ENVIRONMENTAL AND SOCIAL IMPACTS ACROSS INDUSTRY SECTORS



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Table of contents

Acknowledgements 3

Reader's guide 6

Abbreviations and acronyms 7

Executive summary 8

Introduction 9

Overview of existing data and research 10

Survey findings of perceived sector associations with environmental and social impacts 15

Combined findings across survey and existing sources 17

- Convergence on sectors most significantly associated with environmental and social impacts 17
- Convergence on sectors less significantly associated with environmental and social impacts 20
- Significant divergence on remaining sectors 22

Conclusion 24

Annex A. Meta-review methodology 25

Annex B. Detailed analysis of identified literature 29

Annex C. Expert survey 44

References 48

Notes 50

FIGURES

Figure 1. Convergence on sectors most frequently associated with environmental and social impacts 19
Figure 2. Differences in findings based on materiality lens 20
Figure 3. Convergence on sectors least frequently associated with environmental and social impacts 21
Figure 4. Divergence on sector associations with environmental and social impacts 23

Figure A A.1. Summary statistics 28
Figure A B.1. Distribution of NCP Cases 31
Figure A B.2. S&P Global ESG Risk Atlas 32
Figure A B.3. Sector analysis of RepRisk risk incidents 35
Figure A B.4. Hurt et al.'s supply chain due diligence risk indicator (top 10) 37
Figure A B.5. Analysis of USDOL's List of Goods Produced by Child Labor or Forced Labor (top 10) 39
Figure A B.6. Sectoral analysis of STBN Materiality Screening Tool 40
Figure A B.7. Sectoral emissions data 42
Figure A C.1. Survey responses by RBC issue and organisation type 45

TABLES

Table 1. Overview of identified sources on environmental and social impacts across industry sectors 10
Table 2. Illustrative findings of assessed sources on environmental and social impacts across industry sectors 12
Table 3. Results from RBC expert survey 16
Table 4. Combined results from review of survey and existing sources 18

Table A A.1. List of sectors 26
Table A B.1. SASB Materiality Finder 33
Table A B.2. RepRisk: Sectors with the most ESG controversies per RBC issue 36
Table A B.3. Most significant direct impacts on nature by sector as classified by UNEP 41

BOXES

Box A B.1. Specific instances brought to National Contact Points 31

Reader's guide

The main body of this report presents an overview of existing sources and data related to environmental and social impacts across industry sectors, including results from an expert survey conducted by the OECD. It outlines to what extent these sources converge with respect to the prevalence of specific environmental and social impacts across industry sectors. **The technical annexes** offer further analysis and contextualisation. They contain methodological notes, a more in-depth review of sources consulted in the meta-review and detailed results of the expert survey.

Abbreviations and acronyms

Term	Definition
BHRRC	Business and Human Rights Resource Centre
CSR	Corporate Social Responsibility
ESG	Environmental, social and governance
FfB	Finance for Biodiversity
GRI	Global Reporting Initiative
ILO	International Labour Organisation
IO	International organisation
ISIC	International Standard Industrial Classification
MNE Guidelines	OECD Guidelines for Multinational Enterprises on Responsible Business Conduct
NCP	National Contact Point
NGO	Non-governmental organisation
RBC	Responsible business conduct
SASB	Sustainability Accounting Standards Board
SBTN	Science Based Targets Network
$TeCO_2$	Trade in embodied CO_2
UNEP	United Nations Environment Programme
UNEP FI	United Nations Environment Programme Finance Initiative
USDOL	US Department of Labour

Executive summary

There is increasing interest from businesses, policymakers, financial service providers and other stakeholders in understanding which industry sectors are most likely to be associated with different types of adverse environmental and social impacts. This review brings together existing literature and an OECD expert survey to understand where sources converge and diverge in identifying sectors most and least frequently associated with adverse environmental and social impacts. While recognising that sectors are diverse—often encompassing sub-sectors with distinct impacts—and that factors such as governance, business model and operating context necessarily shape exposure to impacts at the company level, this study aims to contribute to the data landscape by synthesising insights from various sources and a broad range of environmental and social impacts. Key findings include:

- **Strong convergence around sectors most associated with key impacts:** The extractive industries, agriculture, manufacturing and certain heavy industries are more frequently associated with adverse impacts across a range of areas, including human rights, workers' rights, environmental and corruption-related issues. These findings are relatively consistent across existing studies and expert perceptions as well as impact and risk materiality approaches—with a few exceptions, the sectors most strongly associated with material sustainability impacts are also the sectors most strongly associated with financially material sustainability risks. Other sectors such as the digital, pharmaceutical and food and beverage industries are more narrowly associated with specific technology and consumer interest-related impacts.
- **Strong convergence around sectors least associated with impacts:** Some sectors, including education, real estate, and non-profit organisations, tend to have very limited association with any impacts across existing studies and expert perceptions.
- **No clear pattern for other sectors:** There is no clear consistency across existing studies and expert perceptions with respect to a large group of sectors. For example, utilities appear to be strongly associated with adverse human rights impacts in incident-based datasets, but not by experts surveyed for this study. Similarly, findings differ substantially for textiles and apparel, pharmaceuticals, and consumer-facing industries. A lack of consistency in assessment is particularly pronounced for environmental and consumer-interest impacts, where there is little to no consistency with respect to sectors most strongly associated with those impacts.
- **Limited data availability:** Evidence on the relative prevalence of adverse environmental and social impacts across different industry sectors is limited and highly fragmented. More comprehensive existing work tends to be tailored to a specific economy or based on qualitative and stakeholder-based methodologies. Many sources focus on single issues, vary in scope (direct operations vs. supply chains), and use varying and often non-standardised sector classifications, limiting their comparability and interoperability.

These findings underline both the value and the limits of sector-level comparisons. Further work is needed to expand access to reliable, comparable data to support businesses—especially SMEs—in identifying and addressing salient risks.

Introduction

International standards, including the OECD Guidelines for Multinational Enterprises on Responsible Business Conduct (the MNE Guidelines) and accompanying due diligence guidance, call on businesses to carry out due diligence across their operations and business relationships to identify, prevent, mitigate and account for adverse impacts on people, planet and society associated with their activities.

In order to prioritise action in areas where actual and potential impacts may be most significant, policymakers and practitioners are seeking to understand which industry sectors may be particularly associated with adverse environmental and social impacts, while also looking for guidance on the distinct due diligence challenges across different sectors. While due diligence expectations, processes and risk areas have been well-identified and elaborated for certain sectors,[1] they have been less examined for others. Furthermore, to date, comprehensive studies that compare the prevalence of environmental and social impacts across industry sectors have been limited, despite their value in supporting the effective implementation of a risk-based approach to due diligence.

The lack of cross-level data reflects various methodological and data-related challenges. Impacts are highly diverse in nature, ranging from human rights impacts to environmental impacts, limiting any meaningful comparison between them. Moreover, sectors are highly heterogeneous and composed of various sub-sectors, each of which may be associated with distinct impacts. At the firm level, an individual company's governance, business model, and exposure to varying operating contexts will inevitably impact its likelihood of being associated with environmental and social impacts. Likewise, a firm's own operations may be attributable to one sector, while its supply chain and business relationships may comprise a large variety of sectors, each of which exhibits salient impacts that vary in likelihood and severity.

This review provides a structured overview of existing data and research as well the results of an expert survey conducted by the OECD on the perceived association of industry sectors with environmental and social impacts.[2] The report reviews and synthesises the findings of different sources to understand where they converge and where further research may be relevant. Acknowledging limitations inherent in the research question as well as the biases in, and limited availability of, sector-level data on environmental and social impacts, this work does not aim to rank sectors by their level of impact.

Overview of existing data and research

The OECD conducted a desk-based literature review to identify research and data that examine the prevalence of environmental and social impacts covered by the MNE Guidelines—hereinafter "responsible business conduct (RBC) issues"—and associated subtopics (e.g. child and forced labour, biodiversity impacts, etc.) across industry sectors.[3] To expand the initial sample of identified sources, the OECD consulted with various stakeholders and discussed the findings via a multi-stakeholder platform consisting of over 20 organisations in the impact management domain. Table 1 lists the 16 sources and associated RBC issues identified, which are analysed in more detail in Annex B. Identified sources assess sectors either against various RBC issues at once or against individual RBC issues such as human rights, employment and industrial relations, environment, or competition.

Table 1. Overview of identified sources on environmental and social impacts across industry sectors

RBC issue	Source
Various	1. KPMG CSR Sector Risk Assessment (KPMG, 2014[1]) 2. UNEP FI Sectors Mapping (UNEP FI, 2024[2]) 3. GRI Sector Programme (GRI, 2021[3]) 4. S&P Global ESG Risk Atlas* (S&P Global, 2020[4]) 5. Sustainalytics ESG Risk Scores* (Sustainalytics, 2022[5]) 6. SASB Materiality Finder* (SASB, n.d.[6]) 7. RepRisk ESG Risk Platform
Human Rights	8. BHRRC Lawsuit Database (ILO, n.d.[7]) 9. Hurt et al., Supply Chain Due Diligence Risk Assessment for the EU (Hurt et al., 2023[8])
Employment and Industrial Relations	10. ILO Statistics on Employment (ILO, n.d.[9]) 11. USDOL List of Goods Produced by Child Labor or Forced Labor (USDOL, 2024[10])
Environment	12. SBTN Materiality Screening Tool (SBTN, 2023[11]) 13. UNEP, Prioritising Nature-related Disclosures – Considerations for high-risk sectors (UNEP, 2022[12])* 14. FfB Foundation, Top 10 Biodiversity-impact Ranking of Company Industries (FfB Foundation, 2023[13]) 15. OECD $TeCO_2$ Database (OECD, 2021[14]) & Climate Watch Data Explorer (Climate Watch, 2022[15])
Competition	16. OECD Competition Trends (OECD, 2024[16])

Note: Asterisks indicate sources that state to assess sectoral exposure to RBC issues partially or fully from a financial materiality perspective. The following identified sources are not included in the score-based meta-review below for methodological reasons; however, they are analysed in further detail in Annex B: KPMG "CSR Sector Risk Assessment" (2014[1]), GRI Sector Programme (2021[3]) and Sustainalytics ESG Risk Scores (Sustainalytics, 2022[5]).

As illustrated in Table 1, significant data gaps exist. There appear to be few cross-sectoral resources that compare a broad range of environmental and social impacts across a comprehensive set of sectors. To the knowledge of the authors, KPMG's 2014 Corporate Social Responsibility (CSR) Sector Risk Assessment and the United Nations Environment Programme Finance Initiative's (UNEP FI) iterative Sectors Mapping tool represent the most comprehensive resources in this regard. The selection of sectors in KPMG's 2014 study is based on an open-ended expert and data-driven methodology,[4] while UNEP FI's Sector Mapping Tool is primarily developed through consultations and expert input.

In addition, some environmental, social and governance (ESG) rating providers such as Sustainalytics and S&P Global have published comparative overviews of environmental and social risks across sectors. Such overviews often draw on data that seeks to measure a company's exposure to or performance with respect to ESG issues from the perspective of financial materiality. While such ratings may not be intended as measures of impact, they can still inform such assessments given the inherent relationship between impacts and risks, however, they should be interpreted with caution.[5]

A variety of issue-specific sources and associated indicators were identified and analysed, including sources by the Business and Human Rights Resource Centre (BHRRC), the International Labour Organisation (ILO), the US Department of Labour (USDOL), the Science Based Targets Network (SBTN), UNEP FI, the Finance for Biodiversity (FfB) Foundation and the OECD. However, sources that compare specific impacts between sectors are similarly limited.[6] Some of these sources may be used to approximate impacts (such as through the rate of litigation or controversy on specific issues across sectors) as opposed to measuring impacts directly. The availability of sources on sector-level impacts varies considerably according to the environmental and social impact in question. Environmental impacts appear to be most covered, followed by sources on human rights. There appear to be fewer indicators on potential and actual technology-related impacts at the sector level.

Importantly, sources examined differ in the extent to which direct impacts or also supply chain impacts are in the scope of the assessment. While some sources explicitly consider impacts across several tiers of the supply chain (e.g. Hurt et al.'s 2023 study "Supply Chain Due Diligence Risk Assessment for the EU: A Network Approach to Estimate Expected Effectiveness of the Planned EU Directive"), others focus on direct operations (e.g. the ILO's Statistics on Employment). Various other sources do not explicitly define whether they are limited to impacts in direct operations or also extend to a sector's upstream and downstream supply chains. The scope of assessment can have important implications for findings related to the association of industry sectors with environmental and social impacts.

Lastly, the identified sources exhibit significant differences in the underlying sector classifications, including differences in granularity, grouping, and coverage across the value chain. In terms of granularity, for instance, UNEP FI uses a highly detailed classification of over 500 sectors, based on the International Standard Industrial Classification (ISIC), whereas the OECD Competition Trends rely on broader categories comprising around 20 sectors in line with the North American Industry Classification System. Sector grouping also differs—for example, the Global Reporting Initiative (GRI) Sector Programme treats "Coal" as a standalone sector, while the BHRRC groups it together with "Oil and Gas". With respect to value chain coverage, Sustainalytics, for instance, includes a category for "Industrial Conglomerates", which is designed for application to diversified companies rather than specific economic activities.

The findings of assessed sources in terms of priority sectors are summarised in Table 2 below and discussed in more detail in Annex B.

Table 2. Illustrative findings of assessed sources on environmental and social impacts across industry sectors

Source	Description	RBC issue	Illustrative priority sectors	
1. KPMG CSR Sector Risk Assessment (KPMG, 2014[1])	Identification of priority sectors as a starting point for dialogue, based on an open-ended expert and data-driven methodology.	Various	- Agriculture and horticulture - Chemicals industry - Construction - Energy - Finance - Food and beverage industry	- Metal / Electronics - Oil and gas - Retail - Textiles and clothing - Wholesale - Wood and paper
2. UNEP FI Sectors Mapping (UNEP FI, 2024[2])	Positive and negative sector associations with the three pillars of sustainable development: environmental, social and economic.	Human Rights	- Extraction of crude petroleum and natural gas - Mining of coal and lignite	- Mining of metal ores - Mining support service activities - Other mining and quarrying
		Employment	- Crop and animal production, hunting and related service activities - Fishing and aquaculture	- Forestry and logging - Mining of coal and lignite - Organic production
		Environment	- Extraction of crude petroleum and natural gas - Mining of coal and lignite	- Mining of metal ores - Mining support service activities - Other mining and quarrying
		Science, Technology & Innovation	- Advertising and market research - Computer programming, consultancy and related activities	- Information service activities - Postal and courier activities - Telecommunications
3. GRI Sector Programme (GRI, 2021[3])	Stakeholder and needs-based selection of high-impact sectors for prioritised development of sectoral reporting guidance.	Various	- Agriculture, aquaculture, and fishing - Banking - Capital markets - Coal - Food and beverages - Forestry	- Insurance - Metal processing - Mining - Oil and gas - Renewable energy - Textiles and apparel - Utilities
4. S&P Global *ESG Risk Atlas* (S&P Global, 2020[4])	Assesses the global relative positioning of sectors to environmental and social exposures, ranked on a scale from 1 (low exposure) to 6 (high exposure).	Environment	- Agribusiness - Chemicals - Metals and mining	- Oil and gas - Power
5. Sustainalytics ESG Risk Scores (Sustainalytics, 2022[5])	Average ESG Risk Rating Scores per sector.	Various	- Diversified Metals - Industrial Conglomerates - Oil & Gas Producers	- Precious Metals - Steel
6. SASB Materiality Finder (SASB, n.d.[6])	Indicates whether 26 distinct issues (e.g., greenhouse gas emissions, air quality, etc.) are likely to affect cash flows, access to finance and cost of capital.	Human Rights	- Biotechnology & Pharmaceuticals - Chemicals - Coal Operations	- Forestry Management - Metals & Mining - Oil & Gas - Exploration & Production
		Employment	- Air Freight & Logistics - Coal Operations - Cruise Lines	- Electronic Manufacturing Services & Original Design Manufacturing - Health Care Delivery
		Environment	- Chemicals - Construction Materials - Containers & Packaging	- Iron & Steel Producers - Metals & Mining
		Consumer Interests	- Biotechnology & Pharmaceuticals - Food Retailers & Distributors - Health Care Delivery	- Medical Equipment & Supplies - Processed Foods - Managed Care

Source	Description	RBC issue	Illustrative priority sectors	
		Science, Technology & Innovation	- Consumer Finance - E-commerce - Internet Media & Services	- Software & IT Services - Telecommunication Services
		Competition	- Airlines - Auto Parts - Construction Materials	- Internet Media & Services - Media & Entertainment
7. RepRisk ESG Risk Platform	Screens over 100 000 public sources to identify and assess reputational ESG risks with "adverse impacts on financial performance, people, or the planet".	Human Rights	- Food and Beverage - Mining	- Oil and Gas - Support Services - Utilities
		Employment	- Construction and Materials - Food and Beverage - Mining	- Support Services - Travel and Leisure
		Environment	- Food and Beverage - Mining - Oil and Gas	- Support Services - Utilities
		Bribery	- Banks - Construction and Materials	- Financial Services - Oil and Gas - Support Services
		Consumer Interests	- Banks - Construction and Materials	- Financial Services - Food and Beverage - Support Services
		Science, Technology & Innovation	- Financial Services - Media - Retail	- Software and Computer Services - Support Services
8. BHRRC Lawsuit Database (ILO, n.d.[7])	Covers over 200 lawsuits related to human rights abuses by businesses, painting a small but rich picture of the legal trends surrounding corporate human rights harms and litigations.	Human Rights	- Construction - Food & beverage - Mining	- Oil, gas & coal - Technology, telecom & electronics
9. Hurt et al, *Supply Chain Due Diligence Risk Assessment for the EU* (Hurt et al., 2023[8])	Analyses the prevalence of EU companies' supply chain links to child and forced labour across their Tier 1 to 4 supply chain links. Data was shared upon request.	Human Rights	- Computers - Chemicals - Rubber & plastic	- Textiles & leather - Basic metals
10. ILO Statistics on Employment (ILO, n.d.[7])	Data on employment-related issues, including (non)-fatal occupational injuries per 100 000 workers, mean weekly hours worked per person, average monthly earnings and the number of strikes and lockouts.	Employment	- Activities of households as employers - Agriculture, forestry & fishing - Construction	- Manufacturing - Mining & extraction - Transportation and storage - Wholesale and retail
11. USDOL List of Goods Produced by Child Labor or	Identifies goods and their source countries that are likely produced using child and/or forced labour.	Employment	- Bricks - Cattle - Coffee - Cotton - Fish	- Garments - Gold - Rice - Sugarcane - Tobacco

Source	Description	RBC issue	Illustrative priority sectors	
Forced Labor (USDOL, 2024[10])				
12. SBTN: Materiality Screening Tool (SBTN, 2023[11])	Sector materiality ratings for 12 ENCORE pressure categories on a scale from 3 (lowest) to 9 (highest).	Environment	- Agriculture, forestry and fishing - Construction - Electricity, gas, steam and air conditioning supply	- Manufacturing - Mining and quarrying
13. UNEP *Prioritising Nature-related Disclosures – Considerations for high-risk sectors* (UNEP, 2022[12])	Defines and analyses the risk profiles of high-dependency and high-impact sectors.	Environment	- Agriculture, forestry and fisheries - Apparel - Chemicals - Construction - Energy (incl. oil, gas and renewables)	- Food and beverages Manufacturing (incl. Pharmaceuticals and healthcare) - Mining - Transportation - Utilities
14. FfB Foundation, *Top 10 biodiversity-impact ranking of company industries* (FfB Foundation, 2023[13])	Assesses potential impacts on nature via a multi-tool analysis of 250 high-impact companies. The study defines ten sectors with a "high potential impact on biodiversity".	Environment	- Automobiles - Chemicals - Consumer Staples Distribution & Retail - Electric Utilities - Food Products	- Health Care Providers & Services - Metals & Mining - Oil, Gas & Consumable Fuels - Pharmaceuticals - Trading Companies & Distributors
15. OECD $TeCO_2$ Database (OECD, 2021[14]) & Climate Watch Data Explorer (Climate Watch, 2022[15])	Global sectoral emissions data.	Environment	- Agriculture - Electricity & heat - Energy	- Manufacturing and construction - Transportation
16. OECD Competition Trends (2024[16])	Sector-level data on competition issues, including the number of cartel and abuse of dominance decisions per sector.	Competition	- Agriculture, forestry, fishing and hunting - Construction	- Manufacturing - Transportation and Warehousing - Wholesale and Retail

Notes: This table lists high-level findings of sources identified during the meta-review. The list of priority sectors is illustrative only, does not reflect the views of the OECD or the respective organisations, and may not capture the full range of sectors covered in each source.

Survey findings of perceived sector associations with environmental and social impacts

To complement the literature review, the OECD conducted an expert survey to attain a broad picture of how experts perceive the association of environmental and social impacts with industry sectors. 133 professionals from over 100 organisations participated, covering non-governmental organisations (NGOs) (23%), the public sector (23%), international organisations (IOs) (19%), academia (10%) and the private sector (9%).[7] The survey was designed as a multiple-choice questionnaire, asking experts to select among 40 sectors those which they consider to be "associated with particularly significant impacts" of a given topic. Impacts were defined as those covered by the MNE Guidelines. Respondents were free to select as many sectors as they wished. An overview of the survey methodology and a detailed review of the findings are available in Annex C.

Table 3 provides the results of the survey through a heat map. Sectors most frequently associated with an RBC issue are identified in dark blue, those occasionally associated with an RBC issue are identified in medium blue and those rarely or not at all associated with an RBC issue are identified in light blue. The survey results indicate that human rights, employment, and environmental impacts are perceived to be most widely associated with the **agriculture, extractive and manufacturing sectors**, while the **financial sector** is perceived to be most widely associated with bribery, consumer interest, and technology-related impacts. The **construction** sector is perceived as being associated with significant employment, bribery, and competition issues.

While some sectors are perceived as strongly associated with a range of different impacts, other sectors are perceived to be more strongly associated with a more concentrated set of impacts. For example, **the mining sector** was the sector most frequently perceived to be associated with significant impacts related to a broad range of issues, including human rights (as indicated by 86% of respondents), air water and soil pollution (83% of respondents), occupational health and safety (82% of respondents), as well as bribery and other forms of corruption (82% of respondents). On the other hand, the **software** as well as **media and communication** sectors were primarily perceived to be associated with a narrow set of issues, particularly including significant technology-related impacts, such as privacy violations, personal data misuse and intellectual property theft. Similarly, **renewable energy** was primarily perceived to be associated with significant human rights impacts, particularly with respect to just transition considerations.

Table 3. Results from RBC expert survey

Human rights, employment and environmental impacts are perceived to be most widely associated with the agriculture, extractive and manufacturing sectors.

Group	Sector	HR 1 2 3	EMP 4 5 6 7 8 9	ENV 10 11 12 13 14 15	BRI 16	CI 17 18 19	STI 20 21	COM 22	TAX† 23
Group 1 Basic materials and needs	Oil and gas								
	Coal								
	Agriculture, aquaculture, and fishing								
	Mining								
	Food and beverages								
	Textiles and apparel								
	Banking								
	Insurance								
	Capital markets								
	Utilities								
	Renewable energy								
	Forestry								
	Metal processing								
Group 2 Industrial	Construction materials								
	Aerospace and defence								
	Automotive								
	Construction								
	Chemicals								
	Machinery and equipment								
	Pharmaceuticals								
	Electronics								
Group 3 Transport, infrastructure, and tourism	Media and communication								
	Software								
	Real estate								
	Transportation infrastructure								
	Shipping								
	Trucking								
	Airlines								
	Trading, distribution, and logistics								
	Packaging								
	Hotels								
Group 4 Other services and light manufacturing	Educational services								
	Household durables								
	Managed health care								
	Medical equipment and services								
	Retail								
	Security services and correctional facilities								
	Restaurants								
	Commercial services								
	Non-profit organizations								

Note: Abbreviations refer to Human Rights (HR), Employment and Industrial Relations (EMP), Environment (ENV), Combating Bribery and Other Forms of Corruption (BRI), Consumer Interests (CI), Science, Technology, and Innovation (STI), Competition (COM), and Taxation (TAX). Columns numbered 1 to 23 represent: 1. Human rights impacts, 2. Impacts on communities & local participation issues, 3. Just transition, 4. Freedom of association and collective bargaining, 5. Child labour, 6. Forced labour, 7. Discrimination in employment, 8. Occupational health & safety issues, 9. Poor employment conditions including wages, 10. Climate change, 11. Degradation of ecosystems & biodiversity loss, 12. Air, water and soil pollution, 13. Mismanagement of waste, including hazardous substances, 14. Animal mistreatment, 15. Overuse and wasting of resources, including plastics, 16. Corruption, bribery & extortion, 17. Consumer health & safety, 18. Deceptive marketing & lack of accurate, verifiable, and clear information to consumers, 19. Consumer fraud, 20. Privacy violations & personal data misuse, 21. Intellectual property theft & unlawful transfer, 22. Anti-competitive practices, and 23. Tax evasion & avoidance. (†) Submitted by a limited sample of only ten experts.

Top 10% (most frequently selected sectors)
Next 40%
Bottom 50% (less frequently selected sectors)

Combined findings across survey and existing sources

To assess whether there is consistency in findings across different sources, the OECD systematically compared the findings of the identified sources discussed in section 2 and the expert survey, by mapping each of the 16 sources to one or several RBC issues, and converted the explicit or implicit impact levels they report for each sector into a standardised score from 0 (lowest) to 100 (highest).[8] This process yields 36 distinct issue assessments and 1 440 sector scores. Summary statistics are available in Annex A.

Findings of the review indicate a high level of convergence across the sectors most commonly and least commonly associated with RBC issues and broad divergence across sources for those in between (see Table 4).

Convergence on sectors most significantly associated with environmental and social impacts

The identified sources and the survey results were generally consistent with respect to the sectors they identified as being most highly associated with specific RBC issues and corresponding topics (see Figure 1).

Most sources identified for the human rights category (i.e. the expert survey, UNEP FI Sectors Mapping, RepRisk, Hurt et al. (2023[8]), BHRRC and the Sustainability Accounting Standards Board (SASB) generally converge on the three **extractive sectors**—**coal, oil and gas, and mining**—as being the sectors most strongly associated with human rights impacts.[9] The same three sectors, in addition to **agriculture**, also feature consistently as the sectors most strongly associated with environmental impacts. Across all sources, **coal and mining**, **agriculture, textiles** and **construction** are the sectors most strongly associated with employment-related impacts. With respect to corruption-related impacts, it is **construction, banking**, and to some degree, **oil and gas** that are consistently more strongly associated with these types of impacts.

Notably, and in line with the survey results, some sectors appear to be significantly associated with several RBC issues, while the impacts of other sectors appear to be more concentrated in fewer issues. For example, the three **extractive sectors** appear to be highly associated with a broad set of issues related to human rights, employment, environment and corruption. In contrast, the **media and communications** as well as **software** sectors appear to be primarily associated with a narrower set of technology-related impacts; the **construction** sector appears to be primarily associated with employment and corruption and bribery-related impacts; and the **food and beverages** and **capital markets** sectors appear to be most closely connected to impacts related to consumer interests.

Table 4. Combined results from review of survey and existing sources

The extractive sectors appear to be significantly associated with several RBC issues, while the impacts of other sectors such as media and software appear to be more concentrated in fewer issues.

Group	Sector	Human rights	Employment and I.R.	Environment	Bribery	Consumer interests	STI
Group 1 Basic materials and needs	Oil and gas						
	Coal						
	Agriculture, aquaculture, and fishing						
	Mining						
	Food and beverages						
	Textiles and apparel						
	Banking						
	Insurance						
	Capital markets						
	Utilities						
	Renewable energy						
	Forestry						
	Metal processing						
Group 2 Industrial	Construction materials						
	Aerospace and defence						
	Automotive						
	Construction						
	Chemicals						
	Machinery and equipment						
	Pharmaceuticals						
	Electronics						
Group 3 Transport, infrastructure and tourism	Media and communication						
	Software						
	Real estate						
	Transportation infrastructure						
	Shipping						
	Trucking						
	Airlines						
	Trading, distribution, and logistics						
	Packaging						
	Hotels						
Group 4 Other services and light manufacturing	Educational services						
	Household durables						
	Managed health care						
	Medical equipment and services						
	Retail						
	Security services and correctional facilities						
	Restaurants						
	Commercial services						
	Non-profit organizations						

Note: Each cell in the heatmap shows the average impact score for a given sector (y-axis) and RBC issue (x-axis). Scores are derived by mapping multiple sources (e.g. UNEP FI Sectors Mapping) to one or several RBC issues and converting their assessment schemes into a 0–100 scale, where 0 = lowest impact and 100 = highest impact. The shading reflects the average of all available scores for that sector–issue combination. See Annex A for details and illustrative examples on indicator mapping and score normalisation.

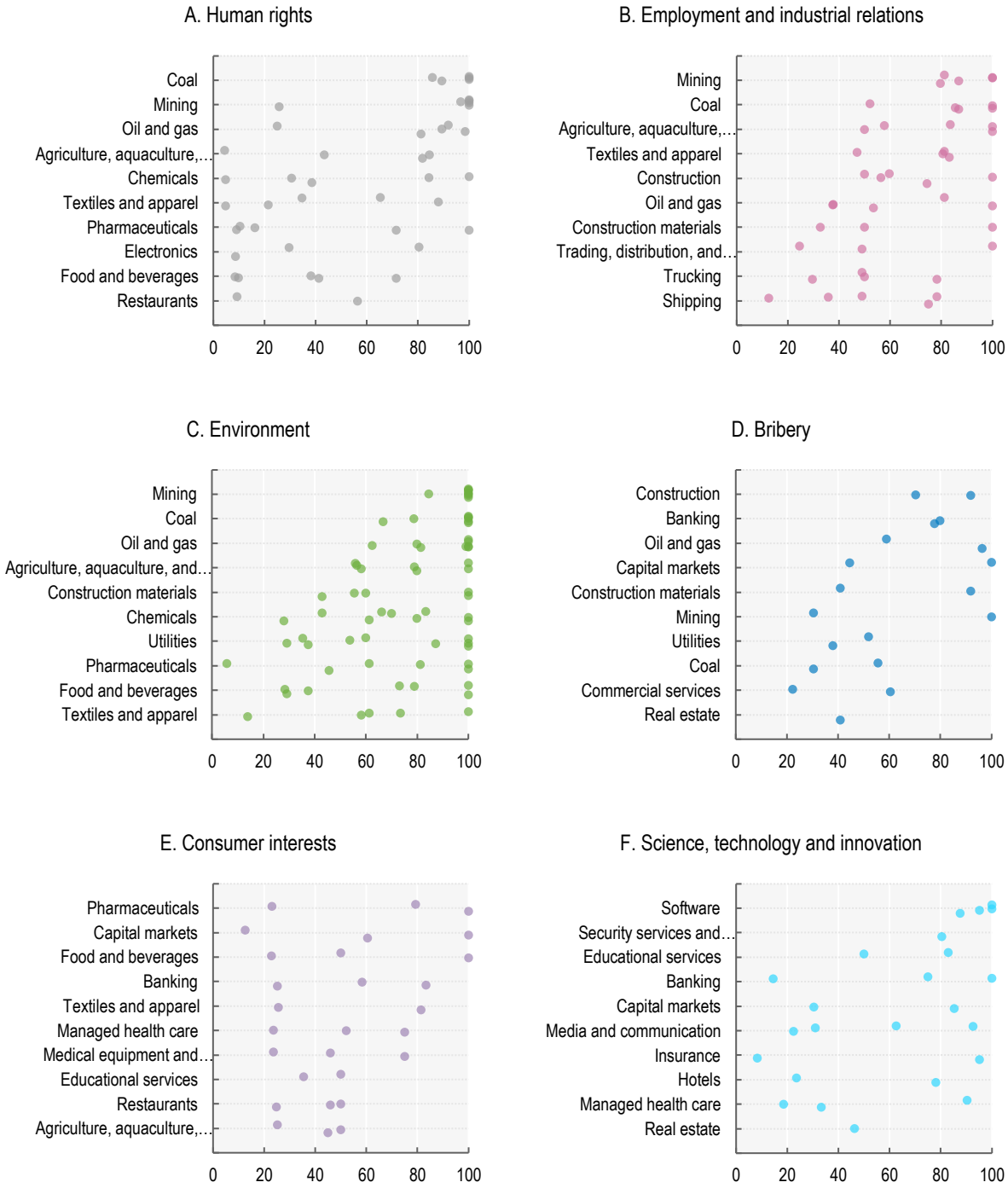
Top 10% (most highly associated with impact)

Next 40%

Bottom 50% (least associated with impact)

Figure 1. Convergence on sectors most frequently associated with environmental and social impacts

Some sectors are consistently considered to be more strongly associated with environmental and social impacts.

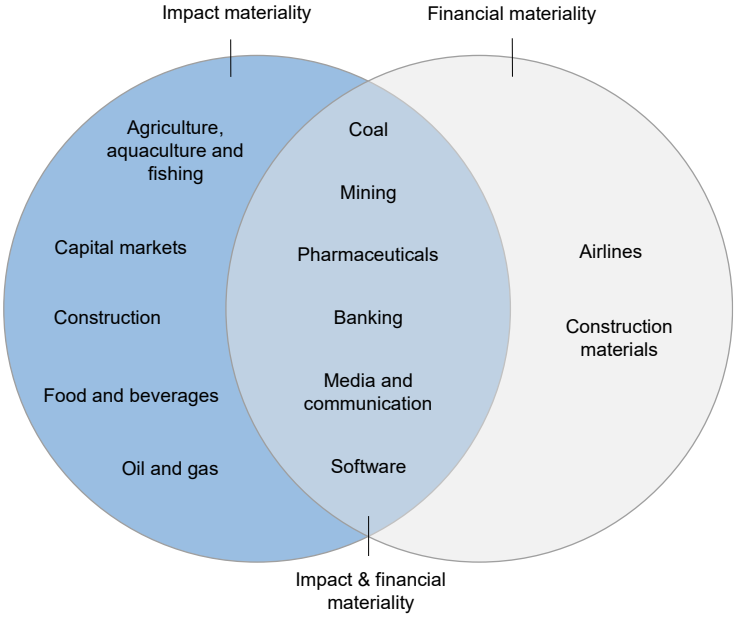


Note: The panel above shows, for each RBC issue, the ten sectors with the highest average indicator scores. Dots represent individual indicator scores (0 = lowest impact, 100 = highest impact) from the underlying sources (e.g. UNEP FI Sectors Mapping, RepRisk, etc.). Proximity of the data points along the x-axis reflects the degree of consistency across sources: tightly clustered points indicate a high level of consistency, whereas more dispersed points signal lower consistency. See Annex A for details and illustrative examples on indicator mapping and score normalisation.

These findings are relatively consistent across different materiality approaches. For instance, excluding sources that assess impacts from a financial materiality perspective, the **extractive and agriculture sectors** remain among the sectors most significantly associated with human rights, employment and environmental impacts, while there are minor changes in the results relating to **industrial and manufacturing sectors**. The **extractive** and **manufacturing** sectors also remain among those sectors with the highest standardised scores for key RBC issues if all sources that apply an impact materiality lens are excluded. Specifically, **coal**, **mining**, **pharmaceuticals**, **banking, media and communication**, and **software sectors** display the highest three scores for one or more RBC issues under *any* materiality lens (see Figure 2). It suggests that sectors such as **airlines** and **construction materials** may be particularly exposed to material financial risks.

Figure 2. Differences in findings based on materiality lens

There is substantial overlap in the sectors most strongly associated with at least one RBC issue when comparing sources that apply an impact materiality lens to those that apply a financial materiality lens.



Note: The figure aggregates findings based on whether the source applied an impact or financial materiality lens. The left circle represents sectors ranking among the top three for at least one RBC issue (e.g., human rights, environment) based on sources applying an **impact materiality lens**, which focuses on impacts on people and the planet. The right circle represents the equivalent top-ranking sectors under a **financial materiality lens**, which considers risks to companies. Sectors shown in the overlapping area are those that rank among the top three for at least one RBC issue under both perspectives.

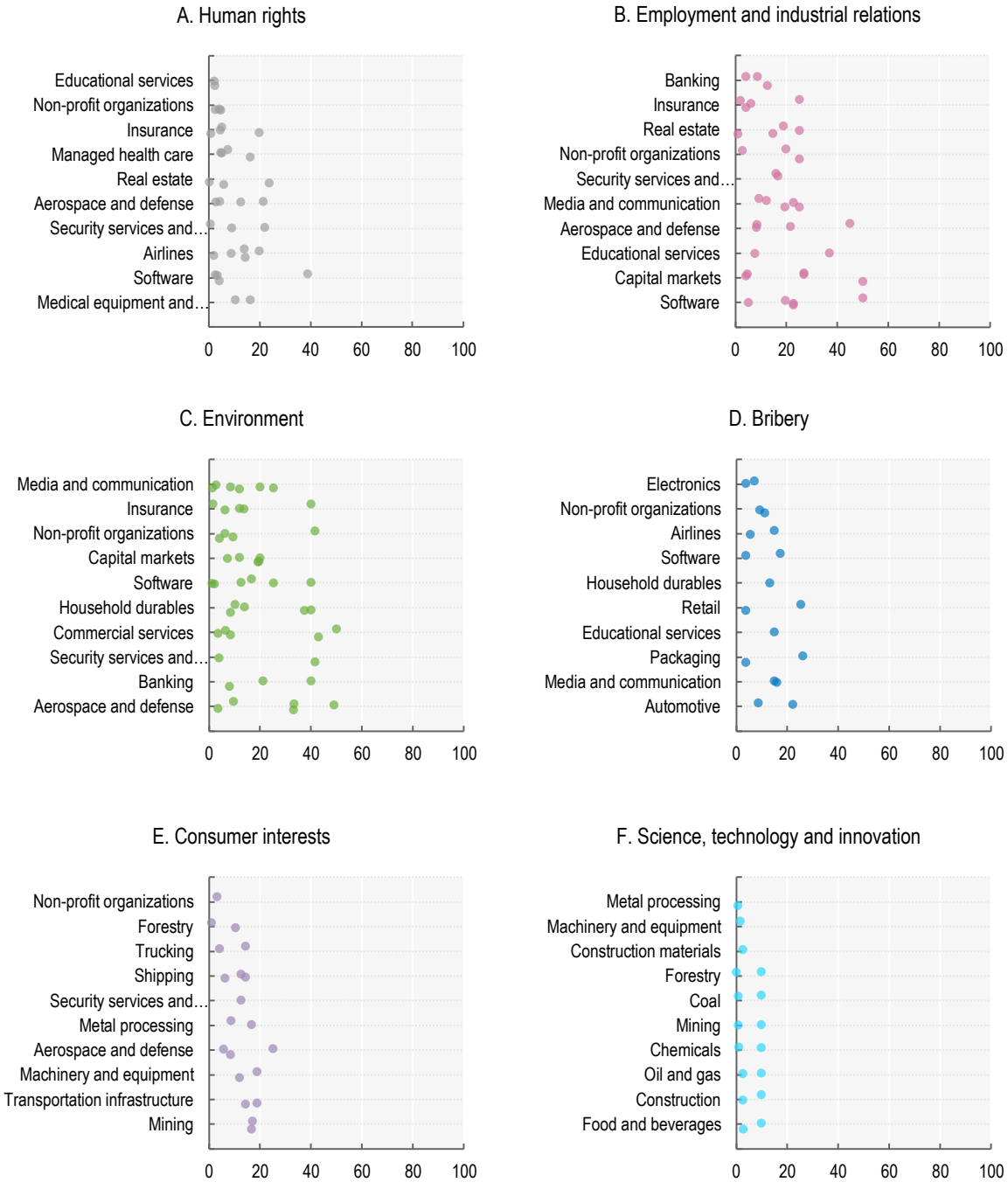
Convergence on sectors less significantly associated with environmental and social impacts

The assessed sources also display convergence on sectors that do not appear to be strongly associated with adverse impacts across RBC issues (see Figure 3).

None of the sources nor the survey, for instance, linked sectors such as **educational services** and **non-profit organisations** to substantial adverse human rights impacts. Similarly, none of the assessed sources associate the **banking** and **insurance sector** with significant employment-related issues, nor the **electronics** sector with significant corruption-related issues. While overall divergence appears somewhat larger across the eight environmental indicators, the **media and communications** sector appears to be considered relatively low impact across identified sources with respect to environmental issues.

Figure 3. Convergence on sectors least frequently associated with environmental and social impacts

Identified sources display convergence on sectors that do not appear to be strongly associated with adverse impacts across RBC issues.



Note: The panel above shows, for each RBC issue, the ten sectors with the lowest average indicator scores. Dots represent individual indicator scores (0 = lowest impact, 100 = highest impact) from the underlying sources (e.g. UNEP FI Sectors Mapping, RepRisk, etc.). Proximity of the data points along the x-axis reflects the degree of consistency across sources: tightly clustered points indicate a high level of consistency, whereas more dispersed points signal lower consistency. See Annex A for details and illustrative examples on indicator mapping and score normalisation.

Significant divergence on remaining sectors

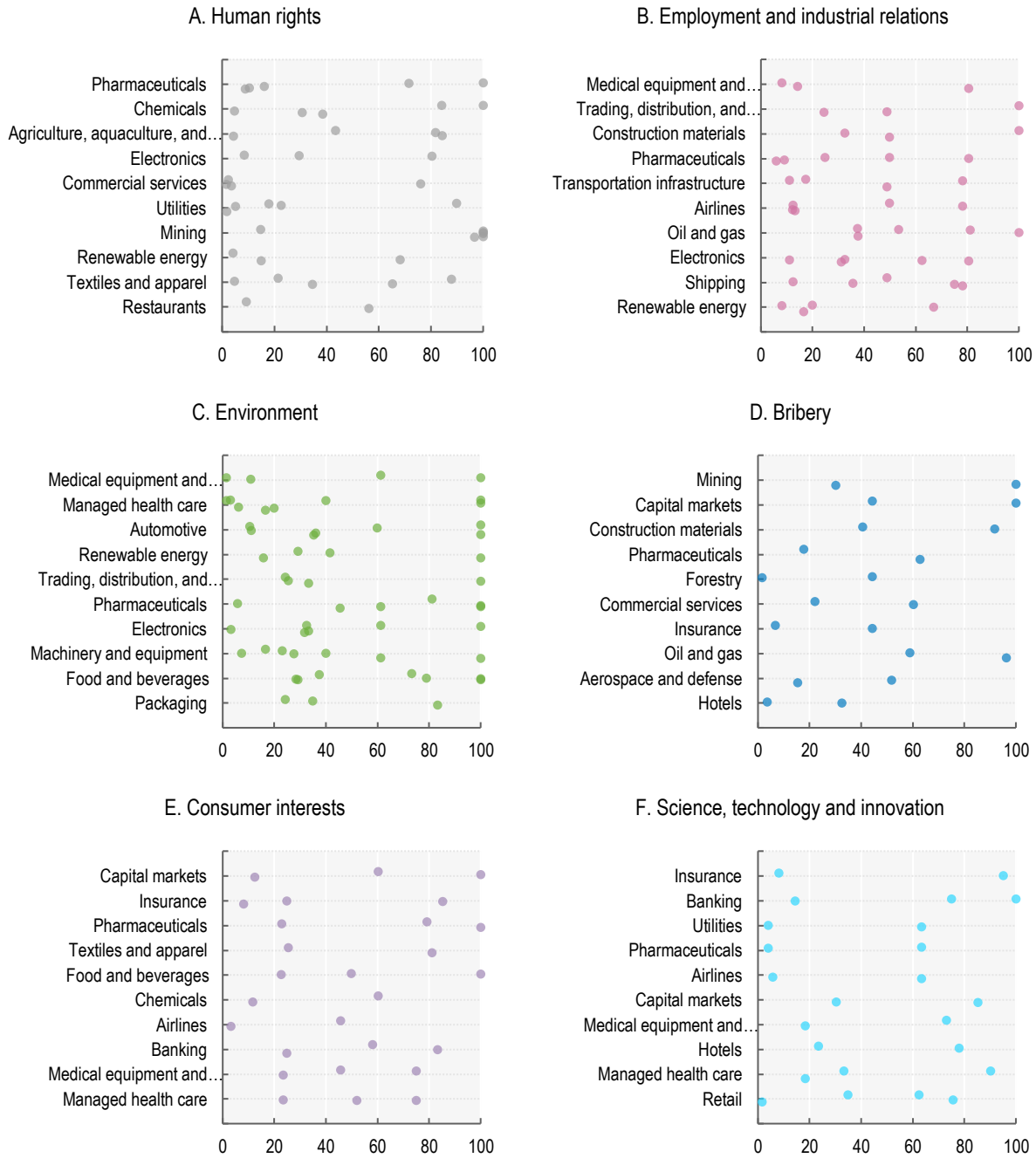
This study further finds a broad set of sectors for which the sources display diverging assessments with respect to RBC issues (see Figure 4)**.**

Utilities, for example, emerges as a sector particularly strongly associated with human rights impacts in RepRisk's incident dataset (trailing only the mining sector), whereas the same sector only ranks in the bottom quartile of sectors associated with human rights impacts by survey respondents. Conversely, while **textiles and apparel** were highly associated with employment-related impacts in the survey (particularly with respect to employment conditions), the sector does not emerge as a particularly high-impact sector with respect to labour issues in RepRisk's controversy-based dataset. Across sources consulted, there is little consistency on how significantly the **pharmaceuticals sector** is associated with *any* RBC issue.[10] Generally, variation in indicator scores for the same sectors was the highest for the Environment chapter and lowest for Bribery.

For the issue of consumer interests specifically, there was very limited convergence across sources on the extent to which specific sectors were most associated with adverse impacts. Given that only three sources were identified for the consumer interests RBC issue (i.e. the expert survey, RepRisk, and SASB's Materiality Finder), this divergence is particularly based on the different evaluations between expert perceptions and the volume of consumer interest-related incidents. For instance, both the **food and beverages** and **insurance** sectors display particularly high perception-based indicator scores for consumer interests (based on the expert survey) while simultaneously ranking low on assessed controversy-based measures (based on RepRisk's controversy-based dataset). Conversely, **textiles and apparel** displays a high frequency of controversies related to consumer interests, while not having been frequently associated with perceived consumer interest issues by respondents to the survey.

Figure 4. Divergence on sector associations with environmental and social impacts

For many sectors, identified sources display diverging assessments of environmental and social impacts.



Note: The panel above shows, for each RBC issue, the ten sectors with the highest standard deviation of indicator scores. Dots represent individual indicator scores (0 = lowest impact, 100 = highest impact) from the underlying sources (e.g. UNEP FI Sectors Mapping, RepRisk, etc.). Proximity of the data points along the x-axis reflects the degree of consistency across sources: tightly clustered points indicate a high level of consistency, whereas more dispersed points signal lower consistency. See Annex A for details and illustrative examples on indicator mapping and score normalisation.

Conclusion

There is increasing interest from businesses, policymakers, financial service providers and other stakeholders to better understand the relative association of industry sectors with various environmental and social impacts. This review of relevant existing sources and expert perceptions reveals a high level of convergence across assessments on sectors that appear to be strongly associated with environmental and social impacts and sectors that do not, while there is a low level of convergence for many sectors that fall between these two extremes.

Such divergences might be explained by methodological choices and inherent limitations in the underlying data. Any attempt to capture sector association with environmental and social impacts is necessarily imperfect and fundamentally driven by the definition of impacts, selection of indicators and other methodological choices. In the context of this study, considered RBC issues capture a broad range of phenomena, of which most sources only capture a limited subset. Overall, there is limited data measuring or comparing the prevalence of environmental and social impacts across sectors or economic activities. Existing data and studies on this topic tend to be limited in scope or tied to a specific geographic context. That said, for some sectors, patterns of impact association can be observed. For many of these sectors, the OECD has developed sector-specific guidance to support their due diligence efforts.

Similarly, for sectors where it appears more difficult to identify clear patterns in the exposure to RBC issues, the cross-sectoral OECD Due Diligence Guidance for Responsible Business Conduct offers direction on how to identify salient issues relevant to each company's activities and context. The findings of this report likewise underscore the importance of companies in all sectors making efforts to understand their exposure to risks and impacts as part of their own risk-based due diligence process and materiality assessment. Further work may be merited to ensure that companies, including smaller businesses, have access to data and tools to assist them in this process.

Annex A. Meta-review methodology

This annex provides details about the steps undertaken by the OECD to compare the findings of different sources and data concerning the association of sectors with environmental and social impacts. This includes the mapping of identified sources to a consistent set of RBC issues and sectors, the normalisation of numerical scores, and the synthesis of findings.

RBC issues and impacts under the MNE Guidelines

Following the chapters of the MNE Guidelines,[11] this study considers the following RBC issues for the definition and operationalisation of environmental and social impacts:

- Human Rights (Chapter IV)
- Employment and Industrial Relations (Chapter V)
- Environment (Chapter VI)
- Combating Bribery and Other Forms of Corruption (Chapter VII)
- Consumer Interests (Chapter VIII)
- Science, Technology, and Innovation (Chapter IX)
- Competition (Chapter X)
- Taxation (Chapter XI)

In line with the OECD Due Diligence Guidance for Responsible Business Conduct (2018[17]), the term "environmental and social impact" refers to potential and actual adverse impacts on people, the environment and society. The risk of adverse impacts is understood as a function of severity and likelihood. The severity of an impact is context-specific but generally depends on its *scale*, *scope* and *irremediable character*. Scale refers to the gravity of the adverse impact, scope concerns the reach of the impact, for example, the number of individuals that are or will be affected or the extent of environmental damage, and irremediable character means any limits on the ability to restore the individuals or environment affected to a situation equivalent to their situation before the adverse impact.

Each identified source was mapped to one or several RBC issues, based on their thematic alignment with the expectations of the different chapters of the MNE Guidelines. In some cases, only a subset of indicators from a source was relevant and retained for mapping purposes, while others were excluded.

Reference classification of industry sectors

Assessed sources are based on varying standardised or non-standardised sector classifications. The OECD mapped these different classifications to a consistent set of 40 sectors across four groups in line with the GRI Sector Programme (see Table A A.1). For example, the ISIC sector "Mining & extraction" was mapped to this study's sectors "Mining", "Oil and gas" and "Coal", while the Sustainable Industry Classification System (SICS) sector "Coal Operations" was mapped to this study's sector "Coal". GRI's classification was used instead of official sector classifications by governments and inter-governmental

bodies (e.g. ISIC, NACE), considering the familiarity of GRI standards for corporate practitioners and thematic experts.

Table A A.1. List of sectors

Sector	Description of activities
Group 1: Basic materials and needs	
Oil and gas	Exploration and production of oil and gas; suppliers of equipment and services to oil and gas fields; storage and transportation; refining and marketing of oil and gas products.
Coal	Exploration and extraction of coal; suppliers of equipment and services to coal mines; storage and transportation; refining and marketing of coal products.
Agriculture, aquaculture, and fishing	Agriculture, animal husbandry, aquaculture, and fishing. Including rubber but excluding hunting and forestry.
Mining	Exploration and extraction of minerals, except coal; suppliers of equipment and services to mining; storage and transportation; refining and marketing of minerals.
Food and beverages	Manufacturing of food, beverages and tobacco.
Textiles and apparel	Manufacturing and retail of textiles, apparel, footwear, and accessories.
Banking	Commercial banks; consumer finance; savings institutions; mortgage finance; micro-finance institutions
Insurance	Life, non-life, and reinsurance.
Capital markets	Asset owners and managers, investment banks, custody, and stock exchanges.
Utilities	Electricity generation (except renewables), transmission and distribution; gas utilities and distributors; water utilities and services; waste management.
Renewable energy	Solar and wind project developers; biofuels producers; producers of fuel cells and industrial batteries.
Forestry	Forestry and logging, production of pulp and paper.
Metal processing	Steel and aluminum production; smelting and processing of other metals.
Group 2: Industrial	
Construction materials	Production of cement, concrete, tiles, bricks, glass and other construction materials, except steel and timber.
Aerospace and defense	Manufacturing of aircrafts and weapons
Automotive	Production of road vehicles and auto parts, retail and repair of road vehicles, car rental and leasing.
Construction	Construction of buildings, civil engineering and other construction activities.
Chemicals	Manufacturing of chemical products, including plastics and fertilizers.
Machinery and equipment	Manufacturing of machines and equipment, including ships and trains. Can include all heavy industry not specified elsewhere.
Pharmaceuticals	Manufacturing of pharmaceuticals products; research and development of idem, biotechnology.
Electronics	Manufacturing and design of electronic products, including computers, mobile phones and their components; semiconductors.
Group 3: Transport, infrastructure and tourism	
Media and communication	Telecom operators, media companies, printing industry.
Software	Software and related services.
Real estate	Real estate developers and services associated.
Transportation infrastructure	Operation of roads, railways, ports, airports, etc.

Sector	Description of activities
Shipping	Transportation services by water.
Trucking	Transportation services by road.
Airlines	Passenger airlines.
Trading, distribution, and logistics	Freight transportation by rail or plane, postal and other logistical services, storage services, trading services.
Packaging	Containers and packaging.
Hotels	Management of hotels, resorts and other leisure spaces.
Group 4: Other services and light manufacturing	
Educational services	Education services at all levels, including online education.
Household durables	Manufacturing of furniture, household appliances, toys, sporting goods and similar. Can include all light manufacturing not specified elsewhere.
Managed health care	Health care services, including veterinary.
Medical equipment and services	Manufacturing of medical supplies and equipment.
Retail	All retail services except automotive. Repair services.
Security services and correctional facilities	Provision of security services, management of correctional facilities.
Restaurants	Restaurants, bars and cafes; catering services.
Commercial services	Professional services, including lawyers, accountants, consultants, advertising and marketing; business process outsourcing.
Non-profit organizations	NGOs, foundations, professional and civic associations, charities.

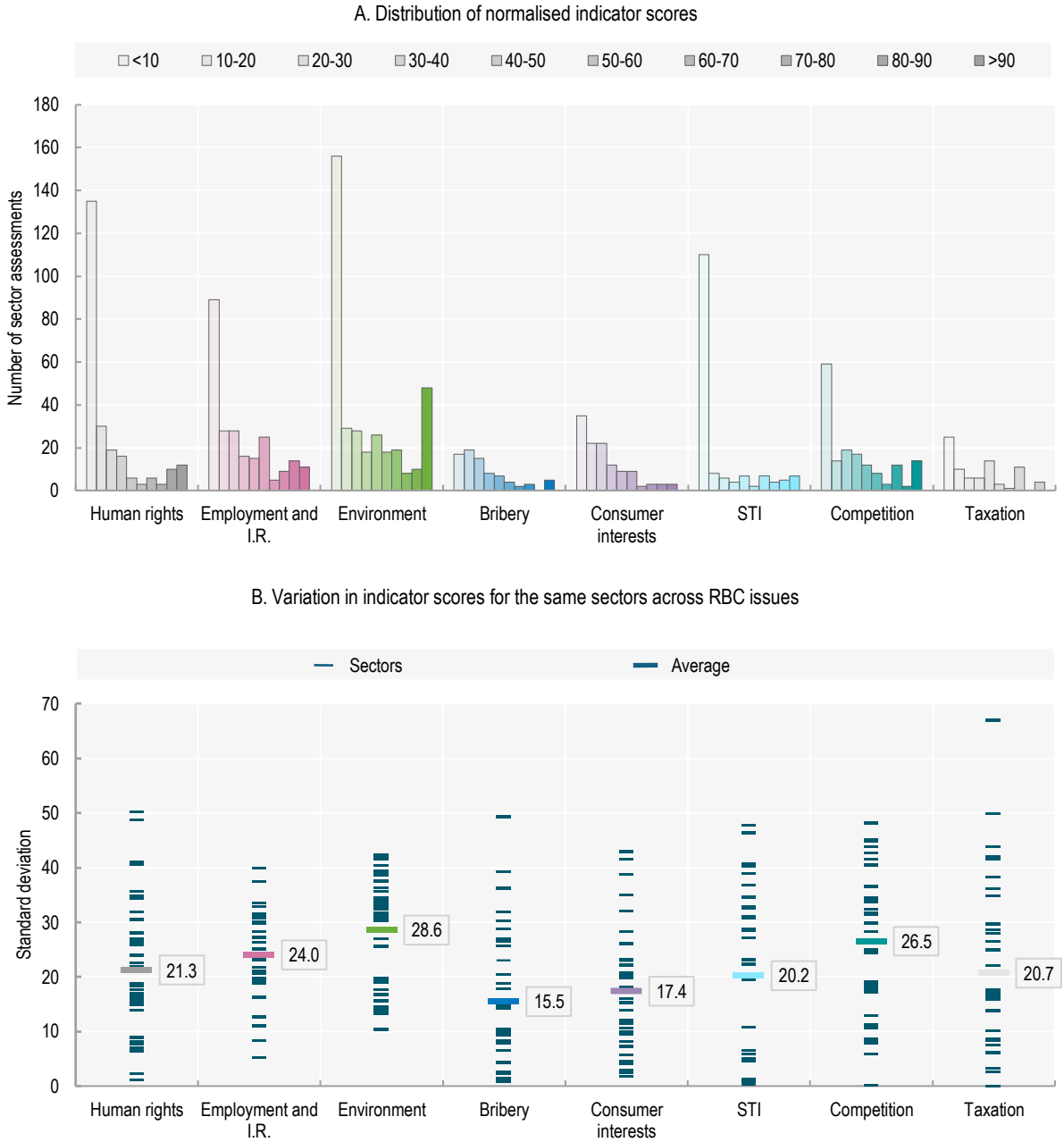
Source: GRI (2019[18]), *GRI Sector Program*. https://www.globalreporting.org/media/cqxldusf/gri_sector_program_description.pdf.

Normalisation and mapping of indicators

Sector-level indicators were normalised from 0 (lowest value) to 100 (highest value). For example, the RepRisk sector “Financial Services” (mapped to “Capital markets”) was associated with the highest number of ESG controversies mapped to the Bribery chapter (8 910 controversies), while the RepRisk sector “Paper” (mapped to “Forestry”) was associated with only 133 controversies (Figure A B.3). Therefore, for RepRisk, the capital markets sector was assigned a Bribery indicator score of 100 (highest value), while Forestry was assigned a score of 0 (lowest value). Prioritised sectors from sector-selective assessments, such as the studies by UNEP FI and FfB, were assigned scores of 100, whereas non-prioritised sectors were assigned scores of 0.

Figure A A.1 shows the distribution of the 1 440 normalised scores resulting from the data standardisation process. Panel A reveals a relatively uniform distribution overall, with a notable concentration of scores between 0 and 10 for the various RBC issues. This pattern is primarily driven by sectors not assessed by certain sources, as well as the presence of outliers. For instance, the BHRRC lawsuit database—one of this study’s six human rights indicators—reports 57 and 51 lawsuits in the mining and oil, gas, and coal sectors, respectively, while the number of such cases in the next most-referenced sectors remains below 15. Panel B also shows the level of variation (or divergence) in indicator scores for the same sectors and RBC issues, which is highest for environmental indicators and lowest for bribery indicators.

Figure A A.1. Summary statistics



Note: Panel A shows the distribution of available indicator scores per RBC issue. Panel B illustrates the variation in sector scores across RBC issues. Each data point represents the standard deviation of scores for a specific sector, indicating how consistently or divergently sectors score across RBC issues. Mining emerges as an outlier for Bribery and Other Forms of Corruption (due to significant differences between expert perception and controversy-based assessments), while Insurance emerges as an outlier for Taxation.

Annex B. Detailed analysis of identified literature

The literature review conducted for this report focused on resources that assess impacts associated with RBC issues across sectors. For the purposes of this meta-review, existing literature and data on sectoral impacts are broadly analysed along whether they assess sectoral impacts with respect to several RBC issues at once ("broad-based") or with respect to individual RBC issues, such as specific human rights or environmental impacts ("issue-specific"). Table 1 in the main report displays the 16 different sources and associated indicators identified, which are analysed in more detail in this section.

Broad-based assessment of RBC impacts

KPMG CSR Sector Risk Assessment

The 2014 CSR Sector Risk Assessment by KMPG, commissioned by the Dutch Ministry for Foreign Trade and Development Cooperation, offers a comprehensive analysis of inter-sectoral, broad-based impacts. Based on the chapters of the MNE Guidelines, the study considers impacts across environmental, human rights, employment, corruption and taxation issues. As such, the study does not consider Chapter VIII (Consumer Interests), introduced with the 2010 update, as well as Chapters IX (Science, Technology and Innovation), and X (Competition).[12] Based on an open-ended expert and data-driven methodology, the following priority sectors were identified "as a starting point for dialogue" (KPMG, 2014[1]):

- Agriculture and horticulture
- Chemicals industry
- Construction
- Energy
- Finance
- Food and beverage industry
- Metal / Electronics
- Oil and gas
- Retail
- Textiles and clothing
- Wholesale
- Wood and paper

The study's sector prioritisation is embedded in the Dutch economic context. For instance, its starting point is the Standard Business Classification—a Dutch classification of economic activities used by Statistics Netherlands. Moreover, part of the selection methodology is the assessment of the economic importance to the Dutch economy, measured by the share in total turnover and employment rate in the Netherlands. As such, as noted in the study itself, "a number of sectors that did not make it to this list even face 'serious' CSR risks but were not included because of their lower economic importance in the Netherlands" (KPMG, 2014[1]), notably including the pharmaceutical and mining sectors.

UNEP FI Sectors Mapping

The UNEP Finance Initiative developed a detailed mapping of sustainability impacts through the Sectors Mapping tool. The tool examines how various industry sectors and their activities relate—both positively and negatively—to the three pillars of sustainable development: environmental, social and economic. The sectors are defined with a high level of detail, based on Levels 1-4 of ISIC Rev. 4. The impact areas and themes are based on the UNEP FI Impact Radar. The mapping draws on multiple reference sources, including the IFC's Environmental Health and Safety Guidelines, UNEP FI's Risk Briefings and thematic tools like ENCORE. It has also been reviewed by a range of expert organisations and is intended to be continuously updated.

GRI Sector Programme

A needs- and stakeholder-based selection of high-impact sectors comes from GRI (2021[3]). For its Sector Programme, GRI identified three priority sectors for the development of pilot Sector Standards and ten additional sectors for subsequent development as follows:

- Oil and gas (priority pilot)
- Coal (priority pilot)
- Agriculture, aquaculture, and fishing (priority pilot)
- Mining
- Food and beverages
- Textiles and apparel
- Banking
- Insurance
- Capital markets
- Utilities
- Renewable energy
- Forestry
- Metal processing

The selection of sectors draws heavily from the primary sectors, particularly the extractive and manufacturing sectors (mining, food and beverages, textiles and apparel, and metal processing), as well as the financial sector (banking, insurance, and capital markets). The main criterion for the selection of these sectors was their "sustainability impacts" (GRI, 2021[3]). This assessment aimed to "reflect the severity of the impacts, as well as the likelihood of their occurrence", taking into account size, geographical distribution and number of potential Sector Standard users (GRI, 2021[3]). The assessment of sectors' sustainability impacts was primarily driven by means of stakeholder consultations, acknowledging that the resulting ranking of sustainability impacts "cannot be completely objective" (GRI, 2021[3]).

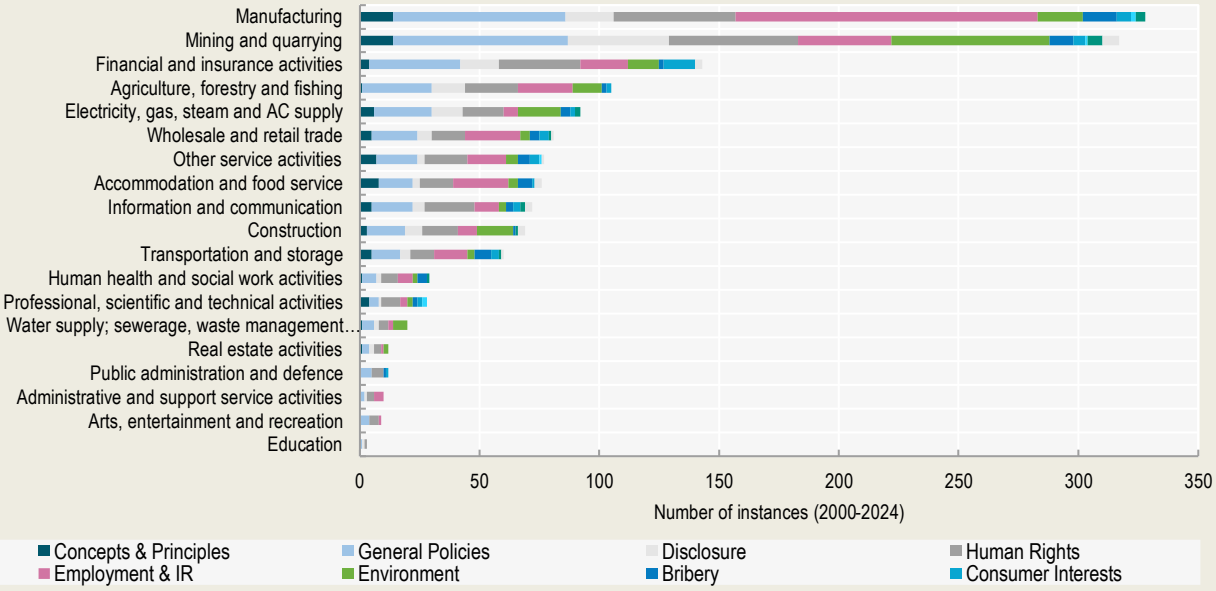
Box A B.1. Specific instances brought to National Contact Points

Countries adhering to the MNE Guidelines are required to set up National Contact Points (NCPs). NCPs promote the implementation of the MNE Guidelines and provide a mediation and conciliation platform for cases ("specific instances") of alleged non-observance of the MNE Guidelines. The OECD NCP Secretariat maintains a database of specific instances handled by NCPs between the year 2000 and today. Over this period, NCPs have handled over 600 cases in over 100 countries. While anecdotal due to limited sample size and thus not included as a data source in the scope of this study, the distribution of specific instances across sectors and the chapters of the MNE Guidelines, as shown in Figure A B.1, provides two valuable insights into sectoral RBC impacts.

Firstly, the largest share of specific instances, by a substantial margin, relates to Manufacturing. 164 specific instances handled by NCPs relate to this sector, followed by mining (108) and financial services (73). Together, these three sectors constitute more than half of all specific instances brought to NCPs between 2000 and 2023. However, this distribution should not be conflated with overall impacts related to RBC across sectors, given that the admission of specific instances is largely driven by the coverage of topics under the MNE Guidelines. For instance, Chapter VII of the MNE Guidelines was only introduced in 2011, such that sectors with salient consumer interest issues may be underrepresented in such analysis.

Furthermore, the association of specific instances with the chapters of the MNE Guidelines differs substantially across sectors. For instance, the vast majority of specific instances related to manufacturing relate to employment issues—linked to 126 out of 164 specific instances (77%). For mining and quarrying, in contrast, the most frequently associated chapter of the MNE Guidelines is General Policies (73), closely followed by Environment (66). In contrast, only 19 specific instances related to Manufacturing are associated with environmental impacts, indicating that direct environmental impacts covered by the Guidelines may be more prevalent in mining as compared to manufacturing.

Figure A B.1. Distribution of NCP Cases

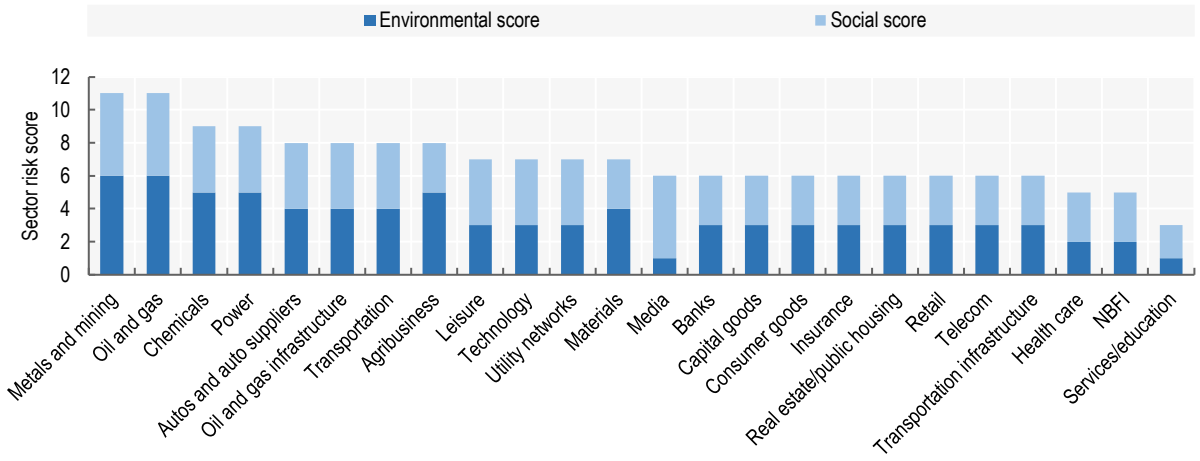


Note: Specific instances can be linked to various sectors and chapters of the MNE Guidelines. Chapters are allocated proportionally for each specific instance, such that the total number of sectoral instances reflects their actual occurrence.
Source: OECD database of specific instances (November 2023).

S&P Global ESG Risk Atlas

Through its ESG Risk Atlas, S&P Global assesses the "global relative positioning of sectors to environmental and social exposures", assessed on a scale from 1 (low exposure) to 6 (high exposure), respectively (see Figure A B.2) (S&P Global, 2020[4]). While it applies a financial materiality lens, the latest ranking of sectors resembles those of other organisations, such as KPMG's and GRI's list of priority sectors. For instance, metals and mining and oil and gas constitute the sectors with the highest combined S&P Global risk scores (11 out of 12) as well as environmental scores (6 out of 6), while also featuring within the list of priority sectors identified by GRI and UNEP FI.

Figure A B.2. S&P Global ESG Risk Atlas



Source: S&P Global (2020[4]). *The ESG Risk Atlas: Sector and Regional Rationales and Scores*, https://www.spglobal.com/marketintelligence/en/documents/theesgriskatlassectorandregionalrationalesandscores_july-22-2020.pdf.

Sustainalytics ESG Risk Scores

Sustainalytics publishes sectoral ESG Risk Rating Scores, measuring the average "magnitude of a company's unmanaged ESG risks" in terms of economic value on a scale from 0 to 100 (Sustainalytics, 2022[5]). The ESG risk rating captures exposure across various "material ESG issues", such as business ethics, product governance, carbon emissions, community relations and waste.[13] Following the Global Industry Classification Standard (GICS) sector classification, the ten "highest-risk industries" with respect to their average ESG Risk Rating Scores as of 2021 are:

- Industrial Conglomerates
- Steel
- Diversified Metals
- Precious Metals
- Oil and Gas Producers
- Aerospace and Defence
- Construction and Engineering
- Food Products
- Refiners and Pipelines
- Chemicals

As such, despite its financial materiality lens, the list by Sustainalytics exhibits some considerable overlap with other priority sector classifications, for instance through its broad focus on extractive and heavy industries (e.g. oil and gas, chemicals and construction) as well as food products. Noticeably, however, industrial conglomerates (i.e. a category of multi-industry companies) not only exhibits the highest average ESG Risk Rating Score but simultaneously the lowest sectoral Management Score across sectors (Sustainalytics, 2022[5]). The inclusion of this sector in the assessment is also indicative of the nature of GICS, which is designed for application to individual companies rather than the description of individual economic activities.[14]

SASB Materiality Finder

Through its Materiality Finder, SASB indicates whether 26 distinct "issues" (e.g. greenhouse gas emissions, air quality, etc.) across five categories are relevant for different sectors.[15] Table A B.1 shows the relevant issues for the five sectors with the highest number of material issues, potentially indicative of the overall breadth (or scope) of ESG risks in these sectors (rather than the individual severity of such risks). This might point toward certain impacts that might otherwise go unnoticed, such as challenges associated with uninsured and low-income patients and medical and pharmaceutical waste. However, such mapping also illustrates differences between financial and impact materiality approaches, for instance by considering issues which are uniquely related to financial materiality (e.g. business model resilience).

Table A B.1. SASB Materiality Finder

	Health Care Delivery	Metals & Mining	Meat, Poultry & Dairy	Oil & Gas - Exploration & Production	Chemicals
Environment					
GHG Emissions		■	■	■	■
Air Quality		■		■	■
Energy Management	■	■	■		■
Water & Wastewater Mgmt.		■	■	■	■
Waste & Hazardous Materials Mgmt.	■	■			■
Ecological Impacts		■	■	■	
Social Capital					
HR & Community Relations		■		■	■
Customer Privacy					
Data Security	■				
Access & Affordability	■				
Product Quality & Safety	■		■		
Customer Welfare	■				
Selling Practices & Prod. Labelling	■				
Human Capital					
Labor Practices		■			
Employee Health & Safety	■	■	■	■	■
Employee Engagement, Div. & Inclusion	■				
Business Model Innovation					
Product Design & Lifecycle Mgmt.			■		■
Business Model Resilience				■	
Supply Chain Management			■		
Materials Sourcing & Efficiency			■		
Physical Impacts of Climate Change	■				
Leadership and Governance					
Business Ethics	■	■		■	
Competitive Behaviour					
Management of Legal & Reg. Env.				■	■
Critical Incident Risk Management		■		■	■
Systemic Risk Management					
Total	11	11	10	10	10

Note: The figure above shows the five sectors with the highest number of material issues as well as their respective risk profiles.
■ Relevant issues
Source: SASB (n.d.[6]), *Materiality Finder*, https://sasb.ifrs.org/standards/materiality-finder.

RepRisk ESG Risk Platform

This study draws on a sectoral analysis of RBC-related risk incidents and controversies. Controversies are typically defined as instances in which media or other public sources critically mention a company with respect to a breach of public norms or norms of RBC. The OECD acquired a dataset of ESG risk incidents by RepRisk. RepRisk screens over 100 000 public sources in 23 languages—excluding company self-disclosures—to identify and assess reputational ESG risks with "adverse impacts on financial performance, people, or the planet" (RepRisk, n.d.[19]). The resulting dataset covers over 250 000 companies associated with risk incidents, i.e. alleged violations of at least one of 28 ESG Issues, defined in line with international standards such as the MNE Guidelines and the ILO Conventions.

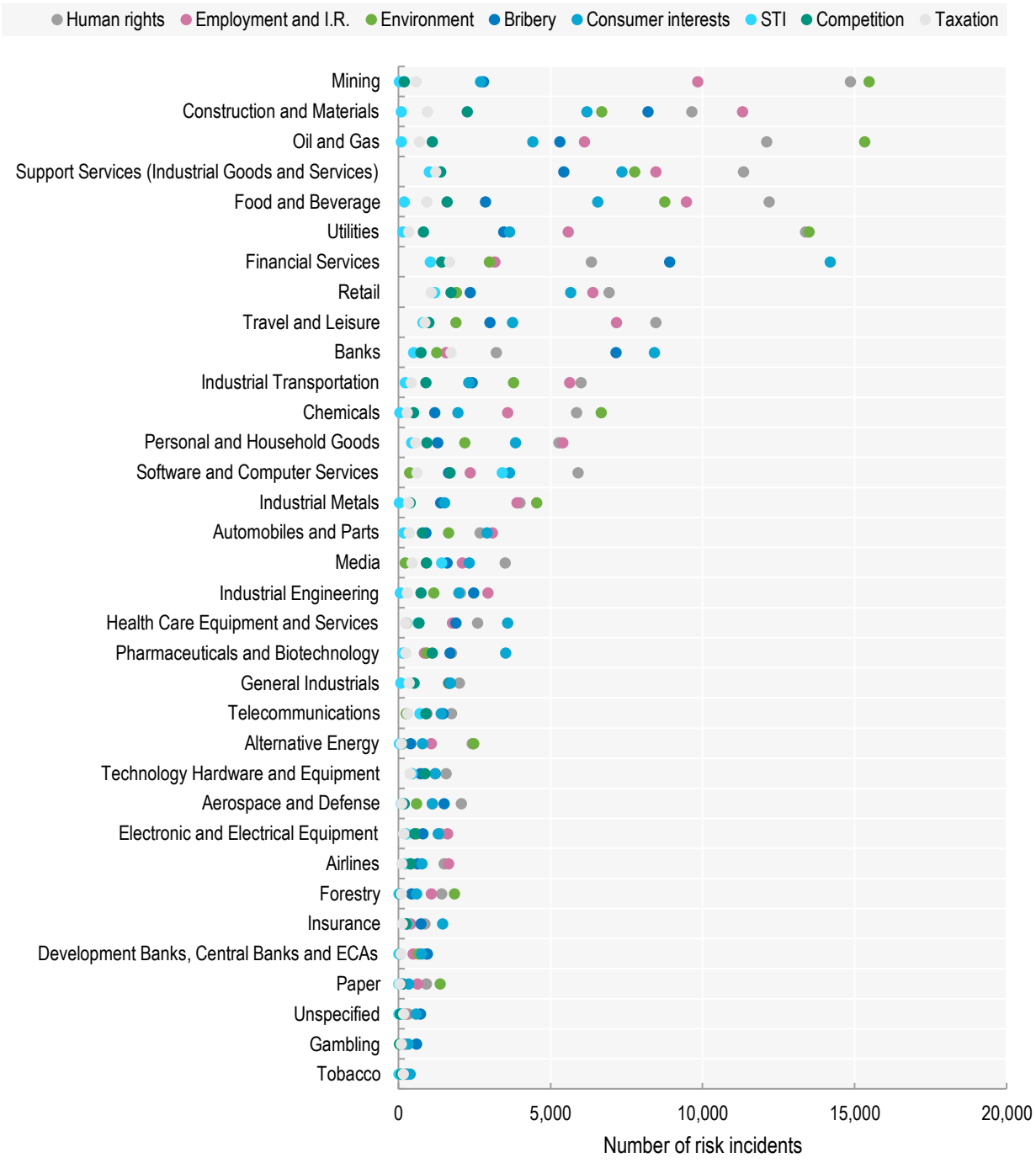
At the time of analysis, the following sectors are most frequently associated with the 321 544 unique risk incidents analysed:

1. Food and Beverage (35 930)
2. Construction and Materials (30 033)
3. Financial Services (28 127)
4. Support Services (27 770)
5. Oil and Gas (26 666)
6. Retail (25 500)
7. Mining (24 728)
8. Utilities (24 228)
9. Travel and Leisure (20 312)
10. Personal and Household Goods (18 393)

Mapping ESG issues back to the chapters of the MNE Guidelines, sectors display substantially distinct impact profiles. Figure A B.3. shows the number of unique incidents per RBC issue, while Table A B.2 shows the five sectors most frequently linked to risk incidents, based on the chapters of the MNE Guidelines. As illustrated, mining constitutes the sector most frequently associated with alleged human rights and environmental impacts while also displaying a significant number of employment controversies. Construction and materials, as the second-most linked sector overall, constitutes the sector most frequently linked to employment issues, while also being associated with a substantial number of bribery, consumer interest, competition and taxation issues. The financial sector ranks first for bribery, consumer interests and taxation, while software and computer services constitutes, by far, the sector most heavily linked to technology-related issues.

Figure A B.3. Sector analysis of RepRisk risk incidents

Mining, oil and gas are primarily associated with environmental and human rights controversies, while employment issues are frequently linked to the construction sector.



Note: Based on a total sample of 321 544 risk incidents. The attribution of RepRisk incidents to the Chapters of the MNE Guidelines is based on a mapping undertaken for 28 ESG issues and 74 topic tags. Risk incidents may be associated with multiple RBC issues, such that the total number of displayed risk incidents exceeds the actual number of recorded risk incidents.
Source: OECD compilation based on RepRisk data.

Table A B.2. RepRisk: Sectors with the most ESG controversies per RBC issue

Risk profiles vary significantly across sectors.

Human Rights 1. Mining (14,856) 2. Utilities (13,374) 3. Food and Beverage (12,178) 4. Oil and Gas (12,102) 5. Support Services (11,347)	**Consumer Interests** 1. Financial Services (14,195) 2. Banks (8,404) 3. Support Services (7,340) 4. Food and Beverage (6,550) 5. Construction and Materials (6,199)
Employment and Industrial Relations 1. Construction and Materials (11,306) 2. Mining (9,831) 3. Food and Beverage (9,468) 4. Support Services (8,458) 5. Travel and Leisure (7,162)	**Science, Technology and Innovation** 1. Software and Computer Services (3,412) 2. Media (1,409) 3. Retail (1,194) 4. Financial Services (1,038) 5. Support Services (1,010)
Environment 1. Mining (15,470) 2. Oil and Gas (15,329) 3. Utilities (13,489) 4. Food and Beverage (8,758) 5. Support Services (7,755)	**Competition** 1. Construction and Materials (2,257) 2. Retail (1,730) 3. Software and Computer Services (1,690) 4. Food and Beverage (1,601) 5. Financial Services (1,409)
Bribery 1. Financial Services (8,910) 2. Construction and Materials (8,200) 3. Banks (7,143) 4. Support Services (Industrial Goods and Services) (5,434) 5. Oil and Gas (5,307)	**Taxation** 1. Banks (1,729) 2. Financial Services (1,679) 3. Support Services (Industrial Goods and Services) (1,228) 4. Retail (1,082) 5. Construction and Materials (952)

Note: Based on a total sample of 321 544 RepRisk risk incidents. The attribution of RepRisk incidents to the chapters of the MNE Guidelines is based on a mapping undertaken for 28 ESG issues and 74 topic tags. Risk incidents may be associated with multiple RBC issues, such that the total number of displayed risk incidents exceeds the actual number of recorded risk incidents.
Source: OECD compilation based on RepRisk data.

Issue-specific assessments

BHRRC Lawsuit Database

The BHRRC Lawsuit Database, at the time of analysis, covers over 200 lawsuits related to human rights abuses by businesses, painting a small but rich picture of the legal trends surrounding corporate human rights harms and litigations. The following ten sectors are most frequently represented in the database:

- Mining
- Oil, gas & coal
- Technology, telecom & electronics
- Construction
- Food & beverage
- Metals & steel
- Clothing & textile
- Natural Resources: General
- Finance & banking
- Energy

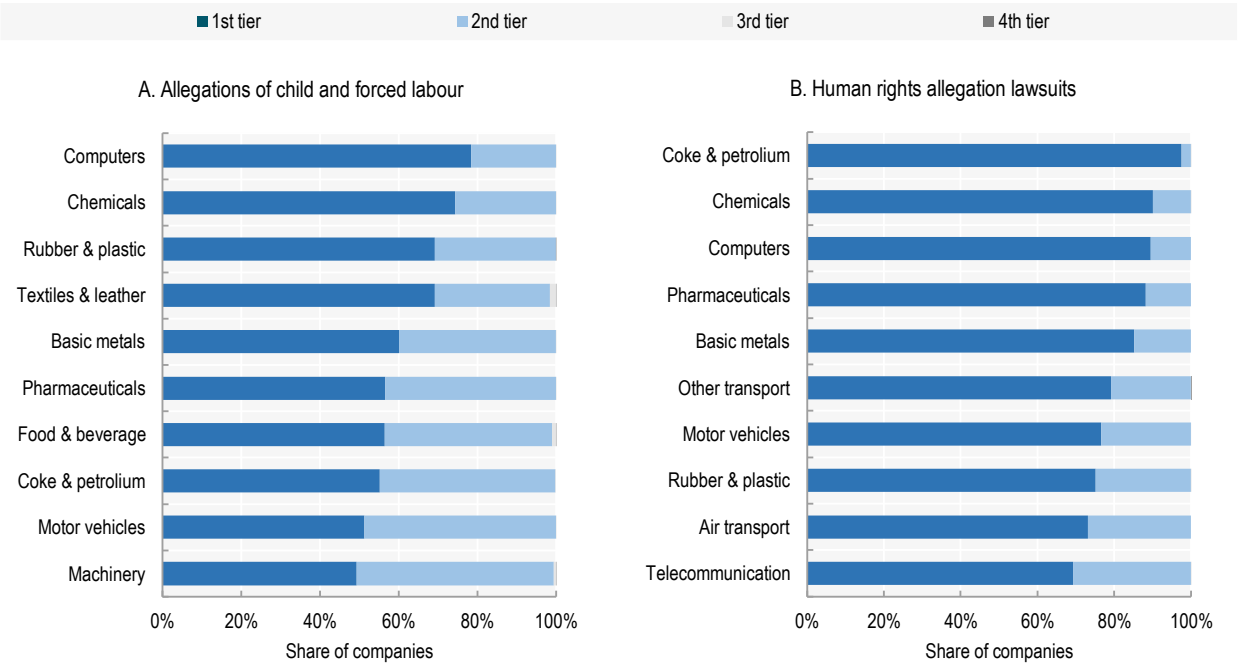
As such, lawsuits are primarily related to the extractive industries and sectors associated with natural resources (mining, oil, gas and coal) followed by a mix of information and technology, manufacturing, and industrial sectors. Nearly 50% of cases associated with human rights were brought against mining or oil, gas, and coal companies.

Hurt et al. Supply Chain Due Diligence Risk Assessment for the EU

The study "Supply Chain Due Diligence Risk Assessment for the EU: A Network Approach to estimate expected effectiveness of the planned EU directive" by Hurt et al. (2023[8]) analyses, among other things, the prevalence of EU companies' supply chain links to child and forced labour across their Tier 1 to 4 supply chain links. The study was jointly developed by members of the Austrian Supply Chain Intelligence Institute, the Complexity Science Hub Vienna and the Austrian Institute of Economic Research and data was kindly made available upon request.

As illustrated in Figure A B.4. (Panel A), Hurt et al. (2023[8]) find the manufacturing of computers to exhibit the highest risk with respect to child and forced labour in Tier 1 supply chain relationships, followed by chemicals and rubber and plastic. Results based on a database of human rights lawsuits by BHRRC (Panel B) yield similar insights, with coke and petroleum first, followed by chemicals and computers. Other sectors with high risk scores comprise basic metals, pharmaceuticals, as well as textiles and leather and food and beverage with respect to child and forced labour. Notably, all sectors exhibit a risk indicator of nearly 100% at Tier 4 and beyond.

Figure A B.4. Hurt et al.'s supply chain due diligence risk indicator (top 10)



Note: Panel A shows the Fraction of companies with 1st, 2nd, 3rd and 4th tier suppliers from sectors in countries which are known for human rights violations, based on the U.S. Labor Department's "List of Goods Produced by either Child or Forced Labor". Panel B displays the same, however, based on a database of Human Rights allegation lawsuits by the Business and Human Rights Resource Centre.
Source: Hurt et al. (2023[8]). *Supply Chain Due Diligence Risk Assessment for the EU: A Network Approach to estimate expected effectiveness of the planned EU directive*, https://doi.org/10.48550/arXiv.2311.15971.

ILO Statistics on Employment

The ILO publishes various data on employment-related issues. Some of this data is available on the sector level, classified by ISIC section (Level 1, Rev. 4). Specifically, the following sectoral data could be retrieved:

- Non-fatal occupational injuries
- Fatal occupational injuries
- Mean weekly hours actually worked per employed person
- Average monthly earnings of employees
- Number of strikes and lockouts

In terms of occupational injuries, manufacturing emerges as the sector with the most recorded cases of annual occupational injuries between the years 2000 and 2022. In 2021 alone, over 1.4 million cases have been recorded in this sector (ILO, n.d.[7]). Other sectors in this regard are construction, wholesale and retail, and transportation and storage. While the total number of fatal occupational injuries is much lower than that for non-fatal occupational injuries, the sectoral pattern diverges significantly, with agriculture, forestry, and fishing constituting the sector with the most recorded cases by a significant margin (ILO, n.d.[7]). Notably, the number of fatal and non-fatal occupational injuries in the mining and extraction sector is comparatively low.[16]

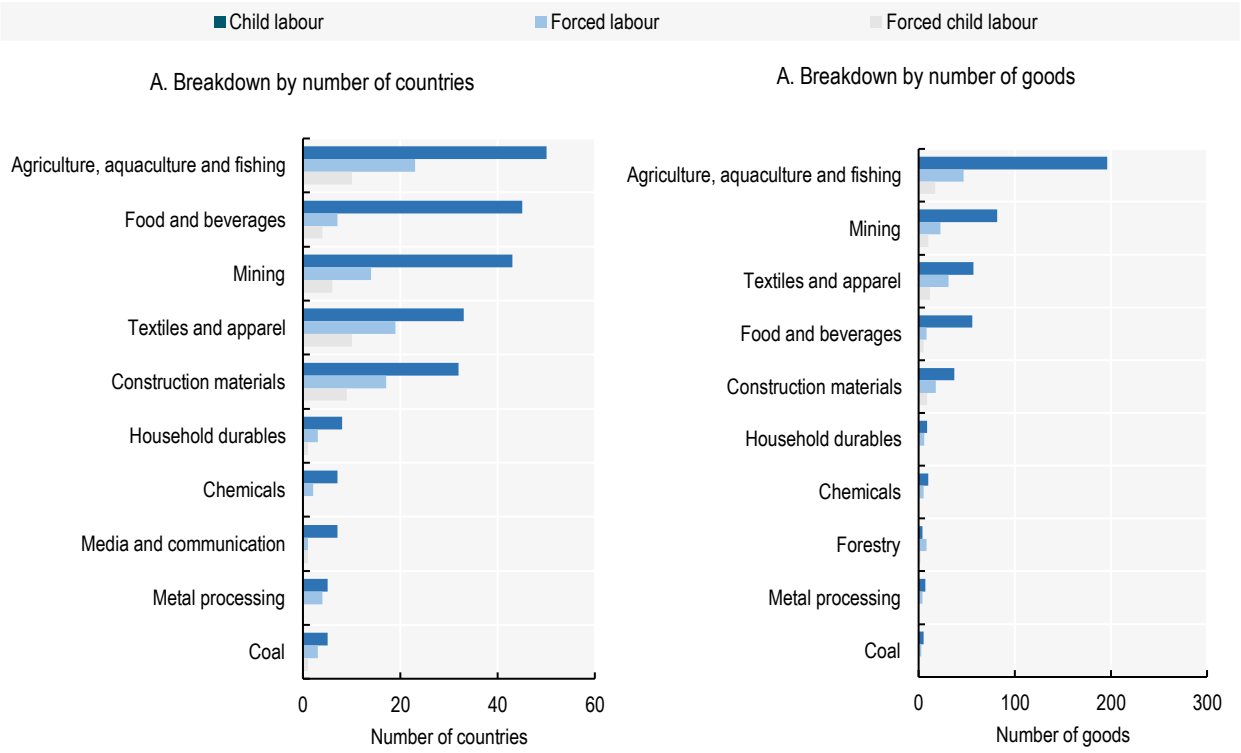
However, with respect to mean weekly hours worked per person, mining and extraction, together with transportation, emerge as the most at-risk sectors, exhibiting average work weeks in emerging economies of up to 60 hours in 2022 (ILO, n.d.[7]). In terms of average monthly earnings measured in current US Dollars, activities of households as employers, administrative and support service activities, arts, entertainment and recreation as well as water supply and waste management make up the bottom of the list. Finally, manufacturing not only constitutes the sector with the most non-fatal occupational injuries but also the most strikes and lockouts.[17]

USDOL List of Goods Produced by Child Labor or Forced Labor

On a commodity level, USDOL's *List of Goods Produced by Child Labor or Forced Labor* identifies goods and their source countries that are likely produced using child and/or forced labour. As of February 2025, the list contains 478 goods from 80 sourced countries, as well as an indication of whether child labour, forced labour and/or forced child labour is suspected. The list is based on a periodic review by the US Bureau of International Labor Affairs of available non-classified evidence, evaluated based on relevance, reliability, corroboration, and significance. Approximately mapping the listed goods to associated sectors—such as bricks to construction materials, gold to mining, and cotton to agriculture—the sector most frequently associated with forced and/or child labour is agriculture, followed by mining and textiles (see Figure A B.5).

Figure A B.5. Analysis of USDOL's List of Goods Produced by Child Labor or Forced Labor (top 10)

The goods suspected by the USDOL to be produced with forced and/or child labour are mostly linked to the agricultural sector, mining and manufacturing.



Note: Mapping of goods to sectors was conducted independently by the OECD. Each good was mapped to one and in some cases two sectors.
Source: USDOL (2024[10]), *List of Goods Produced by Child Labor or Forced Labor*, https://www.dol.gov/agencies/ilab/reports/child-labor/list-of-goods.

SBTN Materiality Screening Tool

To cover the broad array of environmental impacts beyond carbon emissions, this meta-review also considers sectoral data from the SBTN Materiality Screening Tool (Version 1) (2023[11]), based on data from the ENCORE ("Exploring Natural Capital Opportunities, Risks and Exposure") knowledge base. The SBTN Materiality Screening Tool maps production processes from the ENCORE tool to the ISIC sector classification, providing materiality ratings for each sector and the following 12 ENCORE impacts ("pressure categories"):

Land/Water/Sea Use Change

- Terrestrial ecosystem use
- Freshwater ecosystem use
- Marine ecosystem use

Resource exploitation

- Water use
- Other resource use

Climate Change

- Greenhouse gas emissions

Pollution

- Non-greenhouse gas air pollutants
- Water pollutants
- Soil pollutants
- Solid waste

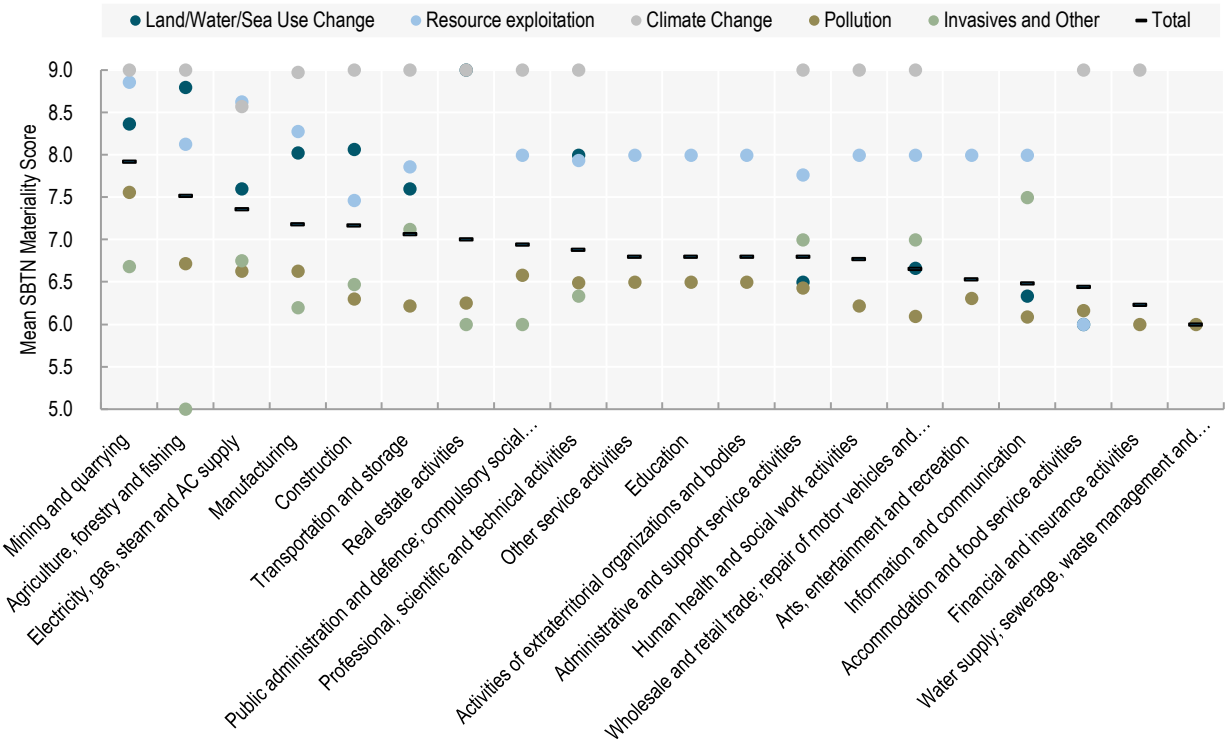
Invasives and Other

- Disturbances
- Biological alterations/interferences

All 12 impacts are assessed on a scale from 3 (lowest) to 9 (highest). For the purposes of this study, for each sector, these scores are averaged across sectors and production processes as a proxy for a sector's overall environmental impact. As shown in Figure A B.6. , mining and quarrying emerges as the sector with the highest average materiality score (7.9) across all environmental impacts, while also exhibiting the highest average scores for Resource exploitation (8.9) and Pollution (7.6). Agriculture ranks second with an average materiality score of 7.5 while exhibiting the highest materiality score for Land/Water/Sea Use Change. Other sectors with high average materiality scores are Electricity, gas, steam, and air conditioning supply (7.3), manufacturing, and construction (each 7.2).

Figure A B.6. Sectoral analysis of STBN Materiality Screening Tool

The extractive industries and energy production exhibit the highest average SBTN Materiality Scores.

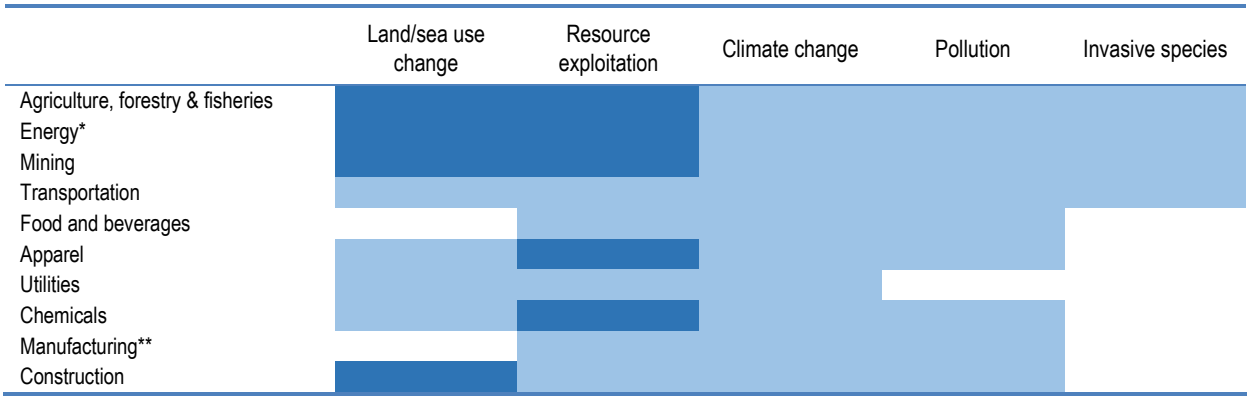


Note: The above illustration shows average materiality scores per ISIC Division (Level 1) across five indicator categories. Scores range from 3 (lowest) to 9 (highest) and are averaged across available data on ISIC Groups (Level 2) and production processes, including averages. "No Data" entries are disregarded in this illustration and not considered for the calculation of averages.
Source: SBTN (2023[11]), *Materiality Screening Tool (v1)*, https://sciencebasedtargetsnetwork.org/companies/take-action/assess/materiality-screening/.

UNEP Prioritising Nature-related Disclosures – Considerations for high-risk sectors

The study "Prioritising Nature-related Disclosures – Considerations for high-risk sectors" published in 2022 by UNEP aims to steer financial institutions' focus on sectoral nature-related impacts and dependencies. It defines and analyses the risk profiles of "high-dependency and high-impact sectors as priorities for initial action". Table A B.3 Table A B.3. shows the ten priority sectors identified alongside their materiality level (high, very high) for different direct impacts. The list of priority sectors draws substantially from the primary and manufacturing sectors. It shares certain features with KPMG's selection of priority sectors, for instance, through the inclusion of agriculture, chemicals, energy, food and beverages, apparel, textiles, and construction. UNEP's selection of "high-risk sectors" furthermore includes the transport sector as well as a broadly defined manufacturing sector that comprises both the pharmaceuticals and healthcare sectors.

Table A B.3. Most significant direct impacts on nature by sector as classified by UNEP



Note: (*) Including oil, gas and Renewables. (**) Including pharmaceuticals and healthcare.
Very high materiality
High materiality
Source: UNEP (2022[12]). *Prioritising Nature-related Disclosures – Considerations for high-risk sectors*, https://www.unepfi.org/wordpress/wp-content/uploads/2022/04/Prioritising-nature-related-disclosures.pdf.

The study's methodology is based on analysis of the ENCORE (Exploring Natural Capital Opportunities, Risks and Exposure) knowledge base. It also makes reference to the two aforementioned studies by Allianz Global Corporate & Specialty (2018[20]) and the WEF (2020[21]) (indicating the hybrid nature of its financial and impact materiality approach), a 2013 study by Trucost (2013[22]) that calculates the level of economic externalities of sectors' environmental impacts, SASB's Materiality Map (n.d.[6]) which identifies the most financially material issues for different sectors (refer to next section for more information), and the existence of sectoral due diligence guidance by the OECD.

FfB Foundation Top 10 biodiversity-impact ranking of company industries

The FfB Foundation released the study "Top 10 biodiversity-impact ranking of company industries" in April 2023, with inputs from the UNEP World Conservation Monitoring Centre (UNEP-WCMC) (FfB Foundation, 2023[13]). Given that corporate data on biodiversity impacts "is lacking", the study assessed *potential* impacts, rather than actual impacts, via a multi-tool analysis of 250 high-impact companies.[18] Averaging the normalised impact scores of the various tools used, the study defines ten sectors with a "high potential impact on biodiversity" (sum of average normalised impact per sector in parentheses):

1. Food Products (421)
2. Oil, Gas & Consumable Fuels (307)

3. Chemicals (187)
4. Consumer Staples Distribution & Retail (176)
5. Metals & Mining (110)
6. Pharmaceuticals (95)
7. Health Care Providers & Services (86)
8. Automobiles (69)
9. Electric Utilities (68)
10. Trading Companies & Distributors (68)

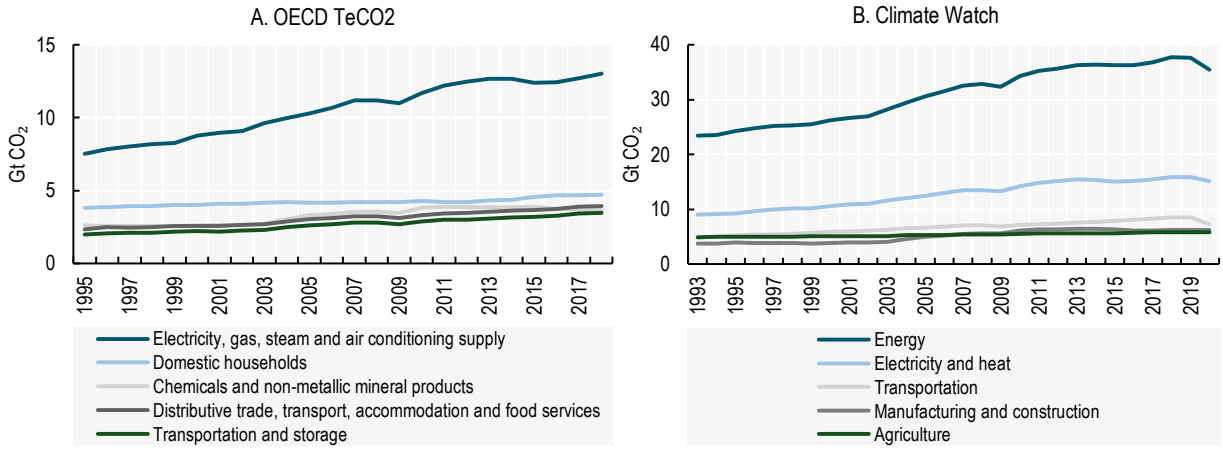
While focused exclusively on Biodiversity, the list similarly contains extractive sectors such as oil, gas, metals and mining, as well as chemicals, pharmaceuticals, and food products. Notably, similar to the UNEP's study, the list also contains healthcare providers. In addition, the FfB priority list also features less commonly associated sectors such as consumer staples, automobiles, trading and trading companies. It does not, however, include the agricultural sector or the financial services sector.

OECD TeCO$_2$ Database & Climate Watch Data Explorer

In terms of carbon emissions, according to OECD Trade in embodied CO_2 ($TeCO_2$) data, electricity, gas, steam, and air conditioning supply constitutes the largest contributor to global emissions at 13 gigatonnes of CO_2 (Gt CO_2) in 2018. This is followed by domestic households (4.6 Gt CO_2), chemicals and non-metallic mineral products including cement (3.7 Gt CO_2), and transportation and storage (3.4 Gt CO_2). While following a different sector classification and methodology, Climate Watch similarly attributes most sectoral emissions to electricity and heat generation (15.1 Gt CO_2 in 2020). This is followed by transportation (7.2 Gt CO_2), manufacturing and construction (6.2 Gt CO_2) and agriculture (5.8 Gt CO_2).

Figure A B.7. Sectoral emissions data

Sectoral emissions stem primarily from electricity and heat production.



Note: Sectoral data from the OECD $TeCO_2$ Database is grouped at different ISIC levels. To avoid duplication of sectors, the following groupings are omitted: Total Manufacturing (D10-33), Total Business Sector Services (D45-82), and Total Services (D41-98).
Source: OECD (2021[14]) *$TeCO_2$ Database* (Panel A), Climate Watch (2022[15]) *Data Explorer* (Panel B).

OECD Competition Trends

Finally, OECD Competition Trends data provides sector-level data on competition issues. The most recent, fifth edition of OECD Competition Trends (OECD, 2024[16]) summarises global competition enforcement trends in the calendar year 2022 across 77 jurisdictions. Sectoral data is available for the number of a)

cartel and b) abuse of dominance decisions taken by the competition authority. In 2022, Manufacturing constitutes the sector most heavily linked to cartel decisions across jurisdictions (93 decisions), followed by Construction (60), Wholesale and Retail (35 and 34), Agriculture (incl. forestry, fishing and hunting) (30), and Transportation and Warehousing (30). With respect to abuse of dominance decisions, Transportation and Warehousing leads the ranking with 20 decisions in 2022, followed by Manufacturing (16), Information (12), Utilities (11) and Retail Trade (11).

Annex C. Expert survey

To attain a broad picture of the perceived severity of relevant real and potential impacts associated with RBC issues across sectors, an expert survey was used.

Survey design

The survey was designed as a multiple-choice questionnaire, asking experts to select among 40 sectors those which they consider to be "associated with particularly significant risks or impacts" of a given topic. Experts were asked to take into consideration both severity and likelihood of a given impact. To allow for sufficient granularity and give an indication of the topics to be considered for each topic, 23 topics were developed based on the topics covered by the MNE Guidelines[19] and informed by the RepRisk classification framework:

Human Rights

1. Human rights impacts[20]
2. Impacts on communities & local participation issues
3. Just transition considerations

Employment and Industrial Relations

4. Freedom of association and collective bargaining
5. Child labour
6. Forced labour
7. Discrimination in employment
8. Occupational health & safety issues
9. Poor employment conditions including wages

Environment

10. Climate change
11. Degradation of ecosystems & biodiversity loss
12. Air, water and soil pollution
13. Mismanagement of waste, including hazardous substances
14. Animal mistreatment
15. Overuse and wasting of resources, including plastics

Combating Bribery and Other Forms of Corruption

16. Corruption, bribery & extortion

Consumer Interests

17. Consumer health & safety
18. Deceptive marketing & lack of accurate, verifiable, and clear information to consumers

19. Consumer fraud

Science, Technology and Innovation

20. Privacy violations & personal data misuse
21. Intellectual property theft & unlawful transfer

Competition

22. Anti-competitive practices

Taxation

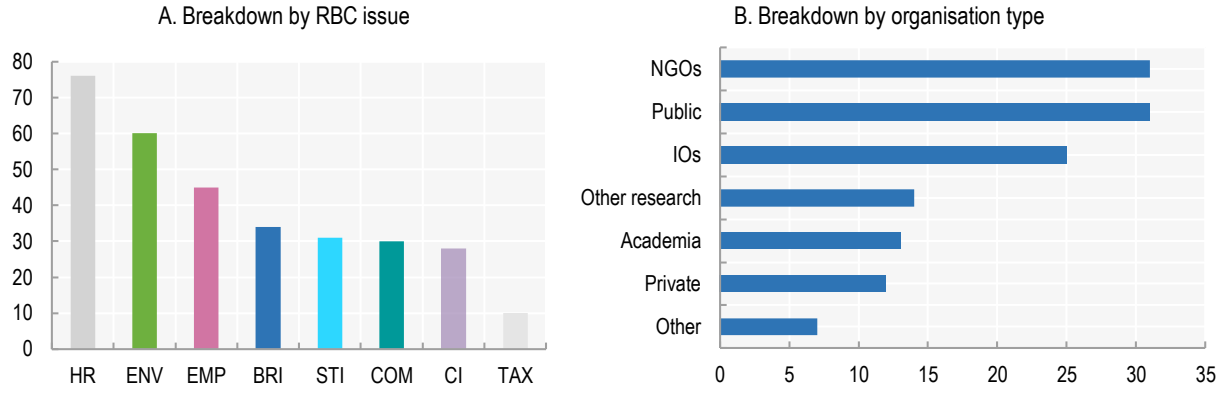
23. Tax evasion & avoidance

For each RBC issue, 20 to 60 experts (347 in total) were identified based on the RBC Centre's existing network, referrals and, where necessary, additional targeted research. In developing the list of sectors, balance across stakeholder groups was sought, with approximately one quarter (26%) of experts from IOs, followed by the private sector (20%), NGOs (19%), academia (17%) and the public sector (government) (11%). Other experts include trade union representatives, think tanks and national human rights institutions. The survey was further shared with all Delegates of the OECD Working Party on Responsible Business Conduct. In line with the project's sector-agnostic methodology, survey participants are associated with one or more of the topics, as opposed to sectors, outlined above. In this respect, private sector experts are drawn from multi-sectoral industry associations, the financial sector, and companies with highly diversified business operations.

With a response rate of 38%, a total of 133 responses were submitted from over 100 organisations. The survey design allowed experts to answer the questionnaires for several sections, which they did, on average, for 2.4 sections. As a result, 314 sections were submitted in total, primarily covering Human Rights (76 responses), Environment (60 responses), and Employment (45 responses), as illustrated in Figure A C.1. Only 10 responses were submitted for Taxation, limiting the generalisability of the responses from this section. Respondents represented a diverse array of organisations, including 31 responses from NGOs (23%), 31 responses from public sector institutions (23%), 25 responses from IOs (19%), as well as various other respondents from academia (10%), the private sector (9%), and others.[21]

Figure A C.1. Survey responses by RBC issue and organisation type

The human rights, environment, and employment sections were most frequently answered by experts.



Note: Abbreviations refer to Human Rights (HR), Environment (ENV), Environment (ENV), Consumer Interests (CI), Competition (COM) Science, Technology, and Innovation (STI), Combating Bribery and Other Forms of Corruption (BRI), and Taxation (TAX). Note the limited sample size of only ten submitted responses for Taxation.
Source: RBC Survey 2024.

Survey results

Table 3 in the main body of this report illustrates the perceived impact profiles across sectors, as reported in the survey responses, in more detail. It indicates that while some sectors are strongly associated with a range of different impacts, other sectors are perceived to be more strongly associated with a more concentrated set of impacts. For example, the **mining** sector was the sector most frequently perceived to be associated with significant impacts related to a broad range of issues, including human rights (as indicated by 86% of respondents), air water and soil pollution (83% of respondents), occupational health and safety (82% of respondents), as well as bribery and other forms of corruption (82% of respondents).

On the other hand, the **software** as well as **media and communication** sectors were primarily perceived to be associated with a narrow set of issues, particularly including significant science, technology and innovation related impacts, such as privacy violations, personal data misuse, and intellectual property theft. Similarly, **renewable energy** was primarily perceived to be associated with significant human rights impacts, particularly with respect to just transition considerations.

For individual RBC issues, various patterns and clusters emerge:

- **Human rights**: There appears to be a high perceived concentration of human rights impacts in the extractive sectors. With only two exceptions, oil and gas, coal, mining as well as agriculture, aquaculture, and fishing (in the following simply agriculture) constitute the four most frequently selected sectors for all three human rights indicators. Textiles and apparel and renewable energy represent two notable exceptions. Textiles and apparel, together with oil and gas, represents the most selected sector for the *Human Rights Impacts* indicator, after mining. Renewable energy stands out as the fourth-most selected sector for the *Just Transition* indicator, following mining, coal, and oil and gas.
- **Employment and Industrial Relations:** Notably, agriculture and mining consistently rank within the top 10% selected sectors across all six employment indicators, including with respect to employers' fundamental rights, child and forced labour, discrimination, and occupational health and safety (OHS). Conversely, apart from OHS issues, the fossil fuel industries (oil, gas, and coal) are perceived to be less frequently associated with employment risks. Instead, two manufacturing sectors—Food and Beverages, and Textile and Apparel—as well as Construction are seen to be heavily associated with real and potential employment-related impacts. For instance, textiles and apparel constitutes the most frequently selected sector for the *collective bargaining* indicator and ranks amongst the most selected sectors with respect to *forced labour*, *child labour*, *work discrimination*, and *poor employment conditions*.
- **Environment:** Experts perceive the four extractive and two manufacturing sectors to be associated with the most significant environmental impacts. Whereas the four extractive sectors consistently exhibit the highest perceived impacts with respect to climate change, ecosystem degradation and biodiversity loss, as well as air, water and soil pollution, a mix of extractive and manufacturing sectors dominate indicators related to waste, animal mistreatment, and resource overuse. However, four additional sectors highly associated with impacts emerge. On the one hand, forestry and pharmaceuticals seem to be associated with particularly high issues of animal mistreatment, albeit trailing agriculture at a significant margin. On the other hand, significant waste issues are perceived to be linked to the chemicals sector (representing the most selected sector for this indicator), and metal processing.
- **Bribery and Other Forms of Corruption:** Consisting only of a single indicator, corruption, bribery, and extortion impacts are perceived to be most significant across the extractive industries. Nearly all respondents considered mining and oil and gas to be associated with particularly high corruption impacts. Banking and construction followed as the third and fourth most frequently selected sectors.

- **Consumer Interest:** Displaying a diverging pattern, consumer interest impacts appear to be primarily perceived in the manufacturing and financial sectors. Four manufacturing sectors seem to be primarily associated with consumer health and safety risks: food and beverages, chemicals, pharmaceuticals, and textiles and apparel. In addition to food and beverages and the textiles and apparel sector, the three financial sectors—banking, insurance, and capital markets—seem to be particularly associated with issues related to deceptive marketing and fraud. In contrast, the extractive industries—potentially given their upstream nature—are not perceived to be associated with particularly significant perceived consumer interest impacts.
- **Science, Technology, and Innovation:** Banking, insurance, and software seem to be the sectors most frequently associated with particularly significant issues related to privacy and personal data misuse, followed by media and communication. Media and communication and software also constitute, by far, the sectors most frequently associated with the theft and unlawful transfer of intellectual property. Nearly all experts considered these sectors to be particularly associated with this issue, followed by a large margin by electronics. However, uncertainty with respect to intellectual property impacts tends to be high as 30% of experts selected the “I don’t know” option.
- **Competition:** Oil and gas and pharmaceuticals are the sectors most frequently associated with anti-competitive behaviour, closely followed by banking, construction, and, notably, airlines. However, the level of convergence between high-risk sector definitions with respect to anticompetitive behaviour tends to be low, with the most selected sectors only being selected by 55% of experts.
- **Taxation:** Only ten experts responded to the tax questionnaire. Four of these considered banking and insurance to be considered with particularly significant impacts related to tax evasion and avoidance. Eight sectors shared the second spot with three selections, including mining, oil and gas, coal, chemicals, electronics, capital markets, trading distribution and logistics, and restaurants. As such, in addition to the limited sample size, the level of convergence across experts’ definitions of high-risk sectors with respect to tax is low.

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WEF (2020), *Nature Risk Rising: Why the Crisis Engulfing Nature Matters for Business and the Economy*, https://www3.weforum.org/docs/WEF_New_Nature_Economy_Report_2020.pdf. [21]

Notes

[1] The OECD has developed due diligence guidance for mineral, agriculture, garment and textile supply chains as well as for the financial sector and cross-sectoral guidance (see https://www.oecd.org/en/topics/sub-issues/due-diligence-guidance-for-responsible-business-conduct.html).

[2] In the Declaration on Promoting and Enabling Responsible Business Conduct in the Global Economy, Ministers called on the OECD to "help address existing gaps on availability of relevant, comparable and reliable data on the global uptake and effectiveness of RBC due diligence" (OECD, 2023[24]).

[3] The RBC issues covered by the MNE Guidelines include Human Rights (Chapter IV), Employment and Industrial Relations (Chapter V), Environment (Chapter VI), Combating Bribery and Other Forms of Corruption (Chapter VII), Consumer Interests (Chapter VIII), Science, Technology and Innovation (Chapter IX), Competition (Chapter X), and Taxation (Chapter XI) and related subtopics.

[4] Part of the selection methodology for this study was the assessment of the economic importance to the Dutch economy, measured by the share in total turnover and employment rate in the Netherlands. As such, as noted in the study itself, "a number of sectors that did not make it to this list even face 'serious' CSR risks but were not included because of their lower economic importance in the Netherlands" (KPMG, 2014[1]).

[5] A recent OECD study finds significant variability in the granularity of metrics across ESG topics used by ESG rating products (OECD, 2025[25]). More nascent or less standardised ESG issues, such as biodiversity and sustainable supply chain management, exhibit a disproportionate focus on input-based aspects of ESG performance, such as the existence of corporate policies and initiatives, as opposed to their tangible impacts on people and planet. These limitations underscore the need for caution when interpreting sector-level insights derived from ESG rating products, as they may not fully capture the complexities or real-world outcomes of ESG performance.

[6] Outside of the sources identified to be relevant in the context of evaluating RBC issues *across* sectors, many studies and reports from NGOs, IOs, media and other stakeholders exist that highlight social and environmental impacts and related due diligence challenges with *respect to individual sectors and economic activities*, for example human rights and environmental impacts associated with the recycling of end-of-life ships (Human Rights Watch, 2023[26]) or modern slavery in the global construction sector (Sustainalytics, 2023[23]). While such research is essential for understanding specific risks and impacts of specific sectors, it does not allow for a comparison of impacts across sectors.

Similarly, various studies and indices exist that consider specific real or potential environmental and social impacts across countries, as opposed to sectors. Such examples include various country-based human rights indices such as those by V-Dem and the CATO Institute, the Corruption Perception Index, and the World Consumer Protection Map. While country-level assessments may be used to approximate environmental and social impacts across sectors, for instance, through international input-output tables, they do not compare real and potential individual or broad-based environmental and social impacts across sectors.

[7] This survey sought input from issue experts on the relevance of different sectors, rather than asking sector experts to rank the relevance of issues. In this respect, cross-sectoral industry associations and groups were invited to respond to the survey rather than representatives from specific companies, which are typically embedded in one or a few

sectors and which could have introduced bias in the selection of sectors (whether by favouring their own or deliberately excluding them). This methodological choice partially contributed to the relatively low representation of private sector respondents, along with a slightly lower response rate from private sector respondents relative to other groups.

[8] See Annex A for methodological notes on how the results of the various sources were normalised and combined.

[9] Only one assessed source—namely Hurt et al. (2023[8])—displays a comparatively low Human Rights indicator score for the mining sector. The study traces child and forced labour to product categories via input-output data across tiers of the supply chain. As such, sectors such as mining are located far upstream in a supply chain and may be associated with lower scores.

[10] The pharmaceuticals sector exhibits the highest average standard deviation of indicator scores per RBC issue, followed by insurance and electronics.

[11] Chapters I (Concepts and Principles), II (General Policies) and III (Disclosure) are not considered.

[12] Chapters I to III are generic or do not consider material impacts in that they cover Concepts and Principles (Chapter I), General Policies (Chapter II), and Disclosure (Chapter III).

[13] The full list of material ESG issues ("MEIs") are Corporate Governance (MEI.0), Access to Basic Services (MEI.1), Bribery and Corruption (MEI.3), Business Ethics (MEI.4), Community Relations (MEI.5), Data Privacy and Security (MEI.6), Emissions, Effluents and Waste (MEI.7), Carbon – Own Operations (MEI.8), Carbon – Products and Services (MEI.8.PS), E&S Impact of Products and Services (MEI.9), Human Rights (MEI.12), Human Rights – Supply Chain (MEI.12.SC), Human Capital (MEI.13), Land Use and Biodiversity (MEI.14), Land Use and Biodiversity – Supply Chain (MEI.14.SC), Occupational Health and Safety (MEI.16), ESG Integration – Financials (MEI.17), Product Governance (MEI.18), Resilience (MEI.19), Resource Use (MEI.20), and Resource Use – Supply Chain (MEI.20.SC).

[14] Sector classifications used for statistical purposes, such as ISIC, do not comprise multi-industry categories such as Industrial Conglomerates (present in GICS). Instead, a company might be associated with various ISIC sections and/or industries depending on the specific economic activity under consideration.

[15] Relevant issues, representing sustainability-related risks and opportunities, are those that are "most likely to affect cash flows, access to finance and cost of capital" and thus most likely to be useful to investors (SASB, n.d.[6]).

[16] The ILO highlights potential data limitations related to the under-reporting of occupational injuries, particularly for fatal injuries and injuries occurring in developing countries (ILO, n.d.[9]). Such limitations may, for instance, contribute to low reported levels of occupational injuries in the mining sector.

[17] A strike refers to the organised and collective withdrawal of labour supply by workers or employees, whereas a lockout occurs when the employer compels workers to accept specific terms and conditions by shutting down the factory or preventing them from entering the workplace.

[18] According to a briefing paper, the set of tools used for the purposes of the assessment included the BIA-GBS tool, the CBF tool, the BFFI tool, and the GID tool, and the sector tool ENCORE.

[19] A simple description of each topic was included in the survey, alongside more detailed GRI sector descriptions. Note that the topics covered by the survey and their associated descriptions do not constitute a comprehensive list of real and potential RBC impacts under the MNE Guidelines and do not represent formal definitions or interpretations of the OECD.

[20] This topic refers to, for example, violence against individuals or threats of violence, human trafficking, supporting oppressive regimes or terrorist organisations, conflict financing and serious human rights impacts and abuses such as widespread sexual violence. It differs from "Impacts on communities & local participation issues" insofar as the latter refers to situations where local communities or individuals are inadequately consulted regarding activities that impact

them, do not receive fair benefits from such activities, or are subject to unethical methods, such as imprisonment or harassment, to suppress their critics. Topic descriptions were visible to survey participants.

[21] Given the varying levels of participation, the share of organisation types among respondents differs from that of the list of identified experts. For instance, at 9%, private sector participation was significantly lower compared to their representation among identified experts (20%), indicating a lower relative response rate. In addition to sample bias with respect to represented organisation types, due to the nature of the RBC Centre's existing network, such differences in response rates may result in additional response bias.

