MODERN SLAVERY & HUMAN RIGHTS | **POLICY & EVIDENCE CENTRE**
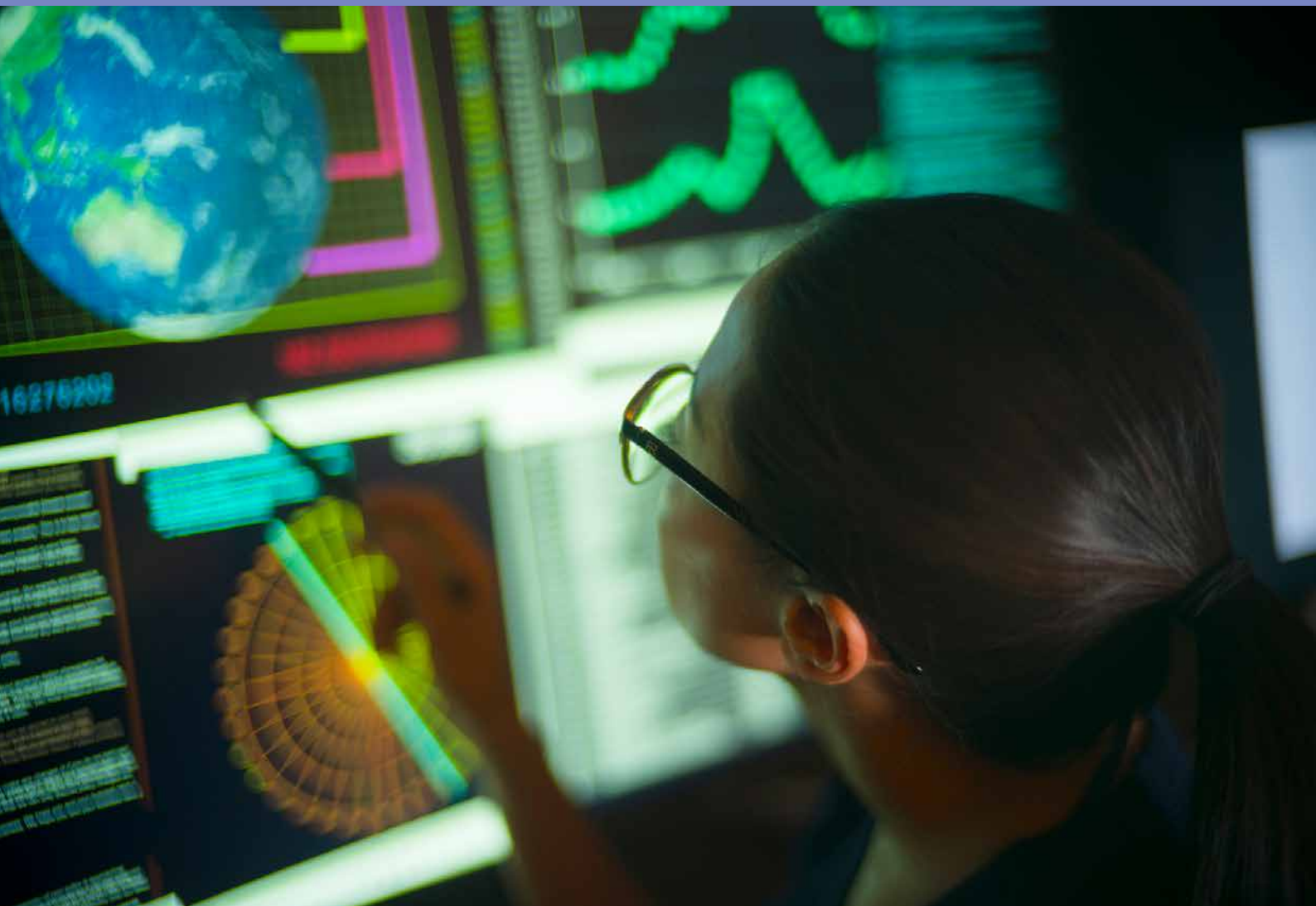
Led by the Bingham Centre

Data for investor action on modern slavery

A landscape analysis

June 2021

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Research by

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Foreword

By Fiona Reynolds, CEO, Principles for Responsible Investment (PRI)

Modern slavery represents a tragic market failure that will not end without the active engagement of the global financial sector. Financial sector actors – including institutional investors – have a critical role to play and can use their leverage as stewards of capital to influence practice and help address modern slavery in value chains.

Currently, institutional investors are being driven to confront modern slavery in their portfolios as part of their responsibility to respect human rights, as defined by the UN Guiding Principles on Business and Human Rights. This responsibility was unanimously endorsed by the UN Human Rights Council in 2011 and has resulted in a burgeoning regulatory landscape which is beginning to demand that enterprises conduct mandatory human rights due diligence. In addition, institutional investors are increasingly being expected – by clients, beneficiaries, employees and wider society – to tackle modern slavery, driven by an increased cognisance of their role in shaping real world outcomes.

At the PRI, we believe that institutional investors have a responsibility to respect human rights and therefore prevent and mitigate actual and potential negative outcomes for people across all their investment activities. This responsibility includes addressing modern slavery and extends right across our signatory base, which has combined assets under management of more than US $100 trillion.

To end modern slavery, as called for in the Sustainable Developments Goals, and respect human rights, institutional investors must understand how they can best use available data. We recognise the urgency to define appropriate approaches and metrics to capture when companies are actually responding and preventing harm to people. There is a clear need to move beyond tick-box measurement and capture real outcomes for people, whilst continually acknowledging the complexity of the social world.

We therefore welcome this Report which maps the existing modern slavery data landscape and identifies areas for improvement. Empowering institutional investors to use data to take effective action on modern slavery contributes to the critical role the financial sector must play in facilitating sustainable development and growth. We hope that global investors join us in driving meaningful data which helps to ensure that fundamental dignity and human rights are upheld.

Summary

Recent years have seen a rapidly growing recognition of the role of investors in addressing modern slavery in business contexts, but investors often find it difficult to obtain information needed to exercise this role effectively. Actionable insights on modern slavery that meet investors' information needs are often difficult to come by.

This research sought to map out the potential of data in enabling investors to take effective action on modern slavery. In particular, the project aimed to address two research questions:

1. What kinds of insights may investors be looking for when integrating the issue of modern slavery into investment decisions and company engagement activities?

2. How can data be used to address investors' information needs, both in terms of currently existing resources and possible efforts to improve the modern slavery data landscape?

To examine these questions, we conducted extensive desk-based research and engaged with over 70 experts through individual interviews and two roundtable events.

Key findings

To act on modern slavery effectively, investors need information for two analytical aims: assessing issue significance and assessing company performance

Investors' ability to take effective action on modern slavery – be it in the context of investment decisions or active ownership activities – depends on two kinds of insight:

- **How significant is the issue of modern slavery in the context of a given company?**

  Assessing issue significance requires determining the *salience* of modern slavery in the context of individual companies. This involves assessing the potential for links to modern slavery within the company's value chain, be it through the production or the use of a company's products and services. In addition, investors may seek to understand potential modern slavery-related impacts on a company's financial performance by conducting an assessment of *financial materiality*.

- **How does the company perform in managing the issue of modern slavery?**

  Assessing company performance includes the tasks of *defining performance expectations*, including applicable legal requirements, and *measuring companies' performance* against these expectations.
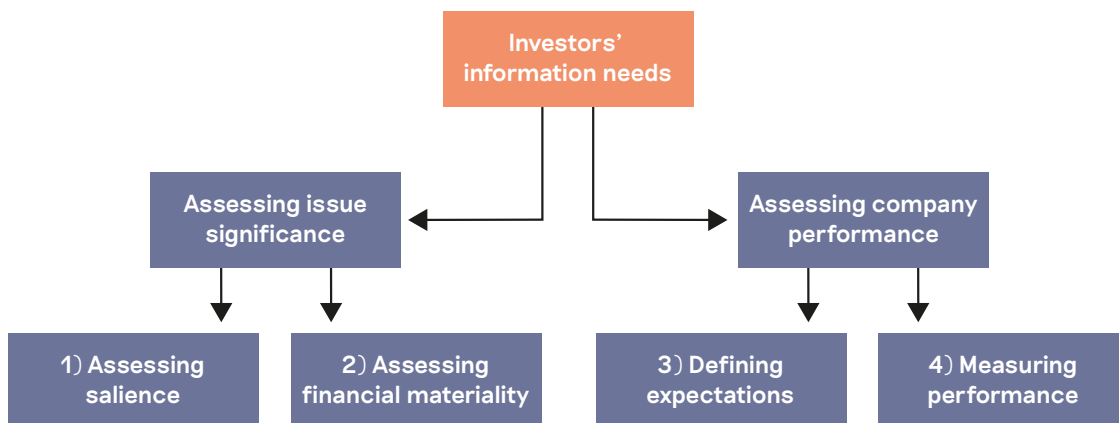
Figure 1: Overview of analytical tasks that define investors' information needs

Several types of data can help meet investors' information needs

The research identified four categories of data that could be useful to arrive at the kinds of insights needed by investors (with prominent examples summarised in a separate resource catalogue document available at modernslaverypec.org/resources/investors-data). We include all *potentially useful* types of data specific to modern slavery, regardless of considerations of practicability, which allows us to consider types of data that hold promise but are currently difficult to leverage.

- **Category 1:** **Contextual information about the occurrence of modern slavery**

  This is information that sheds light on the occurrence of modern slavery in general terms, without being related to specific companies. Such information represents an important starting point for developing a general understanding of modern slavery as a phenomenon in specific geographic areas, industries, or commodity supply chains. Specific types of data in this category include records about known cases of modern slavery, systematic estimates concerning the occurrence and characteristics of modern slavery, and broader issue-focused publications.

- **Category 2:** **Contextual information about societal expectations**

  This category includes data about relevant laws or regulations, as well as data about non-legal expectations regarding companies' behaviour in relation to modern slavery. The latter can include expectations voiced by a variety of stakeholder groups and may be driven, for example, by investor initiatives, business groups, civil society organisations, or governments. The focus of information in this category tends to be defined geographically or by specific industries or commodities.

- **Category 3:** **Company-specific information controlled by companies of interest**

  Data in this category contains information related to specific companies and their value chain and is provided by companies themselves. This includes non-financial disclosures, company registry entries and financial statements, and relevant non-public data.

- **Category 4:** **Independent company-specific information**

  This is information about specific companies that is not controlled by these companies themselves and can be uniquely valuable on account of its independence. Data in this category includes company ratings; data on independent audits, certification or accreditation; data on company-specific controversies, campaigns, and proceedings; and observable business activity footprints.

There are obstacles in using relevant data to arrive at the insights needed by investors

In addition to general challenges around data quality, there are four common obstacles that can make it difficult to leverage the types of data we considered.

- **Empirical blind spots**

  Existing data often provides only an incomplete picture of reality or exhibits other gaps of information. One important cause of empirical blind spots is the fact that modern slavery practices are not immediately obvious and easy to identify. In addition, individual datasets often *lack universal coverage*, instead being limited to, for example, certain geographical areas, industries, or types of companies. Finally, the value of certain types of information is subject to *inherent limitations*, as illustrated, for example, by modern slavery statements published under the UK's Modern Slavery Act.

- **Comparability**

  When drawing on data from multiple sources, it is often difficult to understand to what extent data reflects differences in *conceptual approaches* (for example, definitions of modern slavery), *data accuracy and validity*, or *analytical methods* used. This makes it hard for data users to judge whether data points from different sources are comparable and to account for comparability issues when interpreting data.

- **Ease of analysis**

  It can be difficult to extract key information from *data that is unstructured* (for example, text within documents) or *data that lacks a dedicated focus on modern slavery*, alongside possible challenges of *translating information* recorded in different languages.

- **Data access**

  Data may be protected on grounds of *sensitivity*, access to it can require *payment* (in the case of commercial providers), and pathways for accessing different kinds of relevant data are *fragmented*. These factors can make it practically or financially infeasible to access potentially useful data.

Data science techniques can help to make better use of existing data and arrive at improved insights

The research identified four strategies as particularly promising and currently underutilised:

- **Natural language processing** (**NLP**)

  NLP can facilitate the analysis of unstructured data and help overcome language barriers. For example, text mining and content classification can serve to analyse free-form text from sources, such as company disclosures or news reports, at scale and with limited human involvement.

- **Probabilistic inferences about missing or weak information**

  Rather than taking instances of missing or weak information at face value and treating them as unknowns (for example, in the case of non-existent or weak company disclosures), it may be possible to use probabilistic modelling to draw conclusions about the expected underlying reality in such cases.

- **Overlaying and cross-checking information from different types of data**

  Combining information from different types of data can enable more *granular insights* (for example, overlaying information on the prevalence of modern slavery at the level of countries, industries, and commodities). It can also serve to *identify information inaccuracies* through cross-checking of information from different sources.

- **Advanced modelling techniques for modern slavery estimates**

  Methodological innovation in modelling the occurrence and characteristics of modern slavery has the potential of addressing the shortcomings of existing estimates. This includes possible advancements that *increase the accuracy* of estimates as well as new modelling approaches that focus on particular industries or supply chains, in contrast to traditional geographically focused estimates.
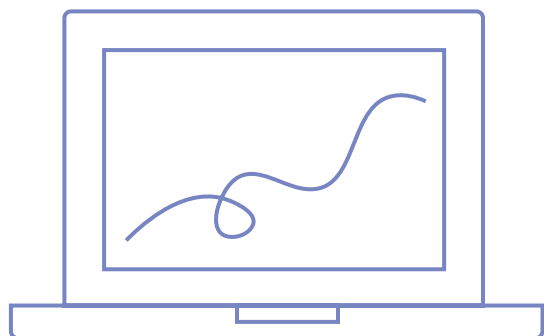
There are limitations in the design of existing solutions for conveying relevant insights to investors

Some kinds of insights and potentially promising analytically capabilities are currently lacking in the landscape of existing solutions. In addition, the capabilities of individual solutions are highly fragmented. As a result, there is currently no 'one-stop shop' that provides the full range of insights that investors may seek.

In addition, there is a particular trade-off when it comes to the capabilities of existing solutions for conveying company ratings:

- Company ratings with a dedicated thematic focus on modern slavery or human rights tend to provide information across *different levels of depth*, for example, combining summary scores and more detailed qualitative information. At the same time, they often only cover a limited number of prominent companies and, given their thematic focus, do not provide information on other environmental, social or governance (ESG) issues that investors may seek information on (limited breadth).

- Conversely, general ESG ratings typically cover the full range of ESG issues of interest to investors and a broader range of companies. Yet, they are often less comprehensive in terms of the aspects of information that they take into account for a given issue and more limited in the depth of information provided (e.g., only providing summary scores).

Strategies for improving the landscape of solutions for conveying insights include filling gaps and integrating capabilities

Filling gaps in the current solutions landscape would involve developing tools that use currently neglected types of data and provide analytical capabilities that are currently lacking. In addition, investors would also benefit from a greater integration of different relevant analytical capabilities in individual tools. An ideal integrated tool would address investors' information needs on the issue of modern slavery in a consolidated manner and link up to broader ESG-related decision-making processes. From a design perspective, company rating tools represent a promising starting point for pursuing this kind of integration. Strategic aims in pursuit of integration would include expanding the range of aspects of information and sources of information covered; coverage of all investable companies; the ability to zoom in and out across levels of breadth and depth of information; and methodological flexibility in analysing and using insights, for example, the ability for users to select their own criteria for issue significance or performance expectations.

Recommendations

Based on these findings, our research suggests the following high-level recommendations, highlighting strategic actions on the path to investors playing a greater and more effective role in addressing the problem of modern slavery through data-driven insights. Given the complexity of the landscape and the range of different kinds of actors involved in it, many of our recommendations apply to multiple stakeholders, including investors, commercial solution providers, civil society organisations, governments, and investee companies:

1. **Increase awareness for the integration of modern slavery considerations across the investment industry**

    Despite a significant increase in investor attention on modern slavery, commitments to integrate the issue into investment practices are far from universal. Individual investors, investor alliances, governments, and civil society organisations should all play their part in promoting investor commitments to addressing modern slavery.

2. **Incentivise and invest in the development of data solutions that meet investor needs consistent with a salience-based approach**

    Turning the promise of data in enabling investor action on modern slavery into reality will require dedicated efforts. To support them, stakeholders should commit resources specifically to the development of investor-focused solutions. This includes possible commitments of financial and other resources from investors, commercial and non-commercial data and solution providers, charitable funders, and governments. In addition, the establishment of common expectations regarding the capabilities of solutions, for example, through efforts by investors to develop shared company performance metrics, can provide important demand-side incentives for development efforts.

3. **Pursue innovation in areas that hold particular promise but are currently neglected**

    In addition to addressing foundational challenges such as data quality, data coverage, and data access issues, efforts should focus on the strategies for improvement identified by the research. This includes innovative ways of analysing data as well as filling gaps and achieving greater comprehensiveness and integration in the capabilities of solutions for presenting insights to users.

4. **Coordinate and avoid duplication of efforts**

    The data and solutions landscape is characterised by a large number of active organisations, ongoing or newly emerging work and, in some cases, difficulties in accessing detailed information about individual resources and tools. This can create obstacles for allocating efforts to where they can make the biggest difference and for avoiding duplication. Organisations, including funders and developers, should work to facilitate coordination and collaboration with other stakeholders and promote transparency about the capabilities and limitations of the solutions being developed.

5. **Prioritise usability and interoperability in data production and solution design**

    Data producers should actively consider the value and practical usability of relevant data for investors when making choices about methodology, data content and data format, for example, when producing modern slavery statements. In addition, data producers should be transparent about methodology and data quality limitations to enable potential users to assess data for suitability and comparability, for example, in the case of company rating data.

    Usability and interoperability should also be taken into account by developers of solutions for accessing data or presenting data-driven insights. For example, the inclusion of company identifiers used in stock trading could facilitate the integration of data from modern slavery statement registries into independently developed company rating tools.

    Policymakers, funders, and investors should consider their role in setting standards to ensure usability and interoperability in data production and solution design. For instance, the introduction of government-issued requirements on the structure and format of modern slavery statements could contribute to increasing their utility in the investment context.
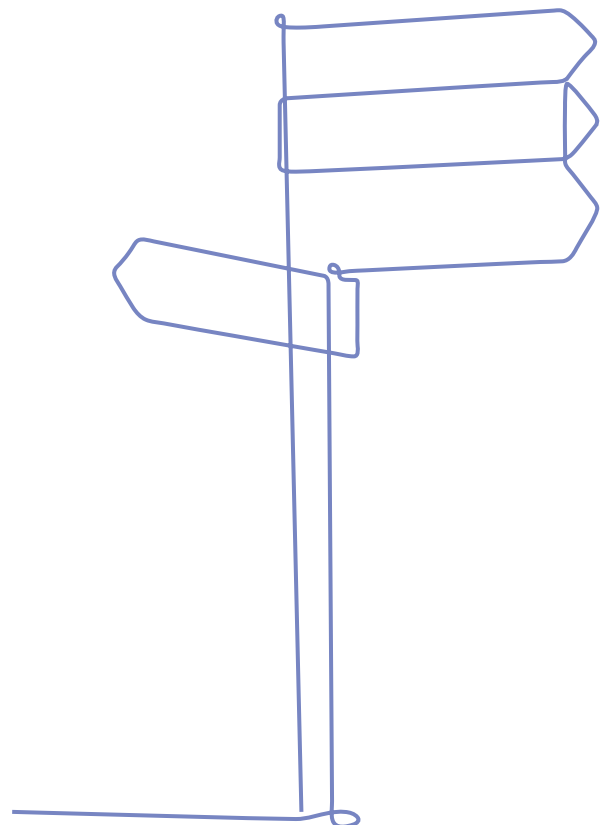
Introduction

Background

Tens of millions of people are estimated to be in conditions of modern slavery around the world today, experiencing different forms of slavery, servitude, forced and compulsory labour, and human trafficking.[1] As a multifaceted global problem, modern slavery represents a cross-sectoral challenge with implications for a wide range of different societal stakeholders. When it comes to addressing modern slavery in business contexts, this includes an important role for *investors* in addressing the problem.

Business activities can be associated with modern slavery in various ways. This includes the occurrence of modern slavery in the *production* of goods and services – be it within a company's own operations or in the operations of suppliers, especially in the context of global value chains. It also includes the possibility of companies being associated with modern slavery through the way in which their products or services are *used* (e.g., to facilitate human trafficking operations).

Recent years have seen a rapidly growing recognition of the crucial role for investors in addressing such links between business activities and different forms of modern slavery.[2] When investors integrate the issue of modern slavery into investment decisions or company engagement and other active ownership activities, they send important signals that can contribute to 'moving the market' by incentivising investee companies to take effective measures to address the problem of modern slavery in their respective business context.[3]

At the same time, investors face significant obstacles to exercising their role effectively: actionable information is scarce and, where it exists, often presented in ways that are difficult to integrate into established investment business processes. This report seeks to contribute to overcoming these obstacles by mapping out the role that data can play in enabling investors to take effective action on modern slavery. The mapping exercise covers different stages in the 'data-decision pipeline', distinguishing between the following three areas of inquiry (Figure 1):

1. Relevant types of data,

2. Analytical methods and strategies for extracting actionable insights from data,

3. Ways of presenting such insights in practicable and scalable ways to decision-makers.

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1. Existing definitions of modern slavery vary in scope. For the purpose of this report, we follow the UK Modern Slavery Act in defining the concept of modern slavery as comprising slavery, servitude, forced and compulsory labour, and human trafficking. See UK Modern Slavery Act 2015, https://www.legislation.gov.uk/ukpga/2015/30/contents/enacted.

2. See Principles for Responsible Investment, Why and How Investors Should Act on Human Rights, 2020, https://www.unpri.org/download?ac=11953; Liechtenstein Initiative, A Blueprint for Mobilizing Finance against Slavery and Trafficking, 2019, https://www.fastinitiative.org/the-blueprint/download-report/; Independent Anti-Slavery Commissioner, Tribe Foundation, and Themis, Preventing Modern Slavery and Human Trafficking in the Financial Sector, 2021, https://themisservices.co.uk/msht; Royal United Services Institute (RUSI), Leaning In – Advancing the Role of Finance against Modern Slavery, 2018, https://rusi.org/sites/default/files/20181212_leaning_in_web.pdf.

3. Freedom Fund, 'Moving the Market Initiative Announces First Round of Grants to Shift Investor Approaches to Social Impacts', 20 April 2020, https://freedomfund.org/blog/moving-the-market-initiative-announces-first-round-of-grants-to-shift-investor-approaches-to-social-impacts/.

The data-decision pipeline
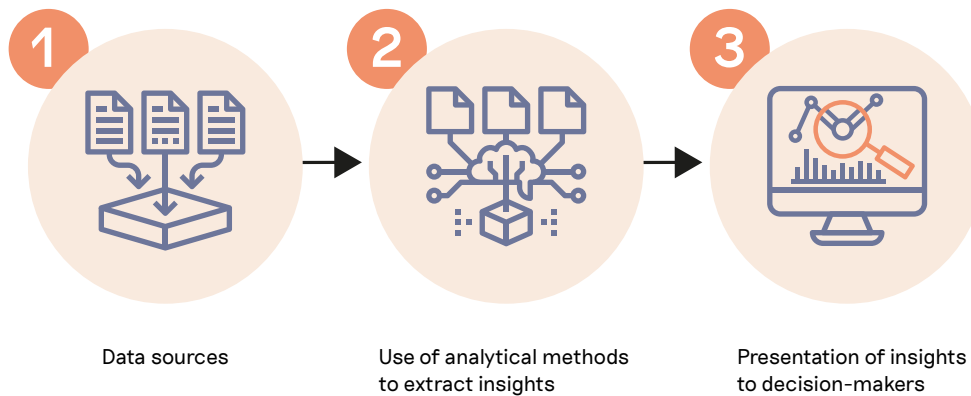
Figure 2: The 'data-decision pipeline'

What is modern slavery?

The concept of modern slavery covers a range of different offences that may occur within the boundaries of a single country or, as is frequently the case, across national boundaries. 'Modern slavery' is not defined in international law but has become recognised at national and international levels as an umbrella concept that includes phenomena such as forced labour, debt bondage, other slavery and slavery-like practices and human trafficking, emphasising that each of these are 'situations of exploitation that a person cannot refuse or leave.'[4]

In England and Wales, a person commits an offence under the Modern Slavery Act 2015 (MSA 2015)[5] if any of the following conditions obtain:

- the person holds another person in slavery or servitude and the circumstances are such that the person knows or ought to know that the other person is held in slavery or servitude;

- the person requires another person to perform forced or compulsory labour and the circumstances are such that the person knows or ought to know that the other person is being required to perform forced or compulsory labour;

- the person arranges or facilitates the travel of another person ("V") with a view to V being exploited.

4. ILO, Global Estimates of Modern Slavery, 2017 https://www.ilo.org/wcmsp5/groups/public/@dgreports/@dcomm/documents/publication/wcms_575479.pdf.
5. UK Modern Slavery Act, above n 1.

Methodology

The findings in this report are based on desk-based research, individual interviews, and two roundtable events (one with participants representing a range of different stakeholder groups and one with asset management industry representatives). Through our interviews and roundtables, we spoke to over seventy experts, ranging from asset management professionals to representatives of relevant civil society organisations, commercial information providers, and leaders of initiatives to foster collective action in the financial sector to address modern slavery.

This research was carried out between January 2020 and March 2021 as an initial scoping study for the Modern Slavery and Human Rights Policy and Evidence Centre. It was undertaken in partnership between the Bingham Centre for the Rule of Law, part of the British Institute of International and Comparative Law, and The Alan Turing Institute, the UK's national institute for data science and AI. Given the complexity and evolving nature of the subject matter, there are certain limitations inherent in the project timeline and mandate. The following insights are therefore presented with respect to the need for further research.

As a particular caveat worth highlighting at the outset, the landscape of relevant data sources and analytical solutions is characterised by a large number of organisations, ongoing solution development efforts, and a significant share of commercial tools whose capabilities are sometimes difficult to discern based on publicly available information. These factors create challenges for achieving a complete and accurate description of the landscape. Despite the research team's best efforts, the project's constrained resources and the fact that our desk-based research was limited to publicly available information means that the landscape analysis in this report may exhibit gaps when it comes to the identification of relevant resources or the description of their features and limitations.

Structure of this report

The report is divided into three parts:

- **Part 1** discusses the different types of insights in relation to the issue of modern slavery that can be of interest to investors – in other words, *investors' information needs*.
- **Part 2** provides an overview of the diverse range of *different types of data* that can be relevant to meeting investors' information needs.
- **Part 3** considers the limitations of the current data and solutions landscape when it comes to meeting investors' information needs and the role that novel analytical methods and tools can play in overcoming these limitations.

Part 1: Investors' information needs

Investment managers and their clients[6] are increasingly aware of the problem of modern slavery and the need to address it[7] – a trend that is illustrated by recent investor-led initiatives such as *Find It, Fix It, Prevent It* and *Votes Against Slavery* in the UK[8] or *Investors Against Slavery and Trafficking* in the Asia-Pacific region.[9] In addressing the problem, investors are faced with the fact that there can be vast differences between companies in terms of modern slavery-related risk potential, risk awareness, and risk management performance. This gives rise to a need to understand the situation of individual companies in relation to the issue of modern slavery in as specific a way as possible.[10]

Broadly speaking, insights that can be of interest to investors in relation to a given company can be grouped into two categories, defined by the following questions:

1. How **significant** is the issue of modern slavery in the context of this company?

2. How does the company **perform** in managing the issue of modern slavery (in terms of meeting legal and non-legal expectations about relevant disclosures and/or substantive action in relation to the issue)?

Answers to these questions can be of interest to investors for different reasons. Broadly speaking, they can serve two distinct important purposes. First, answers to these questions can be used to inform *investment decisions*, i.e., the selection of companies in which to invest or decisions to divest from companies. Second, they can inform decisions about *active ownership activities* such as engaging with investee companies through dialogue or exercising voting rights (e.g., by helping to determine whether the issue of modern slavery should be prioritised in engaging with a given company or to define appropriate issue-related engagement expectations for a given company).

The specific aspects of information that are deemed relevant by investors can vary depending on purpose and context. They typically comprise information in relation to both of the questions identified above, since the magnitude of modern slavery-related risks in the context of a particular company is a function of issue significance (i.e., risk potential) as well as the company's performance in terms of awareness and management of modern slavery-related risks.

The following sections consider the tasks of *assessing issue significance* and *assessing company performance* – together with their associated information needs – in greater detail.

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6. In the following, we use the term 'investors' as shorthand to refer to both asset managers and asset owners.

7. See Mans Carlsson-Sweeny, 'Modern Slavery Is More Than Just an "Ethical Issue" to Investors', Business & Human Rights Resource Centre Blog, 21 January 2019, https://www.business-humanrights.org/en/blog/modern-slavery-is-more-than-an-ethical-issue-to-investors/.

8. See https://www.modernslaveryccla.co.uk and https://www.rathbones.com/knowledge-and-insight/rathbones-votes-against-slavery-report-launched-outlining-successful.

9. See https://iast.fastinitiative.org.

10. For useful background and practical guidance, see International Federation for Human Rights (FIDH), From Policies to Impacts: Analysing Modern Slavery Risks in Portfolio Companies, 2021, https://www.fidh.org/en/issues/globalisation-human-rights/business-and-human-rights/analysing-modern-slavery-risks-in-portfolio-companies-guidance-for; Share Action, Point of No Returns: Part V – Leading Practice, 2021, https://shareaction.org/wp-content/uploads/2021/02/ShareAction-Leading-Practice-2021.pdf; CDC Group, ESG Toolkit: Managing the Risk of Modern Slavery, https://toolkit.cdcgroup.com/es-topics/managing-the-risk-of-modern-slavery/.

Assessing the significance of the issue of modern slavery

Investors' most fundamental need will typically be to determine the significance of the issue of modern slavery in the context of specific companies. This information may be used, for example, to inform what weight should be given to the issue of modern slavery in examining a company's non-financial performance more generally or to determine what indicators should be considered decisive in assessing a company's performance on the issue of modern slavery.

In conceptualising issue significance, an important general distinction can be drawn between the perspectives – described in more detail below – of *salience* and *financial materiality* (Figure 3). The perspective of salience focuses on potential *issue-related impacts on people*, while the second perspective concerns potential *issue-related impacts on a company's financial performance*. The respective role of considerations of salience and financial materiality in informing decisions can differ between investment approaches. Yet, for the reasons highlighted below, a comprehensive understanding of salience and financial materiality alike will generally be important for informed decisions across investment approaches, despite such differences.
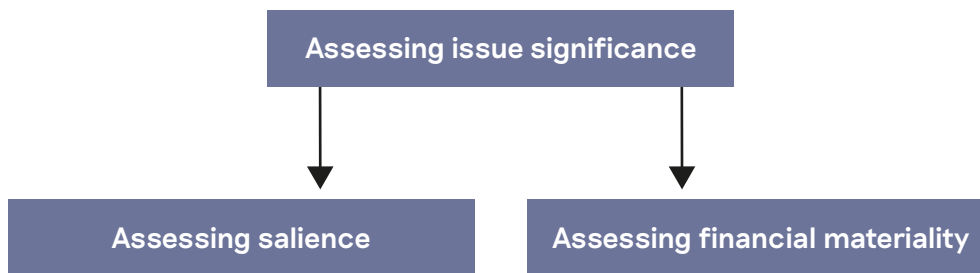
Figure 3: Analytical tasks in relation to issue significance

Assessing salience

Salience has become established as a central concept in the human rights due diligence discourse. It was originally introduced by the UN OHCHR's *The Corporate Responsibility to Respect: An Interpretive Guide*, which states that '[t]he most salient human rights for a business enterprise are those that stand out as being most at risk.'[11] The concept of salience was subsequently incorporated into the influential *UN Guiding Principles Reporting Framework*[12] published by Shift and Mazars, contributing to the widespread use of this terminology.

Human rights risks, in this context, are defined as 'risks of having an adverse impact on human rights, as against risks to the enterprise itself, although the former increasingly leads to the latter.'[13] The perspective of salience thus focuses on the significance of an issue in terms of issue-related *risks to rights* holders that a company may be connected to, regardless of the extent to which such risks are considered material from the company's perspective.[14]

11. UN OHCHR, The Corporate Responsibility to Respect: An Interpretive Guide, HR/PUB/12/02, 2012, https://www.ohchr.org/Documents/publications/hr.puB.12.2_en.pdf, at 8.

12. Shift and Mazars, UN Guiding Principles Reporting Framework, https://www.ungpreporting.org/. See also https://www.ungpreporting.org/reporting-framework/defining-a-focus-of-reporting/statement-of-salient-issues/ and https://www.ungpreporting.org/resources/salient-human-rights-issues/.

13. UN OHCHR, above n 11, at 31.

14. See also UN OHCHR, UN Guiding Principles on Business and Human Rights, HR/PUB/11/04, 2011, https://www.ohchr.org/documents/publications/guidingprinciplesbusinesshr_en.pdf, 'Principle 17'.

As the *Interpretive Guide* notes, 'the Guiding Principles make clear that an enterprise should not focus exclusively on the most salient human rights issues and ignore others that might arise. But the most salient rights will logically be the ones on which it concentrates its primary efforts.'[15] Similarly, investors may take a particular interest in a company's performance in relation to human rights issues (and ESG issues more broadly)[16] that are considered salient within that company's context, without necessarily implying an exclusive focus on these issues. As a result, investors may seek to assess the salience of the issue of modern slavery in the context of particular companies.[17]

In practice, determining the salience of human rights issues requires an assessment of any potential issue-related impacts associated with a company's activities that considers the *severity* of these impacts as well as their *likelihood* of occurrence.[18] In the case of the issue of modern slavery, there can be important differences between companies' potential impacts on both of these dimensions. This is most obvious for the dimension of likelihood, but also true for severity of impact: while the scale of impacts (in terms of the gravity of harm experienced by affected individuals) associated with any form modern slavery is generally high, there can be differences in terms of the scope of impacts (i.e., the number of people affected), for example.[19]

Connections between business activities and instances of modern slavery can take various forms. These include, but are not limited to, the occurrence of modern slavery within a company's own operations. *The UN Guiding Principles on Business and Human Rights* (UNGPs) distinguish the possibilities of business activities (i) causing, (ii) contributing to, or (iii) being directly linked to human rights impacts.[20] A comprehensive assessment of issue salience for a given company requires considering possible connections to modern slavery across all of these categories.

In particular, it is important to consider possible occurrences of modern slavery connected to the *production* of a company's goods or services (be it through the company's own operations or the company's supply chain) as well as occurrences connected to the *use* of its products and services (Figure 4). While the corporate reporting discourse often focuses on modern slavery risks in production contexts, a holistic approach should also take into account risks that occur downstream in the value chain in the form of use-related risks. Examples for connections to modern slavery through the use of products or services include the use of lodging or transportation services for human trafficking purposes or the use of financial services, such as the facilitation of financial transactions or the provision of loans, for purposes related to modern slavery.

15. UN OHCHR, above n 11, at 8.

16. 'ESG issues' stands for 'environmental, social, and governance issues', an established umbrella term to capture the range of different aspects of companies' non-financial performance that may be of interest to investors.

17. The broader literature on non-financial reporting has recently seen increased attention around the concept of 'environmental and social materiality', brought to prominence by the European Commission's Guidelines on Non-Financial Reporting (https://ec.europa.eu/info/publications/non-financial-reporting-guidelines_en) and its supplementary Guidelines on Reporting Climate-Related Information (https://ec.europa.eu/finance/docs/policy/190618-climate-related-information-reporting-guidelines_en.pdf). In similarity to the concept of salience, social materiality, in this context, is defined by a focus on 'the external impacts of the company' in relation to human rights and other social issues, thus contrasting with the lens of financial materiality. While 'environmental and social materiality' is sometimes used interchangeably with 'salience', the meanings of these concepts are not entirely identical. Given its greater prominence in the human rights due diligence context and its suitability for comparative assessments of issue significance in terms of degrees, the present discussion focuses on the concept of salience.

18. Likelihood here is understood as the likelihood of the unwanted outcome occurring in the absence of dedicated risk management to address the issue.

19. The UNGPs recognise a total of three criteria for assessing the severity of impacts, namely their scale (the gravity of harm experienced by affected individuals), their scope (the number of individuals affected), and their irremediable character (any limits on the ability to restore those affected to a situation at least equivalent to their previous situation). See Principles for Responsible Investment, above n 2, at 14; UN OHCHR, above n 14, 'Principle 14'.

20. UN OHCHR, above n 14, 'Principle 13'.

Value chain

Upstream   **Downstream**

| 3rd tier supplier | 2nd tier supplier | 1st tier supplier | Investee | Business-to-business |
| Business-to-consumer |

Production-related risks
e.g. forced labour in seafood supply chain

Use-related risks
e.g. reliance on services in the financial, lodging, or transportation sectors for human trafficking purposes
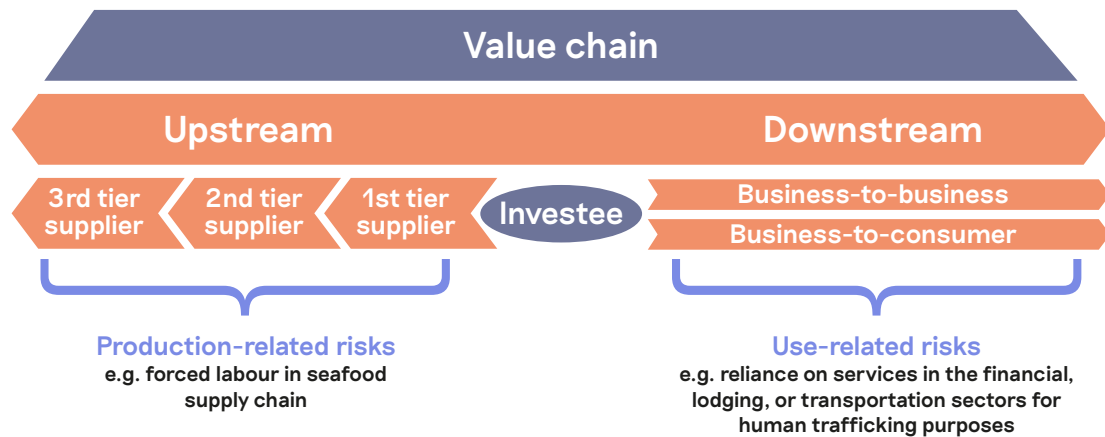
Figure 4: Two ways for companies to be connected to modern slavery

Assessing financial materiality

Assessing the issue of modern slavery from the perspective of financial materiality means assessing potential modern slavery-related impacts on a company's financial performance. As with salience, judgments of financial materiality will typically depend on the severity as well as the likelihood of potential impacts. The important difference is that issue salience is a function of the severity and likelihood of potential issue-related impacts on rights-holders, whereas the issue's financial materiality turns on the severity and likelihood of *impacts on the company's financial situation*.

Relevant financial impacts can take two general forms, namely (i) impacts on a company's profitability with associated consequences for the company's valuation and (ii) direct impacts on a company's valuation that are driven by investor attitudes and are unrelated to impacts on company profitability. A comprehensive assessment of financial materiality for the issue of modern slavery in relation to a given company will involve consideration of different potential impacts across both of these categories.

As for potential impacts on a company's profitability, there are several analytically distinct *types of risk* that can be the source of such impacts. To ensure completeness in assessing potential impacts, it can be helpful to map possible events for each type of risk against different *types of financial impact*, including impacts on a company's revenue/costs, assets/liabilities, and cost of capital.[21] Table 1 illustrates prominent types of risk for the issue of modern slavery across the three broad categories of reputational, operational, and legal and regulatory risks:

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21. See, Sustainability Accounting Standards Board (SASB), SASB Conceptual Framework, 2017, https://www.sasb.org/wp-content/uploads/2019/05/SASB-Conceptual-Framework.pdf.

Table 1

Risk category	Modern slavery incidents or perceived shortcomings in addressing the issue of modern slavery can lead to…
Reputational risks	• Loss of market share • Reduced brand value
Operational risks	• Worksite shutdowns / need to find alternative suppliers • Temporary operational disruptions (investigations, strikes, etc.) • Decreased workforce motivation and productivity • Increased cost of capital
Legal and regulatory risks	• Fines for violation of corporate disclosure or due diligence requirements[22] • Compensation payments to victims and other forms of legal liability for modern slavery-related harms[23] • Seizure of goods (e.g., imports to the US that are deemed to have been produced with forced labour)[24] • Loss of access to certain markets or types of contracts due to failure to meet applicable rules and requirements (e.g., public sector procurement)[25] • Introduction of new regulatory requirements

These different risks highlight the different ways in which companies' valuation can be impacted as a result of the occurrence or the prospect of potential impacts on companies' profitability. In addition, company performance on the issue of modern slavery can potentially also affect companies' valuation in ways that are not connected to profitability expectations. Such direct impacts on company evaluation – the second category of financial impact mentioned above – can occur as a result of investors making selection decisions that take into account companies' modern slavery performance for profitability-unrelated reasons.[26] Relevant possibilities include investors that seek to avoid companies with poor modern slavery performance on ethical grounds. In light of the possible introduction of mandatory human rights due diligence requirements that are applicable to investors (see below), companies that are perceived to perform poorly on the issue of modern slavery might in the future also be considered a compliance risk by investors.

It is common for financial materiality assessments for a given issue to be carried out at the level of industries rather than at the level of individual companies.[27] An industry-level perspective on financial materiality, however, may lead to blind spots by failing to register signals of financial

22. Such fines are possible, for example, under the French 'Duty of Vigilance' Law of 2017. See LOI n° 2017-399 du 27 mars 2017 relative au devoir de vigilance des sociétés mères et des entreprises donneuses d'ordre, https://www.legifrance.gouv.fr/loda/id/JORFTEXT000034290626.

23. For a prominent ongoing case, see Oliver Balch, 'Mars, Nestlé and Hershey to Face Child Slavery Lawsuit in US', The Guardian, 12 Feb 2021, https://www.theguardian.com/global-development/2021/feb/12/mars-nestle-and-hershey-to-face-landmark-child-slavery-lawsuit-in-us. There are past cases in which companies have been required to make compensation payments that reached tens of millions of dollars, with at least one company declaring bankruptcy as a result. See Share Action, Forced Labour: What Investors Need to Know, 2016, https://shareaction.org/wp-content/uploads/2016/06/ForcedLabour-InvestorBriefing.pdf.

24. In the United States, for example, the Tariff Act of 1930 prohibits the import of goods whose production involved forced labour. Recent years have seen an increase in instances of merchandise being denied entry or seized by the US customs authorities on this basis. See U.S. Customs and Border Protection, Forced Labor, https://www.cbp.gov/trade/programs-administration/forced-labor.

25. The UK Government's procurement policy, for example, requires public bodies to consider modern slavery risks in making procurement decisions. See Cabinet Office, Procurement Policy Note 05/19: Tackling Modern Slavery in Government Supply Chains, 2019, https://www.gov.uk/government/publications/procurement-policy-note-0519-tackling-modern-slavery-in-government-supply-chains.

26. See World Economic Forum, Embracing the New Age of Materiality, 2020 http://www3.weforum.org/docs/WEF_Embracing_the_New_Age_of_Materiality_2020.pdf.

27. Such an industry-level approach to financial materiality forms the basis of the Sustainability Accounting Standards Board (SASB) accounting standards, for example. See SASB, above n 21. RightsCoLab is currently pursuing a research collaboration with SASB that leverages novel data analysis strategies to strengthen the assessment of financial materiality of labour rights issues and aims to inform updates to SASB standards in the area of human capital management, see https://rightscolab.org/project-harnessing-big-data/

materiality that may exist at the level of individual companies without rising to industry-level significance. Financial materiality assessments, like salience assessments, will thus benefit from adopting as context-specific a lens as possible.

Differences between investment approaches, the dynamic nature of financial materiality, and the emergence of new mandatory human rights due diligence requirements

As noted above, the role of considerations of salience and financial materiality in decisions can vary between investment approaches. In particular, investment approaches differ with respect to the weight they assign to considerations of financial materiality in assessing an issue's significance. Approaches in which decisions depend on financial materiality stand alongside a growing number of investors for whom considerations of issue salience are a sufficient reason for action in relation to modern slavery and other human rights issues.

Such differences notwithstanding, however, a comprehensive understanding of *issue salience* is crucial from the perspective of any investment approach, since a reliable assessment of a company's risk of being connected to modern slavery is a precondition for an informed assessment of potential modern slavery-related financial impacts. This is true especially in light of the increasingly *dynamic nature of financial materiality*. Increased availability of information on company behaviour, stakeholder and consumer activism, legal and regulatory changes, and changing attitudes on the part of investors mean that issues which have been deemed financially 'non-material' in the past can rapidly become financially material.[28]

The implications for financial materiality of potential changes in the legal and regulatory landscape are especially important in light of recent and expected regulatory developments at the international level as well as in several national jurisdictions.

At the international level, the UN Human Rights Council has set up an open-ended intergovernmental working group that continues in its bid to develop an international legally binding instrument on business activities and human rights.[29]

At the national level, recent years have seen the introduction of *supply chain transparency* legislation in a growing number of jurisdictions. The most recent example is the Australian Modern Slavery Act, passed in 2018, which draws on the UK Modern Slavery Act as a model but goes further – for example in relation to public procurement.[30] For laws that have already come into force, their implications for financial materiality may take some time to be fully appreciated by market participants. Moreover, there are several further jurisdictions, including New Zealand and Hong Kong, that are currently considering the introduction of similar legislation, adding to the fluidity of supply chain transparency requirements and their materiality implications.

In addition, there have been important developments around *mandatory human rights due diligence* (mHRDD). In 2017, France became the first country to pass a law mandating human rights due diligence for large companies. The French 'duty of vigilance' law establishes a legally binding obligation for parent companies to identify and prevent adverse human rights and environmental impacts resulting from their own activities, from activities of companies they control, and from activities of their subcontractors and suppliers.[31] The Dutch child labour due diligence law of 2017 requires companies selling goods and services to Dutch end-users to

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28. World Economic Forum, above n 26.

29. UN HRC, Open-Ended Intergovernmental Working Group on Transnational Corporations and Other Business Enterprises With Respect to Human Rights, https://www.ohchr.org/EN/HRBodies/HRC/WGTransCorp/Pages/IGWGOnTNC.aspx.

30. Australia Modern Slavery Act 2018, https://www.legislation.gov.au/Details/C2018A00153.

31. French 'Duty of Vigilance' Law 2017, above n 22.

determine whether child labour occurs in their supply chains. If so, companies must set out a plan of action on how to combat child labour and issue a due diligence statement on their investigation and plan of action.[32] Similar mHRDD initiatives are being discussed in several other countries, including in Germany[33], Finland, Kenya, Norway, Thailand, the UK, and the US.[34]

In April 2020, the mHRDD movement received vocal support from the investment community through an open letter to national governments signed by an international coalition representing US$5 trillion in assets under management.[35] During the same month, European Commissioner for Justice Didier Reynders announced that the European Commission will introduce legislation in 2021 to make human rights and environmental due diligence mandatory for EU companies.[36] Commissioner Reynders also indicated that the new law would include provisions for corporate liability and that the EU would also seek to ensure access to remedy for victims of abuses. The announcement follows the publication in February 2020 of a study undertaken by BIICL on behalf of the European Commission which concluded that a majority of stakeholders, including EU businesses, were in favour of making human rights due diligence mandatory.[37]

It is important to note that forthcoming mHRDD requirements are widely anticipated to apply not only to investee companies but also to investors and asset managers directly. If this is the case, they will further strengthen the trend of investors taking action on modern slavery and other human rights issues on the basis of salience, regardless of financial materiality. At the same time, this kind of response would in itself contribute to rendering the relevant issues financial material and thus, in turn, have implications for the decisions of capital market actors whose decisions hinge on considerations of financial materiality.

32. Dutch Child Labour Due Diligence Act 2019, https://zoek.officielebekendmakingen.nl/stb-2019-401.html.

33. German Due Diligence Act (draft), https://www.bmas.de/DE/Service/Gesetze-und-Gesetzesvorhaben/gesetz-unternehmerische-sorgfaltspflichten-lieferketten.html.

34. See the portal of Business & Human Rights Resource Centre on mandatory human rights due diligence developments (https://www.business-humanrights.org/en/big-issues/mandatory-due-diligence/). In Switzerland, while a Responsible Business Initiative to introduce mHRDD requirements for Swiss companies was narrowly rejected at a popular vote in November 2020, a reporting-centred proposal adopted by the Parliament will enter into force in 2021.

35. Investor Alliance for Human Rights, 'Investors With US$5 Trillion Call on Governments to Institute Mandatory Human Rights Due Diligence Measures for Companies', 21 April 2020, https://investorsforhumanrights.org/news/investor-case-for-mhrdd.

36. European Parliament, 'European Commission Promises Mandatory Due Diligence Legislation in 2021', 30 April 2020, https://responsiblebusinessconduct.eu/wp/2020/04/30/european-commission-promises-mandatory-due-diligence-legislation-in-2021/.

37. European Commission, Study on Due Diligence Requirements through the Supply Chain, 2020 https://op.europa.eu/en/publication-detail/-/publication/8ba0a8fd-4c83-11ea-b8b7-01aa75ed71a1/.

Assessing company performance on the issue of modern slavery

In addition to understanding the *significance* of the issue of modern slavery in the context of a given company, investors have a need to determine the company's *performance* on modern slavery, i.e., the extent to which the company's behaviour with respect to the issue of modern slavery meets investors' expectations.

Assessing company performance involves two components: defining performance expectations and evaluating how a company fares in meeting them (Figure 5). The following passages elaborate on each of these tasks in turn.
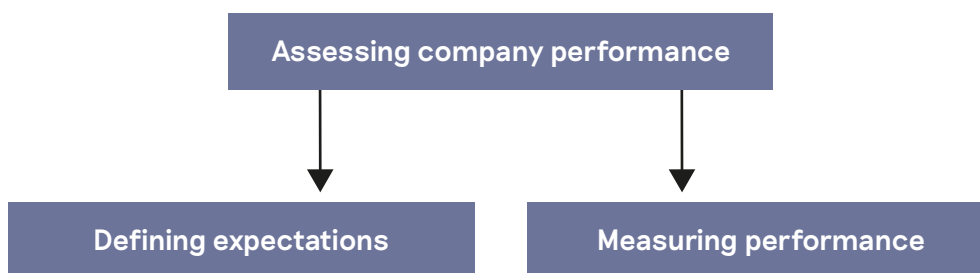
Figure 5: Analytical tasks in relation to company performance

Defining performance expectations

Generally speaking, possible expectations on a company's behaviour in relation to the issue of modern slavery – or any other ESG issue, for that matter – can be mapped out along two dimensions:

- Expectations can relate to a company's **awareness and understanding** or to the **company's management** of issue-related risks;
- Expectations can take the form of **expected disclosures** of information or the form of **substantive expectations** for the company to take certain actions.

The following table illustrates the resulting four-fold typology of performance expectations for the issue of modern slavery:

Table 2

	Disclosure expectations	Substantive expectations
Awareness and understanding of risks	e.g., disclosure of any steps taken to assess modern slavery-related risks and/or the resulting findings	e.g., expectation for the company to take specific steps to assess modern slavery-related risks
Management of risks	e.g., disclosure of the nature of any risk management measures taken	e.g., expectation for the company to take specific risk management measures

Investors' performance expectations on modern slavery may comprise elements from any of these four categories. While investors can differ in their approach to choosing between possible elements, defining performance expectations will generally be an information-dependent task. Different types of information will be crucial to determining what kinds of expectations are considered appropriate.

Insofar as companies are subject to legal requirements that include disclosures (e.g., the requirement to publish modern slavery statements under the UK Modern Slavery Act) or substantive actions (e.g., human rights due diligence duties under the French Duty of Vigilance law), these requirements provide an uncontroversial floor for defining performance expectations: at a minimum, companies will be expected to comply with such legal requirements. Investors will therefore need information about the nature of relevant requirements and their applicability to particular companies.

At the same time, investor expectations will typically go beyond compliance with relevant legal requirements and extend to a broader conception of best practice concerning company behaviour in relation to modern slavery. Such a broader approach is in line with the UNGPs, which stipulate that the corporate responsibility to respect human rights 'exists over and above compliance with national laws and regulations protecting human rights.'[38]

The process of defining best practice expectations, once again, can involve various types of information. For example, investors may seek to tailor their expectations to different types of companies based on information about issue significance or the specific nature of risks that companies are exposed to. In addition to such tailoring, there will often be a case for defining performance expectations in ways that are aligned with other normative or conceptual points of reference in order to avoid the unnecessary creation of parallel frameworks and ensure that expectations are manageable for investee companies.[39]

Types of information that can be relevant in pursuing such alignment include expectations expressed by other members of the investment community[40] or other stakeholder groups.[41] They also include information about existing reporting and disclosure frameworks that can provide conceptual guidance for formulating expectations, such as the frameworks developed by the Global Reporting Initiative (GRI)[42] and the Sustainability Accounting Standards Board (SASB).[43] While navigating the multitude of available frameworks can be challenging, there is a growing number of resources and initiatives aimed at connecting and unifying these frameworks.[44]

38. UN OHCHR, above n 14, 'Principle 11'.

39. The impact that such alignment can have is illustrated by alignment efforts on the issue of climate change, exemplified by initiatives such as the Task Force on Climate-Related Disclosures.

40. See, for example, CCLA, Find It, Fix It, Prevent It – Engagement Expectations, https://www.modernslaveryccla.co.uk/sites/default/files/2020-05/Modern%20Slavery%20Engagement%20Expectations%20Final.pdf.

41. For example, Know the Chain (https://knowthechain.org).

42. See https://www.sasb.org.

43. See https://www.globalreporting.org.

44. For initiatives and efforts to promote alignment between frameworks, see World Economic Forum, Measuring Stakeholder Capitalism Towards Common Metrics and Consistent Reporting of Sustainable Value Creation, 2020, http://www3.weforum.org/docs/WEF_IBC_Measuring_Stakeholder_Capitalism_Report_2020.pdf; Corporate Reporting Dialogue (https://corporatereportingdialogue.com); SASB, 'Promoting Clarity and Compatibility in the Sustainability Landscape', 12 July 2020, https://www.sasb.org/blog/gri-and-sasb-announce-collaboration-sustainability-reporting/. For tools to facilitate cross-referencing between metrics of different existing frameworks, see Know the Chain, Reference Table, www.knowthechain.org/wp-content/uploads/2016/10/Related-indicators_KTC_CHRB_UNGP-RF.xlsx; UN Guiding Principles Reporting Framework, Cross-References to Other Initiatives, www.ungpreporting.org/resources/cross-references-to-other-initiatives); Corporate Human Rights Benchmark, CHRB Methodology 2018 (Annex 3 and 4), https://www.corporatebenchmark.org/sites/default/files/documents/CHRB%202018%20Methodology%20Web%20Version.pdf.

Measuring performance

Having established expectations concerning a company's behaviour in relation to the issue of modern slavery, investors will seek to assess the company's performance in relation to these expectations. In doing so, two perspectives of assessment can be of interest:

- A company's performance in **absolute** terms (i.e., the extent to which the company meets expectations);
- A company's performance in **comparative** terms (i.e., how the extent to which the company meets expectations compares to the extent to which other companies in its peer group meet expectations).

The task of measuring performance applies across the different types of performance expectations described above. When it comes to *disclosure expectations*, performance is a matter of the extent to which companies share the information that they are expected to share. In the case of *substantive expectations*, performance is a matter of the extent to which companies have taken the relevant specific measures to understand and manage modern slavery risks that are expected of them.

Information that is relevant to measuring performance, be it in absolute or comparative terms, can come from various sources. It includes information collected and provided by companies themselves as well as information collected or made available by other actors. In addition, investors may decide to perform the task of measuring performance themselves or make use of performance measurements conducted by other actors. They may therefore rely on *descriptive information* that serves as an input to measuring a company's performance (e.g., the content of a company's modern slavery statement) or on information that already encapsulates an *assessment* of the company's performance in absolute or comparative terms (e.g., company ratings published by non-profit or commercial organisations which may be focused on the issue of forced labour or on human rights or ESG risks more broadly).

Summarising investors' information needs

As highlighted above, the ability of investors to address the issue of modern slavery requires actionable insights in the areas of issue significance and company performance. Each area involves two analytically distinct tasks, leading to a total of four tasks: assessing salience, assessing financial materiality, defining performance expectations, measuring performance (Figure 6).
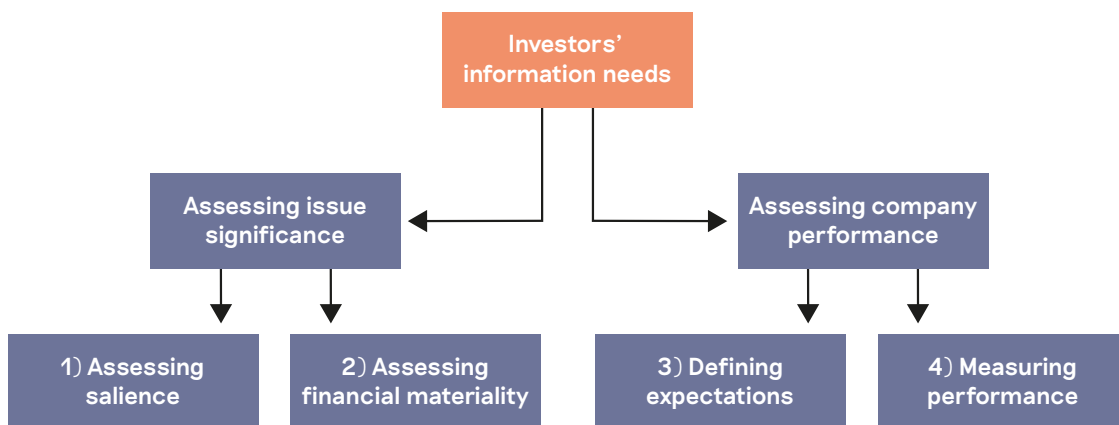
Figure 6: Summary of analytical tasks that define investors' information needs

All four tasks depend on different aspects of empirical information. Investors currently often face obstacles in accessing and using relevant information. At the same time, there is a wide range of possible sources for such information. The following part considers the range of *different types of data* that can provide information relevant for carrying out the mentioned four tasks, thus highlighting the potential of data-focused initiatives in enabling effective investor action on modern slavery.

Part 2: Relevant types of data

Discussions of modern slavery in the business context often focus on information from a limited number of prominent sources, such as modern slavery statements published by companies, official statistics, and prevalence estimates. While these can be useful to investors, there is a much wider range of potential types of data that can be helpful in carrying out the four tasks identified above. The prominent sources mentioned have significant limitations in light of the comprehensive and company-specific insights that are of interest to investors. In order for investors to exercise their role as effectively as possible, there is thus a strong case for seeking ways to leverage all relevant types of data.

In order to contribute to a holistic approach to addressing the information needs of investors that considers all possible sources of information, we conducted a mapping exercise aimed at providing a comprehensive overview of the different types of data that could be useful to arrive at the insights needed by investors. The following section summarises the result of this mapping exercise.

This overview includes potentially useful types of data regardless of considerations of practicability such as the availability, accessibility, quality, or ease of use of different types of data. The overview is thus not meant to suggest that drawing on the mentioned types of data will be equally easy for investors. By adopting a broad focus and identifying data sources based on potential usefulness rather than practicability, we hope to inform future work that seeks to unlock the potential of types of data that hold promise but are currently difficult to leverage due to limitations in terms of availability, accessibility, quality, or ease of use.

The lens adopted for this overview is based on a broad definition of 'data'. Our scope comprises both *quantitative/numerical data* (e.g., statistics or company performance scores) and *qualitative data* that takes a non-numerical form (e.g., textual descriptions of incidents or company policies). In addition, it includes sources of information regardless of the format in which information is recorded or presented, thus covering cases of *structured data* (e.g., machine-readable spreadsheets) as well as *unstructured data* (e.g., PDF files or printed publications).

We distinguish between data that contains *contextual information* (i.e., information that relates to the issue of modern slavery at a global level or in the context of particular geographical areas, industries, or commodity supply chains) and *company-specific* information. Both kinds of data can be relevant to the tasks of assessing salience, assessing financial materiality, and defining performance goals. Data that contains company-specific information can, in addition, be relevant to the task of measuring company performance.

Contextual information and company-specific information alike can each be broken down further into two groups, resulting in the following four categories:

- **Category 1:** **Contextual information about the occurrence of modern slavery**
- **Category 2:** **Contextual information about societal expectations**
- **Category 3:** **Company-specific information controlled by companies of interest**
- **Category 4:** **Independent company-specific information**

The following sections consider these four categories in turn and identify several analytically distinct types of data for each of them. The discussion of individual types of data provides a high-level description and considers the nature of relevant data producers, ways of accessing data, and data format. In addition, the section of each type of data also includes references to concrete examples of relevant datasets or ways of accessing data.

Category 1: Contextual information about the occurrence of modern slavery	Category 2: Contextual information about societal expectations	Category 3: Company-specific information controlled by companies of interest	Category 4: Independent company-specific information
1. Records about known cases of modern slavery 2. Systematic estimates 3. Broader issue-focused publications	4. Relevant laws and regulations 5. Non-legal expectations across different stakeholder groups	6. Relevant non-financial disclosures 7. Company registry entries and financial statements 8. Relevant non-public data within companies' control	9. Company ratings 10. Data on independent audits, certification or accreditation 11. Data on company-specific controversies, campaigns, and proceedings 12. Observable business activity footprints

Figure 7: Overview of relevant types of data

Across all types of data, the most relevant information will generally be information that directly relates to the issue of modern slavery. Yet, information about other issues that have empirical links to and can be indirectly indicative of modern slavery risks, such as child labour, human rights violations more broadly, armed conflict, economic deprivation, or migration can also be useful. The discussion in the following sections will focus on information that is directly related to modern slavery but should be read in light of this consideration: for each data type, there may also be valuable sources of information about related phenomena and indirect risk indicators.

Category 1: Contextual information about the occurrence of modern slavery

The first broad category of data consists of sources of contextual information that sheds light on the *occurrence of modern slavery* in general terms (i.e., information about the occurrence of modern slavery that is not related to specific companies). Prominent types of data that fall into these categories include:

- Records about known cases of modern slavery
- Systematic estimates concerning the occurrence and characteristics of modern slavery
- Broader issue-focused publications

The information contained in these types of data can vary in its contextual focus. In addition to data whose focus is defined by geographical areas (e.g., countries or regions), there are prominent examples that focus on specific industries or commodities. While such data typically does not allow for direct inferences about specific companies, it represents an important starting point for developing a general understanding of modern slavery as a phenomenon. In addition, it can play an important role in relation to three of the specific information tasks faced by investors – information about the occurrence and characteristics of modern slavery in the context of particular geographical areas, industries, or commodities provide an important point of reference when it comes to *assessing issue salience*, *assessing financial materiality*, and *defining performance expectations* for specific companies in light of their contextual situation.

1. Records about known cases of modern slavery

As a first type of data, there are various forms of records of information about known cases of modern slavery. The content of such records can take the form of summary statistics (e.g., the number of recorded cases for different types of relevant offences within a given jurisdiction) or detailed – usually anonymised – information about individual cases (e.g., the nature of the mistreatment experienced, the number and background of individuals affected, the characteristics of perpetrators).

Data producers

The primary producers of such records are organisations that are involved in responding to individual instances of modern slavery. Prominent examples include law enforcement and other government agencies as well as civil society organisations and intergovernmental organisations that provide support to individuals affected by modern slavery. Relevant summary statistics may be found, for example, in law enforcement statistics or activity reports of support organisations. Possible sources of detailed information about individual cases include survivor testimonies recorded by support organisations or police records. Ad-hoc information about known cases of modern slavery can also be found in relevant news media reports.

Access and data format

As Table 3 illustrates, there are prominent examples of this type of data being made accessible directly by the relevant data producers. In addition, relevant data can also often be accessed indirectly through independently maintained publications and digital platforms that draw on information provided by data producers, often combining information from a range of relevant sources in one place. In the case of direct and indirect access alike, data may be available publicly or accessible on request.

Across direct and indirect forms of access, data is often unstructured and embedded in documents or website content. Yet, there is a growing number of platforms that provide access to structured datasets that are more readily usable for computational processing and analysis.

Table 3

Examples of data about known cases of modern slavery

* indicates the availability of data in structured form

Data published directly by individual data producers

- Antislavery Usable Past, Voices: Narratives by Survivors of Modern Slavery
  https://www.antislavery.ac.uk/
- Polaris, Annual U.S National Human Trafficking Hotline Statistics
  https://polarisproject.org/2019-us-national-human-trafficking-hotline-statistics/
- The Salvation Army, Annual Report Statistics
  https://www.salvationarmy.org.uk/modern-slavery/modern-slavery-latest-reports
- The Salvation Army, Survivors' Stories
  https://www.salvationarmy.org.uk/modern-slavery/survivors-stories
- UK Government, National Referral Mechanism Statistics*
  https://www.gov.uk/government/collections/national-referral-mechanism-statistics, https://www.nationalcrimeagency.gov.uk/who-we-are/publications
- UK Government, Police Recorded Crime and Outcomes*
  https://www.gov.uk/government/statistics/police-recorded-crime-open-data-tables
- Unseen UK, Modern Slavery Helpline statistics
  https://www.modernslaveryhelpline.org/learn-more/stats

Indirect or pooled access to relevant data

- International Organization for Migration (IOM), Migration Data Portal*
  https://migrationdataportal.org/
- Liberty Shared, Human Trafficking Dashboard* https://libertyshared.org/idc-center
- Liberty Shared, Victim Case Management System* https://www.vcms.app
- Office for National Statistics, Modern Slavery in the UK*
  https://www.ons.gov.uk/releases/developinganapproachtomeasuremodernslaveryintheuk
- The Counter Trafficking Data Collaborative, Global Dataset*
  https://www.ctdatacollaborative.org/
- Traffik Analysis Hub* https://www.traffikanalysis.org
- UK Government, Annual Report on Modern Slavery
  https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/927111/FINAL-_2020_Modern_Slavery_Report_14-10-20.pdf
- WhatDoTheyKnow (UK freedom of information requests)
  https://www.whatdotheyknow.com

2. Systematic estimates

Given the hidden nature of modern slavery, another important source of contextual information on its occurrence are systematic estimates of the prevalence and characteristics of modern slavery. Rather than capturing information about identified cases, such estimates aim to make probabilistic inferences about the occurrence and the nature of modern slavery incidents in different contexts, including aspects such as prominent risk factors or indicators of vulnerability for different demographic groups. Relevant estimates can be produced by drawing on a range of different methods, including surveys of sample populations or multiple-systems estimation (MSE).[45] The scope of estimates is often defined geographically, covering particular countries, regions, or the world as a whole. In addition, there have been attempts to produce estimates about the occurrence and characteristics of modern slavery in particular industries or supply chains.[46]

Data producers

In principle, relevant estimates can be produced by any organisation with access to data that can serve as a basis for meaningful inferences. Organisations that have produced notable estimates in the past range from civil society organisations and academic institutions to government agencies and intergovernmental organisations. The most prominent examples are the Minderoo Foundation's Walk Free Initiative, which publishes the widely cited Global Slavery Index, and collaborative efforts led by UN agencies.

Access and data format

As public impact tends to be a motivating factor, relevant estimates are often made publicly available by the organisations producing them. This usually includes digital formats. In many cases, data of interest is embedded in documents (e.g., PDF files) or website content, but some data producers also make structured datasets publicly available online.

Table 4

Examples of systematic estimates

* indicates the availability of data in structured form

- Alliance 8.7, Ending Child Labour, Forced Labour and Human Trafficking in Global Supply Chains https://mneguidelines.oecd.org/Ending-child-labour-forced-labour-and-human-trafficking-in-global-supply-chains.pdf
- International Labour Organisation (ILO), Global Estimates of Modern Slavery: Forced Labour and Forced Marriage https://www.ilo.org/global/publications/books/WCMS_575479/lang--en/index.htm
- Walk Free, Global Slavery Index* https://www.globalslaveryindex.org

45. For an overview of the methodological approaches, see Todd Landman, 'Measuring Modern Slavery: Law, Human Rights, and New Forms of Data', Human Rights Quarterly, 42(2), 2020, 303-331, https://muse.jhu.edu/article/754938/pdf.
46. Alliance 8.7, Ending Child Labour, Forced Labour and Human Trafficking in Global Supply Chains, 2019, https://mneguidelines.oecd.org/Ending-child-labour-forced-labour-and-human-trafficking-in-global-supply-chains.pdf.

3. Broader issue-focused publications

Thirdly, there are publications that can help shed light on the occurrence and characteristics of modern slavery by presenting various other forms of information. Rather than focusing specifically on the content of records of known occurrences or systematic estimates, these publications can draw on combinations of different sources and methods, including more anecdotal forms of evidence.

Relevant publications are typically the result of dedicated investigative efforts that can take the form of extended research programmes (often involving recurring editions of a given publication) or a more ad-hoc form (e.g., one-off news pieces or longer reports in response to particular events). The content of relevant publications varies from case to case and can include a wide range of quantitative or qualitative information in relation to the issue of modern slavery, including information on prevalence, pathways to exploitation, risks, or the broader human rights situation in different contexts. Publications that have a systematic focus on particular geographical areas, industries or commodity supply chains stand alongside publications focused on specific incidents or populations. While information content can overlap with information contained in records of known occurrences or systematic estimates, it goes beyond these categories.

Data producers

Issue-focused publications can be produced by various types of organisations. Often, data producers are organisations that conduct work on the issue of modern slavery in virtue of their mission focus. This is the case, for instance, for many relevant civil society organisations, government agencies, and intergovernmental organisations. In other cases, relevant publications may be produced by organisations whose mission is not intrinsically linked to the issue, such as general news media organisations or commercial providers that respond to the information and research needs of customers.

Access and data format

The majority of relevant publications is produced by non-commercial organisations and usually publicly accessible. In the case of commercial news media organisations and information or research providers, access can be limited to paying customers. In addition to data being accessible through data producers directly, there are noteworthy initiatives that seek to provide pooled access to information contained in publications from multiple sources.

While publications are usually available digitally, their content often takes the form of unstructured (and predominantly qualitative) data embedded in documents or websites. Yet, there are examples of organisations providing or developing ways to access relevant data in more structured forms.

Table 5

Examples of issue-focused publications

* indicates the availability of data in structured form

Specific publications

Commodity and industry focus:

- CSR Risk Check https://www.mvorisicochecker.nl/en
- Finance Against Slavery & Trafficking, Connection Diagnostic and Risk Mapping
  https://www.fastinitiative.org/risk-mapping/
- International Finance Corporation (IFC), Global Map of Environmental & Social Risks in Agro-Commodity
  Production (GMAP) https://gmaptool.org
- Mekong Club, Modern Slavery Risk Map https://themekongclub.org/our-tools/
- Responsible Sourcing Tool https://www.responsiblesourcingtool.org/visualizerisk
- US Department of Labor (Bureau of International Labor Affairs), various publications and apps
  (incl. List of Goods Produced by Child Labor or Forced Labour*)
  https://www.dol.gov/agencies/ilab/our-work/child-forced-labor-trafficking
- Verité Commodity Atlas https://www.verite.org/commodity-atlas/

Country focus:

- Danish Institute for Human Rights (DIHR), Human Rights and Business Country Guides
  https://globalnaps.org/human-rights-and-business-country-guides/
- Delta 8.7, Data Dashboards* https://delta87.org/dashboards-landing/data-dashboards/
- Walk Free, Measurement, Action, Freedom: An Independent Assessment of Government Progress
  Towards Achieving UN Sustainable Development Goal 8.7 https://cdn.globalslaveryindex.org/2019-
  content/uploads/2019/07/17123602/walk.free_.MAF_190717_FNL_DIGITAL-P.pdf
- Responsible Sourcing Tool https://www.responsiblesourcingtool.org/
- US Department of Labor (Bureau of International Labor Affairs), various publications and apps (incl. List
  of Goods Produced by Child Labor or Forced Labor*)
  https://www.dol.gov/agencies/ilab/our-work/child-forced-labor-trafficking

Mixed focus:

- Business & Human Rights Resource Centre, Digital Platform* https://www.business-humanrights.org
- Delta 8.7, Thematic Overviews https://delta87.org/resources/thematic-overviews/
- Freedom Collaborative, Mapping Victim Journeys https://freedomcollaborative.org/victim-journey-data/
- Know the Chain, Resources https://knowthechain.org/resources
- United Nations Office on Drugs and Crime (UNODC), Human Trafficking and Migrant Smuggling
  publications https://www.unodc.org/unodc/en/human-trafficking/publications.html

Thematic publication catalogues

- Anti-Slavery International, Resources on Modern Slavery
  https://www.antislavery.org/reports-and-resources/
- Independent Anti-Slavery Commissioner's Office (UK), Resources
  https://www.antislaverycommissioner.co.uk/resources/
- United Nations Office on Drugs and Crime (UNODC), Human Trafficking Knowledge Portal
  https://sherloc.unodc.org/cld/v3/htms/
- Walk Free, Business & Investor Toolkit
  https://www.walkfree.org/projects/business-and-investor-toolkit/

Category 2: Contextual information about societal expectations

A second important category of data consists of sources of contextual information about societal expectations, broadly defined. Two distinct types of data are worth highlighting within this category, namely:

- Relevant laws and regulations and
- Non-legal expectations on the part of different societal stakeholders.

As with the previous category, the focus of information contained in these types of data tends to be defined geographically (typically at the national or international level) or by particular industries or commodities. Data in this category therefore does not lend itself to measuring company performance, but it can be relevant to all other three tasks. When it comes to *assessing salience*, modern slavery-related laws or non-legal expectations voiced by stakeholders can be useful as an indirect source of information.[47] In relation to the tasks of *assessing financial materiality* and *defining performance expectations*, the identification of applicable legal requirements and stakeholder expectations can play a more direct role: as far as assessing financial materiality is concerned, such requirements and expectations represent potential determinants of the financial impact associated with poor company performance on the issue of modern slavery; in terms of defining performance expectations, investors may seek to incorporate legal requirements and expectations expressed by other stakeholders into their own performance expectations.

4. Relevant laws and regulations

Laws and regulations that are relevant in relation to a given company of interest can take various forms. Generally speaking, there are two kinds of provisions worth distinguishing:

- Provisions concerning the legal status of modern slavery and related offences in general (e.g., the criminalisation of forced labour and human trafficking); and
- Provisions specifically related to business conduct (see examples in the box below)

Across these two categories, relevant provisions can be rooted in international law (such as international and regional human rights treaties or ILO Conventions) or domestic laws and regulations (such as constitutional law, criminal law, labour laws, company and director liability laws, laws that stipulate corporate disclosure or due diligence requirements, customs regulations, or public sector procurement rules).

Single pieces of legislation can contain both of the abovementioned types of provisions. An example for this is the UK Modern Slavery Act 2015, which both criminalises modern slavery and requires certain companies to report on their due diligence measures in relation to modern slavery.[48]

Moreover, legal or regulatory provisions can be relevant to the issue of modern slavery without their scope being defined by this issue. For example, relevant corporate disclosure and due diligence requirements are not limited to provisions that are framed in terms of modern slavery, such as the

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47. As with many other insights that may be derived from the different types of data discussed in this chapter, it is important to emphasise that an absence of evidence (in this case, an absence of modern slavery-related legislation or government/stakeholder action) does not represent evidence of absence (in this case, evidence of the issue not being salient).

48. For a more detailed discussion of the corporate reporting requirements in the UK Modern Slavery Act, see Bonavero Institute of Human Rights and the Bingham Centre for the Rule of Law commissioned by the Modern Slavery PEC, Effectiveness of Section 54 of the Modern Slavery Act, 2021, https://modernslaverypec.org/resources/tisc-effectiveness.

UK's and the Australian Modern Slavery Acts or the California Transparency in Supply Chains Act; they also include provisions that have a *broader* focus – for example, on human rights[49] or social and environmental issues[50] in general – or are dedicated to certain *narrower* issues that intersect with the issue of modern slavery, such as the responsible sourcing of minerals.[51]

Table 6

Examples of legal and regulatory provisions specifically relevant to business conduct:

Disclosure and transparency
- UK Modern Slavery Act 2015
- Australia Modern Slavery Act 2018
- California Transparency in Supply Chains Act 2010
- US Section 1502 of the Dodd-Frank Act (conflict minerals) 2010
- EU Non-Financial Reporting Directive 2014

Due diligence requirements
- France Duty of Vigilance Law 2017
- EU Conflict Minerals Regulation 2017
- EU Human Rights and Environmental Due Diligence Directive [expected 2021]

Public sector procurement rules with mandated sensitivity to modern slavery risks
- UK Public Contracts Regulations 2015
- US Federal Acquisition Regulation

Import restrictions
- US, Section 307 of the Tariff Act of 1930 (prohibition of imports produced with forced labour)[52]

Data producers

Laws and regulations, which represent the primary data of interest in this category, are produced by governments and intergovernmental organisations. Summaries and analysis produced by law firms, commercial information providers, or academic researchers can be a useful secondary source of information.

Access and data format

For many national jurisdictions as well as for international law, the text of existing laws and regulations is published in easily accessible ways by the relevant governments or international bodies, often in digital form through their websites. In addition, there is a range of independently maintained catalogues and databases with international scope that can make the search for relevant legal and regulatory provisions much less cumbersome, especially when multiple laws and jurisdictions are involved. Of particular note, next to general legal databases that are publicly accessible or provided as a commercial service, there are several openly accessible catalogues dedicated to laws and regulations that are specifically relevant to the issue of modern slavery.

Across these different ways of accessing relevant information, data is usually unstructured and takes the form of text that is embedded in websites or documents.

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49. E.g., French Duty of Vigilance Law, above n 22.

50. E.g., the EU Directive on Non-Financial Reporting and the respective national laws implementing it.

51. Examples include the European Commission's Conflict Minerals Regulation which came into force in January 2021 or Section 1502 of the Dodd-Frank Act in the US.

52. See U.S. Customs and Border Protection, above n 24.

Table 7

> ### Examples of resources dedicated to tracking relevant laws and regulations:
>
> - Antislavery in Domestic Legislation https://antislaverylaw.ac.uk
> - International Labour Organisation (ILO), Employment Protection Legislation Database (EPLex) https://eplex.ilo.org
> - Labour Exploitation Accountability Hub https://accountabilityhub.org
> - United Nations Office on Drugs and Crime (UNODC), Human Trafficking Knowledge Portal, Database of Legislation and Case Law Database https://sherloc.unodc.org/cld/v3/htms/
> - Wage Indicator Foundation, Labor Law Around the World https://wageindicator.org/labour-laws/labour-law-around-the-world

5. Non-legal expectations across different stakeholder groups

In addition to laws and regulations, there are various other sources of societal expectations on companies' behaviour in relation to the issue of modern slavery that, while not legally binding, can be similarly relevant for purposes of assessing salience, financial materiality, or defining performance expectations. The content of data on such expectations can range from high-level principles to detailed standards, best practice guidelines, codes of conduct, certification and accreditation requirements, or other normative documents. Expectations may focus on disclosures and transparency, due diligence and other forms of substantive action, or a combination of both. Depending on the initiative, they can apply to companies globally or be aimed at companies operating within specific jurisdictions, geographical areas, industries, or commodity supply chains.

Data producers

Non-legal expectations can originate from initiatives that are driven by individual stakeholder groups – including initiatives led by investors, business groups, civil society organisations, or governments – or take a multi-stakeholder form. As with relevant laws and regulations, initiatives that give rise to expectations on corporate conduct in relation to the issue of modern slavery are not necessarily focused on modern slavery in particular. In addition to modern slavery-focused initiatives, relevant examples include initiatives with a broader focus on labour rights, human rights, or responsible and sustainable business conduct in general.

Table 14 at the end of this report (see Appendix) provides an overview of prominent initiatives across different stakeholder groups and levels of focus.

Access and data format

Since most relevant initiatives of the kinds listed in the appendix operate through public advocacy, information about their expectations is usually openly accessible, often through their web presence. In some cases, details of normative documents or procedures may only be available to member organisations. Given the multitude of existing initiatives, identifying relevant initiatives and resources can be one of the biggest obstacles to obtaining data about them. Registers of stakeholder initiatives with relevance to the issue of modern slavery[53] and repositories of relevant publications[54] can be useful in overcoming this challenge.

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53. Such as the Interactive Map for Business of Anti-Human Trafficking Organizations (https://www.modernslaverymap.org).
54. For example, the Sustainability, Help, Information, Frameworks/Findings and Tools Platform (SHIFT) (http://shift.tools/).

In terms of format, information about non-legal expectations will generally need to be extracted from unstructured data such as website content or documents published by relevant initiatives and stakeholders.

Category 3: Company-specific information controlled by companies of interest

This category captures sources or company-specific information that are characterised by the fact that they are controlled by the relevant companies themselves. The following three notable types of data fall within this category:

· Relevant non-financial disclosures

· Company registry entries and financial statements

· Relevant non-public data within companies' control

The informational focus of data within this category differs from that of data in categories 1 and 2. Rather than focusing on geographical areas, industries, or commodities, information contained in the mentioned types of data focuses directly on specific companies of interest (and, where relevant, their business partners).

As a result, information contained in these types of data is also relevant to a broader range of tasks. In particular, such information can not only be useful for the tasks of *assessing salience, assessing financial materiality, and defining performance expectations*, but also for the task of *measuring company performance*.

Investors may seek access to company-specific information about a given investee company of interest as well as about companies that do business with that company.

6. Relevant non-financial disclosures

Non-financial disclosures made by investee companies can play a central role in understanding their situation in relation to the issue of modern slavery in terms of risk exposure and risk management. Such disclosures can be made in response to legal requirements (see the box above on examples of legal and regulatory provisions specifically relevant to business conduct) or on a voluntary basis. Relevant sources of information can take the form of publications dedicated to the issue of modern slavery, as in the prominent case of modern slavery statements, or publications that contain relevant non-financial information while having a broader focus, such as publications focused on workforce management, human rights due diligence, corporate sustainability reports, annual reports, or proxy statements and other regulatory filings.

The types of information contained in relevant disclosures varies significantly across these different formats. The range of information that disclosures may contain is illustrated by the UK Government's statutory guidance on modern slavery statements which identifies the following six areas:

- organisation structure and supply chains;
- policies in relation to slavery and human trafficking;
- due diligence processes;
- risk assessment and management;
- key performance indicators to measure effectiveness of steps being taken;
- training on modern slavery and trafficking.[55]

Data producers

Non-financial disclosures are produced and published by the companies in question.

Access and data format

Given their nature, disclosures are generally publicly available and made accessible by the companies in question, often through their website. In addition, there are several databases and registries dedicated to collecting certain types of disclosure documents published by companies and making them accessible via a single platform (see Table 8 below).

In the majority of cases, disclosures are presented as unstructured data, typically in the form of PDF files, but some platforms provide access to structured data. There are noteworthy initiatives that seek to address data format challenges in the context of non-financial disclosures. This includes efforts to transform the content of Modern Slavery Statements into structured data[56] and to develop common data standards and identifiers for supplier lists.[57]

55. UK Government, Guidance: Publish an Annual Modern Slavery Statement, 2019, https://www.gov.uk/guidance/publish-an-annual-modern-slavery-statement.

56. Walk Free, 'Artificial Intelligence to Assist in the Fight against Modern Slavery', 15 June 2020, https://www.walkfree.org/news/2020/artificial-intelligence-to-assist-in-the-fight-against-modern-slavery/.

57. Two prominent examples in the apparel sector are the Open Data Standard for the Apparel Sector (https://odsas.org) and the unique facility identifiers maintained by the Open Apparel Registry (https://openapparel.org).

Table 8

Examples of data access platforms for relevant non-financial disclosures

* indicates the availability of data in structured form

Dedicated focus on Modern Slavery Statements

- Australian Government's Online Register for Modern Slavery Statements
  https://modernslaveryregister.gov.au
- Business & Human Rights Resource Centre, Modern Slavery Registry Archive (2015-2020)*
  https://www.business-humanrights.org/en/from-us/modern-slavery-statements/
- Github repository maintained by The Future Society containing data scraped from the Modern Slavery Registry: https://github.com/the-future-society/modern-slavery-statements-research
- UK Government, Register for Modern Slavery Statements
  https://modern-slavery-statement-registry.service.gov.uk

Broader focus (in some cases including Modern Slavery Statements)

- Bank Track https://www.banktrack.org/search#category=banks
- Companies House (UK)* https://beta.companieshouse.gov.uk
  https://download.companieshouse.gov.uk/en_output.html
- Datamaran https://www.datamaran.com
- Open Apparel Registry (facility list data from apparel brands) https://openapparel.org
- OpenCorporates* https://opencorporates.com, https://api.opencorporates.com
- Shift, UNGP Reporting Database https://www.ungpreporting.org/database-analysis/
- TISC Report* https://tiscreport.org
- United States Securities and Exchange Commission, EDGAR filings database
  https://www.sec.gov/edgar/search/
- Wikirate* https://wikirate.org
- Workforce Disclosure Initiative, public data* https://shareaction.org/wdi/2019-public-data/

7. Company registry entries and financial statements

In addition to non-financial disclosures, traditional company filings such as company registry entries or financial statements can also be useful in shedding light on a company's situation in relation to modern slavery. Information contained in these sources typically does not provide direct insights into a company's risk exposure or risks management but can nevertheless help answer relevant questions. For example, company registry information can serve to provide an understanding of a company's structure or may include potential indicators of suspicious activity and links to modern slavery (e.g., based on the identity of company directors, registered addresses, or signs of 'phoenixing' to avoid legal proceedings or conceal historical problems).[58] Information in financial statements can shed light on the relative significance of a company's business activities in different areas and the scope of its financial resources to deal with risk. Finally, company registry and financial information can both be relevant to determining the applicability of legal requirements to a given company which can depend, for example, on the company's domicile or annual turnover.

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58. For discussions of phoenixing in the context of modern slavery, see, for example, Labour Behind the Label, Boohoo & COVID-19, 2020, https://labourbehindthelabel.net/wp-content/uploads/2020/06/LBL-Boohoo-WEB.pdf and The Centre for Social Justice, 'Parallel Societies: Slavery, Exploitation and Criminal Subculture in Leicester', 2020, https://www.centreforsocialjustice.org.uk/wp-content/uploads/2020/10/CSJ-JC_Parallel-Societies-Leicester_FINAL.pdf.

Data producers

Relevant company filings are produced and published by the company in question.

Access and data format

In many jurisdictions, company registry entries and financial statements for companies registered in the relevant jurisdiction are publicly accessible through government-maintained databases. In addition, there are platforms that aim to provide access to company filings across different jurisdictions, generally drawing on the content of government-maintained databases but sometimes providing companies with the option of making direct submissions. In the case of companies that are registered in jurisdictions without a publicly accessible register or that are not covered by filing requirements, accessing company registry information and financial statement can be difficult, although it may be possible to obtain relevant information from company websites.

Financial information is usually contained in documents, taking an unstructured form. In the case of company registry information, some platforms provide ways to access information in the form of structured datasets.

Table 9

Examples of data access platforms for company registry entries and financial statements

* indicates the availability of data in structured form

Jurisdiction-specific platforms

- Companies House (UK)* https://beta.companieshouse.gov.uk
- For a non-exhaustive list of government-maintained databases in other jurisdictions, see https://www.gov.uk/government/publications/overseas-registries/overseas-registries

Cross-jurisdictional platforms

- OpenCorporates* https://opencorporates.com
- TISC Report* https://tiscreport.org

8. Relevant non-public data within companies' control

Going beyond publicly disclosed information, there are various forms of non-public data within companies' control that are relevant to the goal of understanding the company's risk exposure and risk management practices. Information contained in such data can relate to the company's own operations or its business relationships with suppliers and clients. Examples include details about recruitment practices, about procurement and client relationships, or about the structure and outcomes of relevant risk assessment and risk management processes (e.g., human rights impact assessments, codes of conducts, supply chain mapping exercises, supplier audits, grievance mechanisms, or the nature of responses to problems and incidents).

Insofar as non-financial disclosures touch on these topics, they typically provide a far less detailed picture compared to the picture that is available on the basis of such internal data. In addition, the content of non-financial disclosures is often less complete. For example, while disclosures in many cases include descriptions of due diligence processes, it is less common for them to contain information on outcomes and results. Internal data therefore has the potential to provide valuable information that goes beyond the content of any non-financial disclosures, company registry entries, or financial statements.

Data producers

Data producers include the company of interest as well as other organisations within the company's value chain. Furthermore, there are various types of third-party solution providers that companies may rely on to assess and manage modern slavery risks and that can be considered data producers in this context.

Possible third-party providers include consultancies providing tailored advisory services or contractors hired to conduct audits. As a particularly significant development from a data perspective, there is also a growing number of providers of relevant data- and technology-driven solutions, especially when it comes to supply chain risks.

In addition to a general and diverse range of digital tools and platforms intended to help companies in assessing and managing supply chain risks related to modern slavery or corporate responsibility and sustainability more broadly, there are two specific types of emerging solutions that have been attracting growing attention in recent years:

- Solutions that make use of **blockchain technology** for information recording and assurance purposes.[59] Examples include a growing number of blockchain-enabled tools designed to trace the movement of goods through supply chains as well as solutions aimed at ensuring the validity of and providing transparent access to employment records across supply chains.

- Solutions that focus on collecting **'worker voice'** information through different forms of direct communication with workers within a company's supply chain. Such worker voice data has been recognised to provide a useful complement to traditional worksite audits and, despite limitations, can help overcome some of the blind spots of worksite audits.[60]

Table 10 provides an overview of prominent examples of data- and technology-driven solution providers.

Access and data format

By definition, this type of data is not openly accessible. Companies tend to treat the information contained in such data as confidential and commercially sensitive, which can be one of the reasons for excluding it from non-financial disclosures made by the company in question. Nevertheless, investors can engage with companies to encourage them to make relevant details available to them. Insofar as companies rely on third-party solutions, the data infrastructure that underpins these solutions can potentially facilitate access to the data in question. Investors may be able to obtain efficient access to relevant internal data directly from the relevant solution providers, subject to authorisation by the company in question. Indeed, some solutions and tools have design features explicitly intended to share information with external stakeholders.[61]

Since this type of data is used for operational purposes, it is often stored in structured forms. This is especially true for data that is generated through the use of data- and technology-driven solutions and tools of the kinds highlighted in Table 10.

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59. For general discussions of potential uses, including limitations, of blockchain technology in this context, see DLA Piper and others, Supply Chain Human Rights Risk Management: Blockchain and Emerging Technology, 2018, https://www.dlapiper.com/~/media/files/insights/publications/2018/11/blockchain_report.pdf; The Mekong Club, Using Blockchain to Combat Modern Slavery, 2018, https://themekongclub.org/wp-content/uploads/2018/04/Blockchain-for-Modern-Slavery_For-web.pdf; Martijn Boersma and Justine Nolan, Blockchain Can Help Break the Chains of Modern Slavery, but It Is Not a Complete Solution, The Conversation, 2 May 2019, https://theconversation.com/blockchain-can-help-break-the-chains-of-modern-slavery-but-it-is-not-a-complete-solution-115358.

60. For general discussions of the potential, limitations, and ethics of worker voice technology, see CDC Group, Enhancing Workforce Engagement with Technology, 2021, https://assets.cdcgroup.com/wp-content/uploads/2021/04/28181743/Enhancing-worker-engagement-with-technology_CDC-Group.pdf; West Principles, White Paper: Realizing the Benefits of Worker Reporting Digital Tools, 2019, https://westprindsprod.wpengine.com/wp-content/uploads/2019/03/west_principles_white_paper-realizing_the_benefits_of_worker_reporting_digital_tools.pdf; Jesse Nishinaga and Faris Natour, Technology Solutions for Advancing Human Rights in Global Supply Chains, Human Rights and Business Initiative, UC Berkeley, 2019, https://humanrights.berkeley.edu/publications/technology-solutions-advancing-human-rights-global-supply-chains; Lisa Rende Taylor and Elena Shih, 'Worker Feedback Technologies and Combatting Modern Slavery in Global Supply Chains: Examining the Effectiveness of Remediation-Oriented and Due-Diligence-Oriented Technologies in Identifying and Addressing Forced Labour and Human Trafficking', Journal of the British Academy, 7(S1), 2019, 131–165, https://www.thebritishacademy.ac.uk/documents/944/JBA-7s1-06-Rende-Taylor-Shih.pdf.

61. Examples include Provnance, OpenSC and Sourcemap.

Table 10

Examples of providers of relevant data- and technology-driven solutions for managing supply chain risks

Due diligence and risk management (**incl. supply chain mapping**)

Focus on modern slavery

- Dun & Bradstreet, Human Trafficking Risk Index https://www-stgdev.dnb.co.uk/products/operations-supply/human-trafficking-risk-index-combat-forced-labor.html
- Labor Safe Screen https://www.sustainability-incubator.com/servicedir/labor-safe-screen/
- Made in a Free World, FRDM https://www.frdm.co
- Slavefreetrade, Libertas https://slavefreetrade.org/organisations/
- Verité, CUMULUS Forced Labor Screen https://www.verite.org/cumulus/

Focus on human rights, ethically responsible sourcing, sustainability

- Atlanta https://altana.ai
- Bluenumber https://www.bluenumber.com/en/
- ChainPoint https://www.chainpoint.com
- EcoVadis https://ecovadis.com
- Enablon https://enablon.com
- ethiXbase https://ethixbase.com
- Greenstone+ Supply Chain Software https://www.greenstoneplus.com/about-us/supply-chain-software
- Phylagen Origin (DNA) https://www.phylagen.com/solutions/phylagen-origin
- RCS Global https://www.rcsglobal.com/
- Resilinc https://solutions.resilinc.com/supplier-risk-scorecard/
- Sedex Advance https://www.sedex.com
- Sourcemap https://www.sourcemap.com
- String3 https://getstring3.com
- Supply Shift https://www.supplyshift.net
- Sustainabill https://sustainabill.de
- Timby https://timby.org/
- Transparency-One https://www.transparency-one.com
- Verifik8 https://www.verifik8.com

Note: Some of the ESG data providers listed in Table 11 also offer supply chain management solutions

Blockchain-based solutions

- Diginex eMin (employment contracts) https://www.diginex-solutions.com/emin
- Everledger (supply chain tracing) https://www.everledger.io
- Fishcoin (supply chain tracing) https://fishcoin.co
- Minespider (supply chain tracing) https://www.minespider.com/
- OpenSC (supply chain tracing) https://opensc.org
- Provenance (supply chain tracing) https://www.provenance.org/
- Traseable (supply chain tracing) https://www.traseable.com
- Wholechain (supply chain tracing) https://wholechain.com/

Worker voice

- &Wider https://www.andwider.com
- Apprise https://www.apprise.solutions/
- Elevate, LaborLink https://www.elevatelimited.com/services/consulting/worker-engagement/
- Issara Institute, Inclusive Labor Monitoring System and Golden Dreams https://www.issarainstitute.org

- Labor Solutions https://www.laborsolutions.tech
- MicroBenefits, ComapnyIQ https://www.microbenefits.com
- Quizrr https://www.quizrr.se
- Slavefreetrade, Libertas https://slavefreetrade.org/organisations/
- Ulula https://ulula.com
- Work Ahead https://www.workahead.co
- Worker Connect https://www.workerconnect.org

Category 4: Independent company-specific information

As a final group, there are various sources of information that relate to specific companies without being controlled by these companies. The following types of data containing such independent company-specific information are worth distinguishing:

- Company ratings
- Data on independent audits, certification, or accreditation
- Data on company-specific controversies, campaigns, and proceedings
- Observable business activity footprints

Like in the case of category 3, the information contained in these types of data focuses on specific companies (including their business partners) and can be useful in relation to all four information tasks, including measuring company performance. At the same time, data in this category can provide unique insights about companies when compared to data that is controlled by companies themselves. The types of data detailed below can contain aspects of company-specific information that go beyond any information managed and used by the relevant companies themselves. This is most clearly illustrated by independent company performance assessments (e.g., company ratings), which can provide a direct answer to the task of measuring company performance in ways that information controlled by companies themselves usually does not do. In addition, data in category 4 can be uniquely valuable on account of its independence, which can make it more trustworthy or provide a check concerning the validity of company-controlled information.

As in the case of Category 3, investors may seek access to company-specific information about a given investee company of interest as well as about companies that do business with that company.

9. Company ratings

Company ratings provide independent judgments on the quality of companies' practices in a certain area of interest. They are produced by various types of independent organisations and can draw on different kinds of information. In contrast to independent audit, certification, or accreditation schemes (see Section 10 below), they are initiated by rating providers rather than the companies being assessed. While ratings may take into account information provided by companies for the specific purpose of the rating, they are typically designed not to depend on such information. As a result, they do not presuppose a cooperative relationship between the rating provider and the company being assessed.

Rating data with relevance to the issue of modern slavery includes ratings that are dedicated specifically to this particular issue as well as ratings with a broader scope on human rights, corporate responsibility, or ESG issues in general. The expectations against which companies'

behaviour is assessed can take the form of disclosure expectations (e.g., assessing whether companies have published modern slavery statements and whether the content of these statements covers the categories of information they are expected to cover), substantive expectations (e.g., assessing whether companies' risk assessment or management processes are sufficiently robust), or a combination of both.

Many ratings are based on information contained in independently existing public disclosures made by companies. Where this is the case, the information they convey could be obtained by analysing companies' non-financial disclosures directly but can provide a useful shortcut to doing so. In some cases, rating methodologies also involve soliciting information from companies through dedicated surveys. In such cases, survey responses may contain information that companies are not prepared to share otherwise (drawing on data described in Section 8 above).

Insofar as ratings are based on public or non-public information controlled by the companies being rated, their validity can be difficult to judge since it depends on whether the picture that companies present of themselves is complete and accurate. Some ratings seek to overcome such limitations by focusing on or incorporating information contained in the types of data discussed in Sections 10, 11 and 12 below, the most prominent example being the use of news media information.

The way in which assessment results – the data of interest in this case – are presented can vary significantly. Possible formats include binary indicators of whether a company's practices satisfy certain criteria, qualitative descriptions, and numerical scores. In some cases, assessment reports combine numerical summary scores with more detailed qualitative descriptions. In others, they are limited to one or the other – including, in the case of some ESG ratings, a single numerical score intended to summarise a company's performance across the full range of environmental, social, and governance issues.

Data producers

Producers of relevant company ratings can roughly be divided into two categories. The first category consists of organisations that produce thematically driven company assessments, i.e., ratings that have a particular thematic focus on a certain issue area or industry. Many data producers in this category have non-profit objectives and the ratings they produce are often designed to be useful to multiple stakeholder groups. Prominent examples in this category include Know the Chain (with a focus on modern slavery) and the Corporate Human Rights Benchmark (with a broader focus on human rights). As a second category, there is a large number of general ESG rating producers. These are typically commercial providers whose offerings include data products specifically intended for investors. Such commercial products may rely on proprietary analysis, rating data from other sources, or a combination of both.[62] Table 11 provides an overview of prominent examples in both categories.

One important difference between different ratings consists of the role of considerations of financial materiality in the rating approach. While many ratings, especially thematically driven ones, adopt a broad perspective that is not constrained by considerations of financial materiality, others include financial materiality as an explicit methodological filter.

The number and types of companies covered by ratings also vary widely. Some ratings only cover companies of a particular size or prominence. This is particularly true for thematically driven ratings. General ESG ratings often aim to cover all (publicly traded) companies within a given market but may nevertheless lack data for some company segments. Regardless of such differences in coverage, ratings generally share the fact that decisions about which companies to include are determined by the priorities of the organisation conducting the rating and their

62. CSRHub is an example of a commercial ESG rating product that is designed to build on rating information from openly available sources and commercial providers to arrive at a 'consensus view' on a company's ESG performance.

audience rather than by the companies being rated. This is a contrast to independent audit, certification, and accreditation schemes whose coverage is determined by companies' decisions to participate in such schemes.

Access and data format

Company ratings are accessible through the organisations producing them, either free of charge (as is the case for many thematically driven ratings) or based on paid subscriptions (as is the case for most general ESG rating providers). There are also products and initiatives that aim to make ratings from different producers accessible via a single platform.[63]

For almost all ratings that involve numerical scores, rating data is readily available in structured formats. In the case of ratings that only contain qualitative assessments, data is often embedded in documents and not available in structured form.

Table 11

Examples of company rating data

* indicates the availability of data in structured form

Thematically driven ratings

Assessments that include quantitative scores:

- Abolish Foundation, BuyFair App https://www.abolishfoundation.com/buyfair/
- Corporate Human Rights Benchmark* https://www.corporatebenchmark.org/download-benchmark-data (part of the World Benchmarking Alliance https://www.worldbenchmarkingalliance.org)
- Fashion Revolution, Fashion Transparency Index 2020* https://www.fashionrevolution.org/about/transparency/, structured data available via WikiRate (https://wikirate.org/Fashion_Revolution+Fashion_Transparency_Index_2020)*
- GFEMS Modern Slavery Screening Tool* (in development) https://www.gfems.org/global-finance
- JUST Capital Ranking* https://justcapital.com/rankings/
- Know the Chain Company List* https://knowthechain.org/company-lists/, https://knowthechain.org/benchmark-downloads/scorecard-downloads/
- Responsible Mining Foundation, Responsible Mining Index 2020* https://2020.responsibleminingindex.org/en
- Responsible Sourcing Network, Mining the Disclosures 2019 https://www.sourcingnetwork.org/mining-the-disclosures

Qualitative assessments:

- Business & Human Rights Resource Centre, Company Dashboards https://www.business-humanrights.org/en/companies/#company_search
- Ethical Consumer, Company Profiles https://www.ethicalconsumer.org
- Fair Wear Foundation, Brand Performance Check https://www.fairwear.org/brands
- Fashion Checker https://fashionchecker.org
- ICCR Shareholder Exchange https://www.iccr.org/data-driven-engagement-strategies-powered-iccrs-shareholder-exchange

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63. For an open-access example of a platform that provides access to ratings from various producers, see WikiRate (https://wikirate.org). For a commercial example, see CSRHub (https://www.csrhub.com).

Remake (apparel brands) 45
- TISC Report* https://tiscreport.org
- Wikirate* https://wikirate.org

General ESG ratings
- Arabesque S-Ray* https://www.arabesque.com/s-ray/
- Bloomberg, ES Scores and ESG Disclosure Scores
  https://www.bloomberg.com/professional/solution/sustainable-finance/
- CSRHub* https://www.csrhub.com
- Diginex ESG* https://www.diginex-solutions.com/diginexesg
- EcoDesk* https://www.ecodesk.com
- FTSE Russell, ESG Ratings* https://www.ftserussell.com/data/sustainability-and-esg-data/esg-ratings
- Greenstone+ Investor ESG Software* https://www.greenstoneplus.com
- MSCI ESG raw data, scores and ratings* https://www.msci.com
- Refinitiv, ESG data and scores* https://www.refinitiv.com/en/financial-data/company-data/esg-
  data, https://www.refinitiv.com/en/sustainable-finance/esg-scores
- RepRisk* https://www.reprisk.com
- S&P Global ESG Solutions* https://www.spglobal.com/en/capabilities/esg-solutions
- S&P Dow Jones Indices, ESG Scores*
  https://www.spglobal.com/spdji/en/landing/investment-themes/esg-scores/
- Sustainalytics* https://www.sustainalytics.com
- Vigeo Eiris* https://vigeo-eiris.com

10. Data on independent audits, certification, or accreditation

Companies or their suppliers may participate in independently administered audit, certification or accreditation schemes that are relevant to the issue of modern slavery. This includes schemes whose scope comprises issues that are directly related to modern slavery, such as recruitment or supply chain due diligence practices. It also includes schemes that touch on other aspects of responsible business conduct that can be correlated with modern slavery risks, such as workplace safety and culture or labour rights, human rights and sustainability more broadly.

While it is important to be aware of the limitations of such schemes,[64] data about independent audits, certification, and accreditation can be a source of useful information that is not fully accounted for by the other types of data mentioned so far. Some companies may include information about their participation in relevant schemes as part of their own non-financial disclosures (data type 6), but this information differs from other forms of non-financial disclosures in reflecting and independent assessment of company practices. Moreover, there are companies that participate in relevant schemes without disclosing the resulting information themselves.

Data producers

Many of the initiatives listed in Table 14 (see Appendix) administer relevant schemes and represent the most prominent data producers in this context (as indicated in the table). Like the initiatives themselves, these schemes and the data they produce can be focused on companies operating in a specific industry or have cross-sectoral application.

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64. Changing Markets, The False Promise of Certification, 2018, https://changingmarkets.org/wp-content/uploads/2018/05/False-promise_full-report-ENG.pdf.

Access and data format

Some schemes make registries of participating companies publicly available via their website, sometimes in structured formats (see Appendix). Where available, this form of accessing information can be useful to investors even where the same information is also published by individual companies themselves, as it provides an additional level of assurance about the validity of information as well as efficient access to information about all participating companies through a single source. Moreover, it can be the only mode of access if participating companies do not release information about their participation themselves in ways that are easily accessible to investors. This can be the case especially for smaller companies and companies situated at the upper end of international supply chains which often are not subject to legal non-financial reporting requirements, such as individual fisheries, agricultural producers, apparel factories, or mines. Other schemes, especially those that provide publicly well-known certification seals and have large numbers of participants, rely exclusively on the public display of certificates and other forms of communication by participating companies as the only mode of communicating participation without providing any form of central registry.

In addition to information about the participation of individual companies, determining a scheme's significance in relation to modern slavery risks also requires information about the scheme's requirements and method of assessment. This information is often publicly available from the body administering the scheme, typically in the form of unstructured data such as descriptions of the scheme on websites or in published documents.

11. Data on company-specific controversies, campaigns, and proceedings

Companies can be the subject of public controversies and various forms of targeted campaigns or formal proceedings. Insofar as the substance of such controversies, campaigns, and proceedings has implications for the issue of modern slavery, they represent a third relevant source of independent company-specific information. Adopting a broad definition, this type of data includes a wide range of actions that different stakeholders may take in relation to individual companies. Specific information sources that are worth distinguishing include:

- Investor-initiated company engagement and shareholder activism
- Targeted campaigns initiated by other stakeholder groups
- Formal non-legal complaint mechanisms
- Law enforcement and judicial proceedings
- Allegations reported through news media and other public-facing communication channels

Data producers

Reflecting this diversity of information sources, data on controversies, campaigns, and proceedings can originate from various types of organisations. This includes the different kinds of initiatives listed in Table 14 (Appendix): investor-led initiatives produce data on company engagement campaigns, shareholder resolutions, and other activities; civil society-led initiatives collect information about allegations and may produce data associated with targeted advocacy or boycott campaigns; and some initiatives include formal complaint mechanisms, such as the national grievance mechanisms established under the OECD Guidelines for Multinational Enterprises. In addition, government bodies produce data about law enforcement and judicial proceedings and news media organisations, social media users, and advocacy organisations can act as publishers of information about allegations that may not be recorded elsewhere.

Access and data format

Data on relevant law enforcement and judicial proceedings can be difficult to access. Data for the other abovementioned types of information sources is often accessible directly through the relevant data producers. For data that originates from the activities of stakeholder initiatives, social media, or advocacy organisations, data is usually publicly accessible. In the case of news media content, access may require paid subscriptions, depending on the outlet. In addition to direct access, there are openly accessible and commercial platforms that act as aggregators of relevant data from different sources, such as different news media outlets or complaint mechanisms. Table 12 provides a list of prominent examples across these different forms of data access. In some cases, data is stored and presented in structured or semi-structured forms.

Table 12

Examples of access to data on company-specific campaigns, allegations, and proceedings

* indicates the availability of data in structured form

Note: In the interest of brevity, individual news media organisations and social media platforms are omitted from this list

Data on company-specific investor activity

- As You Sow, Shareholder Resolutions Tracker* https://www.asyousow.org/resolutions-tracker
- Committee on Workers' Capital, News and Proxy Alerts https://www.workerscapital.org/documents
- Interfaith Centre on Corporate Responsibility, various resources (updates, lists of corporate engagements and shareholder resolutions, Shareholder Exchange)*https://www.iccr.org
- Shareholder Association for Research and Education (SHARE)*, Shareholder Proposal Search https://share.ca/share-proposals/

Data on company-specific controversies more broadly

- Bank Track, Dodgy Deals map https://www.banktrack.org/dodgy_deals_map
- Bloomberg, Environmental & Social News Sentiment Scores* https://www.bloomberg.com/professional/solution/sustainable-finance/
- Business & Human Rights Resource Centre, Company Dashboards* https://www.business-humanrights.org/en/blog/using-our-business-and-human-rights-data-to-bring-about-change/
- Complaint data bases maintained by National Contact Points for the OECD Guidelines for Multinational Enterprises For the UK National Contact Point, https://www.gov.uk/government/collections/uk-national-contact-point-statements
- Ethical Consumer, Company Profiles and Boycotts List https://www.ethicalconsumer.org, https://www.ethicalconsumer.org/ethicalcampaigns/boycotts
- LexisNexis, Global News Aggregation* https://bis.lexisnexis.com/uk/news-aggregation
- Minerals Grievance Platform* https://mineralsgrievanceplatform.org
- OECD Watch, OECD-wide database of complaints submitted to National Contact Points for the OECD Guidelines for Multinational Enterprises* https://complaints.oecdwatch.org/cases
- Refinitiv, World-Check Risk Intelligence* https://www.refinitiv.com/en/products/world-check-kyc-screening
- RepRisk* https://www.reprisk.com
- US Customs and Border Protection, Withhold Release Orders and Findings https://www.cbp.gov/trade/programs-administration/forced-labor/withhold-release-orders-and-findings

12. Observable business activity footprints

Business activities can generate various sorts of information trails that exist independently of the kinds of company-controlled data described in Group 3. Such 'information footprints' can provide modern slavery-related insights that go beyond the information contained in the previously mentioned types of data. Three particular promising instances of such data are worth highlighting:

- Customs and logistics data
- Fishing vessel tracking data
- Financial transaction data and suspicious activity reports

The use of these three kinds of data for analytical purposes related to modern slavery is in a nascent stage. Yet, they have the potential of being useful for various purposes ranging from acting as a basis for assessing the accuracy of company-reported information to providing unique signals of exposure to modern slavery risks:

- Customs and logistics data derived from cargo manifests, customs declarations, and related documents can contain information about companies' supplier and client relationships. Such information can be used to check the accuracy of information about business relationships published in companies' financial disclosures. It can also provide a more efficient path to understanding a company's business relationships than relying on non-financial disclosures or serve as an alternative source of information where company disclosures are lacking. When connected to other data about a company's trading partners, customs and logistics data can potentially enable additional insights. For example, such data may reveal inconsistencies between a factory's production capacity and the volume of recorded shipments, which could be an indicator of hidden subcontracting involving forced labour.[65]

- Tracking data for fishing vessels, be it in the form of Automatic Identification System (AIS) data[66] or satellite images,[67] can contain signals of vessel behaviour that may be associated with the occurrence of modern slavery. For example, research suggests that fishing vessels that employ forced labour may tend to dock less frequently, avoid ports known for strict law enforcement, or disproportionately engage in trans-shipment which involves docking onto other vessels on the open sea to transfer fish catches and supplies.[68] Similarly, if vessels violate fishing rules, e.g., by fishing in prohibited areas, or switch off their satellite transponders, such behaviour may be correlated with the likelihood of the occurrence of forced labour. Based on such insights, AIS data and satellite images of vessels can be used as model inputs to predict the likelihood that individual vessels employ forced labour.[69] Such predictions can then be linked to information about vessel ownership and supply chain structures as an indicator of risk exposure for relevant companies.

65. The Global Fund to End Modern Slavery is currently developing an investment screening tool that draws on import/export data, see https://www.gfems.org/global-finance.

66. Sarah Gibbens, 'Slave Labor Is Used to Catch Fish. This Tech Aims to Stop It', National Geographic, 13 June 2019, https://www.nationalgeographic.com/environment/article/slave-labor-used-to-catch-fish-but-tech-may-help; 'Software That Detects Human Trafficking', The Economist, 5 May 2018, https://www.economist.com/science-and-technology/2018/05/03/software-that-detects-human-trafficking.

67. Robin McDowell, Martha Mendoza and Margie Mason, 'AP Tracks Slave Boats to Papua New Guinea', Associated Press, 27 July 2015, https://www.ap.org/explore/seafood-from-slaves/ap-tracks-slave-boats-to-papua-new-guinea.html; Digital Globe, Lake Volta, https://www.arcgis.com/apps/Cascade/index.html?appid=553180f8be4e40eb9e3caf8f28d25ba5.

68. Greenpeace, Seabound: The Journey to Modern Slavery on the High Seas, 2019 https://www.greenpeace.org/static/planet4-southeastasia-stateless/2019/12/b68e7b93-greenpeace-seabound-book-c.pdf; Sarah Gibbens, above n 66.

69. Gavin McDonald et al., 'Satellites Can Reveal Global Extent of Forced Labor in the World's Fishing Fleet', PNAS, 118(3), 2021, https://doi.org/10.1073/pnas.2016238117; Freedom Collaborative, Forced Labor Abuses in Fisheries: A Predictive Model for Identifying High-Risk Vessels, 2021, https://freedomcollaborative.org/webinar-library/forced-labor-abuses-in-fisheries-a-predictive-model-for-identifying-high-risk-vessels.

- Activities that involve human trafficking or the employment of forced labour can be associated with distinctive financial footprints.[70] As a result, the analysis of financial transaction data and suspicious activity reports (SARs) can be an important tool in the fight against modern slavery. Recent years have seen a growing amount of research and guidance on modern slavery risks indicators related to financial transactions.[71] This evolving area of work tends to focus on the information needs of law enforcement agencies and financial crime professionals, but insights arising from the analysis of financial transaction data could also be useful in relation to the information needs of investors.

Data producers

Customs and logistics records are collected by customs authorities and providers of logistics services. Sea vessel tracking data is produced by different publicly or privately maintained monitoring systems, which can have a national or international focus. Financial transaction data is produced by financial institutions, with suspicious activity records being submitted to and collected by national government authorities.

Access and data format

Across the three mentioned areas, data is usually available in structured formats, but there are significant differences in terms of data access. Customs and logistics data is available through specialised platforms maintained by commercial providers. While these platforms aggregate data from various countries, often aiming for global coverage, it is important to note that the kinds of information that are available differ between countries. In particular, public information about the identity of importers and exporters is only available for certain customs systems. Fishing vessel tracking data is available through several publicly accessible or commercial platforms, typically with global coverage. Financial transaction data, in contrast, tends to be generally inaccessible outside of individual financial institutions and government agencies processing SARs. Recognising the limitations of this status quo, there are several initiatives aimed at exploring new forms of data collaboration involving financial transaction data for the purpose of combatting modern slavery.

70. Independent Anti-Slavery Commissioner, Operation Fort: What Businesses Should Learn from the UK's Largest Anti-Slavery Prosecution, 2020, https://www.antislaverycommissioner.co.uk/media/1421/iasc-operation-fort-review-june-2020.pdf; Jill E B Coster van Voorhout, 'Combatting Human Trafficking Holistically through Proactive Financial Investigations', Journal of International Criminal Justice, 18(1), 2020, 87-106, https://doi.org/10.1093/jicj/mqaa013; Liechtenstein Initiative, Financial Crime Compliance to Fight Modern Slavery and Human Trafficking, https://www.fastinitiative.org/wp-content/uploads/Insight-1.pdf; Matt Friedman, 'Fighting Modern Slavery: What the Banking Sector Can Do to Help', ACAMS Today, 9 January 2020, https://www.acamstoday.org/fighting-modern-slavery-what-the-banking-sector-can-do-to-help/.

71. Financial Action Taskforce (FATF), Financial Flows from Human Trafficking, 2018, https://www.fatf-gafi.org/media/fatf/content/images/human-trafficking-2018.pdf; The Mekong Club, Modern Slavery Typologies for Financial Services Providers, 2018, https://themekongclub.org/wp-content/uploads/2018/01/Typology-Repository-for-FinServ-sector.pdf ; ACAMS, Fighting Modern Slavery and Human Trafficking, https://www.acams.org/en/training/certificates/fighting-modern-slavery-and-human-trafficking; OSCE, Following the Money: Compendium of Resources and Step-by-Step Guide to Financial Investigations Related to Trafficking in Human Beings, 2019, https://www.osce.org/files/f/documents/f/5/438323_0.pdf; FinCEN, Supplemental Advisory on Identifying and Reporting Human Trafficking and Related Activity, 2020, https://www.fincen.gov/sites/default/files/advisory/2020-10-15/Advisory%20Human%20Trafficking%20508%20FINAL_0.pdf; UK National Crime Agency, 'Indicators of Modern Slavery and Human Trafficking in the Legal Sector, 2020, https://www.nationalcrimeagency.gov.uk/who-we-are/publications/440-indicators-of-msht-in-the-legal-sector/.

Table 13

Examples of access to data on observable business footprints

(typically in structured form)

Customs and logistics data

- Descartes Datamyne https://www.descartes.com/solutions/global-trade-intelligence/import-export-data-trade-research
- IHS Markit, PIERS https://ihsmarkit.com/products/piers.html
- Import Radar https://importradar.com/
- ImportGenius https://www.importgenius.com
- Market Inside https://www.marketinsidedata.com
- S&P Global, Panjiva https://panjiva.com

Sea vessel tracking data

- exactEarth https://www.exactearth.com
- FleetMon https://www.fleetmon.com
- Global Fishing Watch https://globalfishingwatch.org
- Marine Traffic https://www.marinetraffic.com
- MyShip Tracking https://www.myshiptracking.com
- UN Global Platform Market, AIS data feed (request access) https://marketplace.officialstatistics.org/ais-data
- VesselFinder https://www.vesselfinder.com
- Maxar, Digital Globe https://www.maxar.com
- OceanMind https://www.oceanmind.global

Data collaboration initiatives for financial transaction data in the context of combatting modern slavery

- Financial Transactions and Reports Analysis Centre of Canada (FINTRAC), Project PROTECT https://www.fintrac-canafe.gc.ca/emplo/psr-eng
- Traffik Analysis Hub https://www.traffikanalysis.org
- Anti-Human Trafficking Intelligence Initiative https://followmoneyfightslavery.org
- The Knoble (Cross Industry Data Initiative) https://www.theknoble.com
- Global Fund to End Modern Slavery https://www.gfems.org
- Global Coalition to Fight Financial Crime https://www.gcffc.org/about-gcffc/

Part 3: Arriving at actionable insights and presenting them in practical ways

Having mapped out the types of relevant data, this final part turns to the issue of realising the potential of data as an enabler of effective investor action on modern slavery. In particular, we consider the limitations of the current data and solutions landscape when it comes to investors' ability to leverage the kinds of data-driven insights that would ideally be available to them and identify strategies for improvement over the status quo.

Our analysis of obstacles and possible improvements is divided into two areas: (i) arriving at actionable insights and (ii) presenting insights in practical ways to relevant decision-makers. In both of these areas, there is a gap between the resources and tools that are currently available to investors and what an ideal solutions landscape would look like. In each area, solution development efforts aimed at closing these gaps can make important contributions to unlocking the full potential of data for investor action on modern slavery.

Arriving at actionable insights

Part 2 has highlighted the potential usefulness of a wide range of types of data in addressing investors' information needs. Despite their potential utility, existing data in the outlined categories often exhibits obstacles when it comes to arriving at the kinds of actionable insights needed by investors. Issues of data quality, availability and accessibility or other limitations around how data is produced, managed, stored can limit the value of the information contained in data as well as investors' ability to analyse this information.

At the same time, there are analytical strategies and data science techniques that can help address such limitations. In particular, natural language processing and other methods can facilitate the analysis of information contained in unstructured data; and advanced analytical approaches that draw on the information contained in existing data can help overcome some of the limitations of this information and lead to novel or improved insights that go beyond the insights that are readily available to investors in the current landscape.

Obstacles

Generally speaking, data quality issues are a common obstacle in moving from existing data to meaningful and actionable insights in relation to the issue of modern slavery. Like in any context that involves data, the utility of the various types of data described in Part 2 crucially depends on data quality aspects such as accuracy, reliability, validity, and recency. The wide range of data sources, data producers, and data recording contexts that characterises the modern slavery data landscape can make it particularly difficult to judge the quality of individual instances of data. For example, it can be challenging to assess whether the information contained in a given dataset is up to date or to what extent it may be affected by potential biases and errors.

In addition to these general considerations, four obstacles are particularly salient for the types of data outlined in Part 2: i) empirical blind spots; ii) comparability; iii) ease of analysis; and iv) data access.

i. Empirical blind spots

As a first common limitation across different types of data, existing data often provides only an incomplete picture of the reality that it is intended to capture or exhibits other gaps of information. The extent of such 'empirical blind spots' can be difficult to determine, which makes it challenging to account for them when attempting to draw actionable conclusions from data. Moreover, a lack of awareness of blind spots can lead to false conclusions about the empirical reality of interest by failing to consider that an absence of evidence does not equate to evidence of absence.

Empirical blind spots can have different roots, as the following examples illustrate:

- **The hidden nature of modern slavery.** By its nature, modern slavery is often hidden, making occurrences of modern slavery difficult to detect. This will often limit the inferences that data about modern slavery allows for. For example, information about known instances of modern slavery will necessarily provide an incomplete picture of the occurrence of modern slavery and estimates that are designed to account for such incompleteness are subject to inherent limitations in their success of doing so.

- **Partial coverage in datasets.** Existing data or datasets are often limited in their coverage when compared to the global perspective that is typically of interest to investors. That is to say, for the variables (or aspects of information) covered by a dataset, its scope is limited to observations within a certain perimeter. For example, studies on the occurrence of modern slavery may focus on a given geographical area or a given industry, without this necessarily indicating anything about the comparative significance of the issue in other areas or industries. Similarly, company performance rating data is often limited to certain types of companies (e.g., based on size or the country in which the company is incorporated) without the issues covered by the rating necessarily being any less relevant in the case of companies that fall outside this scope of coverage.

- **Inherent limitations of a given type of information.** Setting aside issues of hiddenness and partial coverage, many types of information have inherent limitations due to which the picture they provide is necessarily incomplete. Modern slavery statements published under the Modern Slavery Act in the UK or similar laws in other jurisdictions provide a vivid illustration of this issue, although the issue is not limited to this type of data and most types of data are subject to certain forms of inherent limitation. The legal requirement to publish a modern slavery statement only applies to companies that have a business presence in the UK and an annual turnover of £36 million or more,[72] and many companies to whom the requirement applies fail to publish a statement.[73] As a result, a complete dataset of all published modern slavery statements will only provide information on the risk exposure and risk management practices of a small subset of the universe of investable companies. In addition, the meaningfulness and depth of information contained in published statements vary greatly, such that two companies may have comparable risk exposure and risk management practices without this being equally visible in their modern slavery statements.[74] Due to these reasons, a picture of companies' performance in relation to the issue of modern slavery based on modern slavery statements will exhibit important informational gaps and blind spots. These can be potentially misleading, as they are unlikely to be correlated with actual differences in risk exposure and risk management.[75]

72. UK Government, above n 55.

73. Business & Human Rights Resource Centre, Modern Slavey Act: Five Years of Reporting, 2021 https://media.business-humanrights.org/media/documents/Modern_Slavery_Act_2021.pdf.

74. On the effectiveness of Section 54 of the UK Modern Slavery Act, see Bonavero Institute of Human Rights and the Bingham Centre for the Rule of Law commissioned by the Modern Slavery PEC, above n 48.

75. For example, the fact that one company's MSA statement includes evidence of the occurrence of modern slavery within the company's supply chain and another company's MSA statement does not does not necessarily mean there is a significant difference between these companies' exposure to modern slavery.

ii. Comparability

A second limitation shared by several of the types of data covered in Part 2 consists of a lack of comparability of information across different sources. Comparability can be defined as 'the extent to which differences between statistics from different geographical areas, non-geographical domains, or over time, can be attributed to differences between the true values of the statistics.'[76] Comparability issues can, once again, arise due to various reasons. For example, data may exhibit *conceptual differences*, including differences in the definition of modern slavery or in distinguishing between different forms of modern slavery. Such conceptual differences may occur as a result of diverging conceptual approaches between data producers, but also within the data of a single data producer, e.g., in the case of law enforcement data due to changes in official taxonomies for crime classification. Comparability issues can also arise due to differences in *data accuracy and reliability*. For instance, while modern slavery often remains hidden, the extent to which it goes unnoticed can vary between contexts, e.g., due to differences in the effectiveness of law enforcement and judicial systems between jurisdictions or differences in the investigative freedoms and efforts of journalism in different areas. Finally, the comparability of data can be affected by methodological differences. For example, producers of modern slavery prevalence estimates or quantitative company performance scores often rely on different data inputs and use different formulae for calculating such estimates and scores.

Across these scenarios, it is often difficult for data users to understand to what extent data reflects differences in conceptual approaches, accuracy and validity, or method, and what effect such differences have on the content of data. For example, the effectiveness of law enforcement in detecting modern slavery is difficult to quantify and the methodology behind quantitative company performance scores produced by commercial providers is often not publicly available. This makes it hard for data users to judge whether data points from different sources are comparable and, where comparability is lacking, to account for it in interpreting data.

iii. Ease of analysis

Setting aside issues with the informational content of data, there are various factors that can make it difficult to analyse data and extract the information contained in it. Prominently, this includes the fact that information contained in *unstructured data* (e.g., text contained in documents or embedded in websites) is not readily machine readable. This makes such data difficult to integrate into scalable information processing solutions without relying on humans to manually extract information from data and transcribe it into a structured format. As highlighted in Part 2, this limitation is relevant to data in all four main categories, including modern slavery statements and other company disclosures which typically take the form of unstructured data.

Other factors that may affect the ease of analysis of data include information being recorded in a *foreign language* with a need for translation and the fact that information about modern slavery can be *embedded in data with a broader focus* (e.g., documents and reports on human rights or ESG issues in general), thus making it cumbersome to identify and separate out information that is relevant to the purpose at hand.

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76. OECD, Glossary of Statistical Terms, https://stats.oecd.org/glossary/detail.asp?ID=395.

iv. Data access

A final obstacle shared across many types of data consists of difficulties in accessing data. First, for some of the types of data surveyed in Part 2, access is inherently difficult or impossible to obtain due to the confidentiality or sensitivity of the information involved. Such restrictions are particularly prominent, for example, in the case of law enforcement and certain other types of government data, non-public data within companies' control, certain aspects of customs and logistic data, and financial transaction data. Second, where data is accessible in principle, access can require payment, which may put data out of reach depending on budgetary constraints.

Finally, pathways for accessing relevant data are characterised by a high degree of fragmentation. Individual data access platforms only cover a subset of the different types of data described in Part 2 and are often limited to a single data type. In addition, they are often not exhaustive for the types of data that they do cover, as illustrated, for instance, by platforms that are focused on specific kinds of non-financial disclosures or company ratings from particular rating producers rather than providing comprehensive access to all kinds of financial disclosures or company ratings from multiple sources. This kind of fragmentation renders the process of obtaining all relevant data very labour intensive, thus often making it impracticable to leverage instances of data that might otherwise be useful, regardless of the financial costs involved in obtaining access.

Strategies for improvement

The mentioned obstacles can be difficult to overcome and addressing them will often require action on the part of data producers, including structural and methodological changes in terms of how data is recorded, managed, and stored. Yet, there are also strategies for deriving improved insights based on data as it currently exists, especially when it comes to improved ease of analysis and addressing empirical blind spots. Our research has identified four such strategies as particularly promising and currently underutilised: i) natural language processing; ii) probabilistic inferences about missing or weak information; iii) overlaying and cross-checking information from different types of data; and iv) advanced modelling techniques for modern slavery estimates. While not necessarily addressing the abovementioned limitations at their root, these strategies can lead to more actionable insights through better uses of existing data.

i. Natural language processing (NLP)

When it comes to the ease of analysis of data, the use of NLP can facilitate the analysis of unstructured data and help overcome language barriers. Text mining and content classification can serve to analyse free-form text at scale and with limited human involvement, making it possible to extract information from such data that would be too cumbersome to obtain otherwise. This can unlock currently underutilised insights, for example, from news media and social media content or company disclosures. Regarding the latter, Walk Free and the Future Society, in collaboration with WikiRate and Business & Human Rights Resource Centre, are currently developing an NLP tool for the automated analysis of the content of modern slavery statements.[77] One of the promises of using NLP to analyse the content of modern slavery statements and other company disclosures is its ability to enable a move from a currently widespread focus on whether companies comply with legal reporting requirements (which often says little about the content of company disclosures) to an assessment of the *quality* of reporting. Setting aside the extraction of information from unstructured data, automated translation tools represent a separate relevant NLP application that can enable the analysis of information published in a foreign language.

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77. Walk Free, above n 56.

ii. Probabilistic inferences about missing or weak information

In terms of addressing empirical blind spots, the use of models to make probabilistic inferences can enable improved insights in cases of missing or weak information. Rather than taking instances of missing or weak information at face value and treating them as unknowns that do not allow for further interpretation, modelling can serve to make inferences about the underlying reality in such cases. For example, empirical analysis of company practices could uncover that a lack of published modern slavery statements or the publication of modern slavery statements with thin informational content is correlated with certain risk exposure or risk management profiles. Similarly, it may be possible to make probabilistic inferences about the supply chain structure of a given company whose public disclosures lack detailed information based on available information about the supply chain structure of similarly situated companies.

iii. Overlaying and cross-checking information from different types of data

Another promising strategy for addressing certain forms of empirical blind spots consists of overlaying and cross-referencing information from different types of data. Doing so can serve two purposes. First, the combination of information from different types of data can enable *more granular* forms of understanding. For instance, by overlaying information on the prevalence of modern slavery at different levels of analysis (e.g., prevalence at the level of countries, industries, and commodities), investors may be able to arrive at a more reliable contextual understanding of a given company's risk exposure compared to relying on a single level of analysis. Similarly, combining information from company disclosures and information about controversies from independent sources can yield a more nuanced picture about a company's risk exposure and risk management practices than relying on company disclosures alone. Second, cross-checking information from different types of data can serve to *identify inaccurate information* and make it possible to arrive at a more accurate picture of reality without having to rely on a single source. A possible illustration of this is the use of customs and logistics data described in Part 2, which can be compared to supply chain transparency information published in company disclosures to find potential inconsistencies.

iv. Advanced modelling techniques for modern slavery estimates

Despite the general challenges of estimating modern slavery prevalence and characteristics associated with its hidden nature, there is potential for methodological advancement in producing estimates that may lead to improved accuracy and insights that cater more closely to the information needs of investors. This includes the use of non-parametric approaches or other forms of methodological innovation enabled by machine learning to arrive at improved models for geographical estimates, which tend to be the focus of existing modern slavery estimates.[78] It also includes the development of models for modern slavery estimates that move beyond the traditional geographical focus and, instead, aim to develop a systematic quantitative understanding of modern slavery prevalence and characteristics at the level of industries or in the context of different commodity supply chains. While particularly relevant to the information needs of investors, modelling efforts aimed at this latter kind of understanding are comparatively underdeveloped.

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78. Rosa Lavelle-Hill et al., 'Machine Learning Methods for "Small-n, Large-p" Problems: Understanding the Complex Drivers of Modern-Day Slavery', 2021, https://www.researchsquare.com/article/rs-296275/v1.

Presenting insights to investors

Setting aside the task of extracting insights from data, insights need to be accessible to users – i.e., relevant decision-makers across the investment cycle – in practical and user-friendly ways. In an ideal landscape, insights in relation to modern slavery would be available in ways that are efficient and easy to integrate into broader decisions in the investment process. While existing solutions for conveying insights include tools that can be useful to investors, they have significant limitations – collectively and individually – with respect to matching the information needs and the practical demands of users in the investment context. The following two subsections consider these limitations of the existing landscape for presenting information to investment users and identify solution development strategies for addressing these limitations.

Limitations

Individually, existing solutions tend to be limited with respect to the kinds of insights they are designed to convey and the flexibility they offer for tailoring insights according to user priorities. Taken collectively, the existing solution landscape is characterised by a comparative neglect of investors as a user group and of certain types of sources of information. As a result, some types of insight are currently underutilised by investors due to being unavailable or presented in ways that make them cumbersome to integrate; and insofar as insights are being utilised, doing so can be more laborious than it would be in an ideal landscape.

Fragmentation of insights

When it comes to the kinds of insights that individual solutions are designed to convey, the existing landscape is characterised by several forms of fragmentation. The following dimensions of fragmentation are worth highlighting in particular, with the final three dimensions applying specifically to company ratings:

- **Aspects of information:** Individual solutions often focus on providing answers to certain questions rather than taking a holistic approach to the full range of questions that may be of interest to investors. For example, tools may be focused on assessing company performance without conveying information about issue significance, or vice versa; they may place an emphasis on company's efforts to address the issue of modern slavery without including information on the effectiveness of these efforts;[79] or they may provide information about the occurrence of publicly reported scandals or allegations without providing information about companies' responses.

- **Sources of information:** For any aspects of information covered, existing tools often rely on a single or relatively narrow range of types of data as a source of answers to the questions of interest. For instance, company ratings often strongly rely on information provided by the companies in question without necessarily giving the same weight and consideration to company-specific information from other sources (e.g., data on controversies, campaigns, and proceedings, or – where applicable – customs data).

- **Investment universe:** Company ratings often only cover a limited number of companies within the universe of investable companies. This is particularly true for thematically driven ratings. While providers of general ESG ratings often aspire to cover as wide a range of companies as possible, thematically driven ratings (e.g., ratings with a focus on modern slavery or human rights) tend to focus on companies that are especially prominent, above a certain size, and/or located in specific sectors.

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79. For a comprehensive discussion of this particular limitation, see Casey O'Connor and Sarah Labowitz, 'Putting The "S" in ESG: Measuring Human Rights Performance for Investors', NYU Stern Center for Business and Human Rights, 2017, https://www.stern.nyu.edu/experience-stern/global/putting-s-esg-measuring-human-rights-performance-investors.

- **Different degrees of breadth:** As highlighted in earlier sections, the issue of modern slavery is one element within the broader set of human rights issues, with the latter forming part of the even broader set of social issues and, ultimately, ESG issues as a whole. While investors may take a particularly strong interest in the issue of modern slavery, it will rarely be the only ESG issue of interest. Investors will often be interested in relating a company's performance on the issue of modern slavery to its performance on other issues or its ESG performance in the aggregate. Thematic company ratings, which tend to be the most informative ratings when it comes to the issue of modern slavery, typically take a 'stand-alone' form, making it difficult to connect and integrate the information they contain to company assessments from a broader ESG perspective. General ESG ratings, by contrast, tend to exhibit the opposite limitation: while providing an assessment of company performance from an aggregate ESG perspective, they often provide only a thin[80] or no assessment of company performance on the issue of modern slavery specifically.

- **Different levels of depth:** In addition to different degrees of breadth, investors are interested in company performance information at different levels of depth. The dimension of depth can be thought of as orthogonal to that of breadth (see Figure 8). It ranges from numerical scores or high-level indicators designed to summarise a company's performance in a single metric to more detailed qualitative information about the company's behaviour and practices. Numerical summary scores and high-level indicators are useful for purposes of high-level comparative screening, but decision-makers are often equally interested in the ability to examine underlying detailed information where needed. General ESG rating tend to have strong limitations in this respect, usually only providing limited or no ways for users to 'drill down' into more specific aspects of information. Thematically driven ratings are less affected by this limitation, often providing both summary scores and more detailed information. But in return, they tend to exhibit the abovementioned limitations of covering a narrower range of companies and lacking a broader integrated perspective of company performance across different ESG issues.
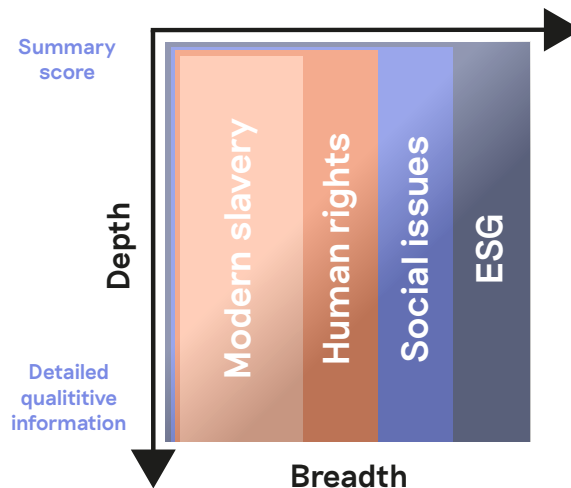

Figure 8: Illustration of the relationship between different degrees of breadth and different levels of depth

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80. For instance, information about company performance in relation to modern slavery may be limited to an indicator as to whether the company is known to have a supplier code of conduct that prohibits the use of forced labour.

Lack of flexibility to tailor insights to different aims

Within the space of company ratings, general ESG ratings often adopt a financial materiality lens as a rigid methodological component. This means that rating outcomes are inextricably linked to considerations of financial materiality. Insofar as this is the case, the data involved cannot be used to analyse company performance in ways that are not constrained by considerations of financial materiality. This can be a significant limitation, since it prevents users from adopting a salience-based approach to scrutinising portfolios for the issue of modern slavery in line with the UN Guiding Principles on Business and Human Rights.

Limitations at the collective level

In addition to the mentioned limitations at the level of individual solutions, the current landscape also has limitations when considering the capabilities of existing solutions collectively. For one thing, there are certain types of data that are rarely leveraged by any solutions, such as customs and logistics data and the other examples of 'observable business activity footprints' mentioned in Part 2. In addition, there are certain analytical tasks and types of insights for which there are no dedicated solutions. A prominent example for this is the assessment of issues significance from the perspective of salience: our research suggests a lack of tools for analysing portfolios to highlight companies for which the issue of modern slavery is salient. Similarly, it is rare for solutions to incorporate insights about modern slavery risks related to the use of a company's products or services, as opposed to modern slavery risks in the context of the production of products and services.

Finally, the way in which relevant resources and tools are designed and marketed often places less emphasis on investors as a user group compared to other types of users, such as, say, supply chain managers and occupants of corporate social responsibility roles within investee companies. A review of company rating solutions in 2017, for example, found that only 14% of ratings with a focus on social issues targeted investors as an audience, compared to a much higher percentage for ratings focused on environmental and governance issues.[81] While ratings and other solutions can be useful to investors without explicitly targeting them as an audience, a lack of targeting may mean that investors are less likely to be aware of them. It can also mean that investor needs are neglected in the design of solutions, limiting their usefulness to investors. Factors that may be less important to other user groups but can be a determining factor for the usefulness of solutions to investors include information being quantifiable, available in structured formats, and including company identifiers such as ticker symbols or ISIN codes.

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81. Casey O'Connor and Sarah Labowitz, above n 79. https://static1.squarespace.com/static/547df270e4b0ba184dfc490e/t/58cad912e58c 6274180b58b6/1489688854754/Metrics-Report-final-1.pdf, page 8.

Strategies for improvement

The solutions landscape for presenting insights on the issue of modern slavery is evolving. Recent years have seen ongoing efforts to pursue innovations aimed at addressing some of the limitations just described. At a general level, this includes a growing recognition of the needs of investors as a distinct user group and solution development efforts intended to make up for the relative neglect of this user group in the existing landscape.[82] At a more concrete level, solutions that have recently emerged or are currently under development show progress in relation to some of the specific limitations described above.

Company ratings, in particular, are a rapidly evolving space. Established rating providers are working to enhance the capabilities of their existing tools and a significant number of start-ups and new initiatives are entering the space. As an example for the latter, the Global Fund to End Modern Slavery is currently developing an issue-specific portfolio screening tool for forced labour risks that aims to include an issue significance lens and whose information sources comprise import/export data.[83] Another noteworthy area of growing interest and ongoing solution development efforts, albeit at a nascent stage, is the use of worker voice and blockchain technology to provide investors with new forms of assurance about employment practices and supply chain structures that are more direct and can be easier to verify compared to the information traditionally available to investors.[84]

Despite these developments, our research suggests that the limitations identified above continue to be relevant for the foreseeable future and overcoming them will require additional efforts. A conclusive assessment of the status quo is complicated by the fact that many solution development efforts are commercial in nature, which means that transparency concerning the nature and scope of such efforts is often limited. This makes it difficult to judge the extent to which limitations and gaps persist or are addressed by emerging solutions. The following recommendations should be read with this caveat in mind.

Generally speaking, there are two possible visions for addressing existing limitations. First, efforts may focus on 'filling gaps' without necessarily changing the structure of the existing solutions landscape. Second, efforts may go beyond filling the gaps and aim to integrate relevant analytical capabilities into a single (or limited number) of tools.

Vision 1: 'Filling the gaps'

Under the first vision, efforts would aim at providing capabilities that are currently lacking when considering the landscape of existing solutions collectively, while accepting that there will be fragmentation between the capabilities of individual tools and users may need to draw on a combination of a range of tools to meet their needs. As highlighted above, examples of relevant gaps in the collective landscape include the development of tools that:

- enable investors to analyse issue salience across a given portfolio of companies
- capture risks of connection to modern slavery through the use of a companies' products or services
- leverage currently neglected types of data

When it comes to company ratings in particular, filling gaps would also include efforts to extend coverage to as large a part of the investment universe as possible for rating solutions across different degrees of breadth and depth (i.e., especially in the case of thematically driven ratings that currently tend to be particularly limited in their coverage).

82. The Freedom Fund, above n 3.
83. Global Fund to End Modern Slavery, above n 65.
84. See, for example, CDC Group, above n 60.

It is worth highlighting the importance of methodological transparency and alignment as enabling conditions for the success of this vision. Insofar as the landscape requires users to draw on a combination of multiple solutions, each providing different capabilities and types of insights, users' ability to leverage these solutions effectively will depend on comparability and interoperability across individual tools. Currently, this kind of comparability and interoperability is often lacking due to commercial secrecy around methods and the use of diverging conceptual frameworks. Efforts to achieve greater transparency and alignment will therefore be an important component to realise the full potential of this strategy.

Vision 2: Move towards more comprehensive and integrated solutions

The second vision extends beyond filling gaps in the landscape of existing solutions considered collectively and includes efforts aimed at a greater integration of solutions, increasing the range of analytical capabilities provided by individual tools. The idea of a single tool that maximally leverages all sources of information outlined in Part 2 may seem utopian. But investors would benefit from tools that leverage relevant sources of information and address investors' information needs on the issue of modern slavery in a consolidated manner and link up to broader ESG-related decision-making processes.

While there are various conceivable starting points for the development of integrated solutions, existing company rating tools seem to lend themselves particularly well to act as a basis for efforts to arrive at more integrated solutions. Currently existing rating tools only partially address the four information tasks identified in Part 1 (i.e., assessing salience, assessing financial materiality, defining performance expectations, and measuring performance). Yet, the insights that company ratings are meant to convey can be thought of as the analytical end point of this chain of tasks. In terms of information management, the perspective of company ratings therefore represents a sort of Archimedean point for pursuing a greater integration of insights. In terms of design, company ratings also provide a useful starting point, since the way in which they present information coheres with the portfolio perspective characteristic of the investment context. In the case of commercial ESG rating tools, this includes particularly useful design features such as the reliance on interactive user interfaces and dashboards or users' ability to import lists of portfolio companies for analysis.

In light of the limitations identified in the previous section, integration-oriented development efforts that take company rating solutions as a starting point would ideally pursue an expansion of the capabilities of such solutions in ways that include the following dimensions:

Expansion of aspects of information and sources of information

In their existing forms, company ratings focus on the information task of assessing company performance and, as discussed above, tend to be limited to certain aspects and sources of information in doing so. More comprehensive stand-alone tools would ideally cover all aspects of information and sources of information that are relevant to assessing company performance (e.g., going beyond a focus on companies' efforts by attempting to assess their effectiveness, going beyond the reliance on company-controlled information, and going beyond production-related risks to include risks associated with the use of products and services). Such tools would also provide information on issue significance – including issue salience – in relation to companies in ways that can be separated from the assessment of companies' performance.

Universal coverage and the ability to zoom in and out across levels of breadth and depth of information

As mentioned above, different types of existing rating solutions have different strengths and weaknesses in terms of coverage of the investment universe and inclusion of information at different levels of breadth and depth. An ideal rating tool would combine all of these strengths, rather than requiring investors to draw on different rating solutions to compensate for their respective weaknesses. In other words, such a tool would:

- cover the entire universe of investable companies
- provide information on company performance through the lens of different degrees of breadth (ESG, social issues, human rights, and modern slavery)
- provide information across different levels of depth, ranging from numerical summary scores or high-level indicators to detailed qualitative information

As already mentioned, the two relevant types of existing company ratings exhibit complementary strengths and weaknesses in these respects:

- General ESG ratings tend to exhibit wide coverage and provide information with a high degree of breadth, but they are often limited to high-level summary scores and indicators (lack of depth) and provide limited issue-specific information (weakness for low degrees of breadth).
- Thematically driven ratings, in contrast, tend to provide information across different levels of depth, but are often limited to issue-specific perspectives (weakness for high degrees of breadth) and have limited coverage.

Depending on which type of existing tool one takes as a starting point, strategies for arriving at a tool that allows for the integrated ability to zoom in and out across different degrees of breadth and levels of depth could take two forms: (i) expanding the capabilities of ESG ratings at lower degrees of breadth and higher levels of depth (possibly by incorporating the capabilities of existing thematically driven ratings); or (ii) increasing the coverage of thematically driven ratings and linking them to information at higher degrees of breadth (possibly through integration with the capabilities of existing ESG rating solutions).

Methodological flexibility

Ideally, integrated tools would combine these different capabilities in ways that provide methodological flexibility in analysing and using insights. For example, it would be valuable for investors to be able to select their own criteria for issue significance rather than having to rely on a rigid application of pre-defined criteria of issue significance set by the rating provider. Importantly, this should include the possibility to adopt a lens of issue significance that is based on salience without being constrained by considerations of financial materiality. Similarly, it would be useful if users could define or select the performance expectations that form the basis of company rating results, as opposed to company ratings reflecting an inalterable set of pre-defined expectations defined by the solution provider.

Conclusion

Currently, investors that seek to address the issue of modern slavery often find it difficult to obtain actionable and easily usable information. In part, this is due to the fact that efforts to develop solutions that cater to the information needs of investors have been limited. In addition, the landscape of relevant data sources and tools is complex and diverse. This can make it difficult to identify useful resources where they exist, especially since they may not necessarily be actively promoted to investor audiences.

To enable progress in realising the potential of data in enabling investor action on modern slavery, this report sought to highlight the various roles that different forms of data can play in addressing investors' information needs, map out existing resources, and identify areas for improvement. We hope that the resulting landscape overview and gap analysis will be useful to different stakeholders, including investors, who may be considering which tools to use to drive their decision-making; solution developers, who may be trying to determine where to place their efforts or identify opportunities to achieve integration across solutions; and policymakers or charitable funders, who may be considering ways to promote the development of solutions that cater to the information needs of investors.

We conclude with a number of high-level recommendations for strategic actions on the path to seeing investors play a greater and more effective role in addressing the problem of modern slavery through data-driven insights. Given the complexity of the landscape and the range of different kinds of actors involved in it, many of our recommendations apply to multiple stakeholders, including investors, commercial solution providers, civil society organisations, governments, and investee companies.

Recommendation 1: Increase awareness for the integration of modern slavery risks across the investment industry

Recent years have seen a significant increase in investor attention on the issue of modern slavery, but commitments to integrate the issue into investment practices are far from universal.[85] Individual investors, investor alliances, governments, and civil society organisations should all play their part in promoting investor commitments to addressing modern slavery. Such commitments, in turn, can send important signals for improvements in the data and solutions landscape.

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85. See Share Action, Point of No Returns: Part III – Human Rights, 2020, ,; Walk Free, Beyond Compliance in the Finance Sector: A Review of Statements Produced by Asset Managers Under the UK Modern Slavery Act, 2021, https://www.walkfree.org/reports/beyond-compliance-in-the-finance-sector/.

Recommendation 2: Incentivise and invest in the development of data solutions that meet investor needs consistent with a salience-based approach

Turning the promise of data in enabling investor action on modern slavery into reality will require dedicated efforts. To support such efforts, stakeholders should commit resources specifically to the development of investor-focused solutions. This includes possible commitments of financial and other resources from investors, commercial and non-commercial data and solution providers, charitable funders, and governments. In addition, the establishment of common expectations regarding the capabilities of solutions, for example through efforts by investors to develop shared company performance metrics, can provide important demand-side incentives for development efforts.

Recommendation 3: Pursue innovation in areas that hold particular promise but are currently neglected

In addition to addressing foundational challenges such as data quality, data coverage, and data access issues, efforts should focus on the strategies for improvement identified in Part 3 of the report. This includes innovative ways of analysing data to arrive at actionable insights as well as filling gaps and achieving greater comprehensiveness and integration in the capabilities of solutions for presenting insights to users.

## Recommendation 4: Coordinate and avoid duplication of efforts

As noted in the introduction, the data and solutions landscape is characterised by a large number of active organisations, work that is ongoing or newly emerging, and the fact that detailed information about individual resources and tools can be difficult to access publicly (especially in the case of commercial providers). This can create obstacles for ensuring that development efforts are allocated where they can make the biggest difference and avoid duplication. To minimise such obstacles and realise synergies, organisations involved in relevant efforts, be it as funders or developers, should approach their work in ways that facilitate coordination and collaboration with other stakeholders and promote transparency about the capabilities and limitations of the solutions being developed.

Recommendation 5: Prioritise usability and interoperability in data production and solution design

To maximise the value and practical usability of relevant data in the investment context, data producers should actively consider this context when making choices about methodology, data content, and data format. For example, companies' decisions about the content and structure of modern slavery statements fundamentally affect their relevance to investors' information needs, and decisions about the format of modern slavery statements can have significant implications for machine readability and the use of NLP to facilitate their analysis.[86] In addition, by being transparent about methodology and data quality limitations, data producers can make an important contribution to enabling potential users to assess data for suitability and comparability (e.g., in the case of company rating data).

Considerations of usability and interoperability are equally relevant in the design of solutions for accessing data or presenting data-driven insights and should be taken into account by developers of such solutions. When it comes to modern slavery statement registries and similar public repositories, for example, the inclusion of company identifiers used in stock trading and other investor-focused design features could facilitate the integration of registry data into independently developed company rating tools.

Finally, policymakers, funders, and investors should consider their role in sending signals and setting standards that can contribute to ensuring usability and interoperability in data production and solution design. For instance, the introduction of government-issued requirements on the structure and format of modern slavery statements and other company disclosures could play an influential role in addressing the abovementioned considerations.

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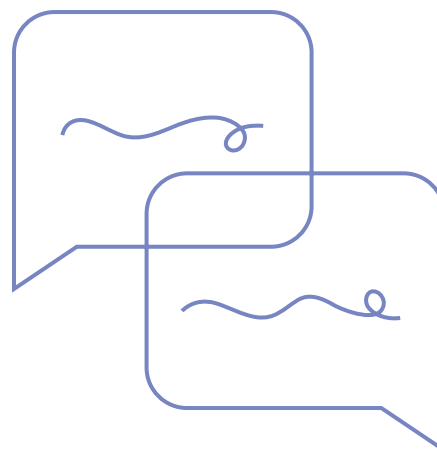
86. On machine readability, see Walk Free, The Future Society, WikiRate, and Business & Human Rights Resource Centre, AI against Modern Slavery: Digital Insights into Modern Slavery Reporting – Challenges and Opportunities, 2021, https://cdn.walkfree.org/content/uploads/2021/05/05173207/20210428-digital-insights-into-modern-slavery.pdf

Appendix

Table 14: Overview of stakeholder initiatives with relevance to corporate conduct in relation to modern slavery

Key: +=includes audit/certification/accreditation scheme[87]
++= includes database of certified/audited/accredited companies

Type of initiative	Thematic scope		
	Modern slavery	Labour rights / human rights	Responsible and sustainable business conduct
Investor-led	**Cross-sectoral:** 'Find It, Fix It, Prevent It' Initiative (led by CCLA) Investors Against Slavery and Trafficking Asia-Pacific Votes Against Slavery (led by Rathbones)	**Cross-sectoral:** Investor Alliance for Human Rights Workforce Disclosure Initiative (Investor Coalition)	**Cross-sectoral:** As You Sow Committee on Workers' Capital Interfaith Centre on Corporate Responsibility (ICCR) Principles for Responsible Investment Shareholder Association for Research and Education (SHARE) The Investor Forum

87. Inclusion in this table is not meant to express a judgment on the validity or soundness of individual schemes.

| Multi-stakeholder | **Cross-sectoral:**

BEST Alliance (Businesses Ending Slavery & Trafficking)

Responsible and Ethical Private Sector Coalition against Trafficking (RESPECT)

Stronger Together

Sector-specific:

Banks Alliance Against Trafficking

Finance Against Slavery and Trafficking

Stop Slavery Hotel Industry Network

The Multi-stakeholders Initiative for Accountable Supply Chain of Thai Fisheries (MAST)

Truckers Against Trafficking／Busing on the Lookout++ | **Cross-sectoral:**

Ethical Trading Initiative

Fair Labor Association+

Leadership Group for Responsible Recruitment

Responsible Sourcing Network

Social Responsibility Alliance | **Cross-sectoral:**

Corporate Reporting Dialogue

Fairtrade International+ and Fair Trade USA+

Global Reporting Initiative

International Integrated Reporting Council

Rainforest Alliance+

Sustainability Accounting Standards Board

UN Global Compact

Sector-specific:

Alliance for Responsible Mining／Fairmined+

Fashion Revolution

Initiative for Responsible Mining Assurance+

Partnership on Sustainable Textiles

Responsible Sourcing Network

Roundtable on Sustainable Palm Oil++

Seafood Alliance for Legality and Traceability (SALT) |
| Business-led | **Cross-sectoral:**

Global Business Coalition Against Human Trafficking (GBCAT)

The Mekong Club

Sector-specific:

IATA Eyes Open Initiative (Airline Industry)

Seafood Taskforce | **Cross-sectoral:**

Consumer Good Forum, Human Rights Coalition (Working to End Forced Labour)

Responsible Recruitment Toolkit／Clearview certification scheme+

Sector-specific:

Apparel & Footwear Industry Commitment to Responsible Recruitment

Fair Wear Foundation | **Cross-sectoral:**

Consumer Good Forum, Sustainable Supply Chain Initiative

Responsible Business Alliance[88]

Sector-specific:

Better Cotton Initiative++

Responsible Fishing Vessel Standard

Responsible Jewellery Council++

Sustainable Apparel Coalition

Sustainable Hospitality Alliance |

88. Initiatives include the Responsible Labor Initiative, the Responsible Minerals Initiative, and the Responsible Factory Initiative.

Civil society-led	**Cross-sectoral:** Know the Chain	**Cross-sectoral:** Corporate Human Rights Benchmark International Corporate Accountability Roundtable Social Accountability International+ Sector-specific: Clean Clothes Campaign Transparency Pledge (Apparel and Footwear)	**Cross-sectoral:** Corporate Justice Coalition Share Action Sector-specific: Responsible Mining Foundation
Government-led	**Cross-sectoral:** Bali Process Government & Business Forum Corporate Responsibility in Eliminating Slavery and Trafficking (CREST) ILO Global Business Network on Forced Labor	**Cross-sectoral:** Better Work Initiative++ ILO Fair Recruitment Initiative IOM International Recruitment Integrity System (IRIS) UN Guiding Principles on Business and Human Rights (including National Action Plans)	**Cross-sectoral:** OECD Guidelines for Multinational Enterprises

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