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Corporate Climate Ratings: Assessing Divergence from Scientific Expectations

Marine Kohler^{1,2,*}, François Cluzel¹, Pascal Da Costa¹, Loïc Umbricht²

Abstract

Private investment and consumption choices encourage companies to cut greenhouse gas emissions and prepare for climate change, but unreliable corporate disclosure complicates decision-making. Since the 1990s, sustainability scores like labels and rankings have helped guide choices, though they also face growing criticism. In this context, we systematically review criticism and assess climate performance scoring systems against our findings. Our approach includes a comprehensive literature review, an identification of score providers and their offerings, and an assessment of scores against best-in-class practices. We find scholarly concerns are related to the accuracy, reliability, fairness and effectiveness in driving corporate action of ESG scores. Market actors exhibit diverse business models, methodologies, and definitions of corporate climate performance. Despite some variability across scores and issues, they remain generally opaque and poorly aligned with academic expectations. While indirect corporate impacts and industry and size specificities are typically taken into account; standardized, verified inputs, and transparent, science-based weightings are rare. Investors, corporations, and researchers might use our results to make an informed decision when choosing their information provider, while regulators might take interest in the snapshot we provide on the maturity of the market. This article can also inspire the design of improved sustainability information systems.

Keywords: rating; ranking; score; label; climate; corporate; disclosure

Highlights:

- Scores can lack accuracy, reliability, fairness, and impact.
- Varying definitions of climate performance result in diverse methods and perimeters.
- Scores systems remain relatively opaque, leading to strong information asymmetry.
- Despite some variability, scores generally misalign with academic concerns.
- Standardized, verified inputs, and transparent, science-based weightings remain rare.

Authorship:

- Marine Kohler: Conceptualization, Methodology, Investigation, Visualization, Writing - original draft
- Pascal Da Costa: Funding acquisition, Supervision, Methodology, Writing - review and editing
- François Cluzel: Supervision, Methodology, Writing - review and editing
- Loïc Umbricht: Writing - review and editing

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1 Introduction

Global warming causes major damage and threatens human societies (Calvin et al., 2023). Public scrutiny on climate change rises steadily (Leiserowitz et al., 2018; Poortinga et al., 2011), with temperatures exceeding 1.5°C of average global warming in 2024 and in a context of growing but insufficient global governance (Calvin et al., 2023; European Commission and Copernicus and ECMWF, 2025).

In the absence of sufficient constraining regulation (Schneider and La Hoz Theuer, 2019), companies face increasing pressure from consumers and investors to manage their contribution to global warming (Alkhatib et al., 2023; Beisenbina et al., 2023). Additionally, a growing number of companies take responsibility for their upstream and downstream emissions and thus put pressure on their suppliers to lower their operational impact (Science Based Targets initiative, 2023). In response to these pressures, corporations disclose an increasing amount of information and performance indicators on the greenhouse gas emissions (GHG) linked to their activities (Kolk et al., 2008) through their corporate social responsibility (CSR) reports or voluntary reporting platforms like the Carbon Disclosure Project (CDP) (CDP, 2024a). Even though most climate reporting mostly relies on voluntary action, recent regulation in Europe and in the US extends the perimeter of mandatory reporting and its frequency. (European Commission, 2024; Securities and Commission, 2024). The quantity of information available on corporate climate change management is thus expected to rise significantly.

Yet, literature shows reported data points and information disclosed are unreliable. For instance, companies disclosures can vary across sources, be partial, or use different computation approaches and perimeters (Brander and Bjørn, 2023; Brander et al., 2023; Dragomir, 2012; Klaaßen and Stoll, 2021; Magnusson Rauf, 2023; Matthews et al., 2008), generating a strong information asymmetry. Further, reported information can be quite extensive, and can have a significant positive bias (Bingler et al., 2022). This contributes to high information treatment costs, with stakeholders suffering from information fatigue and usually lacking the necessary critical standpoint to interpret the disclosed data (Brown et al., 2009).

Scoring systems that evaluate and aggregate the data available proliferated to answer their unmet need for efficient decision-making. Companies can also voluntarily seek these evaluations to clear any doubts on their CSR leadership, ultimately seeking to attract further funds or customers (Avetisyan and Hockerts, 2017; Mooij, 2017). Financial information providers (e.g. KLD, Calvert, MSCI) were the first to capture the market by offering responsible investment indexes, closely followed by newly companies specialized in environmental, social and governance (ESG) data analysis and rating (e.g. Vigeo, EIRIS, Innovest) in the 90's and 2000's (Avetisyan and Hockerts, 2017). While the market underwent considerable consolidation since the 2000's (Avetisyan and Hockerts, 2017; Escrig-Olmedo et al., 2019), a number of competing CSR scoring systems still exist. These organizations study public ESG data from companies to extract data points and aggregate their findings in databases of ESG performance indicators, that they last aggregate into certifications, labels, rankings, scores and ratings. In the following, for simplification purposes, we will use the terms "score" and "scoring" indiscriminately to refer to any of these results. Similarly, we will use the term "rater" to refer to any score provider.

CSR scores are now widely used in finance, procurement and academia as a measure of corporate social responsibility (CSR), and, more specifically, of corporate climate performance (Chatterji et al., 2016). However, simultaneously, these ESG ratings have been repeatedly challenged by research. In particular, although they claim to measure the similar outputs, their results are notoriously poorly correlated (Chatterji et al., 2016) due to varying assessment perimeters and choices of indicators (Berg et al., 2019).

Some thus conclude scoring systems contribute to information fatigue and mislead corporations and end-users (Mooij, 2017; Wegener et al., 2019). The EU seems to share these concerns, having recently adopted a legislation regulating the transparency and integrity of Environmental, Social and Governance (ESG) rating activities (Transparency and integrity of Environmental, Social and Governance (ESG) rating activities, 2024). Similarly, discontent among rated companies and companies using the ratings to take decisions is on the rise (SustainAbility, 2023). Indeed, the current state of affairs could result in a lessened investment in

ESG measures as corporations lack clear incentives (Berg et al., 2019); could financially penalize companies receiving mixed results across scores (Wang et al., 2024); and could contribute to the misallocation of funds and contracts to laggard corporations (Fichtner et al., 2024).

In this paper, we aim thus to identify current climate corporate scoring systems and assess them individually compared to criticisms addressed to CSR scoring systems by the scientific literature. We chose to focus on climate change for a few reasons. First, we trust it is an outstanding issue that, if left unaddressed, will threaten any other United Nations (UN) sustainable development goal. Further, our market analysis showed some actors were specialized in corporate climate performance, denoting increased demand on the topic. We provide a comprehensive review of the issues surrounding ESG scoring systems in the scientific literature, complemented by an analysis of gray literature. We uncovered 18 different issues focusing on the scoring’s reliability, accuracy, fairness and effectiveness in driving the environmental transition. We further studied our literature corpus to list all market actors mentioned, and investigated their current offer to identify all scores assessing at least in part corporate climate performance. Finally, we rated each scoring against best-in-class behavior for each of our 18 issues. We highlight significant disparities in assessment scopes and approaches, with scores aiming to measure distinct aspects of corporate ESG or climate performance. Further, while found the overall transparency of systems to be satisfactory, most systems stay opaque on the indicators and weighting function they use. On average, 35% of the scoring systems aligned with best practices, with notable disparities across different issues. We conclude that there is no actor on the market addressing all concerns yet, and call for prudence when using ESG or climate scoring results and further market regulation.

Our work contributes to the existing scientific literature by providing a more exhaustive, up-to-date and critical review of corporate climate scoring systems. Various reviews of uses and approaches of corporate ESG rating systems have been published but do not systematically assess the systems they review against mentioned issues (Diez-Cañamero et al., 2020; Escrig-Olmedo et al., 2019; Patara and Dhalla, 2022; Saadaoui and Soobaroyen, 2017; Siew, 2015) or are restrained to a specific score type (Fichtner et al., 2024; Patara and Dhalla, 2022). Further, none of these reviews claim to perform an intensive literature review to identify CSR scoring limitations.

The following method section (2) reports on our process for the analysis, the result section (3) presents the output of our research, and lastly, the discussion section focuses on key limitations and possible interpretations of our work (4). Note that the result section is divided in sections to reflect our stepwise process: it first emphasizes identified raters and their scoring systems, it then highlights the results of our literature review of CSR scoring criticisms, and it finally presents best-in-class behavior for each issue and how identified scores perform against them.

2 Method

We developed a stepwise research approach, summarized in Figure 1.

First, our literature review on CSR rating systems was conducted using Google scholar[®] with separate searches for keywords “corporate sustainability performance”, “sustainability measurement systems”, “environmental performance indicators”, “corporate sustainability disclosure”, “corporate climate performance”, “ESG scoring”, “ESG rating and “corporate climate disclosure”. We focused on studies centered on corporate sustainability rating systems and reviewed the articles they cited to build our article database, following a backwards snowballing method. We discarded any research using ESG scoring systems as a measure of corporate sustainability performance without discussing them; non-peer-reviewed preprints; articles that we found to be of insufficient quality (e.g. missing sources, containing inconsistencies or improper syntax); and other miscellaneous materials (newspapers articles, FAQ, webinar transcripts). We stopped our search when further citation checks yielded no additional relevant studies. Given the topic is relevant to the private sector, we complemented this approach by reviewing grey literature. We thus searched for the same keywords on Google search, adding a few market and official reports to our database. In total, we grouped 70

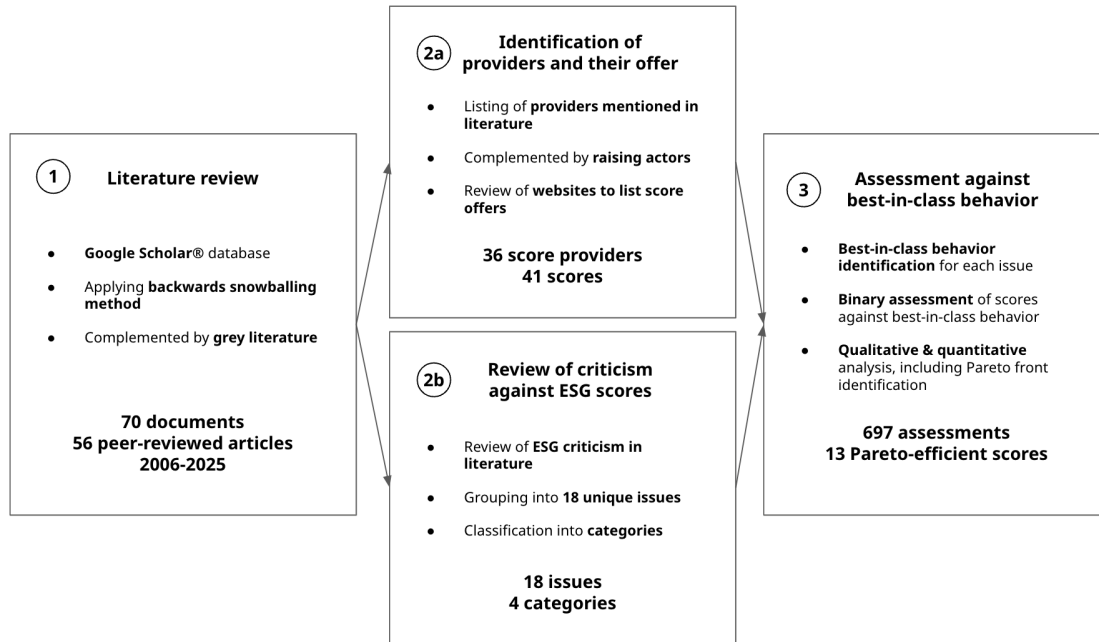


Figure 1: Visual summary of the approach of our work.

documents, including 56 peer-review articles. Articles were published in a range of journals, including the Journal of Cleaner Production, Sustainability, Business Strategy and the Environment and the Journal of Business Ethics; belong to various disciplines, including finance, ethics and environmental assessment; and were published between 2006 and 2025.

Second, we examined the grouped documents to list scoring system providers they mention. To account for mergers and acquisitions in the ESG scoring market, we combined merged entities into a single entry. We consolidated this literature analysis and conducted an online search for further "ESG corporate rating systems", which added 6 smaller and more recent actors to our list. This research also led us to uncover a variety of scores and labels that were either region-specific or assigned to products rather than companies. Although they also merit analysis, we excluded them from the perimeter of this paper to keep it a reasonable size. Based on the information available on the identified rater's websites, we then identified the scores they offer. In line with the scope of this analysis, we excluded scores that do not cover corporate climate performance, such as those focused exclusively on gender equality or biodiversity. We identified a total of 41 scoring systems across 36 raters. Note that two initially identified actors were excluded from the analysis as their website did not indicate they offered ESG scoring services.

In parallel, we reviewed all 53 documents to identify academic concerns on ESG scoring systems. We listed individual issues that were presented as novel ideas or cited from further research, then grouped them into categories. Concerns related to the ESG ratings market or interactions between ratings were set aside as we focused on evaluating each scoring system individually. We then converted each criticism into a pass/fail criterion by identifying best-in-class behavior for each issue among our 40 scoring systems. To do so, we browsed publicly available information on each identified score system to determine their response to each concern. For instance, we identified "Criteria are justified by a double materiality assessment" as best-in-class behavior when it comes to the issue of scores focusing on non-material externalities. Due to the variability in raters' responses to issues, identifying best-in-class behavior was sometimes challenging. For example, it is unclear whether differentiating weightings across industry, geography, and company size is relevant for all scores, regardless of their scope. We thoroughly discussed these cases and established passing criteria accordingly.

We then binarily assessed each of the scoring systems against the criteria identified in the third step of our methodology, using public information available online. Scoring passed the criteria if the available information stated they were aligned with the best practice for the issue. The scores were not assessed in case no public information on the scoring approach was available on the website or made available when contacting the rater. In case there was insufficient information, the scoring was awarded a 'Partial' evaluation on the criterion. In case no relevant information was provided on a specific issue, scores were not rated on the issue. In case the criterion did not apply to the rating due to its specific scope or structure, the assessment was noted 'Non Applicable (N/A)'. For instance, ratings stating they use a double materiality approach to assess their criteria weights received a passing grade on the issue of focusing on non-material externalities; those that did not justify their weighting choice were not rated; and those that do not rely on a weighting mechanism, but for instance only on a set of criteria to pass, were marked 'Non applicable'. We further identified and described scores belonging to the Pareto front, i.e. scores that aren't strictly dominated on all criteria by any other investigated score. The Pareto front represents the set of optimal scores achievable under a given set of prioritized criteria.

Lastly, the results were sent to rating providers to confirm that we had correctly identified the scores they offer and to allow them to provide feedback on our assessment. Any additional content provided in the raters' responses has been used to enrich the analysis, provided it was supported by public sources. An overview of the exchanges with raters is available in Table 2 in Appendix.

3 Results

3.1 Current market actors and products

3.1.1 Identified raters

Figure 2 depicts a simplified overview of the scoring process and its actors. Figure 3 displays the identified actors grouped according to their activity, and ordered based on the frequency of their mention in our literature review. Table 3 in the appendix completes this Figure and lists the documents mentioning each actor. We identified 31 actors by browsing our literature review, but we also uncovered 5 actors via a google query. These actors are either smaller, more local actors (Carbone 4 and Ethifinance), newcomers (Insight investment, BLab and Climateaction100), or actors other raters rely on as part of their scoring methodology (Science Based initiative (SBTi)). Sources for each actor's characteristics are listed in Table 2.

The most cited actors are historical investment consulting firms that, in some cases, acquired specialized companies in CSR data scraping and CSR scoring (e.g., MSCI and KLD or Innovest). While these conglomerates confirm the strong consolidation of market players since the 1990 observed by Mooij, 2017 and Muñoz and Smoleńska, 2023, other more recent and specialized players joined the market. In particular, the CDP is an outstanding, non-governmental organization among the most cited raters. Other market participants include smaller financial consulting companies that claim to be more ambitious and reliable than major market players (e.g. Ethibel, Insight investment, Carbone 4) or are focused on emerging markets (e.g. SynTao Green Finance and Wind in China); startups looking to disrupt the market by integrating artificial intelligence into ESG data collection and analysis (e.g. Sensefolio, RepTrak, RepRisk); banks building their own score systems (Bank Sarasin & Co, ZKB Sustainability research); and specialized startups in supply chain reporting (Ecovadis). Finally, BLab, ClimateAction100 and SBTi stand out as unique non-profit actors. BLab is a US-based non-profit organization specializing in evaluating and labelling corporate CSR performance. ClimateAction100 is a shared initiative between investor groups and NGOs that aims to promote climate action and climate data disclosure from the most emitting corporations worldwide. SBTi is a charity that aims to verify whether corporate GHG targets are aligned with the Paris Agreement.

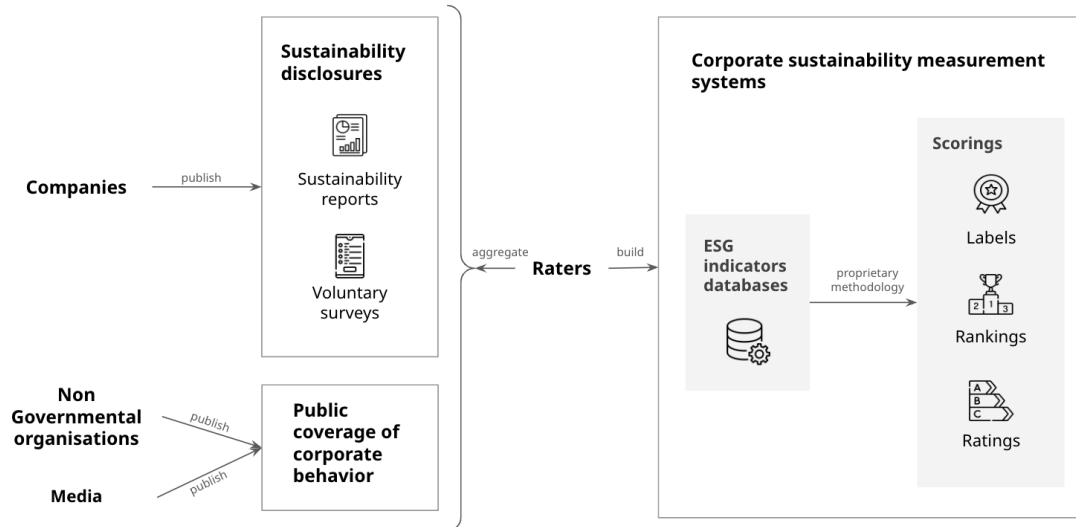


Figure 2: Schematic overview of the CSR rating process and actors

3.1.2 Identified rating systems

We then identified all scores offered by the actors we listed, considering only systems including criteria relative to climate change. We identified 41 competing scoring systems shared among our 36 actors. Some providers offer up to three relevant ESG scores (e.g., MorningStar / Sustainalytics). Among our 36 initial actors, 5 identified actors have no proprietary methodology. Either they rely on their peers' scoring systems (STOXX uses the J. Safra Sarasin ESG Rating and Wind uses SSI's approach, and Solactive uses ISS's UN SDG methodology to build its ESG indexes), or only offer custom ESG evaluations (Calvert). Further, Ethibel and Moody's/Vigeo EIRIS respectively have discontinued or are discontinuing their rating activities. Table 4 and 5 available as supplementary material offer an overview of the scoring systems identified and their company universe, data sources and result availability.

Identified systems are of a diverse nature: among them, 24 are ratings, 5 are scores, 5 are rankings and 2 are labels. Most scoring systems identified do not assess specifically climate issues, but we rarely had to exclude a score from our assessment for not covering climate, i.e. we rarely found scores covering only other ESG issues. Actors either source their input data passively in available public data, including corporate websites, yearly CSR reports, other voluntary disclosures on specialized databases, government databases and media; or have an active data collection method and request companies or stakeholders fill questionnaires or build application files. The public availability of input data and scoring results depends on the provider's business model. Raters choose to either monetize the data or results to sell to financial institutions and corporations doing market research (e.g. MorningStar/Sustainalytics); or choose to monetize the verification of data and administrative tasks of the scoring process (e.g. SBTi, CDP, BLab). Some systems appear to be used exclusively for internal operations and not directly participate in the raters' revenues (for instance, Sarasin Bank uses their proprietary methodology to provide custom investment counselling while S&P Climate Transition Assessment is delivered as part of a CSR strategy analysis service). The universe of rated company is generally designed to be as extensive as possible given the available data, except for financial actors that focus on listed companies and ignore small and medium-sized companies (e.g. 3BL Media's 100 Best Corporate Citizen, ClimateAction100, FTSE Russell's ESG scores). A significant number of raters use input data gathered by other market actors (as exemplified by MSCI and Moody's latest alliance) or partially or fully rely on their scoring methodology to process the data. Notably, most raters rely on SBTi's labels to validate the consistency of corporate GHG reduction targets with the Paris Agreement (e.g. CDP, Blab, Ecovadis).

We suggest categorizing the market into three groups according to the assessment's focus: either risk,

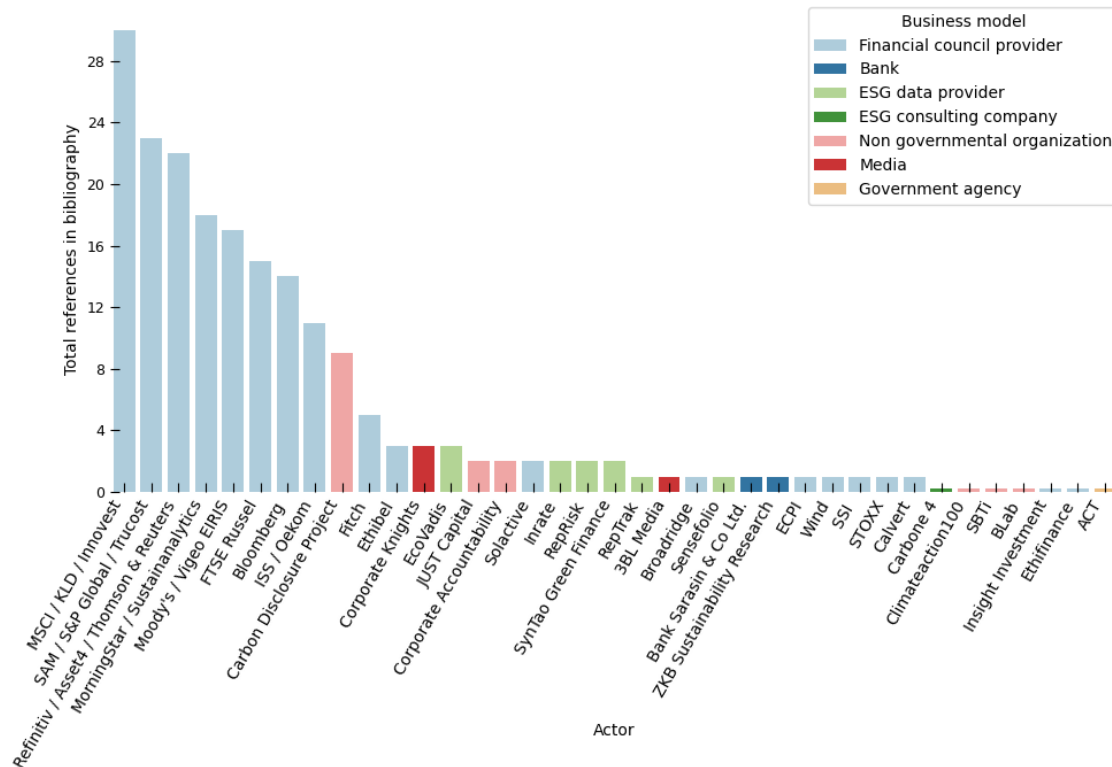


Figure 3: Identified actors and actor conglomerates according to the total number of references to them in the literature review. Colors denote their main activity and is described by the Figure's legend. Actors identified using a complementary google query are listed on the right of the bar chart.

impact or reputation. Note that the score's name is not a sufficient indicator to determine which underlying approach is applied.

The largest group consists of scoring systems focused on assessing the financial risk that ESG issues, particularly climate change, pose to corporations. These systems identify and assess the physical risks brought by climate change that threatens a company's operations and assets. They include the impact of acute events as flooding, wildfires and extreme heat, and the repercussions of chronic issues like droughts and coastal inundation. Further, some of these systems also analyze the risks and opportunities stemming from possible market, regulatory or technological changes. Generally, these scoring systems consider both the current company or industry exposure to risk and the alleviation actions the company plans to implement. Prime examples of such ratings are Morningstar/SustainAnalytics ESG Risk rating and SAM / S&P Global / Trucost's climate transition assessment.

The second most represented scoring type in our dataset puts emphasis on measuring corporate socio-environmental impacts. This includes analyzing current emissions levels by studying and eventually benchmarking corporate absolute and relative emissions. It can also entails estimating their future evolution, considering corporate emissions' past trends, reduction targets, and action plans. Additionally, such scores can also scrutinize the associated governance structure (e.g. use of carbon pricing for internal decision-making, climate performance dependent financial incentives for executive management, board structure). Emissions allocated to companies can include the emissions released throughout their complete value chain (scope 3 emissions), or focus on direct emissions from corporate assets (scope 1&2). Prime examples of such ratings are the CDP's climate score and SSI's carbon neutrality rating.

Lastly, a smaller group of scores centers on measuring corporate ESG reputation. They survey and monitor public opinion to evaluate trust in the corporations' responsible behavior. In particular, they focus on public ESG controversies on conventional and social media, and rate their relative importance and monitor their impact over time. These ratings do not rely on corporate disclosure to fuel their inputs. Prime examples of such ratings are the RepRisk and JUST Capital scores.

Groups are not mutually exclusive, as some systems consolidate different approaches into a single score (for instance, ISS / Oekom's ESG Corporate Rating investigates both the financial and impact materiality of companies). Additionally, even within a group, there exists a diversity of scoring perimeters.

Figure 4 displays the distribution of scores across actor business models, scoring types and assessment focuses. It shows risk-based assessments are mainly offered by financial advisory businesses and banks, while other actors generally publish impact based assessments. Reputation assessments are proprietary to specialized ESG assessment companies or NGOs. Rankings and labels are mostly distributed by media or NGOs, while scores and rankings are equally distributed among ESG data providers, consulting companies and banks.

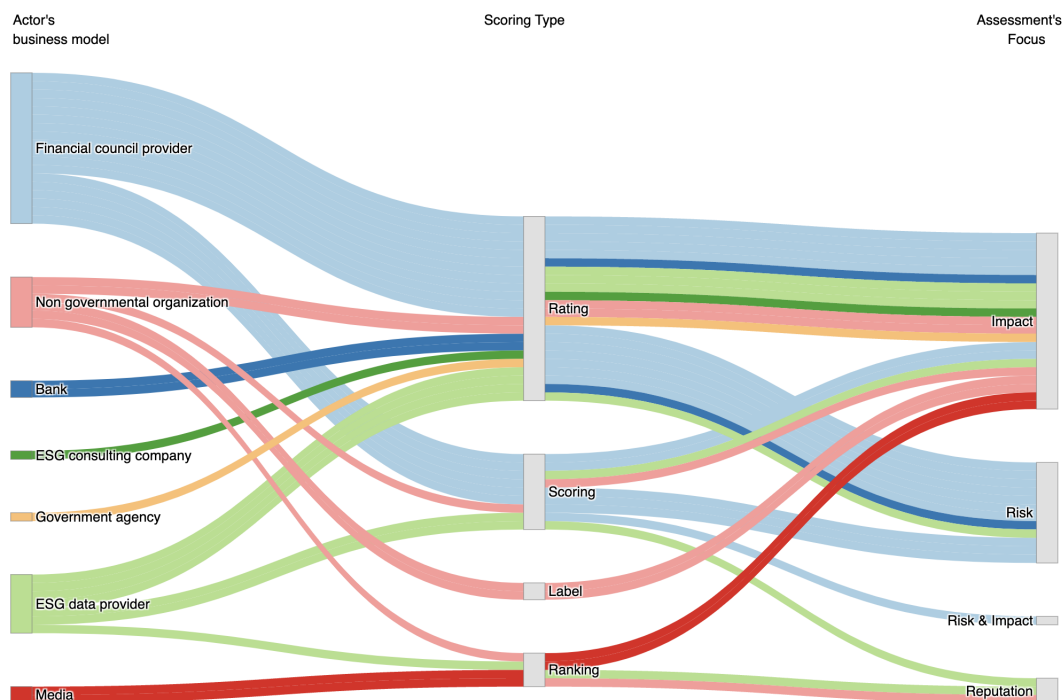


Figure 4: Distribution of scores across actor's business models, scoring types and assessment focuses. Colors denote the actor's business models, as in Figure 3.

3.2 Review of academic concerns

The following offers an overview of the criticism addressed to ESG rating systems by the scientific literature. Among the 70 documents of our review, 40 contained at least a critical view of CSR rating systems. We grouped the commentaries into four categories based on the aspect of the score they challenge: reliability, accuracy, fairness, and effectiveness in improving CSR performance. Categories are not exclusive: for example, the financial dependency of some raters on the companies they rate affects their reliability and may also

impact the fairness of the results. For the sake of readability, references for each concern are listed in Table 1.

3.2.1 Reliability

First and foremost, the reliability of CSR scoring actors has been extensively discussed by literature. A scoring's reliability is its capacity to deliver a consistent and comparable assessment for a single company or for companies with similar characteristics. This set of criticism was among the two most cited along with accuracy, with 53 total mentions.

The lack of transparency in raters' scoring approaches was the most frequently mentioned concern. This is expected, as this lack of transparency often hinders the researchers' efforts to understand and discuss results based on such scoring. This opaqueness can concern scoring weights, perimeters, criteria, thresholds and hypotheses depending on raters (Windolph, 2011). While we consider it mostly hinders reliability by limiting the trust in raters, we recognize it also rises concerns on the scoring's accuracy as it impedes the auditability of results.

The financial ties between the rater and the rated companies or the lack of an independent review of results were also a major points of attention. Researchers called in question whether raters can remain a reliable third party assessor while relying on rated companies for revenue. While it may seem excessive to suggest that corporations can directly purchase favorable ratings, we argue that it inevitably influences the scoring methodology. Companies can pay for data verification following a preliminary assessment to obtain a provisional grade or label (this is the case for the BCorp or SBTi label). Consequently, the grading system must be sufficiently lenient to ensure that a sufficient number of companies receive attractive preliminary grades and request data verification and a final rating.

Finally, the quality and comparability of the input data used by CSR scoring systems was a growing subject for scrutiny. Scoring systems rely on public corporate disclosure content or corporate answers to rater-specific CSR questionnaires. Yet, this content has been shown to contain inaccurate, rosy or deceptive information, and is rarely verified by an independent third party (Bingler et al., 2022; Boiral, 2013; Callery and Perkins, 2021; Lyon and Montgomery, 2015). This is made more probable when corporations are not mandated to follow frameworks that define the perimeter and methodology to compute the information to disclose (Christofi et al., 2012); and even with proper requirements, companies can still provide erroneous or manipulated information Brander et al., 2023. Major concerns thus centered on the lack of requirements for standardized, objective corporate inputs and the absence of information verification during the scoring process.

3.2.2 Accuracy

Second, the accuracy of CSR scoring was also frequently called into question. This group of criticisms doubts the capacity of CSR scoring systems to provide correct information on corporate performance. This set of 10 issues groups 37 total mentions across the 24 critical documents studied.

First and foremost, a report by France Stratégie underlined the necessity for CSR scoring systems to have rating criteria that go beyond what is enforced by regulation (France Stratégie, 2024). While it is not the most recurring criticism in the category, meeting it seems to be a prerequisite as corporate social responsibility efforts are, according to their most common definition, voluntary (Sarkar and Searcy, 2016).

Further, scoring systems commonly received negative feedback for their criteria weighting systems. The most common concern was that the weighting of criteria and their scope are chosen arbitrarily or, more specifically, without considering the materiality of the externalities of a company's activities.

Researchers also criticised the possibility for companies to compensate poor results on part of the assessment with acceptable ones in other sections. Indeed, latest visions of CSR call for a holistic approach, i.e. tackling issues in parallel and avoid worsening impacts for some stakeholders while trying to enhance

performance for others. Some thus also recommended the integration of stakeholder solicitation in all scoring methodologies through open consultation. Similarly, academics sometimes underlined the fact that rating systems fail to account for performance at value chain level, hiding indirect impacts that corporations are yet dependent on; or even plead for the exclusion of controversial sectors altogether (e.g. Oil & Gas, Tobacco, Air travel) as they cannot be congratulated for their CSR strategy given the proven magnitude of the negative impact of their activities.

Lastly, part of the literature condemned the CSR scoring systems for focusing only on rating the quality of corporate management of CSR issues and failing to assess the magnitude of externalities or their future predictable evolution. Critics also highlighted most fail to embrace absolute sustainability and compare corporate performance with downscaled Planetary boundaries.

3.2.3 Fairness

Third, the capacity of CSR scoring systems to show impartial and just treatment has been commented.

In particular, scores have been repeatedly criticized for failing to properly account for company size, industry, or geography, leading to a negative bias against companies with fewer financial and human resources. Further, Berg et al., 2019 found evidence of rater bias: companies that excel in certain criteria may face less scrutiny in other areas, as raters assume their overall performance will be equally strong.

3.2.4 Effectiveness in driving improvements

Lastly, although not widely recognized as a primary function of CSR scoring systems, their ability to drive corporate environmental transition has occasionally been questioned. More specifically, some argued it is a shame some methodologies do not force companies to improve to maintain their grade year-on-year or do not support them to do meet evolving requirements.

3.3 Assessment of current corporate measurement systems

3.3.1 Best-in-class behavior identification

Table 1 offers an overview of the issues listed above and the associated minimal passing criteria to binarily assess the raters. The criteria reflect best-in-class behaviors observed among the identified scores. Scoring systems displaying best-in-class behavior can be identified Figure 5 in the following section.

Prior to discussing best-in-class behavior, we want to emphasize that despite our best efforts, we were not able to assess our rating systems on all identified issues. Specifically, we failed to assess whether raters were likely to display rater bias. None of the scores we reviewed acknowledged this issue or explained how they addressed it and the lack of transparent data prevented us from seeking numerical evidence.

Regarding reliability, we found that despite the wide criticism, some systems disclosed their methodology in full, so their assessment is theoretically replicable by a third party. Further, a range of actors are financially independent of the corporations they assess. Similarly, some systems rely only on quantitative, standard-backed information and systematically request supporting proof documents (e.g. bills or written policies) to ensure the veracity of the information provided by corporations. On the topic of accuracy, the most advanced raters either avoid weighting altogether or apply a transparent, scientifically justified process. We deemed both these approaches equally acceptable. For example, JUST Capital determines the weighting of the issues assessed in their annual corporate ranking based on votes from a statistically significant sample of the American public. Some scores are designed to completely forbid compensation of partial results. Such scores either constitute the final score by taking the minimum of subscores on different ESG pillars, defining minimum requirements for companies to meet on each aspect, or rating companies separately on all aspects. Again, we deemed all these approaches equally acceptable. While most scores are industry-relative or assess corporate performance against arbitrary criteria, SBTi aims to compare corporate performance to the planetary boundaries when it comes GHG emissions and is integrated as a criterion in other scores. Further, some

raters involve a representative panel of stakeholders in the assessment, for instance by public consultation on weightings (JUST Capital) or by integrating stakeholders in the methodology review process (ISS ESG). Concerning fairness, the most advanced actors on the topic take into account company size, industry and geography to adapt scoring. Lastly, in relation to effectiveness, some systems systematically raise expectation for scored companies year-on-year, and offer companies extensive documentation on how to meet criteria and improve their ESG management.

Although the identification of best-in-class criterion was typically straightforward, we had to make some arbitrary choices to have operational rating criteria. First, we decided not to select a minimum list of sectors to exclude, as ratings generally do so on moral grounds. We thus accepted any list of exclusions. Second, we decided not to require scoring to adapt their methodology on company geography, size and industry as it might not be relevant for all scoring perimeters. For instance, geography might not be a relevant differentiating factor when it comes to assessing a company's contribution to the voluntary carbon market. We thus lessened the criteria and assess whether there was at least one of geography, industry or size was taken into account. Additionally, given the poor transparency of scoring systems and the variety of perimeters, we weren't able to ensure all scoring criteria went further than local legislation. We thus lessened the criteria to check that only one of the scoring criteria went further than a local legislation where the scoring is applied.

Table 1: Table summarizing criticisms of reliability and accuracy in CSR scoring systems according to gray and scientific literature, along with criteria chosen to evaluate scoring providers on each issue. Criteria correspond to best-in-class behavior observed among the scoring we scrutinized. Actors displaying best in class criteria can be identified using Table 5

Group	Issue Keyword	Issue	Best in Class Criterion	Sources
Reliability	Transparency	The scoring methodology is not transparent	Methodology is available in full online	Bernardini et al., 2024; Billio et al., 2021; Bourne et al., 2024; Callery and Perkins, 2021; Capizzi et al., 2021; Chatterji et al., 2016; Direction générale du Trésor, 2021; Escrig-Olmedo et al., 2019; Fonseca et al., 2014; González-Pozo et al., 2024; Jankalová and Jankal, 2017; Muñoz and Smoleńska, 2023; OECD, 2020, 2022; Patara and Dhalla, 2022; Saadaoui and Soobaroyen, 2017; Sipiczki, 2022; SustainAbility, 2023; Transparency and integrity of Environmental, Social and Governance (ESG) rating activities, 2024; Windolph, 2011
Reliability	Independency	Raters are not independent financially from rated companies	There are no financial ties between rater and rated companies	Billio et al., 2021; Direction générale du Trésor, 2021; Jankalová and Jankal, 2017; Kotsantonis and Serafeim, 2019; Muñoz and Smoleńska, 2023; Patara and Dhalla, 2022; Sipiczki, 2022; Transparency and integrity of Environmental, Social and Governance (ESG) rating activities, 2024; Windolph, 2011
Reliability	Standardization	Input information used is subjective and not standardized	The rating systems uses quantitative, standard-backed data points	Billio et al., 2021; Bourne et al., 2024; Callery and Perkins, 2021; Capizzi et al., 2021; Chen, 2025; Jankalová and Jankal, 2017; Kotsantonis and Serafeim, 2019; Muñoz and Smoleńska, 2023; OECD, 2020; Patara and Dhalla, 2022; Sipiczki, 2022; SustainAbility, 2023; Transparency and integrity of Environmental, Social and Governance (ESG) rating activities, 2024; Windolph, 2011

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Group	Issue Keyword	Issue	Best in Class Criterion	Sources
Reliability	Verification	Input information is not verified in the rating process	Input information is verified by requesting supporting documents	Bernardini et al., 2024; Billio et al., 2021; Callery and Perkins, 2021; Escrig-Olmedo et al., 2014; Muñoz and Smoleńska, 2023; Patara and Dhalla, 2022; Sipiczki, 2022; SustainAbility, 2023; Windolph, 2011
Accuracy	Weighting	Raters choose arbitrary weightings for the covered issues	Scoring does not require weighting or uses a transparent science-based weighting	Bernardini et al., 2024; Billio et al., 2021; Bourne et al., 2024; Capizzi et al., 2021; Chatterji et al., 2016; Chen, 2025; Escrig-Olmedo et al., 2010, 2014, 2019; Moneva et al., 2006; Muñoz and Smoleńska, 2023; Nikolaou and Tsalis, 2018; OECD, 2020; Saadaoui and Soobaroyen, 2017; Windolph, 2011
Accuracy	Compensation	Rated companies have the possibility to compensate for low scores on some criteria	Companies cannot compensate failing on categories by performing well on others	Billio et al., 2021; Deb and Behra, 2024; Escrig-Olmedo et al., 2010, 2014, 2019; France Stratégie, 2024; OECD, 2020; Windolph, 2011
Accuracy	Relativity	Rating is relative and does not take into account planetary boundaries	Rating compares corporate performance with planetary boundaries	Chatterji and Levine, 2006; Escrig-Olmedo et al., 2019; Fonseca et al., 2014; Nikolaou and Tsalis, 2018; OECD, 2020, 2022
Accuracy	Immateriality	Raters focus on immaterial ESG aspects	Criteria are justified by a materiality assessment	Bernardini et al., 2024; France Stratégie, 2024; González-Pozo et al., 2024; Muñoz and Smoleńska, 2023; SustainAbility, 2023; Transparency and integrity of Environmental, Social and Governance (ESG) rating activities, 2024
Accuracy	Impact	Ratings are based on disclosure and impact management and not negative impact magnitude	Rating takes into account negative impact levels	CSR issues and failing to assess the magnitude of externalities Delmas and Blass, 2010; Jankalová and Jankal, 2017; Muñoz and Smoleńska, 2023; OECD, 2020, 2022; Peng et al., 2024
Accuracy	Forward look	Ratings are based mostly on backwards looking information and do not consider future results	Rating projects future evolution of corporate performance	Fonseca et al., 2014; Moneva et al., 2006

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Group	Issue Keyword	Issue	Best in Class Criterion	Sources
Accuracy	Stakeholders	Stakeholders' opinions are not properly taken into account for the rating	A representative selection of all company stakeholders are solicited in the rating process	Diez-Cañamero et al., 2020; Escrig-Olmedo et al., 2019; Fonseca et al., 2014; Veenstra and Ellemers, 2020
Accuracy	Sector exclusion	Controversial sectors are not excluded from rated companies	A list of controversial sectors is excluded	Drempetic et al., 2020; Patara and Dhalla, 2022; Saadaoui and Soobaroyen, 2017
Accuracy	Value chain	Raters focus on company performance rather than reflecting at the value chain level	Criteria include impacts in the company's value chain	Escrig-Olmedo et al., 2019; Fonseca et al., 2014; Moneva et al., 2006
Accuracy	Regulation	Rating criteria do not go beyond regulation	At least one criterion is more ambitious than what is mandated by regulation applicable	France Stratégie, 2024
Fairness	Specificity	Method does not take into account company size, activity, geography resulting in bias	Approach takes into account at least company size, activity, or geography	Chen, 2025; Direction générale du Trésor, 2021; Dobrick et al., 2023; Drempetic et al., 2020; France Stratégie, 2024; Gupta et al., 2025; Gyönyörová et al., 2023; Kotsantonis and Serafeim, 2019; Muñoz and Smoleńska, 2023; Patara and Dhalla, 2022; Rossi et al., 2024; Sipiczki, 2022; Transparency and integrity of Environmental, Social and Governance (ESG) rating activities, 2024; Windolph, 2011
Fairness	*	Companies with a good performance on a criterion are less scrutinized on the rest of criteria	<i>Impossible to assess without access to the company input data</i>	Berg et al., 2019
Effectiveness	Progress	Companies are not expected to make progress year on year to retain the same rating	Criteria are made more ambitious yearly	Direction générale du Trésor, 2021; France Stratégie, 2024; Moneva et al., 2006

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Group	Issue Keyword	Issue	Best in Class Criterion	Sources
Effectiveness	Support	Rating process does not entail support to drive improvement at rated companies	Rated companies are offered documentation on how to meet criteria	Direction générale du Trésor, 2021; Transparency and integrity of Environmental, Social and Governance (ESG) rating activities, 2024

3.3.2 Assessment of scores against best-in-class behavior

Figure 5 displays the performance of scoring systems against the best-in-class criteria. A written version of this Table is available in Appendix if needed (Table 10, 11, 12 and 13). Explanations associated to each ratings assessment can be found in Tables 6, 7, 8 and 9. We recommend browsing the explanations Tables to fully grasp the reasons behind each individual rating. Sources for each assessment are listed in Table 2, along with the result of contacts of the scoring companies.

As a preliminary remark, it is essential to acknowledge that the amount of available public information on the scoring systems is limited. Overall, we failed to find any information on more than 20% of methodologies and to conclude fully on whether the score passes the criterion on 21% of the score-criteria pairs. In particular, raters usually fail to disclose clear and specific information on the nature and verification of data inputs used and the update of methodologies, as we were not able to assess raters in respectively 40%, 50% and 50% of the cases on both these criteria. In the current state of the market, it is thus unclear whether most ESG and climate scoring systems actually improve information quality and proactively push companies to improve year-on-year.

On the same note, almost all rated systems failed to disclose if they used qualitative data points or at least partially relied on them for their corporate assessment. Some actors cope with the analysis of qualitative data by using generative AI on the market. While we agree, in line with latest scientific results, that this technology can help deal with the growing amount of declarative qualitative data (Bingler et al., 2022), we want to emphasize that, depending on the technology used, this can come at the cost of transparency on rating methodologies.

Similarly, most scores failed to disclose whether corporate emissions levels or projections were compared with planetary boundaries, or propose final results relative to a company pool. We thus recommended refraining from using ESG scoring levels to claim a company or set of companies is absolutely sustainable or improving towards absolute sustainability.

When sufficient information is available to draw conclusions, our research indicates that the market is still relatively misaligned with best practices, with over 32% of evaluations failing to meet our criteria. In particular, the elements scrutinized by the upcoming European legislation (Transparency and integrity of Environmental, Social and Governance (ESG) rating activities, 2024) are still marginal in the market: according to our analysis, only 29% percent of the actors disclose a full public methodology; and only 45% percent of scores belong to an actor with a business model that does not depend on rated companies for revenue.

Further, scoring systems that rely on weighting systems still perform very poorly regarding critiques on the choice of the weighting: only 17% of them have either no weighting or a transparent, science-based weighting. While a significant proportion declares or declares having a weighting backed by a materiality analysis (45%), it is unclear how this promise translates in practice as a minority of the actors described how this materiality was assessed. When the materiality assessment process is described, it can be called into question: for instance, Refinitiv / Asset4 / Thomson & Reuters claims to measure topic materiality by considering the quantity of industry specific disclosure for the elements; and Syntao Green finance states they use "Material ESG indicators that are consistent with international practice and the actual situation in China". On the same note, we note that the definition of term 'materiality' varies significantly from actor to actor, with some some focusing only on financial materiality (outside-in), others on environmental and social materiality (inside-out). Only ISS-Oekom's ESG Corporate rating and S&P's global ESG score clearly claim to combine both approaches.

Similarly, only a few scoring systems address the possibility for companies to compensate poor performances on some ESG aspects, with for instance minimum requirements on certain criteria to reach certain ratings. This effectively means that, to our knowledge, current ESG ratings cannot be used to ensure companies have at least an acceptable performance on all relevant socio-environmental aspects. More specifically, a global ESG rating cannot be used as a guarantee when it comes to corporate climate performance.

Lastly, ESG scores currently mostly miss the mark on helping the rated companies fill their requirements and progress yearly (respectively 23% and 8% of the scores where this is applicable discuss this in their methodologies).

Our analysis nevertheless shows some market progress. First, most studied ESG ratings have at least a climate related criteria that goes beyond regulation, ensure the taking into account of impacts across the value chain, and requests the disclosure or scrutinize indirect emissions. Similarly, a growing number of actors seems to go beyond valuing disclosure and account for negative impact levels in their analysis (43% of scores). In the case of corporate climate performance, this translates most of the time in the benchmarking of relative emission levels against industry peers. Additionally, 55% of scores we assessed integrate element relative to the future evolution company emissions. While this is a progress, often, it seems only corporate reduction targets are considered and assessments do not offer a critical review of corporate emissions reduction strategies. Lastly, more than 80% of score differentiate their assessment method according to company size, geography or industry. While this overall positive, it sometimes seems to serve the objective of having an unrepeatable, complex and opaque methodology; especially when indicator weighting methods are not disclosed or do not follow the principles of double materiality assessment. Note that two of the criteria where we find a significant proportion of score passes are criteria for which we had to make an arbitrary choice, as best practice was ambiguous or too hard to assess.

In addition to these overarching trends, we note that even within a single score focus group, scores have diversity of performance against our criteria. For instance, when it comes to risk assessment, SAM/ S&P Global / Trucost ESG Score validates 7 criteria while Syntao Greenly Finance only passes 3. We thus call for a more rigorous selection of scoring system, regardless of the focus needed. Similarly, we find no notable differences in overall performance depending on actor type or score format. In this context, none of this information can be used to prematurely conclude on the quality of the scoring system.

All in all, while there is no ESG scoring that answers all the concerns of literature, Pareto-efficient offers are highlighted in orange in Figure 5. Since the ratings perform quite differently across criteria, we uncover 13 Pareto-efficient scores. A few outstanding ones include: the BCorp label (the best performing across our criteria), Carbone 4's compatibility score with the Paris Agreements (uses solely standardized, quantitative data and takes into account negative impact levels) Climateaction 100 (performs quite similarly to BCorp across our criteria except for the exclusion of controversial sector, and is additionally financially independent of the companies they rate), Corporate Knights' score (does not perform well on materiality, compensation issues and taking into account current and future negative impacts, yet it is the best performing actor when it comes to reliability: its rating is transparent on its methodology, the organization is financially independent of the rated companies and the information used is quantitative and standard-backed), and SBTi (offers an absolute label focused on future impact and pose no issue of weighting nor compensation due to it being single criteria). Further, note that the SBT standard is referred to by the majority of the rest of the scores to evaluate corporate reduction targets. We suggest focusing on these actors when choosing a science-based ESG data provider, or filtering our results based on scoring type and assessment focus to recompute the Pareto frontier among a smaller set of systems that answer considered needs.

4 Discussion

Building on our findings, this section highlights the key limitations and potential interpretations of our work. It also highlights elements of discussions with raters.

4.1 Limitations

First, all our results are based on public declarative information edited by raters. It remains unclear to what extent the practices presented are applied and practices can be poorly defined. For instance, a few systems claim their criteria weightings are based on a double materiality assessment to ensure it reflects the impact magnitude on all stakeholders. We wonder to what extent this is accurate, given the formidable

resources required to properly assess materiality of thousands of criteria across a multitude of stakeholders and industries. In line with this remark, we note other criteria lack specificity. For instance, it remains unclear what qualifies as a sufficient supporting document to guarantee the exactitude of information due to the absence of further description by raters.

Second, not every concern was relevant to all scoring types and focus areas. In particular, issues related to weighting, compensation of poor performance or criteria choice are not applicable to labels that do not rely on an underlying scoring system such as the SBTi label or MSCI / KLD / Innovest's Implied Temperature rise rating. Similarly, other issues pertaining to compensation of performance of various ESG aspects are not applicable to single criteria evaluations; and it is irrelevant to expect ESG reputation ratings to require supporting documents to justify public perceptions. Finally, some assessments measure corporate performance against an absolute threshold (e.g. remaining carbon budget to uphold the Paris Agreement). These scoring systems cannot be expected to be made more ambitious year-on-year. We attribute the mismatch of concerns and scores to the previously discussed diversity of scoring perimeters, focuses, and formats.

Further, this study casts a shadow on the relevance of some criticism addressed to CSR scoring systems and showcases tradeoffs between them. Indeed, while most scores fail to exclude a list of controversial sectors from their assessment pool, it seems in some cases justified. In particular, some scores have a particularly punitive approach, which leads them to focus on companies in the most controversial industries (e.g. the Corporate Accountability's Corporate Hall of Shame); while other voluntarily focus on controversial sectors as they deem them key sectors for the low carbon transition (Climateaction 100's Net Zero Company Benchmark). Regarding tradeoffs, scores that integrate stakeholder opinions in their ratings often fail on other criteria pertaining to the materiality or ambition of their assessment (e.g. Just Capital, The Global 100 list). We trace this back to the difficult identification of relevant stakeholders and the overall lack of education of the general public on socio-environmental issues. Finally, ratings that directly depend on the rated companies for revenue (BLab, SBTi, S&P climate transition assessment) typically outperform their peers in providing support to foster corporate CSR improvements. We conclude that, although direct financial dependency calls into question the rater's reliability, it can help improve the way rated companies are accompanied in their low-carbon transition.

Lastly, we emphasize that best-in-class behavior does not always align with the ideal practices that raters could demonstrate. A major concern is weighting. For instance, alignment with planetary boundaries and negative impact levels should be significant in the final results. However, the current work only assessed whether they were included as rating criteria. Likewise, we could expect raters to take into account any company characteristic that affects corporate CSR performance rather than taking only into account size, industry or geography.

All in all, we conclude that the definition of absolute requirements for scores requires further conceptualisation.

4.2 Challenges from ESG Raters

We presented our initial analysis to market actors to ensure we correctly represented their methodology. This section provides an overview the rater's counterarguments and justifications for the methodological limitations we underlined.

The market actors we exchanged with offered relevant documentation and talking points and thus appeared to be aware and sensitive to academic concerns. Some actors (Bloomberg, EcoVadis, ISS ESG, LSEG, Moody's, MorningStar Sustainalytics, MSCI, RepRisk, S&P, and SynTao Green Finance) showed proactivity and signed an industry code of conduct ESG Data and Ratings Working Group (DRWG), 2023 that notably sets standards on financial independence and transparency.

Actors justified their lack of transparency as a precaution against plagiarism ESG Data and Ratings Working Group (DRWG), 2023. This argument can be doubted considering some of the most notorious and

ambitious products on the market (e.g. the S&P Global ESG Score or the CDP climate score) have fully transparent methodologies. We hypothesize that the complexity of input data collection is sufficient to deter the copy of methodologies.

Some actors acknowledged the poor quality of declarative ESG data. For instance, RepRisk explicitly developed their methodology to avoid this issue, and Swisscanto does not consider scope 3 emissions due to the poor quality of indirect emissions levels disclosures. Yet, most raters state that the collection of specific and verified data is arduous and goes against their efforts to scale the score's coverage.

Some actors stated that their individual choices of perimeter, weighting and ambition were solely consequences of their client's needs. However, we also attribute this diversity of choices to the difficulty of performing an industry-specific materiality analysis across hundreds of criteria. Further, given the similarity of input data sources, CSR scoring results would be similar if the weighting of criteria were science-based and rigorous across actors. This redundancy would threaten the actors financially since their market shares currently overlap. (SustainAbility, 2023) We thus argue varying perimeter, weighting, and ambitions also result from the need of differentiation of the different market actors.

The ambition of scores can also limit their capacity to discriminate between companies. Indeed, ambitious ESG scores tend to rate companies poorly, and, most importantly, similarly. We theorize ambitious scores can thus only be niche, dedicated to inform companies of their shortcomings but unlikely to become a massified decision-making product. We consider this inherent dependency of the ESG scores to average corporate behavior contributes to the status quo.

5 Conclusion

Our research contributes to the emergence of accessible and trustworthy corporate climate data. We identify current corporate climate performance scoring systems, review literature to derive scores quality criteria and assess scores against them.

While the market has experienced a range of mergers and acquisitions, corporations and financial actors still have a significant range of options to choose from to support their sustainable decision-making. Further, scores display a wide variety of focuses. Some measure the magnitude and management of climate and low-carbon transition risks, others focus on the management of GHG, and some assess the public perception of corporate action. We recommend scores users stay cautious, in particular to avoid mislabelling the capacity of companies to uphold the financial challenges brought by environmental changes as sustainability. Further, the market might benefit from a regulatory standardisation of assessment approaches to avoid any errors and manipulations.

Academia raises a number of issues on the reliability, accuracy, fairness and effectiveness in driving corporate improvements of such systems. Mentioned issues seem overlooked by demand as raters do not typically focus on them in their marketing strategy, and go beyond the improvements of upcoming legislation (Transparency and integrity of Environmental, Social and Governance (ESG) rating activities, 2024). Yet, these issues call into question the ability of scoring systems to direct investment efforts and contracts towards actors of the low-carbon economy.

For each of these concerns, we identify best-in-class rater behaviour, that is, the most relevant rater practice to address the issue. In some cases, best-in-class behavior is still insufficient to fully address the concern. For instance, we find further progress is probably needed on data verification, or ensuring that impact metrics are valued as highly as data disclosure. It can also be unclear whether raters follow through on their public commitments, particularly when applying double materiality assessments to determine criteria and weightings across multiple sectors.

Our assessment of the scoring systems against these best-in-class behavior reveals a mixed performance

of current rating systems. On the one hand, scores often fall short of best practice in terms of transparency, data input quality, the potential to compensate for poor grades, and the justification of weighting systems. On the other hand, they are relatively aligned with best practices when evaluating performance at the value chain level, considering company-specific factors, and going beyond regulatory requirements. We also identify trade-offs between criteria and discuss the relevance of certain academic expectations. All and all, we find no score answers every concern raised by the literature, and recommend an in depth study of methodologies before choosing an ESG scoring provider.

Our study has limitations, which we highlight to encourage further research. First and foremost, we focus on ESG scoring systems that cover climate change. While we consider this is an outstanding issue, a similar tool review for other environmental and social impacts would benefit literature. Further, we acknowledge that another focus, albeit on the same generic ESG scores, could change the assessment outcome, as our analysis centred on climate-related methodology. Repeating our climate-centered analysis could also be valuable, as it provides only a snapshot of a dynamic market and academic discussion. In particular, we believe we might have missed scores edited by early stage startups or local companies. Further, we are certain other assessment criteria will be proposed as the academic topic matures.

Second, we rely only on publicly available data to make our assessments. This effectively penalizes opaque actors throughout all criteria and makes this study vulnerable to false reporting for market actors. The literature would benefit from further research to estimate rater behavior empirically rather than relying on voluntary disclosure.

Third, for practical purposes, our assessment is binary and does not reflect all the nuances of approaches of the raters. We thus encourage readers to read the input data for scoring the assessment available as supplementary material to get a fuller picture (Tables 6, 7, 8, and 9). For similar reasons, our assessment is relative and only compares scores to best-in-class behavior; and in a minority of cases, we arbitrarily chose an ambition level. Thus, our results do not prescribe ideal system behavior, and are partially dependent on choices we made. Ultimately, we urge further academic discussion on the desired behavior of these systems, as they could significantly influence the future economy and our ability to achieve a low-carbon society.

Actor	Scoring name	Criterion																Number of passing criteria	
		Transparency	Independency	Standardisation	Verification	Weighting	Compensation	Relativity	Immateriality	Impact	Forward look	Stakeholders	Sector exclusion	Value chain	Regulation	Specificity	Progress		Support
3BL Media	100 Best Corporate Citizens	Red	Green	Green	Green	Red	Red	Red	Red	Red	Red	Red	Red	Green	Green	Green	Red	Red	3
Bank Sarasin & Co Ltd.	J. Safra Sarasin ESG Rating	Red	Green	Green	Green	Red	Red	Red	Red	Red	Red	Red	Red	Green	Green	Green	Red	Red	3
BLab	B Corp Label (2025 standard)	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	12
Bloomberg	ESG Score	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	7
Bloomberg	UN SDG Impact materiality	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	8
Bloomberg	Various	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	0
Carbon Disclosure Project	CDP Climate Score	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	7
Carbone 4	Compatibility score with the Paris Agreement	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	10
Carbone 4	Carbon Impact Analytics	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	0
Climateaction100	Net Zero Company Benchmark	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	9
Corporate Accountability	Corporate Hall of Shame	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	2
Corporate Knights	The Global 100 list	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	7
EcoVadis	Ecovadis Medals and Badges	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	6
ECPI	Carbon rating	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	7
ECPI	ESG Rating	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	0
Ethifinance	Unavailable	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	0
Fitch	ESG Vulnerability score	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	0
FTSE Russel	FTSE ESG Scores	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	7
Inrate	ESG impact ratings	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	6
Insight Investment	Prime climate risk ratings	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	6
Insight Investment	Prime ESG ratings	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	7
ISS / Oekom	ESG Corporate Rating	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	6
ISS / Oekom	Carbon Risk Rating	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	0
JUST Capital	Annual JUST capital corporation ranking	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	11
Moody's / Vigeo EIRIS	ESG risk score	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	0
Moody's / Vigeo EIRIS	Climate risk score	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	0
MorningStar / Sustainalytics	Low Carbon Transition Rating	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	6
MorningStar / Sustainalytics	ESG Risk rating	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	3
MorningStar / Sustainalytics	Physical risk rating	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	6
MSCI / KLD / Innovest	MSCI Implied Temperature Rise	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	6
MSCI / KLD / Innovest	MSCI ESG Rating	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	4
Refinitiv / Asset4 / Thomson & Reuters	ESG Score	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	2
RepRisk	RepRisk Index	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	3
RepTrak	ESG Perception & Global RepTrak 100	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	2
SAM / S&P Global / Trucost	S&P Global ESG Score	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	7
SAM / S&P Global / Trucost	Climate Transition Assessment	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	7
SBTi	Science Based Targets labels	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	8
Sensefolio	Sensefolio ESG framework	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	0
SSI	ESG Rating	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	4
SSI	Carbon neutrality rating	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	5
SynTao Green Finance	SynTao ESG Rating	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	3
ZKB Sustainability Research	Swisscanto Sustainability rating	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	5
Passing percentage (when issue is applicable)		27%	48%	12%	10%	19%	10%	34%	48%	47%	55%	10%	16%	61%	94%	88%	8%	21%	

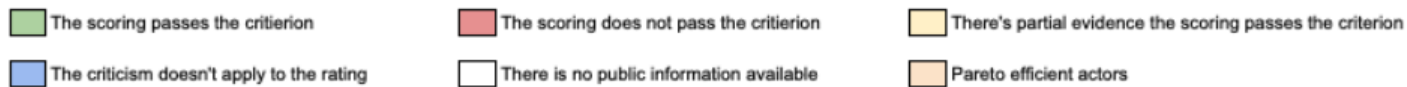


Figure 5: Result of the assessment of the identified scoring systems against best-in-class criteria. Criteria are further described in Table 1. The details of how ratings perform against the criteria are available in Tables 6, 7, 8 and 9 Appendix. To ensure readability, the same content is available with on a table format with written information in the Appendix (Tables 10, 11, 12, 13).

Table 2: List of sources used for the analysis and contacts made with companies. In case the company responded, response is available along with contact reason in the "Contact and Response" column. The table presents the scoring system, relevant documentation or sources, and any additional contact or response information for each actor.

Actor	Score	Source	Contact/Response
3BL Media	100 Best Corporate Citizens	3BL, 2024a , 2024b	Company contacted to review their assessment. No response.
Bank Sarasin & Co Ltd.	J. Safra Sarasin ESG Rating	MSCI ESG Research, 2023 ; Sarasin, 2024	Company contacted to review their assessment. No response.
B Lab	B Corp Label	B Lab, 2024a , 2024b , 2024c	Company contacted to review their assessment. No response.
Bloomberg	ESG Score	Bloomberg Professionnal Services, 2024a , 2024c	Company contacted as public information is too scarce to assess their methodology. The company shared 2 proprietary methodologies after having discussed the purpose of the research and accessed assessment criteria.
	UN SDG Impact materiality	Bloomberg Professionnal Services, 2024b , 2024c	Company contacted as public information is too scarce to assess their methodology. The company shared 2 proprietary methodologies after having discussed the purpose of the research and accessed assessment criteria. The rater further provided feedback on its assessments. The feedback is included in tables 6 , 7 , 8 and 9 .
	Various	Bloomberg Professionnal Services, 2024a , 2024b , 2024c	Company contacted as available information is too scarce to assess their methodology. The company shared 2 proprietary methodologies after having discussed the purpose of the research and accessed assessment criteria. The feedback is included in tables 6 , 7 , 8 and 9 .

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Actor	Score	Source	Contact and Response
Broadridge			Company contacted to ensure they offer no scoring system. No response.
Calvert			Company contacted to ensure they offer no scoring system. No response.
Carbon Disclosure Project	CDP Climate Score	CDP, 2024a , 2024b , 2024c	Company contacted to review their assessment. No response.
Carbone 4	Compatibility score with the Paris Agreement	Aboukrat et al., 2022	Company contacted to review their assessment. No response.
	Carbon Impact Analytics		Company contacted as available information is too scarce to assess their methodology. Company contacted to review their assessment. No response.
Climateaction 100	Net Zero Company Benchmark	Climate Action 100, 2023 , 2024 ; Climate Action 100+, 2024	Actor contacted to review their assessment. The actor responded positively and requested a meeting, but stopped answering when discussing meeting scheduling.
Corporate Accountability	Corporate Hall of Shame	Corporate Accountability, 2024a , 2024b	Company contacted to review their assessment. No response.
Corporate Knights	The Global 100 list	Corporate Knights Inc., 2024a , 2024b	Company contacted to review their assessment. No response.
EcoVadis	Ecovadis Medals and Badges	Ecovadis, 2024a , 2024c , 2024d , 2024f	Company contacted to review their assessment. No response.
	Carbon rating	Ecovadis, 2024b , 2024e	Company contacted to review their assessment. No response.
ECPI	ESG Rating		Company contacted as available information is too scarce to assess their methodology. No response.

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Actor	Score	Source	Contact and Response
Ethibel			Company contacted to ensure they offer no scoring system. No response.
Ethifinance	Various		Company contacted as available information is too scarce to assess their methodology. No response.
Fitch	ESG Vulnerability score	FitchRatings, 2020 , 2021	Company contacted as available information is too scarce to assess their methodology. No response.
FTSE Russel	FTSE ESG Scores	FTSE Russell, 2023 , 2024	Company contacted to review their assessment. The company answered they would look into it, but never got back to us.
Inrate	ESG impact ratings	Inrate, 2024a , 2024b	Actor contacted to review their assessment. The actor responded positively and requested a meeting, but stopped answering when discussing meeting scheduling.
Insight Investment	Prime climate risk ratings	Insights Investment, 2024a , 2024d	Company contacted to review their assessment. No response.
	Prime ESG ratings	Insights Investment, 2024b , 2024c	Company contacted to review their assessment. No response.
ISS / Oekom	ESG Corporate Rating	ISS ESG, 2023 , 2024c	Company contacted to review their assessment. The company declined to participate further.
	Carbon Risk Rating	ISS ESG, 2024a , 2024b	Company contacted to review their assessment. The company declined to participate further.
JUST Capital	Annual JUST Capital Corporation Ranking	JUST Capital, 2024a , 2024b	Company contacted to review their assessment. No response.

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Actor	Score	Source	Contact and Response
Moody's / Vigeo EIRIS	ESG Risk Score		Company contacted as available information is too scarce to assess their methodology. The company responded ESG ratings will be discontinued following a partnership with MSCI.
MorningStar / Sustainalytics	Climate Risk Score		Company contacted as available information is too scarce to assess their methodology. The company responded ESG ratings will be discontinued following a partnership with MSCI.
MorningStar / Sustainalytics	Low Carbon Transition Rating	Morningstar / Sustainalytics, 2024b	Company contacted to review their assessment. The actor responded to our inquiry by providing links to already accessed documents.
MorningStar / Sustainalytics	ESG Risk Rating	Morningstar / Sustainalytics, 2024a , 2024c	Company contacted to review their assessment. The actor responded to our inquiry by providing links to already accessed documents.
MorningStar / Sustainalytics	Physical Risk Rating	Morningstar / Sustainalytics, 2023	Company contacted to review their assessment. The actor responded to our inquiry by providing links to already accessed documents.
MSCI / KLD / Innovest	MSCI Implied Temperature Rise	MSCI ESG Research, 2020 , 2021 , 2024a	Company contacted to review their assessment. No response.
MSCI / KLD / Innovest	MSCI ESG Rating	MSCI ESG Research, 2024a , 2024b , 2024c	Company contacted to review their assessment. No response.
Refinitiv / Asset4 / Thomson & Reuters / LSEG	ESG Score	LSEG, 2023	Company contacted to review their assessment. No response.

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Actor	Score	Source	Contact and Response
RepRisk	RepRisk Index	ESG Data and Ratings Working Group (DRWG), 2023; RepRisk, 2023, 2024a, 2024b, 2024c	Company contacted to review the assessment of their methodology. The company provided sources ESG Data and Ratings Working Group (DRWG), 2023; RepRisk, 2023, 2024b, 2024c so that we could review our initial assessment. The documents were integrated in the final assessment as specified Tables (6, 7, 8 and 9).
RepTrak	ESG Perception & Global RepTrak 100	Reptrak, 2024	Company contacted to review their assessment. No response.
SAM / S&P Global / Trucost	S&P Global ESG Score	S&P Global Inc., 2024a, 2024b, 2024c, 2024e	
	Climate Transition Assessment	S&P Global Inc., 2023, 2024d, 2024f, 2024g	Company contacted as available information is too scarce to assess their methodology.
SBTi	Science Based Targets Labels	Science Based Targets initiative, 2023, 2024a, 2024b, 2024c, 2024d	
Sensefolio	Sensefolio ESG Framework		Company contacted as available information is too scarce to assess their methodology. No response.
Solactive	Solactive ISS ESG EU Paris-Aligned & Climate Transition Benchmarks	Solactive AG German Index Engineering, 2024	Company contacted to ensure they offer no scoring system. No response.
SSI	ESG Rating	Shanghai Huazheng Index Information Service Co., 2024a, 2024b, 2024c	Actor reviewed the initial assessment, and provided the latest version of their methodology brochure. Rater's response has been integrated in the final assessment and can be read in the detailed assessment (Tables 6, 7, 8 and 9).

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Actor	Score	Source	Contact and Response
STOXX	Carbon Neutrality Rating	Shanghai Huazheng Index Information Service Co. translated by ChatGPT 4.0, 2024	<p>Actor reviewed the initial assessment, and provided its latest methodology description. Rater's reponse has been integrated in the final assessment and can be read in the detailed assessment Tables (6, 7, 8 and 9).</p> <p>Company contacted to ensure they offer no scoring system. No response.</p>
SynTao Green Finance	SynTao ESG Rating	Syntao Finance, 2024	<p>Company contacted to review their assessment. No response.</p>
Wind			<p>Company contacted to ensure they offer no scoring system. No response.</p>
ZKB Sustainability Research	Swisscanto Sustainability Rating	Zürcher Kantonalbank / Swisscanto, 2024	<p>Company contacted to review their assessment. No response.</p>

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Supplementary material

Table 3: List of rating providers identified by our literature review. Raters are grouped according to the results of latest mergers and acquisitions.

Actor	Mentioned by	Total mentions
MSCI / KLD / Innovest	Berg et al., 2019; Bernardini et al., 2024; Billio et al., 2021; Bourne et al., 2024; Capizzi et al., 2021; Chatterji and Levine, 2006; Chatterji et al., 2016; Chen, 2025; Christensen et al., 2022; Delmas and Blass, 2010; Diez-Cañamero et al., 2020; Doyle, 2018; Environmental Resources Management, 2021; Escrig-Olmedo et al., 2014, 2019; Fichtner et al., 2024; Gibson Brandon et al., 2021; González-Pozo et al., 2024; Gupta et al., 2025; Jankalová and Jankal, 2017; Mooij, 2017; OECD, 2020, 2022; Saadaoui and Soobaroyen, 2017; Siew, 2015; Sipiczki, 2022; SustainAbility, 2023; Veenstra and Ellemers, 2020; Windolph, 2011	30
SAM / S&P Global / Trucost	Berg et al., 2019; Bernardini et al., 2024; Billio et al., 2021; Bourne et al., 2024; Capizzi et al., 2021; Chatterji and Levine, 2006; Chatterji et al., 2016; Christofi et al., 2012; Delmas and Blass, 2010; Diez-Cañamero et al., 2020; Environmental Resources Management, 2021; Escrig-Olmedo et al., 2010, 2014, 2019; Jankalová and Jankal, 2017; Mooij, 2017; OECD, 2022; Rossi et al., 2024; Saadaoui and Soobaroyen, 2017; Siew, 2015; Sipiczki, 2022; SustainAbility, 2023; Windolph, 2011	23
Refinitiv / Asset4 / Thomson & Reuters / LSEG	Berg et al., 2019; Bernardini et al., 2024; Bourne et al., 2024; Capizzi et al., 2021; Chatterji and Levine, 2006; Chen, 2025; Christensen et al., 2022; Dobrick et al., 2023; Dremptic et al., 2020; Escrig-Olmedo et al., 2014, 2019; Gibson Brandon et al., 2021; González-Pozo et al., 2024; Gupta et al., 2025; Mooij, 2017; Muñoz and Smoleńska, 2023; OECD, 2020; Peng et al., 2024; Rossi et al., 2024; SustainAbility, 2023; Veenstra and Ellemers, 2020	22
MorningStar / Sustainanalytics	Arvidsson and Dumay, 2022; Berg et al., 2019; Bernardini et al., 2024; Billio et al., 2021; Capizzi et al., 2021; Christensen et al., 2022; Diez-Cañamero et al., 2020; Doyle, 2018; Environmental Resources Management, 2021; Escrig-Olmedo et al., 2014; Fichtner et al., 2024; Gibson Brandon et al., 2021; Gupta et al., 2025; Muñoz and Smoleńska, 2023; Rossi et al., 2024; Sipiczki, 2022; SustainAbility, 2023	18

Actor	Mentioned by	Total mentions
Moody's / Vigeo EIRIS	Berg et al., 2019; Billio et al., 2021; Capizzi et al., 2021; Chen, 2025; Diez-Cañamero et al., 2020; Environmental Resources Management, 2021; Escrig-Olmedo et al., 2010, 2014, 2019; González-Pozo et al., 2024; Gyönyörová et al., 2023; Mooij, 2017; Saadaoui and Soobaroyen, 2017; Siew, 2015; SustainAbility, 2023; Veenstra and Ellemers, 2020; Windolph, 2011	17
London Stock Exchange / FTSE Russel	Bourne et al., 2024; Chatterji and Levine, 2006; Chatterji et al., 2016; Diez-Cañamero et al., 2020; Escrig-Olmedo et al., 2010, 2014, 2019; Gibson Brandon et al., 2021; Jankalová and Jankal, 2017; Mackenzie et al., 2013; Muñoz and Smoleńska, 2023; Saadaoui and Soobaroyen, 2017; Siew, 2015; SustainAbility, 2023; Wang et al., 2024; Windolph, 2011	15
Bloomberg	Bernardini et al., 2024; Capizzi et al., 2021; Escrig-Olmedo et al., 2014; Fichtner et al., 2024; Gibson Brandon et al., 2021; Gupta et al., 2025; Muñoz and Smoleńska, 2023; OECD, 2020, 2022; Siew, 2015; Sipiczki, 2022; SustainAbility, 2023; Veenstra and Ellemers, 2020; Wang et al., 2024	14
ISS / Oekom	Bernardini et al., 2024; Diez-Cañamero et al., 2020; Doyle, 2018; Environmental Resources Management, 2021; Escrig-Olmedo et al., 2010, 2014, 2019; Muñoz and Smoleńska, 2023; Sipiczki, 2022; SustainAbility, 2023; Windolph, 2011	11
Carbon Disclosure Project	Bernardini et al., 2024; Brander et al., 2023; Callery and Perkins, 2021; Environmental Resources Management, 2021; Siew, 2015; Sipiczki, 2022; SustainAbility, 2023; Windolph, 2011; Zha et al., 2020	9
Fitch	Billio et al., 2021; Bourne et al., 2024; Environmental Resources Management, 2021; Muñoz and Smoleńska, 2023; SustainAbility, 2023	5
Corporate Knights	Diez-Cañamero et al., 2020; Patara and Dhalla, 2022; Windolph, 2011	3
EcoVadis	Diez-Cañamero et al., 2020; Muñoz and Smoleńska, 2023; SustainAbility, 2023	3
Ethibel	Diez-Cañamero et al., 2020; Jankalová and Jankal, 2017; Windolph, 2011	3
Corporate Accountability	Escrig-Olmedo et al., 2014, 2019	2
Inrate	Capizzi et al., 2021; Gibson Brandon et al., 2021	2
JUST Capital	Patara and Dhalla, 2022; SustainAbility, 2023	2
RepRisk	Doyle, 2018; SustainAbility, 2023	2
Solactive	Diez-Cañamero et al., 2020; Jankalová and Jankal, 2017	2
SynTao Green Finance	Li and Xu, 2024; Wang et al., 2024	2

Actor	Mentioned by	Total mentions
3BL Media	Patara and Dhalla, 2022	1
Bank Sarasin & Co Ltd.	Windolph, 2011	1
Broadridge	Fichtner et al., 2024	1
Calvert	Chatterji and Levine, 2006	1
ECPI	Diez-Cañamero et al., 2020	1
RepTrak	Diez-Cañamero et al., 2020	1
Sensefolio	Muñoz and Smoleńska, 2023	1
Sino-securities index (SSI)	Wang et al., 2024	1
STOXX	Mooij, 2017	1
Wind	Wang et al., 2024	1
ZKB Sustainability Research	Windolph, 2011	1
BLab	*	0
Carbone 4	*	0
Climateaction100	*	0
Ethifinance	*	0
Insight Investment	*	0
Science Based Target initiative	*	0

Table 4: Review of scoring systems identified for each market actor. The table displays the score’s name, type and focus. Ratings were identified by browsing the actors’ official website. This table does not include actors for which no rating has been identified (Broadridge, Clavert, Ethibel, Solactive, STOXX, Wind). The information pertaining to scoring for which no public documentation is available is left empty in this table (Carbone 4’s Carbon Impact Analytics; ECPI’s ESG Rating, Ethifinance’s various unidentified ratings, Moody’s / Vigeo EIRIS’ ESG and climate risk score (discontinued in 2024)). Sources for each actors and scoring are available in Table 2.

Actor	Scoring Name	Climate specific	Type	Focus	Description
3BL Media	100 Best Corporate Citizens	No	Scoring & Ranking	Impact	The 100 Best Corporations is a corporate ESG ranking system. It relies on a scoring based on 7 pillars (Climate Change, Employees, Environment, Stakeholders and Society, Human rights, Governance).
Bank Sarasin & Co Ltd.	J. Safra Sarasin ESG Rating	No	Scoring & Ranking	Risk	J. Safra Sarasin ESG Rating is a Corporate CSR scoring based on both a company-specific ESG score and an industry score. The assessment evaluates companies’ ability to navigate ESG risks and opportunities relative to their industry. The final ranking aggregates both scores to rank companies between Best in class (A) to Worst-out universe.
BCorp	B Corp Label	No	Label	Impact	The BCorp assessment is an ESG Scoring system spanning across 5 categories: governance, workers, community, environment, and customers. Companies that reach a certain score become eligible for the BCorp label.
Bloomberg	ESG Score	No	Scoring	Risk	Bloomberg’s ESG Scores measure a company’s management of financially material environmental, social, and governance issues.

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Actor	Scoring Name	Climate specific	Type	Focus	Description
Bloomberg	UN SDG Impact Materiality	No	Rating	Impact	The Bloomberg UN SDG Impact Materiality Methodology quantifies the potential positive and negative impacts of companies' activities on the 17 UN Sustainable Development Goals (SDGs). It calculates the share of a company's revenues that potentially impact each SDG, either positively or negatively.
Bloomberg	Various, including 'Transition risk assessments, physical risk exposure indicators, and implied temperature rise metrics'				
Carbon Disclosure Project	CDP Climate Score	Yes	Scoring & Ranking	Impact	The CDP climate score provides a snapshot of yearly climate disclosure and management for companies that voluntarily respond to the CDP questionnaire.
Carbone 4	Compatibility score with the Paris Agreement	Yes	Rating	Impact	This indicator aims to measure the relevance of a product or service in a low-carbon world aligned with a 1.5°C or well below 2°C decarbonization pathway. Introduced in 2022, its application remains unclear.
Carbone 4	Carbon Impact Analytics				

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Actor	Scoring Name	Climate specific	Type	Focus	Description
Climateaction 100	Net Zero Company Benchmark	Yes	Scoring	Impact	The net zero company benchmark assesses the performance of companies in reducing GHG emissions, climate governance, and climate disclosures. Developed collaboratively with partners such as InfluenceMap and Carbon Tracker.
Corporate Accountability	Corporate Hall of Shame	No	Ranking	Reputation	A corporate ranking based on public voting, identifying organizations with the most negative socio-environmental impact.
Corporate Knights	The Global 100 list	No	Scoring & Ranking	Impact	The Global 100 list is a yearly ranking of the world's most sustainable companies, defined as those poised to succeed in the transition to a low-carbon economy. The ranking focuses on sustainable investment and revenue.
EcoVadis	Ecovadis Medals and Badges	No	Scoring & Rating	Impact	Ecovadis medals and badges recognize companies with outstanding sustainability management systems, assessing ESG issues across environment, labor & human rights, ethics, and sustainable procurement.
EcoVadis	Carbon rating	Yes	Scoring & Rating	Impact	The Ecovadis Carbon rating assesses the GHG management practices of a company, analyzing its commitment, actions, and reporting programs.
ECPI	ESG rating			Risk	
Ethifinance	<i>Various</i>			Risk	

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Actor	Scoring Name	Climate specific	Type	Focus	Description
Fitch	ESG Vulnerability score	No	Scoring	Risk	The ESG Vulnerability score assesses risks arising from foreseeable socio-environmental changes up to 2050, based on a 2°C global warming scenario.
FTSE Russel	FTSE ESG Scores	No	Scoring	Risk & Impact	FTSE's ESG scores assess corporate ESG exposure (risk) and performance (socio-environmental impacts). The climate section is partially based on Transition Pathway Initiative assessments.
Inrate	ESG impact ratings	No	Scoring & Rating	Impact	Inrate's ESG impact ratings provide insights into corporations' ecological, social impacts, and governance policies.
Insight Investment	Prime climate risk ratings	Yes	Scoring & Rating	Risk	Insight's climate risk ranking comprehensively ranks fixed income corporate credit issuers, focusing on climate change-related risks (physical and transitional).
Insight Investment	Prime ESG ratings	No	Scoring & Rating	Risk	Insight's ESG risk ratings reflect material ESG risks that companies face.
ISS / Oekom	ESG Corporate Rating	No	Scoring & Rating	Risk	ISS' ESG corporate rating enables investors to assess the ESG performance of issuers.
ISS / Oekom	Carbon Risk Rating	Yes	Scoring & Rating	Risk	ISS's carbon risk rating assesses a company's ability to cope with climate change-related challenges and seize opportunities in a low-carbon economy.
JUST Capital	Annual JUST capital corporation ranking	No	Scoring & Ranking	Impact	The annual JUST Capital ranking rates companies across ESG issues identified and weighted by the American public through surveys.

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Actor	Scoring Name	Climate specific	Type	Focus	Description
Moody's / Vigeo EIRIS	ESG risk score			Risk	
Moody's / Vigeo EIRIS	Climate risk score			Risk	
MorningStar / Sustainalytics	Low Carbon Transition Rating	Yes	Scoring & Rating	Impact	A forward-looking assessment estimating a Temperature Rise Score, indicating how close a company is to respecting its 1.5°C budget.
MorningStar / Sustainalytics	ESG Risk rating	No	Scoring & Rating	Risk	The ESG risk ratings assess the magnitude of corporate unmanaged ESG risks.
MorningStar / Sustainalytics	Physical risk rating	Yes	Scoring & Rating	Risk	Morningstar's physical risk rating provides quantitative data to understand and manage land-related climate exposure and risks.
MSCI / KLD / Innovest	MSCI Implied Temperature Rise	Yes	Scoring & Rating	Impact	The MSCI implied temperature rise rating evaluates how corporate emissions targets compare with the 1.5°C and well below 2°C targets outlined by the Paris agreement.
MSCI / KLD / Innovest	MSCI ESG Rating	No	Scoring & Rating	Risk	The MSCI ESG Rating assesses corporate management of ESG risks, combining exposure and management metrics from environmental and social issues, and corporate governance factors.
Refinitiv / Asset4 / Thomson & Reuters / LSEG	ESG Score	No	Scoring	Impact	ESG scores from LSEG measure a company's relative ESG performance, commitment, and effectiveness, based on company-reported data.

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Actor	Scoring Name	Climate specific	Type	Focus	Description
RepRisk	RepRisk Index	No	Scoring	Reputation	The RepRisk Index (RRI) is a proprietary algorithm that actively measures and assesses the reputational risk a company or project faces regarding ESG issues.
RepTrak	ESG Perception & Global RepTrak 100	No	Scoring & Ranking	Reputation	Reptrack's ESG scoring system measures how stakeholders view a company's ESG performance.
SAM / S&P Global / Trucost	S&P Global ESG Score	No	Scoring	Risk	The S&P Global ESG Score measures a company's performance on and management of material ESG risks, opportunities, and impacts. It is used to determine the eligible universe for the Dow Jones Sustainability Index.
SAM / S&P Global / Trucost	Climate Transition Assessment	Yes	Rating	Impact	A qualitative scoring system assessing company progress and future performance in the low-carbon economy.
SBTi	Science Based Targets labels	Yes	Label	Impact	SBTi labels certify that corporate emission reduction targets are aligned with the Paris Agreement and limit global warming to 1.5°C above pre-industrial levels.
Sensefolio	Sensefolio ESG framework	No	Scoring	Impact	The Sensefolio ESG framework rates companies on environmental, societal, and governance issues on a scale from 0 to 100.
SSI	ESG Rating	No	Scoring & Rating	Impact	SSI's ESG Rating rates companies on environmental, societal, and governance issues.

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Actor	Scoring Name	Climate specific	Type	Focus	Description
SSI	Carbon neutrality rating	Yes	Scoring & Rating	Impact	SSI's carbon neutrality rating extends the ESG scoring to scrutinize climate performance, encompassing policy management, carbon emission intensity, carbon reduction capability, renewable energy usage, and carbon management.
SynTao Green Finance	SynTao ESG Rating	No	Scoring & Rating	Risk	The SynTao ESG rating evaluates the quality of ESG management and the level of risk exposure across environmental, social, and governance pillars, with companies rated from A to D.
ZKB Sustainability Research	Swisscanto Sustainability rating	No	Scoring & Rating	Impact	Swisscanto Sustainability rating evaluates companies and countries on four pillars: ESG management, Controversy score, Climate score, and SDGs contribution. Companies and countries are rated from A to G.

Table 5: Additional description table that displays the actor’s name, rating name, scoring company pool, scoring data source, and scoring availability. This table does not include actors for which no rating has been identified (Broadridge, Clavert, Ethibel, Solactive, STOXX, Wind). The information pertaining scoring for which no public documentation is available is left empty in this table (Carbone 4’s Carbon Impact Analytics; ECPI’s ESG Rating, Ethifinance’s various unidentified ratings, Moody’s / Vigeo EIRIS’ ESG and climate risk score (discontinued in 2024)).

Actor	Rating Name	Scoring Company Pool	Scoring Data Source	Scoring Availability
3BL Media	100 Best Corporate Citizens	Russell 1000	The 3BL Media scoring system relies on ISS data. ISS data stems from corporate websites, reports, and documents (e.g., annual reports, corporate responsibility and sustainability reports, SEC filings, policies, etc.) and reputable third parties (e.g., CDP, Compustat, GRI, U.N. Global Compact, U.S. EPA).	Aggregate scores on pillars fully available online.
Bank Sarasin & Co Ltd.	J. Safra Sarasin ESG Rating	Unavailable information	The scoring uses aggregated data from MSCI ESG, Vigeo EIRIS, and RepRisk.	Not available online, used only for online investment portfolio proposal definition.

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Actor	Rating Name	Scoring Company Pool	Scoring Data Source	Scoring Availability
BCorp	B Corp Label	Any willing company	Data is collected through a proprietary questionnaire.	The list of BCorp labelled companies and their detailed assessment are available online. The results of the B Impact Assessment are not public, but anonymized aggregates are made available to companies that take the assessment.
Bloomberg	ESG Score	While the limits of the company pools aren't specified, the score covers 15,000 companies across more than 100 countries, i.e., approximately 93% of global market capitalization.	ESG scores are based on publicly available, company-disclosed information. Sources include sustainability reports, annual filings, and company websites.	The aggregated subscores and scores are available on the Bloomberg terminal. Company contacted as available information is too scarce to assess their methodology. Latest methodology reports were provided by Bloomberg upon request.
Bloomberg	UN SDG Impact Materiality	This is unspecified in the provided information.	Revenue share per product is the only company-specific data collected. It is collected from public financial disclosures such as annual reports, filings, and investor presentations.	The aggregated subscores and scores are available on the Bloomberg terminal. Company contacted as available information is too scarce to assess their methodology. Latest methodology reports were provided by Bloomberg upon request.

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Actor	Rating Name	Scoring Company Pool	Scoring Data Source	Scoring Availability
Bloomberg	Various, including "Transition risk assessments, physical risk exposure indicators, and implied temperature rise metrics"			
Carbon Disclosure Project	CDP Climate Score	Any company that has been requested to respond.	Voluntary CDP questionnaire responses. Companies that have been requested to respond but didn't are rated F.	Available on the CDP website after a (free) subscription, along with questionnaire responses for companies that chose to make them public.
Carbone 4	Compatibility score with the Paris Agreement	To our knowledge, the scoring has never been applied.	To our knowledge, the scoring has never been applied.	To our knowledge, the scoring has never been applied.
Climateaction 100	Carbon Impact Analytics Net Zero Company Benchmark	150 focus companies for the investment conglomerate	Public and self-disclosed data from companies, collected from annual sustainability and financial reports, press releases, and CDP disclosures.	Final scoring and subcategories are available on the Climate Action 100+ website. Input data is not available.

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Actor	Rating Name	Scoring Company Pool	Scoring Data Source	Scoring Availability
Corporate Accountability	Corporate Hall of Shame	Selected companies that have been involved in controversies during the assessment year, including others upon request.	Public votes available on the Corporate Accountability website	Unexpectedly, the scoring results don't seem to be available online.
Corporate Knights	The Global 100 list	Publicly listed companies with a certain minimum gross revenue.	Rating is based on publicly-disclosed data from financial filings, sustainability reports, and company websites.	Ranking is available in full for each assessment year.
EcoVadis	Ecovadis Medals and Badges	Any company requested to fill the EcoVadis questionnaire by their supplier.	Rating is based on corporate responses to the EcoVadis questionnaire, but also on public information disclosed by independent third parties (NGOs, trade unions, international organizations, local authorities, etc.).	Scoring results, input data, and recommendations are available when subscribing to the EcoVadis service.
	Carbon Rating	Any company requested to fill the EcoVadis questionnaire by their client.	Rating is based on corporate responses to the EcoVadis questionnaire, but also on public information disclosed by independent third parties (NGOs, trade unions, international organizations, local authorities, etc.).	Scoring results, input data, and recommendations are available when subscribing to the EcoVadis service.

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Actor	Rating Name	Scoring Company Pool	Scoring Data Source	Scoring Availability
ECPI	ESG Rating			
Ethifinance	Various			
Fitch	ESG Vulnerability Score	The score focuses on rating industries and covers 94 subsectors. To our knowledge, Fitch does not disclose a number of companies.	According to our research, the list of datapoints used and their sources is not available. However, some examples of sources include public disclosures in sustainability reports, financial filings, CDP disclosures, specialist providers (Urgentem, Quantis, South Pole, ISS), and other industry-specific sources.	A subscription to Fitch financial services is necessary to access corporate datapoints and score results. Industry-level results are available for free on the Fitch website.
FTSE Russell	FTSE ESG Scores	Companies part of the FTSE All-World Index, FTSE All-Share Index, and Russell 1000® Index.	The assessment is based on publicly available data, including corporate reports, websites, and press releases.	Accessible after subscription on the FTSE online data platform.
Inrate	ESG Impact Ratings	Inrate rates in priority public issuers that form the majority of market capitalization. Private companies can also be rated upon request.	Inrate uses company disclosures and information from unspecified third-party sources.	Final score and input data are available on the Inrate website for their clients.

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Actor	Rating Name	Scoring Company Pool	Scoring Data Source	Scoring Availability
Insight Investment	Prime Climate Risk Ratings	Insight Investment states that 16,800 issuers have been rated. It is unclear whether these were only rated upon request from their lenders, or if companies have been rated spontaneously within a pool.	The assessment takes into account both public elements and direct corporate responses to an undisclosed questionnaire.	Final score and analyses are made available to investment structures subscribing to the Insight Investment climate risk assessment service.
	Prime ESG Ratings	Insight Investment states that 3,000 issuers have been rated. It is unclear whether these were only rated upon request from their lenders, or if companies have been rated spontaneously inside a pool.	The assessment is based on multiple, unspecified data inputs.	Final score and analyses are made available to investment structures subscribing to the Insight Investment ESG risk assessment service. Aggregate score data is available for free on the Insight Investment website.
ISS / Oekom	ESG Corporate Rating	ISS ESG states that 12,000 issuers have been rated. It is unclear whether these were only rated upon request from their lenders, or if companies have been rated spontaneously inside a pool.	ISS's ESG corporate rating is based primarily on publicly available information, including corporate voluntary disclosures, media information, governmental and NGO databases.	Score and subscore are freely available on the ISS ESG website.

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Actor	Rating Name	Scoring Company Pool	Scoring Data Source	Scoring Availability
JUST Capital	Carbon Risk Rating	<p>ISS ESG states that 12,000 issuers have been rated. It is unclear whether these were only rated upon request from their lenders, or if companies have been rated spontaneously inside a pool.</p>	<p>ISS's carbon risk rating is based primarily on publicly available information, including corporate voluntary disclosures, media information, governmental and NGO databases.</p>	<p>Score and subscore are freely available on the ISS ESG website.</p>
	Annual JUST Capital Corporation Ranking	<p>Considered companies are part of the Russell 1000 Index. JUST Capital excludes companies without available data, holding companies, duplicate securities, companies with too few or no employees in the U.S., and companies that have been acquired since the index construction.</p>	<p>The ranking is based on publicly available data on corporate behavior from company filings, third-party data platforms, vendors, government datasets, academic and NGO datasets. This data is completed by in-house surveys.</p>	<p>Scores and intermediate results are available in full on the JUST Capital website.</p>
	<p>ESG Risk Score</p> <p>Climate Risk Score</p>			

Moody's / Vigeo EIRIS

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Actor	Rating Name	Scoring Company Pool	Scoring Data Source	Scoring Availability
MorningStar / Sustainalytics	Low Carbon Transition Rating	Companies listed in major global indices.	<p>Rating is mostly automated based on public information. Companies are not requested to submit supporting documents, except if they submit exceptionally private data to challenge their initial rating.</p>	Scores are available on the Morningstar / Sustainalytics platform for subscribed clients.
	ESG Risk Rating	Companies listed in major global indices.	<p>Rating is mostly automated based on public information. Companies are not requested to submit supporting documents, except if they submit exceptionally private data to challenge their initial rating.</p>	Aggregated scores are available on the Morningstar / Sustainalytics portal.
	Physical Risk Rating	Companies listed in major global indices.	<p>Rating is mostly automated based on information from the XDI database.</p>	Scores are available on the Morningstar / Sustainalytics platform for subscribed clients.
MSCI / KLD / Innovest	MSCI Implied Temperature Rise	All companies in the MSCI ACWI Index and MSCI US Investible Market Index (IMI).	Data used are scope 1, 2, and 3 emission levels from the MSCI ESG database. The database leverages regulatory datasets, news and media, and voluntary emission disclosure.	Resulting ratings are partially available for free on the ESG Ratings & Climate Search Tool.

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Actor	Rating Name	Scoring Company Pool	Scoring Data Source	Scoring Availability
Refinitiv / Asset4 / Thomson & Reuters / LSEG	MSCI ESG Rating	All companies in the MSCI ACWI Index and MSCI US Investible Market Index (IMI).	The MSCI database leverages voluntary corporate disclosures, regulatory datasets, news and media, and voluntary emission disclosure.	Resulting ratings are partially available for free on the ESG Ratings & Climate Search Tool.
	ESG Score	Companies listed in major global indices.	The scoring uses company-reported data from public information sources (Annual corporate CSR reports, company websites, news sources, etc.).	Data and score results are available behind a paywall on the LSEG platform.
	RepRisk Index	Any company facing a public ESG incident.	RepRisk relies on the analysis of media content and stakeholder declarations to identify ESG incidents. The analysis is partially AI-driven. RepRisk specifically ignores corporate disclosure content.	Data and score results are available behind a paywall on the RepRisk platform.

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Actor	Rating Name	Scoring Company Pool	Scoring Data Source	Scoring Availability
RepTrak	ESG Perception & Global RepTrak 100	Corporate global brands with a global revenue above 2 billion USD and have sufficient visibility for the public (measured by another proprietary indicator: the Global Familiarity Index).	Responses to dedicated questionnaires from the general public.	Data and score results are available behind a paywall on the RepTrak platform.
SAM / S&P Global / Trucost	S&P Global ESG Score	Selected companies for their market relevance, typically part of the DJSI.	The scoring is based on voluntary corporate responses to industry-specific proprietary questionnaires, public data scrapping in case the company fails to answer, and continuous monitoring of media for controversies.	Data and score results available behind a paywall on the S&P platform. Some examples of data and results are available for free on the platform.
	Climate Transition Assessment	Unavailable information	Unavailable information	Results available behind a paywall on the S&P platform.
SBTi	Science Based Targets Labels	Any willing company	Companies submit an application file with supporting documents when requesting the label.	Labels obtained by companies are available on the target dashboard on the website.

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Actor	Rating Name	Scoring Company Pool	Scoring Data Source	Scoring Availability
Sensefolio	Sensefolio ESG Framework	Unavailable information	Public scrapped information (News, corporate disclosures, social media posts, company reviews & NGO reports).	Data and score results are available behind a paywall on the Sensefolio hub platform.
SSI	ESG Rating	A-share listed companies in China and investable Hong Kong-listed companies.	Public scraped information completed statistically for missing data.	Data and score results are available behind a paywall on the Wind platform.
	Carbon Neutrality Rating	A-share listed companies in China	Public scraped information from voluntary and mandatory corporate ESG disclosures.	Data and score results are available behind a paywall on the Wind platform.
SynTao Green Finance	SynTao ESG Rating	Listed companies in Mainland China and Hong Kong.	In-house public data scrapping based on corporate voluntary disclosure, regulatory data, & media content.	Final core results are available for free upon creating an account. Full datapoints are not available.
ZKB Sustainability Research	Swisscanto Sustainability Rating	Unavailable information	Data provider is undisclosed, but ZKB specifies that data stems from corporate CSR disclosures.	Not available online, used only for online investment portfolio proposal definition.

Table 6: Supplementary table to clarify the assessment of scoring systems on Reliability criteria. Criteria can be identified by referring to Table 1. This table is completed by Tables 7, 8, 9.

Actor	Scoring Name	Transparency	Independency	Standardization	Verification
3BL Media	100 Best Corporate Citizens	Neither criteria weights nor the full list of criteria are accessible.	All Russell 1,000 companies [...] are researched and ranked at no cost.	GHG Assessment and climate risk identification methodology expected are not specified. Various qualitative datapoints are used (eg "Does the company disclose a climate change strategy?" requires an implicit definition of what a minimal climate change strategy is).	While companies can verify information on an ISS portal at no cost, it's not clear to what extend they are expected to send supporting documents to support or modify the data.
Bank Sarasin & Co Ltd.	J. Safra Sarasin ESG Rating	J. Safra Sarasin states their methodology is proprietary and neither criteria nor weighting are available online.	While the bank does not provide direct services to rated corporations, it is unclear whether rated companies are part of the bank's investment portefolio.	Datapoints required are not disclosed.	Various data sources are used. MSCI states MSCI ESG Research has established several data review and verification processes without specifying them further. Moody's doesn't mention data verification on their website according to our research. RepRisk covers reputational incidents, requiring no data verification.

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Actor	Scoring Name	Transparency	Independency	Standardization	Verification
BLab	B Corp Label	Methodology is available in full, along with extensive descriptions of required datapoints.	BCorp requests a verification fee for companies that want to obtain the BCorp label.	While expected GHG Assessment, emission reduction target and climate scenario standards are defined, some datapoints remain qualitative (eg "The company engages in climate advocacy").	For each datapoint, precise documents and meeting transcripts are expected to support the company's disclosures.
		While methodology descriptions are not available freely on the Bloomberg public website, the company provided their methodology to us upon request, after we disclosed our criteria list. The methodology is available for clients and for scored companies, who can access the methodology on a dedicated corporate web portal.	Bloomberg rates companies based on public information and does not request payment from rated companies.	All questions are not standard-backed or qualitative but all qualitative responses are assessed against quantitative criteria (presence or absence of responses, presence or absence of specific elements in answer).	Rating is automated based on public information. Companies are not requested to submit supporting documents.

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Actor	Scoring Name	Transparency	Independency	Standardization	Verification
Bloomberg	UN SDG Impact Materiality	While methodology descriptions are not available freely on the Bloomberg public website, the company provided their methodology to us upon request, after we disclosed our criteria list. The methodology is available for clients and for scored companies, who can access the methodology on a dedicated corporate web portal.	Bloomberg rates companies based on public information and does not request payment from rated companies.	The assessment only takes into account corporate revenue and its repartition across different activities, which is standard-backed and quantitative.	Rating is automated based on public information. Companies are not requested to submit supporting documents.
Carbon Disclosure Project	CDP Climate Score	The organisation provides a modal to disclose the methodology (criteria, thresholds and criteria weights) for all their questionnaires.	The NGO partially depends on corporate fees for revenue.	All questions are not standard-backed or qualitative but all qualitative responses are assessed against quantitative criteria (presence or absence of responses, presence or absence of specific elements in answer).	No supporting documents are required through the questionnaire's filling.
Carbone 4	Compatibility score with the Paris Agreement	Carbone 4 provides the full details of methodology and threshold values.	Carbone 4 is a consulting company that can perform such analyses for their clients.	The assessment is based only on activity GHG intensities though the life cycle assessment method. Fonctional unit are specified.	The method hasn't been applied to scale yet so the data collection and verification process isn't mentioned in the available documentation.

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Actor	Scoring Name	Transparency	Independency	Standardization	Verification
Climateaction 100	Net Zero Company Benchmark	Assessment criteria and aggregation method is described in full.	The initiative is supported by philanthropic foundation and anonymous donors and does not request payment from rated companies.	While information on GHG emissions levels and targets is standard backed, the part of the assessment related to alignment relies on analyst judgement. There are no clear guidelines for this assessment.	Rating is automated based on public information. Companies are not requested to submit supporting documents.
Corporate Accountability	Corporate Hall of Shame	While the voting process entails no criteria and weights to disclose, the way votes are aggregated remains unclear.	Corporate accountability is an NGO financed by individual contributions and grants and does not request payment from rated companies.	While they are binary, we argue individual votes can not be considered as quantitative or standard based datapoints as they reflect the company's perception which is highly subjective.	No data is requested from companies.
Corporate Knights	The Global 100 list	Indicators, associated taxonomies and associated weights are fully disclosed by corporate knights.	The methodology specifies that submissions and payment from rated companies are not required.	All datapoints are quantitative or binary and standards are specified from emissions reporting.	Rating is automated based on public information. Companies are not requested to submit supporting documents.
EcoVadis	Ecovadis Medals and Badges	Only a methodology preview is available. It includes examples of indicators and weightings, but the full extend of necessary indicators, thresholds and weightings isn't accessible.	The Ecovadis assessment can be delivered as a part of a voluntary paid company CSR assessment.	Rating is based on the qualitative disclosure of corporate initiatives, although formal rating criteria (presence of certain elements, assessment guidelines) are specified.	Credit is given for answers only in the presence of supporting evidence.

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Actor	Scoring Name	Transparency	Independency	Standardization	Verification
FTSE Russel	Carbon rating	Only a methodology preview is available. It includes examples of indicators and weightings, but the full extend of necessary indicators, thresholds and weightings isn't accessible.	The Ecovadis assessment can be delivered as a part of a voluntary paid company CSR assessment.	Rating is based on the qualitative disclosure of corporate initiatives, although formal rating criteria (presence of certain elements, assessment guidelines) are specified.	Credit is given for answers only in the presence of supporting evidence.
	FTSE ESG Scores	An overview of method and theme is available but the detail of indicators, weightings and aggregation methods is not disclosed.	FTSE rates companies based on public information and does not request payment from rated companies.	Indicators include both qualitative and quantitative data. It is not specified how qualitative data is handled.	The methodology mentions a quality and peer review rules but supporting documents are not part of the listed elements.
	Inrate	ESG impact ratings	A brief overview of the methodology is available on the website but no in-depth report is public.	Inrate provides payed assessments to financial actors on their portefolio but doesn't provide payed assessments for individual corporations.	The methodology doesn't disclose required datapoints.
Insight Investment	Prime climate risk ratings	A description of rating theme and approach is available on the Insight website, but precise indicators and weightings are not disclosed.	Insight investment rates companies based on public information and does not request payment from rated companies.	Indicators used are not disclosed.	The methodology document mentions significant measure are put in place to check the quality of the data, but the process applied is unclear.

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Actor	Scoring Name	Transparency	Independency	Standardization	Verification
ISS / Oekom	Prime ESG ratings	A description of rating theme and approach is available on the Insight website, but precise indicators and weightings are not disclosed.	Insight investment rates companies based on public information and does not request payment from rated companies.	Indicators used are not disclosed.	The methodology document mentions significant measure are put in place to check the quality of the data, but the process applied is unclear.
	ESG Corporate Rating	ISS describes the general logic of the assessment, and examples of indicators and scoring criteria. Indicator weights and threshold are not systematically disclosed for all methodologies.	ISS ESG rates companies based on public information and does not request payment from rated companies.	ISS ESG states that about 75% used indicators are qualitative, but are systematically aligned with relevant norms, standards and regulations.	ISS ESG uses mostly public available data and recognizes that estimated data based on robust evidence represent only between 5% and 10% of total indicators.
	Annual JUST capital corporation ranking	The full assessment methodology is disclosed, including required datapoints, associated thresholds and weights.	The NGO states that they do not depend on rated companies for income, relying instead on selling datasets and collaborating with media and consultants.	Datapoints used are not always standard backed or quantitative. In particular, assessments are made on qualitative corporate information without specific guidance on how this is done.	The methodology specifies a data quality insurance process to ensure data consistency but data veracity is not addressed, and supporting documents are not m
	Low Carbon Transition Rating	While methodology is generally described, datapoints used, criteria and weightings for the management assessment are not disclosed.	Rated companies can subscribe to a services to get marketing and presentation assets, including more detailed insights into their score and their competitor's.	The methodology doesn't specify the expected standard for emissions disclosure and datapoints considered for emissions management rating are not disclosed.	The datapoints considered for emissions management rating are not disclosed. The methodology doesn't specify if or how information is verified.

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Actor	Scoring Name	Transparency	Independency	Standardization	Verification
MSCI / KLD / Innovest	ESG Risk rating	While methodology is generally described, datapoints used, criteria and weightings are not disclosed.	Rated companies can subscribe to a services to get marketing and presentation assets, including more detailed insights into their score and their competitor's.	The list of datapoints used is not disclosed.	The methodology mentions a quality and peer review rules but supporting documents are not part of the listed elements.
	Physical risk rating	While methodology is generally described, datapoints used, criteria and weightings are not disclosed.	Rated companies can subscribe to a services to get marketing and presentation assets, including more detailed insights into their score and their competitor's.	The list of datapoints used is not disclosed.	Verification process is insufficiently described to answer this criteria.
	MSCI Implied Temperature Rise	The methodology is fully disclosed, including formulas and values that allow to replicate the assessment.	MSCI rates companies based on public information and does not request payment from rated companies.	The standards used for corporate greenhouse gas emission levels and targets is unspecified, but all elements are quantitative.	No data is requested from rated companies through the rating process, hence no supporting document is collected.
	MSCI ESG Rating	While methodology is generally described, datapoints used, criteria and weightings are not disclosed.	MSCI rates companies based on public information and does not request payment from rated companies.	The methodology doesn't disclosed the datapoints required.	The methodolgy specifies a data quality insurance process to ensure data consistency but data veracity is not addressed.
Refinitiv / Asset4 / Thomson & Reuters	ESG Score	Criteria are extensively described, but criteria weights are not specified.	LSEG rates companies based on public information and does not request payment from rated companies.	The methodology doesn't disclosed the datapoints required.	While collected data is reviewed prior to usage to ensure consistency and credibility, collecting supporting documents is not mentionned.

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Actor	Scoring Name	Transparency	Independency	Standardization	Verification
RepRisk	RepRisk Index	<p>While tackled topics are listed, and the methodology to derive a score from a list of incidents is fully described, it is unclear how the incident severity, reach and novelty for each incident are rated. Rater's response : The actor provided several elements to discuss this assessment : a full jupyter notebook allowing a technical public to further discover their methodology and dataset, the IRSG code of conduct for ESG ratings and Data Product Providers and the Checklist for Singapore Code of Conduct for ESG Rating and Data Product Providers. Note on rater's response : All these pages state RepRisk's commitment to transparency, and the jupyter notebook indeed provided further insight in the methodology. However, incident classification isn't adressed by the provided documents, our assessment thus remains unchanged.</p>	<p>While it appears not to be the company's primary source of income, Reprisk offers this rating as part of a platform that allows companies to monitor their ESG reputation. Rater's response : The DRWG code of conduct for ESG Ratings and Data Products Providers states "ESG ratings and data products providers should identify, avoid or appropriately manage, mitigate and disclose actual or potential conflicts of interest that may compromise the independence and integrity of tthe ESG ratings and data products providers' operations." Further, the transparency commiment charter states "RepRisk exclusively focuses on ESG data and research, and does not offer any other services or products [...]." We adjusted our assessment accordingly.</p>	<p>RepRisk uses media reports and other non standardised content to fuel their assessment. Rater's response : None of the provided additionnal documents discuss this.</p>	<p>Input data is related to the public perception of brands, hence does not require verification.</p>

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Actor	Scoring Name	Transparency	Independency	Standardization	Verification
RepTrak	ESG Perception & Global RepTrak 100	Questionnaire content and criteria are not public.	Reptrak offers this rating as part of a platform that allows companies to monitor their ESG reputation.	Datapoints used are not disclosed.	Input data is related to the public perception of brands, hence does not require verification.
SAM / S&P Global / Trucost	S&P Global ESG Score	S&P discloses both the list of questions and relative weights of sets of questions for each industry.	While S&P's revenue typically stem from selling ESG score datasets, the company also offers payed ESG assessments directly to corporations.	According to the corporate sustainability handbook, S&P requests both quantitative, standard backed datapoints and subjective data. Companies are nevertheless urged to keep subjective data brief, relevant and on topic.	Internal documents are requested "when necessary".

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Actor	Scoring Name	Transparency	Independency	Standardization	Verification
	Climate Transition Assessment	<p>S&P discloses a brief overview of the principles behind the rating but the criteria or approaches aren't fully disclosed. Rater's response : "Our methodology is available in full online." The rater also shared some previously unaccessed methodology description documents. Note on rater's reponse : While the provided documents are relevant and do provide further insights into the assessment process, they do not systematically described the environmental impacts considered for each industry and only provide examples. We updated our assessment accordingly.</p>	<p>While S&P's revenue typically stem from selling ESG score datasets, the company offers this specific rating as part of a consulting service. Rater's reponses : "S&P provides the assessment as part of an engaged service." Note on rater's reponse : This confirms our initial assessment.</p>	<p>S&P discloses a brief overview of the principles behind the rating but the criteria or approaches aren't fully disclosed. Rater's reponse : "Approach is largely qualitative, with full methodology documents available for download on our website (see links above)." Note on rater's response : Indeed, provided additionnal documents show the approach is mainly qualitative. We updated our assessment accordingly.</p>	<p>S&P discloses a brief overview of the principles behind the rating but the criteria or approaches aren't fully disclosed, including the data verification approach. Rater's response : "Full methodology documents available for download on our website (see links above)". Note on rater's reponse : There appears to have been a misunderstanding on the focus of this criteria. We maintain our initial assessment.</p>

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Actor	Scoring Name	Transparency	Independency	Standardization	Verification
SBTi	Science Based Targets labels	The SBTi Corporate Net-Zero Standard fully describes requirements for companies to get the label.	Companies pay a fee for data verification when submitting their application file. This has been flagged before as an issue, thus the organization states it will make a separate entity from its verification department and enforce a strict conflict of interest statement.	The SBTi labellisation requires only quantitative datapoints (emissions levels and targets), and the company's emissions data are required to follow the GHG Protocol standard.	The submission form includes no request for supporting documents or third party verification as of august 2024.

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Actor	Scoring Name	Transparency	Independency	Standardization	Verification
SSI	ESG Rating	Neither criteria weights nor the full list of criteria are accessible.	<p>Despite our best efforts, we could not properly determine the company's perimeter of activity. While it first states it provides "comprehensive services for index and index investment to various asset management institutions"; it also offers "services for the entire industry chain including research consulting, product authorization, operation management, marketing promotion, valuation, and data information". Rater's response : We are independent ESG rating agency. There is no financial ties with listed companies. We do not generate revenue by providing ESG ratings to listed companies. Given the absence of supporting documents provided, we keep our initial 'no information assessment'. Note on rater's responses : The evidence provided does not support this. In the absence of further proof, we maintain our initial assessment.</p>	<p>According to the methodology available online, the scoring uses both quantitative and qualitative data. Qualitative data is assessed using natural language processing, it is unclear whether clear guidelines are provided for this. Rater's response : "Unstructured data is assessed based on consistent standard." Note on rater's response : The provided supporting document does not mention a consistent standard. In the absence of supporting documents, we maintain our initial assessment.</p>	<p>Data is public scrapped information completed statistically for missing data Rater's reponse : "We do not ask companies to provide supporting documents. But most of our input data is backed by their ESG report or ESG part in their annual report. We deem missing data as nondisclosure, which results in low score in this metric." Note on rater's response : "Supporting documents are supposed to be edited or audited by third parties. We maintain our original assessment."</p>

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Actor	Scoring Name	Transparency	Independency	Standardization	Verification
	Carbon neutrality rating	Neither criteria weights nor the full list of criteria are accessible.	<p>Despite our best efforts, we could not properly determine the company's perimeter of activity. While it first states it provides "comprehensive services for index and index investment to various asset management institutions"; it also offers "services for the entire industry chain including research consulting, product authorization, operation management, marketing promotion, valuation, and data information". Rater's response : We are independent ESG rating agency. There is no financial ties with listed companies. We do not generate revenue by providing ESG ratings to listed companies. Given the absence of supporting documents provided, we keep our initial 'no information assessment'. Note on rater's responses : The evidence provided does not support this. In the absence of further proof, we maintain our initial assessment.</p>	<p>According to the methodology available online, the scoring uses both quantitative and qualitative data. Qualitative data is assessed using natural language processing, it is unclear whether clear guidelines are provided for this. Rater's response : "Unstructured data is assessed based on consistent standard." Note on rater's response : The provided supporting document does not mention a consistent standard. In the absence of supporting public documents, we maintain our initial assessment.</p>	<p>The methodology states that it considers "data verified by independent third-party audits and certifications", but it is unclear to which extend this is a requirement for all datapoints. Rater's response : "We do not ask companies to provide supporting documents. But most of our input data is backed by their ESG report or ESG part in their annual report. We deem missing data as nondisclosure, which results in low score in this metric." Note on rater's response : "Supporting documents are supposed to be edited or audited by third parties. We maintain our original assessment."</p>

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Actor	Scoring Name	Transparency	Independency	Standardization	Verification
SynTao Green Finance	SynTao ESG Rating	Weightings and criteria remain undisclosed.	SynTao appears to be a ESG consulting company, but their precise business model is unclear. It might be supporting some of the rated companies in their ESG strategy building.	Datapoints required are not disclosed.	Data is scrapped for public information, corporations seem not to be able to challenge the data or required to provide supporting documents.
ZKB Sustainability Research	Swisscanto Sustainability rating	Weightings and criteria remain undisclosed.	While the bank does not provide direct services to rated corporations, it is unclear whether rated companies are part of the bank's investment portefolio.	Datapoints are not disclosed.	Data providers are not disclosed, and the methodology document doesn't specify any data verification methods.

Table 7: Supplementary table to clarify the assessment of scoring systems on Accuracy criteria 5 to 9. Criteria can be identified by referring to Table 1. This table is completed by Tables 8 and 9.

Actor	Scoring name	Weighting	Compensation	Relativity	Immateriality	Impact
3BL Media	100 Best Corporate Citizens	The methodology specifies that some factors have higher relative weights, without further description on how the weighting was chosen.	Final score is a weighted average of the scores on criteria.	While the rating takes into account the datapoint "Does the company report on progress against GHG emission reduction targets?", actual progress metrics are not part of the collected datapoints. Additionally, there's not mention that GHG emissions reduction targets should be defined in accordance with planetary boundaries.	No justification for criteria choice is available online.	GHG emissions levels are collected, but how 3BL Media uses them in the rating system is unclear.
Bank Sarasin & Co Ltd.	J. Safra Sarasin ESG Rating	The methodology includes a undisclosed weighting.	Final score is a weighted average of the scores on criteria.	Datapoints required are not disclosed.	No justification for criteria choice is available online.	Datapoints required are not disclosed.

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Actor	Scoring name	Weighting	Compensation	Relativity	Immateriality	Impact
BLab	B Corp Label	Companies are expected to meet a set of defined criteria according to their industry and size. Criteria are not weighted.	Companies are expected to meet a set of defined criteria according to their industry and size. Company cannot compensate not meeting certain criteria.	One of the mandatory criteria is to set targets and implement a reduction strategy in line with the Paris Agreement.	Criteria choice process per industry is not explicit.	GHG emissions levels are collected, but companies are only ranked on their disclosure and not their level.
Bloomberg	Bloomberg ESG Rating	The methodology description specifies each weighting is determined by the financial materiality of each data point. The financial materiality of each data point is assessed by taking into account its probability, magnitude and timing by analysts conducting proprietary research.	Final scores is computed using a power mean of scores on subcriteria. While this doesn't completely forbid compensation, it penalises companies with uneven performance across ESG aspects.	While the scoring considers whether corporations have set net zero targets, final results are relative to industry performance.	Criteria choice and weighting are established based on the principles of financial materiality.	Companies are rated based on their relative emissions levels compared to their industry peers.

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Actor	Scoring name	Weighting	Compensation	Relativity	Immateriality	Impact
Bloomberg	UN SDG Impact Materiality	Shares of revenues are used to weight the different activities. It constitutes a transparent, science-based weighting.	Final score is a weighted average of the scores on criteria.	Rating points out the positive and negative impacts of companies on UN SDGs, the magnitude of the impact is not compared with absolute objectives.	Impact identification is rooted in identifying material impacts of activities on UN SDGs.	Rating measures both negative and positive corporate impact on UN SDGs.
Carbon Disclosure Project	CDP Climate Score	The score is based on an unjustified weighting.	Companies can for instance compensate a poor emissions management performance by an acceptable disclosure score.	The ratings takes into account corporate reduction targets and compares them against planetary boundaries using the Science Based Target initiative framework.	The CDP soberly states "Each scoring category at Management and Leadership levels is weighted according to its relative importance to the overall score." and does not refer to materiality to justify the weighting.	While GHG emissions levels are requested, they are rated only based on the disclosure quality but not on their magnitude.

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Actor	Scoring name	Weighting	Compensation	Relativity	Immateriality	Impact
Carbone 4	Compatibility score with the Paris Agreement	The final corporate score is the aggregation of all the scores for each corporate activity, ponderated by the share of revenue they represent.	Companies can compensate a climate missaligned activity (eg fuel extraction) with a climate compatible business line (eg renewable electricity deployment) as long as the revenue they get from these business lines is comparable.	Rating compares GHG intensities with 2030 and 2050 sectorial objectives aligned with 1.5 or 2°C global warming.	The activity GHG intensities are weighted according to their financial materiality to the company.	Rating compares GHG intensities with 2030 and 2050 sectorial objectives.
Climateaction 100	Net Zero Company Benchmark	The assessment is based on a set of pass fail criteria where all questions have the same relative importance towards the final rating.	Companies are rated separately on all aspects, the final result isn't an aggregated score.	Rating evaluates the adequacy of corporate action plan and investment strategy towards net zero and their GHG reduction targets.	Criteria choice is not discussed in the publicly accessible documents.	Rating evaluates only disclosure levels and corporate emission reduction efforts.

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Actor	Scoring name	Weighting	Compensation	Relativity	Immateriality	Impact
Corporate Accountability	Corporate Hall of Shame	The website doesn't disclose how votes are aggregated.	Companies are not rated on various criteria.	Rating is based exclusively on public perception and not on any objective criteria.	Companies description on the basis of which the public votes focuses on stringent issues, but is not build following a thorough materiality assessment.	Information provided to guide scoring focuses on current and past company ESG controversies. The description of corporations to vote for thus contain negative impact estimates.
Corporate Knights	The Global 100 list	The rating is based on a arbitrary weighting between sustainable investment, sustainable revenue and performance. Allocation of points to indexes inside these categories is based on a materiality assessment.	Companies can compensate low results in an ESG dimension by best-in-class behavior in others.	Rating evaluates companies compared to their peer groups. The final assessment is thus always relative.	Criteria choice is not discussed in the methodological report.	Companies are evaluated on their carbon productivity : the amount of revenue they generate when emitting a ton of CO2e.

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Actor	Scoring name	Weighting	Compensation	Relativity	Immateriality	Impact
EcoVadis	Ecovadis Medals and Badges	The scoring systems include an undisclosed, apparently arbitrary weighting between policies, endorsements, measures, etc.	Very low results on at least an ESG rating excludes companies to receive a medal.	Final medal attribution is based on corporate performance relative to their peers, the assessment is thus relative.	The methodology mentions criteria are based on the importance of the issues for the corporation geography and activity, but it's unclear whether this is based on an actual materiality assessment.	Ecovadis' rating focuses on management of externalities but does not take into account initial externality levels.
	Carbon rating	The rating is based on an unjustified weighting between reporting, commitment and actions.	Companies can compensate low results in an ESG dimension by best-in-class behavior in others.	Companies are expected to set Science Based Targets in accordance with the Science Based Target initiative standard to get full points on the commitment section.	This is unspecified across the public information available.	While the rating requests scope 1, 2 & 3 emissions data, companies are assessed only based on the comprehensiveness and quality of their disclosures.

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Actor	Scoring name	Weighting	Compensation	Relativity	Immateriality	Impact
FTSE Russel	FTSE ESG Scores	Final rating is a weighted average of corporate performance over different pillars across different themes. The themes's relative importance is translated into an arbitrary weight. Similarly, indicators have undisclosed arbitrary weights.	The final rating is a weighted average of scores on different ESG aspects.	Corporate performance is only assessed against industry best practice.	(Financial) materiality is mentioned as a driver for the selection and relative weighting of issues.	The assessment compares corporate emission levels to their peers.
Inrate	ESG impact ratings	The assessment is based on an undisclosed, unjustified weighting.	There's insufficient information on the methodology to be able to assess this element.	There's insufficient information on the methodology to be able to assess this element.	There's insufficient information on criteria choice in the publicly available elements.	The assessment claims it takes into account the impact of the company's activity across its products livecycles.

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Actor	Scoring name	Weighting	Compensation	Relativity	Immateriality	Impact
Insight Investment	Prime climate risk ratings	The methodology description specifies each weighting is determined by the financial materiality of each data point for each industry but process to assess financial materiality is not described.	Companies might compensate having no reduction targets with appropriate reporting or climate friendly offerings. Yet, the final score takes is the minimum of both transition risk and physical risk final score, making it impossible to compensate between these two aspects.	It's unclear how gross emission levels and emission reduction targets are rated.	The assessment relies on the assessment of the criteria's financial materiality.	Gross emissions are included as input data, but its possible only their disclosure is assessed.
	Prime ESG ratings	The methodology description specifies each weighting is determined by the financial materiality of each data point for each industry but process to assess financial materiality is not described.	Companies can compensate poor performances on environmental pillars with better results on other ESG aspects.			The assessment includes an evaluation of how a company's product and service contribute to climate change.

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Actor	Scoring name	Weighting	Compensation	Relativity	Immateriality	Impact
ISS / Oekom	ESG Corporate Rating	The methodology description specifies each weighting is determined by the double materiality of each data point for each industry but process to assess double materiality is not explicit.	The final score is a weighted average of subscores across dimensions.	The assessment mentions SBTi as a source of standard for their assessment, they thus take into account whether corporation aim to align their emissions with the Paris Agreement.	The methodology description states that the assessment is constructed by using a double materiality lens, assessing both the impact of ESG risks on the company's financial performance and the impact of the externalities linked to the pursuit of the company's activities.	Used indicators and assessment methodologies are not disclosed.
		The weighting issue is derived from the public survey in a systematic manner and is transparent.			Corporations are expected to commit to reduce their emission to align with the Paris Agreement.	
JUST Capital	Annual JUST capital corporation ranking		Companies can compensate poor performances on environmental pillars with better results on other ESG aspects.			Scope 1, 2 & 3 emission levels are assessed against industry average.

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Actor	Scoring name	Weighting	Compensation	Relativity	Immateriality	Impact
MorningStar / Sustainalytics	Low Carbon Transition Rating	The emission management score entails an undisclosed, unjustified weighting.	As part of the management score, companies can compensate low levels of GHG emission reduction targets with financial solvency, for example.	Companies are rated based on the difference between their projected carbon emissions and their downscaled carbon budget.	The emission management score entails an undisclosed, unjustified weighting.	Companies are rated based on the difference between their projected carbon emissions and their downscaled carbon budget.
	ESG Risk rating	The methodology description specifies each weighting is determined by the financial materiality of each data point for each industry but process to assess financial materiality is not assessed.	The final score is a weighted average of subscores on material ESG issues.	While methodology is generally described, datapoints used, criteria and weightings are not disclosed. It is thus unclear whether corporate performance is compared against planetary boundaries.	The assessment relies on the assessment of the criteria's potential impact, but exclusively on corporate finances (financial materiality).	The ratings only evaluate the adequacy and comprehensiveness of corporate policies to manage material ESG risks, but criteria weights might be influenced by corporate emissions levels or intensities (betas).
	Physical risk rating	The weighting is derived from each risks' magnitude, assessed only based on their impact magnitude and likelihood of occurrence.	The final score is the sum of all risks, a major risk thus cannot be alleviated by minor risks.	Rating focuses on physical climate risks, which are generally unaffected by the company's performance regarding the planetary boundaries.	The assessment relies on the assessment of the criteria's potential impact, but exclusively on corporate finances (financial materiality).	This is outside the assessment perimeter.

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Actor	Scoring name	Weighting	Compensation	Relativity	Immateriality	Impact
MSCI / KLD / Innovest	MSCI Implied Temperature Rise	The system doesn't require any weighting as a single criterion is considered.	Companies cannot compensate different ESG aspects as a single criterion is considered.	The rating compares corporate carbon trajectories with the remaining carbon budget to stay below 2°C of global warming.	There is only one criterion considered.	All companies, regardless of their initial emissions, are expected to reduce their emissions by the same proportion.
	MSCI ESG Rating	The selection and weighting of industry specific issues are justified by an externalities impact measurement. However, no systematic method to perform such assessment is described.	The final scoring is a weighted average of environmental, social and governance subscores.	The scoring measures the performance of companies on each criteria compared to its peers.	The assessment relies on the assessment of the criteria's potential impact on corporate finances and the company's externalities.	The methodology doesn't disclosed the datapoints required nor how they are evaluated.

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Actor	Scoring name	Weighting	Compensation	Relativity	Immateriality	Impact
Refinitiv / Asset4 / Thomson & Reuters	ESG Score	The methodology description specifies each weighting is determined by the materiality of each data point for each industry but, in practice, materiality is determined either by "data points with sufficient disclosure are used as a proxy for industry magnitude" or by comparing median of quantitative data to other industries. It is unclear whether the resulting weights effectively correlate with negative impact magnitude.	Final score is a weighted average of the scores on criteria.	The scoring is designed to measure company performance relative to their industry peers.	The methodology description specifies each weighting is determined by the materiality of each data point for each industry but, in practice, materiality is determined either by "data points with sufficient disclosure are used as a proxy for industry magnitude" or by comparing median of quantitative data to other industries. It is unclear whether the resulting weights correlate with negative impact magnitude.	Datapoints required for each pillar are not disclosed.

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Actor	Scoring name	Weighting	Compensation	Relativity	Immateriality	Impact
RepRisk	RepRisk Index	<p>Input data: The methodology includes undisclosed, unjustified weightings of ESG incidents based on severity, reach, and novelty. Rater's response: RepRisk provided a notebook, shared the IRSG Code of Conduct, their response to the Singapore Code of Conduct Checklist, and RepRisk's Transparency Commitment Charter. Note on response: While these materials affirm RepRisk's commitment to transparency and offer more methodological insight than previously available, the issue of incident classification remains unaddressed. Our assessment remains unchanged.</p>	<p>The final score is a weighted average of results for each incident. Companies thus can mitigate a bad performance on some ESG aspects by a better performance on others.</p>	<p>RepRisk's ESG scoring systems measure how stakeholders view a company's ESG performance. This doesn't necessarily correlate with performance against planetary boundaries.</p>	<p>The methodology does not disclose how criteria are justified. In particular, the methodology doesn't describe how 'incident severity' is rated. Rater's response : Reprisk provided a full jupiter notebook allowing a technical public to further discover their methodology and dataset. Note on rater's response : We did not find further information on incident severity assesement in the provided additionnal documentation. We maintain our initial assessment.</p>	<p>Media coverage of corporate impacts is used, but its correlation to negative impact levels remains unclear. Rater's response: RepRisk's transparency charter highlights their "outside-in" approach, analyzing public sources and stakeholder information and excluding company self-disclosures. Note on response: While the critique of self-reported data is valid, we maintain doubts that media coverage accurately reflects corporate negative impacts. Our assessment remains unchanged.</p>

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Actor	Scoring name	Weighting	Compensation	Relativity	Immateriality	Impact
RepTrak	ESG Perception & Global RepTrak 100	The methodology includes a undisclosed, unjustified weighting.	The final score is a weighted average of results for each indicator.	Reptrack's ESG scoring systems measure how stakeholder view a company's ESG performance.	Reptrack's ESG scoring systems measure how stakeholder view a company's ESG performance. Public perception doesn't always focus on the most material corporate sustainability issues.	Input data is related to the media coverage of corporate impacts. It's unclear whether this systematically correlates to negative impact levels.
SAM / S&P Global / Trucost	S&P Global ESG Score	Weighting of issues is based on a double materiality assessment. While the approach to do so is generally disclosed, further information on the evaluation process of risks & opportunities and impact of externalities would have been welcomed.	Final score is a weighted average of the scores on criteria.	Scoring is designed to help compare performance with industry peers.	S&P presents weights as the results of a double materiality assessment, where both the risk & opportunities for the firms and the external impact of their activity was taken into account.	Emission levels are requested and used to assess company performance.

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Actor	Scoring name	Weighting	Compensation	Relativity	Immateriality	Impact
	Climate Transition Assessment	<p>S&P discloses a brief overview of the principles behind the rating but the criteria or approaches aren't fully disclosed. Rater's reponse : "Methodology is not a scoring method with weights, rather it is a qualitative and contextual analysis.". Note on rater's response : "Indeed, the method is qualitative. Yet, implicitly, different environmental impacts, internal governance initiatives etc are given different importances, which constitute implicit weights. In the absence of information on how elements are prioritised, we maintain our assessment."</p>	<p>S&P discloses a brief overview of the principles behind the rating but the criteria or approaches aren't fully disclosed. We are not able to assess the score on this issue. Rater's reponse : "A company's options are consider given regional jurisdiction and technological availability." Note on rater's reponse : There appears to have been a misunderstanding on the focus of this criteria. The additionnal document provided nevertheless show that companies are for instance able to compensate missadaptation to the climate transition by climate impact.</p>	<p>The rating takes into account the corporation's climate transition plan to assess how compatible with 1.5°C average global warming the business will be.</p>	<p>S&P discloses a brief overview of the principles behind the rating but the criteria or approaches aren't fully disclosed. Rater's response : "Material sustainability factors for a company are considered." Note on rater's response : Indeed, and the provided document support this claim. We updated our assessment accordingly.</p>	<p>The rating takes into account how consistent the company's activities are with a low carbon future.</p>

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Actor	Scoring name	Weighting	Compensation	Relativity	Immateriality	Impact
SBTi	Science Based Targets labels	The system doesn't require any weighting as a single criterion is considered.	Companies cannot compensate different ESG aspects as a single criterion is considered.	While whether minimum levels required by Science Based Targets are in line with the planetary boundaries can be discussed, it's the organisation goal to provide an absolute assessment of corporate targets compared to the Paris Agreement commitments.	There is only one criterion considered.	Companies are rated based on the difference between their projected carbon emissions and their downscaled carbon budget.

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Actor	Scoring name	Weighting	Compensation	Relativity	Immateriality	Impact
SSI	ESG Rating	<p>Weighting of issues is based on risk (impact magnitude and probability of occurrence) associated with the datapoint for the industry. While approach is disclosed, further information on the evaluation process for risks would have been welcomed. Rater's response : "We plan to make our weighting heatmap public next year. As for now, the weightings can be seen on our newly-launched SMART ESG platform or detailed ESG rating report. These are open to listed companies or paid users." Note on rater's response : While this would indeed increase the transparency of the assessment, it does not contribute to further transparency on the weighting choice process.</p>	<p>Final score is a weighted average of the scores on criteria.</p>	<p>Final ratings are scaled according to industry-wide results. Rater's response : "We can provide users both pre-industry adjusted results for absolute comparison and industry-adjusted results for cross-industry comparison." Note on rater's reponse : While this does indeed help make the rating absolute, the supporting documents do not mention the Paris agreement, planetary limits or corporate emissions reduction targets. We maintain our assessment.</p>	<p>Weighting of issues is based on risk (impact magnitude and probability of occurrence) and weight is set to 0 for non relevant indicators. It is unclear whether this is understood in the sense of financial materiality or externalities magnitude.</p>	<p>GHG emissions levels are collected, but how SSI uses them in the rating system is unclear. Rater's response : "GHG emissions levels are collected, the higher the GHG intensity the lower the score." Note on rater's response : This is not explicit in any public document found or provided. We maintain our assessment.</p>

Actor	Scoring name	Weighting	Compensation	Relativity	Immateriality	Impact
	Carbon neutrality rating	<p>SSI explains the criteria's specifics weights reflect their overall importance in achieving global carbon neutrality. It is unclear how this importance is defined or measured. Rater's response : "We plan to make our weighting heatmap public next year. As for now, the weightings can be seen on our newly-launched SMART ESG platform or detailed ESG rating report. These are open to listed companies or paid users." Note on rater's response : While this would indeed increase the transparency of the weighting, it does not contribute to make it more science-based.</p>	<p>Final score is a weighted average of the scores on criteria.</p>	<p>Final ratings are scaled according to industry-wide results. Rater's response : "We can provide users both pre-industry adjusted results for absolute comparison and industry-adjusted results for cross-industry comparison." Note on rater's reponse : While this does indeed help make the rating absolute, the supporting documents do not mention the Paris agreement, planetary limits or corporate emissions reduction targets. We maintain our assessment.</p>	<p>SSI explains the criteria's specifics weights reflect their overall importance in achieving global carbon neutrality. It is unclear how this importance is defined or measured.</p>	<p>The carbon emission intensity dimension evaluated the performance of corporate greenhouse gas emissions and compares it to their peers.</p>

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Actor	Scoring name	Weighting	Compensation	Relativity	Immateriality	Impact
SynTao Green Finance	SynTao ESG Rating	<p>The methodology includes a undisclosed, unjustified weighting.</p>	<p>Final score is a weighted average of the scores on criteria.</p>	<p>According to the methodology disclosed, only risks exposure and their governance is assessed.</p>	<p>The methodology states the scoring uses "Material ESG indicators that are consistent with international practice and the actual situation in China". It is unclear whether this is understood in the sense of financial materiality or externalities magnitude.</p>	<p>According to the methodology disclosed, only risks exposure and their governance is assessed.</p>
ZKB Sustainability Research	Swisscanto Sustainability rating	<p>The methodology specifies that some factors have higher relative weights, without further description on how the weighting was chosen.</p>	<p>Final score is a weighted average of the scores on criteria.</p>	<p>Datapoints required are not disclosed.</p>	<p>The ESG score is based on indicators deemed "financially relevant from a risk and opportunity point of view".</p>	<p>Corporation GHG intensities are compared to benchmarks and companies are rated accordingly.</p>

Table 8: Supplementary table to clarify the assessment of scoring systems on Accuracy criteria 10 to 14. Criteria can be identified by referring to Table 1. This table is completed by Table 9.

Actor	Scoring name	Forward look	Stakeholders	Sector exclusion	Value chain	Regulation
3BL Media	100 Best Corporate Citizens	No information on emission reduction strategy content is collected during the scoring process.	The system is an automated rating based on ISS data only. While companies are welcome to update their data and give feedback, the FAQ and methodology do not mention integrating other stakeholders.	While no sector is formally excluded, a deduction of 100 from the overall weighted score is applied to companies involved in tobacco production.	Scope 3 GHG accounting and reduction targets collected.	For instance, the scoring takes in account Science Based Targets compliant reduction targets.
Bank Sarasin & Co Ltd.	J. Safra Sarasin ESG Rating	Datapoints required are not disclosed.	The scoring includes a media and stakeholder analysis that takes into account relevant business controversies and incidents involving the rated company.	Coal, GMOs in agriculture and medicine, Palm oil, Defence and Armament, Tobacco, Adult Entertainment and companies that are in violation of Human Rights and other Global Compact Principles are excluded from the scoring.	According to the methodology description, criteria take into account direct and indirect impacts along the value chain.	Datapoints required are not disclosed.

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Actor	Scoring name	Forward look	Stakeholders	Sector exclusion	Value chain	Regulation
BLab	B Corp Label	Climate transition plan is scrutinized to make sure they are consistent with corporate reduction targets.	The available document do not mention of stakeholders when it comes to methodology building or input data sharing.	Companies evolving or making business with companies evolving in the firearms, weapons, munitions, pornography, tobacco, gambling or recreation marijuana sectors; companies directly involved with prisons and detention center, coal or oil sands and companies deriving more than 5% of their global annual revenue from coal or oil sands are ineligible. Further unspecified sector specific restrictions apply.	Criteria include measuring and setting targets to reduce value-chain emissions.	For instance, companies are not mandated by law to commit to Paris aligned reduction targets.

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Actor	Scoring name	Forward look	Stakeholders	Sector exclusion	Value chain	Regulation
Bloomberg	Bloomberg ESG Rating	Rating considers carbon reduction targets.	Rating is automated. While methodology updates are driven by research, consultation with external experts and active engagement with clients, the general public isn't solicited.	This is not mentioned in the methodology document and rating covers 93% of market capitalization.	Scope 3 GHG accounting and reduction targets are collected and taken into consideration.	Setting net zero targets is not commonly mandated by regulation.

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Actor	Scoring name	Forward look	Stakeholders	Sector exclusion	Value chain	Regulation
Bloomberg	UN SDG Impact Materiality	Rating is based only on current corporate revenue repartition.	Rating is automated. While methodology updates are driven by research, consultation with external experts and active engagement with clients, the general public isn't solicited. However, it's unclear whether the UNEP FI SDG sector mapping (which constitutes the base of the score) involves stakeholders for determining positive and negative SDG impacts.	This isn't mentioned in the methodology provided and negative impacts are considered.	Impacts on UN SDGs are considered on the value chain level.	Companies are not expected to ensure their activities have no negative impacts on UN SDG goals.
Carbon Disclosure Project	CDP Climate Score	Emissions targets and associated action plan are considered in the scoring process.	Rating takes into account only corporate responses to a standardised questionnaire.	All sectors can be scored, although differently.	Scope 3 emissions disclosure, targets and strategy is scrutinized.	For instance, emissions reduction is not systematically mandated by regulation.

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Actor	Scoring name	Forward look	Stakeholders	Sector exclusion	Value chain	Regulation
Carbone 4	Compatibility score with the Paris Agreement	The assessment is only an assessment of the current GHG intensities of corporate activities.	Rating takes into account only corporate responses to a standardised questionnaire.	Companies from all sectors can be rated.	Value chain emissions are taken into account in the activity emission's assessment.	For instance, companies are not systematically expected to align their activities why certain GHG intensities.
Climateaction 100	Net Zero Company Benchmark	Rating evaluates the adequacy of corporate action plan and investment strategy towards net zero.	Framework is reviewed by the investor conglomerate yearly. Other stakeholders are not involved in the rating process.	The rating actually focuses on climate controvertial sectors (oil & gas, air transportation, etc) as those are the most critical sectors to achieve the low carbon transition.	The assessment takes into account scope 3 emissions reduction targets.	For instance, companies are not systematically expected to reduce their emissions.

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Actor	Scoring name	Forward look	Stakeholders	Sector exclusion	Value chain	Regulation
Corporate Accountability	Corporate Hall of Shame	Information provided to guide scoring focuses on current and past company ESG controversives. The description of current raters do not contain foward looking information.	Results are based on public vote. While this opens up the discussion to more stakeholders, it doesn't mean relevant stakeholder will see the inquiry and answer.	This rating aims to identify the least responsible business. Excluding controversial sectors make little sense with this objective.	The text description of the various candidate include value chain impacts (eg impacts of investments and sold products). It's unclear how systematic this scrutiny is and if these elements are effectively taken into account by the public when voting for the corporate hall of shame.	The rating doesn't use any formal criteria.
Corporate Knights	The Global 100 list	The assessment doesn't take into account any forward looking information.	Rating is automated based on public information and stakeholders are thus not solicited.	The list of sectors isn't specified, but the methodology states that companies from certain activities "counterproductive to sustainable development" are screened out.	The scoring request the disclosure of the company's top 5 suppliers but this is part of the social assessment and is not sufficient to evaluate value chain externalities.	For instance, companies are not mandated by law to have certain carbon productivity levels.

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Actor	Scoring name	Forward look	Stakeholders	Sector exclusion	Value chain	Regulation
EcoVadis	EcoVadis Medals and Badges	Corporate targets and actions to fulfill the targets are scrutinized.	Ecovadis states their assessment is based on the company's response, supporting documents, and the analyst's opinion, only.	Companies evolving in the tobacco, weapons and ammunition, coal and lignite mining, and coal sectors are not eligible to receive EcoVadis medals.	A section of the score covers supplier management (upstream emissions). It is unclear to what extent downstream emissions are also scrutinized as they are not mentioned in publicly available content.	For instance, companies are not mandated to set GHG reduction targets.
		The rating takes into account corporate reduction targets and initiatives.	Ecovadis states their assessment is based on the company's response, supporting documents, and the analyst's opinion, only.	Sector exclusion or inclusion not discussed across the public information available.	The rating encourages the disclosure of scope 3 emissions and their management.	For instance, companies are not mandated to set GHG reduction targets.
FTSE Russell	FTSE ESG Scores	The assessment considers corporate reduction targets.	While stakeholders are not solicited directly during the assessment process, the methodology states their opinion is integrated when methodology is reviewed.	This is not specified in the methodology.	The disclosure and management of scope 3 emissions are considered by the TPI methodology.	For instance, reducing emissions is not systematically mandatory for companies.

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Actor	Scoring name	Forward look	Stakeholders	Sector exclusion	Value chain	Regulation
Inrate	ESG impact ratings	The assessment takes into account corporate policies, targets and initiatives to manage material sustainability issues.	There's insufficient information on the rating process to conclude that stakeholders are solicited during the assessment, but methodology reviews includes soliciting research to ensure impacts are appropriately taken into account.	This is not specified in the methodology.	The assessment claims it takes into account the impact of the company's activity across its products lifecycles.	For instance, companies are rated on their value-chain emissions levels which they are not systematically required to disclose nor reduce.
Insight Investment	Prime climate risk ratings	The rating takes into account emissions reduction targets and capacity to reduce emissions over time.	There's no mention of non financial stakeholders regarding methodology building or input data sharing.	This is not specified in the methodology and exclusions screens are suggested as a complement to the rating.	Scope 3 emissions are taken into account.	For instance, reducing emissions is not systematically mandatory for companies.
	Prime ESG ratings	The rating takes into account emissions reduction targets and capacity to reduce emissions over time.	There's no mention of non financial stakeholders regarding methodology building or input data sharing.	This is not specified in the methodology and exclusions screens are suggested as a complement to the rating.	Emissions taken into account include both direct and indirect emissions.	For instance, companies are not systematically expected to reduce the share of products and services they sell that contribute to climate change.

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Actor	Scoring name	Forward look	Stakeholders	Sector exclusion	Value chain	Regulation
ISS / Oekom	ESG Corporate Rating	The assessment mentions SBTi as a source of standard for their assessment, they thus take into account whether corporation aim to align their emissions with the Paris Agreement.	ISS ESG plans to open public surveys for stakeholders to express their views on the methodological foundation of their assessment during the yearly methodology review.	This is not specified in the methodology.	Used indicators and assessment methodologies are not disclosed.	The assessment mentions SBTi as a source of standard for their assessment, it is thus likely they take into account whether corporation aim to align their emissions with the Paris Agreement, which is not mandated by law.
		The scoring takes into account emission reduction targets.	The general public is solicited randomly and representatively to gather scoring criteria and weightings.	All companies in the Russell 100 Index (expect exceptions based on size, geography and corporate structure) are ranked.	Scope 3 emissions (emissions both upstream and downstream the value chain) are taken into account.	For instance, companies are not systematically expected to committing to reducing their emissions to align with the Paris Agreement.
		The future evolution of corporate emissions is estimated on a scope by scope basis based on current management plans and processes.	The assessment is automated and uses only elements disclosed by the assessed company. Stakeholders are not mentioned regarding methodology updates.	This is not specified and oil and gas companies are rated, which is likely to be considered the most controversial sector for a low carbon transition rating.	The assessment includes corporate scope 3 emissions (value chain emissions).	For instance, corporations are expected to reduce their emissions, which is not mandated by law.
JUST Capital	Annual JUST capital corporation ranking					
MorningStar / Sustainalytics	Low Carbon Transition Rating					

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Actor	Scoring name	Forward look	Stakeholders	Sector exclusion	Value chain	Regulation
MSCI / KLD / Innovest	ESG Risk rating	The public documents do not state whether the risk assessment projects foreseeable emissions evolutions.	Stakeholders management is considered as part of the assessment but stakeholders do not contribute to defining the materiality of criteria.	This is not specified in the available documentation.	The list of datapoints used is not disclosed.	All companies are not expected by law to manage ESG related risks.
	Physical risk rating	The public documents do not state whether the risk assessment consider future company risk exposure.	This isn't relevant to the perimeter of the rating as it focuses on physical climate risk.	This isn't relevant to the perimeter of the rating as it focuses on physical climate risk, which are relevant regardless of the sector.	Both direct (on operations) and indirect (on other value chain actors) climate change exposure are accounted for.	All companies are not expected to systematically assess nor properly manage their climate related risks.
	MSCI Implied Temperature Rise	The rating compares corporate carbon trajectories with the remaining carbon budget to stay below 2°C of global warming.	This isn't relevant to the perimeter of the rating as it focuses only corporate reduction targets.	This is not specified and oil and gas companies are rated.	Rating takes into account corporate scope 3 emissions (emissions across the supply chain).	Corporations are expected to reduce their emissions, which is not mandated by law.
	MSCI ESG Rating	The methodology doesn't disclose the datapoints required nor how they are evaluated.	Stakeholders are not mentioned in the assessment or methodology update section of the MSCI rating process report.	This is not specified and oil and gas companies are rated.	Datapoints required are not fully disclosed and only direct emissions are mentioned.	Corporations are expected to reduce their emissions, which is not mandated by law.

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Actor	Scoring name	Forward look	Stakeholders	Sector exclusion	Value chain	Regulation
Refinitiv / Asset4 / Thomson & Reuters	ESG Score	The methodology doesn't disclose the datapoints required nor how they are evaluated.	The scoring uses only publicly available information and does not specify stakeholders are solicited during the methodology update process.	LSEG doesn't specify a list of excluded sectors, and states the scoring covers 90% of market valuation.	Datapoints required for each pillar are not disclosed.	Datapoints required for each pillar are not disclosed.

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Actor	Scoring name	Forward look	Stakeholders	Sector exclusion	Value chain	Regulation
RepRisk	RepRisk Index	Information required focuses on current and past company performance ESG perception. No forward looking information is collected. Rater's response : Reprisk provided a full jupiter notebook allowing a technical public to further discover their methodology and dataset. Note on rater's response : This confirmed our initial assessment.	While RepRisk collects information passively and does not interact with stakeholders directly, the information collected relates to stakeholder perception (NGO reports, media coverage, etc). It is unclear whether this correlates with actual stakeholder opinion. Rater's response : Reprisk provided a full jupiter notebook allowing a technical public to further discover their methodology and dataset. Note on rater's response : This confirmed our initial assessment. Stakeholders are not mentioned in the rating process.	Any company can be ranked, as soon as the algorithm detects an incident. Rater's response : Reprisk provided a full jupiter notebook allowing a technical public to further discover their methodology and dataset. Note on rater's response : This confirmed our initial assessment.	There's no specific information available on whether and how supply chain incidents are taken into account for each company. However, Reprisk lists "Supply chain issues" as part of the ESG issues considered.	For instance, a company not complying with the UN's Global Compact's 10 principles is considered an ESG incident.

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Actor	Scoring name	Forward look	Stakeholders	Sector exclusion	Value chain	Regulation
RepTrak	ESG Perception & Global RepTrak 100	Information required focuses on current company performance ESG perception.	The general public is solicited randomly to gather the data used for the scoring.	All companies with sufficient public visibility and revenue are scored.	There's no information available on whether supply chain reputation incidents are taken into account for each company.	Input data is related to the public perception of brands. The scoring process doesn't evaluate the performance of companies.
SAM / S&P Global / Trucost	S&P Global ESG Score	No information relative to corporate emissions reduction strategy is requested.	Weighting of issues is based on a double materiality assessment, but the methodology doesn't specify to what extent stakeholders are solicited when assessing outgoing materiality.	The score results cover 99% of Global Market capitalisation and S&P doesn't specify a list of excluded sectors.	Indirect value chain emissions levels are requested and used as an indicator.	For instance, the scoring takes into account whether the companies uses the voluntary Task Force on Climate-related Financial Disclosures framework to disclose climate related risks.

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Actor	Scoring name	Forward look	Stakeholders	Sector exclusion	Value chain	Regulation
	Climate Transition Assessment	The rating takes into account the corporation's climate transition plan to assess how compatible with 1.5°C average global warming the business will be.	<p>S&P discloses a brief overview of the principles behind the rating but the criteria or approaches aren't fully disclosed. In particular, the public documents do not contain any mention of stakeholder solicitation.</p> <p>Rater's response : "Company engages S&P Global Ratings for the assessment and provides inputs. See FAQ which includes how the process works FAQ: Applying Our Integrated Analytical Approach For Climate Transition Assessments S&P Global Ratings (spglobal.com)."</p> <p>Note on rater's response : While the FAQ indeed shows companies are offered an opportunity to review and discuss results, it does not mention other stakeholders. We maintain our assessment.</p>	Any company can receive a rating upon request.	<p>S&P discloses a brief overview of the principles behind the rating but the criteria or approaches aren't fully disclosed.</p> <p>Rater's response : "Value chain considerations are embedded in the shading methodology. See Analytical Approach for CTA (Analytical Approach: Climate Transition Assessments S&P Global Ratings (spglobal.com)) and underlying Shades of Green methodology (Analytical Approach: Shades Of Green Assessments S&P Global Ratings (spglobal.com))."</p> <p>Note on rater's response : "Indeed, this is supported by the additional documents provided, we updated our assessment."</p>	The assessment takes into account the corporation's climate transition plan which is not systematically mandated by regulation.

Actor	Scoring name	Forward look	Stakeholders	Sector exclusion	Value chain	Regulation
SBTi	Science Based Targets labels	SBTi validates corporate emissions reduction targets against the Paris Agreement. Note however, that while brief information on emissions reduction plan to meet targets is required, it is unlikely this information is sufficient to determine whether the company will reach its target.	This isn't relevant to the perimeter of the rating as it focuses only corporate reduction targets.	All sectors can submit targets, although highly emissive sectors are required to comply with more ambitious target levels.	The indirect emissions stemming from the company's value chain are included in required targets, with an exception for SME for which scope 3 target setting is voluntary.	Ambitious emissions reduction commitments are typically not mandated by law.

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Actor	Scoring name	Forward look	Stakeholders	Sector exclusion	Value chain	Regulation
SSI	ESG Rating	The methodology lists the GHG emissions reduction roadmap as a required datapoint.	The system is an automated rating based on scrapped data only. The yearly methodology review doesn't mention including stakeholder outside experts. Rater's response : "We update data, score and ratings only if there is incorrect data. Listed companies have to provide publicly available supporting document if they want to correct certain data." Note on rater's reponse : This confirms our initial assessment.	This is not specified in the documentation and the ratings claims more they reach more than 95% market value coverage. Rater's response : "We have full coverage on A-share companies. For HK-listco, we cover the largest listed companies by market cap. We do not exclude any sectors on purpose." Note on rater's response : This confirms our initial assessment.	While supply chain specific data is required, it seems to revolve around supplier risk management and supply chain collaboration. It is unclear whether impacts listed as datapoints (Greenhouse gas emissions for instance) should include value chain impacts. Rater's response : "Supply chain metrics revolve around supplier risk management and sustainable supply chain. For example, Scope 3 GHG intensity is included in our metrics under Climate Change Theme." Note on rater's reponse : This is not specified on any public document found or provided. We maintain our initial assessment.	For instance, requiring a GHG emissions roadmap is not mandated by law. Rater's response : "Scope 3 GHG intensity and ESG data verification are encouraged by regulators but mandatory in our scoring model." Note on rater's reponse : This confirms our initial assessment.

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Actor	Scoring name	Forward look	Stakeholders	Sector exclusion	Value chain	Regulation
	Carbon neutrality rating	The assessment takes into account the adequacy of the company's internal policies and management strategies aimed at achieving carbon neutrality	The methodology states that "China Securities Index actively engages with stakeholders, including companies, investors, environmental organizations, and regulatory bodies" to ensure the scoring methodology answers their needs and concerns.	This is not specified in the documentation and the scope of the rating is defined as any issuer of chinese securities. Rater's response : "We have full coverage on A-share companies. For HK-listco, we cover the largest listed companies by market cap. We do not exclude any sectors on purpose." Note on rater's response : This confirms our initial assessment.	It is unclear whether impacts listed as datapoints (Greenhouse gas emissions for instance) should include value chain impacts. Rater's response : "Supply chain metrics revolve around supplier risk management and sustainable supply chain. For example, Scope 3 GHG intensity is included in our metrics under Climate Change Theme." Note on rater's reponse : This is not specified on any public document found or provided. We maintain our initial assessment.	For instance, companies are evaluated on their renewable energy usage, which is not mandated by law. Rater's response : "Scope 3 GHG intensity and ESG data verification are encouraged by regulators but mandatory in our scoring model." Note on rater's reponse : This confirms our initial assessment.

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Actor	Scoring name	Forward look	Stakeholders	Sector exclusion	Value chain	Regulation
SynTao Green Finance	SynTao ESG Rating	Datapoints required are not disclosed.	The system is an automated rating based scrapped data. The public documents available don't mention stakeholders are included for the methodology review.	The scoring systems covers all companies listed in Mainland China & Hong-Kong.	Datapoints required are not disclosed.	For instance, companies are evaluated based on the implementation of a "climate change management system", why is not systematically mandated by law.
ZKB Sustainability Research	Swisscanto Sustainability rating	Datapoints required are not disclosed.	The system is an automated rating based on public data only. There is no mention of methodology updates in the available documentation.	The bank follows the blacklist of the Swiss Association for Responsible Investments.	The methodology states scope 3 emissions are not taken into account due to poor data quality and lack of standardisation.	Companies are put in competition according to their GHG intensity, which is not systematically mandatory by law.

Table 9: Supplementary table to clarify the assessment of scoring systems on fairness and efficiency criteria. Criteria can be identified by referring to Table 1.

Actor	Scoring name	Specificity	Progress	Support
3BL Media	100 Best Corporate Citizens	The methodology and FAQ do not mention sector, size or geography specific perimeters or criteria weighting.	Criteria are updated yearly, but changes to the 2024 methodology on climate change appear to be clarifications. Additionally, since full methodology is not available, it's not clear how weighting has evolved.	The system is an automated rating based on ISS data only.
Bank Sarasin & Co Ltd.	J. Safra Sarasin ESG Rating	Analysis is based on KPIs and weightings specific for each industry.	Methodology is reviewed on a biannual basis, without specifications on raising expectations.	Not specified in available documentation.
BLab	B Corp Label	Criteria depend on both company size and sector. Further tailoring is accessible upon request and justification and is analysed on a case by case basis.	Upon certification, companies are expected to choose improvement targets and improve upon them for their next annual recertification.	BCorp provides tools and documentation for companies to improve their score.

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Actor	Scoring name	Specificity	Progress	Support
Bloomberg	Bloomberg ESG Rating	Companies are pooled according to their business models, products and services, supply chains, clients and risks into industries.	While methodology is reviewed yearly to ensure alignment with latest sustainability disclosures practices and standards, it's unclear whether this systematically results in raising ambition levels. Bloomberg emphasized as a response that, given disclosure rates grow year over year, their assessment is mechanically made more ambitious, although this is not by design. Given the uncertainty of the continuation in the raise of climate disclosure, we maintain our assessment.	Scoring is automated, Bloomberg doesn't engage with companies.
Bloomberg	UN SDG Impact Materiality	Companies are rated based on their activity.	Assessment does not entail threshold values.	Scoring is automated, Bloomberg doesn't engage with companies.
Carbon Disclosure Project	CDP Climate Score	Questionnaire varies based on company size (upcoming SME scoring in 2025) and their activity.	CDP states that it raises the bar continually so that companies continue evolving in their environmental journey.	Companies can generate reporting guidance for every question applicable to them but further guidance on how to enhance their strategy is not available.

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Actor	Scoring name	Specificity	Progress	Support
Carbone 4	Compatibility score with the Paris Agreement	Assessment is differentiated according to the company's industry.	Assessment is absolute.	The assessment is part of a wider consulting service that then helps companies update their business plan to become Paris Aligned.
Climateaction 100	Net Zero Company Benchmark	Methodology depends on the industry, with specific industry getting audited on specific elements requested by their suppliers.	Criteria are updated yearly based on discussion with the investment conglomerate, but there is no guarantee that criteria will be made more ambitious.	The process includes direct solicitations of companies from their investors, but it's unclear how this is conducted and whether this includes support in building a CSR strategy.
Corporate Accountability	Corporate Hall of Shame	All sectors, geographies and companies sizes are put in competition for a position in the corporate hall of shame.	The score process doesn't include any criteria.	Rating occurs without the solicitation of companies.
Corporate Knights	The Global 100 list	Companies are rated relatively to their industry's performance.	Criteria are updated yearly, but there is no guarantee that criteria will be made more ambitious.	Rating occurs without the solicitation of companies except for information verification.

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Actor	Scoring name	Specificity	Progress	Support
EcoVadis	Ecovadis Medals and Badges	The Ecovadis questionnaire and scoring method is customized according to company size, industry and geographical location.	The methodology states a methodology committee meets quarterly to review and update the assessment methodology based on latest best sustainability practices. This effectively makes the scoring more ambitious yearly, assuming corporate best practices improve.	Companies receive score cards that detail their performance and improvement options.
	Carbon rating	The Ecovadis carbon questionnaire and scoring method is customized according to company size and industry.	The methodology states a methodology committee meets quarterly to review and update the assessment methodology based on latest best sustainability practices. This effectively makes the scoring more ambitious yearly, assuming corporate best practices improve.	Companies receive score cards that detail their performance and improvement options.
FTSE Russel	FTSE ESG Scores	Indicators are tailored according to the company's geography and activity.	The scoring methodology is reviewed yearly to account for stakeholder feedback and regulation evolution. It is unclear whether this systematically results in raising the ambition of the rating.	The assessment process is automated based on public information.

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Actor	Scoring name	Specificity	Progress	Support
Inrate	ESG impact ratings	The weighting of criteria is differentiated according to industry.	The website states that the methodology is regularly updated to "keep up with the most pressing issues of our time". This effectively makes the scoring more ambitious yearly, assuming issues are gradually uncovered.	The rating process remains unclear and doesn't specify whether rated companies are offered documentation.
Insight Investment	Prime climate risk ratings	Indicators weightings are adjusted according to the company's industry and geography.	Methodology updates are not mentioned in the available public documents.	Insight insist ratings often result in proactive engagement and dialogue with rated companies to ensure risk are more appropriately managed or to encourage change in corporate behavior. It is unclear how systematic this is.
	Prime ESG ratings	Indicators weightings are adjusted according to company industry.	Methodology updates are not mentioned in the available public documents.	Insight insist ratings often result in proactive engagement and dialogue with rated companies to ensure risk are more appropriately managed or to encourage change in corporate behavior. It is unclear how systematic this is.

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Actor	Scoring name	Specificity	Progress	Support
ISS / Oekom	ESG Corporate Rating	ISS ESG takes into account industry and size to define material issues and performance thresholds and geography to infer basic behaviors from companies based on local legislation.	Methodology updates are scheduled yearly and take into account regulatory developments, existing and emerging disclosure standards, increasing stakeholder expectations, academic research, and scientific and technological developments. Assuming standards and regulations are made more ambitious each year, this effectively raises the rating's ambition yearly.	Companies are implicated in the rating process as they are asked to review preliminary ratings and eventually provide supplementary information to challenge public data. Results are also shared with the rated company, but it's unclear if they include any documentation.
JUST Capital	Annual JUST capital corporation ranking	The ranking adapts some indicators based on both geography and industry.	The ranking methodology is updated yearly based on the yearly results to a public solicitation survey. This hasn't resulted in more ambitious rating criteria over the last assessment years.	Just Capital engages with rated companies to ensure they understand the methodology and analysis and get feedback on their ESG performance.
MorningStar / Sustainability	Low Carbon Transition Rating	Companies' emissions are assessed against geography and industry specific reduction targets from the UN's Inevitable Policy Response (IPR).	The assessment is absolute.	The rating systems does not involve rated companies.

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Actor	Scoring name	Specificity	Progress	Support
MSCI / KLD / Innovest	ESG Risk rating	The scoring differentiates criteria according to company industry.	The scoring methodology states the process is reviewed yearly to reassess data points and issue materiality to adapt to the changing operational realities of companies. Assuming CSR strategy uptake in companies, the scoring is thus made more ambitious each year.	The rating systems does not involve rated companies.
	Physical risk rating	The assessment takes into account the geography of companies to determine their exposure.	The assessment is absolute.	The rating systems does not involve rated companies.
	MSCI Implied Temperature Rise	All corporate trajectories are assessed against the Global carbon budget not to exceed 2°C.	The assessment is absolute.	The rating systems does not involve rated companies.
	MSCI ESG Rating	MSCI ESG ratings are industry and geography specific.	The scoring methodology states the assessment approach is reviewed quarterly and updated annually by consulting investors and corporate issuers. This does not ensure criteria are made more ambitious.	The methodology only states MSCI is committed to transparent communication with rated companies and does not specify it will provide feedback nor recommendations.
Refinitiv / Asset4 / Thomson & Reuters	ESG Score	The weighting of datapoints varies according to industries.	No information on methodology updates is provided.	The rating systems does not involve rated companies.

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Actor	Scoring name	Specificity	Progress	Support
RepRisk	RepRisk Index	<p>No information available on whether risk classification is industry, size or geography dependent. Rater's response : Reprisk provided a full jupiter notebook allowing a technical public to further discover their methodology and dataset. Note on rater's response : The document clearly states "There is no weighting of the ESG Issues e.g., by sector or country". We updated our assessment accordingly.</p>	<p>Reprisk's ESG scoring systems measure media coverage of a company's ESG performance. Assuming the media is more sensitive to ESG issues each year, scoring is thus made more ambitious yearly.</p>	<p>The rating systems does not involve rated companies.</p>
RepTrak	ESG Perception & Global RepTrak 100	<p>Reptrak adjust their methodology based on industry.</p>	<p>Reptrak's ESG scoring systems measure how stakeholder view a company's ESG performance. Assuming the public is more sensitive to ESG issues each year, scoring is thus made more ambitious yearly.</p>	<p>The rating systems does not involve rated companies unless they pay to access platform and analyse results.</p>

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Actor	Scoring name	Specificity	Progress	Support
SAM / S&P Global / Trucost	S&P Global ESG Score	The scoring system includes 62 industry-specific questionnaires.	The methodology states criterias are updated yearly to reflect latest trends in sectoral materiality assessments. Assuming further material issues are discovered each year, scoring is thus made more ambitious each year.	S&P provides extensive guidance on how to answer their questions in their CSR handbook.
	Climate Transition Assessment	The assessment is differentiated according to the corporations' industry.	The rating is absolute thus the expectations for companies are not raised year-on-year. Rater's response : " The rating is absolute, however companies are encouraged to get a yearly update to track progress, and when the CTA is used for alignment to exchanges green equity designations (Nasdaq, B3, SIX) annual updates are required." Note on rater's response : The criterion refers to the ability of scorings to drive year-on-year improvements for companies via raising expectations yearly. We thus maintain our initial assessment.	The rating is part of a service that offers feedback and suggestion on how to improve climate transition plans. Rater's response : "The assessments are solicited, methodology is publicly available. However this is not a consulting service and companies are not coached on how to achieve a higher assessment level." Note on rater's response : Indeed, after review of publicly available report, it appears no counselling is provided on how to improve the outlook. We updated our assessment accordingly.

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Actor	Scoring name	Specificity	Progress	Support
SBTi	Science Based Targets labels	Minimum targets levels are differentiated according to company sizes and industry.	The rating is absolute thus the expectations for companies are not raised year-on-year.	Companies receive feedback when their application has been reviewed.
SSI	ESG Rating	Weighting is differentiated according to industry.	Methodology is regularly reviewed by an expert committee, but it remains unclear how it evolves year-on-year. Rater's response : "We closely monitor the development of ESG disclosure and will update our criteria if needed. Methodology is regularly reviewed by an expert committee." Note on rater's response: This does not support the idea of the criteria being made more ambitious year on year.	The system is an automated rating based on scrapped data only. Rater's response : "Listed companies can see their detailed score via our SMART ESG platform or detailed soft copy ESG rating report. The platform or rating report shows ESG metrics, the input data and output score, which helps companies get to know what data is expected to be disclosed and how the data is compared with peers." Note on rater's response : The response does not mention supporting documentation on how to meet criteria and is not supported by public documents found or provided.

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Actor	Scoring name	Specificity	Progress	Support
	Carbon neutrality rating	Final score is standardised based on industry performance.	Methodology is regularly reviewed by an expert comitee and stakeholders, but it remains unclear how it evolves year-on-year. Rater's reponse : "We closely monitor the development of ESG disclosure and will update our criteria if needed. Methodology is regularly reviewed by an expert committee." Note on rater's reponse: This does not support the idea of the criteria being made more ambitious year on year.	The system is an automated rating based on scrapped data only. Rater's response : "Listed companies can see their detailed score via our SMART ESG platform or detailed soft copy ESG rating report. The platform or rating report shows ESG metrics, the input data and output score, which helps companies get to know what data is expected to be disclosed and how the data is compared with peers." Note on rater's reponse : The response does not mention supporting documentation on how to meet criteria and is not supported by public documents found or provided.
SynTao Green Finance	SynTao ESG Rating	Weightings are adjusted according to industries.	There is no mention of methodology updates on the company's website.	The system is an automated rating based scrapped data.
ZKB Sustainability Re-search	Swisscanto Sustainability rating	ESG evaluation criteria and weights are industry specific.	There is no mention of methodology updates in the available documentation.	The system is an automated rating based on public data only.

Appendix

Table 10: Supplementary table for the assessment of scoring systems on Reliability criteria. Criteria can be identified by referring to Table 1. FALSE means the scoring failed the criterion, TRUE the scoring passed the criterion, ? there is insufficient public information to assess the score on the criterion and N/A the criterion doesn't apply to the score. This table is completed by Tables 11, 12, 13.

Actor	Scoring Name	Transparency	Independency	Standardisation	Verification
3BL Media	100 Best Corporate Citizens	FALSE	TRUE	FALSE	?
Bank Sarasin & Co Ltd.	J. Safra Sarasin ESG Rating	FALSE	Partial	?	?
BLab	B Corp Label (2025 standard)	TRUE	FALSE	Partial	TRUE
Bloomberg	ESG Score	Partial	TRUE	Partial	FALSE
Bloomberg	UN SDG Impact Materiality	Partial	TRUE	TRUE	FALSE
Carbon Disclosure Project	CDP Climate Score	TRUE	FALSE	Partial	FALSE
Carbone 4	Compatibility score with the Paris Agreement	TRUE	FALSE	TRUE	?
Climateaction 100	Net Zero Company Benchmark	TRUE	TRUE	Partial	FALSE

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Actor	Scoring Name	Transparency	Independency	Standardisation	Verification
Corporate Accountability	Corporate Hall of Shame	Partial	TRUE	FALSE	N/A
Corporate Knights	The Global 100 list	TRUE	TRUE	TRUE	Partial
EcoVadis	Ecovadis Medals and Badges	Partial	FALSE	Partial	TRUE
	Carbon rating	Partial	FALSE	Partial	TRUE
FTSE Russel	FTSE ESG Scores	FALSE	TRUE	FALSE	?
Inrate	ESG impact ratings	FALSE	TRUE	?	?
Insight Investment	Prime climate risk ratings	FALSE	TRUE	?	?
Insight Investment	Prime ESG ratings	FALSE	TRUE	?	?
ISS / Oekom	ESG Corporate Rating	Partial	TRUE	Partial	FALSE
	Annual JUST capital corporation ranking	TRUE	TRUE	FALSE	?
MorningStar / Sustainability	Low Carbon Transition Rating	FALSE	FALSE	?	?

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Actor	Scoring Name	Transparency	Independency	Standardisation	Verification
MSCI / KLD / Innovest	ESG Risk rating	FALSE	FALSE	?	?
	Physical risk rating	FALSE	FALSE	?	?
	MSCI Implied Temperature Rise	TRUE	TRUE	Partial	FALSE
	MSCI ESG Rating	FALSE	TRUE	?	?
Refinitiv / Asset4 / Thomson & Reuters	ESG Score	FALSE	TRUE	?	?
RepRisk	RepRisk Index	FALSE	TRUE	FALSE	N/A
RepTrak	ESG Perception & Global RepTrak 100	FALSE	FALSE	?	N/A
SAM / S&P Global / Trucost	S&P Global ESG Score	TRUE	FALSE	Partial	Partial
	Climate Transition Assessment	Partial	FALSE	FALSE	?
SBTi	Science Based Targets labels	TRUE	FALSE	TRUE	FALSE

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Actor	Scoring Name	Transparency	Independency	Standardisation	Verification
SSI	ESG Rating	FALSE	?	Partial	FALSE
	Carbon neutrality rating	FALSE	?	Partial	Partial
SynTao Green Finance	SynTao ESG Rating	FALSE	?	?	FALSE
ZKB Sustainability Research	Swisscanto Sustainability rating	FALSE	Partial	?	?

Table 11: Supplementary table for the assessment of scoring systems on Accuracy criteria 5 to 9. Criteria can be identified by referring to Table 1. FALSE means the scoring failed the criterion, TRUE the scoring passed the criterion, ? there is insufficient public information to assess the score on the criterion and N/A the criterion doesn't apply to the score. This table is completed by Tables 12, 13.

Actor	Scoring name	Weighting	Compensation	Relativity	Immateriality	Impact
3BL Media	100 Best Corporate Citizens	FALSE	FALSE	FALSE	?	?
Bank Sarasin & Co Ltd.	J. Safra Sarasin ESG Rating	FALSE	FALSE	?	?	?
BLab	B Corp Label (2025 standard)	TRUE	TRUE	TRUE	?	FALSE
Bloomberg	ESG Score	Partial	Partial	FALSE	TRUE	TRUE

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Actor	Scoring name	Weighting	Compensation	Relativity	Immateriality	Impact
Bloomberg	UN SDG Impact Materiality	TRUE	TRUE	FALSE	TRUE	TRUE
Carbon Disclosure Project	CDP Climate Score	FALSE	FALSE	TRUE	FALSE	FALSE
Carbone 4	Compatibility score with the Paris Agreement	TRUE	FALSE	TRUE	TRUE	TRUE
Climateaction 100	Net Zero Company Benchmark	TRUE	TRUE	TRUE	?	FALSE
Corporate Accountability	Corporate Hall of Shame	?	N/A	FALSE	FALSE	TRUE
Corporate Knights	The Global 100 list	FALSE	FALSE	FALSE	FALSE	TRUE
EcoVadis	Ecovadis Medals and Badges	FALSE	Partial	FALSE	?	FALSE
	Carbon rating	FALSE	FALSE	TRUE	?	FALSE
FTSE Russel	FTSE ESG Scores	FALSE	FALSE	FALSE	TRUE	TRUE
Inrate	ESG impact ratings	FALSE	?	?	?	TRUE

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Actor	Scoring name	Weighting	Compensation	Relativity	Immateriality	Impact
Insight Investment	Prime climate risk ratings	Partial	Partial	?	TRUE	?
Insight Investment	Prime ESG ratings	Partial	FALSE	?	TRUE	TRUE
ISS / Oekom	ESG Corporate Rating	Partial	FALSE	TRUE	TRUE	?
JUST Capital	Annual JUST capital corporation ranking	TRUE	FALSE	TRUE	FALSE	TRUE
MorningStar / Sustainalytics	Low Carbon Transition Rating	FALSE	FALSE	TRUE	FALSE	TRUE
	ESG Risk rating	Partial	FALSE	?	TRUE	?
	Physical risk rating	TRUE	TRUE	FALSE	TRUE	N/A
MSCI / KLD / Innovest	MSCI Implied Temperature Rise	N/A	N/A	TRUE	N/A	FALSE
	MSCI ESG Rating	Partial	FALSE	FALSE	TRUE	?

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Actor	Scoring name	Weighting	Compensation	Relativity	Immateriality	Impact
Refinitiv / Asset4 / Thomson & Reuters	ESG Score	Partial	FALSE	FALSE	Partial	?
RepRisk	RepRisk Index	FALSE	FALSE	FALSE	?	?
RepTrak	ESG Perception & Global RepTrak 100	FALSE	FALSE	FALSE	FALSE	?
SAM / S&P Global / Trucost	S&P Global ESG Score	Partial	FALSE	FALSE	TRUE	TRUE
	Climate Transition Assessment	?	FALSE	TRUE	TRUE	TRUE
SBTi	Science Based Targets labels	N/A	N/A	TRUE	N/A	TRUE
SSI	ESG Rating	Partial	FALSE	FALSE	TRUE	?
	Carbon neutrality rating	FALSE	FALSE	FALSE	?	TRUE
SynTao Green Finance	SynTao ESG Rating	FALSE	FALSE	FALSE	TRUE	FALSE

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Actor	Scoring name	Weighting	Compensation	Relativity	Immateriality	Impact
ZKB Sustainability Research	Swisscanto Sustainability rating	FALSE	FALSE	?	TRUE	TRUE

Table 12: Supplementary table for the assessment of scoring systems on Accuracy criteria 10 to 14. Criteria can be identified by referring to Table 1. FALSE means the scoring failed the criterion, TRUE the scoring passed the criterion, ? there is insufficient public information to assess the score on the criterion and N/A the criterion doesn't apply to the score. This table is completed by Table 13.

Table 12: Evaluation of Criteria 10 to 14

Actor	Scoring name	Forward look	Stakeholders	Sector exclusion	Value chain	Regulation
3BL Media	100 Best Corporate Citizens	FALSE	FALSE	Partial	TRUE	TRUE
Bank Sarasin & Co Ltd.	J. Safra Sarasin ESG Rating	?	Partial	TRUE	TRUE	?
BLab	B Corp Label (2025 standard)	TRUE	?	TRUE	TRUE	TRUE
Bloomberg	ESG Score	TRUE	TRUE	TRUE	TRUE	FALSE
Bloomberg	UN SDG Impact Materiality	FALSE	?	Partial	TRUE	TRUE

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Actor	Scoring name	Forward look	Stakeholders	Sector exclusion	Value chain	Regulation
Carbon Disclosure Project	CDP Climate Score	TRUE	FALSE	FALSE	TRUE	TRUE
Carbone 4	Compatibility score with the Paris Agreement	FALSE	FALSE	FALSE	TRUE	TRUE
Climateaction 100	Net Zero Company Benchmark	TRUE	Partial	FALSE	TRUE	TRUE
Corporate Accountability	Corporate Hall of Shame	FALSE	Partial	N/A	Partial	N/A
Corporate Knights	The Global 100 list	FALSE	FALSE	TRUE	Partial	TRUE
EcoVadis	Ecovadis Medals and Badges	TRUE	FALSE	TRUE	Partial	TRUE
	Carbon rating	TRUE	FALSE	?	TRUE	TRUE
FTSE Russel	FTSE ESG Scores	TRUE	Partial	?	TRUE	TRUE
Inrate	ESG impact ratings	TRUE	Partial	?	TRUE	TRUE
Insight Investment	Prime climate risk ratings	TRUE	?	FALSE	TRUE	TRUE
Insight Investment	Prime ESG ratings	TRUE	?	FALSE	TRUE	TRUE

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Actor	Scoring name	Forward look	Stakeholders	Sector exclusion	Value chain	Regulation
ISS / Oekom	ESG Corporate Rating	TRUE	Partial	?	?	TRUE
JUST Capital	Annual JUST capital corporation ranking	TRUE	TRUE	FALSE	TRUE	TRUE
MorningStar / Sustainability	Low Carbon Transition Rating	TRUE	FALSE	FALSE	TRUE	TRUE
	ESG Risk rating	?	Partial	?	?	TRUE
	Physical risk rating	?	N/A	N/A	TRUE	TRUE
MSCI / KLD / Innovest	MSCI Implied Temperature Rise	TRUE	N/A	FALSE	TRUE	TRUE
	MSCI ESG Rating	?	FALSE	FALSE	?	TRUE
Refinitiv / Asset4 / Thomson & Reuters	ESG Score	?	FALSE	FALSE	?	?
RepRisk	RepRisk Index	FALSE	Partial	FALSE	TRUE	TRUE

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Actor	Scoring name	Forward look	Stakeholders	Sector exclusion	Value chain	Regulation
RepTrak	ESG Perception & Global RepTrak 100	FALSE	TRUE	FALSE	?	N/A
SAM / S&P Global / Trucost	S&P Global ESG Score	FALSE	?	FALSE	TRUE	TRUE
	Climate Transition Assessment	TRUE	?	FALSE	TRUE	TRUE
SBTi	Science Based Targets labels	TRUE	N/A	FALSE	Partial	TRUE
SSI	ESG Rating	TRUE	FALSE	FALSE	?	TRUE
	Carbon neutrality rating	TRUE	TRUE	FALSE	?	TRUE
SynTao Green Finance	SynTao ESG Rating	?	FALSE	FALSE	?	TRUE
ZKB Sustainability Research	Swisscanto Sustainability rating	?	FALSE	TRUE	FALSE	TRUE

Table 13: Supplementary table for the assessment of scoring systems on Fairness and Efficiency criteria. Criteria can be identified by referring to Table 1. FALSE means the scoring failed the criterion, TRUE the scoring passed the criterion, ? there is insufficient public information to assess the score on the criterion and N/A the criterion doesn't apply to the score.

Actor	Scoring Name	Specificity	Progress	Support
3BL Media	100 Best Corporate Citizens	FALSE	?	FALSE
Bank Sarasin & Co Ltd.	J. Safra Sarasin ESG Rating	TRUE	?	?
BLab	B Corp Label (2025 standard)	TRUE	TRUE	TRUE
Bloomberg	ESG Score	?	FALSE	FALSE
Bloomberg	UN SDG Impact Materiality	TRUE	N/A	FALSE
Carbon Disclosure Project	CDP Climate Score	TRUE	TRUE	Partial
Carbone 4	Compatibility score with the Paris Agreement	TRUE	N/A	TRUE
Climateaction 100	Net Zero Company Benchmark	TRUE	?	?

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Actor	Scoring Name	Specificity	Progress	Support
Corporate Accountability	Corporate Hall of Shame	FALSE	N/A	FALSE
Corporate Knights	The Global 100 list	TRUE	?	FALSE
EcoVadis	Ecovadis Medals and Badges	TRUE	Partial	TRUE
ECPI	Carbon rating	TRUE	Partial	TRUE
FTSE Russel	FTSE ESG Scores	TRUE	?	FALSE
Inrate	ESG impact ratings	TRUE	Partial	?
Insight Investment	Prime climate risk ratings	TRUE	?	Partial
Insight Investment	Prime ESG ratings	TRUE	?	Partial
ISS / Oekom	ESG Corporate Rating	TRUE	Partial	?
JUST Capital	Annual JUST capital corporation ranking	TRUE	FALSE	TRUE

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Actor	Scoring Name	Specificity	Progress	Support
MorningStar / Sustainalytics	Low Carbon Transition Rating	TRUE	N/A	FALSE
	ESG Risk rating	TRUE	Partial	FALSE
	Physical risk rating	TRUE	N/A	FALSE
MSCI / KLD / Innovest	MSCI Implied Temperature Rise	FALSE	N/A	FALSE
	MSCI ESG Rating	TRUE	?	?
Refinitiv / Asset4 / Thomson & Reuters	ESG Score	TRUE	?	FALSE
RepRisk	RepRisk Index	FALSE	Partial	FALSE
RepTrak	ESG Perception & Global RepTrak 100	TRUE	Partial	Partial
SAM / S&P Global / Trucost	S&P Global ESG Score	TRUE	Partial	TRUE
	Climate Transition Assessment	TRUE	N/A	FALSE

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Actor	Scoring Name	Specificity	Progress	Support
SBTi	Science Based Targets labels	TRUE	N/A	TRUE
SSI	ESG Rating	TRUE	?	FALSE
	Carbon neutrality rating	TRUE	?	FALSE
SynTao Green Finance	SynTao ESG Rating	TRUE	?	FALSE
ZKB Sustainability Research	Swisscanto Sustainability rating	TRUE	?	FALSE