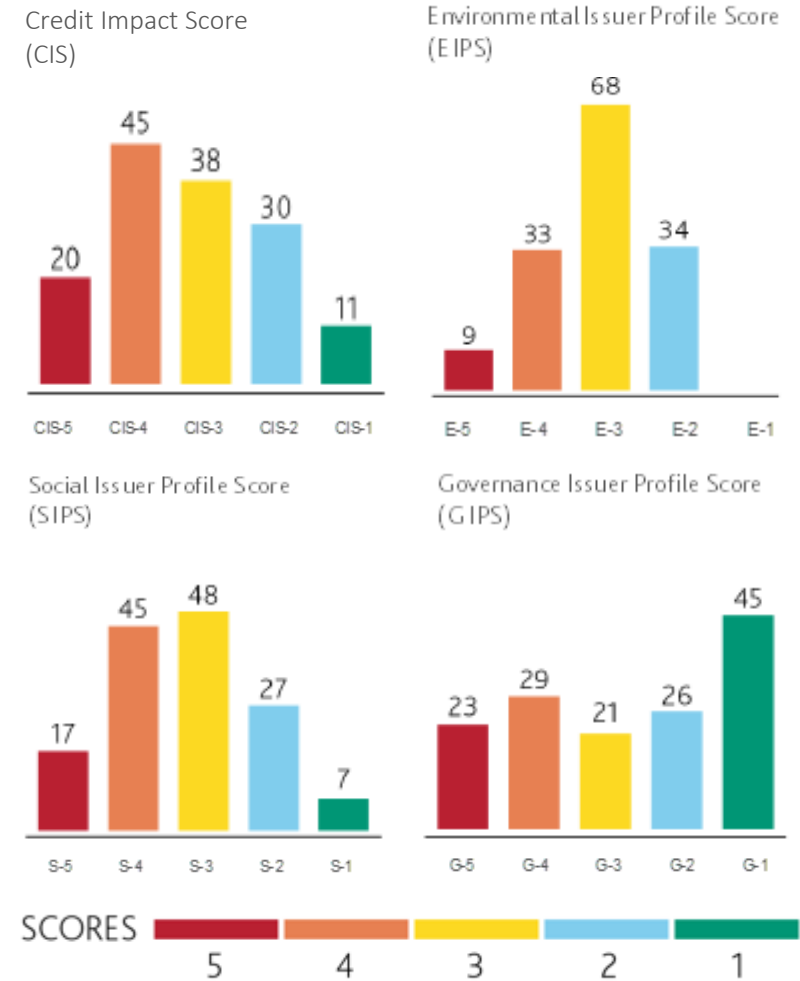
- » ESG factors commonly have a moderately negative overall impact on Metals and Mining credit quality
- » Environmental risk is most often very high, high at best
- » Social risk tends to be high or very high
- » Governance is a G-2 or G-3 for most Metals and Mining companies



Source: [Metals & Mining and Coal – Global: ESG issues have negative credit impact on metals and mining, more severe for coal](#), 8 June 2021

Sovereign IPS and CIS Scores indicate largely credit-negative impact of ESG

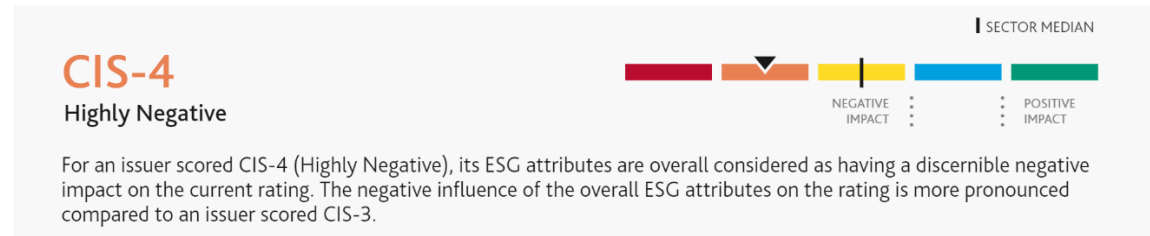
- » ESG factors commonly have a negative overall impact on sovereign credit quality
- » Environmental risk is most often moderately negative, neutral at best
- » Social risk tends to be moderately or highly negative
- » Governance is a strength for most advanced economies, varies for emerging markets



Source: [Sovereigns – Global: Explanatory Comment: New scores depict varied and largely credit-negative impact of ESG factors](#), 18 Jan 2021

Example:

Vale S.A.'s “Highly Negative” CIS in Credit Opinion



» **CIS-4.** (highly negative). Vale’s ESG Credit Impact Score reflects a series of ESG concerns raised after the dam collapse in Brumadinho in January 2019, with implications for Vale’s business reputation, operations, and relationship with different stakeholders. ESG risks remain a constraint to the rating. Despite the improvements in Vale’s ESG practices, which have enhanced risk management and governance oversight and reduce the risk of future incidents of similar magnitude, Vale’s operations have a very high exposure to environmental and social risks.

- » **Environmental:** E-5 (very highly negative). Vale has a very highly negative exposure to environmental risks mainly related to natural capital and waste & pollution. The major driver is the tailing dam incident in Brumadinho in 2019, which resulted in a large number of fatalities, extensive environmental damage and loss of production, and resulted in fines (\$7 billion settlement) and litigations. Vale’s operations are located in areas of abundant water availability with only moderately negative exposure to weather and climate related hazards, which gives Vale moderately negative exposure to water management and physical climate risks.
- » **Social:** S-5 (very highly negative). Exposure to social risks is very highly negative as a consequence of the tailings dam incident and its implications related to safety of operations, employee well-being and community stakeholder engagement and reputation. Vale’s exposure to other social risks such as human capital is not as high as most mining companies, given the absence of union disputes and strikes, while demographic and societal trends are moderately negative, since Vale’s exposure to iron ore is somewhat mitigated by the company’s exposure to commodities (copper, nickel) that are linked to battery production and the green economy.
- » **Governance:** G-3 (moderately negative). Governance poses moderately negative risks. Vale’s financial strategy, strong balance sheet, solid liquidity and enhanced risk management is balanced by limited track record following the dam collapse in 2019.

Source: [Vale S.A. on Moodys.com](#), as of 8 September 2021



Reference Documents/Reports

- » [General Principles for Assessing Environmental, Social and Governance Risks Methodology](#)
- » (E) Environmental
 - [Environmental Classification](#)
 - [Environmental Risk Heatmap](#)
- » (S) Social
 - [Social Risk Classification \(Private Sectors\)](#)
 - [Social Risk Classification \(Public Sectors\)](#)
 - [Social Risk Heatmap](#)
- » (G) Governance
 - [Governance Risk Classification \(Private & Public Sectors\)](#)

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