Capital Markets Strategy
Essential inCights for the C-Suite

MUFG

Credit Rating & Accounting Perspectives on ESG

JUL 2021

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A. Moody’s Approach to ESG

Moody's Approach to ESG

Credit rating agencies have always incorporated ESG factors where they have been material and relevant to cash flow and credit risk. However, with ESG increasingly in focus for investors and regulators, rating agencies are now more clearly isolating ESG risks and opportunities and identifying the specific impact they have on credit ratings. Moody's, for example, issues two related ESG scores, one examining ESG exposure and the second providing a qualitative explanation of the rating impact.

Moody's Approach to ESG

- First, all ESG factors with current or potential future credit impact are identified. To be meaningful, considerations must be material to the likelihood of default and credit loss.
    - These factors may be incorporated qualitatively or quantitatively into the relevant sector specific scorecard or model
    - Factors may also be incorporated qualitatively outside the scorecard, particularly when their expected impact is longer term and difficult to meaningfully project
    - In some cases, sector-specific methodologies describe how considerations affect scoring of certain scorecard factors and sub-factors
- An Issuer Profile Score (IPS) may be issued to examine the exposure an issuer has to E, S or G Factors
    - The IPS is assessed on a five-point scale where '1' indicates an ESG factor may have a positive impact on the issuer and '2' to '5' range from "Neutral to Low" to "Very Highly Negative" impact
    - The IPS is used as an input to the rating model
- Finally, ESG Credit Impact Scores (CIS) may be issued to explain the impact of ESG considerations on the rating of an issuer or transaction
    - The CIS is based on a qualitative assessment of the impact of ESG considerations in the context of the issuer's other material credit drivers

ESG Integration in Credit Analysis

Moody's incorporates ESG factors in numerous ways, via existing integration in sector scorecards and models, via assigned Issuer Profile Scores (IPSs), and with an ESG Credit Impact Score (CIS). Analysis in the scorecard and IPSs are inputs for the credit rating while the CIS provides a qualitative explanation of the impact ESG considerations have on a given rating.

Moody's Credit Analysis Process and ESG Consideration

Moody's rating analysis considers all material credit considerations, including ESG

Sector-Specific Methodologies

Methodology Scorecard / Model

Other Considerations

ESG Cross-Sector Methodology

Issuer Profile Scores

Environmental IPS

E-1 E-2 E-3 E-4 E-5

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

Social IPS

S-1 S-2 S-3 S-4 S-5

- Customer relations
- Human capital
- Demographic and societal trends
- Health and safety
- Responsible production

Governance IPS

G-1 G-2 G-3 G-4 G-5

- Financial strategy and risk management
- Management credibility and track record
- Organizational structure
- Compliance and reporting
- Board structures and policies

Credit Rating

ESG Credit Impact Score*

CIS-1	Positive
CIS-2	Neutral-to-low
CIS-3	Moderately Negative
CIS-4	Highly Negative
CIS-5	Very-Highly Negative

**The ESG credit impact score (CIS) is an output of the rating process that more transparently communicates the impact of ESG considerations on the rating of an issuer or transaction.*

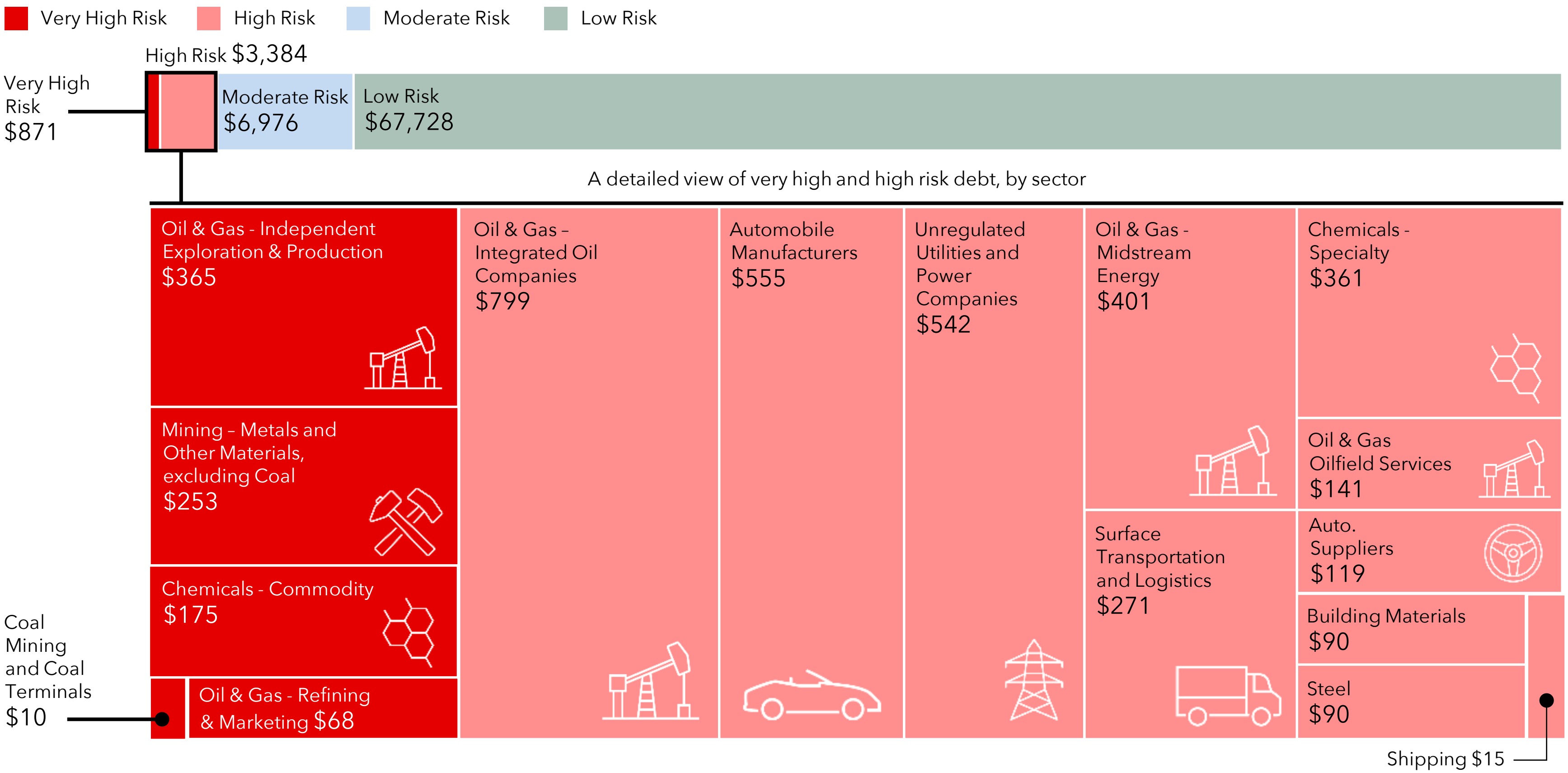
Source: (1) Moody's "General Principles for Assessing Environmental, Social and Governance Risks Methodology" (June 28, 2021).

MOODY'S

Environmental Risk Heat Map

Moody's has identified 16 sectors with $4.3 trillion in rated debt that face heightened credit risk from environmental considerations, an increase of nearly $1 trillion since a similar analysis conducted in 2020. The primary driver of the increase was renewed policy and market initiatives to reduce emissions in the lead up to the UN Climate Change Conference (COP26) in November.

Debt at risk due to environmental factors (USD, bn)

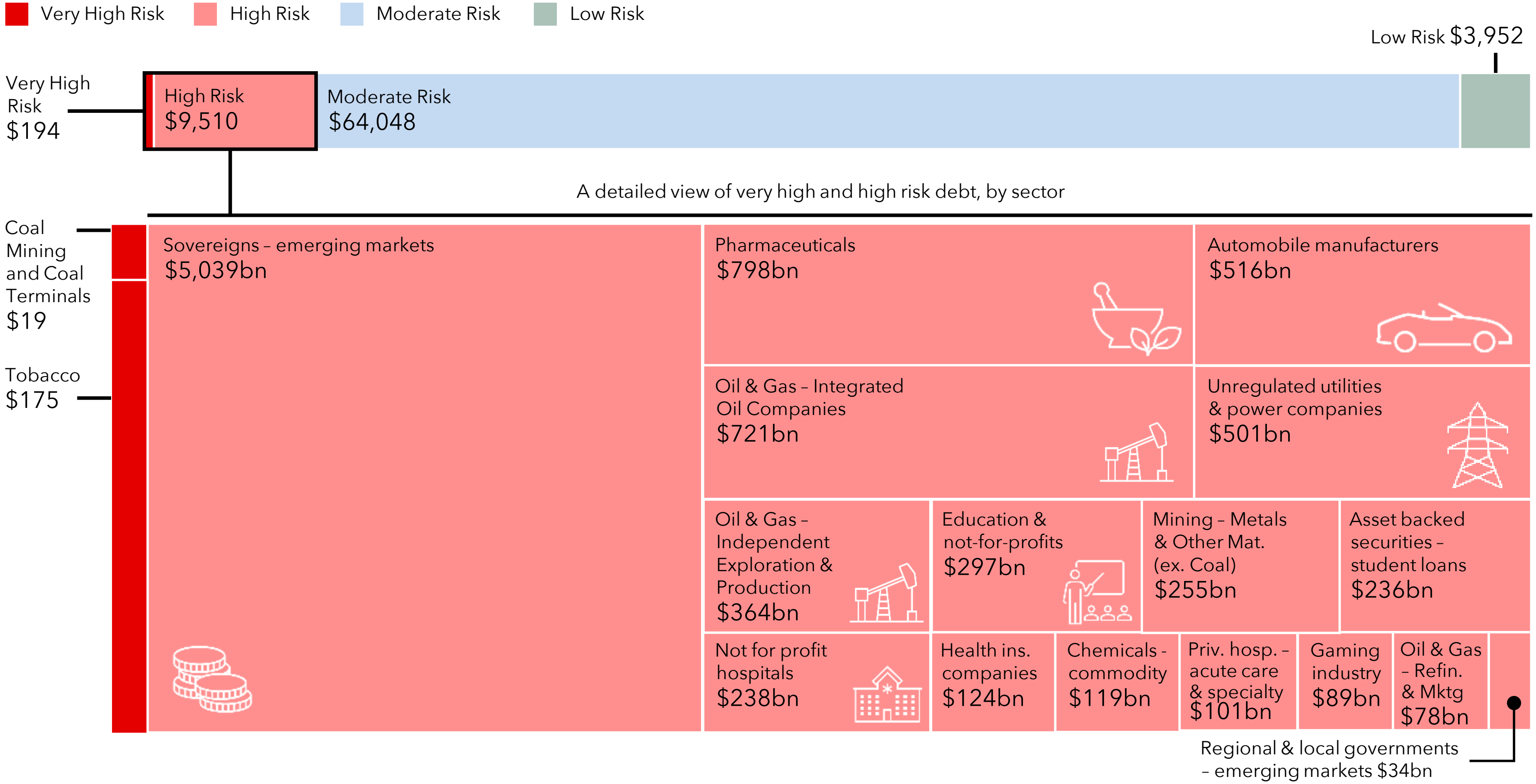


Source: Moody's Investors Service, ESG-Global "Environmental heat map update: Risks rise for oil & gas, chemicals, metals & mining." May 2021.

Social Risk Heat Map

Moody's has identified 18 sectors with $9.7 trillion in rated debt that face heightened credit risk from social considerations. The analysis classifies coal mining & coal terminals and tobacco as "very high risk" while the prior Heat Map, created in 2019, did not identify any sectors as very high risk.

Debt at risk due to social factors (USD, bn)



Source: Moody's Investors Service, ESG-Global "Social heat map update: Risks rise for coal, oil & gas, tobacco, metals & mining" May, 2021.

B. S&P's Approach to ESG

S&P's Approach to ESG

S&P's corporate credit analysis has always incorporated material ESG risks and opportunities via its corporate credit framework. However, S&P has proposed a new methodology that would more clearly articulate how ESG credit factors are integrated. The comment period for the new methodology closed on June 17 and updated guidance is expected imminently. In addition to the credit rating process, in 2019, S&P launched its ESG Evaluation. The evaluation produces an ESG Profile Score based on exposure to E, S and G factors.

S&P's Integration of ESG Factors into Rating Analysis

- ESG factors are not given separate scores in S&P's rating process, instead, where they can materially influence creditworthiness and where there is sufficient visibility, factors are included directly in the credit modeling process
- S&P's corporate analysis most often considers ESG risks in assessment of:
    - Business risk (i.e., competitive position)
    - Financial risk (i.e., cash flow / leverage assessment and financial forecasts)
    - Management and governance (i.e., E & S risk management)
- Updated methodology is expected imminently that would more clearly articulate how ESG credit factors are integrated in the rating process

S&P's ESG Evaluation

- Distinct evaluation separate from credit rating report
- Cross-sector, relative analysis of an entity's ability to operate in the future based on the impact of ESG factors on key stakeholders
- First, the E, S and G Risk Atlases are used to identify regional and sector exposures to ESG factors, then issuer specific characteristics and risks are assessed to ultimately issue an ESG Profile Score

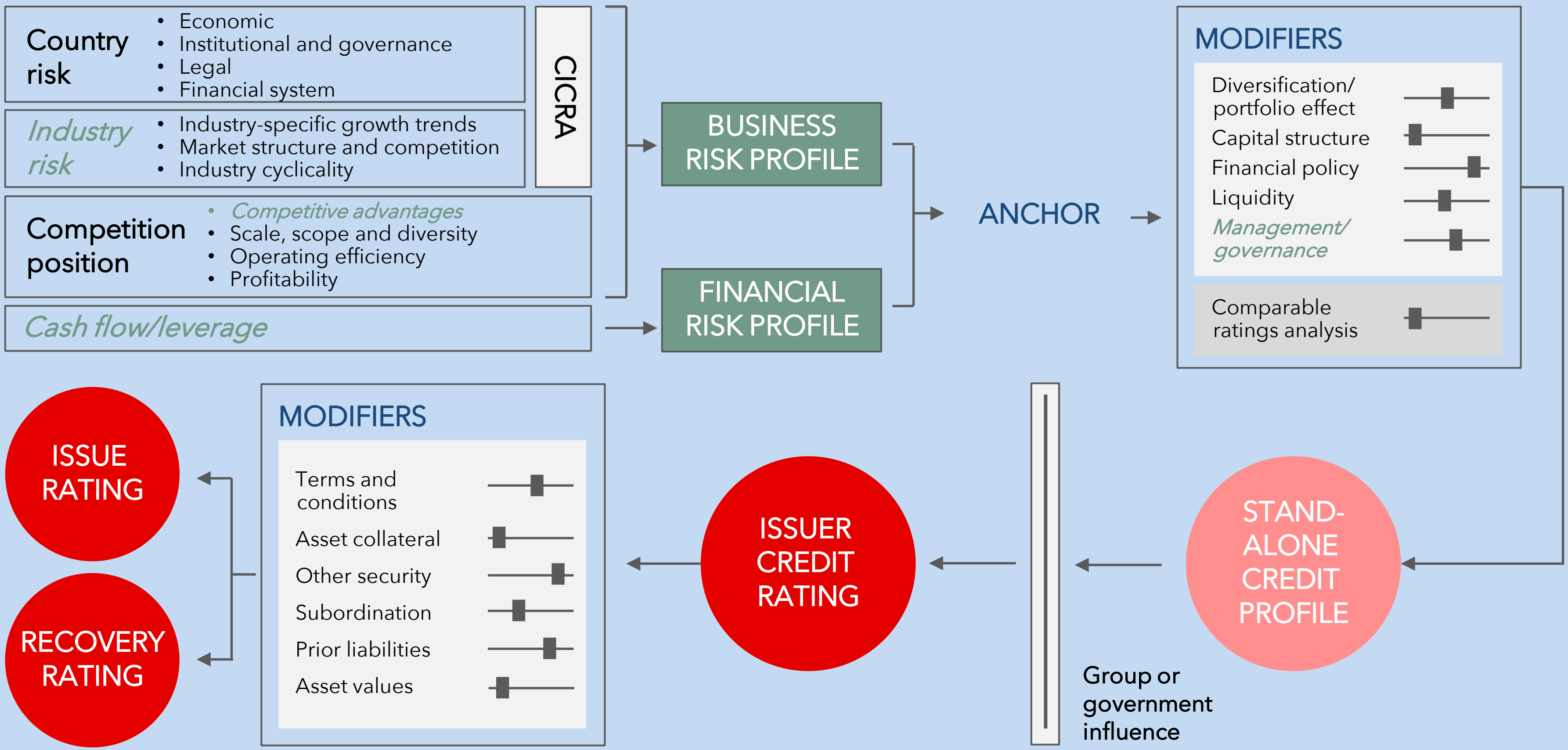
S&P Global

Material ESG Factors in Credit Analysis

Where materially influential, ESG factors are incorporated directly in credit analysis via the business risk profile, financial risk profile and management and governance assessment

Corporate Criteria Framework

Factors most likely to include consideration of E, S and G risks in green



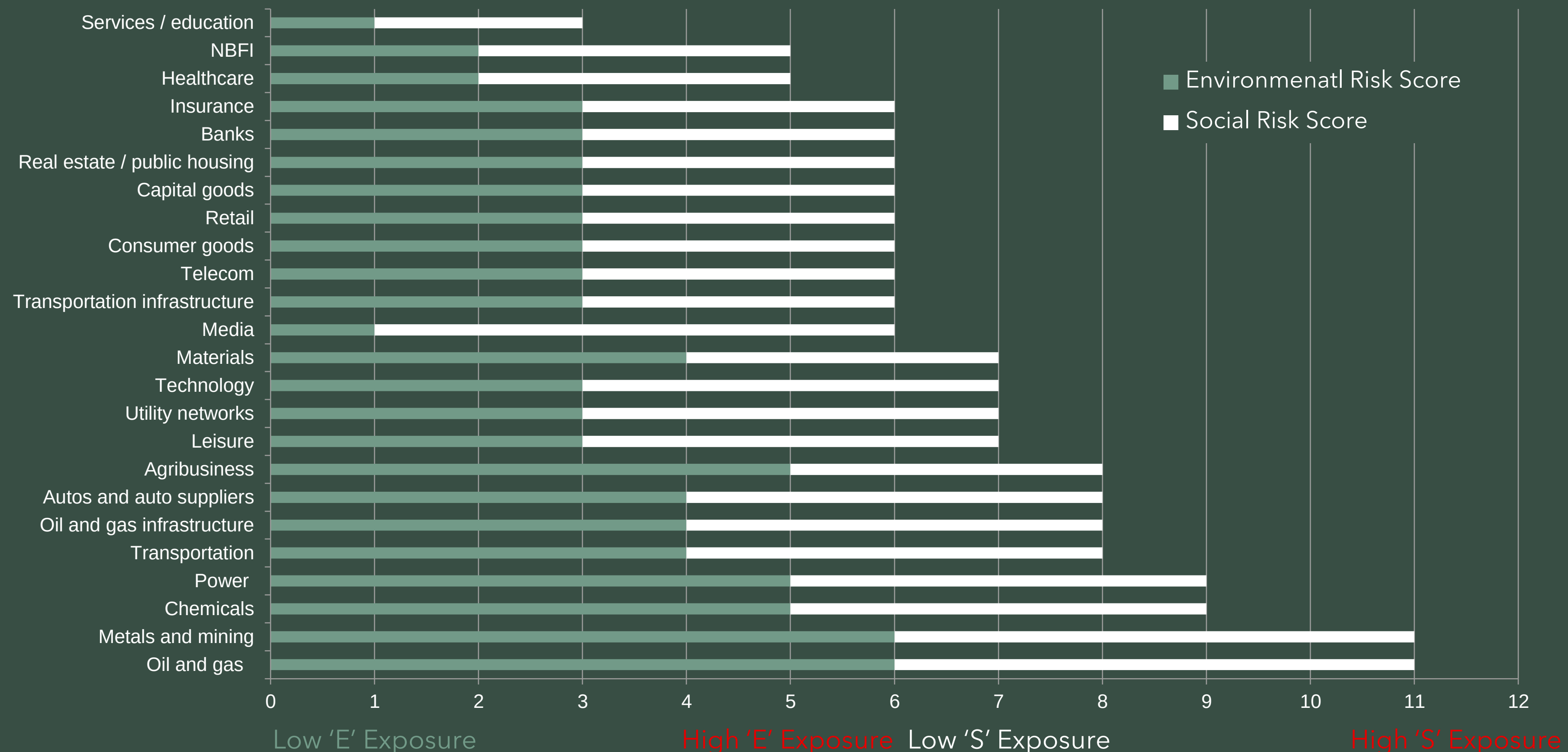
Source: S&P Global Ratings "how Does S&P Global Ratings Incorporate Environmental, Social, and Governance Risks Into Its Ratings Analysis".

S&P Global

ESG Evaluation

S&P's ESG Evaluation is a cross-sector, relative analysis of an entity's ability to operate in the future based on the impact of ESG factors on key stakeholders. First, the E, S and G Risk Atlases are used to identify regional and sector exposures to ESG factors, then issuer specific characteristics and risks are assessed to ultimately issue an ESG Profile Score.

The Environmental & Social Risk Atlas provides a score from '1' (low exposure) to '6' (high exposure) for environmental and social risks

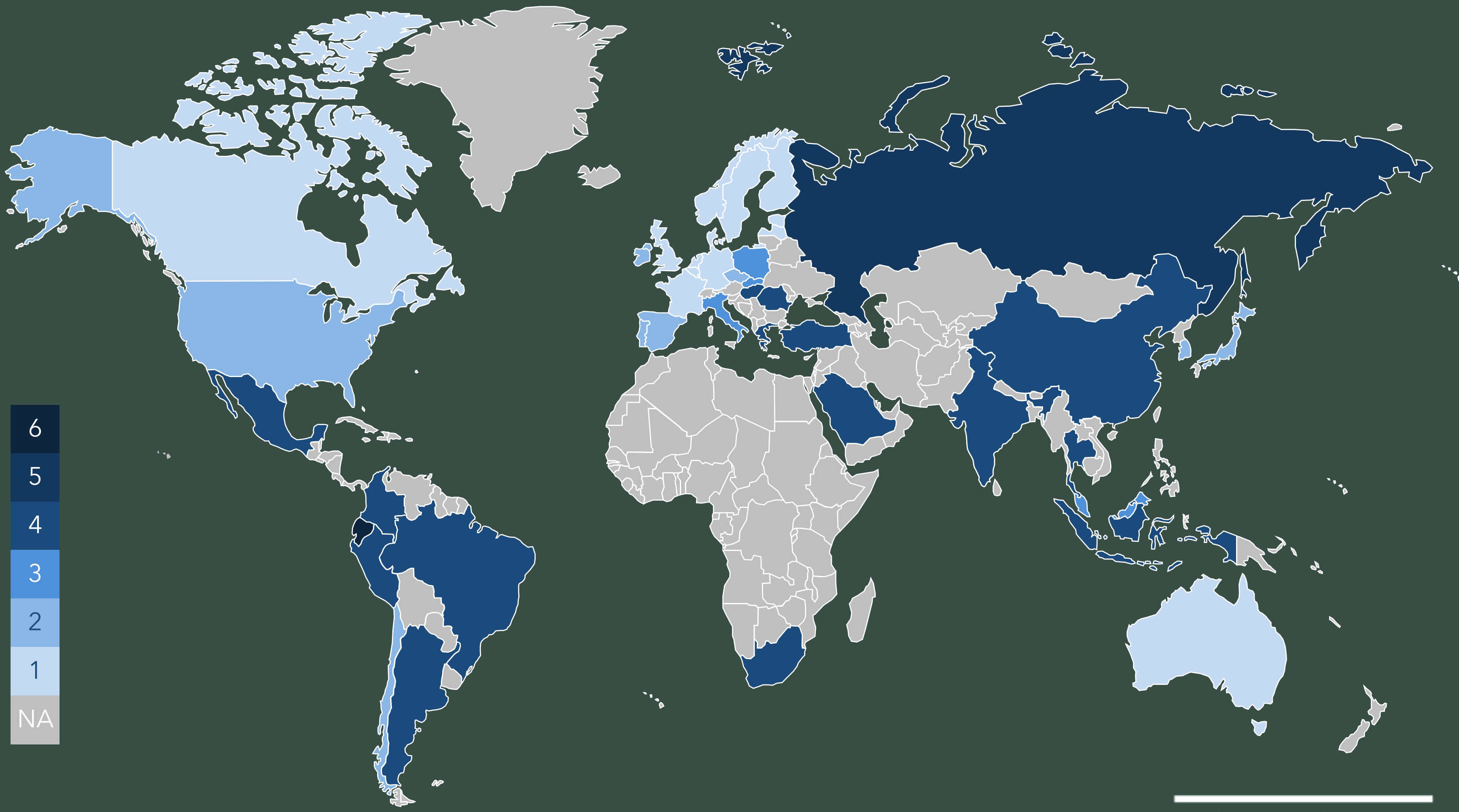


Source: S&P Global Ratings "The ESG Risk Atlas: Sector and Regional Rationales And Scores".

S&P Global

ESG Evaluation (Cont'd)

The Governance Risk Atlas provides regional analysis on the same 1 to 6 scale of natural disaster risk, social standards, and governance standards



Source: S&P Global Ratings "The ESG Risk Atlas: Sector and Regional Rationales And Scores".

S&P Global

FitchRatings

C. Fitch's Approach to ESG

Fitch's Approach to ESG

In January 2019, Fitch launched their ESG Relevance Scores which rate individual ESG elements from '1' (no impact) to '5' (high impact) based on the relevance and materiality an element has on a credit rating decision. Factors with a Relevance Score of '4' or '5' are potential ratings drivers and thus a debate point at committee.

ESG Relevancy Score ratings

FitchRatings

Score	Credit relevance	Description
5	High impact	Highly relevant, a key rating driver that has a significant impact on the entity, transaction or program rating on an individual basis
4	Medium impact	Relevant to the entity, transaction or program rating but not a key driver – has a rating impact in combination with other factors
3	Low impact	Minimally relevant to rating; either very low impact or actively managed resulting in no entity, transaction or program rating impact
2	No Impact	Irrelevant to the entity, transaction or program rating but relevant to the sector
1	No impact	Irrelevant to the entity, transaction or program rating and irrelevant to the sector

Source: (1) Fitch "Introducing ESG Relevance Scores for Corporates" (January 2019); "ESG Credit Trends 2021: ESG Influence Over Company Strategy, Financing and Operating Environment Will Increase" (January 2021); "2020 ESG in Credit".

ESG Relevancy Score Heat Map

The Fitch ESG Heat Map begins by providing an assessment of ESG factors on a ‘1’ to ‘5’ scale at a sector level. Companies within each sector are then evaluated on issuer specific criteria.

FitchRatings

		Healthcare, Consumer & Retail							
		Consumer	Gaming	Hotels	Food Retail	Non-Food Retail	Medical Products & Devices	Pharmaceuticals	U.S. Healthcare Providers
	# of Fitch-Rated Issuers In Sector	17	17	6	12	42	15	27	6
ENVIRONMENTAL	GHG Emissions & Air Quality	2	1	3	2	3	1	3	2
ENVIRONMENTAL	Energy Management	3	1	1	3	3	2	3	2
ENVIRONMENTAL	Water & Wastewater Management	3	1	2	1	1	3	3	2
ENVIRONMENTAL	Waste & Hazardous Materials Mgmt.; Ecological Impacts	3	1	1	3	3	3	3	3
ENVIRONMENTAL	Exposure to Environmental Impacts	3	3	3	2	3	2	3	3
SOCIAL	Human Rights, Comm. Relations, Access & Affordability	1	1	1	1	1	3	3	3
SOCIAL	Cust. Welfare - Fair Messaging, Privacy & Data Security	3	4	3	3	3	3	4	3
SOCIAL	Labor Relations & Practices	3	3	3	3	3	3	3	3
SOCIAL	Employee Wellbeing	1	1	1	1	1	1	3	1
SOCIAL	Exposure to Social Impacts	4+	3	3	3	4	4	4	4
GOVERNANCE	Management Strategy	5	5	3	3	5	3	4	3
GOVERNANCE	Governance Structure	4	5	3	4	5	3	4	4
GOVERNANCE	Group Structure	3	4	3	4	4	3	3	3
GOVERNANCE	Financial Transparency	4	4	3	3	4	3	3	3

		Food, Beverage & Tobacco					
		Alcoholic Beverages	Non-Alcoholic Beverages	Packaged Food	Protein	Restaurants	Tobacco
	# of Fitch-Rated Issuers In Sector	8	11	24	12	7	5
ENVIRONMENTAL	GHG Emissions & Air Quality	2	2	3	3	3	1
ENVIRONMENTAL	Energy Management	2	2	2	3	3	2
ENVIRONMENTAL	Water & Wastewater Management	3	3	3	3	2	2
ENVIRONMENTAL	Waste & Hazardous Materials Mgmt.; Ecological Impacts	3	3	3	3	3	2
ENVIRONMENTAL	Exposure to Environmental Impacts	3	3	3	3	3	3
SOCIAL	Human Rights, Comm. Relations, Access & Affordability	1	1	2	1	3	2
SOCIAL	Cust. Welfare - Fair Messaging, Privacy & Data Security	3	4	3	4	3	4
SOCIAL	Labor Relations & Practices	3	3	3	3	3	3
SOCIAL	Employee Wellbeing	1	1	1	3	3	1
SOCIAL	Exposure to Social Impacts	3	4	4	3	3	4
GOVERNANCE	Management Strategy	3	4	3	3	3	3
GOVERNANCE	Governance Structure	3	5	5	5	3	3
GOVERNANCE	Group Structure	3	4	5	4	3	3
GOVERNANCE	Financial Transparency	3	4	4	3	3	3

		Real Estate, Construction & Building Materials									
		Building Materials	Building Products	Engineering / Construction	Chinese Homebuilders	EMEA Homebuilders	U.S. Homebuilders	APAC REIT	EMEA REIT	LATAM REIT	U.S. REIT
	# of Fitch-Rated Issuers In Sector	14	17	20	55	7	9	19	30	10	49
ENVIRONMENTAL	GHG Emissions & Air Quality	3	2	3	1	3	1	1	1	1	1
ENVIRONMENTAL	Energy Management	3	2	1	1	3	1	1	1	1	3
ENVIRONMENTAL	Water & Wastewater Management	3	2	1	1	3	1	1	1	1	1
ENVIRONMENTAL	Waste & Hazardous Materials Mgmt.; Ecological Impacts	4	4	3	4+	3	3	3	3	3	4
ENVIRONMENTAL	Exposure to Environmental Impacts	3	2	3	3	3	3	3	3	4	3
SOCIAL	Human Rights, Comm. Relations, Access & Affordability	3	1	1	1	3	1	1	1	1	3
SOCIAL	Cust. Welfare - Fair Messaging, Privacy & Data Security	3	4	3	3	3	3	3	3	2	3
SOCIAL	Labor Relations & Practices	3	3	3	3	3	3	3	3	2	3
SOCIAL	Employee Wellbeing	3	2	3	3	2	2	2	1	1	1
SOCIAL	Exposure to Social Impacts	3	1	1	3	3	3	4	3	3	4
GOVERNANCE	Management Strategy	3	3	4	5	3	3	4	4	5	3
GOVERNANCE	Governance Structure	4	3	4	4	3	3	3	4	5	3
GOVERNANCE	Group Structure	3	3	4	4	3	3	4	4	4	3
GOVERNANCE	Financial Transparency	3	4	4	4	3	3	5	4	4	4

		Communication & Services				
		Business Services	Business Services DAP	Diversified Media	Telecommunications	Global Tech
	# of Fitch-Rated Issuers In Sector	18	27	16	80	70
ENVIRONMENTAL	GHG Emissions & Air Quality	3	2	1	1	3
ENVIRONMENTAL	Energy Management	3	3	1	3	3
ENVIRONMENTAL	Water & Wastewater Management	3	2	1	3	3
ENVIRONMENTAL	Waste & Hazardous Materials Mgmt.; Ecological Impacts	4+	2	1	3	3
ENVIRONMENTAL	Exposure to Environmental Impacts	3	2	1	4	3
SOCIAL	Human Rights, Comm. Relations, Access & Affordability	3	3	1	1	3
SOCIAL	Cust. Welfare - Fair Messaging, Privacy & Data Security	3	4	3	4	3
SOCIAL	Labor Relations & Practices	3	3	3	3	3
SOCIAL	Employee Wellbeing	3	3	1	1	3
SOCIAL	Exposure to Social Impacts	3	3	3	3	3
GOVERNANCE	Management Strategy	3	3	4	4	4
GOVERNANCE	Governance Structure	4	4	5	5	4
GOVERNANCE	Group Structure	4	4	4	5	4
GOVERNANCE	Financial Transparency	3	4	4	4	3

No impact 1 — 5 Material credit impact

Source: Fitch Ratings.

ESG Relevancy Score Heat Map (Cont'd)

The Fitch ESG Heat Map begins by providing an assessment of ESG factors on a '1' to '5' scale at a sector level. Companies within each sector are then evaluated on issuer specific criteria.

FitchRatings

		Industrial & Transport						Natural Resources								Utilities, Power & Gas							
		Aerospace & Defense	Airlines	Auto Manufacturers	Auto Suppliers	Industrials & Capital Goods	Shipping	Chemicals	Commodity Processing	Mining	Steel	Oil & Gas Production	Oilfield Services	Refining & Marketing	Pipeline / Midstream	APAC Integrated Utilities	EMEA Utilities	LATAM Utilities	U.S. Utilities	APAC Network Utilities	Australia Reg. Networks	EMEA Regulated Networks	Global Electricity Gen.
	# of Fitch-Rated Issuers In Sector	16	19	14	19	74	2	57	14	50	30	87	8	22	81	21	30	26	138	9	2	53	74
ENVIRONMENTAL	GHG Emissions & Air Quality	3	3	4	4	4	3	3	3	4	3	3	3	3	4	3	4+	3	3	1	1	3	4+
	Energy Management	2	4	3	2	3	3	3	3	3	3	3	3	3	3	3	4+	3	3	2	2	3	4
	Water & Wastewater Management	3	1	3	2	3	2	3	3	3	3	3	3	3	3	2	3	3	3	1	1	4+	3
	Waste & Hazardous Materials Management; Ecological Impacts	3	1	3	3	4	3	4	4	4	3	4	3	3	4	3	3	3	3	2	2	3	3
	Exposure to Environmental Impacts	1	3	3	1	3	3	3	4	3	1	4	3	4	4	3	3	3	5	3	3	4	5
SOCIAL	Human Rights, Community Relations, Access & Affordability	1	1	3	1	3	1	3	3	4	1	5	3	4	4	3	3	3	4	3	3	3	3
	Customer Welfare - Fair Messaging, Privacy & Data Security	3	3	3	3	3	1	3	3	1	1	3	3	1	3	3	3	3	5	3	3	4+	3
	Labor Relations & Practices	3	4	3	3	3	3	3	3	4	3	3	3	3	3	3	3	3	3	3	3	3	3
	Employee Wellbeing	1	3	3	1	3	2	3	3	4	3	3	3	2	3	2	2	3	3	2	2	3	3
	Exposure to Social Impacts	1	1	3	3	4+	1	3	3	4	3	4	3	3	4	3	4+	4	5	3	3	3	3
GOVERNANCE	Management Strategy	4	4	4	4	4	4	4	4	4	3	3	3	3	3	3	3	3	4	3	3	4	4
	Governance Structure	4	4	4	4	3	3	4	4	4	4	4	3	4	4	3	4	4	4	3	3	4	5
	Group Structure	3	4	4+	3	4	3	4	4	4	4	4	3	4	4	3	5	4	4	3	3	4+	4
	Financial Transparency	4	3	3	3	4	3	4	3	3	3	4	3	4	4	3	4	4	4	3	3	3	3

No impact 1 — 5 Material credit impact

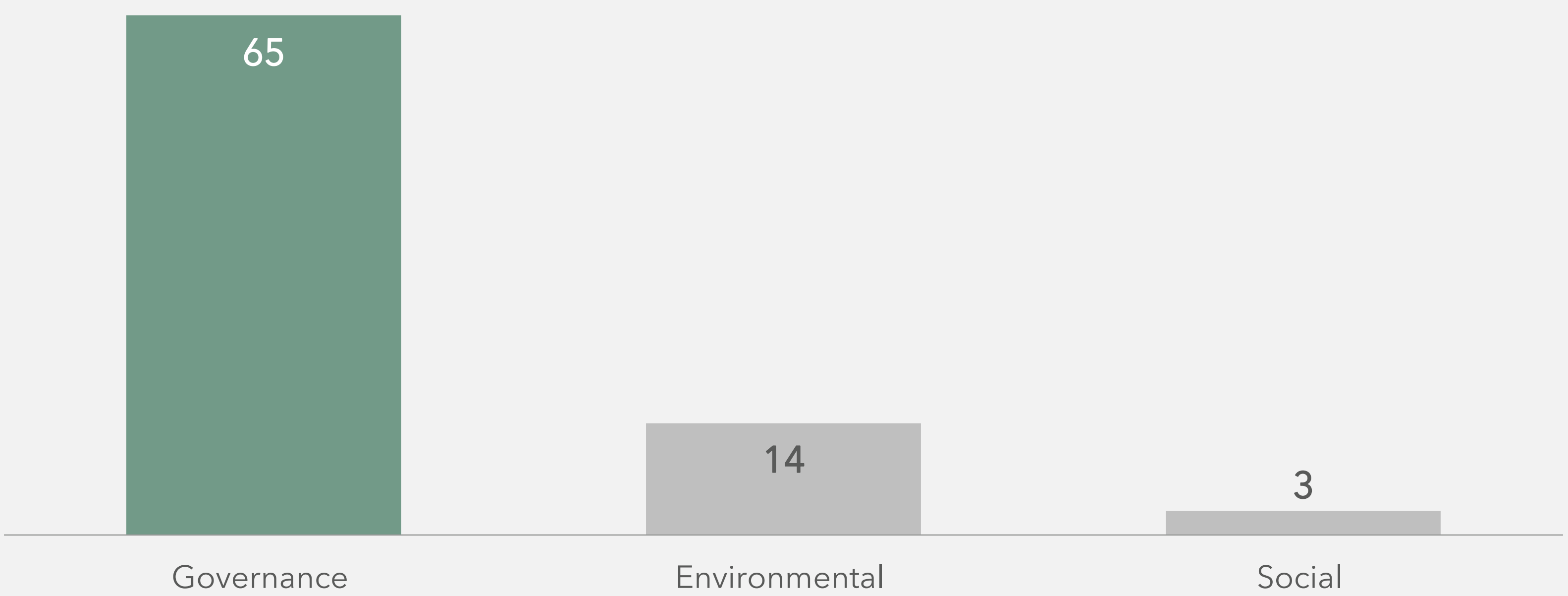
Source: Fitch Ratings.

Governance as Key Credit Influencer

Fitch has found ESG factors to be more of an "influencer" rather than a "driver" of credit ratings with only 2.7% of issuers having a '5' rating for any ESG element, but 22% of issuers having a '4' or '5'. Governance factors have been the most relevant driver with more '4' or '5' governance scores than environmental or social, combined.

Governance factors have been the most relevant and material ESG factor for credit ratings

Number of global corporate issuers with ESG Relevance Scores increased to '4' or '5' in 2020, by category



Source: (1) Fitch "Introducing ESG Relevance Scores for Corporates" (January 2019); "ESG Credit Trends 2021: ESG Influence Over Company Strategy, Financing and Operating Environment Will Increase" (January 2021); "2020 ESG in Credit".

II. ESG's Impact on Accounting Standards

International Developments in Financial Reporting

While many companies have been reporting climate and sustainability data in line with SASB or TCFD for several years now, in the last 18 months, there has been a renewed effort by investors, standard setters and regulators to have companies incorporate climate-related risks into their financial statements, rather than as stand-alone narrative reports

NOV 2019

International Accounting Standards Board (IASB) provides guidance suggesting **climate must be incorporated into financial accounting**

JUL 2020

International Auditing & Assurance Standards Board (IAASB) provides guidance for auditors on **incorporating climate risk into financial risks**

SEP 2020

Global investor groups representing $103 trillion write open letter to companies and auditors requesting use of IASB guidance **incorporating sustainability assumptions into financial reporting**

DEC 2020

Six largest auditors globally publish letter **recognizing guidance from IASB and IAASB**

MAR 2021

The US's Financial Accounting Standards Board (FASB) publishes an educational paper on the **intersection of ESG matters and financial accounting standards**

JUN 2021

The IFRS moves ahead with its plans to **create the International Sustainability Standards Board (ISSB)** by requesting nominations for the Chair and Vice-Chair

The ISSB would operate alongside the IASB under the IFRS Foundation to **determine which sustainability information should be a part of corporate financial statements** vs. what should be included in broader disclosures

Source: (1) S&P Global, ESG Insider. IFRS "IFRS Standards and climate-related disclosures.". IASB. IAASB. FASB.

Selected Accounting Issues Under Consideration

Several US and international accounting standards organizations have published guidance on ways companies and auditors should expect to incorporate ESG factors into financial reporting standards

ESG's impact on selected financial accounting standards

Goodwill and indefinite-lived intangible asset impairment

Direct or indirect impact from ESG factors may increase probability of impairment

Finite-lived intangible assets and property, plant and equipment useful life calculation

Environmental factors could change useful life expectancy

Inventory assessment

Net realized value estimate may be materially impacted by ESG related regulatory changes, significant weather events, changes in consumer behavior, or increases in completion costs due to challenges in raw material sourcing

Future cash flow assumptions for long-lived asset or goodwill impairment analysis

Shifting regulatory dynamics and consumer behavior may reduce existing demand assumptions and impact cash flow assumptions

Tax recognition for deferred tax assets

Changing environmental regulations may affect estimates of future taxable income

Reputational damage

Indirect impact on financial statements from increased reputational risk due to heightened focus on ESG matters

Sources: Deloitte: "Do ESG Matters Affect Accounting and Financial Reporting Today?" (May 26, 2021), "On the audit committee's agenda: Defining the role of the audit committee in overseeing ESG" (November 2020). FASB "FASB Staff Educational Paper: Intersection of Environmental, Social and Governance Matters with Financial Accounting Standards" (March 2021).

REUTERS

June 15, 2021

PwC planning to hire 100,000 over five years in major ESG push

NEW YORK, June 15 (Reuters) - Accounting firm PwC said on Tuesday it would invest $12 billion over five years to create 100,000 new jobs aimed at helping its clients grapple with climate and diversity reporting and also in artificial intelligence, as part of its new global strategy.

Investors Seek Corporate Climate Disclosure in Financial Reporting

In September 2020, a group of investors representing $103 trillion in AUM responded to an opinion published by the International Accounting Standards Board (IASB) suggesting that climate should be incorporated into a company's financial accounting

Selected excerpts from investors' open letter to corporates and auditors

> As groups representing institutional investors, we call on companies to ensure that their financial reports and accounts reflect the recent opinion from the International Accounting Standards Board (IASB) and are prepared using assumptions consistent with the Paris Agreement on climate change…
>
> To deliver this, companies should ensure that their financial statements accurately report their performance by incorporating material information about climate-related risks, for instance that they value assets in a way that would be compatible with a sustainable climate…
>
> Without such clarifying guidance on how to incorporate an assessment of climate-related risks into their financial statements, companies have found it difficult to do so, let alone do so consistently. Auditors have had similar difficulties in fulfilling their role. Some companies may even have thought that they did not need to consider such risks, since they are not explicitly referenced in the existing IFRS guidance. This publication creates clarity that, from now on, an assessment of climate-related risks must indeed be incorporated into financial statements that are prepared under IFRS, and indicates how that should be done. The publication further emphasizes that the materiality of disclosures should be assessed according to investor concerns…

So What Are Investors Asking For?

In the same open letter to corporates and auditors, shareholders set out a series for four specific requests pertaining to incorporating climate related risks into financial reporting

1. That companies apply the IASB opinion in the letter and the spirit, including showing the key assumptions that have been made with regard to climate-related risks
2. That auditors only sign off on financial statements which are consistent with the IASB opinion in the letter and the spirit, which include showing the key assumptions that have been made with regard to climate-related risks
3. That regulators and civil society work with us in enforcing and encouraging these actions
4. That henceforward the assumptions made by companies in preparing financial statements under International Financial Reporting Standards be compatible with the Paris Agreement

MUFG’s Global ESG Expertise

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Tom Joyce is a Managing Director and Capital Markets Strategist within MUFG's global capital markets and investment banking business. Based in New York, Tom heads a team that creates customized analytical content for multi-national US corporates and Fortune 500 companies. His team provides in depth analysis on the impact of economic, political, public policy and regulatory dynamics on the US credit, foreign exchange, rates and commodities markets.

Tom has over 25 years of Investment Banking experience in New York, London, Hong Kong, and San Francisco. Over the last 15 years, Tom created and built the Capital Markets Strategy role, advising corporate C-Suite executives (Boards, CEOs, CFOs, and Treasurers) on the pervasive macro forces driving markets. Tom also presents at dozens of corporate events each year including Board meetings, CEO ExCo sessions, CFO and Treasury off-sites, corporate leadership events and conferences.

Tom's educational background includes a year of study at Oxford University from 1991 - 1992, a Bachelor of Arts in Political Science from Holy Cross College in 1993, and a MBA from Kellogg Business School, Northwestern University in 2000.

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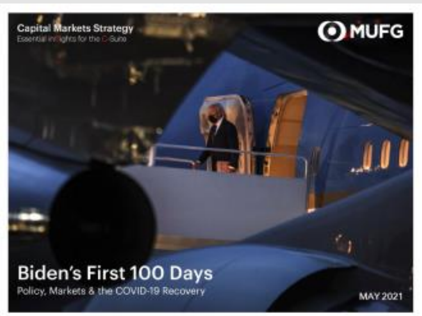
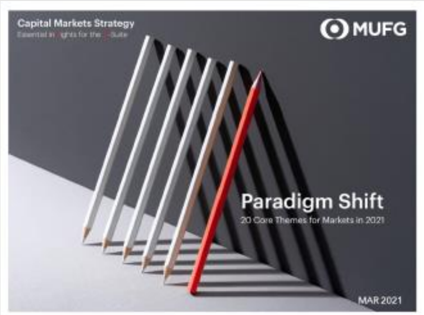
MUFG's Capital Markets Strategy Team

The MUFG Capital Markets Strategy team provides monthly publications and weekly policy notes, presenting to Boards and C-Suite executives, on a broad range of transformative themes driving the FX, rates and credit markets including: the COVID-19 recovery, ESG's acceleration, tax code policy changes, US-China decoupling, corporate strategy, geopolitical risk and central bank monetary policy.





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