

Introduction

ESG is an acronym for:

- **Environmental (E)**: factors pertaining to the natural world
- **Social (S)**: factors which affect the way in which people live and work; and
- **Governance (G)**: factors affected by the way in which businesses are run.

These factors represent key risks and opportunities that were not previously considered by credit analysts, along with a number of ethical issues that are becoming increasingly relevant to many investors.

They are increasingly recognized as important elements contributing to a company's long-term performance and competitiveness. As a result, investors wish to incorporate ESG factors into their decision-making processes, elevating ESG to a key component of contemporary financial thinking.

ESG-integrated investing involves the incorporation of environmental, social and governance issues into the investment decision-making process. ESG takes into account both traditional investment issues such as risk, return and diversification, alongside the potential material impact of a range of categorically defined risks and opportunities, seeking to minimize the risks and maximize the benefit from environmental, social and corporate governance factors.

ESG investing involves managing the risks and opportunities associated with long-term economic, social and environmental trends enabling companies to have the best chance to prosper in the long run, incorporating the full range of material factors, both risks and opportunities, into their decision-making.

This document is an excerpt from the Global Credit Certificate (GCC).

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Incorporating ESG into Decision-making

The credit decision-making process

When companies borrow, it is often to finance a particular project or capital expenditure program and, such companies increasingly need to ensure that they have assessed any relevant ESG implications. Similarly, individual investors considering providing finance to these businesses are increasingly incorporating ESG considerations into their financial analysis, risk assessment and corporate valuation.

The assessment of ESG risks and opportunities complements existing investment and credit analysis techniques, providing a more robust and extensive assessment of material information to improve decision-making. As a result, a good starting point here is to refresh our understanding of the traditional financial decision-making process.

Traditionally, companies allocate corporate capital on behalf of bond and equity holders to meet their corporate risk-return objectives. Similarly, asset managers allocate investment capital on behalf of clients to meet their risk-return objectives. This decision-making process typically involves the following stages:

1. **Research:** identifying and gathering relevant material information. For companies, we can use data in their financial reports, along with any other relevant data such as government strategy reports on tariff regulation.
2. **Analysis:** sorting and assessing that research data to provide a useful insight into the implications for risk and return. This analysis may involve the use of financial ratio analysis to aid the cash flow projections for valuation purposes.
3. **Valuation:** using information from the analysis stage to assess the value of debt and equity instruments of each firm by making projections about future cash flows and related risks.
4. **Investment decision-making:** allocating capital to maximize returns to match the given risk tolerances.

Incorporating ESG into this process does not require a fundamentally new approach, rather ESG complements each stage and involves the explicit, and systematic inclusion of ESG factors into these three stages.

Correspondingly, credit analysts take similar issues into consideration when assessing the purpose, payback, risks and structure of the credit arrangement, and ultimately the credit risk. Consequently, credit providers are equally concerned by material ESG factors.

Material ESG data

Decision-making requires the gathering and analysis of material information. Materiality is an accounting term which describes factors that are likely to have a significant impact on key metrics such as risks and returns. This is typically measured in terms of likelihood and magnitude of impact.

ESG factors may have a positive or a negative effect on the financial performance or solvency of a company, institution, or sovereign. The EBA considers that ESG risks can be of a magnitude that can also affect the financial system and a country's economy, to the extent that the consequences could be systemic.

To determine the true credit risk presented by these factors we need to assess:

- How material their effects may be; and
- If they are sufficient to change the credit profile or influence the credit decision, and if so how?

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Materiality of ESG factors

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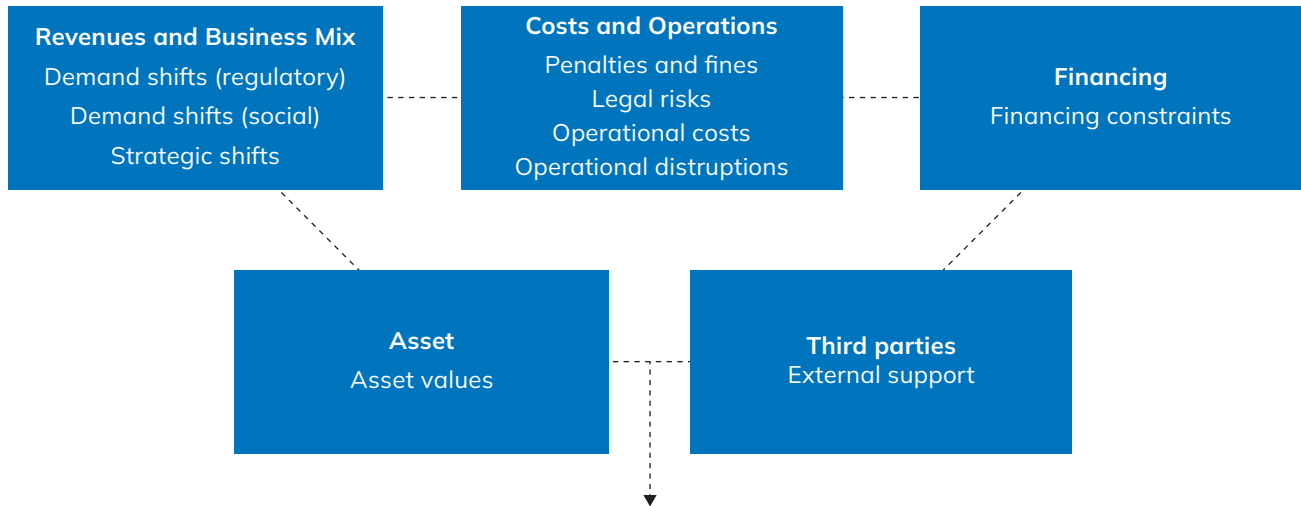
We must also attempt to determine the effects of the E, S and G factors on a company's business model and value drivers such as on operating revenues, capital expenditure, profit margins and risk appetite, or any other factors that are taken into consideration when undertaking a credit analysis. Let's look a little more closely with examples of how this may play out in practice:

- **Operating revenues:** a company may design a more environmentally friendly product that generates higher demand from the market and higher sales, which in turn, drive higher revenues. Conversely, a company may find that the production method for one of the ingredients or components of its products causes concern to customers, for example, the use of child labor in the supply chain. As a result, demand for that product will fall, causing sales revenues to drop.
- **Capital expenditure:** a logistics company is expanding and needs to add additional vans to its fleet, which to date have been powered by diesel. Knowing that the law is changing over the next 10 years to discourage highly polluting vehicles, the company considers investing in electric vehicles instead. The price of electric vehicles is considerably higher than the diesel option, so the company's capital expenditure needs to increase, or its fleet ambitions need to be scaled back. Raising the finance needed to increase the capital expenditure may breach financial covenants in its loan agreement with the bank. Not only is capital expenditure potentially affected, but future revenue growth could be slower because of having a smaller fleet.
- **Profit margins:** a clothing manufacturer is sourcing material and labor from an emerging market country. Being a socially responsible company is high on its management's agenda and so it opts to pay higher than average salaries to have its products manufactured in the local market, thereby enhancing the quality of life for its workers. This, in turn, means that the production costs are higher and profit margins are smaller than they could have otherwise been. On the other hand, failure to meet minimum wage or other social obligations in the supply chain may have a negative reputational effect.
- **Risk appetite:** a bank is considering its lending opportunities and has made the decision that it will not lend to carbon-based companies. This decision is an example of negative screening and effectively shuts down a significant segment of the energy market to the bank. Consequentially, this will reduce the bank's earnings potential, as carbon-based companies are finding it increasingly difficult to borrow from banks and are therefore willing to pay higher prices for such funding. The bank decides that it no longer has the risk appetite for such lending and is instead focusing on funding companies with higher environmental credentials, even though this sector of the energy market is much more competitive and so margins are considerably lower.

The above examples describe what are known as **transmission mechanisms**, how ESG risk drivers affect both economic and financial metrics and, if sufficiently material, affect the business's bottom line. In material circumstances, the company may suffer a loss and see its credit risk rise as a result.

If we take the viewpoint of a bank lending to these companies, the bank may experience credit losses as loans default (or market losses if investment values fall), which translate into impacts on its own capital adequacy and its own credit standing.

The figure below shows examples of some of the transmission mechanisms and financial impacts that may affect a company:



*Transition mechanisms and their financial impact
Source: Fitch ESG in Credit White Paper 2021*

Whilst it is possible to assess material factors and transmission mechanisms at a high level, measuring them consistently and objectively is more complex and requires a framework that is supplemental to the traditional accounting standards and reporting model.

The Sustainability Accounting Standards Board (SASB) has developed a materiality map, which identifies material sustainability issues on an industry-by-industry basis. It ranks 26 sustainability-related business issues across different sectors and types of institution according to whether an issue is material for more than or less than 50% of industries in a sector. The map is interactive and is available on the SASB website: <https://materiality.sasb.org/>.

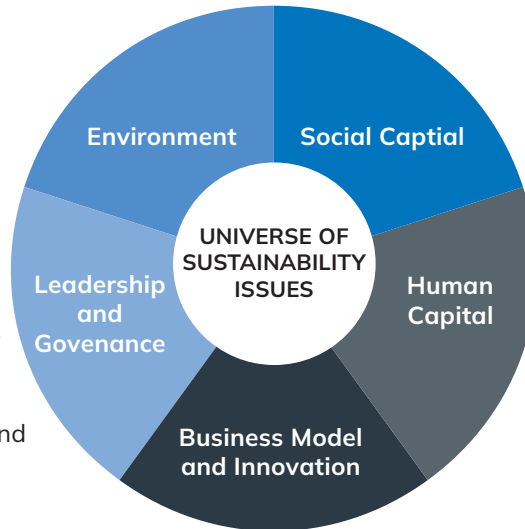
The following figure shows how the 26 factors are categorized into five sustainability dimensions: Environment; Social Capital; Human Capital; Business Model and Innovation; and Leadership and Governance.

Environment

- GHG emissions
- Air quality
- Energy management
- Water and wastewater management
- Waste and hazardous materials management
- Ecological impacts

Leadership and Governance

- Business ethics
- Competitive behavior
- Management of the legal and regulatory environment
- Critical incident risk management
- Systemic risk management



Social Capital

- Human rights and community relations
- Customer privacy
- Data security
- Access and affordability
- Product quality and safety
- Customer welfare
- Selling practices and product labeling

Human Capital

- Labor practices
- Employee health and safety
- Employee engagement diversity and inclusion

Business Mode and Innovation

- Product design and lifecycle management
- Business model resilience
- Supply chain management
- Materials sourcing and efficiency
- Physical impacts of climate change

SSAB Materiality Map

Source: SASB Materiality Map, SASB: (<https://www.sasb.org/standards/materiality-map/>)

The model identifies the key accounting metrics that may be affected and suggests where to find quantifiable information.

As an example, for an investment bank, the Leadership and Governance section returns a high risk factor for business ethics, driven by professional integrity, with the accounting metrics signposting to the total amount of monetary losses as a result of legal proceedings associated with fraud, insider trading, anti-trust, anti-competitive behavior, market manipulation, malpractice or other related financial industry laws and regulations. In turn this could materially affect the bank’s revenue/costs, assets/liabilities, and cost of capital. We have seen this happen on many an occasion with banks reporting multi million (or even billion) dollar charges to atone for their ethical transgressions.

ESG research

Nature of data

With the tools required to determine the materiality of any ESG factors for a particular business or sector, we must now gather the relevant ESG data, which may be either:

- **Qualitative ESG research:** gathering non-numeric data to gain an understanding of motives, quality of management and risk culture. Typical sources of such data are company financial statements, meetings with senior management and surveys. For example, for a utility company, this could involve a review of their risk management policy.
- **Quantitative ESG research:** gathering numerical data to gain an understanding of relative or absolute metrics. Typical sources again include company financial statements, for example in the case of a utility company this could include measurement of carbon emissions, waste and effluent volumes.

Sources of data

We also have some alternatives with respect to gathering this material data, where research may be classified as either:

- **Primary ESG research:** self-conducted research undertaken in-house or commissioned. For example in-house analysis of company reports or surveys of customer views, boards diversity or investment proposals for new technology.
- **Secondary ESG research:** use of existing published third-party reports, analysis and ratings, for example, ESG agency ratings for companies and sectors.

ESG rating agencies

As most asset managers do not have the resources to undertake comprehensive primary research on ESG factors for their investment universe, they employ external ESG agencies to provide relevant data.

ESG rating agency	Services provided
Sustainalytics	Company ESG ratings, ESG data, carbon analytics
MSCI	Company ESG ratings, ESG indices
CDP	Carbon scope data, e-disclosures, environmental management assessment
SASB	Sustainability standards, materiality maps

*ESG service provider services
Source: FitchLearning*

Most ESG agencies undertake both primary research and analysis, and provide a broad range of information. Some focus on a specific area (CDP) and others, like the Sustainability Accounting Standards Board (SASB), provide frameworks and guidance on best practice for disclosure and analysis.

ESG analysis

Irrespective of its source, quantitative and qualitative research needs to be analyzed and combined in some objective manner to achieve an overall ESG view. As there is some subjectivity involved in determining certain inputs, this cannot be a wholly objective assessment but must combine subjective assessments. For example, an assessment of management effectiveness must be combined with an analysis of objective measures such as profitability.

This overall assessment is typically aggregated into an ESG factor or score, which can then be applied to quantitative financial analysis models. Bond holders and lenders should note, however, that there is no universally accepted method for either how the data is integrated into the ESG score or how the score is used, and each institute's approach may be unique.

As a result, the ESG integration framework does not illustrate the perfect ESG-integrated analysis process and the ESG integration techniques of one firm are not necessarily the right techniques for all firms. Many firms do, however, rely on the research and analysis of major rating agencies, and in the following section we examine the approaches taken by two leading ESG agencies providing information, metrics, analysis and scores for asset managers and asset owners.

Sustainalytics

Sustainalytics are a leading ESG agency providing amongst other resources, ESG risk rating metrics. These measure the degree to which a company’s economic value is at risk driven by ESG factors.

The risk rating incorporates three dimensions:

- **Exposure dimension:** to what ESG risks is the business exposed and what is the scale of that risk/exposure
- **Management dimension:** to what extent do management mitigate ESG risks; and
- **Unmanaged risk dimension:** what risks are unmanaged, which includes:
 - **Unmanageable risk:** ESG risks which are beyond management control e.g. aspects of climate change; and
 - **Management gap:** the risks management do not manage, but that are within their control. This may be deliberate reflecting costs and resources, or passive. Management have simply not considered such risks.



ESG risk rating metrics
Source: Sustainalytics

The Sustainalytics’ ESG Risk Rating measures the degree to which a company’s economic value is at risk as a result of ESG factors. More technically speaking, it is an assessment of the magnitude of a company’s unmanaged ESG risks. ESG management can be considered as a set of company commitments and actions that demonstrate how a company approaches and handles an ESG issue through policies, programs, quantitative performance and involvement in controversies, as well as its management of corporate governance. Each company is given a numerical risk rating, starting from zero and going all the way above 50. The ratings sort companies into five risk categories: Negligible, Low, Medium, High and Severe, corresponding to bands on the numerical scale with Negligible being in the 0-10 range and the Severe range starting from 40 and above.

Generally speaking, companies with good risk management policies and corporate governance structures have lower unmanaged risk than peers.

We should note that Sustainalytics risk scores are absolute and are not normalized for industry. Therefore, a company in IT may have a risk score similar to that of a company operating in the financial sector.

MSCI

MSCI is employed by many asset owners and managers in the creation of index funds and establishment of benchmarks and their services now extend to ESG resources. MSCI assess ESG risks and opportunities arising from large scale trends as well as by the nature of the company’s operations.

A risk is material when it is likely that companies in each industry will incur substantial costs in connection with it; for example, regulation leading to curtailment of activities. Social media companies benefit from the use of their platforms, but the social consequences of data recording and use has already led to legislation modifying their use of data and engagement protocols.

An opportunity is material to an industry when it is likely that companies could capitalize on it for profit. For example, demand for battery technology is increasing as eCar production increases. Tesla has taken advantage of its battery manufacturing capabilities by servicing a range of clients beyond the automotive industry.

MSCI assess material risks and opportunities for each industry through a quantitative model derived from assessing companies using the following framework:



*MSCI's risk categorization framework
Source: MSCI*

To create the score for industries and companies, key issues are assigned relevant to exposure. For example, carbon footprint will be important for utilities but not for IT companies.

Final MSCI ESG ratings are then derived by the weighted averages of the key issue scores, which are then aggregated and normalized by industry. Each company's final industry-adjusted score corresponds to a rating between best (AAA) and worst (CCC).

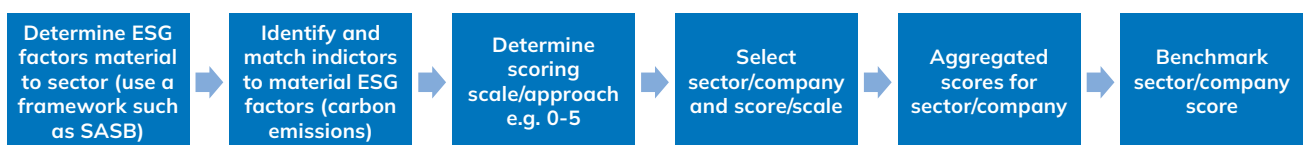
These assessments are not absolute, but are intended to be relative to the standards and performance of a company's industry peers

Since MSCI's definition of materiality is based on judgment and their approach to scoring is normalized, the Sustainalytics and MSCI ESG scores for any given company are unlikely to be identical, causing challenges with comparability for asset managers.

ESG scorecards

Faced with a wide range of qualitative and quantitative data along with alternative analysis scores, a credit analyst now needs to sort and assess the relative ESG credentials of potential investments. This is typically achieved using ESG scorecards which attribute a quantitative score to both qualitative and quantitative factors. Scorecards may be bespoke to the analyst or bond manager but are also available from ESG agencies.

The process for developing a score card is outlined below, although we would note that the key determinant is the decision on what factors to measure, again the output from the materiality assessment.



*ESG score card
Source: FitchLearning*

ESG screens

Provided with quantitative data and ESG scores, the investment analysts can now identify which companies merit further consideration using a screen to filter out stocks which do not match their ESG criteria.

The first ESG screens were negative, excluding 'sin stocks' which derived their profits from gambling, weapons, or tobacco. Negative screens can now be used to exclude ESG 'laggards'. Positive ESG screens are used to identify stocks which are leaders in their sector.

Integrating the analysis of the operating and business environment

Assessment of the operating and business environment

To fully understand the effect that ESG risks and opportunities may have on a company's operating and business environment the analyst will need to conduct a thorough economic and industry analysis.

Economic analysis normally entails assessment of macroeconomic conditions to serve as a foundation for understanding the prospects for individual industries. It is at this stage that some analysts will try to assess how ESG factors affect economic growth and macroeconomic themes such as capacity utilization and resource scarcity.

At the macroeconomic/country level, analysts may consider general governance and social factors. For example, companies operating in Northern European countries such as Denmark, benefit from stable democratic state governance norms, high Gini coefficients and must comply with local regulations related to robust labor protection. This should reduce governance and social risk exposure relative to companies operating in other regions.

To understand the competitive environment, what drives the current level of profitability and competitiveness of the industry, analysts may use a range of techniques.

One such technique is an analysis of Porter's five forces that consider the internal competitiveness of the industry, the bargaining power of suppliers, the bargaining power of customers, the threat of new entrants and the threat of substitute products. Analysts may also assess the product life cycle.

For example, environmental regulation and changing consumer preferences are liable to have a significant effect. The analyst must attempt to assess future developments in both areas.

- **Consumer preferences:** consumers who buy food and household products may want to use items that are sold in environmentally-friendly, recycled or biodegradable packaging. Companies that offer such packaging may win market share from those that do not.
- **Environmental regulation** may alter the required business models. Car companies face restrictions on sales of cars with combustion engines within the next 10 years. Their strategy needs to address the switch to electric power vehicles.

To assist with this, analysts may take advantage of the following tools and resources:

- Company sustainability reports: there are few regulatory frameworks governing these reports, with the exception of TCFD reports in Europe, but there are 'best practice' reporting standards provided by the Sustainability Accounting Standards Board (SASB) and Global Reporting Initiative (GRI)
- Discussions with, or information from, the management
- Research from ESG rating agencies
- The company's past track record of handling ESG risks; and
- Information and research from external consultants and experts.

Assessment of materiality

In the course of any such analysis, it may become apparent that the company is exposed to a large number of ESG risks; however, we need to assess their materiality. In doing this, analysts may use their own experience and that of their colleagues, although another way to understand and make judgments on materiality is to use an interactive tool such as the SASB Materiality Maps that identify likely material sustainability issues on an industry-by-industry basis.

For example, an analyst looking at a company in the food retail sector may refer to the SASB materiality maps to identify the most common issues of concern for food retailers and distributors, which are:

- GHG emissions
- Energy management
- Water and hazardous materials management
- Data security
- Product quality and safety
- Customer welfare
- Selling practices and produce labeling, and
- Labor practices.

Further detail on each of these areas is available on the SASB's interactive website. For example, if we look at the Energy Management website we see that this is measured based on 1. operational energy consumed; 2. percentage grid electricity; and 3. percentage renewable. These issues can then be investigated with regard to the company concerned.

Use of ESG ratings

As we know, ESG rating agencies provide assessment of environmental, social and governance risks faced by companies, with Sustainalytics and MSCI ratings being the most prominent. However, there are numerous differences between the ratings produced by these agencies, the following two being most notable:

- **Absolute or relative:** Sustainalytics' ESG scores are absolute, whereas MSCI's are relative to the standard and performance of the company's industry peers.
- **Risks and opportunities:** Sustainalytics' ESG scores consider risk alone, whereas MSCI's assessment considers not just the risks posed by ESG factors, but also the opportunities they may present.

Beyond the overall score, reports by rating agencies provide peer group information, as well as assessment of individual categories of risks that may help the analyst narrow the focus of analysis to assess how well companies are managing these issues.

To make the best use of ESG rating agencies' output, analysts need to understand the terminologies and techniques they use. Regardless of how much the analyst uses such reports to understand more about the risks, it is good practice for analysts to be aware of the rating agencies' views, as any communication with buy-side analysts, portfolio managers, or the subject company's management teams may cover the issue of how the rating agencies view the companies and how the sell-side analyst's view may differ.

ESG valuation

As with analysis, there is no single universally accepted approach for the integration of ESG into the corporate valuation process; however, the following are commonly applied methods:

Valuation approach	Quantifiable factors	Non-quantifiable factors
DCF valuation models	Adjust specific forecast resources, profits or cash flows for the effects of quantifiable factors such as the application of carbon taxes	Adjust the cost of capital/ discount rate applied to those cash flows for the effects of any non-quantifiable ESG risks within the ESG score, raising the rate to incorporate risks or lowering the rate to reflect any opportunities
Valuation ratios: for valuation models that make use of ratios such as price/earnings multiples	Adjust the earnings or other underlying measure for the impact of any quantifiable factors	Adjust the valuation ratios (e.g. the price/earnings multiple) to reflect any non-quantifiable factors within the ESG score
Risk-return assessments: optimization models such as the Sharpe ratio	Adjust the forecast returns for the impact of any quantifiable factors	Adjust the risk estimates for any non-quantifiable factors within the ESG score

ESG valuation
Source: Fitch Learning

The difficulty with all of these is the adjustments made for the non-quantifiable issues, adjustments that naturally involve a degree of subjectivity. Once again, there is no universally accepted method for how this should be achieved, and the precise approach adopted by each investment Institute may be quite unique.

As a result, although we may expect there to be some correlation between the conclusions drawn between various investment institutes, there may well be some notable differences.

Discounted cash flow valuation models

Of the three valuation models noted above, DCF valuation models are by far the most commonly applied, and the following examples provide an illustration of the approach.

Income statement adjustments - Revenue

Future revenues and revenue growth rates significantly affect revenues and associated variable costs. To forecast revenues, we will typically take a view on how fast the industry is growing and whether the specific company will gain or lose market share. ESG factors can be integrated into these forecasts by increasing or decreasing the company's sales growth rate by an amount that reflects the level of ESG opportunities or risks. For example:

- If a company was found to have misused customers' personal data causing reputational damage, the analysts may lower or reverse future sales growth projections to account for anticipated customer backlash against the company, for example X (formerly Twitter).
- If an automotive supplier was able to take advantage of rising demand for components used in electric vehicles, the analyst may take this as an ESG opportunity to increase revenues.
- If a car maker stops selling a particular model in a particular region due to new, significant sales taxes imposed on that category of car, the analyst may reduce the sales forecast by a certain percentage annually for a specific time period, for example, the UK's response to the government's intention to ban the sale of fossil-powered cars from 2030.

Income statement adjustment - Operating costs and operating margin

Analysts can make assumptions about the influence of ESG factors on future operating costs and either adjust them directly or adjust the operating profit margin assumption. Some operating costs may be forecast explicitly, for example, the change in the number of employees. In other scenarios it may be necessary to make an adjustment to the operating margin instead. For example:

- A petrochemical company's operating cost estimates may be increased by a specific amount each year for the additional cost associated with new legislation on toxic waste.
- A company's supply chain may be suffering disruptions due to industrial unrest or demands for better working conditions, suggesting that the company may need to switch to other more expensive suppliers.
- Rising obesity could be a driver for a switch from less healthy to more expensive, healthier foods and diet products, which would not only have a positive effect on revenues but would also lead to higher margins for several years.

Balance sheet adjustment - Book value and impairment charge

ESG factors can also influence anticipated cash flow associated with assets, and in extreme cases, these assets may become obsolete due to regulatory, environmental, or market constraints, referred to as stranded assets. This will give rise to an impairment charge to bring the book value down accordingly. Such action would not only reduce the asset value on the balance sheet, but will also reduce the company's earnings for the year due to the one-off, non-cash impairment charge shown on the income statement.

For example, a mining company's coal assets may no longer generate the level of cash flows previously expected due to insufficient demand or regulatory change. An impairment charge would be likely, as was the case with Shell who wrote off USD 20 billion in stranded assets in 2021.

Cash flow adjustment - Capital expenditure

An investor may believe that ESG factors will lead a company to decrease or increase their future capital expenditure, an important component of cash flow forecasts. If new ESG opportunities open the way for sales of new products (such as wind turbines, solar panels or components for electric cars), capital expenditure may need to increase to enable the company to produce such components. Alternatively, new regulations on emissions, waste, water usage or noise generated by existing manufacturing equipment may force the management to invest in new equipment, temporarily raising capital expenditures.

Cost of capital adjustments

Each of the above represents a quantifiable factor where we can adjust a specific forecast figure (resources, profits or cash flows) to reflect our best estimate of the financial effect. However, where we are dealing with more subjective, non-quantifiable factors it may be more appropriate to adjust the cost of capital/discount rate applied within any evaluation to reflect any non-quantifiable ESG risks and opportunities within the ESG score, raising the discount rate to incorporate risks or lowering the discount rate to reflect any opportunities.

For example, if increasing legislation or litigation in a sector increases the company's operational risk, this should be reflected by an increase in the discount rate. The difficulty here is in determining the required increase, which may require a somewhat subjective assessment of how the factor may alter the company's relative risk, hence beta.

Financing decision-making

When making credit assessments it is necessary to integrate ESG factors or scores into the assessment of the

- Purpose, payback, risks and structure of the credit arrangement; and
- Expected loss assessment.

Purpose, payback, risks, structure and debt assessment

Purpose

One of the areas we may want to consider when looking at the purpose of the loan is whether that purpose has any effect on material ESG factors. For example, lending for a purpose that includes the construction of a highly polluting facility clearly has an environmental effect. On the other hand, a loan to a borrower or project that is carbon neutral or even environmentally positive may be more attractive to a lender, since it may help to achieve better ESG outcomes in aggregate for the lending book. Lending organizations may have restrictions and targets, e.g. **green ratios** or other ESG requirements that may need to be factored into the assessment of purpose as an ESG driver to the lending rationale.

The social effect of a lending decision can also be considered in respect of the purpose of the loan. Socially positive outcomes are likely to be viewed more favorably than those that have negative effects. Similarly, injecting high levels of leverage into a socially important business may not only have credit negatives, but may have social negatives too. These may affect the borrower's ability to meet its financial obligations if some form of action is taken by the community which adversely affects the company.

Governance should also be considered when reviewing the purpose of the loan to ensure financing is in line with the company's stated objectives and adheres to its reported ESG strategy and transparency.

Payback

eLearning

ESG risks, principles and drivers and the purpose payback model

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When assessing the sources of payback, consideration should be given to how environmental events, legislation or regulatory pressure may affect the company's ability to meet its financial objectives.

The company's social track records and intentions should be considered when determining its ability to meet its repayment obligations, since negative reactions to the company's social profile could result in a consumer backlash or boycott.

Payback risks relating to governance can include the actions taken by high-profile executives or the strategic decisions taken by the board that may adversely affect repayment ability.

Risks

When assessing risks to the business that may impede the repayment of the loan, there are several environmental risks that may affect the borrower either directly or indirectly. For example, the direct effect of extreme weather events, changes in commodity costs, changes in insurance premia, or the indirect effects of changes in regulation or competitors' products having better environmental credentials, may lead consumers to switch to a less environmentally harmful alternative.

Social risks may arise due to poor industrial relations, supply chain record on welfare, child labor, modern slavery, etc. This becomes a clear point of differentiation where competitors have a better social track-record and represents a genuine market risk.

In the context of governance, risks may arise if the board does not have suitable oversight or diversity or where there is insufficient challenge within the board.

Structure

Loans may be structured in a way that helps mitigate against environmental risks by including covenants based on insurance and/or the environment. Pricing may also be based on the borrower meeting certain environmental objectives.

Lenders should understand whether a facility has social effects due to its structure. High leverage, sale of assets, changing relationship with suppliers or buyers (effect on their staff) may give rise to social risks for the business and should be assessed appropriately.

Finally, with respect to structure, the limits, or requirements the loan imposes should be compatible with the governance structure or objectives of the organization.

Expected loss

The risk dimension of the above analysis will usually be quantified by assessing the expected loss using this formula.

$$\text{Expected loss} = \text{Probability of default} \times \text{Exposure at default} \times \text{Loss given default}$$

We therefore need to consider how ESG-related opportunities and risks can affect each of these parameters. What follows is a consideration of the effect of ESG risks. ESG opportunities would have the opposite effect.

- **Probability of default:** ESG risks reduce business viability leading to deteriorating creditworthiness and, therefore, rising credit risk. This would be reflected in a credit rating downgrade reflecting a higher probability of default. The lending bank (or trading counterparty) would then need to assign a provision and would see capital charges increase, thus negatively affecting their own profitability.
- **Exposure at default:** the credit exposure at default is the amount of the loan (or other facility) that is outstanding at the point that an event of default is called. We must be aware, however, that this amount often increases immediately prior to default.

eLearning

Impact of ESG on probability of default, exposure at default and loss given default

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For example, an airline has a committed credit line from its bank (Bank ABC) that enables it to draw on additional funds without requiring any further approval from the bank. Due to a global pandemic, the airline's business viability is severely compromised, but it has a loan repayment due in the next month on its loan from Bank XYZ. The airline borrows funds under its credit line with Bank ABC to repay the loan to Bank XYZ. However, these funds

are insufficient for full repayment and the airline defaults on the loan to Bank XYZ. From Bank ABC's perspective, its exposure to the airline has increased immediately prior to the airline declaring default.

This may also occur in situations where there is a physical risk event (such as flooding) and a company draws on additional bank funding but then defaults anyway; its exposure at default has increased. Such exposures may also occur in situations where there is a physical risk event, such as extreme weather events, that severely disrupt the airline's operations, causing it to draw on additional bank funding that results in a default. Once again, its exposure at default has increased.

- **Loss given default:** when a borrower has defaulted the loss may not necessarily correspond to 100% of the exposure at default as there may be collateral in place to mitigate the loss to the lender or recovery on liquidation.

However, if that security were to be a factory that was leaking toxic chemicals into a local river, the collateral value of that factory would be reduced or deemed negative. Not only that, but the bank would have the additional problem of having to remediate the pollution issue before the factory could be sold, and its monetary value realized to offset the loss on the loan.

Alternatively, a trading counterparty could have pledged equity shares in a third-party company as collateral for a trade. That third-party company may have had a sizeable customer data leak causing its share price to fall. The value of that stock as collateral for the trade is now worth less than it was before. If the trade were to fail, the resulting loss given default would be higher as the collateral value had fallen.

In addition, ESG risks can cause many other issues for credit takers, particularly if they are incorporated as drivers into the credit ratings process. Any downgrades triggered by ESG factors, as was the case for Volkswagen during the diesel emissions scandal of 2015, may drive lenders' capital requirements higher and increase financial risks.

Failure to address ESG issues on the part of a company or its lending bank could lead to reputational and/or conduct risk, pricing errors and business development challenges. Additionally, lower investor and market confidence could result in liquidity issues, higher funding costs, challenges accessing bank facilities and ultimately, support. Credit entities that are adept at managing the ESG risks in their businesses should theoretically have a better and more sustainable credit profile with a lower risk of loss.

Challenges to ESG integration

Key challenges

The key challenges to successfully integrating ESG into any investment or credit decision include:

- Corporate disclosure and data-related challenges
- Comparability difficulties; and
- ESG data analysis.

eLearning

Challenges to integrating ESG into credit analysis

Password: **Bloom24**

Available until 30 April 2024



Corporate disclosure and data-related challenges

There are currently few compulsory requirements for corporates to disclose ESG data in their report and accounts. However, there are frameworks in most developed countries and standards of best practice supported by organizations such as SASB. The consequences are as follows:

- Management has flexibility in what it chooses to report
- There may be a problem of over-disclosure (greenwashing where companies paint a picture of good ESG policies)
- Lack of disclosure, which could be an indicator of poor ESG management; and
- Even when revealed, ESG disclosure might be unaudited, incomplete or incomparable.

For example, carbon pollution can be categorized and measured under the following scopes:

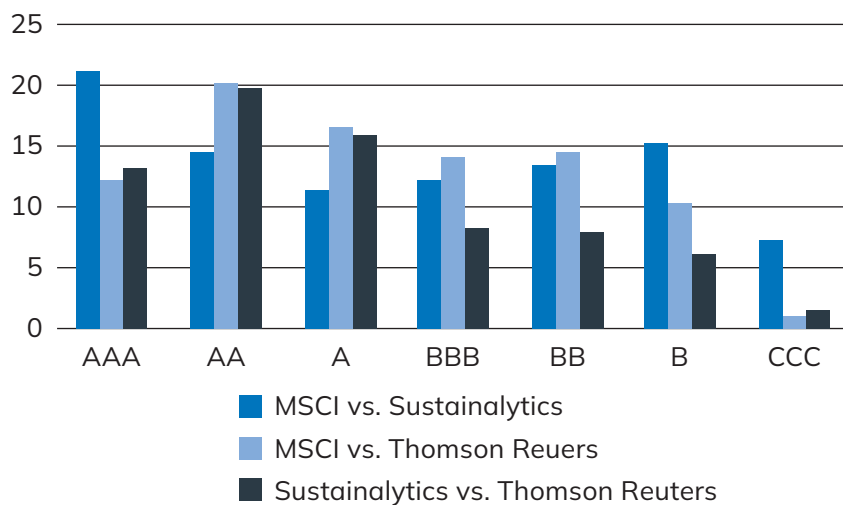
- **Scope 1:** Direct emissions from core operations
- **Scope 2:** Purchased energy (electricity); and
- **Scope 3:** Carbon emissions in the wider supply chain.

Many companies provide data on Scope 1 and Scope 2 measures, but not Scope 3, which is estimated to account for more than 50% of the world's carbon pollution impact.

Comparability difficulties

There are more than 20 agencies providing scores and data relating to similar ESG factors. However, ESG rating agencies use different techniques and assessments. For example, Sustainalytics provides absolute risk numbers while MSCI offers ratings normalized for each industry. Ratings are therefore not easily comparable as illustrated in the following research by Schroders.

Probabilities of ESG scores being the same across providers,(%)



Comparable differences in ESG ratings
Source: Schroders

Even if the data is comparable, judgments on ESG materiality may differ between analysts, disparities can be magnified by cultural or regional differences. Finally, where materiality can be judged, it can be hard to assess the level of impact.

As a result, although ESG the materiality maps provided by the various credit rating agencies may be helpful in providing guidance, investment professionals often develop their own view on what is most material.

ESG data analysis and comparability challenges

As we have previously established, ESG research and analysis is a subjective process, based on opinions. Where an asset or credit manager is attempting to integrate ESG across both the firm and asset classes, many of the following challenges will arise:

- **Agreement on ESG material factors:** many factors are not universally agreed, and much ESG data has only been recorded for a relatively short term; hence, it's not ideal for long-term planning.
- **Subjectivity:** scoring of qualitative factors is subjective, as is the assessment of materiality.
- **Cultural inconsistencies:** ESG factors are difficult to integrate globally across large firms as the assessment of ESG factors is affected by culture and experience.
- **Asset class differences:** ESG implications differ across asset classes, with equity significantly affected by E and S factors, while fixed income analysts often only consider G factors as material.

The resulting consequence is a lack of comparability or differences of opinion, even within asset or credit management firms. The challenges associated with research and analysis are being addressed by a move to provide an overarching framework by organizations such as the PRI and SASB, whilst regulators, and more recently the IASB/ISSB move to standardize ESG disclosures by corporates. In addition, the European Commission has initiated a review of ESG rating providers and may be expected to provide regulatory requirements with respect to the integration of ESG factors by rating agencies.

Nevertheless, lack of comparability and subjectivity remain the biggest challenges to the successful integration of ESG within corporate credit analysis.

This document is an excerpt from the Global Credit Certificate (GCC). For more information about the GCC visit www.gicp.org/gcc



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