PRI Principles for Responsible Investment

UNEP FINANCE INITIATIVE | United Nations Global Compact

An investor initiative in partnership with UNEP Finance Initiative and UN Global Compact

SHIFTING PERCEPTIONS:

ESG, CREDIT RISK AND RATINGS

PART 3:

FROM DISCONNECTS TO ACTION AREAS

With support from The Rockefeller Foundation

The ROCKEFELLER FOUNDATION

UN environment

Inquiry: Design of a Sustainable Financial System

THE SIX PRINCIPLES

PREAMBLE TO THE PRINCIPLES

As institutional investors, we have a duty to act in the best long-term interests of our beneficiaries. In this fiduciary role, we believe that environmental, social, and governance (ESG) issues can affect the performance of investment portfolios (to varying degrees across companies, sectors, regions, asset classes and through time). We also recognise that applying these Principles may better align investors with broader objectives of society. Therefore, where consistent with our fiduciary responsibilities, we commit to the following:

1 **We will incorporate ESG issues into investment analysis and decision-making processes.**

2 We will be active owners and incorporate ESG issues into our ownership policies and practices.

3 We will seek appropriate disclosure on ESG issues by the entities in which we invest.

4 We will promote acceptance and implementation of the Principles within the investment industry.

5 We will work together to enhance our effectiveness in implementing the Principles.

6 We will each report on our activities and progress towards implementing the Principles.

PRI's MISSION

We believe that an economically efficient, sustainable global financial system is a necessity for long-term value creation. Such a system will reward long-term, responsible investment and benefit the environment and society as a whole.

The PRI will work to achieve this sustainable global financial system by encouraging adoption of the Principles and collaboration on their implementation; by fostering good governance, integrity and accountability; and by addressing obstacles to a sustainable financial system that lie within market practices, structures and regulation.

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ACKNOWLEDGEMENTS

The PRI would like to thank the Advisory Committee on Credit Ratings (ACCR) and its chair, My-Linh Ngo, Head of ESG Investment Risk at BlueBay Asset Management, for their time, guidance and commitment to the ESG in Credit Ratings Initiative. Thank you also to all PRI signatories that have signed the ESG in Credit Ratings Statement and hosted the forums, to those who provided case studies, and the credit rating agencies for contributing to the initiative by engaging with investors and participating in discussions about how to advance thinking in credit risk analysis through the roundtables that the PRI has organised. Finally, the PRI would like to thank The Rockefeller Foundation for the financial resources it provided towards this project.

EXECUTIVE SUMMARY

Credit risk analysis is evolving. Although the basic tenet of assessing whether an issuer can pay back its obligations on time and in full still holds, the global fixed income (FI) community is increasingly seeking ways to factor in sustainability considerations when allocating capital and managing risks. As a first step, this requires ensuring that environmental, social and governance (ESG) factors, where material, are appropriately reflected in credit risk analysis.

The PRI has been working with investors and credit rating agencies (CRAs) since the launch of the ESG in Credit Ratings Initiative in 2016 to promote understanding of practices, identify gaps in the consideration of ESG factors in credit risk analysis, and find ways to address those gaps[1].

This investor-CRA dialogue has highlighted that ESG consideration in credit risk analysis is still not addressed consistently and systematically by all FI market participants. However, it has also brought to light that:

- many positive developments are gaining rapid momentum – including expanding resources and increasing transparency efforts by many investors and CRAs to explain how ESG factors feature in their analysis;
- the idea that ESG consideration is part of a holistic approach to assessing credit risk is gaining traction;
- perceptions are shifting and ESG signals are beginning to be used not only to manage downside risks but also to spot investment opportunities; and
- FI investment and credit ratings have different objectives: whereas a credit rating will only include ESG factors if material to credit risk, investors looking for guidance on ESG factors in a FI investment may also use standalone ESG scores and assessments.

This report, the third in a three-part series, focuses on the emerging solutions discussed during 15 investor-CRA forums that the PRI organised globally, targeting credit practitioners, to address four apparent investor-CRA disconnects, i.e. areas where investors and CRAs seemed to have different views at the start of the initiative (see Figure 1). The report builds on part one, which described the state of play of ESG consideration in credit risk analysis, and part two, which focused on the results of roundtable discussions exploring those disconnects.

Figure 1: Investor-CRA disconnects at the start of the ESG in Credit Ratings Initiative

MATERIALITY OF ESG FACTORS	CREDIT-RELEVANT TIME HORIZONS	ORGANISATIONAL APPROACHES TO ESG	TRANSPARENCY AND COMMUNICATION

Some of the disconnects have emerged as *misconceptions* or signs of calls for greater transparency and increased communication between investors and CRAs. It also transpired that some are *shared challenges* that credit practitioners face as they build a more systematic framework to consider ESG factors, and that more work needs to be done to:

- assess ESG factor materiality and, in the case of investors, performance attribution;
- monitor the ESG triggers that may alter credit risk assessments and threaten the sustainability of business models over the long term; and
- reach a minimum level of ESG standardisation.

Against this backdrop, the PRI has compiled a list of action areas, which are aimed at improving the process and output of ESG consideration in credit risk analysis. Some areas target both CRAs and investors, and others are more tailored to either stakeholder. Figure 2 contains some highlights.

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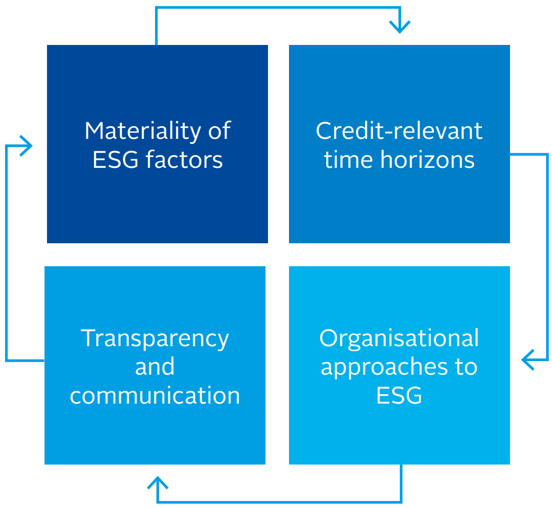
1 In the remainder of the report, we use ESG consideration to refer to the assessment of ESG factors in credit risk analysis, including whether they should be taken into account, and, if so, which factors and when.

Figure 2: Summary of key action areas

CRAS	INVESTORS AND CRAs	INVESTORS
▪ Map ESG credit-relevant factors and flag triggers that could alter medium to long-term assessments ▪ Improve ESG factor signposting and be more explicit in commentaries ▪ Increase outreach on ESG topics	▪ Categorise ESG factors by type, relevance and urgency ▪ Conduct regular retrospective analysis and assess the evolution of ESG consideration ▪ Recognise credit-relevant time horizons ▪ Provide analysts with ongoing training ▪ Engage with issuers on ESG topics ▪ Improve disclosure and transparency	▪ Set up internal frameworks to make ESG consideration more systematic ▪ Do not confuse the purpose of credit ratings and ESG assessment services ▪ Be more proactive with issuers, service providers and in public consultations

Full recommendations are on page 19, or to access details by action areas, click on the squares to the right.



The list should be treated as best-in-class practice and does not suggest a one-size-fits-all approach to the consideration of ESG factors in credit risk analysis, as the implications of ESG factors (current or potential) on issuer creditworthiness depend on the specific characteristics of each entity. Moreover, while there are areas of common ground between investors and CRAs, there are also differences (such as in terms of the purpose, duties and legal boundaries of their analysis). For instance, credit ratings exclusively reflect an assessment of an issuer's creditworthiness and CRAs must be allowed to maintain full independence in determining which criteria may be material to their ratings, as per the ESG in Credit Ratings Statement. Finally, among institutional investors, sensitivities to ESG factors vary depending on whether the investment objectives are those of asset owners (AOs) or asset managers (AMs).

While some actions can be implemented quicker than others, the PRI encourages organisations to prioritise them depending on their starting point, size and resources – but, importantly, to continue to demonstrate change. Indeed, some market players – notably the large, global CRAs, some specialised ones as well as advanced investors – have already made visible progress on many aspects of the recommendations, as documented by this report and the two previous iterations. In this case, the list represents a guideline to continue or enhance practices. Nevertheless, this better starting point should be no excuse for complacency.

This report also contains new evidence of CRA rating opinions that reference ESG factors explicitly when they have contributed to a change in rating or rating outlook, adding to the list of examples that the PRI published in part two (see Appendix 3). It includes 15 additional case studies highlighting how investors that have already implemented a framework to systematically assess ESG factors in credit risk analysis have used it to address one or more of the aforementioned action areas before reaching an investment conclusion (see Appendix 4). Some of the case studies are on sovereign credit risk, which a panel session at the 2017 PRI in Person conference in Berlin, as well as the London and Paris roundtables, started to address (see Appendix 2).

Finally, the regional roundtables that were held after the publication of part two highlight that ESG awareness, or the call for ESG integration in credit analysis, differs across jurisdictions and regions (see Appendix 1).

Going forward, the initiative intends to focus on broadening the dialogue between CRAs and FI investors to bond issuers to advance understanding of the materiality of ESG factors to credit risk, and promote engagement, the development of common terminology and enhanced data disclosure. The PRI plans to continue monitoring progress and provide a platform to share it.

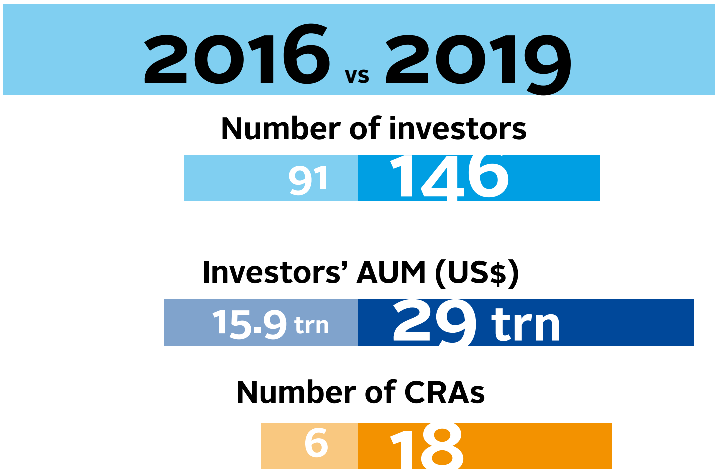
We encourage active involvement in the work that lies ahead through feedback, sharing best practices and participating in the debate.

FOSTERING INVESTOR-CRA DIALOGUE

This report rounds off a series of three as part of the PRI's ESG in Credit Ratings Initiative, which started with the launch of the [ESG in Credit Ratings Statement] in May 2016[2]. Signatories to the statement publicly state their recognition of the value of considering ESG factors transparently and systematically in credit risk analysis.

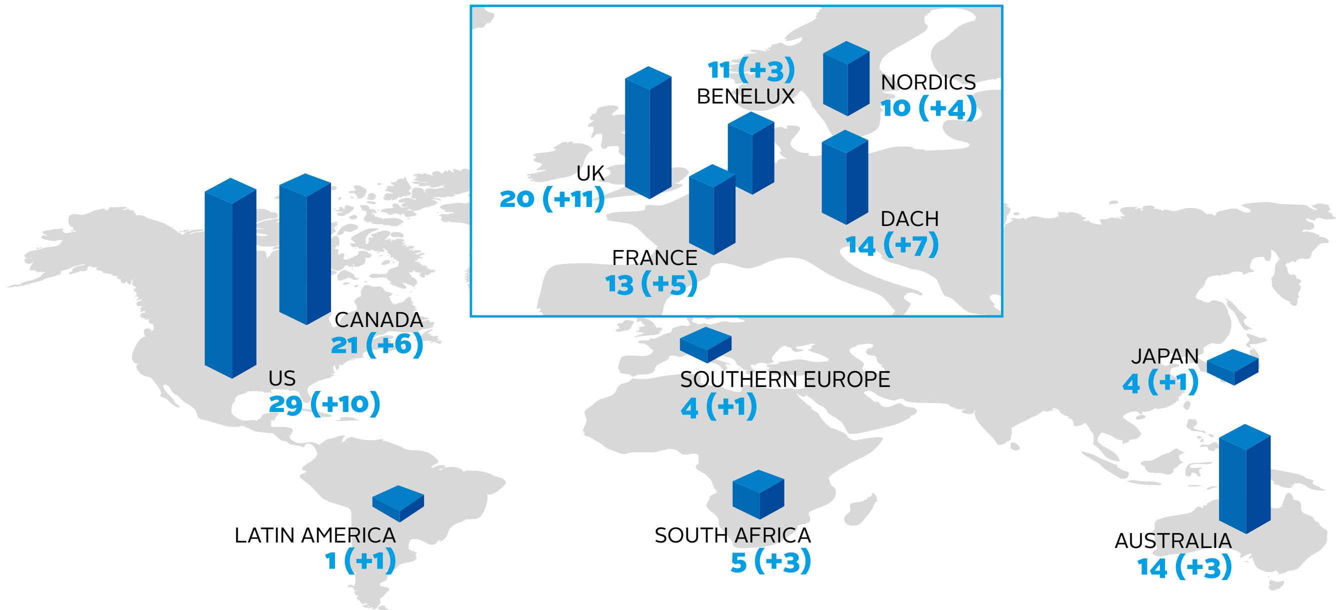
The rapid growth in number of signatories to the statement is a testament to how quickly this topic is gaining traction; to date 146 investors globally have signed, managing US$29 trillion collectively (see Figures 3 and 4). Even more impressive has been the trebling of participating CRAs (see Figure 5).

Figure 3: Signatories to the ESG in Credit Ratings Statement



Note: Latest data as of 14 January 2019.

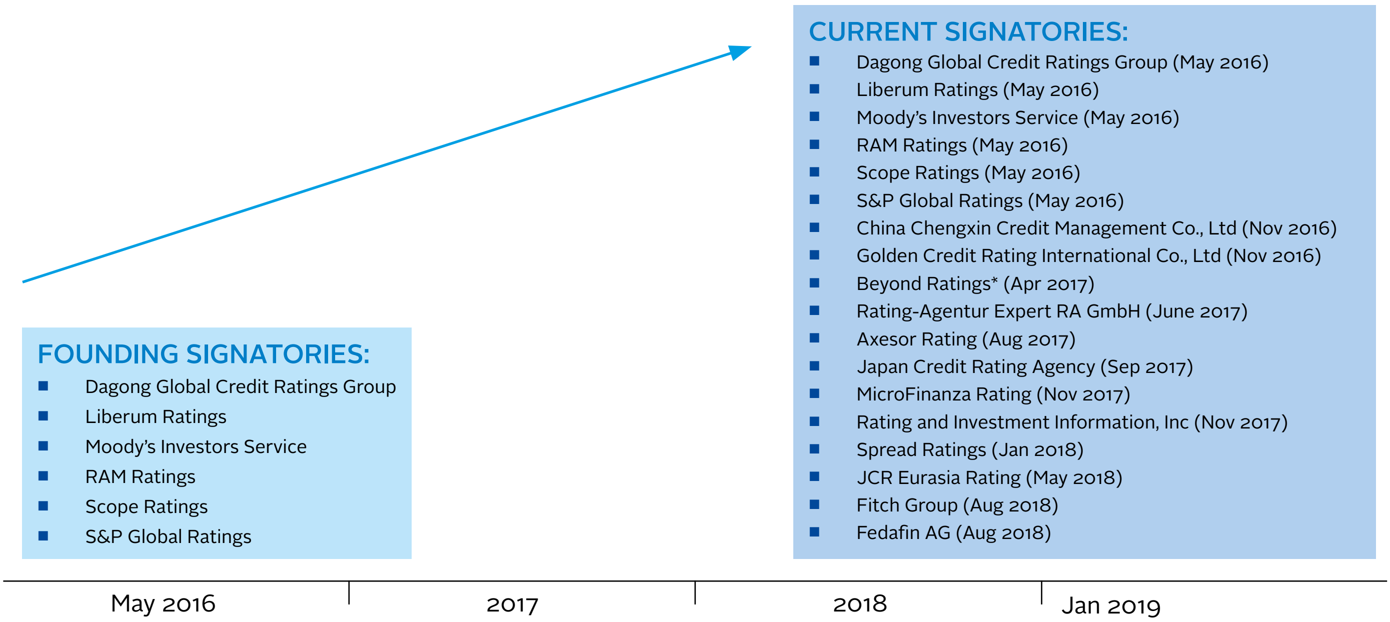
Figure 4: The global investor signatory base of the ESG in Credit Ratings Initiative has grown by nearly 60 percent



Note: the numbers in brackets represent the change since the launch of the ESG in Credit Ratings Initiative in May 2016. Latest data as of 14 January 2019.

2 For more information about the ESG in Credit Ratings Initiative, see part one and part two of the series 'Shifting perceptions: ESG, credit risk and ratings', 4 July 2017 and 11 June 2018, respectively, the PRI.

Figure 5: The number of supporting CRAs has trebled



Note: Beyond Ratings in not yet officially recognised by the European regulator ESMA as a CRA. The dates in brackets denote when the CRAs signed the ESG in Credit Ratings Statement.

The statement – which remains open to new signatories – has served as an important incentive for credit analysts (from investors and CRAs) and FI portfolio managers to engage on ESG topics at such scale and regional breadth through the forums that the PRI has organised. These forums have facilitated a purposeful dialogue, providing participants with the time and space to share progress and challenges in their approach to ESG consideration.

The statement has also encouraged investors and CRAs to engage more actively with issuers, industry representatives, regulators and non-governmental organisations (NGOs) to raise awareness about the goals of the initiative and promote its progress.

Progress has accelerated in recent years: some of the most established CRAs have been leading the pack, but many regional players have also made notable efforts. Importantly, in a very short time frame, commitment to the statement has catalysed significant organisational changes at many CRAs, including the establishment of dedicated analyst teams, the creation of web pages to share ESG-related articles and increased transparency as to how they integrate ESG consideration into their methodologies. The latter two developments were viewed as "positive steps forward" by the European Securities and Markets Authority (ESMA)[3].

The initiative has also drawn attention to new agencies – some of which are not regulated yet – that provide ESG risk assessments or augmented analyses of creditworthiness i.e. with the explicit inclusion in their methodology of sustainability indicators.

Figures 6, 7 and 8 provide a snapshot of the areas in which CRAs have made visible progress since the start of the initiative. Individual rating examples are in Appendix 3.

3 See 'Consultation paper - guidelines on disclosure requirements applicable to credit ratings', 19 December 2018, ESMA.

Figure 6: Synthetic representation of global CRA action (based on CRA documentation)

	ANALYSIS		ORGANISATION			TRANSPARENCY AND COMMUNICATION			
		AAA/ BB/D							
TYPE OF CRA	**RESEARCH**	**EXAMPLES OF CREDIT RATING CHANGES**	**ORGANI-SATIONAL CHANGES**	**ANALYST TRAINING**	**ESG (NON-CREDIT RATING) PRODUCTS**	**METHOD-OLOGY CLARIFICA-TION**	**DEDICATED WEB PAGES**	**COMPILA-TIONS**	**EVENTS**
Global	Sector or thematic - enhancing the appreciation of credit-relevant ESG factors	Instances where ESG factors have contributed to a change in rating opinion or outlook	Dedicated analysts/working groups and clear senior leadership	Regular ESG educational programmes/ modules and seminars	ESG/ sustainability/ green bond or other thematic bond evaluations	ESG indicators are implicit in the methodology but have been clarified through notes	Web pages that facilitate dissemination	Research highlights on the credit implications of ESG trends and factors	ESG-specific conferences or sessions as part of mainstream events
Fitch Ratings	✓	✓	Global Sustainable Finance Group - created mid-2018, headed by Andrew Steel, and sponsored by the President of Fitch Ratings, Ian Linnel, and Global Analytical Head, Brett Hemsley	✓	✗	✓	ESG Risk - Fitch Ratings	✗	✓
Moody's Investors Service	✓	✓	ESG Initiative created in mid-2015, led by Brian Cahill (global executive sponsor) and expanded in November 2017 (announcement)	✓	Green bond assessments	✓	ESG - Moody's	ESG and sustainable finance quarterly compendiums	✓
S&P Global Ratings	✓	✓	Sustainable finance team created in April 2018 (structure), led by Michael Wilkins	✓	Green and ESG evaluations	✓	ESG - S&P Global	Climate finance and sustainability: key research 2018	✓

All three large, global CRAs have published notes explaining how ESG factors are considered in their methodologies[4]. Furthermore, ESG-related literature is expanding rapidly and is well documented on the respective CRA ESG web pages, hyperlinked in Figure 6. Some recent publications are particularly noteworthy, including:

- Fitch Ratings, which was relatively late to join the PRI ESG in Credit Ratings Initiative, launched an integrated scoring system as part of its credit rating research in January 2019. The system shows how ESG factors impact individual non-financial corporate credit rating decisions and enables investors to agree or disagree with the way Fitch has treated ESG factors at both an entity and a sector level[5].
- Moody's Investors Service updated its environmental risk heat map in September 2018, highlighting the sectors with elevated, medium and low credit exposure and changes in relative environmental risk scores

4 See 'Capturing environmental, social and governance risk in credit ratings', 7 November 2017, Fitch Ratings; 'Moody's approach to assessing ESG in credit analysis', 25 October 2017, Moody's Investors Service; and 'How does S&P Global Ratings incorporate environmental, social, and governance risks into its ratings analysis', 21 November 2017, S&P Global Ratings.

5 See 'Introducing ESG relevance scores for corporates – marking the intersection of credit risk and ESG risks', 7 January 2019, Fitch Ratings.

since 2015[6]. Moreover, it has requested feedback on its general principles for assessing ESG risks and its proposed framework for the corporate governance assessment of publicly-listed non-financial corporates[7].

- S&P Global Ratings completed a trilogy of reports dedicated to clarifying how environmental and climate, social, and management and governance risks and opportunities factor into its global corporate ratings, and published the same analysis for its sovereign, insurance and financial institution ratings, based on a review of past rating actions, including changes to rating outlooks[8].

Figure 7: Summary of local CRA action since the signing of the ESG in Credit Ratings Statement (based on CRA documentation)

LOCAL CRAS		KEY FINDING
Name	Country/ region	Progress since signing the ESG in Credit Ratings Statement
Axesor Rating	Spain/ Europe	Since signing the statement in August 2017, Axesor Rating has started to make more explicit reference to ESG factors in its rating commentaries. It is working towards clarifying how these feature in its rating methodology, starting with its 2018 sovereign rating methodology, which contains a section explaining how ESG factors form part of its qualitative and quantitative assessment.
Fedafin AG	Switzerland	Fedafin is still in its early days of working towards a more transparent and systematic consideration of ESG factors in credit risk analysis, having signed the statement in August 2018.
Japan Credit Rating Agency (JCR)	Japan	After signing the statement in September 2017, the Credit Ratings and Planning Department of JCR, under the leadership of Kenji Sumitani, published a note explaining why it is important to consider ESG factors in credit risk analysis. It has since established a Sustainable Finance Evaluation Department, headed by Atsuko Kajiwara. This unit evaluates green and social bonds, as well as loans. JCR participated in the PRI Tokyo forum and held several internal and external seminars regarding ESG and green bonds in 2017 and 2018. It recently co-hosted the Asian Green Bond Seminar in Tokyo as part of an initiative with the Association of Credit Rating Agencies in Asia.
JCR Eurasia Rating (JCR-ER)	Turkey	JCR-ER is a relatively new supporter of the ESG in Credit Ratings Initiative. Since signing the statement in May 2018, it has published more information about ESG consideration in its credit rating opinions.
Liberum Ratings	Brazil	Despite supporting the statement since its launch in 2016, progress has been limited so far, partly due to the complex nature of the asset class in which it specialises (structured FI products), where ESG consideration is lagging.
RAM Rating Services Berhad (RAM Ratings)	Malaysia	Among the founding signatories of the statement in 2016, it has established an ESG task force under the leadership of Promod-Dass and a dedicated sustainability buzz web page; it now provides internal training to analysts on the link between ESG and credit risk. It has also published two notes on how RAM Ratings views ESG in credit ratings and in its methodology. Since July 2018, material ESG factors evaluated are highlighted and integrated into the relevant sections of the published credit rating rationales. Separately, it provides (non-credit) sustainability evaluations. Finally, it has been a strong advocate of the PRI initiative in Asia and at international conferences on ESG-related issues, as well as participating in the Singapore PRI roundtable.
Rating-Agentur Expert GmbH (RAEX)	Germany/ Europe	Since signing the statement in June 2017, Raex-Europe has started to clarify its approach to ESG consideration in credit ratings on its web page. It produces separate ESG ratings, different from credit ratings, and green bond second opinions. It participated in the PRI roundtable in Frankfurt.
Rating and Investment Information, Inc (R&I)	Japan	R&I signed the statement in November 2017. Since then, it has established an ESG department led by Akira Ishiwata as well as a dedicated web page in English and in Japanese to disseminate publications related to ESG issues (for example, a recent note on the automotive sector and on corporate governance). Corporate rating analysts completed questionnaires to explain how they consider environmental factors in their credit analysis. In May 2018 R&I clarified how ESG factors feature in its basic rating methodology and in December 2018 it published a report highlighting how the importance of environmental factors in credit rating evaluation is increasing (English press release). R&I also introduced governance evaluation sheets in its rating process for corporate issuers, providing non-credit ESG evaluations such as green bond assessments. Finally, it participated in the PRI forum in Tokyo.
Scope Ratings	Germany/ Europe	Since signing the statement with the first group of CRAs in 2016, Scope Ratings has clarified its ESG consideration in its banking and sovereign credit methodology (Bank Rating Methodology, Rating Methodology: Public Finance Sovereign Ratings), enhanced its accounting of ESG factors in its sovereign methodology (press release) and introduced sustainability in its new methodology for supranational entities (press release - see also Appendix 4). Scope has also participated in the London and Frankfurt PRI roundtables to further investor outreach and share practices.

6 See 'Eleven sectors with $2.2 trillion debt have elevated environmental risk exposure', 25 September 2018; and 'Sector in-depth – heat map shows wide variations in credit impact across sectors', 30 November 2015, Moody's Investors Service.

7 See 'Request for comment: general principles for assessing environmental, social and governance risks', 19 September 2018; and 'Proposed framework for corporate governance assessments for publicly traded non-financial corporates', 8 October 2018, Moody's Investors Service.

8 See 'How environmental and climate risks and opportunities factor into global corporate ratings – an update', 9 November 2017, following an initial note on 21 October 2015; 'How social risks and opportunities factor into global corporate ratings', 11 April 2018; 'How management and governance risks and opportunities factor into global corporate ratings', 7 November 2018; and 'How environmental, social, and governance factors help shape the ratings on governments, insurers, and financial institutions', 23 October 2018, S&P Global Ratings.

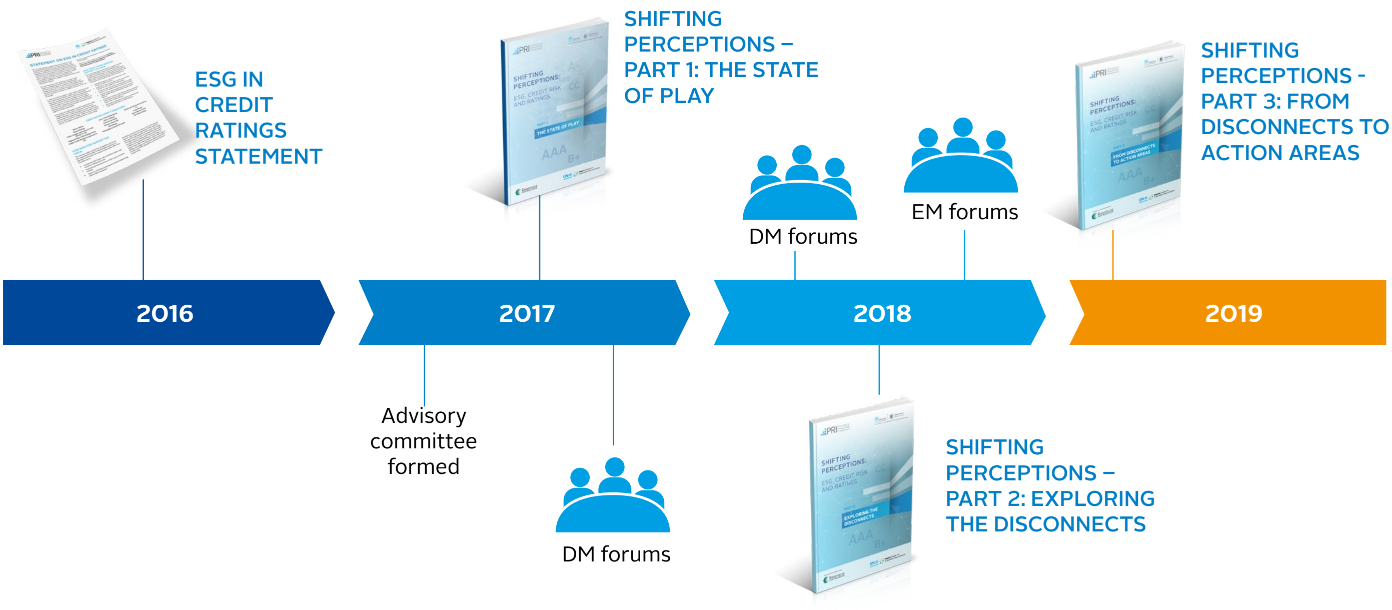
Figure 8: Highlights from Chinese and new CRAs (based on CRA documentation)

CHINESE CRAS	KEY FINDING
Name	**Progress since signing the ESG in Credit Ratings Statement**
China Chengxin Credit Mangement Co., Ltd. (CCX)	Mostly still focused on green bonds, CCX has set up a Green Finance Department headed by Sunny Shen and now has a web page dedicated to its green financial services. Its credit analysts have received five training sessions on green bond certification by the green bond analysts. Finally, CCX has started offering green advisory services to rural commercial banks. Before joining the PRI ESG in Credit Ratings Initiative, CCX had already participated in the drafting of the 2015 Chinese Green Bond Endorsed Project Catalogue and has been involved in its update due in 2019.
Dagong Global Credit Ratings Group	At the time of the signing the ESG in Credit Ratings Statement, among the first signatories in May 2016, Dagong Global Credit Ratings already included governance in its credit rating methodology. It is now working towards including an environmental indicator in its updated methodology and has started to publish thematic research on this topic. Separately, it provides green bond assessments.
Golden Credit Rating International Co., Ltd.	Since signing the statement in November 2016, it has established an ESG research team led by Stella Chang and a business development unit led by Fang Yixiang, as well as ESG training for credit analysts. While still mostly focused on green and social bond evaluations, it has started to integrate ESG consideration into the assessment of the creditworthiness of mainstream bonds. It plans to launch a dedicated web page in early 2019.
New CRAs	
Beyond Ratings*	These CRAs are relatively young and have constructed their methodologies in a way that features ESG factors and sustainability consideration more explicitly. They specialise in products: Beyond Ratings* currently focuses on public issuers (sovereigns, sub-sovereigns and policy-driven financial institutions) but will extend its rating service to corporate issuers. Spread Ratings specialises in European corporate bonds; MicroFinanza Rating specialises in financial institutions, mostly in emerging market countries. In addition to credit rating analysis, it offers sustainability evaluations and certifications.
MicroFinanza Rating	
Spread Ratings	

* Note: Beyond Ratings is not yet a registered CRA with the European regulator ESMA.

This report and part one and two – describing the state of play of ESG consideration in credit risk analysis and exploring the areas where investors and CRAs appeared to have different views at the start of the dialogue, respectively – are also milestones of the initiative (see Figure 9).

Figure 9: Milestones of the ESG in Credit Ratings Initiative



Note: DM (developed markets); EM (emerging markets)

FROM DISCONNECTS TO ACTION AREAS

The investor-CRA roundtable discussions revealed that there is broad consensus that ESG factors are not new to credit risk analysis, and that governance is the most important of the three categories when assessing default risk.

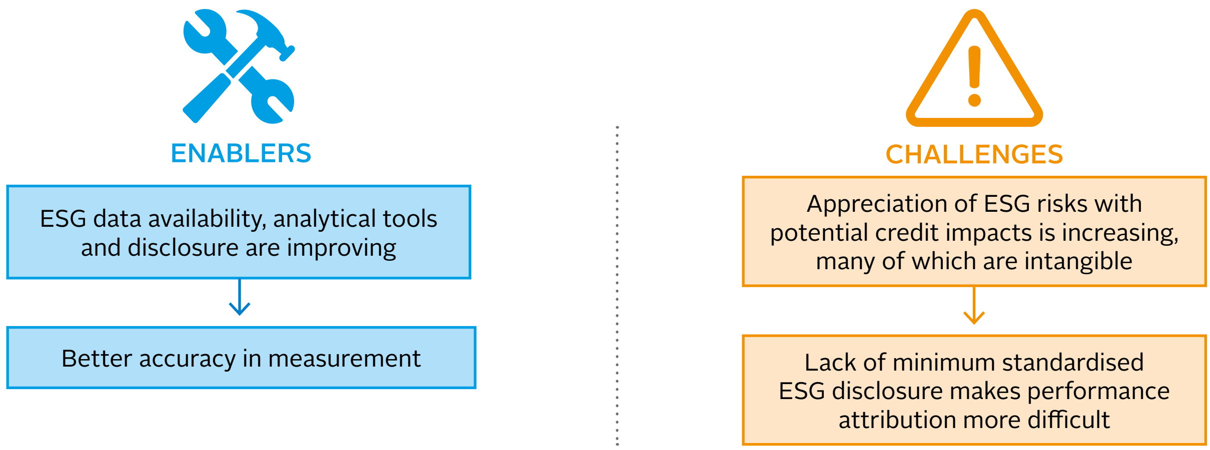
What *is* new is the growing recognition that more information and better tools to conduct analysis are available. Scrutiny of governance factors has changed, with investors taking a more inquisitive approach to how corporate boards address long-term strategies - including those related to the environment and human capital – as well as the impact of business models on society. The concept of value creation and sensitivities to reputational risks are also changing.

Environmental and social factors are also attracting more attention. Climate-related risks, once perceived as a distant threat, can no longer be ignored as they become more frequent, more intense and easier to quantify. Issues such as biodiversity and sustainable infrastructure are also gaining prominence. Social risks, including those that may affect intangible assets such as brand and reputation, are climbing up the agenda.

These factors are starting to be priced, requiring new performance attribution work to identify and quantify their role in driving positive or negative returns. Finally, other risks are nascent, such as changing consumer preferences, meaning their drivers need to be monitored.

ESG data availability has increased and disclosure is slowly improving, as well as the accuracy of how data are measured, and access to publicly-available information. At the same time, more work is needed to better factor in the impact of ESG factors on credit risk, as their implications become clearer. This is not straightforward, however, as many ESG factors are intangible (see Figure 10).

Figure 10: Enablers and challenges when assessing ESG factors in credit risk analysis



Moreover, ESG dynamics are more multi-dimensional for FI assets than is the case in equity markets. For example, the potential materiality of ESG factors varies depending on the financial strength of the entity that issues a FI instrument, the type of issuer (sovereign or corporate), and the maturity and structure of a bond. Finally, these considerations cannot prescind from others factors, such as inflation developments, prospective central bank policy interest rate changes, liquidity conditions and foreign exchange movements.

The roundtables discussed how ESG consideration is a framework that helps investors to price, and CRAs to rate, risks more accurately, as ESG signals can often act as a leading indicator before risks (and opportunities) are flagged by traditional financial metrics. Credit risk-returns may be attractive even once relevant ESG considerations are factored into cash flow projections and the discount rate. Therefore, the ESG lens can be used to enhance credit risk assessment in mainstream FI investing and not necessarily as a strategy that is purely based on exclusion or thematic rules. It also helps practitioners to fulfil their accountability, due diligence and fiduciary duties.

For example, when assessing the bond issued by a polluting corporate issuer, credit practitioners may not just focus on how much CO_2 the company emits but also on the material impact – including financial, regulatory and legal factors – of those CO_2 emissions. Depending on the maturity of the bond, they may decide to invest in it, if the return is high enough to compensate for the risks that they are taking.

At the same time, investors could engage with the company to challenge its long-term business model and penalise or reward it at the time of refinancing, depending on the steps that the company is planning or implementing to make its business model more sustainable. This is a different approach from excluding that bond from a portfolio *tout court* or investing the bond's proceeds to finance a project with a positive environmental impact.

Albeit slowly, there is growing recognition that ESG factors may alter the estimate of collateral values and recovery rates. What is also increasingly apparent in this regard is the need to make different loss assumptions if assets become stranded because of climate-related risks, new regulations, technological developments, changing social norms and in the interpretation of existing legislation.

Against this backdrop, through a series of interviews with investors and CRA analysts at the start of the initiative, in part one the PRI identified four main apparent disconnects i.e. areas where investors and CRAs seemed to have different views on how to incorporate ESG factors in credit risk analysis, or where more clarification and discussion was needed.

Some initial differences in views were linked to *misconceptions* about objectives, however. For example, CRAs assess the relative likelihood of the default of a debt issuer or issue and associated losses in such an event. But default risk is one of many risks that can affect bond price performance, with investors more focused on valuations, and some also on impact. It follows, then, that the integration of ESG factors also introduces different challenges for investment and credit rating purposes. For example, how should ESG factors be weighted alongside financial factors? And, how does the time frame of ESG factors impact rating or investment decisions? As for investors, how are such ESG factors priced and over what period of time?

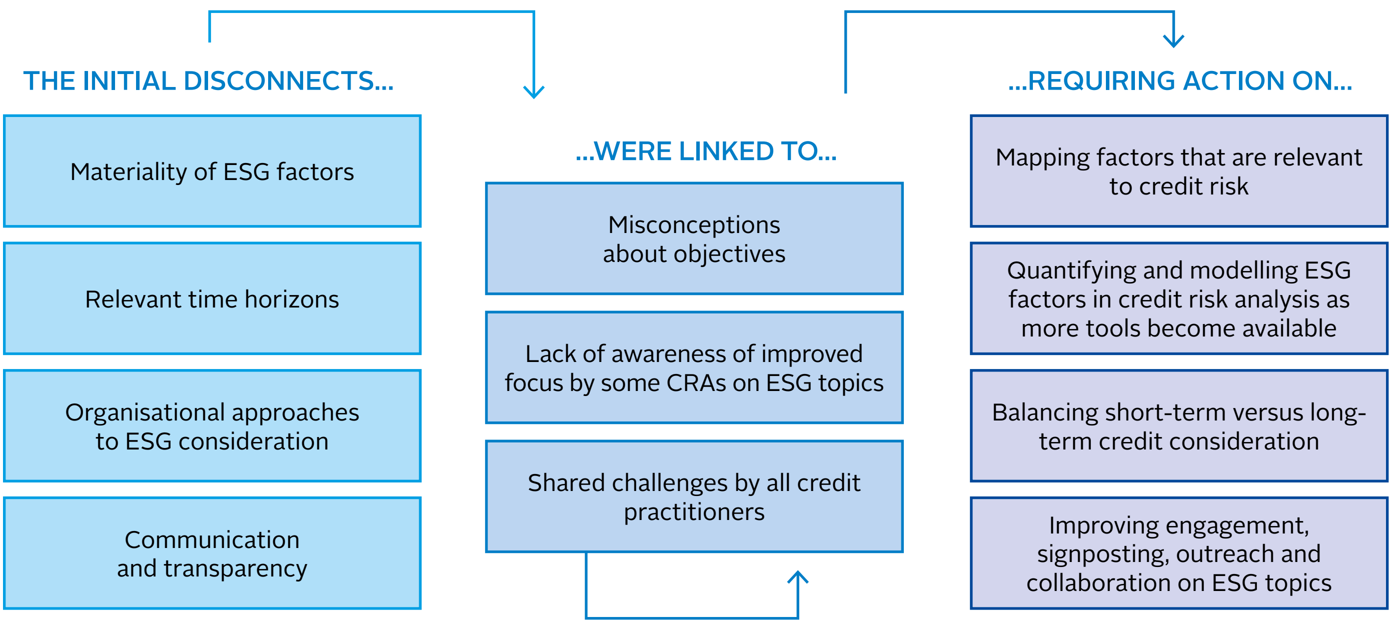
Other disconnects were linked to a lack of investor awareness of the efforts that some CRAs have been making to clarify methodologies and boost research on ESG topics, or demystify confusion about terminology. ESG has become a useful, catchy acronym, but comprises a variety of factors that can be categorised differently, and no minimum market standardisation exists.

Finally, it also transpired that several disconnects were in fact shared challenges, and hence they were better addressed as areas where action is needed, as both investors and CRAs try to:

- map material ESG factors in their analysis;
- quantify and model ESG factors in credit risk analysis as more tools become available;
- balance short-term versus long-term credit considerations; and
- improve engagement, signposting, outreach and collaboration on ESG topics.

Figure 11 outlines the initial (seeming) investor-CRA disconnects and how, through the PRI forums, it emerged that they were linked to a variety of other factors, requiring action.

Figure 11: From disconnects to identifying action areas (based on roundtable discussions)



A TRANSPARENT AND SYSTEMATIC FRAMEWORK

Roundtable discussions began considering the various steps that need to be taken to help build a more structured and systematic framework for ESG consideration in credit risk analysis. Three potentially significant steps have been identified so far (see Figure 12):

Figure 12: Basic steps to build a systematic framework for ESG consideration in credit risk analysis (based on roundtable discussions)

STEP 1

Profile ESG factors: the "what" and "when" (materiality, probability and timing)

Map credit-relevant ESG factors (including whether they present actual and potential risk or opportunities) and selecting the relevant time horizons.

STEP 2

Measure the financial impact of ESG factors: the "so what"? (severity)

Establish the actual or potential severity of the impact of ESG factors on an issuer's cash flow and balance sheet.

STEP 3

Assess an issuer's capability and willingness to address ESG factors: the "how" (preparedness)

Assess the issuer's ability to address the actual and potential positive or negative consequences of ESG factors (including market access for refinancing and proven resilience under stress), as well as its willingness to repay its debt.

Note: this diagram is for illustrative purposes; ESG factors are among many of the quantitative and qualitative inputs that support credit risk analysis.

STEP 1: PROFILE ESG FACTORS

When it comes to risk profiling, credit practitioners have started to consider how to sharpen their focus on the different types of ESG factors to establish if they are relevant to credit and over what time horizon. Those listed in Figure 13 are a useful starting point for building a framework.

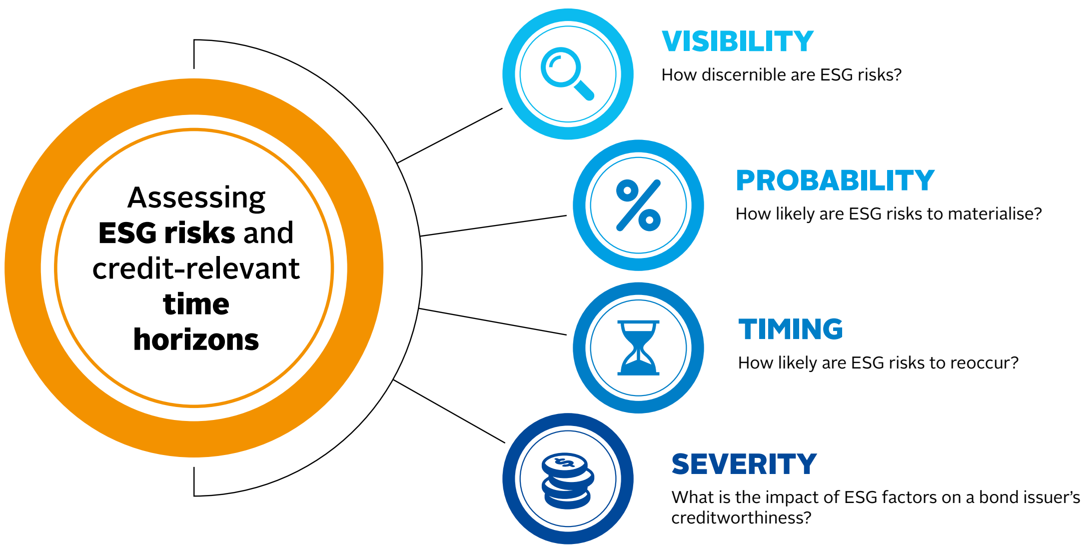
Figure 13: Mapping ESG factors in credit risk analysis (based on roundtable discussions)

Type	**Event-driven**	**Trend-driven**	**Policy-driven**
	(Flooding)	(Climate change)	(Regulatory changes)
Level	**Issuer**	**Issue**	**Portfolio**
	(Management conduct)	(Bond duration and pricing)	(Measuring top-down risk/ strategic allocation)
Breadth	**Macro**	**Sector level**	**Micro**
	(Demographics)	(Auto and vehicle emissions tests)	(Fraud/litigation)
Timing	**Present**	**Emerging**	**Potential**
	(Existing carbon controls)	(Regulatory plans to curb plastic packaging)	(Technology and consumer preference changes)

Note: the text in brackets represents examples.

When it comes to assessing credit-relevant time horizons, it is worth establishing how visible the ESG factors are, how likely they are to materialise and how often, and, finally, their impact on creditworthiness, including the issuer's balance sheet strength and whether, if possible, they have been mitigated (see Figure 14).

Figure 14: Assessing ESG factors and credit-relevant time horizons (based on roundtable discussions)



CREDIT-RELEVANT TIME HORIZONS AND "WHAT IF" ANALYSIS

There is no silver bullet to identify the time horizon over which to assess ESG factors in credit risk analysis. It depends on many factors, including whether analysis is conducted at the issuer level or at the issue level. For investors, it also depends on their investment strategies and objectives.

Part two highlighted that due to the multi-dimensional nature of ESG factors, difficulties in modelling non-financial factors and capturing data interdependencies were cited among the biggest obstacles to ESG consideration in credit risk analysis. Specifically, the interplay between the following factors was flagged as a major challenge: 1) long-term structural trends that tend to determine ESG risks; 2) the probability that ESG-related incidents will materialise and when; 3) the risk of these incidents reoccurring, and 4) their impact on an issuer's credit fundamentals and its ability to adjust its business model by buying or selling companies and introducing or reacting to disruptive technology.

Scenario analysis emerged recurrently during the forums as a possible mechanism to make credit risk analysis more forward looking – not via long-term forecasts, but by considering how an issuing entity might perform in response to a range of hypothetical outcomes. It can help to assess the awareness of risks by bond issuers and their preparedness to address them. Importantly, it can highlight the causes that lead to specific outcomes. Part of the current popularity of scenario analysis is down to it being part of the Task Force on Climate-Related Financial Disclosures recommendations. New instruments to assess the exposure of financial portfolios to climate transition risk in multiple scenarios are also emerging[9].

However, scenario analysis has its limitations when it comes to ascertaining plausibility (as this depends on how realistic the underlying assumptions are), as well as comparability and how many scenarios to consider overall.

There are other forms of "what-if" analysis, which can be helpful.

For example, **sensitivity analysis** would involve assessing the impact on the cash flow and balance sheet of an issuing entity of the change of a single ESG variable at a time (such as the cost of reducing CO_2 emissions by different amounts). It can also be helpful to order the relevance of risks related to ESG factors. While estimates of sensitivities are not new to credit risk analysis, they are typically conducted through financial variables, as opposed to treating ESG factors as independent variables.

Stress testing, currently used in the financial sector for macroprudential oversight and to determine a bank's capital requirements, can help to test an issuer's cash flow and balance sheet resilience under one extreme scenario or a combination of severe scenarios, which are not necessarily correlated. It can therefore highlight vulnerabilities and help with planning.

All these types of analysis require quantitative skills as they often involve highly complex simulations. But they are becoming more manageable as analytical tools improve and models become more user-friendly. Analysis can be conducted by investors and CRAs, depending on their capabilities, or investors and CRAs can ask issuers if they use them as a tool to assess how aware they are of risks (and opportunities) and how prepared they are to address (or embrace) them. Either way, they can be useful to assess long-term risks, incorporate uncertainty, and focus on possible solutions to understand the implications of potential outcomes.

STEP 2: MEASURE THE FINANCIAL IMPACT OF ESG FACTORS

Once credit-relevant ESG factors and time horizons have been identified, another important step is to rank them in order of importance or urgency by linking an estimate of their severity to the probability of them materialising.

Heat maps can be a useful synthetic indicator to prioritise material ESG factors and provide a relative assessment of their potential impact (in the form of risk or opportunity) (see Figure 15).

9 For example, see the PACTA tool.

Figure 15: Example of how credit-relevant ESG factors can be assessed through heat maps (based on roundtable discussions)

LIKELIHOOD					
Almost certain	Moderate	Major	Critical	Critical	Critical
Likely	Moderate	Major	Major	Critical	Critical
Possible	Moderate	Moderate	Major	Major	Critical
Unlikely	Minor	Moderate	Moderate	Major	Critical
Rare	Minor	Minor	Moderate	Moderate	Major
	Insignificant	Minor	Moderate	Major	Critical
	FINANCIAL IMPACT				

Note: for illustrative purposes.

The example below shows how one CRA has started scoring and ranking ESG factors that play a role in its credit rating opinions (see Figure 16).

Figure 16: Scoring and derivation of ESG credit-relevant factors in credit rating opinions. Source: Fitch Ratings

ESG SCORING DEFINITIONS

LOWEST RELEVANCE		NEUTRAL	CREDIT-RELEVANT TO ISSUER	
1	2	3	4	5
Irrelevant to the entity rating and irrelevant to the sector.	Irrelevant to the entity rating but relevant to the sector.	Minimally relevant to rating, either very low impact or actively managed in a way that results in no impact on the entity rating.	Relevant to rating, not a key rating driver but has an impact on the rating in combination with other factors.	Highly relevant, a key rating driver that has a significant impact on the rating on an individual basis.

CREDIT-RELEVANT ESG DERIVATION

COMPANY ABC HAS 2 ESG KEY RATING DRIVERS AND 7 ESG POTENTIAL RATING DRIVERS.	KEY DRIVER	2	ISSUES	5
Company ABC has exposure to emissions regulatory risk which, on an individual basis, has a significant impact on the rating. Company ABC has exposure to board independence risk which, on an individual basis, has a significant impact on the rating. Company ABC has exposure to waste and impact management risk but this has very low impact on the rating. Company ABC has exposure to customer accountability risk and product quality & safety risk but this has very low impact on the rating. Company ABC has exposure to labor relations and practices risk but this has very low impact on the rating. Company ABC has exposure to shifting consumer preferences but this has very low impact on the rating	Driver	0	Issues	4
	Potential driver	7	Issues	3
	Not a rating driver	2	Issues	2
		3	Issues	1

STEP 3: ASSESS ISSUER CAPABILITY AND WILLINGNESS

The final steps involve assessing an issuing entity's awareness of ESG factors that may affect its credit quality and its ability and willingness to address them (see Figure 17). Evaluating this capability could be approached in numerous ways, including looking at how management has addressed the credit implications of ESG factors in the past (for example, recovery after a hurricane or adapting to a change in regulatory regime), or by conducting scenario analysis and stress tests. There could also be instances where ESG risks are visible but have no immediate impact on an issuer or issue, after the time frame and magnitude of these risks have been considered, relative to the underlying creditworthiness of the entity.

Figure 17: Evaluating an issuer's capability to address the credit implications of ESG factors (based on roundtable discussions)

This is the stage where the analyst's qualitative assessment has more of a role, focusing on management expertise, corporate culture, labour relations and factors such as reputation and intangible capital. It is also the phase where investors and CRAs (through engagement and outreach) can talk to issuers about ESG topics.

APPLYING THEORY TO PRACTICE

Against this backdrop, the PRI has compiled a list of more detailed emerging solutions that have been discussed during the investor-CRA roundtables, aimed at improving the transparent and systematic consideration of ESG factors in credit risk analysis. Some recommendations target both CRAs and investors, others are tailored to each stakeholder, and some apply to both. Some recommendations can be implemented quicker than others, which have a longer-term focus.

The list is not prescriptive and does not imply that ESG factors are more important than others from a credit risk perspective. As the PRI recognises that organisations are at different stages of ESG consideration and vary in size and available resources, it does not advocate a one-size-fits-all approach. The implications of ESG factors (current or potential) on issuer creditworthiness depend on the specific characteristics of each entity. Among institutional investors, credit-relevant time horizons may differ between AOs and AMs. Furthermore, some market players – notably the large, global CRAs, specialised players as well as advanced investors – have already made visible progress on many aspects of the recommendations, as documented in this report and its previous iterations. In this case, the list should be adopted as a guideline to continue or enhance current practices – but this does mean there is room for complacency.

JOINT INVESTOR-CRA RECOMMENDATIONS

- **Categorise ESG factors:** CRAs and investors should continue to work on clarifying how ESG factors are material to credit risk by type (event, trend or policy-driven) or by ranking them according to their relevance and urgency. Analytical tools that use colour coding, such as heat maps, can facilitate the ranking of the relevant ESG factors from a credit risk perspective, and their evolution.
- **Retrospective analysis:** as more data become available, more sophisticated backtesting on the impact of ESG factors on credit risk, default and recovery analysis, and related changes over time, should be carried out.

  It is not always possible to identify historical trends to inform the analysis, and backtesting cannot capture emerging issues which need monitoring. Nevertheless, while the past is not always indicative of future trends, this exercise may help to improve forward-looking analysis, which remains a mix of quantitative and qualitative assessments. In the case of event-driven risks, assessing the entity's resilience post-event (i.e. how it reacted and invested in better prevention and mitigation) may also be useful – a practice already adopted by some CRAs.
- **Recognise credit-relevant time horizons:** time horizons vary and depend on factors including investment objectives and the type of rated entities or instruments. While analysis must be based on the foreseeable future, a key question when assessing ESG factors – which are often linked to secular trends – is how to treat those that could have a material impact on long-term creditworthiness (such as physical climate risk).

  To reconcile these temporal dimensions, "what if" analysis – through stress testing, and sensitivity and scenario analysis – can signal long-term risks, incorporate uncertainty and focus on drivers of potential outcomes, as well as help to understand an issuing entity's level of risk awareness. This is the point at which an ESG factor turns into a credit risk factor can be demonstrated: if an ESG factor is not deemed credit-relevant at that time, the circumstances under which it *could* become relevant can be stated. European regulation already requires CRAs to give appropriate risk warning, including sensitivity analysis of relevant rating assumptions[10]. Making ESG a bigger component of the sensitivity analysis that they already conduct would therefore also enhance transparency.
- **Engage with issuers and other key stakeholders:** CRAs and investors should have regular conversations with issuers on ESG topics. While (in theory) both conversations could start with similar questions, it is important to note that CRAs and investors engage with issuers for different purposes. Investors may engage, individually or collaboratively, for fact-finding (insight) to make more informed investment decisions or with a specific objective (influence), such as through the investor initiative Climate Action 100+. CRAs, by contrast, cannot influence a rated entity's policies or structure, and cannot provide professional or legal advice, but they should engage on ESG topics, when relevant, to assess how a rated entity's management and governance could impact its creditworthiness.

  Either way, having these conversations more frequently will help issuers to recognise that disregarding material ESG risks can result in suboptimal investments and ratings that could affect their cost of capital. Improved transparency with issuers around what investors and CRAs believe are the most material ESG factors to credit risk could also prompt indirect market benefits in terms of improved issuer disclosure and reporting, as well as fostering a market standard of comparable, meaningful metrics that facilitates relative analysis.

  Beyond issuers, investors and CRAs should engage constructively and responsibly with other stakeholders such as policy makers, providers of ESG intelligence – e.g. international organisations such as the International Monetary Fund (IMF), and, for investors, with ESG research providers – and regulators. With ESG

10 See Regulation (EC) No 1060/2009 of the European Parliament and of the Council, 16 September 2009.

consideration under intensifying regulatory scrutiny, this type of engagement can support the effective integration of ESG factors, where appropriate. Engaging with independent ESG data providers to produce quality, objective research will be equally important in driving quality ESG integration.

- **Continuously train credit analysts:** credit analysts must be equipped with the knowledge and resources required to conduct ESG analysis. Indeed, training by some CRAs has already started (refer to Figures 6-8). This does not mean that credit analysts should replace ESG analysts. Rather, analysts should be trained on identifying links between ESG factors and cash flow generation, as well as signals that may alter credit risk and threaten the sustainability of business operations.

CRAS

- **Improve ESG factor signposting:** CRAs need to continue proving that their methodology takes into account ESG factors in credit risk analysis. They need to be explicit in the press releases and commentaries that accompany changes in rating opinions or outlooks about how the materiality, likelihood and timeliness of ESG factors, when relevant, contribute to rating actions. While evidence of this is growing (see Appendix 3, which adds to evidence presented in part two), there is still room for improvement in providing clarity and guidance. For example, where material, CRAs could list the top ESG factors that have contributed to a rating decision or have a separate paragraph discussing them. They could also do the same for sector or industry analysis.
- **Clarify the credit-relevance of ESG factors:** CRAs should continue to publish thematic, regional and sector research that explains how ESG factors affect credit risk. They should use these findings as an aside to the rationale behind whether and how ESG factors may contribute to credit rating opinions or related outlooks, as well as when having conversations with issuers. This top-level analysis could also provide long-term risk guidance, and flag the triggers that could alter the assumptions of the base-case scenario underpinning credit rating or outlook conclusions.
- **Increase outreach:** CRAs have made great strides in expanding capacity, bolstering research and publishing notes that clarify how ESG factors have featured in their methodologies in recent years, particularly those with a global presence. Regional players are also making progress. Finally, new agencies – some of which are not regulated yet – now provide ESG-augmented analyses of creditworthiness. However, many investors are unaware of these developments. Therefore, CRAs should boost outreach and improve dissemination, so that investors use CRAs as well as other resources when assessing ESG factors in credit risk analysis.

INVESTORS

- **Set up internal frameworks to systematically assess how ESG factors may affect credit risk analysis:** this requires altering traditional credit risk models to reflect new data, the inclusion of new metrics in addition to traditional ones, a recalibration of weights and time horizon analysis. Some investors are already very advanced in this regard, but represent a minority.
- **Do not confuse the nature and purpose of credit ratings and ESG assessment services:** part two (p. 27-28) highlighted that there is considerable market confusion, particularly among FI investors, around the purpose of ESG consideration in credit ratings and the assessments made by specialised ESG service providers through ESG/sustainability scores[11]. Credit analysts should use both tools to inform their views but appreciate that they are distinct products. They should think about what information included in ESG scores may be material to credit risk and over what time frame.
- **Be more proactive:** investors should be more inquisitive and take note of ESG-related research and commentaries issued by CRAs. They should engage more with CRAs and ESG service providers so that they are incentivised to enhance disclosure and improve their offerings. Finally, they should engage in public consultations or collaborative platforms to stay abreast of ESG policy initiatives, which are climbing up the agenda in several countries[12].

Below are more detailed emerging solutions, specific to each of the four action areas identified during the PRI forums as in need of further work (see Figures 18-22). They are split between those aimed at improving the process and output of ESG consideration in credit risk analysis. As previously noted, market participants that have already demonstrated leadership in these areas should not rest on their laurels; as the ESG and regulatory landscapes evolve, credit risk assessments and pricing will need to be revaluated.

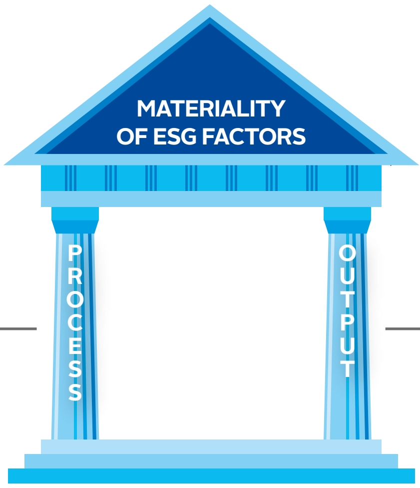
11 Specialised ESG service providers are also known in the market as sustainability rating agencies, and their products as sustainability/ESG ratings.

12 For example, on 7 December 2018, the European Commission's Technical Expert Group on Sustainable Finance called for feedback on first proposed activities that contribute substantially to climate change mitigation across five key economic sectors, and, on 19 December 2018, ESMA launched the aforementioned consultation on guidelines on disclosure requirements applicable to credit ratings.

Figure 18: Key action areas

Note: with thanks to Schroders for its help designing this image.

Figure 19: Emerging solutions to assess the materiality of ESG factors to credit risk



JOINT RECOMMENDATIONS

- **Map** ESG factors (by sector, geography, type of manifestation etc.).
- **Clearly flag triggers** that could turn a potential ESG risk into a real credit risk.
- **Systematically conduct retrospective analysis** on the impact of ESG consideration in rating migration (by CRAs) and regular portfolio reviews (by investors); use these to enhance future analysis.

CRAS

- **Further research**, including on thematic issues, to clarify the credit relevance of ESG issues.
- **Monitor supply chain-related risks** as part of governance surveillance.
- **Consider ESG factors in the estimates of default and recovery rates.**

INVESTORS

- **Set up internal frameworks** to identify and evaluate the materiality of ESG factors to credit risk.
- **Build quantitative models** to measure the impact of ESG factors on pricing/spreads and attribution.

JOINT RECOMMENDATIONS

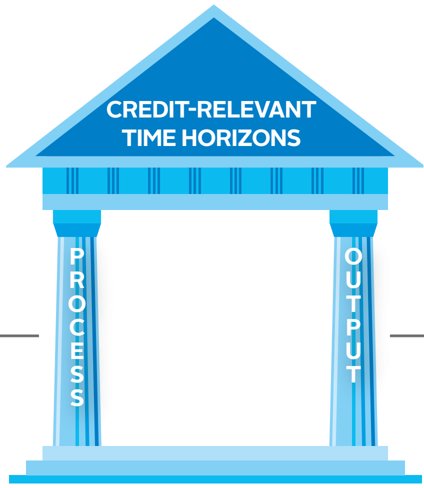
- **More examples** of how ESG factors contribute to rating actions (by CRAs) and investment decisions (by investors).
- **Better informed credit rating opinions and investment decisions**, once the materiality of ESG factors has been established.
- **Use of visual representation such as heat maps** to demonstrate if ESG factors are material, their relative risk to credit quality and how their weights vary over time.
- **Engage with issuing entities** to understand their preparedness – including awareness, policies and procedures – to address relevant ESG risks. Tailor questionnaires to issuers to include ESG topics more systematically, when deemed material.

BACK TO SUMMARY

Figure 20: Emerging solutions to recognise credit-relevant time horizons

JOINT RECOMMENDATIONS

- **Acknowledge that the impact of ESG factors varies over time**, hence the need to build a framework to distinguish how (e.g. short, medium, long-term or present, emerging, potential).
- **Explore and develop analytical tools** (qualitative and quantitative) to facilitate the consideration of ESG factors over different time frames (e.g. scenario analysis or stress testing to understand the implications of potential outcomes).
- **Boost research on timelines** to better understand performance trends and links to ESG factors over extended horizons.
- **Assess how long it takes for ESG factors to impact performance**. For example, if a factor was identified as a potential risk in year X for a specific issuer, assess whether it led to a rating action or an investment decision in the short to medium term, or after a long period of time.
- **Incorporate quantitative carbon or climate-related projections** to inform credit and investment discussions.



JOINT RECOMMENDATIONS

- **Produce case studies and share the findings** of analysis and tools that can enhance the evaluation of ESG factor dynamics to advance thinking and practice.

CRAS

- **Disclose the time frames taken into account in credit risk analysis** and the extent to which these vary by issuers (e.g. investment-grade versus high yield).
- **Use research and sector analysis to provide guidance** about long-term and potential risks; refer to high-level analysis in rating opinions.
- **List the top ESG risks (e.g. three or five) for an entity and/or sector**, and monitor how they evolve over time.

INVESTORS

- **Consider periodic checks during investment holding periods** – provided that investors operate in liquid markets – to conduct portfolio adjustments, as risks evolve and their weights change.

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Figure 21: Organisational changes to facilitate ESG consideration in credit risk analysis

JOINT RECOMMENDATIONS

- **Outline a transparent operational model for ESG consideration to be systematic** (e.g. clarify the role of credit analysts, ESG analysts and FI portfolio managers regarding ESG integration, including senior-level responsibility).
- **Provide credit analysts with resources to improve knowledge and expertise** (either through outsourcing or by establishing in-house teams focused on ESG sustainability to provide in-depth insight across the organisation).
- **Run training programmes** and other initiatives to keep analysts abreast of trends and emerging risks.
- **Elect ESG champions** within the firm to raise awareness and use their influence and networks if there is no internal firm buy-in yet.
- **Invest in analytical tools** to systematically consider ESG factors.

JOINT RECOMMENDATIONS

- **Demonstrate how the organisation is structured to consider ESG factors** (in credit ratings or investment decisions).
- **Ramp up expertise** and analytical skills.

CRAS

- **Clarify how ESG factors feature in assessment frameworks** and better signpost the process that underpins the choice of ESG factors that are relevant to credit risk analysis, their relative weight and importance.
- **If using separate standalone ESG scores/evaluations**, explain how these informed credit opinions.

INVESTORS

- **Become more strategic** about ESG consideration in credit risk analysis.
- **Written policies should be used by AMs** to formalise the guiding principles behind ESG consideration in credit risk analysis and what they mean in practical terms.
- **AOs should be more inquisitive** about the investment manager's organisation and practices in considering ESG factors in credit risk analysis.
- **Review periodically and engage with ESG data providers** so that their product offering is better tailored to FI investors.

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Figure 22: Emerging solutions to enhance communication and transparency

JOINT RECOMMENDATIONS

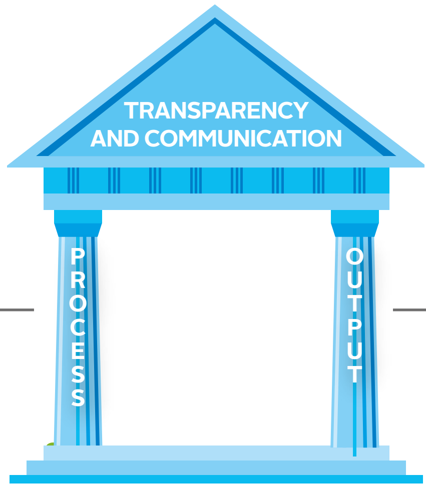
- **Continue to engage with issuers** to enhance data disclosure.
- **Continue to engage with other stakeholders** to facilitate quality ESG incorporation in credit analysis and ratings e.g. regulators, ESG research providers, etc.

INVESTORS

- **Remove barriers to communication between ESG** and credit analysts**,** if the two roles are separate.

CRAS

- **Increase outreach to investors** on ESG topics through targeted dissemination, public events and in-person meetings.
- **Specify the assumptions underpinning the base case scenario** behind the rating opinion.



INVESTORS

- **Provide regular updates** on how ESG factors are incorporated in credit risk analysis.

CRAS

- **Better signposting,** including a list of material ESG factors in rating commentaries and how these have changed ratings over time.
- **Research** how ESG factors impact credit ratings including **transition, default and recovery data,** where appropriate.
- **Dedicated ESG platforms** and web pages, where they do not already exist, to facilitate the dissemination of ESG-related reports and methodology information.

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NEXT STEPS: CONNECTING THE DOTS

This report rounds off phase one of the PRI's ESG in Credit Ratings Initiative, which has served as an important stimulus for investors and CRAs to sharpen their focus on ESG factors. The progress that it has made in a very short time frame – particularly by the large CRAs – has been remarkable.

The investor-CRA dialogue that the PRI has nurtured needs to continue and, to bear additional fruits, the PRI intends to work towards:

- fostering the implementation of the emerging solutions;
- creating standardised credit-relevant metrics or ratios for specific ESG issues; and
- extending the conversation to bond issuers.

Implementing the aforementioned potential solutions requires additional work (by sector and/or asset class) to identify the materiality of ESG factors to credit risk analysis and relevant time horizons.

Additionally, the work carried out to date reinforces that investors have different preferences and objectives; hence, they need to leverage data and available tools (including credit ratings) in ways that reflect these differences as they build analysis frameworks. However, the work has also underpinned the importance of data comparability (financial and non-financial) in credit risk analysis, to reduce the cost of processing information, as well as uncertainty about entities' underlying credit risk and in enhancing performance attribution. The industry needs to work towards establishing some form of basic credit-relevant data standardisation on ESG-related issues.

Finally, bringing bond issuers to the investor-CRA discussion would provide an important channel for buy/sell-side engagement to enhance communication, clarify what information credit practitioners need to develop more informed opinions, and show what data issuers already provide and what data are missing. This would enable issuers to better understand how financing costs could vary (up or down), depending on their exposure to risks and approach to risk management, in an environment where sensitivities to value creation or growth models are changing. It would also foster activism among credit practitioners and help them to better shape their analysis by sector or asset class.

With these steps, the initiative intends to continue to contribute to enhanced alignment among key stakeholders of the investment chain and further boost information transparency, awareness of available resources and the systematic consideration of ESG factors to promote sound judgment about underlying credit risk.

APPENDIX 1

REGIONAL COLOUR FROM THE PRI FORUMS

The forums that the PRI has organised globally have revealed regional differences on three levels (see Figure 23)[13]:

- awareness and advancement of ESG consideration;
- relative sensitivity to ESG factors by country; and
- regulatory environment and attitudes towards it.

AWARENESS AND ADVANCEMENT OF ESG CONSIDERATION

The most notable development on this front is the rapidly increasing level of interest that this topic is generating in Japan, as well as the pace of progress of ESG consideration in North America. The increasing commitment by Japan's Government Pension Fund (GPIF) – the world largest pension fund – to ESG investing has stimulated interest among Japanese market participants (including institutional investors as well as local CRAs), with positive repercussions in other Asian markets.

In North America, where some of the most engaging investor-CRA discussions took place, pressures to expand product offering, spurred by client demand, appear at play in the US. In Canada, some investment managers and large AOs have passed the stage of ESG awareness and are actively working on incorporating ESG factors in investment practices, but many others are still assembling building blocks and have yet to step up the pace of embedding ESG consideration in existing practices.

In Europe, it was unsurprising that the level of progress on ESG consideration is more advanced in France, the Netherlands and Sweden, where ESG consideration started comparatively earlier. In Northern Europe, rules-based approaches have been the precursor of more mainstream ESG investing and engagement practices are more common than elsewhere. Even in Germany – one of the European countries where ESG consideration is lagging, despite its comparatively larger bond market – appetite for ESG consideration is growing[14].

SENSITIVITIES TO ESG FACTORS

These vary significantly by country. For example, conversations around governance were relatively more prominent in Japan, and particularly so in South Africa; the South African market is also subject to capital controls and is more illiquid compared to other countries, making investment decisions more binary and with limited room for engagement. During the Hong Kong roundtable, the question of "moral hazard" regarding governance was also raised in relation to state-owned enterprises, where financing structures may be distorted by government guarantees.

Sensitivity to environmental factors also varied by country: some are more exposed to physical environmental risks than others – EMs more so than DMs. There was, however, growing appreciation during the European roundtables that these are becoming more regular in DMs. During most of the roundtables, the distinction between physical and policy risks (such as measures related to the transition to a low-carbon economy) was also flagged, with some participants asking CRAs to clarify which scenario underpinned their base-case assumptions.

Furthermore, the link between social factors and creditworthiness remains the most difficult to measure across the board. But some social factors – such as labour market conditions and labour disputes – are already on the agenda of some investors in selected countries (notably South Africa and Singapore).

Finally, sensitivities to ESG factors also vary also depending on whether institutional investors are AMs or AOs, given their different investment objectives and time horizons. This inevitably affects the weight attached to ESG factors. For example, participants of the Sydney roundtable were mostly AOs; their contribution highlighted that AOs are not yet clear about what to ask external FI managers about their approach to ESG consideration when they appoint them, nor how to ensure they comply with ESG policies. Many admitted that ESG consideration in credit risk is a new area and are in need of guidance.

13 Although we use the term regional, the highlights here are not meant to be exhaustive, as the PRI has only organised forums in selected countries so far, with the exception of mainland China and countries in Latin America, where the PRI is planning more events in 2019.

14 It is notable that the German Society of Investment Professionals (DVFA) proposed a code for sustainability in investment processes in March 2018, and in September 2018 published a proposal for an operational taxonomy.

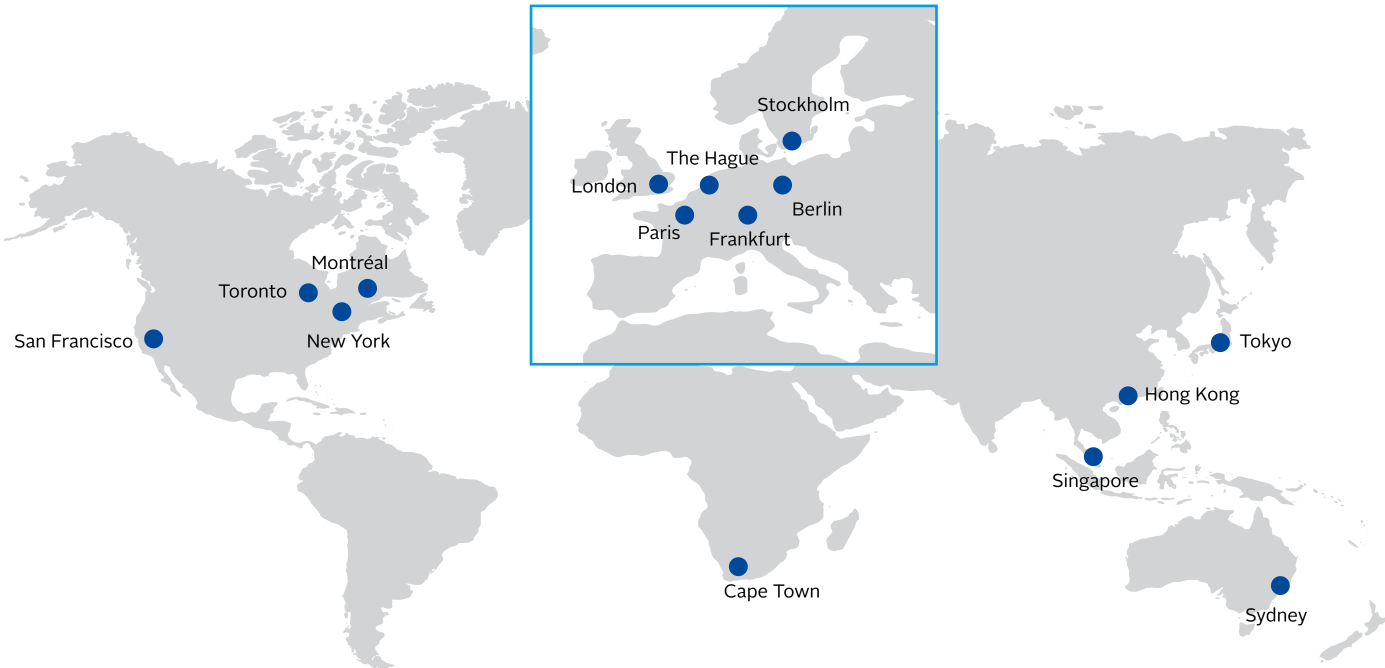
THE REGULATORY ENVIRONMENT AND ATTITUDES TOWARDS IT

Regulatory pressures are building up rapidly in several regions. The French Energy Transition for Green Growth Law, adopted in August 2015, marked a turning point in carbon reporting. More recently, in Europe, the work of the High-Level Expert Group on Sustainable Finance and the subsequent EU Commission Action Plan, published in March 2018, have incentivised credit practitioners to sharpen their focus on ESG issues.

Another example is Canada, where, in 2016, Ontario became the first province to require local pension funds to disclose the extent to which they invest sustainably, and if so, how ESG factors are incorporated into investment policies. Furthermore, in 2017, the Canadian Securities Administrators launched a climate change disclosure review project, partly in response to institutional investor demand for improved reporting in this area. And, this year, the Canadian Ministry of Environment and Ministry of Finance appointed an Expert Panel for Sustainable Finance in Canada to consult on this topic with a wide range of stakeholders.

However, in certain countries, regulatory intervention is perceived more as a threat (which may trigger pre-emptive action in the right direction). In others, notably some Asian countries, regulation is welcomed as a propeller of change.

Figure 23: The PRI ESG in Credit Risk and Ratings Forums (September 2017 to September 2018)



APPENDIX 2
SOVEREIGN VERSUS CORPORATE CREDIT RISK

In part one, we highlighted the importance of credit ratings in sovereign debt, with the government debt market by far the largest across FI instruments (p. 20). Also, since the global financial crisis, the share of government bonds with AAA ratings by the largest three CRAs has been shrinking, in a sign that even assets once perceived as safe havens are not immune from credit risk.

The work that the PRI started in this asset class as part of the ESG in Credit Ratings Initiative began with a panel session at PRI in Person 2017 in Berlin, which featured investor and CRA representatives as well as a representative of the sovereign state of France. It continued with the London and Paris roundtables, covering sovereign as well as corporate credit risk. The discussions during these events started highlighting the areas around which to frame analysis for how to consider ESG factors more systematically, particularly the differences between[15]:

- sovereign and corporate credit risk;
- sovereign credit and country risk; and
- the relative weights of ESG factors.

SOVEREIGN AND CORPORATE CREDIT RISK

Forum participants noted that one of the main aspects that differentiates sovereign credit risk analysis from corporate credit risk is that more standardised ESG-related data are available for the former, particularly from national accounts. Thus, comparability is relatively easier than for corporate bonds, even bearing in mind that the data are often released with a significant lag compared to their reference period and may be lacking in quality (some countries more so than others).

On the other hand, engagement with sovereign issuers is perceived to be more difficult, either because there are fewer direct channels or because it is more challenging to identify the official or department accountable. Sensitivity-related implications may also be a factor. However, in the same way that the roundtable discussions helped to clarify that considering ESG factors in credit risk analysis does not necessarily involve exclusion or rules-based investment strategies, it became clear that sovereign engagement does not involve political interference; rather, it can be necessary for fact-finding (which CRAs already do as part of their surveillance). Thus, in addition to meeting government officials, engagement could include meeting other stakeholders and members of society (such as representatives of opposition parties, trade unions, employers' associations, technocrats or the press, as well as supranational entities such as the IMF or the OECD which conduct regular country reviews). This can help to form a holistic view of the sovereign landscape.

Government roadshows organised by debt management offices to launch bond issues such as green bonds are also a useful setting for dialogue. Admittedly, sovereign engagement can be more challenging for investors in emerging markets, but, even here, collaborative platforms such as the Emerging Markets Investors Alliance can offer a channel to advocate sound governance.

Finally, modifying asset allocation based on ESG criteria can be challenging if investors are benchmarking standard sovereign bond indices. As individual country weights are higher than those for single corporates, exclusion can be problematic because of the absence of adequate substitutes, as well as underweighting or overweighting. Furthermore, ESG sovereign bond benchmarks are limited at this stage.

COUNTRY RISK AND SOVEREIGN DEBT RISK

Although many analysts tend to use sovereign credit ratings as proxies for country risk, they are a different type of risk. Sovereign credit ratings measure the relative likelihood of a sovereign defaulting on its debt obligations i.e. its ability and willingness to honour its debt; country risk is more linked to the risk of investing or lending in a country, including political risk, exchange rate risk, economic risk and transfer risk. And while it is true that sovereigns with a high credit rating tend to have low country risk, this is not necessarily a corollary. Thus, there can be instances where corporate entities have a higher credit rating than the sovereign rating of the country in which they operate, particularly if they do not largely depend on the domestic market[16].

15 In 2018, the PRI also launched in a separate dedicated workstream on sovereign bonds covering several aspects of ESG consideration in this asset class, beyond credit risk and ratings.

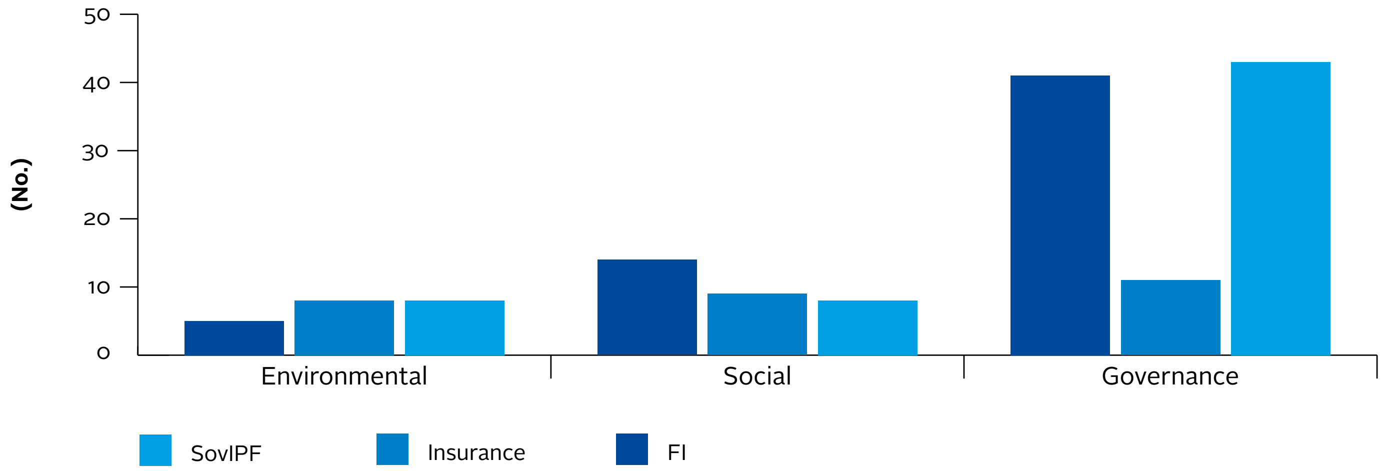
16 See 'Cross-Sector Rating Methodology: How Sovereign Credit Quality Can Affect Other Ratings', 16 March 2015, Moody's Investors Service.

17 Op. cit. in footnote 8.

RELATIVE WEIGHTS OF ESG FACTORS

Similarly to corporate credit risk, governance remains by far the most important of the three ESG categories when assessing sovereign risk, as it is directly linked to a government's ability and willingness to generate enough revenues to repay its financial obligations. In turn, these depend on a government's institutional and political standing as well as its economic fabric (growth potential, diversification and competitiveness) which determines the strength of its revenue base. This conclusion was also supported by a recent S&P Global Ratings study, showing that governance factors impacted sovereign and international public finance credit more often than social and environmental factors over the two years ending July 2018 (see Figure 24)[17].

Figure 24: Direct influence of ESG factors in rating actions. Source: S&P Global Ratings



FI (financial institution); SovIPF (sovereigns and international public finance)

Note: the chart shows the number of cases in which ESG factors directly influenced the ratings of 147 sovereigns, local and regional governments, insurers and banks in the two years to 31 July 2018.

However, some forum participants also observed that unlike corporate credit, when assessing sovereign credit risk, the importance of social factors is easier to understand and measure (with links to demographics, education levels, labour market structure, health and inequality or corruption indicators, which are generally available and easy to score on a relative basis). So, in theory, they are easier to incorporate in a systematic credit risk framework.

Environmental factors, meanwhile, are captured the least, with participants acknowledging that natural capital is often considered as exogenous and no price is used to measure it, let alone associated with the way it is managed or depleted. The same applies to environmental policies.

Some environmental elements may be factored into GDP analysis and a country's balance of payment, such as if a country's energy supply heavily depends on imports, or a country with heightened CO_2 emissions because it manufactures many export goods. However, they need to be made more explicit so that markets can begin to price a country's vulnerability or resilience (see Figure 25). Moreover, the relative weight of environmental factors on how they impact credit risk may increase substantially going forward, as the impact of climate change continues to intensify, if measures to tackle its causes are not taken.

Figure 25: Example of how ESG factors can feature in a sovereign rating methodology. Source: Moody's Investors Service

RATING FACTOR	RATING SUBFACTOR	ENVIRONMENTAL	SOCIAL	GOVERNANCE	EXAMPLES
Economic strength	Growth dynamics				Environmental conditions and natural resources are a key determinant of economic growth. Changes in the population structure can also lead to lower growth as the labor force shrinks.
	Scale of the economy				
	National income				GDP per capita is a common measure of social development and one of the indicators we use to assess economic strength.
Institutional strength	Institutional framework and effectiveness				The quality of governance is synonymous to the strength of a country's institutions and largely determines the effectiveness of policy.
	Policy credibility and effectiveness				
Fiscal strength	Debt burden				Environmental shocks and social demands can place pressure on the fiscal accounts.
	Debt affordability				
Susceptibility to event risk	Political risk				Social demands increase political risk when the governing institutions do not address them.
	Government liquidity risk				Government liquidity relies on investor confidence which is susceptible to ESG shocks .
	Banking sector risk				Weak institutional oversight increases the risk of a banking crisis.
	External vulnerability risk				Environmental shocks increase external vulnerability, particularly in small, open economies.

With that said, the interdependency of ESG factors is very clear in the case of sovereign credit risk: ultimately, whether a country has sufficient preventative or mitigation procedures in place to withstand physical environmental risks, or whether it implements policies to address climate-related challenges, is a governance issue, similar to other policy choices (such as those related to immigration, education or healthcare).

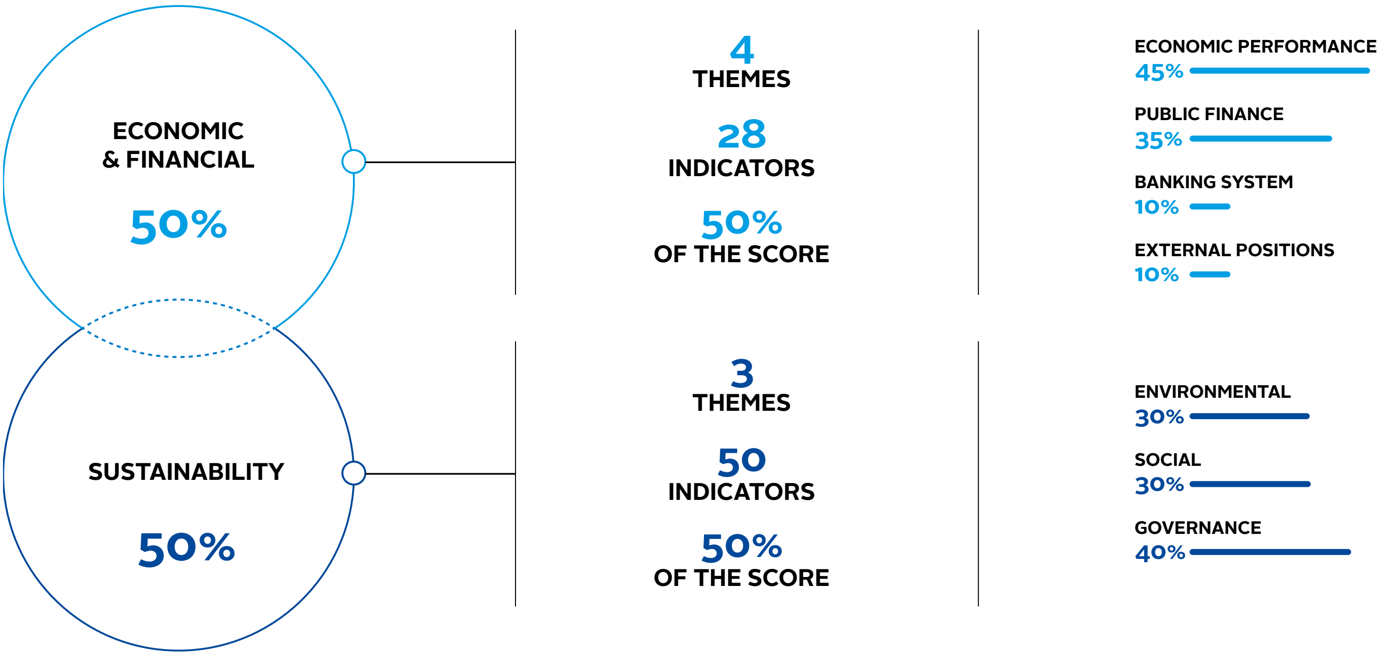
In part one (p. 21), we provided examples of several CRA frameworks, highlighting which ESG factors are already part of the pillars of the methodology to assess sovereign credit risk. We also pointed out that research, especially on the credit impact of environmental issues, was increasing. CRAs have since made further progress in clarifying how ESG factors feature in their methodologies.

They have also started publishing thematic research specifically on this topic, as well as analysis on sub-sovereign, regional and local governments. The list on the CRAs' websites is extensive. Below are some examples.

CRA	PUBLICATION/CLARIFICATION	DATE
Fitch Ratings	Capturing ESG risk in credit ratings	7 Nov 2017
	Ageing looms as key economic, fiscal issue for US States	1 Nov 2018
	Venezuela migrants raise regional fiscal and political pressures	11 Dec 2018
	France's riot response underscores fiscal risks	12 Dec 2018
Moody's Investors Service	Cross-sector rating methodology: How sovereign credit quality can affect other ratings	16 Mar 2015
	Sovereigns - global: environmental, social and governance risks influence sovereign ratings in multiple ways	27 Jun 2018
	Banks - Asia Pacific: demographic changes will bring new challenges and opportunities in next decade	18 Sep 2018
	Government of the United States: rising income inequality will likely weigh on credit profile	8 Oct 2018
	Governments of Japan and Korea: demographics will weigh on long-term economic and fiscal strength, despite offsets from technology, labour participation	30 Oct 2018
	Cross-sector: social issues have multiple impacts on government credit quality	28 Nov 2018
Scope Ratings	Rating methodology: public finance sovereign ratings	4 May 2018
	Introduction of "*Factoring of ESG*" section in sovereign rating announcements (hyperlink not available)'	From Aug 2018
	New supranational methodology	6 Sep 2018
S&P Global Ratings	The heat is on: how climate change can impact sovereign ratings	25 Nov 2015
	How does S&P Global Ratings incorporate ESG risks into its ratings analysis	21 Nov 2017
	Through the ESG lens: how ESG factors are incorporated into U.S. public finance ratings	10 Oct 2018
	How ESG factors help shape the ratings on governments, insurers and financial institutions	23 Oct 2018

During the London and Paris roundtables, investors also learned about a new actor on the CRA landscape: Beyond Ratings (BR), which integrates ESG factors explicitly into its financial ratings, in addition to economic and financial indicators (see Figure 26)[18].

Figure 26: Example of a methodological approach to sovereign risk assessment with more explicit reference to sustainability indicators. Source: Beyond Ratings



18 Beyond Ratings is not yet officially recognised as a CRA by the European regulator ESMA.

APPENDIX 3
CRA EXAMPLES

Below are examples showing how ESG factors are becoming more explicit in CRA commentaries, adding to the list that the PRI published in part two. Corporate and sovereign credit risk examples are offered in chronological order, showing that rating or outlook changes, which are directly influenced by ESG factors, can be positive as well as negative.

Environmental Social Governance

CORPORATE EXAMPLES

Corporate issuer: Taiyo Life Insurance, Daido Life Insurance, and T&D Financial Life Insurance

Country: Japan

Sector: Insurance

Date: 12 February 2016

ESG factor: Governance

Action: Upgraded insurance claims paying ability from A+ to AA- credit rating; outlook: stable (hyperlink not available)

Key rationale: T&D Life group fully introduced group-wide enterprise risk management (ERM) and incorporated it into the management's decision-making process. The management team is also highly conscious of ERM operations.

Source: Rating and Investment Information, Inc.

Corporate issuer: Lloyd's of London Ltd.

Country: UK

Sector: Insurance

Date: 12 October 2017

ESG factor: Environmental

Action: Outlook revised from stable to negative; insurer financial strength and long-term counterparty credit ratings A+ affirmed

Key rationale: Announced and estimated losses from hurricanes Harvey and Irma that are large compared with existing capital buffers and relative to those of peers.

Source: S&P Global Ratings

Corporate issuer: Wynn Resorts

Country: US

Sector: Casino and gambling

Date: 30 January 2018

ESG factor: Social and governance

Action: Outlook revised from stable to negative; BB- credit rating affirmed

Key rationale: Reputational and legal/regulatory risks associated with sexual misconduct allegations against founder/CEO.

Source: S&P Global Ratings

Corporate issuer: Wells Fargo Corp.

Country: US

Sector: Banking

Date: 7 February 2018

ESG factor: Social and governance

Action: Credit rating downgraded from A to A-; outlook stable

Key rationale: Asset growth capped until the company further enhances its governance and compliance and risk management to the standards required by the regulator; the downgrade also reflects ongoing ramifications of its retail sales practices issues.

Source: S&P Global Ratings

Corporate issuer: William Hill plc

Country: UK

Sector: Gaming

Date: 22 May 2018

ESG factor: Social

Action: Outlook changed to negative from stable; affirmed Ba1 credit rating

Key rationale: Action reflects the UK government's Triennial Review announcement on 17 May 2018 that the maximum stake on B2 games will be reduced from GBP100 to GBP2 following a consultation with the public and the industry, seeking to balance sector profitability with social responsibility.

Source: Moody's Investors Service

Corporate issuer: JSC Rusnarbank

Country: Russia

Sector: Banking

Date: 25 May 2018

ESG factor: Governance

Action: Credit rating affirmed at B+; stable outlook

Key rationale: The rating continues to be restrained by challenges related to execution of the bank's new strategy, given current industry economic developments in the banking industry.

Source: Rating-Agentur Expert RA GmbH

Corporate issuer: AMN Healthcare, Inc.

Country: US

Sector: Gaming

Date: 28 May 2018

ESG factor: Social

Action: Credit rating upgraded to Ba1 from Ba2; stable outlook

Key rationale: Moody's expects that over the long term AMN will benefit from favourable industry trends, including growing demand for health services due to an ageing population and a shrinking pool of healthcare professionals.

Source: Moody's Investors Service

Corporate issuer: Kinder Morgan, Inc. (KMI)

Country: US

Sector: Oil and gas - midstream

Date: 17 August 2018

ESG factor: Environmental and governance

Action: Outlook changed to positive from stable; affirmed Baa3 credit rating

Key rationale: Sale of Trans Mountain has reduced KMI's exposure to environmental opposition to the liquids pipeline expansion, which is credit positive. With respect to governance, KMI faces some challenges to provide more disclosure around its exposure to carbon emissions and potential legislative or regulatory risks around climate change, as evidenced in its recent shareholder vote.

Source: Moody's Investors Service

Corporate issuer: Country Garden Holdings Company Ltd.

Country: China (domiciled in Cayman Islands)

Sector: Homebuilding and property development

Date: 2 August 2018

ESG factor: Social

Action: No impact on credit rating, affirmed Ba1

Key rationale: Multiple fatalities and injuries associated with Country Garden Holdings Company Limited's construction work at three projects in China over the last three months are credit negative, but will not immediately affect the company's Ba1 corporate family rating (CFR) or the stable outlook on the rating.

Source: Moody's Investors Service

Corporate issuer: Toshiba Corp.

Country: Japan

Sector: Electrical appliances

Date: 29 August 2018

ESG factor: Governance

Action: Upgraded credit rating from BB+ to BBB-; outlook stable

Key rationale: Toshiba's financial structure improved by selling off semiconductor memory business. R&I also confirmed its improvement in governance, including the enhancement of the board of directors' composition.

Source: Rating and Investment Information, Inc.,

Corporate issuer: Hydro One Ltd.

Country: US

Sector: Utilities

Date: 13 September 2018

ESG factor: Governance

Action: Credit rating downgraded from A to A-

Key rationale: The one-notch downgrade reflects our reassessment of HOL's management and governance structure, which in our view, has weakened following the Government of Ontario's decision to exert its influence on the utility's compensation structure through legislation, with the passing of the Hydro One Accountablility Act.

Source: S&P Global Ratings

Corporate issuer: Tahoe Group Co., Ltd

Country: China

Sector: Real estate

Date: 10 October 2018

ESG factor: Governance

Action: Long-term foreign currency issuer default rating downgraded to B- from B; outlook negative

Key rationale: Two ratings drivers related to aggressive financial strategy and lack of transparency/visibility on sales (cash collections substantially lower than contracted sales).

Source: Fitch Ratings Ltd

Corporate issuer: Signet Jewelers Ltd

Country: US (domiciled in Bermuda)

Sector: Luxury goods

Date: 8 October 2018

ESG factor: Social

Action: Outlook revised to negative; long-term issuer default rating affirmed at BB

Key rationale: Rating drivers impacting top line sales include consumer sentiment following recent diamond swapping and female employee treatment allegations, as well as failure to adapt to changing consumer preferences.

Source: Fitch Ratings Ltd

Corporate issuer: Kemble Water Finance Limited

Country: UK

Sector: Water and waste management

Date: 31 October 2018

ESG factor: Environmental

Action: Senior secured debt downgrade to BB- from BB; outlook stable

Key rationale: Ratings driven by opco performance (Thames Water) where poor regulatory performance on leakage and customer service have led to significant performance penalties (£230 mi) and a need for higher spending in the next regulatory period.

Source: Fitch Ratings Ltd

Corporate issuer: Yes Bank Limited

Country: India

Sector: Banking

Date: 27 Nov 2018

ESG factor: Governance

Action: Foreign currency issuer downgraded to Ba1 from Baa2; outlook changed to negative

Key rationale: Action considers the resignation of various members of the bank's Board of Directors - which, when seen in conjunction with the Reserve Bank of India's (RBI) directive in September 2018 to restrict the term of the bank's Managing Director and Chief Executive, as well as founder Rana Kapoor, till 31 January 2019 - have raised Moody's concerns over corporate governance.

Source: Moody's Investors Service

Corporate issuer: Edison International (EIX), Southern California Edison Company (SCE)

Country: US

Sector: Regulated electric and gas utilities

Date: 3 December 2018

ESG factor: Environmental

Action: Outlook changed to negative from stable; affirmed Baa1 issuer rating of EIX, and A3 of SCE

Key rationale: Cumulative exposure to wildfires exacerbated by the effects of climate change are materialising faster than we originally expected. Efforts to insulate the utilities, in the form of new laws or regulations, will be slow and drawn out, putting downward pressure on its credit rating.

Source: Moody's Investors Service

SOVEREIGN EXAMPLES

Sovereign issuer: Russia

Date: 17 February 2017

Action: Outlook changed from stable to negative, Ba1 rating affirmed

ESG factor: Social

Key rationale: In the absence of structural reforms that address high poverty levels, the declining working age population and the multitude of factors that constrain investment, the rating agency that expects potential growth will remain at 1.5-2 per cent.

Source: Moody's Investors Service

Sovereign issuer: Fiji

Date: 6 September 2017

Action: Upgraded to Ba3 from B1, outlook changed to stable from positive

ESG factor: Environmental

Key rationale: Despite government measures to mitigate the impact of climate change, Fiji's economy and public finances will remain highly vulnerable to both sudden climate events and gradual climate change trends, a constraint on its rating.

Source: Moody's Investors Service

Sovereign issuer: Turks and Caicos Islands

Date: 28 June 2018

ESG factor: Environmental

Action: BBB+ rating affirmed; outlook revised to stable

Key rationale: Estimates for total damage, losses, and other costs associated with hurricanes Irma and Maria of about 55 per cent of Turks and Caicos Islands' GDP.

Source: S&P Global Ratings

Sovereign issuer: Turkey

Date: 13 July 2018

ESG factor: Governance

Action: Downgraded to BB from BB+, outlook negative

Key rationale: Drivers of the downgrade included deterioration in economic policy credibility, and policy actions which increased economic uncertainty.

Source: Fitch Ratings Ltd

Sovereign issuer: US

Date: 21 September 2018

ESG factor: Governance and social

Action: Credit rating affirmed at AA; stable outlook

Key rationale: Qualitative governance-related assessments on "recent events and policy decisions" and "geo-political risk" are assessed as "weak". "Macro-economic stability and sustainability" is assessed as "neutral", balancing a very diversified economy with heightened inequality.

Source: Scope Ratings GmbH

Sovereign issuer: Federal Republic of Germany

Date: 2 November 2018

ESG factor: Governance and social

Action: Credit rating affirmed at AAA; stable outlook

Key rationale: Governance-related factors are explicitly captured in Scope's quantitative model in Germany's high WGI scores. Social-related factors are captured in Germany's high GDP per capita (US$ 44,769 in 2017) and record-low level of unemployment but increasing old-age dependency ratio.

Source: Scope Ratings GmbH

Sovereign issuer: Indonesia

Date: 23 October 2018

ESG factor: Social and governance

Action: Upgraded to BBB- from BB+; outlook stable

Key rationale: Government's new focus on realistic budgeting and better data collection, combined with plans to address the existing shortfall in infrastructure and basic services.

Source: S&P Global Ratings

Sovereign issuer: Sri Lanka

Date: 3 December 2018

ESG factor: Governance

Action: Downgrade to B from B+; outlook stable

Key rationale: Heightened external refinancing risks, an uncertain policy outlook, and the risk of a slowdown in fiscal consolidation contributed to the downgrade, also driven by a political crisis, following the President's sudden replacement of the Prime Minister on 26 October 2018.

Source: Fitch Ratings Ltd

APPENDIX 4

INVESTOR CASE STUDIES

This section contains 15 investor case studies. Contributors are asset owners and investment managers that support the ESG in Credit Ratings Statement and have actively engaged with CRAs through the forums that the PRI has organised as part of the initiative.

The PRI asked the contributors to describe how their respective organisations have addressed one or more of the four action areas that have driven the analysis of the three reports and the investor-CRA dialogue so far.

In part two of the series, the PRI published eight issuer-specific case studies. In this third and final iteration, the case studies focus more on the investment set-up, including how CRA rating opinions are taken into account. Each case study is structured in four parts (see Figure 27):

Figure 27: The structure of the investor case studies

The investment approach	The investment process	The investment outcomes	Key takeaways
WHY	**HOW**	**PRACTICE**	**LESSONS**
The motivation behind the need to address the action areas for ESG consideration and their drivers.	The inputs, the framework, the methodology and the roles of different stakeholders in taking into account specific ESG dynamics in credit.	Evidence of implementation of the investment process, with examples on sovereign or corporate bond issuers.	The lessons learned, the challenges encountered, what could have been done differently and the plans for the future.

The investment approach and process should help other market participants to build a more systematic framework for ESG consideration.

Regardless of which action area the contributors focused on, shared themes have emerged:

- building a credit-specific ESG framework helps to sharpen the focus on material ESG factors, with a clear financial link that can alter the credit quality assessment;
- despite common traits, ESG consideration plays out differently depending on whether it is taken into account at the industry, issuer, portfolio, strategy or single issue level;
- building a framework is a long process and may require various steps;
- an ESG framework is not a static process – it requires constant adaptation due to improving analytics, the emergence of new data/risks and iterative actions;
- devising a systematic structure to consider ESG factors may promote an internal dialogue across teams and improve communication;
- the ESG lens can help to identify areas for engagement; and
- the approach to ESG consideration is not one-size-fits-all.

Below is the list of contributors, their area of focus and the type of bond that they have chosen to demonstrate application of the investment process (see Figure 28).

Figure 28: Case study contributing organisations

CONTRIBUTOR	ACTION AREA				EXAMPLE OF INVESTMENT OUTCOME
	Materiality of ESG factors	Time horizons	Organisational approach	Transparency and communication	Type of bond
AXA		✔	✔	✔	Corporate
BlueBay AM LLP	✔				Corporate
Futuregrowth AM	✔				Corporate
HSBC AM			✔	✔	Corporate
Legal and General IM	✔	✔	✔		Corporate
Nikko AM	✔				Corporate
NN Investment Partners	✔				Corporate
Nomura AM	✔				Corporate
Triodos IM			✔		Corporate
Aegon AM Netherlands	✔		✔		Sovereign
Caisse des Dépôts et Consignations	✔				Sovereign
Colchester Global Investors	✔				Sovereign
Insight Investment	✔		✔	✔	Sovereign
PIMCO	✔	✔	✔		Sovereign
Templeton Global Macro	✔				Sovereign

Note: AM (asset management); IM (investment management). The case studies are listed in alphabetical order by contributing organisation.

CORPORATE BOND

CREDIT RISK CASE STUDY: AXA GROUP

AUTHORS	**Florence Roche, Credit Research Manager on Non-Financials** **Stéphane Le Priol, Head of Credit Research** **Amandine Soulier, Corporate Responsibility**

MARKET PARTICIPANT TYPE	**Asset Owner**
TOTAL AUM	**€587 billion (as at June 2018)**
FIXED INCOME AUM	**€411 billion (as at June 2018)**
OPERATING COUNTRY	**Global**

ACTION AREA				
	Materiality of ESG factors	**Time horizons** ✓	**Organisational approach** ✓	**Transparency and communication** ✓

THE INVESTMENT APPROACH

AXA Group defines responsible investment as the integration of ESG considerations into its investment processes. We believe ESG integration may impact long-term investment performance by offering an enhanced understanding of risk drivers. This conviction is derived from academic research and empirical market data. It also helps us to align our investments and broader corporate responsibility commitments. The process of ESG integration is coordinated centrally by the group credit research team, which assigns an internal credit rating (ICR) and manages issuer eligibility. ICRs assigned by the team cover more than 80 percent (of amount invested) of AXA Group's credit portfolio. Ratings from external CRAs are taken into account for the rest.

THE INVESTMENT PROCESS

When performing a credit review and assigning an ICR, the credit research team assesses several credit-relevant factors related to an issuer's business and financial profiles (see Figure 29). The assessment is relative to a group of issuers within the same industry/geographical area. Each factor is assessed as strong, neutral or weak versus the company's peers.

Figure 29: Credit review process. Source: AXA Group

NON-FINANCIAL CORPORATES

BUSINESS FACTORS

- Industry
- Market position
- Strategy
- ESG & transparency

FINANCIAL FACTORS

- Profitability
- Cash flow coverage
- Leverage

FINANCIAL CORPORATES

BUSINESS FACTORS

- Operating environment
- Market position
- Strategy & risk appetite
- Support
- ESG & transparency

FINANCIAL FACTORS

- Solvency & leverage
- Asset quality
- Profitability
- Liquidity & funding

The ESG and transparency factor is not markedly different from the other credit factors we consider when forming a credit opinion and assigning an ICR. It too can be a key rating driver and in some cases an overriding factor. It should be noted that the credit research team does not conduct a full-fledged ESG analysis; rather, it assesses the materiality of ESG factors on an issuer's creditworthiness. Analysts use ESG information from sources ranging from company reports to ESG data providers/NGOs (e.g. Carbon Disclosure Project for oil and gas) and specific industry sources (e.g. Evaluate for the pharmaceutical industry). Credit analysts try to evaluate how this information contributes to an issuer's market position, revenues, profitability, capex and cash flow, etc.; each analyst evaluates which criteria are the most meaningful, observable and material by sector.

However, the ESG and transparency factor can differ from other factors in terms of its time horizon. Although it can be material within our usual rating horizon (around two years) and thus impact the ICR like any other factor, ESG and transparency risks can also have a longer time horizon before they materialise. In such cases, the ICR may not be impacted but the credit research team can take other actions such as proposing to stop investing or imposing maturity constraints. Those decisions are then implemented by asset managers investing on behalf of AXA Group.

THE INVESTMENT OUTCOMES

This framework was introduced four years ago and is now fully integrated into our analytical and investment decision processes. As a result, we have stopped investing in several issuers and reduced the investable maturity of others.

One example is the independent pure-play exploration and production (E&P) industry. The pace of the energy transition – the shift towards a lower reliance on fossil fuel energy in favour of less carbon-intensive sources – is gaining momentum and influence on companies' long-term strategies. The market consensus anticipates a peak in oil demand in the next 10 to 40 years. We believe that future regulation is likely to influence demand for and the pricing of hydrocarbons, and that there is a stranded asset risk for the independent E&P industry in the long term. While this has no impact on our ICR given the longer time horizon, we decided to cap the maximum investable maturity for this sector to 10 years.

KEY TAKEAWAYS

AXA Group is a long-term buy-and-hold investor but our ICRs (like ratings from external agencies) have a two to three-year horizon only. Introducing an ESG factor within our approach has made it possible for us to reconcile the difference in time horizon and to adjust our credit positioning accordingly.

Returning to the above example, capping our investment maturity will gradually reshape our credit exposure to independent E&P companies within a shorter time frame that will be easier to monitor. If or when tail risk increases, maturity constraints will be reviewed depending on industry developments, and we should be in a better position to minimise stranded asset risk.

CORPORATE BOND

CREDIT RISK CASE STUDY: BLUEBAY ASSET MANAGEMENT LLP

AUTHOR	**My-Linh Ngo, Head of ESG Investment Risk**
MARKET PARTICIPANT TYPE	**Asset Manager**
TOTAL AUM	**US$59.6 billion (as at June 2018)**
FIXED INCOME AUM	**US$59.6 billion (as at June 2018)**
OPERATING COUNTRY:	**Global**
ACTION AREA	**Materiality of ESG factors** ✔ / Time horizons / Organisational approach / Transparency and communication

THE INVESTMENT APPROACH

BlueBay believes that ESG factors can potentially have a material impact on an issuer's long-term financial performance. Since 2013, we have operated an ESG investment risk management framework across all our managed assets. It involves identifying and assessing material ESG risk factors and integrating these in portfolio construction.

Our efforts to date have centred on working with our credit analysts to share ESG risk insights on an ongoing basis. In 2018, we went a step further, implementing an issuer evaluation process to incorporate ESG risks more systematically into our fundamental credit analysis across our public debt investment teams.

The process was designed to help us achieve the following goals:

- systematically evidence and document ESG integration pre-investment;
- better allow for, and reflect on, how ESG dynamics may play out in FI investing (compared with equities), as well as potentially between different debt strategies;
- advance our understanding of how ESG risk factors may impact different issuer types such as corporates, sovereigns and state-owned enterprises;
- complement ESG insights gained from third parties with in-house knowledge and expertise;
- promote ownership and accountability by having credit and ESG analysts involved in the ESG review process; and
- use insights to inform ESG engagement priorities.

THE INVESTMENT PROCESS

For corporates and sovereigns, the issuer ESG evaluation template generates two ESG metrics (see Figure 30):

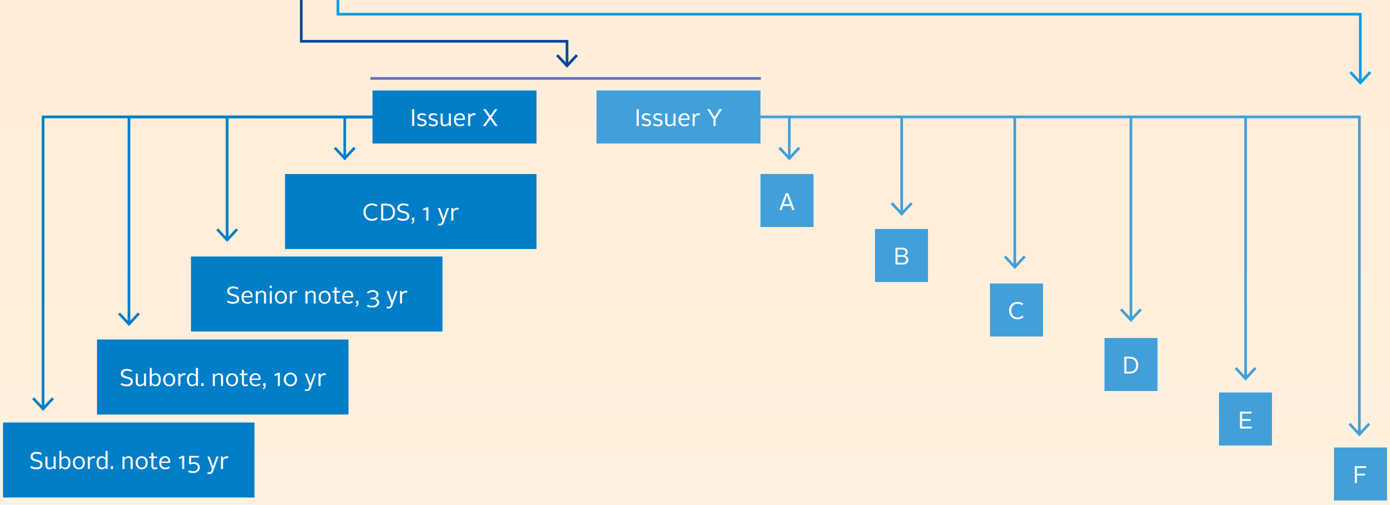
1. A Fundamental ESG Rating which indicates our view on how well the issuer manages its material ESG risks. There can only be one Fundamental ESG Rating per issuer, e.g. at the ticker level, across BlueBay. This Fundamental ESG Rating is co-owned by the credit analyst(s) and ESG team.

2. An Investment ESG Score which reflects an investment view on the extent to which ESG risk factors are considered relevant to valuations. The Investment ESG Score is specific to a decision on a security/instrument level, e.g. at the International Security Identification Number level. Each investment team may assign different Investment ESG Scores, meaning there may be multiple scores for a single issuer. We can therefore consider ESG investment materiality over varying time frames and risk-reward profiles. This Investment ESG Score is owned by the credit analyst/portfolio manager.

Figure 30: Summary of the issuer ESG evaluation outputs. Source: BlueBay Asset Management LLP

FUNDAMENTAL ESG RATING (ABSOLUTE) [Issuer level]
Very high ESG risks
High ESG risks
Medium ESG risks
Low ESG risks
Very low ESG risks

INVESTMENT ESG SCORE (RELATIVE VALUATION IMPACT) [Decision at security/instrument level]	DESCRIPTION
-3	Very high ESG investment-related risks
-2	High ESG investment-related risks
-1	Some ESG investment-related risks
0	ESG considerations are unlikely to have an impact
+1	Some investment opportunities as a result of ESG considerations
+2	High investment opportunities as a result of ESG considerations
+3	Very high investment opportunities as a result of ESG considerations



Ultimately, the issuer ESG evaluation process enables our credit and ESG analysts to express their ESG views on an issuer before making an investment. The views can then be taken into account by portfolio managers when constructing their portfolios and making investment decisions. However, they are not prescriptive, as there may be valid reasons why the portfolio managers take an investment position that contradicts the ESG signal.

We have disaggregated the management of material ESG risks by the issuer from the investment materiality, as this enables us to better understand the extent to which ESG risks are indeed investment-relevant and in which circumstances. This level of transparency is particularly important in a FI environment, where the asset class operates differently to equity, and ESG factors play out in different ways. Such insights inform our wider knowledge and understanding of ESG FI dynamics, and ultimately allow us to make more informed investment decisions.

A pilot version of the issuer ESG evaluation process was trialled in 2017 by a single investment desk, and further refinements were made as a result of the learnings among a wider group of analysts. It was formally launched in August 2018.

Some key points associated with the template and process are:

- While the specific content of the templates for sovereign and corporates differ, both follow similar principles, have broadly similar structures and generate consistent ESG metrics.
- There can only be a single ESG evaluation completed per issuer, even if an issuer may be relevant for different investment strategies (e.g. investment-grade, high-yield or emerging market debt).
- To encourage credit analysts to think about analysis from a different perspective (ESG), the process has been designed so they lead on the initial ESG evaluation in terms of the Fundamental ESG Rating, which is then submitted to the ESG team for review. The ESG team must confirm the proposed Fundamental ESG Rating, as this is co-owned by the credit and ESG analysts.
- The Investment ESG Score is more dynamic than the Fundamental ESG Rating, and is expected to be updated more frequently.
- The two ESG metrics are integrated into our internal investment holdings and trade monitoring platforms, which enable investment teams to access this data along with conventional issuer credit metrics.

THE INVESTMENT OUTCOMES

The initiative is already generating value by formalising ESG integration in fundamental credit research and investment decision processes, providing insights into ESG FI dynamics, as well as fostering active ownership and accountability. The example in Figure 31 shows how the in-house issuer ESG evaluation process allows us to explain a view which differs to the ESG vendor assessment, and expresses the nature of the investment materiality.

Figure 31: ESG rating and investment ESG score of Bausch Health Companies. Source: BlueBay Asset Management LLP

NORTH AMERICAN HIGH-YIELD CORPORATE CREDIT: BAUSCH HEALTH COMPANIES – FORMERLY VALEANT PHARMACEUTICALS		
Third-party ESG vendor(s) assessment	**BlueBay Fundamental ESG Rating**	**BlueBay Investment ESG Score** (Indicative, assuming a long position)
▪ Overall very weak ESG rating ▪ Weak absolute scores in governance and social areas ▪ High exposure to ESG controversies	Rating: Medium ESG risks Rationale: *We believe the ESG rating and scores assigned by the ESG vendors are lagging in terms of where the company is in reality. Clearly, there have been some ESG failings associated with the legacy entity. However, we feel strongly that it is a very different company than the one of 2015. There has been near complete management and board turnover, and the business model has shifted dramatically from growth derived from M&A and price increases to a company focused on organic volume growth of existing products, developing its admittedly limited product pipeline, and deleveraging its balance sheet.* *We are sensitive to the reputational risks and ESG concerns about the company and appreciate that only consistent execution and time will change the legacy perception, but what we have seen so far is constructive/positive. We recognise the need to maintain close monitoring and engagement with management to continue to hold them to account.*	Score: +1 [some investment opportunities as a result of ESG considerations] Rationale: *We expect a continued focus on internal controls and more robust corporate infrastructure to drive investor confidence in the credit. This turnaround will be most reliant on governance improvements/execution, but we also expect the company to work towards industry standard practices with regards to environmental and social risks.*

KEY TAKEAWAYS

The initiative is enabling us to undertake ESG integration more systematically at the fundamental credit research level, although our process will likely evolve and be refined over time, as ESG integration is an iterative process. Our key takeaways so far include:

- **Identifying materiality by quantifying ESG risk factors:** some analysts have commented that while ESG risks may be discussed in credit meetings and with portfolio managers, having this formal process means they need to express their ESG view in a more quantitative way to make the risks more tangible to grasp.
- **Providing an explicit signal to inform investment decisions:** the ESG metrics serve as a communication tool from the analysts to the portfolio managers, which they will need to consider alongside other investment factors such as fundamentals, technicals and valuation during their portfolio construction.
- **Mutual learning, promoting debate and dialogue:** analysts have found that by being directly accountable for the evaluation of ESG risks, they better appreciate how these credits are viewed from an ESG perspective, expanding the way they look at credits. The process has already generated debate and discussions with regards to whether assigned Fundamental ESG Ratings and/or Investment ESG Scores are valid, and the extent to which consistency between teams is needed.
- **Promoting ownership and accountability:** while having access to third-party ESG vendor data is useful in helping to formulate an initial view, our framework has encouraged investment teams to build on this to formulate their own views on ESG risk factors, particularly where they differ from third parties.

CORPORATE BOND

CREDIT RISK CASE STUDY: FUTUREGROWTH ASSET MANAGEMENT

AUTHORS	**Angelique Kalam, Manager, Sustainable Investment Practices** **Kearon Gordon, Investment Analyst**
MARKET PARTICIPANT TYPE	**Asset Manager**
TOTAL AUM	**US$13 billion (as at October 2018)**
FIXED INCOME AUM	**US$12.5 billion (as at October 2018)**
OPERATING COUNTRY:	**South Africa**
ACTION AREA	**Materiality of ESG factors** ✔ / Time horizons / Organisational approach / Transparency and communication

THE INVESTMENT APPROACH

We believe that integrating ESG analysis into our overall investment decision-making processes leads to better investment decisions and more sustainable returns. We seek to identify non-financial risks (ESG, management, operational etc.) that could impair the credit quality and sustainability of our investments to improve their analysis, assess risks and promote better standards of practice. Our credit strategy promotes independent and in-depth analysis of borrowers. We apply fundamental credit analysis and internal risk measures to analyse, screen, identify and price risks, and negotiate rates and terms. We use a range of criteria to ensure that the risk-reward trade-off is appropriate. We see ourselves as a long-term funding partner and, as such, we view sustainability as key to understanding risk.

KEY CONSIDERATIONS

- there is no standardised framework for analysing companies on sustainability issues;
- credit analysts should apply their knowledge as a qualitative overlay to financial, operational and other risk analysis;
- considering ESG factors improves the analysis of all investments by promoting improving standards of practice;
- identifying risks that could affect the cost of funding such as operational disruptions is important;
- ESG indicators are one of many credit risk tools that should form part of a holistic credit process;
- rates charged for loans should be appropriate for the risk-reward assumed; and
- good governance practices and processes are fundamental in assessing the sustainability of a company.

THE INVESTMENT PROCESS

We use the example of our approach to analyse MTN Group (MTN), an African telecommunications network provider, to illustrate our investment process. Futuregrowth has had opportunities to acquire debt exposure to MTN through auctions and the sell-down of debt from other financial institutions. The Futuregrowth Credit Team held discussions to consider these opportunities, with a focus on the company's governance issues. Key considerations were whether we could address the risk through only considering short-term exposures, and whether the returns would sufficiently compensate our clients for the risk associated with the counterparty.

ESG factors aside, MTN's financial fundamentals paint a positive credit picture. However, once ESG factors are considered, a weaker credit view emerges, owing to poor governance practices and seemingly a culture of non-compliance with regulations. Following several significant and publicised risk events (see below) we downgraded the counterparty multiple times over the past few years. While we consider credit rating agencies, our ratings are based on an internal assessment of the risk of default based on financial and non-financial metrics (including ESG factors). Our internal ratings are generally more conservative than those of the ratings agencies. MTN's credit rating was downgraded from Baa3 to Ba1 by Moody's in June 2017, citing the weakening credit profile of the government of South Africa (SA), and the resulting downgrade of the SA sovereign rating to Baa3 and a negative outlook[19]. Moody's subsequently placed MTN Group on review for a further downgrade in September 2018[20].

19 See rating action: 'Moody's downgrades MTN's global rating to Ba1, outlook stable', 13 June 2017; and 'Moody's downgrades South Africa's rating to Baa3 and assigns negative outlook'.
20 See rating action: 'Moody's places MTN Group's Ba1 rating on review for downgrade', 6 September 2018.

CREDIT FACTORS

MTN's financial fundamentals weakened dramatically in the 2016 and 2017 financial years, including profitability, as a result of a US$5.2 billion fine by the Nigerian Communications Commission for regulatory failures (the disconnecting of unregistered SIM cards). Some of its revenue growth challenges originated from losing many customers off the back of regulatory failures, coupled with the inherently volatile macro-economic markets MTN operates in. However, the balance sheet remains relatively strong and it continues to generate a healthy cash flow, allowing it to service its debt. MTN is, however, significantly more geared than its competitors. Some of the fundamentals have shown signs of normalisation, and, if the trend continues, it would improve our view of the financial strength of the group.

GOVERNANCE FACTORS

In addition to the financial and credit fundamentals, we focused on governance factors. For example, we evaluated and reviewed governance structures as well as broader indicators of MTN's legal and regulatory investigations and sanctions in recent years. We found an absence of governance and risk management specialists on MTN's board, though there are some individuals with experience in higher-risk territories in Africa. Historically, the group had no standalone Risk Committee – this task was delegated to the Audit Committee. Additionally, MTN operates in a highly regulated environment, across numerous jurisdictions and often in politically conflicted or troubled regions with nuanced legal and regulatory environments. In isolation, this presented heightened risk, including legal and regulatory non-compliance. Its operating environment added to our concerns about existing governance weaknesses. And while there is racial diversity on the board, gender diversity is lacking.

The group did, however, make some positive changes subsequent to the Nigeria fine, including:

- the board and shareholders approved the hire of Rob Shuter as group CEO and Ralph Mupita as CFO, as well as Stephen van Coller as M&A and Strategy Executive (who has subsequently left the group);
- amending its governance structures with the introduction of an executive responsible for governance; and
- the separation of the risk management function to report directly to the board.

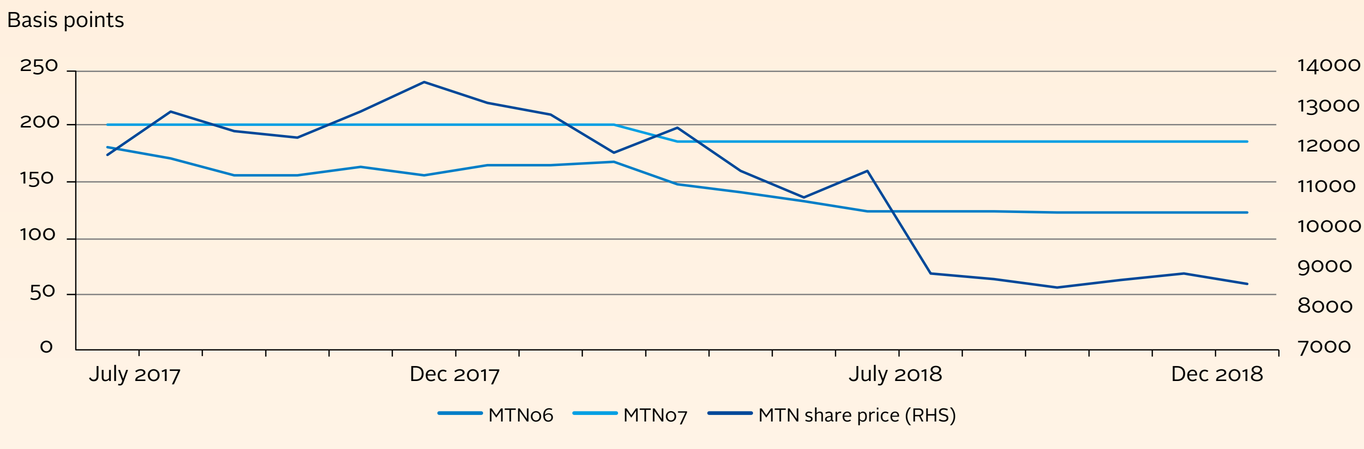
However, as at the date of our most recent review, we were not confident that the changes in governance structures implemented by the new management team were sufficient to reduce the risk of non-compliance to an acceptable level. Furthermore, we were also wary that previous governance shortfalls may give rise to legal and regulatory sanctions in future. This view was vindicated by the recent actions taken by the Nigerian Central Bank and the tax authorities.

IMPLICATIONS FOR SPREADS

There is limited secondary trading in MTN's debt and we have not seen major bond spread widening of the listed debt in response to governance risk events in recent years. On the contrary, spreads have remained unchanged, or have even narrowed. We believe this is a consequence of a lack of appreciation in the bond market of these regulatory risks, as well as the fact that most debt investors apply a buy-and-hold strategy. This does not allow for the level of active trading required for spreads to accurately reflect the risks.

In contrast, equity markets have reacted negatively, and MTN's share prices have fallen significantly over the past year (see Figure 32).

Figure 32: Price of MTN shares and selected bond yield spreads. Source: INet



Note: yield spreads are measured against the Republic of South Africa government bonds. MTN06 and MTN07 are the senior unsecured floating rate notes expiring on 13 July 2020 and on 13 July 2022, respectively.

THE INVESTMENT OUTCOMES

MTN is well-positioned in the SA market as well as in the other 22 markets in which it operates (due to the financial fundamentals that suggest a positive credit view and geographic diversity). Margins remain sound, and profitability is recovering following the fine by the Nigerian Communications Commission. Furthermore, markets outside of SA remain high-growth geographies, with MTN set to benefit from increased subscriber levels. This does, however, come with regulatory and political risk within the various jurisdictions MTN operates in, as well as the governance issues noted above, and the fines (in Nigeria) and lawsuit (in Iran) being evidence of some of the most pressing concerns.

Despite recent changes made to the executive, and comments from the CEO about improving the culture of operations, as well as other improvements noted above, the decision was made to not invest in longer-term instruments until reports of regulatory transgressions subside, investors have greater clarity on the Nigerian fine, and the current board and management team show they are committed to implementing new governance processes and policies. However, if the trend of normalising fundamentals continues, our view on the financial strength of the group would likely improve.

KEY TAKEAWAYS

Through this case study, we have demonstrated how the Futuregrowth Credit Team assessed MTN in terms of credit and ESG issues, particularly the company's governance. We have illustrated what the impact of poor governance can have on our credit outlook, credit rating and investment decision.

While the financial fundamentals appeared relatively sound, poor governance practices in the past presented a significant risk that we did not feel had been adequately priced and hence we have repeatedly declined investment opportunities in the counterparty. We agreed that we would continue to monitor the counterparty as a means of assessing whether the new board and management team has been successful in changing the governance culture of the organisation and addressing legacy governance issues.

We recognise that sound governance is a crucial factor to ensure that companies accessing public capital markets are sustainably managed for the long term. We have found that non-financial issues like ESG do matter, since they can impact a company's long-term performance and sustainability. As a fiduciary asset manager, we are responsible for managing our clients' funds in a sustainable and responsible manner that considers an appropriate risk-reward payoff. The end result is to provide sustainable returns that contribute to clients' long-term return objectives.

CORPORATE BOND

CREDIT RISK CASE STUDY: HSBC GLOBAL ASSET MANAGEMENT

AUTHORS — **Xavier Baraton, Global Chief Investment Officer, FI & Alternatives**
Helene Winch, Senior FI Responsible Investment Advisor

MARKET PARTICIPANT TYPE — **Asset Manager**

TOTAL AUM — **US$460.7 billion (as at September 2018)**

FIXED INCOME AUM — **US$185.9 billion (as at September 2018)**

OPERATING COUNTRY: — **Global**

Materiality of ESG factors	Time horizons	**Organisational approach** ✓	**Transparency and communication** ✓

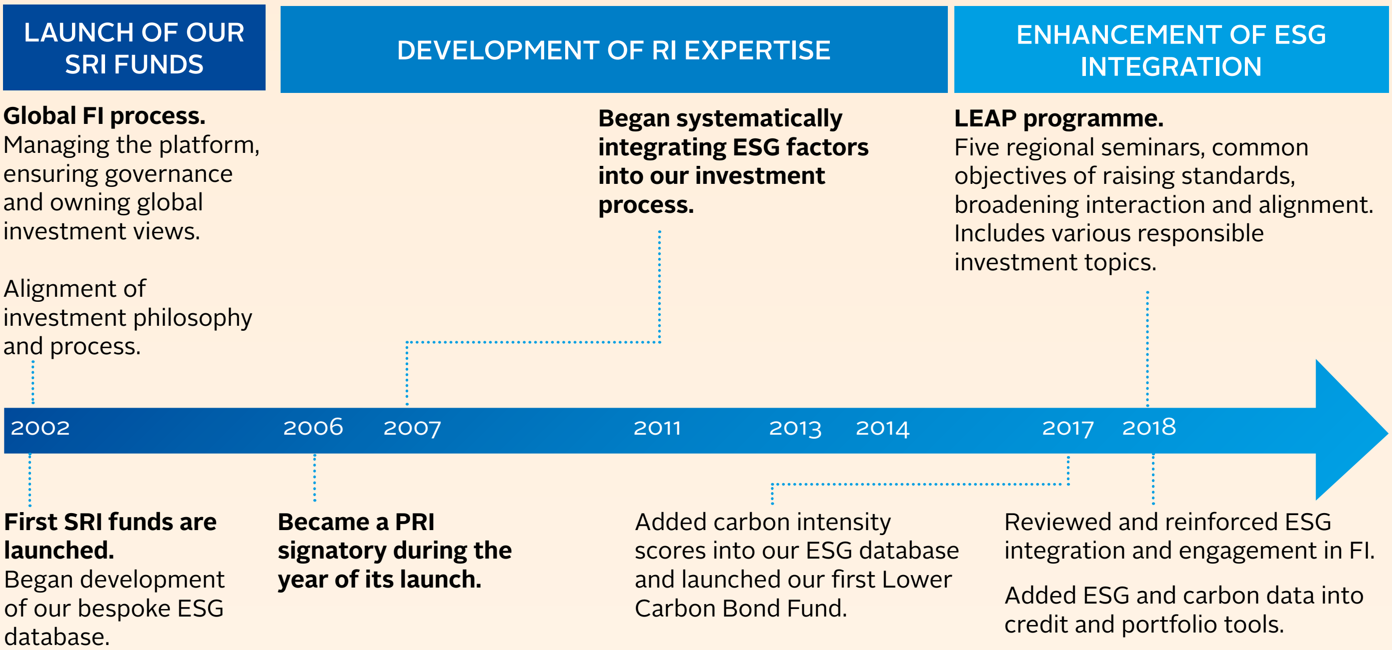
THE INVESTMENT APPROACH

We believe that ESG issues can have a long-term material impact on company fundamentals, and that they are linked to opportunities and risks which financial markets may not price appropriately.

The integration of ESG factors within our investment process is led by the FI investment team and is not a standalone process. The team comprises 177 members who rely on the support of the Global Credit Research platform, comprising 46 sector and regional analysts including 11 ESG champions, and a separate team of ESG specialists who support the process by providing ESG data, sector knowledge and thematic research.

The current approach is the result of a process (see Figure 33) starting in 2002 with the launch of our first sustainable fund. We integrated ESG factors more systematically across our FI process starting in 2007, using external ESG data providers for our research and analysis.

Figure 33: The development of the global approach to responsible investment. Source: HSBC Asset Management



Note: December 2018. For illustrative purposes only. Representative overview of the investment process, which may differ by product, client mandate or market conditions.

Taking the learnings from managing successful sustainable funds, backed by analytical research showing that considering ESG factors is beneficial to the investment process and rarely has a negative impact, we reviewed our process in 2017 and subsequently reinforced our ESG integration and engagement process. This involved the launch of a FI ESG thematic "university" to promote awareness, training and guidance on ESG subject matter, and recruiting a dedicated FI responsible investment advisor.

THE INVESTMENT PROCESS

The investment process starts with the selection of our investment universe, involving issuer-level screening in line with our controversial weapons exclusion policy and any other client or strategy exclusions.

We then consider the composite ESG score and summary for each issuer provided by our global ESG database, using data from third-party ESG data providers. The highest-risk names per sector (categorised by emerging and developed markets) are highlighted in the database and require a more detailed level of due diligence by the credit research team before any investment.

Our fundamental research framework for all companies incorporates ESG analysis as specific inputs, including a business profile detailing components of management, governance and strategy, and liabilities (legal, social and environmental). This analysis highlights – firstly and most importantly – any potential negative impacts on the operating profile of the company and, secondly, financial metrics such as revenue and debt/EBITDA. This is supplemented with issuer meetings by the credit research team where further ESG questions specific to the issuer or sector are raised.

CRA reports and external ratings are one of many inputs into our credit analysis, but we do not rely solely on them; in fact, we produce our own proprietary credit ratings. However, we use external credit ratings to define investment universes for funds and mandates. They are also among the second-party certifiers of green bonds we use for green bond assessment.

The credit process ensures we only select issuers whose operating and financial metrics we are comfortable with and exclude those that are viewed as unreliable or have potential idiosyncratic risks. The credit analyst approves each issuer with oversight from the Global Head of Credit Research.

Credit analysts communicate directly with their investment colleagues globally at sector and country level as well as through groups such as the ESG Analyst Group that communicates and shares ESG sector-level research, investment views and engagement findings between analysts in the credit and equity teams. One of the group's main outputs of 2018 was the production of 24 ESG sector checklists, summarising each industry's ESG issues and suggesting engagement questions, enabling analysts to focus on the most financially-material dimensions for credit. We monitor engagement activities on a quarterly basis, covering the contact that we have with issuers to ensure that we raise ESG-related questions with them and share our findings across the investment platform. We also monitor funds' ESG and carbon intensity scores, providing feedback into the portfolio construction process (see Figure 34).

One of the main challenges in integrating ESG factors in FI is data availability, partly due to the dominance of data providers using equity indicators. All ESG data needs to be mapped internally to our issuer universe. Coverage of unlisted or sovereign-owned enterprises has yet to be developed.

Figure 34: ESG integration throughout the investment decision-making process. Source: HSBC Global Asset Management

ESG CONSIDERATIONS ARE THE RESPONSIBILITY OF ALL OUR INVESTMENT PROFESSIONALS AND ARE INTEGRATED AT EACH STEP OF OUR INVESTMENT PROCESS

ESG CRITERIA ARE INTEGRATED THROUGHOUT THE INVESTMENT DECISION-MAKING PROCESS

INVESTABLE UNIVERSE

Industry exclusion

- Controversial weapons exclusion policy
- Clients' specific exclusion list (if required)

FUNDAMENTAL CREDIT ANALYSIS

Minesweeping

- Identified using quantitative and qualitative analysis, through absolute and relative approaches
- Enhanced due diligence on high-risk issuers

Credit review

- Issuer annual review, with internal ratings and outlooks featuring ESG considerations
- Backed by a proprietary global ESG intranet fed by third-party research and available to all FI investment teams

PORTFOLIO CONSTRUCTION

ESG oversight for all portfolios

- ESG score maximisation on clients' request

Thematic funds (SRI, low carbon)

Note: December 2018. For illustrative purposes only. Representative overview of the investment process, which may differ by product, client mandate or market conditions.

THE INVESTMENT OUTCOMES

As part of the fundamental credit process, we require a full understanding of the balance sheet including any potential ESG risks that could impact cash flow, debt/EBITDA and other credit metrics. For privately-held companies, the required financial and ESG information is often unavailable or insufficient to complete a credit review. When this happens, we engage with the issuer, requesting information from the treasurer, CFO or investor relations team.

In a recent example concerning a European unlisted company (with an external credit rating of AA and a low governance rating by an ESG service provider), we were unable to confirm the existence of policies related to anti-corruption. This information was required to complete the liabilities (legal, social and environmental) component of our credit analysis and was potentially financially material due to the issuer's high level of government-regulated income and involvement with government procurement. We contacted the company and spoke with the treasurer in 2017, when we requested the required policy. The company understood our requirements and agreed to disclose the policy. We were able to approve the credit and invest in its upcoming bond issue.

In another example, in the European unlisted market, a corporate with a complex financial structure and limited public disclosure meant we were unable to form a comprehensive view on the credit. This led to uncertainty about the potential for stable future cash flows and credit metrics. We attempted several engagements with company management to mitigate these concerns, which were unsuccessful and therefore further amplified our concerns. As a result, we felt that this risk was not being priced into the company's bonds. Based on this limited information, we internally downgraded the credit, and informed the company that we would not be able to participate in any new issues unless it increased its willingness to engage with debt investors.

In both examples, we also considered carbon risk in our credit analysis. However, given the lack of carbon intensity disclosure data in the unlisted corporate market, we are unable to complete our carbon risk calculations and may be increasingly restricted in the size of positions we can hold.

KEY TAKEAWAYS

Although we have been integrating ESG in our investment process for many years, the PRI's workstreams on FI and on CRAs has highlighted the requirements for clearer explanations of the investment process, particularly in how we consider ESG data and risks and opportunities in our credit research process, as well as the importance of issuer engagement.

Our recent enhancements have increased ESG knowledge and dialogue within the investment team, leading to better evidence of our ESG integration process to clients. We are also planning to introduce a public quarterly report on integrating ESG in FI to enhance our transparency.

Within our propriety tools, we can measure the outcome of our ESG integration through improved portfolio ESG and carbon scores. We believe this will lead to more sustainable risk-adjusted returns for clients in the long term.

Future plans include systematically embedding sector-specific ESG criteria directly into proprietary quantitative credit ratings. This will further enhance our ability to consider ESG data in the credit process.

CORPORATE BOND

CREDIT RISK CASE STUDY: LEGAL & GENERAL INVESTMENT MANAGEMENT

AUTHOR	**Catherine Ogden, Manager, Sustainability & Responsible Investment**
MARKET PARTICIPANT TYPE	**Asset Manager**
TOTAL AUM	**US$934.2 billion[21] (as at June 2018)**
FIXED INCOME AUM	**US$227 billion (active); US$261.2 billion (passive)**
OPERATING COUNTRY:	**UK, US and Hong Kong**

ACTION AREA				
	Materiality of ESG factors ✔	**Time horizons** ✔	**Organisational approach** ✔	Transparency and communication

THE INVESTMENT APPROACH

Across asset classes, Legal and General Investment Management (LGIM) sees unmanaged ESG factors as posing potential risks and opportunities, which can have a material impact on the performance of investments. In FI, we look for risks that could affect the credit quality of a bond and therefore its returns, as well as how ESG integration in fundamental credit analysis may unlock opportunities through identifying market mispricing, for example.

However, it is not easy to discern whether an ESG factor will affect credit quality. To conduct a review of our ESG framework, we had an open discussion about materiality with ESG, credit and equity professionals. We brought together working groups to debate materiality at a sector level and then upgraded our framework of analysis/tools accordingly. This helped to improve knowledge across the board and equip investment teams to apply ESG analysis to a specific investment security and strategy.

The result is that the same ESG assessment can yield different outcomes across credit portfolios, as well as credit and equity investment decisions.

For example, certain issuers are not considered in our Buy and Maintain funds because of potential longer-term ESG risk, but may still be held by other funds. Others may be held in a core fund despite a poor ESG profile because the ESG risk is not seen as likely to materialise as a financial risk that would affect credit quality or default risk – or indeed because the risk is already priced. However, for our Future World fund range – where we go further in addressing ESG issues – we would only incorporate a company with a weak ESG status if we expect to see improvements as a result of successful engagement.

We have not made organisational changes to our investment processes but have given more responsibility to the credit team and individual credit analysts:

- We have gone through a year-long process of reviewing our ESG structures, processes and tools to improve the robustness of our framework for assessment and to broaden understanding and knowledge of ESG across all areas of the business.
- The review has been a joint effort by our active investment teams and ESG professionals. The credit team has been particularly involved as we sought to improve the way in which our ESG tools and processes help to meet their requirements. Responsibility for reviewing the outputs of the tool on an ongoing basis sits across all teams, requiring cross-team discussion and collaboration. Responsibility for assessing the implications at the issuer and issuance levels sits with credit analysts.
- This approach has also involved drawing on the expertise of broader teams across the company – from data and technical teams to sales and distribution, and we have extended formal and informal training for these teams.
- Although the investment process within our core funds has not changed, we now have a more systematic, sophisticated and structured framework for assessing the materiality of ESG factors and monitoring changes, and have developed a culture in which ESG is valued and supported.
- As the ESG landscape evolves, it is important to adapt our approach and processes, driven by increasing regulatory and fiduciary pressures, growing evidence of the relationship between ESG and corporate financial performance, and greater client demand for evidence of ESG integration, particularly as ESG data and analytics improve.

21 These figures include assets managed by LGIMA, an SEC-registered investment advisor.

THE INVESTMENT PROCESS

We believe that a company's ESG profile is most comprehensively assessed by looking at two drivers of investment returns. The first is how business activities can impact the bottom line; for example, the risk of pollution by a miner leading to the loss of a licence to extract resources from a country. The second is how long-term trends may determine consumer demand for products and services; for example, the implications of the global battle against plastic for petrochemical companies and demand for oil.

Thinking about these issues is not new; however, we have been working to develop and enhance our tools and processes for assessing how companies are managing ESG factors, as well as how to integrate these findings into active fund management. This has involved:

- Firstly, evaluating long-term themes; in our working groups on energy, demographics, technology and politics, we generate insights into how companies are adapting to a rapidly-changing world. Secondly, through considering LGIM's Active ESG View.
- Our Active ESG View seeks to identify and represent the ESG risks and opportunities within each company. It is an essential component of the overall active research process. It takes the inputs that form the LGIM ESG Score as a starting point for assessing ESG quality, and then goes a step further by incorporating additional quantitative and qualitative inputs.
- It involves teams leveraging their sector expertise, knowledge of company dynamics and corporate access. This leads to a status being created for each company ranging from very strong to very weak. The degree to which this ESG View drives bond and equity selection will depend on the fund design.
- For our core active products, the Active ESG View is fully integrated into how we fundamentally assess a company and is considered alongside all other components of investment analysis. Within core products, it remains at the portfolio manager's discretion as to whether a company with a weak ESG status offers the necessary level of return for the given level of risk.
- However, for our Future World fund range – where we go further in addressing ESG issues – we would only incorporate a company with a weak ESG status if we expect to see improvements in the future as a result of successful engagement.

THE INVESTMENT OUTCOMES

Digital Realty (DLR) is an example of a corporate issuer we consider appropriate for core funds and our Future World fund range, based on considering ESG factors as part of our credit analysis. DLR is a real estate investment trust that invests in data centres and provides colocation and peering services (see Figure 35).

Long-term themes: we believe the fundamentals of the alternative property space that DLR operates in (data warehouses) are strong. DLR is doing more than adapting to the rapidly-changing world, with demand for the company's services driven by long-term technology trends, the cornerstone of LGIM's long-term view on the issuer.

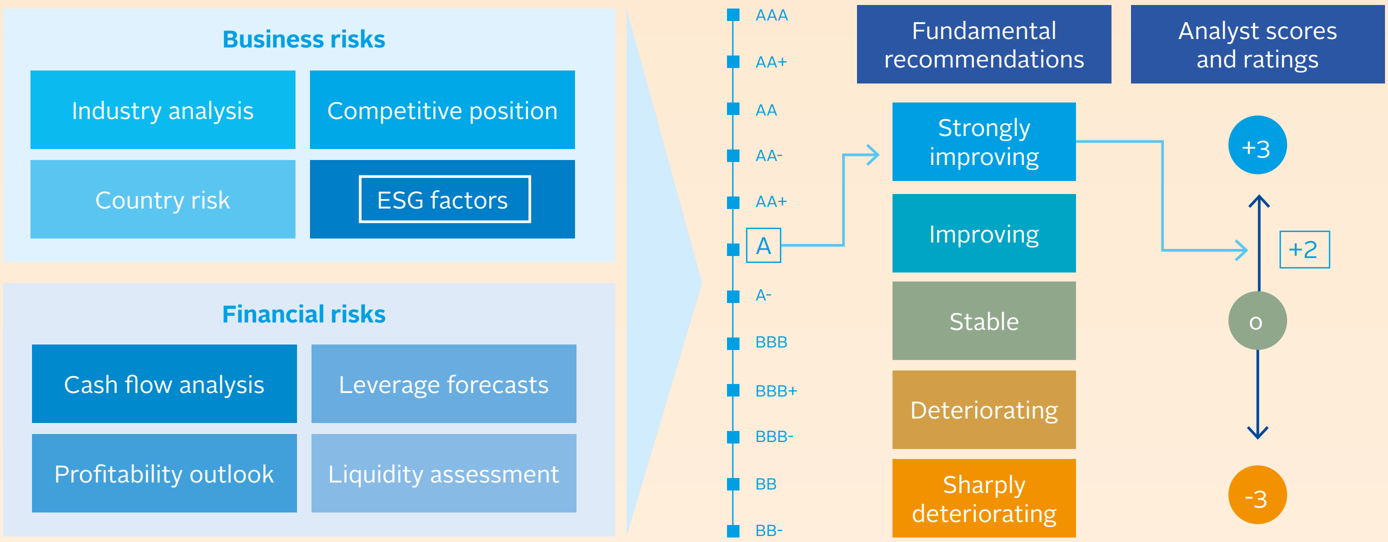
Active ESG View for our Core Funds: the company performs well on our governance assessment, while environmental and social performance is weighed down by a lack of disclosure. However, our meetings with the company and recent site visits have provided valuable insights into its environmental and social practices. We were particularly encouraged to hear of the company's initiatives to improve energy efficiency (for example, by using locally-focused air conditioning and using river water in the cooling process), its targets for renewable energy procurement, and move from diesel back-up generators to batteries. We believe that focusing on energy efficiency can create customer value for DLR and translate into greater profitability. Overall, we view the sector as low risk.

Active ESG Views for Future World Credit Funds: LGIM considers DLR to comfortably meet the standard required; we see long-term trends as beneficial to the sector, and we are reassured by the responsibility DLR is assuming to manage environmental impacts. DLR issued its first green bond in June 2015 (the first data centre REIT to do so), allocating $493 million of net proceeds to nine global green building projects. Moving forward, we expect issuance of a green bond from the company; if pricing is appropriate, we will consider including it in our Future World Credit Funds.

Engagement with the company: although we consider the sector to have relatively low ESG risk, and despite being reassured about environmental and social practices during our visits, we are asking the company for better disclosure in these areas. This will enable us to monitor and evaluate company ESG performance consistently and regularly, and will provide the wider market with the tools to do so. If the ESG risk status changes, we will be better equipped to factor this into our credit assessment in a timely manner.

LGIM's credit recommendation: as stated above, we believe that DLR's global positioning stands to benefit from broader developments in technology and strong global demand for data centres. It has solid credit fundamentals and is attractive on a relative value basis versus its peers. We also think that the company's focus on energy efficiency and sustainability has medium to long-term benefits for its stakeholders and can ultimately create value for customers. DLR has made a conscious effort to increase the amount of renewables in its fuel mix (doubling since 2014), and a continuation along these lines could help to increase asset values and reduce operating costs in the future. The potential launch of a new green bond underlines the company's commitment to green initiatives.

Figure 35: Issuer research - fundamental and relative value recommendations. Source: LGIM



KEY TAKEAWAYS

The key takeaways from our work on integration to date are:

- that the process and path to integration is not linear;
- if starting out, be prepared for bumps along the way; if already up and running, be prepared to review your approach, take on board criticism and listen to suggestions from colleagues and stakeholders;
- a structured framework of analysis and application for ESG is extremely valuable, but build in flexibility so that it can evolve as data, information, understanding of ESG and the nature of risks and opportunity change;
- be prepared for ESG outcomes to be applied differently across portfolios and investment strategies;
- build efficient and accessible tools that are intuitive for all relevant teams across the business; and
- draw on expertise from across investment teams and from around the business, including technical teams.

CORPORATE BOND

CREDIT RISK CASE STUDY: NIKKO ASSET MANAGEMENT

AUTHOR	**Akihiko Yoshino, Credit Research Group Manager**
MARKET PARTICIPANT TYPE	**Asset Manager**
TOTAL AUM	**US$220.5 billion (JPY25.0 trillion – as at September 2018)**
FIXED INCOME AUM	**US$31.4 billion (JPY3.5 trillion – as at September 2018)**
OPERATING COUNTRY:	**Global**
ACTION AREA	**Materiality of ESG factors** ✔ / Time horizons / Organisational approach / Transparency and communication

THE INVESTMENT APPROACH

Nikko Asset Management (Nikko AM) believes that assessing creditworthiness requires considering quantitative factors such as debt service ability or financial strength, as well as qualitative factors. ESG-related risks are incorporated as important qualitative viewpoints in our investment process.

THE INVESTMENT PROCESS

We use 24 qualitative viewpoints across our coverage, comprising two environment-related factors, three social-related related factors and three governance-related factors. Our internal analysts, who are responsible for both fundamental analysis and ESG analysis, provide a comprehensive view on the creditworthiness of issuers to portfolio managers.

To integrate ESG viewpoints and fundamental analysis, our internal analysts communicate with issuers, and closely watch news flow and external ESG scores. All 24 qualitative viewpoints are updated monthly and shared with portfolio managers. The team discusses and implements necessary actions if any serious change is found.

THE INVESTMENT OUTCOMES

The example below illustrates how Nikko AM has integrated a material social factor into fundamental credit risk analysis and investment decision making.

Nikko AM analysed a company that operates a restaurant chain in Japan with fast food, diner and sushi-go-round restaurants. It is the largest and fastest-growing company in the industry, with aggressive expansion plans. When we made our investment decision, it was rated as BBB by the Japan Credit Rating Agency (JCR) and downgraded to BBB- approximately one year later.

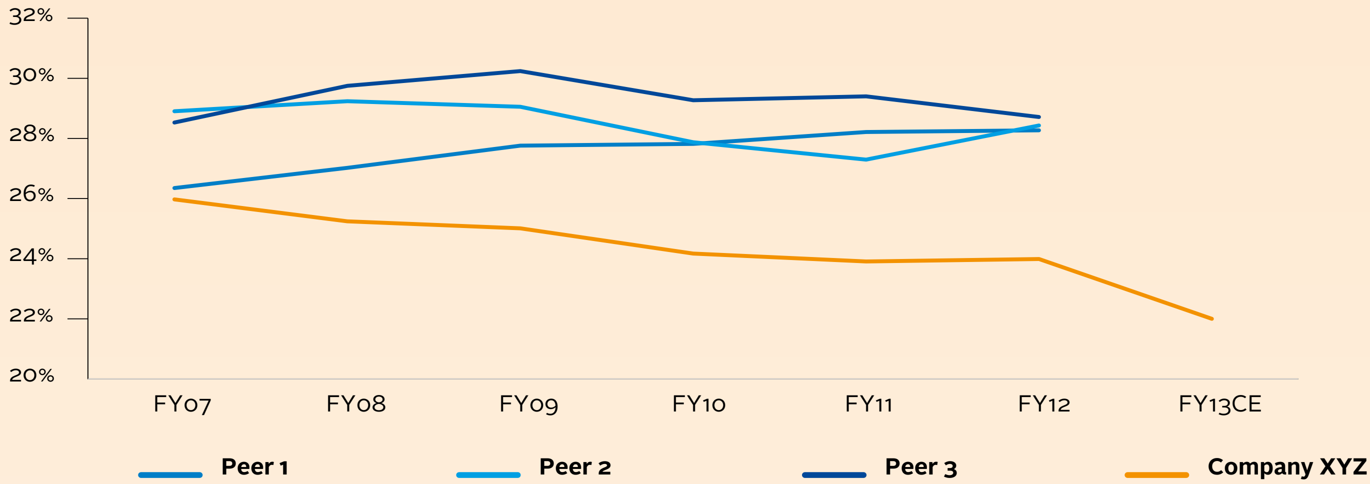
We identified a social factor related to human capital that could potentially increase this company's credit risk; it was expanding too fast, with an irrational cost-cutting method that drastically increased employee workload and caused a mass exodus.

We decided not to purchase this company's bond; while its financial performance looked better than its peers, we deemed it an unsustainable investment based on our analysis of traditional financial factors as well as non-financial views.

From traditional financial analysis, we found that the company's profitability was due to lower labour expenses compared to peers (see Figure 36). But upon observing its stores, we saw that its low-cost operation relied on serious staff shortage, not driven by efforts to improve efficiency.

As industry competition stiffened, and food prices soared, the company had no choice but to rely on overworking staff. We concluded that the company could not maintain its growth and expansion without resolving the staff shortage problem.

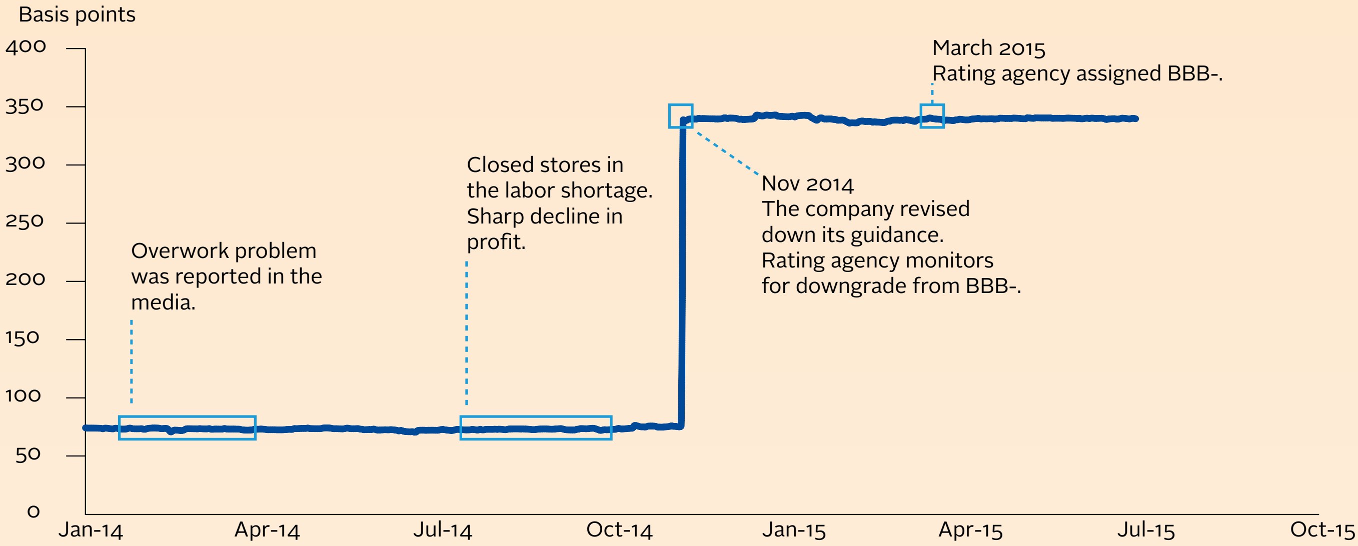
Figure 36: Comparison of labour expense to sales ratio of selected companies in the Japanese restaurant industry. Source: Companies' accounts



Company XYZ is the subject of the case study.

The issue of overworked employees caught the media's attention in 2014. Meanwhile, because of the staff shortage, the company had to reduce its hours of business, and its financials weakened as a result. The company eventually suffered a sharp drop in profit and its bond spread over Japan government bonds (JGB) widened in November (see Figure 37) when JCR hinted at a possible downgrade from BBB-.

Figure 37: Spread of Company XYZ's short-term bond to JGB. Source: Nikko AM



Note: JGB Japan Government Bond. Short-term is one to three years.

KEY TAKEAWAYS

The example above illustrates how we successfully protected our portfolio from serious bond price decline. Our investment process to incorporate non-financial ESG views proved to be effective.

Though social matters are generally difficult to factor into investment decisions, we feel it is one of the most encouraging examples of how ESG viewpoints can be successfully integrated with fundamental credit analysis. This supports the view that combining traditional financial analysis with non-financial factors and proprietary research can pay off.

CORPORATE BOND

CREDIT RISK CASE STUDY: NN INVESTMENT PARTNERS

AUTHOR	**Jod Hsu, Investment Analyst**
MARKET PARTICIPANT TYPE	**Asset Manager**
TOTAL AUM	**US$227 billion (as at September 2018)**
FIXED INCOME AUM	**US$202 billion (as at September 2018)**
OPERATING COUNTRY:	**Global**

ACTION AREA	Materiality of ESG factors ✔	Time horizons	Organisational approach	Transparency and communication

THE INVESTMENT APPROACH

The integration of ESG analysis in NN Investment Partners' (NNIP) credit investment process enables us to identify opportunities and avoid downside risks. ESG analysis is integrated into our credit analysis process and, ultimately, embedded in our internal rating assignment. We officially introduced ESG analysis into our internal rating assignment in 2015 and continuously enhance the integration process. Despite that our internal rating assignment remains the key element in the investment process, credit ratings by CRAs, on which we have no formal investment limits, are still important as some of our mandate guidelines are based on them. Additionally, if the internal rating of a company differs significantly from CRA ratings, the credit analyst will review the internal rating to ensure that all perspectives are considered.

THE INVESTMENT PROCESS

Working with our responsible investment teams, credit analysts with industry expertise first identify the material ESG issues within their sectors. The credit analysts then evaluate the performance of each company they cover within the sector against these factors, looking at negative and positive impacts where appropriate. To complement this internal analysis, we also use ESG data and scores from external data vendors. The aggregate ESG analysis forms part of our fundamental evaluation of business and strategy, and corporate governance. In cases where there is expected to be a material financial impact from an ESG-related issue, this feeds into our assessment of a company's financial profile.

When a company has been identified as having very weak performance in areas where ESG analysis applies or with material controversies, discussion is often elevated to the Controversy & Engagement Council (CEC). The CEC always assesses companies with higher controversies. It receives input from portfolio managers, analysts (on the equity as well as the credit side) and ESG data providers. The council may then decide to put a name on the company-wide exclusion list. We might also engage with the company depending on whether we are currently invested, the degree to which the company is receptive to engagement, and the expected rate of positive change that engagement might facilitate.

THE INVESTMENT OUTCOMES

We have chosen the automotive industry, which is undergoing significant transformation, to illustrate how ESG factors provide a valuable mechanism for analysing these changes.

While emission regulations remain the core focus of environmental issues for the sector, substantial litigation claims and recalls, partly driven by inadequate governance, have occupied headlines and driven credit valuations in recent years. The diesel scandal is an example where this approach has proven valuable. While Volkswagen has spent approximately €30 billion on settlements, fines and recalls, and suffered credit rating downgrades along the way, other original equipment manufacturers also spent large amounts on retrofitting or replacing old diesel vehicles.

The European Union CO_2 emission target is another example. The CO_2 emission target of the fleet average set by the EU is 95 grams of CO_2 per kilometre by 2021. Car manufacturers that fail to achieve this target must pay a €95 fine per gram from the first gram of exceedance onwards per vehicle sold. Missing the target could be a significant risk for car manufacturers, from a financial (see Figure 38) and reputational perspective.

Figure 38: Carmakers on CO_2 emissions and potential fines. Sources: PA Consulting, ACEA, Bloomberg and NNIP

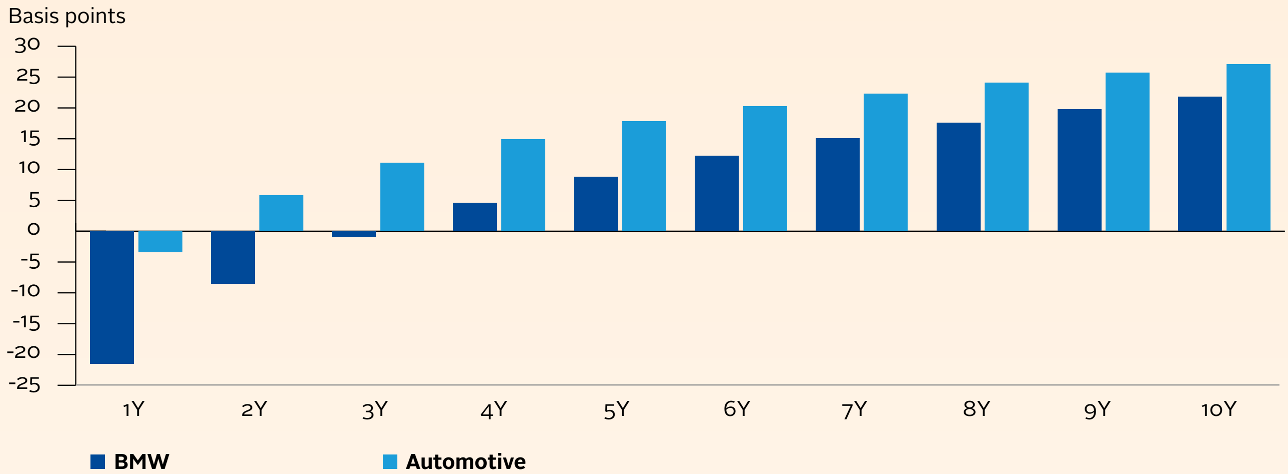
	ACTUAL DATA (g CO_2/KM)				FORECAST (g CO2/KM)		(g CO_2/KM)		Thousand units	€ million	%
Carmaker	2011	2013	2015	2016	2018	2021	2021 target	Deviation	2017 new registrations in EU and EFTA	Potential fine	Potential fine as % of operating profit
BMW	145.0	134.4	126.4	121.4	119.3	104.7	100.3	4.4	1,042	436	4.4%
Daimler	153.0	136.6	124.7	124.7	117.2	102.1	100.7	1.4	1,011	134	1.0%
FCA	118.3	123.8	122.2	120.0	116.6	101.2	91.1	10.1	1,047	1,004	13.2%
Ford	132.7	121.8	118.0	120.0	110.8	96.1	93.0	3.1	1,043	307	7.2%
JLR	206.0	182.0	165.0	150.0	142.3	130.9	132.0	-1.1	237	-	-
PSA	128.5	115.7	104.6	110.3	104.4	95.6	92.6	3.0	2,484	708	22.9%
Renault-Nissan	129.0	119.2	112.1	109.7	106.5	91.4	92.1	-0.7	2,175	-	-
Toyota	126.4	116.8	108.3	105.5	91.7	83.5	94.3	-10.8	729	-	-
Volks-wagen	135.4	128.9	121.5	120.0	115.7	100.3	96.3	4.0	3,638	1,382	10.0%
Volvo	154.0	130.8	121.9	119.2	110.0	73.1	103.5	-30.4	301	-	-

Besides downside risks, there are opportunities for companies that are well positioned for these emerging environmental and social trends. As the electrification of vehicles remains crucial to reduce CO2 emissions, companies with leading technologies in electrification, such as 48V hybrid, batteries and electronics, should benefit from the industry transformation.

However, the appropriate time horizon for investors to assess impact from ESG factors remains challenging. Though the CO2 emission target (2021 and further in 2030) appears to be a story for the longer term, litigation risks could surface in a relatively short period of time, which was the case in the diesel scandal.

We strongly believe that ESG factors are important to the fundamental credit strength of companies in the automotive sector, and that they can drive credit valuations. In our ESG assessment, BMW is considered a strong performer due to its electric vehicle (EV) strategy and better product control in emissions. In the last three years, the senior Z-spread curve of BMW significantly outperformed the whole automotive sector (see Figure 39), showing that ESG performance can impact spread performance.

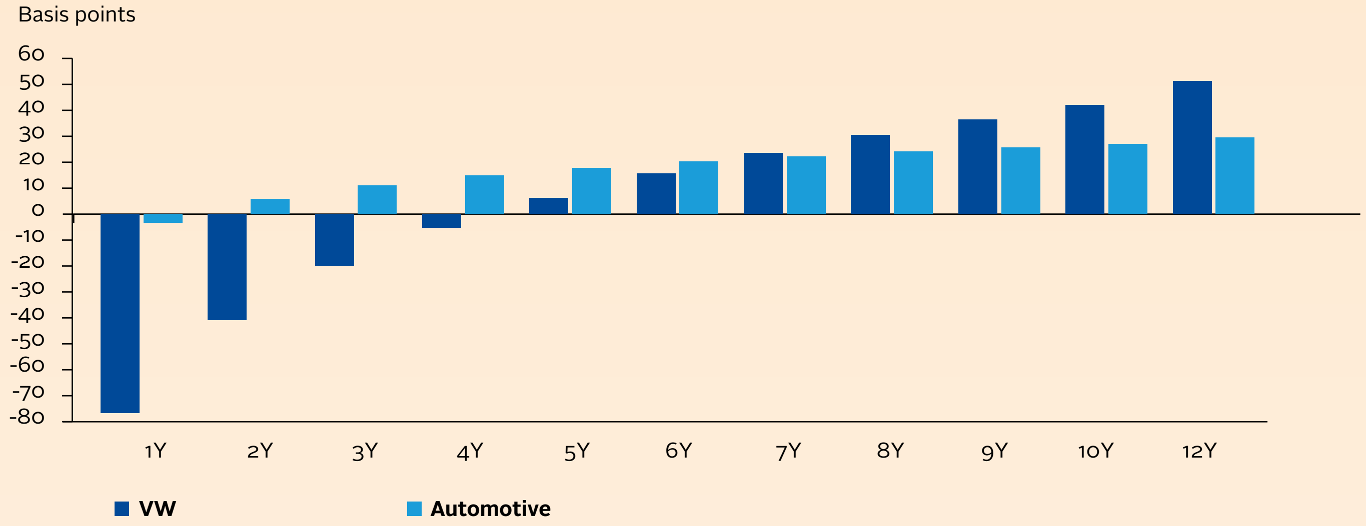
Figure 39: BMW versus Barclays EUR aggregate automotive senior curve Z-spread change. Sources: Bloomberg and NNIP



Note: the senior curve Z-spread change is in the period between 4/1/2016 and 22/11/2018.

Besides focusing on ESG leaders, it is also important to identify companies exhibiting an *improving* ESG profile. Volkswagen is a good example of this. After the diesel scandal, the company launched an ambitious EV strategy, reshaped its corporate culture and improved governance policies and practices. We believe the improving ESG profile of Volkswagen is reflected in the outperformance of short to medium-term bonds versus the index (see Figure 40).

Figure 40: Volkswagen versus Barclays EUR aggregate automotive senior curve Z-spread change. Sources: Bloomberg and NNIP



Note: the senior curve Z-spread change is in the period between 4/1/2016 and 22/11/2018.

KEY TAKEAWAYS

The appropriate integration of ESG analysis provides an extremely useful framework for assessing the potential impact of certain non-financial, hard-to-model factors on an issuer's credit profile and rating. But it is often difficult to determine the materiality of each issue and the relevant time horizon.

It is also important for FI investors to monitor and engage with companies regarding serious ESG shortcomings and controversies, as improvements may not only positively contribute to society, but also provide attractive investment opportunities.

CORPORATE BOND

CREDIT RISK CASE STUDY: NOMURA ASSET MANAGEMENT

AUTHOR	**Jason Mortimer, Senior Portfolio Manager**
MARKET PARTICIPANT TYPE	**Asset Manager**
TOTAL AUM	**US$450 billion (as at 30 September 2018)**
FIXED INCOME AUM	**US$156 billion (as at 30 September 2018)**
OPERATING COUNTRY:	**Global**
ACTION AREA	**Materiality of ESG factors** ✔ / Time horizons / Organisational approach / Transparency and communication

THE INVESTMENT APPROACH

The launch of a specialised investment-grade corporate debt strategy led Nomura Asset Management to develop a quantitative ESG risk and portfolio analysis framework focused on corporate sustainability issues material to credit investors. Our research showed that credit portfolios of higher ESG quality have fewer rating downgrades and higher Sharpe ratios, two key performance measures for FI. Companies in this strategy's investment-grade universe operate in mature, asset-heavy industries and regulated sectors, vary in terms of corporate governance quality and business ethics risk, and have exposure to long-term challenges such as asset impairment from the low-carbon transition. This creates opportunities for credit quality and performance differentiation from ESG integration.

However, traditional external ESG ratings by specialised service providers often reflect governance materiality from an equity shareholder perspective, in ways that may differ or conflict with credit investor priorities. These ESG ratings often emphasise growth opportunities from sustainability that are difficult for debt holders to monetise. As FI investors, we are primarily concerned with the potential for ESG factors to materialise as downside to our investments, so an ESG assessment focused on credit-material, downside risks is necessary. Our challenge was to design a quantitative framework to assess the ESG quality of corporate credits, complementing the team's existing fundamental (i.e. qualitative) approach to ESG integration. We believe the quantitative framework will improve the sustainability and quality of the strategy's financial returns, and – via the market price signal and capital allocation – send a clear message to companies that outperformance in sustainability issues is a key feature of their assessment by investors.

THE INVESTMENT PROCESS

We augmented our existing fundamental ESG credit research with a quantitative framework for identifying and assessing ESG quality, with focus on downside credit risks.

The quantitative framework has two steps:
- Mapping industries against sustainability issues that are financially material, credit-focused, and have identifiable downside risk potential, to derive industry-specific ESG weights; and
- Quantifying the ESG quality of corporate credits by applying the weights derived in step one to our own assessment of ESG performance, based on industry-specific, credit-relevant, and downside-risk focused sustainability issues.

For step one, we identified a starting set of ESG factors that are potentially relevant to corporate credit assessment by referencing SASB, GRI, CDP, PRI resources and in-house expertise. We consolidated these ESG factors into a set of sustainability issues, and categorised these into ESG key issues (see Figure 41).

Figure 41: Credit-relevant ESG factors consolidate into sustainability issues that are organised into ESG key issues. Source: Nomura Asset Management

ESG FACTORS	SUSTAINABILITY ISSUES	ESG KEY ISSUES
Environmental factors (multiple)	GHG emissions	Environmental
	Air pollution	
	Water use and pollution	
	Waste management	
	Resource sustainability	
Social factors (multiple)	Product safety and product use impact	Social
	Customer health, welfare and safety	
	Human rights and community relations	
	Labour relations and practices	
	Diversity	
Governance factors (multiple)	Transition management (climate change, low-carbon transition, stranded asset risk)	Governance
	Business ethics (governance, practices, fraud, tax and accounting risks)	
	Supply chain (sourcing of materials, labour and services)	
	Data (customer privacy and cybersecurity)	
	Operations (quality, safety and resiliency)	

A key requirement for our quantitative framework was that it only includes credit-relevant sustainability issues for each industry if it had specific downside potential risks. Firstly, we defined these as negative externality risk, reputational risk and business sustainability risk (see Figure 42).

Figure 42: ESG downside risk criteria for determining credit relevancy. Source: Nomura Asset Management

ESG DOWNSIDE RISKS	EXAMPLES OF HOW ESG DOWNSIDE RISK MANIFESTS IN CREDIT INVESTMENTS
Negative externality risk	Costs of environmental and social negative externalities (emissions, pollution, public health impacts) internalise as direct liabilities through future taxation, fines and regulation, and clean-up costs, etc.
Reputational risk	Social rejection of controversial or unethical business practices, or reaction to corporate scandals, impairs market perceptions of credit quality and access to funding.
Sustainability risk	Poor management of changes in external conditions (resource availability, regulation, environmental limits, social expectations and cyber risk) leads to credit deterioration or insolvency.

Subsequently, for each sector, we considered as material only sustainability issues with a clear link to financial credit quality (see Figure 43).

Figure 43: Sample of our materiality map of sustainability issues by industry sector. Source: Nomura Asset Management

	ENVIRONMENTAL					SOCIAL					GOVERNANCE				
Sustainability issues	GHG emissions	Air pollution	Water use and pollution	Waste management	Resource sustainability	Product safety and product use impact	Customer health, welfare, and safety	Human rights and community relations	Labor relations and practices	Diversity	Transition management (climate change, low-carbon transition, stranded asset risk)	Business ethics (governance, practices, fraud, tax & accounting risks)	Supply chain (sourcing of materials, labour, and services)	Data (customer privacy, cyber security)	Operations (quality, safety, and resiliency)
Basic industry															
Chemicals	■	■	■	■	■	■					■	■			■
Metals and mining	■	■	■	■	■			■	■		■	■			■
Paper	■	■	■		■	■					■		■		
Capital goods															
Aerospace/ defense				■	■	■					■	■	■	■	
Building materials	■	■	■	■	■	■					■	■			■
Diversified manufacturing				■	■	■					■	■	■		
Construction machinery					■	■							■		■
Packaging	■	■	■	■	■	■	■						■		
Environmental	■	■		■	■	■			■		■				■
Consumer cyclical															
Automotive				■		■			■		■		■		
Leisure	■	■		■	■		■		■		■				■
Gaming					■		■					■			■
Home construction			■		■	■	■				■				■
Lodging			■		■				■		■				
Retailers					■				■	■			■	■	
Consumer cyc services			■		■	■				■				■	

To complete step one, we used our credit materiality map to derive industry-specific weights for each ESG key issue. ESG key issue weights are a function of the number of sustainability issues per ESG key issue, for each industry and relative to all other industries. The underlying concept is that industries naturally have varying degrees of exposure to ESG risks, but the factors with the highest exposure in relative terms determine which are the key drivers of ESG risk pricing, and ultimately contribute the most to determining ESG quality. Relying on our proprietary credit materiality map to attribute these weights ensures objectivity and internal consistency.

In step two, we generate weighted corporate ESG quality scores, based on our assessment of performance against credit-material sustainability issues. We assess the material sustainability issues for each company with a score based on the average of a sub-set of corporate ESG factors from a third-party ESG ratings provider. Sustainability issue scores for each company are aggregated as three ESG key scores, and finally as an overall ESG quality score based on that company's industry-specific weights derived in step one. By only incorporating data from credit-material ESG factors, and deriving ESG weights from our mapping of credit and downside risk-based materiality, we aim to improve the usability of the quantitative framework with outputs that are transparent and relevant to the decisions we make in our credit investment process.

These steps are integrated into our security selection and portfolio construction process to augment our fundamental analysis of credit and qualitative ESG considerations. Individual corporates can be objectively evaluated based on ESG quality and sustainability issue scores, independently and versus industry peers, at the global, regional and country level to identify credit-material areas of relative strength and weakness for further analysis (see Figure 44). Aggregate data provides insight into performance across material ESG and sustainability risks across the portfolio (see Figure 45). Portfolio-level ESG quality statistics can be compared to targets or benchmark indices to identify potential areas of underperformance. Based on these results, analysts and portfolio managers conduct targeted follow-up analysis, which can result in changes to the portfolio.

Figure 44: Example of scores for sustainability issues and ESG quality for individual electric utilities. Source: Nomura Asset Management

	RELATIVE MATERIALITY			AVG OF SUSTAINABILITY ISSUES				ENVIRONMENTAL				SOCIAL				GOVERNANCE			
Issuer	Environmental weight	Social weight	Governance weight	Environmental score	Social score	Governance score	ESG quality score	GHG emissions	Water use and pollution	Waste management	Resource sustainability	Product safety and product-use impact	Customer health, welfare, and safety	Human rights and community relations	Labor relations and practices	Transition management - climate change, physical risk, low-carbon economy	Business ethics - governance risks, practices, fraud and accounting	Data - customer privacy, cyber security	Operations - quality, safety and resiliancy
Electric utility A	43%	27%	30%	6.7	2.7	5.1	5.1	9.5	5.4	5.3	6.4				2.7	5.8	4.8	7.5	2.2
Electric utility B	43%	27%	30%	5.9	3.3	6.6	5.4	9.0	5.6	3.6	5.6				3.3	7.1	5.8	8.3	5.1
Electric utility C	43%	27%	30%	6.9	4.8	7.1	6.3	9.0	3.5	7.9	7.0				4.8	5.8	7.1	9.2	6.1

Note: we impose certain constraints on the ESG data used as inputs to the quantitative framework for quality control purposes. As a result, the quantitative assessment of certain sustainability issues is on a consolidated basis. Blank cells indicate that there are no FI material data available.

Figure 45: Example of aggregate scores for sustainability issues and esg quality at the portfolio level. Source: Nomura Asset Management

	RELATIVE MATERIALITY			SUSTAINABILITY ISSUES				ENVIRONMENTAL				SOCIAL				GOVERNANCE			
Portfolio	Environmental weight	Social weight	Governance weight	Environmental score	Social score	Governance score	ESG quality score	GHG emissions	Water use and pollution	Waste management	Resource sustainability	Product safety and product-use impact	Customer health, welfare, and safety	Human rights and community relations	Labor relations and practices	Transition management - climate change, physical risk, low-carbon economy	Business ethics - governance risks, practices, fraud and accounting	Data - customer privacy, cyber security	Operations - quality, safety and resiliency
Sample pf	35%	33%	32%	6.9	4.8	5.8	5.8	8.0	6.2	6.1	6.8	4.1	6.3		4.7	5.4	5.5	7.5	5.4
Benchmark	24%	34%	37%	6.8	4.4	5.4	5.3	7.9	7.0	6.4	7.4	3.7	5.6	2.8	4.6	6.1	5.5	6.3	5.5
Pf vs benchmark	11%	0%	-5%	0.0	0.4	0.4	0.5	0.1	-0.7	-0.3	-0.6	0.4	0.7		0.1	-0.7	0.0	1.2	-0.1

Note: blank cells indicate that there are no FI material data available. Pf (portfolio).

THE INVESTMENT OUTCOMES

Our ESG quality assessment has a direct impact on security selection and portfolio construction. In one case, an insurance company (external credit rating BBB-) under consideration for portfolio inclusion was internally rated positively on financial factors but ranked low on social and governance quality. Further investigation revealed sustainability concerns from concentrated and entrenched leadership, and weak responsible investment practices. As a result, the credit was not included in the portfolio.

In another case, ESG quality analysis of a prospective model portfolio with high exposure to environmental and governance key issues revealed that the model portfolio in aggregate underperformed in these areas. This was traced to an emerging market oil and gas credit (external credit rating BBB+) with exceptionally poor performance in waste management, environmental sustainability and operations safety. Despite this credit's attractive risk-adjusted spread, we replaced it with a higher ESG quality credit that also fulfilled the investment mandate. Clear communication of our quantitative ESG framework to issuers will, we expect, work to "complete the circuit" by highlighting how and why specific sustainability issues matter in their assessment, thus encouraging improvement across all companies.

KEY TAKEAWAYS

The development and application of this quantitative framework aids our ESG analysis by focusing on sustainability issues with identifiable downside credit risk elements. The in-depth look at external ESG rating agency factors used as inputs to our framework highlighted the need for these data providers to produce more granular data for investors to apply tailored, flexible approaches across asset classes. We plan to further explore the alpha potential of ESG and credit risk-adjusted corporate spreads, the integration of corporate and sovereign ESG ratings, and the introduction of a duration element to the weighting formula.

CORPORATE BOND

CREDIT RISK CASE STUDY: TRIODOS INVESTMENT MANAGEMENT

AUTHOR	**Andrea Palmer, Product Specialist, Impact Equities and Bonds**
MARKET PARTICIPANT TYPE	**Asset Manager**
TOTAL AUM	**US$4.7 billion (as at June 2018)**
FIXED INCOME AUM	**US$3.1 billion (as at September 2018)**
OPERATING COUNTRY:	**Pan-European**

ACTION AREA	Materiality of ESG factors	Time horizons	**Organisational approach** ✔	Transparency and communication

THE INVESTMENT APPROACH

Triodos Investment Management is an impact investment firm that operates on the conviction that capital can be used to facilitate intentional and measurable positive change. This philosophy has been embedded into all Triodos Sustainable Bond Fund investment activities and the overall thesis underpinning its investment approach.

In April 2018, our listed equity and bond funds initiated a revised and enhanced investment strategy, moving away from the existing ESG best-in-class and exclusion approach to a strategy that cherry-picks corporate and sub-sovereign issuers and issues that offer commercial solutions to global sustainability challenges.

THE INVESTMENT PROCESS

Our approach to impact investing through listed bonds requires us to maintain an understanding of the chain reactions prompted by global sustainability challenges, and to establish a long-term vision as to what solutions can most effectively, and most sustainably, solve them. Our in-house, and often qualitative, research guides the investment process by developing opinions of each issuer's commitment to sustainability and contribution to our sustainable transition themes through their products, services and/or operations. For sovereign or sub-sovereign green and/or project bonds, we assess the use of proceeds and overall impact against our thematic contribution screening. We refer to both of these groups as impact bonds. The Triodos Sustainable Bond Fund seeks investments that address the following themes:

- sustainable food and agriculture;
- renewable resources;
- circular economy;
- sustainable mobility and infrastructure;
- innovation for sustainability;
- prosperous and healthy people; and
- social inclusion and empowerment.

After we confirm that the issuer's business positively contributes to our themes, we analyse it against our group process, product and precautionary minimum standards. In this step, our analysts assess the issuer to ensure its business model does not hamper market adoption of sustainable solutions. The highest risk companies in terms of ESG and commercial viability are removed from the investment universe, as it is unlikely that these companies would pass our minimum standards screen. In short, we apply our minimum standards for three reasons: 1) to ensure companies meet our fundamentals and have no negative environmental or societal impact 2) to remain divested from companies whose business practices hinder the sustainable transition, and 3) to embed ESG and company longevity risk management into our company analysis.

Once an issuer has passed both levels of sustainability criteria – i.e. the screen for thematic contribution (positive inclusion) and minimum standards (negative exclusion) – the team reviews the fundamentals of the issuer and the issuance, including the credit rating and spreads. The Triodos Sustainable Bond Fund is constrained to euro-denominated, investment-grade instruments, as defined by third-party rating agencies, so the investment universe is limited to this market segment (see Figure 46). We do not recalibrate third-party credit ratings with ESG or impact data as this stage is embedded in the analysis of the first and second steps of the investment process: positive inclusion and negative exclusion. Each issuer in the portfolio is reassessed at least once every 12 months. Additionally, for liquidity risk management, the Triodos Sustainable Bond Fund also invests in sovereign bonds. To be eligible for the portfolio, the issuer must be a member of the European Union and demonstrate the highest standards of a functioning democracy.

Figure 46: Investment framework. Source: Triodos Investment Management

	TRIODOS SUSTAINABLE BOND FUND	CONVENTIONAL ESG BEST-IN-CLASS STRATEGIES	CONVENTIONAL RESPONSIBLE INVESTING
Promotes investment in companies driving sustainable solutions	Yes	No	No
Screens out destructive and exploitative industries (e.g., fossil fuels, arms)	Yes	No	Yes
Assesses ESG practices and policies of the company	Yes	Yes	No
Encourages company transparency and public disclosure	Yes	Yes	Yes

THE INVESTMENT OUTCOMES

An example of a bond that was included in the portfolio based on its positive contribution was ALD Automotive. ALD has one of the best structured and most sophisticated impact bond frameworks we have encountered, and its UOP (eligible green vehicles) is clearly aligned with our sustainable mobility and infrastructure theme. Its quality of impact reporting is very high: measurement is based on lifecycle analysis, developed with a third-party consultant which considers the impact of the production, use (including fuel and/or electricity production) and end-of-life treatment of cars. The science-based methodology is available in the framework for investors to evaluate. These impact measurements drive the selection of the assets to be included in the impact bond asset pool, which is very rare and demonstrates a serious intention to avoid greenwashing as assets such as electric vehicles in countries with carbon-intensive electricity grids will not be eligible for the asset pool. In addition to complying with the Green Bond Principles, the ALD framework is aligned with a more recent framework called Positive Impact Finance (UNEP FI) and is CBI-certified.

We invested in the bond when it was issued (primary). ALD's long-term issuer credit rating was upgraded to BBB+ from BBB by S&P Global Ratings on 24 October 2018, after its outlook was revised from stable to positive on 19 October 2017. Also, Fitch assigned an A- with a stable outlook in October 2018.

KEY TAKEAWAYS

We have made progress since our initial investment approach based on best-in-class and exclusion as we determined that it was not able to deliver the strong positive impact that we demanded as an impact investor. This conclusion was drawn with evidence that the ESG scores were often incomparable across ESG rating agencies' outputs, were biased towards large companies, and were, in summary, a translation of management quality and policy setting. The ESG lens is an effective strategy for risk-return optimisation, but with our new approach, we are better positioned to steer capital toward the companies that really innovate and drive systems change.

Visit: [Triodos Investment Management]

SOVEREIGN

CREDIT RISK CASE STUDY: AEGON ASSET MANAGEMENT

AUTHORS	**Emanuele Fanelli, Responsible Investment Manager** **Jesus Martinez, Portfolio Manager**
MARKET PARTICIPANT TYPE	**Asset Manager**
TOTAL AUM	**US$361 billion (as at December 2017)**
FIXED INCOME AUM	**US$276 billion (as at December 2017)**
OPERATING COUNTRY:	**Global**
ACTION AREA	**Materiality of ESG factors** ✔ / Time horizons / **Organisational approach** ✔ / Transparency and communication

THE INVESTMENT APPROACH

Aegon Asset Management Netherlands believes that ESG factors are an important component of sound fundamental credit analysis, driving alpha and helping to manage downside and tail risk. Though not always referred to as ESG-related, the underlying concepts have helped to define our investment methodology for decades, and remain an important and evolving part of our investment process. In recent months, we have been conducting in-depth analysis of the opportunities and challenges related to ESG integration in sovereign debt markets.

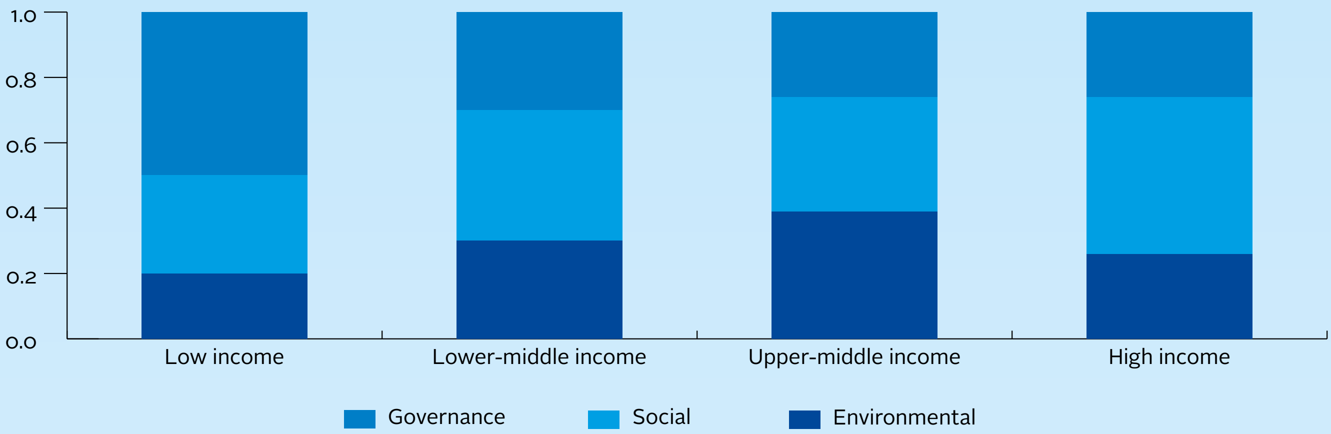
Integration is not without its challenges. On the qualitative side, traditional CRAs are not always fully explicit about how ESG factors are considered in their methodologies. On the quantitative side, data quality, availability and timeliness limit our flexibility when assessing ESG factors, and our confidence in third-party scores is limited by black-box methodologies. More generally, the financial materiality of ESG factors for sovereigns is subject to the intricacies of development economics. Academic and practitioner research on the issue is still in its infancy, which complicates the assessment because of the multidimensional elements of ESG factors in country assessments.

THE INVESTMENT PROCESS

We created a proprietary ESG score for countries with the overarching goal of identifying the financial impact of those factors on sovereign creditworthiness. Therefore, next to our exclusion list that prohibits some countries based on global norms and sanctions, we have developed a proprietary quantitative score.

The score is computed by converting data from public sources into ESG factors, capturing aspects such as institutional strength or climate action. The materiality of those factors is then determined statistically. Since not all factors affect countries in the same way, we differentiate the materiality analysis by country income group, which allows for a more nuanced and realistic approach to ESG factors in sovereign risk assessment. The weights determined by this analysis are then used to aggregate factors into a quantitative ESG score and three sub-scores, which are adapted to each country's level of development as measured by their GNI per capita and classified by the World Bank (see Figure 47).

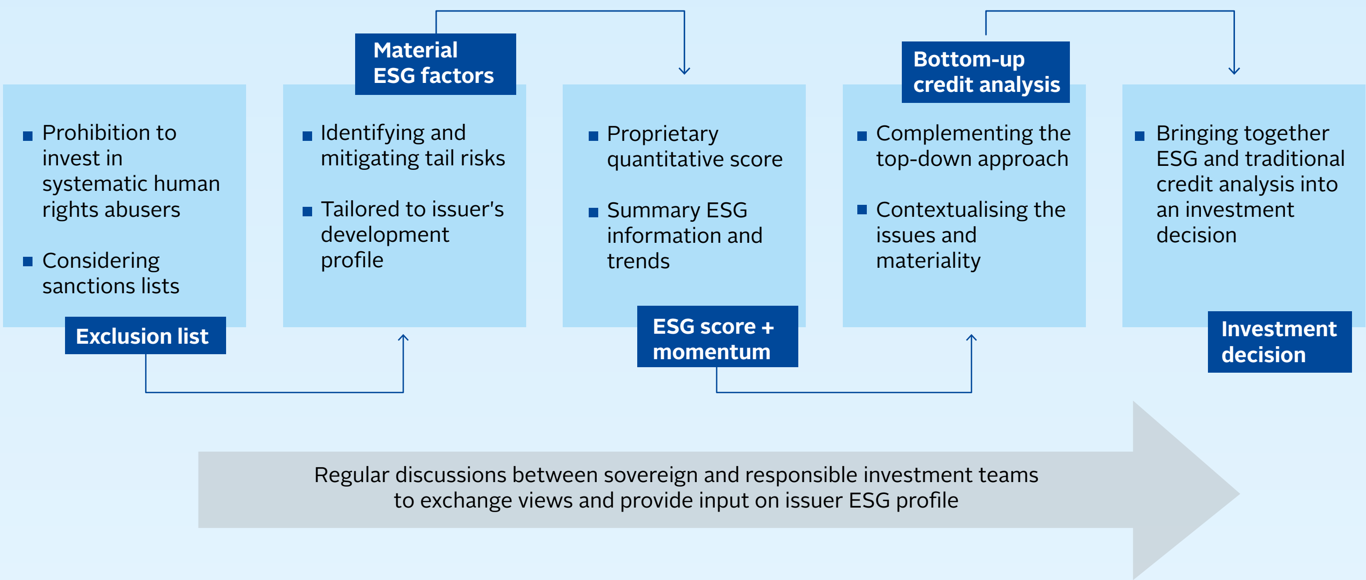
Figure 47: Weighting scheme of ESG factors by country. Source: Aegon Asset Management



Note: the weighting scheme of ESG factors varies by income group to reflect developmental risks and needs.

Our ESG score therefore measures the ESG risk that each country faces given its level of development. We also use a measure of ESG momentum to capture trends in the ESG performance of a country. These measures provide us with a dynamic summary view of the ESG strengths and weaknesses of sovereign issuers. The underlying data are always readily available, with poor performances that might not be revealed in an aggregated score flagged for further research. Sovereign credit analysts also conduct bottom-up research to complement and clarify the insights from our quantitative methodology (see Figure 48).

Figure 48: ESG integration process in sovereign portfolios. Source: Aegon Asset Management



The combination of bottom-up and top-down approaches gives the investment team a holistic view of the ESG risks and their materiality to a sovereign issuer's creditworthiness. Further, the responsible investment team advise the investment team at each stage of the process, exchanging views and providing insights into the risks identified, ensuring that the investment team can gradually take more ownership of the process as their knowledge of the issues increases in each cycle.

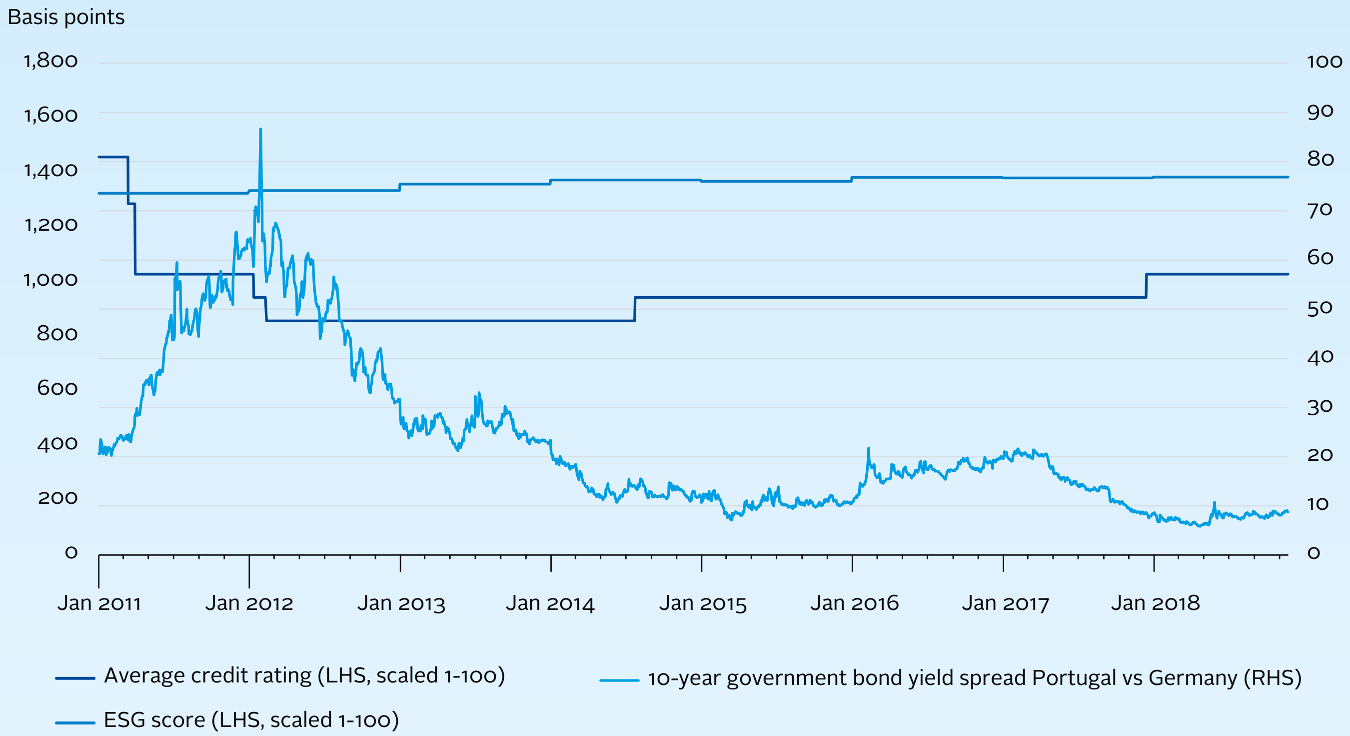
THE INVESTMENT OUTCOMES

The following case study on Portuguese government bonds shows how our process identifies material ESG issues when analysing sovereign debt markets and how these are addressed.

The outbreak of the sovereign crisis in 2012 caused Portugal to be downgraded to below investment grade by all three rating agencies. It took the country five years to regain its former investment-grade status, following severe fiscal adjustments (in 2017 by S&P Global Ratings and Fitch Ratings, and by Moody's Investors Service in 2018). Since 2012, economic growth has been key to building confidence and stability in the country's bond market. Portugal's GDP growth in the last five years has been increasing, after an average of -2 percent in the period after the sovereign financial crisis, and reaching 2.8 percent in 2018. Furthermore, its debt to GDP ratio has recently decreased, having stabilised in 2013-2016.

Credit ratings deteriorated at a similar speed as Portugal's spread differential against Germany 10-year Bonds, peaking in the second half of 2011 (see Figure 49). Relevant short-term indicators such as the ability of the country to access wholesale markets caused investors to adopt a cautious outlook. However, our methodology showed a stable and relatively high score as compared to other countries in the same income group.

Figure 49: Comparison of average Portugal credit rating, ESG score and 10-year yield spread versus German government bonds. Sources: Bloomberg, Aegon Asset Management

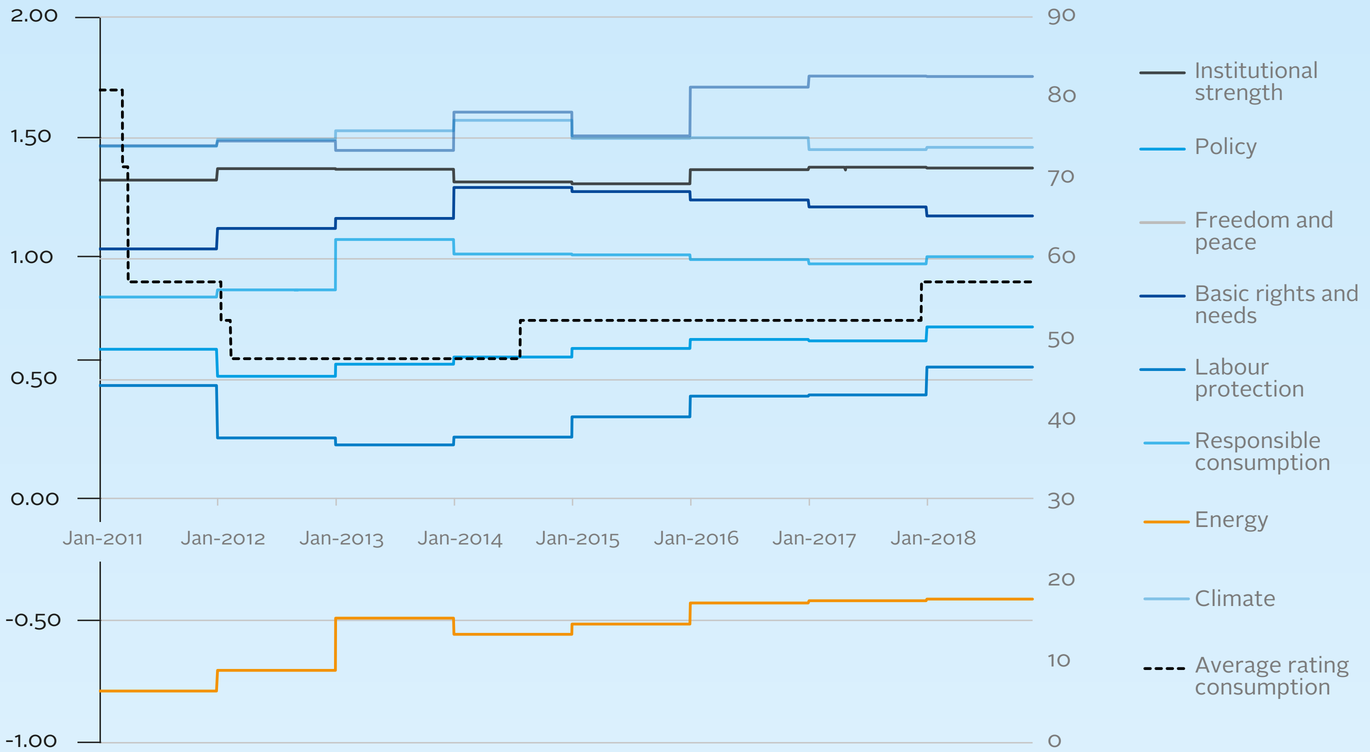


Note: the average credit rating (Fitch Ratings, Moody's Investors Service and S&P Global Ratings) and our internal ESG scores have been linearly scaled from 0 to 100, where 0 represents the minimum possible score (C) and 100 the maximum (AAA).

Such stability in our proprietary ESG score of Portugal does not reflect the reality of the underlying items that did move during this turbulent period, smoothing out the result. This effect shows that a single number does not describe the complex reality of an issuer, and how necessary it is to evaluate and develop a professional judgement based on accurate and relevant data.

Figure 50 shows how labour protection and policy deteriorated significantly in 2012, mainly due to the implementation of reforms that were aimed at achieving a more flexible economy, which led to salary devaluation. That effect was compensated by generally positive momentum from other indicators such as basic rights and needs or institutional strength.

Figure 50: Evolution of Portuguese ESG indicators versus average credit rating. Source: Aegon Asset Management



Note: the average credit rating (Fitch Ratings, Moody's Investors Service, and S&P Global Ratings) has been linearly scaled from 0 to 100, where 0 represents the minimum possible score (C) and 100 the maximum (AAA).

Since 2012, the reforms have continued and affected several aspects of the Portuguese economy. An example is the steps taken to reduce the energy tariff deficit and increase the use of renewable energy, which started to pay off as of 2013. While most of these policy actions improved the long-term sustainability prospects of the country, valuations remained expensive and ratings were kept low, increasing the attractiveness of Portuguese bonds even before market indicators started improving.

KEY TAKEAWAYS

Our takeaways include that:

- developing and implementing a proprietary score and process helped us build a deep understanding of the issues and opportunities related to ESG factors in sovereign portfolios;
- a one-size-fits-all quantitative approach is not suited to the realities of the sovereign debt market;
- our ESG integration process is not set in stone – we refine our approach each time we go through a cycle of analysis and increase our knowledge and understanding of the issues; and
- our proprietary analysis also helps us meet our client reporting obligations.

SOVEREIGN

CREDIT RISK CASE STUDY: CAISSE DES DEPOTS

AUTHOR	**Pascal Coret, Deputy Head of Portfolio Management**
MARKET PARTICIPANT TYPE	**Asset Owner**
TOTAL AUM	**US$155 billion (as at December 2017)**
FIXED INCOME AUM	**US$116 billion (as at December 2017)**
OPERATING COUNTRY:	**France**
ACTION AREA	**Materiality of ESG factors** ✔ / Time horizons / Organisational approach / Transparency and communication

THE INVESTMENT APPROACH

Caisse des Dépôts' (CDC) emerging market (EM) sovereign debt portfolio was set up before the integration of ESG analysis in sovereign debt allocation. Like the developed market portfolio, our EM portfolio is constrained by minimum credit ratings. However, as EM sovereign bonds are more volatile and riskier than developed sovereign debt instruments, CDC realised that an increased exposure to this asset class required a broader analytical framework beyond the usual macroeconomic indicators. Indeed, a lesser level of economic development is often related to a stronger dependency of the economic structure on the primary sector, hence a bigger exposure to physical environmental risks. Furthermore, developing countries by definition do not have the same network of legal, regulatory and supervisory institutions as their developed peers, which can lead to governance issues. In the worst cases, environmental and governance issues can cause social tensions.

THE INVESTMENT PROCESS

In building this analytical framework, the exposure of sovereign bonds to material factors had to be identified, measured and ultimately assessed and integrated into the portfolio allocation process. We decided to develop capacity within the team of portfolio managers instead of relying on an external provider.

Our effort to build a new analytical model started with EM countries but was scaled up to cover developed issuers (which on some ESG metrics do not score better than certain developing countries).

We currently collect the time series data of 50 countries (close to the eligible investment universe) through publicly-available databases. We cover three main topics:

- governance indicators, such as government effectiveness or corruption, with a focus on female positions in society;
- social development and inequalities (Gini index, education and health); and
- the environment through indicators on forestry, energy, agriculture, water and air quality.

The data are normalised and each country is assigned a relative score for each environmental, social and governance factor. When possible, a dynamic component is also added to factor in improving (or worsening) trends. The analysis focuses on the main changes.

To adjust for the wealth effect, i.e. the correlation between a country's revenues and its ESG performance, scores are expressed in relation to the country's per capita real disposable income. The reasons for this are:

- to avoid only the most developed countries (with the best ESG scores) benefiting from allocations based on raw ESG scores;
- to avoid penalising the least developed countries which would otherwise be deprived of investor flows and development financing; and
- to study if the country's development model is in line with the Sustainable Development Goals.

The adjustments also magnify the poor scores of developed countries, making the ESG underperformance even more striking.

These proprietary ESG scores complement our more traditional credit risk analysis, which is also performed internally by the team of portfolio managers, while the risk department conducts its own risk appraisal (with ESG integration).

THE INVESTMENT OUTCOMES

The example below shows how the CDC investment process identifies material ESG issues and how these are addressed by our portfolio managers.

Our FI team initially invested in an EM sovereign debt market based on its strong macro fundamentals (solvency, refinancing capacity, expected growth and revenues). This decision was also supported by strong rating opinions issued by major CRAs at the time.

However, despite being in the first decile of countries ranked by revenue per head, our ESG analysis left this sovereign country in a relatively low position – in the fourth bottom decile – due to relatively poor performance on some environmental (air quality, CO_2 emissions and greenhouse gasses in the agricultural sector) and governance metrics (voice and accountability and gender parity). Moreover, there was no significant sign of improvement over time. As a result, our portfolio managers had reservations about the awareness and/or willingness of the ruling administration to address these ESG shortfalls, and questioned the financial performance of the country, despite its apparent soundness based on traditional financial metrics. If the risks associated with these ESG deficiencies had materialised, they would have significantly increased budgetary expenditures. This concern, coupled with the team's concerns about potential reputational risks, represented a significant downside risk.

We therefore decided to gradually exit the entire position. The portfolio then showed a reduced geographical diversification and a slightly higher financial risk, as measured by average ratings, since the proceeds of the divestitures were reinvested in EM bonds with lower ratings. However, given further markets developments, no specific underperformance due to this reallocation could be identified.

Two major CRAs downgraded the sovereign bond issuer by one notch four to six months after CDC's complete divestment.

KEY TAKEAWAYS

Adding an ESG analytical framework to go beyond macroeconomic analysis and traditional credit risk evaluation based on financial metrics was time-consuming (particularly developing an internal ESG assessment tool). However, this investment approach paid off with enhanced risk appraisal by FI portfolio managers. The macroeconomic consequences of growing inequalities (within a given country) and exposure to climate change are examples of risk factors that are much better captured when integrating ESG parameters.

Visit: Caisse des Dépôts

SOVEREIGN

CREDIT RISK CASE STUDY: COLCHESTER GLOBAL INVESTORS

AUTHOR	**Claudia Gollmeier, CFA, CIPM, Senior Investment Officer**
MARKET PARTICIPANT TYPE	**Asset Manager**
TOTAL AUM	**US$43.3 billion (as at October 2018)**
FIXED INCOME AUM	**US$43.3 billion (as at October 2018)**
OPERATING COUNTRY:	**Global**
ACTION AREA	**Materiality of ESG factors** ✔ | Time horizons | Organisational approach | Transparency and communication

THE INVESTMENT APPROACH

ESG factors have always been an integral part of Colchester Global Investors' (Colchester) investment process for developed and emerging economies. We believe that countries with stronger governance, healthier and more educated workforces, and higher environmental standards tend to produce better economic outcomes. Typically, this leads to more stable debt and currency paths, which are associated with better risk-adjusted returns.

Colchester integrates its assessment of ESG factors into its analysis of a country's balance sheet (Figure 51). Unsurprisingly, governance is the most important factor when considering sovereign bonds. Not only is stronger governance correlated with higher GDP per capita (Figure 52), it also strongly influences social and environmental factors, as government policies define the framework within which social and environmental outcomes are determined. There is evidence to support the belief that better social conditions – healthcare, educational standards, labour conditions, etc. – have a positive impact on economic outcomes. The positive correlation (R^2 = 0.68)[22] between educational standards and per capita GDP is one example. Similarly, a strong link can be found between environmental performance index and a country's economic outcome (R2 = 0.72)[23]. Academic research[24] also supports the notion that countries with higher governance standards tend to have more effective environmental policies.

Figure 51: Quantitative and qualitative ESG factors within the in-house investment process.
Source: Colchester Global Investors

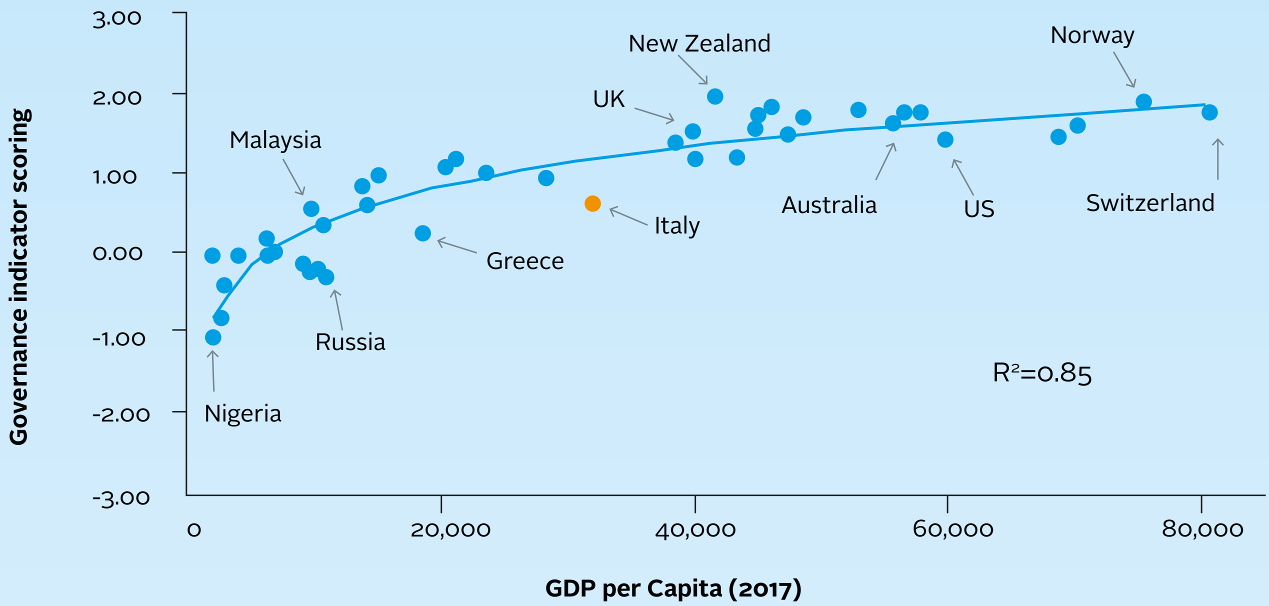
"E"
ENVIRONMENTAL FACTORS
- WorldRiskIndex
- Yale Environmental Performance Index
- Fossil fuel consumption
- CO2 emissions per capita
- Resource governance

"S"
SOCIAL FACTORS
- Life expectancy
- Education standards
- Standards of living
- Labour standards
- Demographics
- Health factors

"G"
GOVERNANCE FACTORS
- Institutional strength
- Political stability
- Control of corruption
- Rule of law
- Voice of accountability
- Government effectiveness
- Regulatory quality
- Business environment

22 Correlation between average PISA score and GDP per capita, as of 2015.
23 Correlation between Environmental Performance Index Score 2018 and GDP per capita 2017.
24 Bündnis Entwicklung Hilft, WorldRiskIndex 2017 and Yale Center for Environmental Law & Policy, EPI Report 2018.

Figure 52: Correlation between governance factors and GDP per capita. Sources: IMF, World Bank and Colchester Global Investors



Note: the scoring was determined by equal weightings of Worldwide Governance Indicators 2018 and ease of doing business ranking 2018, on a scale of -2.5 to +2.5.

THE INVESTMENT PROCESS

ESG factors are integrated holistically - not formulaically - into our investment valuation framework. Countries are assigned a proprietary financial stability score (FSS) that combines an assessment of their overall balance sheet strength and ESG factors (Figure 53). Bond and currency scores range from +4 to –4[25], and a country may be excluded from the investment universe if its ranking falls below –4.

Colchester penalises a country's balance sheet for weak ESG factors (for example, Russia[26]), but does not increase the FSS for strong ESG factors. ESG and country research is undertaken by Colchester's investment team, who also engage with stakeholders, where possible, during country research trips. Such engagement and potential impact is more limited and, by definition, more challenging in the sovereign space compared with corporations.

25 +4 refers to a strong balance sheet and -4 refers to a weak balance sheet.

26 Guidance and case studies for ESG integration: equities and fixed income, CFA Institute-PRI, 2018 p.132-140.

Figure 53: ESG integration process. Source: Colchester Global Investors

DEBT AND EXTERNAL SUSTAINABILITY ANALYSIS

- **Macroeconomic analysis:**
  e.g. Real economy and composition
- **Fiscal position:**
  e.g. Revenue/expenditure composition and elasticity
- **Debt (gross and net):**
  e.g. Incl. contingent liabilities, ownership and financing structure
- **External position:**
  e.g. Balance of payments composition, external debt (public/private)

ESG FACTORS

- **Governance:**
  e.g. Institutional strength, business environment, control of corruption, government effectiveness
- **Social:**
  e.g. Human development, demographics
- **Environmental:**
  e.g. Disaster risks management, resource governance and sustainability

FINANCIAL STABILITY SCORE

VALUATIONS ADJUSTED

Colchester invests on the basis of real yields[27] and real exchange rates[28], adjusted for the FSS. Portfolio construction is based on a standard mean-variance optimisation framework with risk measures and investment guideline constraints. The latter include, among others, client-specific credit limits, which can range from minimum ratings of AA- to below investment grade. The position size is generally a direct function of risk-adjusted potential real returns[29]. Should two countries have equal real yields (unadjusted for their FSS), the one with the higher FSS would be favoured. Specifically, a country with stronger ESG factors is likely to have a higher comparative FSS score that enhances its attractiveness relative to the country that has weaker ESG factors. Underpinning this assessment is the belief that the former is likely to have a better economic outcome and deliver better medium-term returns.

THE INVESTMENT OUTCOMES

The Italian case study below shows how Colchester's investment process identifies material ESG issues and how these are addressed.

The structural weakness in the Italian balance sheet is long-standing. Political instability has prevented successive governments from implementing lasting structural reforms and limited the country's growth potential. While Italy compares unfavorably to most other developed world economies on most ESG indicators, weak governance underpins much of this underperformance. Such weaknesses have facilitated tax evasion and corruption, led to inefficient resource allocation, hampered productivity growth[30] and promoted growth in the shadow economy[31]. An inefficient bureaucracy and a complex, slow legal system also increases transaction costs and inhibits activity.

Italy also underperforms across a number of social and environmental factors. While educational standards appear comparable with other OECD countries, Italy suffers skills mismatches, particularly with lower skilled workers[32], which affects wage and productivity growth. This translates into very high youth unemployment (35 percent as of 2017)[33] and a school drop-out rate (14 percent as of 2017)[34] which is high compared with its peers.

27 Real yields are defined as the yield on a government bond minus Colchester's forecast of the next 18 to 24 months' consumer price inflation.

28 Colchester calculates purchasing power parity by using country consumer and producer price indices, and foreign exchange rates.

29 Real returns are defined as real yields adjusted for the FSS.

30 Bank of Italy, Productivity growth in Italy: a tale of a slow-motion change, January 2018 (Occasional Papers, Number 422).

31 The Italian shadow economy, estimated at 19.5 percent of GDP, compares unfavourably with Switzerland (5.8 percent) and Germany (9.8 percent). See Johannes Kepler University Linz, Prognose für 2018: Verhältnis von Schattenwirtschaft.

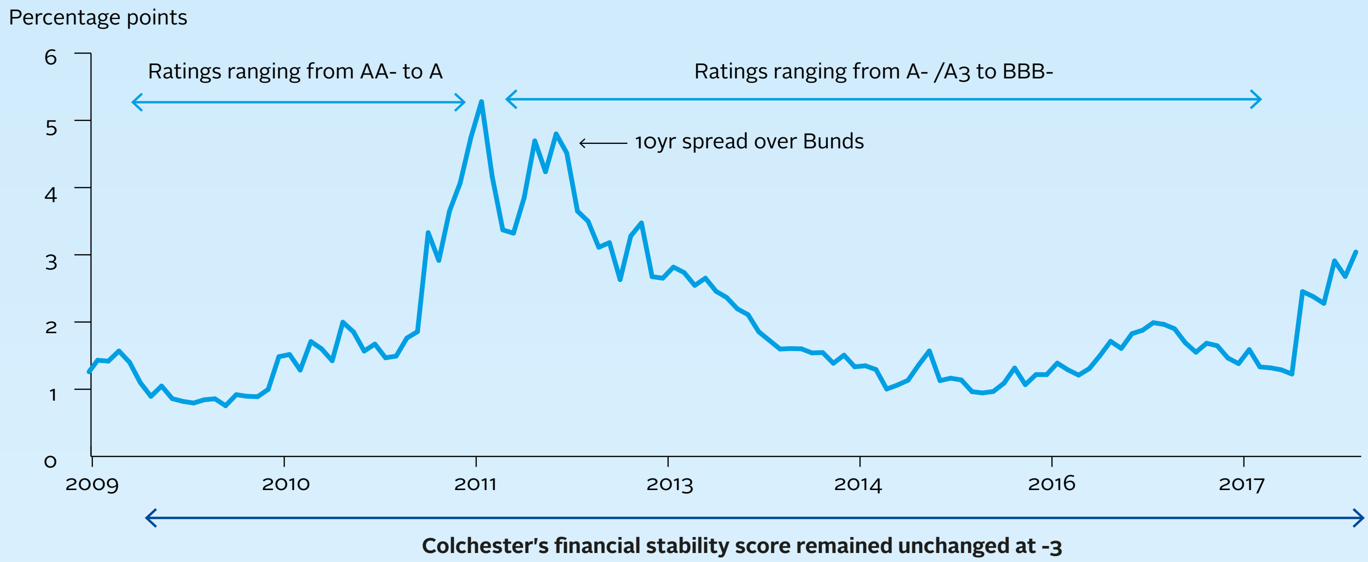
32 OECD, OECD Skills Strategy Diagnostic Report Italy 2017.

33 Eurostat (2017), Early leavers from education and training by sex and labour status, share of 18-24 year olds, unemployment 15-24 year olds as percentage of labour force of the same age.

34 Eurostat (2017), Early leavers from education and training by sex and labour status, share of 18-24 year olds, unemployment 15-24 year olds as percentage of labour force of the same age.

In summary, whilst Italy has made some reform progress recently, has low private sector debt, and is a member of the EU, it has high government debt, structural rigidities, unstable governments and weak levels of governance and social factors. Our assessment of these ESG factors weighs on Italy's overall FSS, leaving it at the lower end of our FSS range, at -3. Given that these weaknesses have been inherent in its balance sheet for several years, Italy's FSS has remained unchanged over the past 10 years. Notwithstanding market volatility and credit rating agency pronouncements, the key drivers of Italy's financial stability have not materially changed over many years (Figure 54). Italy's potential real yield (FSS-adjusted) relative to other markets, combined with risk management, kept Colchester's Global Bond Programme underweight the Italian bond market prior to the eurozone crisis[35]. When valuations became more attractive, the bond programme established a gradual overweight in mid-2012, despite the unchanged balance sheet. As Italian yields fell in absolute and relative terms to Germany, Colchester subsequently reduced its exposure to Italian bonds.

Figure 54: 10-year Italian government bond spread over Bunds, and credit ratings of the three main agencies. Sources: Bloomberg, Colchester Global Investors



KEY TAKEAWAYS

Colchester has incorporated ESG factors within its investment process since the inception of the firm. Colchester believes ESG factors are an important consideration when assessing a country's financial stability. Stronger, more stable balance sheets combined with positive ESG factors have been associated with better financial outcomes. Incorporating this analysis into our investment process has been beneficial to Colchester's long-term performance track record.

35 The eurozone sovereign debt crisis started from late 2009.

SOVEREIGN

CREDIT RISK CASE STUDY: INSIGHT INVESTMENT

AUTHOR	**Joshua Kendall, Senior ESG Analyst**			
MARKET PARTICIPANT TYPE	**Asset Manager**			
TOTAL AUM	**US$790 billion (as at September 2018)[36]**			
FIXED INCOME AUM	**US$166 billion (as at September 2018)**			
OPERATING COUNTRY:	**Global**			
ACTION AREA	**Materiality of ESG factors** ✔	Time horizons	**Organisational approach** ✔	**Transparency and communication** ✔

THE INVESTMENT APPROACH

Insight believes that investing effectively in sovereign debt requires in-depth analysis of ESG matters. However, most ESG analysis and research focuses on corporates – not countries. As a result, awareness of the materiality of risks, and the availability of tools to help make informed decisions, are lacking for sovereign debt investors, especially in emerging markets.

We set out to build a ratings model that complemented our existing country valuation and risk models. To ensure the relevance of our ratings for our FI strategies, we aimed to focus on metrics from credible sources that also have the potential to be material to country risks.

THE INVESTMENT PROCESS

We built a proprietary model to help us better understand ESG risks at the country level across our portfolios. Insight's country sustainability risk model generates two complementary ratings to give our portfolio managers greater insight over long-term trends:

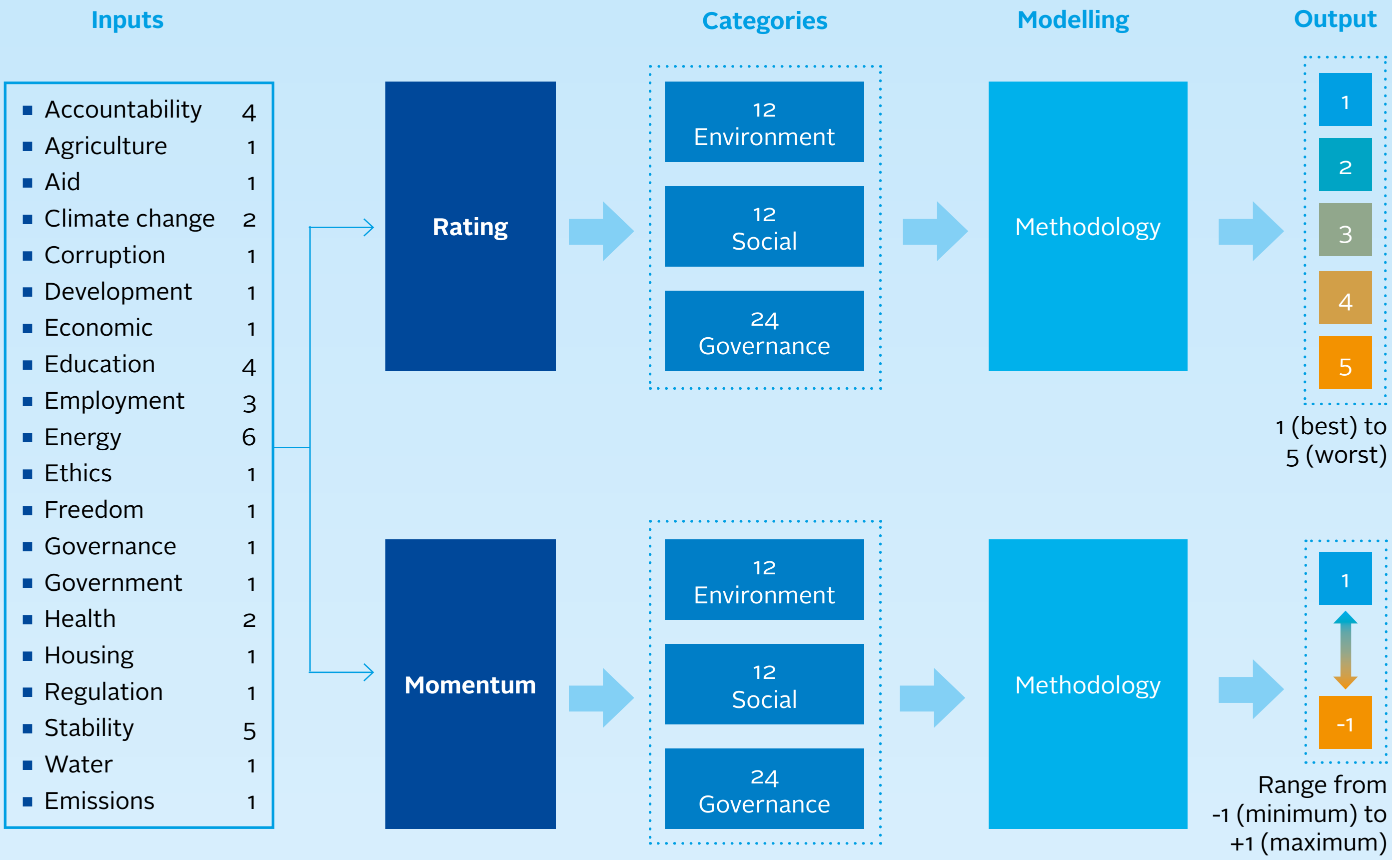
- The model's overall ESG rating offers a snapshot of a country's current standing regarding ESG factors, based on the latest available data.
- Meanwhile, the model's ESG momentum score, which illustrates a country's improvement or deterioration with regard to ESG factors over a six-year period, can be used to identify longer-term trends, which may develop into material risks.

Not all data sets include metrics for every country. In total, the model scores 186 countries. We have excluded 31 countries (which have very limited debt issuance) in the final output due to insufficient data across the underlying data sets.

Finally, the ESG scores are combined to create an overall ESG rating, of which the environmental and social scores account for 30 percent, with governance scores accounting for 40 percent. This reflects the tendency for governance issues to have a greater short-term impact on a country's creditworthiness, and the larger number of governance metrics within the model (see Figure 55).

36 Insight's AUM reflects the AUM of Insight, the corporate brand for certain companies operated by Insight Investment Management Limited (IIML). Insight includes, amongst others, Insight Investment Management (Global) Limited (IIMG), Insight Investment International Limited (IIIL) and Insight North America LLC (INA), each of which provides asset management services. Insight's AUM are represented by the value of cash securities and other economic exposure managed for clients.

Figure 55: Overview of Insight's country sustainability risk model. Source Insight Investment



THE INVESTMENT OUTCOMES

Results from the model provide a starting point for further analysis. Initial insights include:

- **Countries with higher GDP per capita typically have better ESG ratings.** This is generally driven by governance and social factors, not environmental scores.
- **More countries are deteriorating on ESG than improving**, with the majority of developed markets receiving a negative ESG momentum score.
- **ESG momentum has a weak relationship overall with standard industry measures of sovereign credit risk**, but there are outliers.

Below are some of the data highlights of the analysis (see Figures 56-60):

Figure 56: Top 10 overall ESG ratings

COUNTRY	RATING
New Zealand	1
Iceland	1
Sweden	1
Finland	1
Spain	1
Denmark	1
Norway	1
Portugal	1
Ireland	1
Latvia	1

Figure 57: Bottom 10 overall ESG ratings

COUNTRY	RATING
Afghanistan	5
South Sudan	5
Syrian Arab Republic	5
Yemen, Rep.	5
Iraq	5
Equatorial Guinea	5
Niger	5
Congo, Rep.	5
Sudan	5
Cameroon	5

Figure 58: Top 10 ESG momentum scores

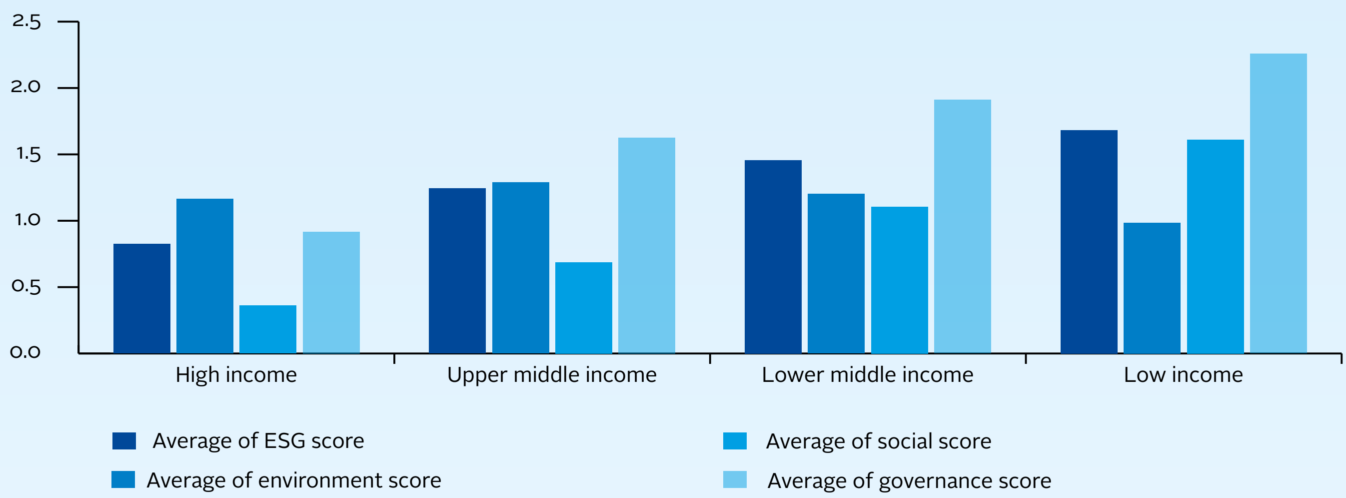
COUNTRY	RATING
Côte d'Ivoire	0.45
Somalia	0.43
Pakistan	0.40
Latvia	0.34
Brunei Darussalam	0.29
Togo	0.28
Belarus	0.26
United States	0.25
Estonia	0.25
Nicaragua	0.24

Figure 59: Bottom 10 ESG momentum scores

COUNTRY	RATING
Eritrea	-0.52
Libya	-0.52
Micronesia, Fed. Sts.	-0.50
Maldives	-0.43
Gabon	-0.42
South Sudan	-0.42
St. Lucia	-0.40
Syrian Arab Republic	-0.37
Barbados	-0.37
Grenada	-0.35

Note: overall ESG rating range 1 (best) to 5 (worst); ESG momentum score range -1 (deteriorating) to +1 (improving). Source: Insight Investment.

Figure 60: ESG scores of countries according to income and GDP. Sources: Insight Investment and Bloomberg



Note: data as at 30 September 2018.

KEY TAKEAWAYS

We integrate the model scores within our research, which supports our investment decision making. We use it to:

- **Expand the scope of our existing risk models:** when making investment decisions regarding sovereign debt, and other related debt such as issues from state-owned enterprises where the sovereign is effectively the backing entity, identifying changes in economic conditions and the risk profile of the relevant country are key. ESG indicators can provide another angle. Our country sustainability model supplies two further inputs to the FI group's wider models, providing more in-depth information on their investment universe.
- **Manage client-specific portfolios with ESG guidelines:** we manage strategies for clients that specify that the overall ESG rating of portfolio holdings must exceed that of the relevant benchmark. The model enables us to exclude or include issuers based on their ESG performance.
- **Support reporting to clients on ESG-specific factors:** the model's ratings demonstrate how sovereign debt portfolios perform from an ESG perspective, on an absolute basis or relative to a benchmark.
- **Indicate issues for dialogue:** dialogue with sovereign issuers can be challenging and politically sensitive, but there can be opportunities to start discussions with officials from relevant agencies. Our model presents a tool by which we might identify and prioritise matters to address with sovereign issuers. This is particularly relevant to emerging markets.

SOVEREIGN

CREDIT RISK CASE STUDY: PIMCO

AUTHOR	**Lupin Rahman, Portfolio Manager, Executive Vice President**
MARKET PARTICIPANT TYPE	**Asset Manager**
TOTAL AUM	**US$1.72 trillion (as at September 2018)**[37]
FIXED INCOME AUM	**US$1.20 trillion (as at September 2018)**[38]
OPERATING COUNTRY:	**US**
ACTION AREA	**Materiality of ESG factors** ✔ / **Time horizons** ✔ / **Organisational approach** ✔ / Transparency and communication

THE INVESTMENT APPROACH

ESG criteria are an integral part of PIMCO's sovereign ratings analysis and provide important context to our assessment of a sovereign's creditworthiness. We believe incorporating ESG factors into traditional sovereign analysis helps to identify credits with potentially lower long-term credit/higher default risk, as well as countries with positive and/or negative ratings momentum. Both are material to the evaluation of sovereign default risk in the medium term and the price of sovereign credit risk in the near term.

A key challenge when considering which ESG factors to consider in sovereign analysis is the issue of potential latent risks, which tend to manifest in the long term and often have indirect effects on creditworthiness. When they do, they can have significant binary effects. The Arab Spring in 2011 is an example: extremely high levels of youth unemployment, income inequality and limited political voice coexisted for decades in what was essentially a "stable disequilibrium". These initial conditions sparked a sudden and full-blown movement for social and political change across the region. A latent risk emerged rapidly – with profound effects on sovereign credit.

THE INVESTMENT PROCESS

PIMCO seeks to uncover and analyse latent risks in sovereign credit via:

- **Proprietary ratings model:** PIMCO's proprietary sovereign credit ratings model incorporates many quantitative ESG indicators, which include near and long-term drivers of credit risk, as well as variables that may be more slow moving and have more diffuse effects. These include measures of political stability, voice and accountability, rule of law, income inequality, literacy, labour market indicators and health indicators. These ESG variables have a combined weight of approximately 25 percent in the model and as such directly affect our absolute sovereign ratings. They also contribute to changes in our ratings outlook if there are large shifts over time.
- **Third-party checks:** PIMCO's proprietary sovereign ratings are complemented by analysis from CRAs, international financial institutions such as the International Monetary Fund, and standalone sovereign consultants. Where there are differences, we consult with these sources to assess what is driving the difference and what underlying assumptions are being considered in the alternative sources of analysis. This is particularly important for latent ESG risks, which can have varying degrees of importance depending on the approach.
- **Standalone ESG score:** complementing our sovereign ratings model is a standalone ESG score that includes a wider range of variables than the sovereign model. For example, it includes very slow-moving latent risks such as mortality and health indicators. It also includes indicators that may affect credit risk via indirect channels, such as labour market standards.
- **Scenario analysis:** we conduct country-specific scenario analysis to assess medium-term, more extreme risks including those relating to political regime change, long-term debt sustainability, resource depletion and natural disasters. This analysis helps us to identify what risks are material for investing, which sovereigns are most prone to them and what contingency plans they have in place.

We find that the combination of the sovereign ratings model, third-party checks, standalone ESG score and scenario analysis provide a better assessment of latent sovereign risks. The ratings model directly includes these risks in our credit assessment, the third-party checks and ESG score act as a flag for issues that are not explicitly incorporated in the ratings, and the scenario analysis provides a framework for thinking about the probability of these outcomes and the consequences if they occur.

37 Total AUM includes US$1.32 trillion managed on behalf of third-party clients.

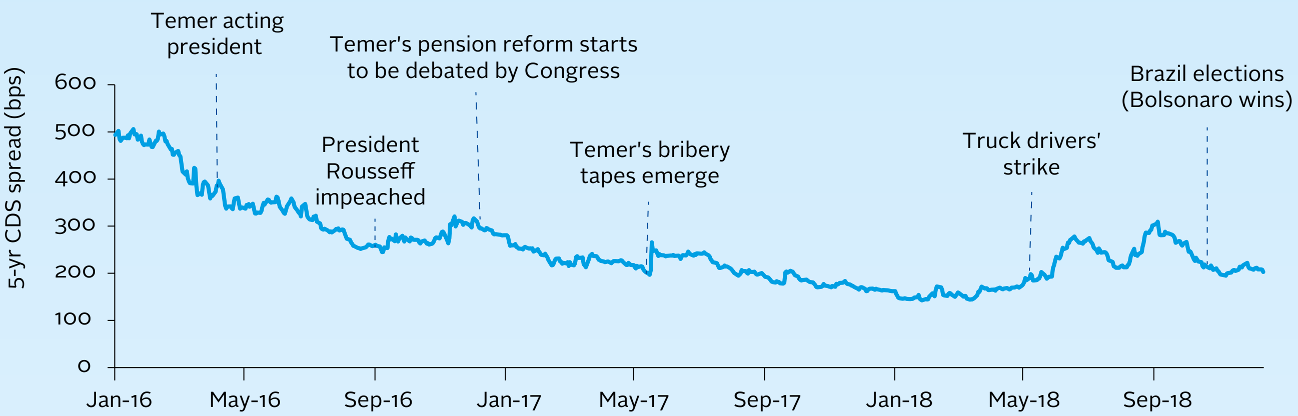
38 Fixed income AUM reflects assets managed on behalf of third-party clients only and excludes affiliated assets.

THE INVESTMENT OUTCOMES

This approach has helped PIMCO recognise potential latent risks over the long term and better manage left-tail risks (i.e. less likely events that could have major repercussions). It enabled us to navigate a challenging environment in the aftermath of the Arab Spring where the political economy of several countries in the region became more uncertain. It also helped us to identify sovereigns where similar risks existed. Specifically, it shaped how we approached the social risks associated with the aftermath of the eurozone debt crisis. There, we identified in advance the shift towards populist political regimes and the tensions this would create between the core and the periphery economies. As such, we took a more cautious approach to adding European risk during the initial stages of the crisis.

Our approach to latent ESG risks has also been a key input in our assessment of political regime changes across the globe including in Brazil, Mexico and Argentina, as well as helping to assess where political regimes have remained in place despite these latent risks, e.g. South Africa and Russia. On a more micro level, focusing on events such as strikes, protests and riots have allowed for a deeper analysis of government reaction functions that can directly affect sovereign credit risk. For example, the fiscal concessions made in the aftermath of the truckers' strike in Brazil made us more cautious on investing in the country, as we assessed the likelihood of a pension reform ahead of the October 2018 elections (see Figure 61).

Figure 61: Brazil sovereign spreads and key events. Sources: Bloomberg and PIMCO



Note: CDS (credit default swap). Bps (basis points). The chart data are as of 13 December 2018.

KEY TAKEAWAYS

The key takeaway has been to be proactive and continually reassess our investing and credit risk priors in our identification and assessment of latent ESG risks in sovereign credit analysis. While it can be tempting to overlook them given the bias towards near-term material risks, their binary nature and the potential for severe consequences can mean that ignoring them could result in overlooking big risks to portfolios and/or missing important investment opportunities.

DISCLAIMER

Socially responsible investing is qualitative and subjective by nature, and there is no guarantee that the criteria utilized, or judgment exercised, by an investment manager will reflect the beliefs or values of any one particular investor. Information regarding responsible practices is obtained through voluntary or third-party reporting, which may not be accurate or complete, and an investment manager is dependent on such information to evaluate a company's commitment to, or implementation of, responsible practices. Socially responsible norms differ by region. There is no assurance that the socially responsible investing strategy and techniques employed by an investment manager will be successful. This article contains the current opinions of the manager and such opinions are subject to change without notice. This article has been distributed for educational purposes only and should not be considered as investment advice or a recommendation of any particular security, strategy or investment product. Information contained herein has been obtained from sources believed to be reliable, but not guaranteed. No part of this article may be reproduced in any form, or referred to in any other publication, without express written permission.

Visit: PIMCO

CREDIT RISK CASE STUDY: TEMPLETON GLOBAL MACRO

AUTHOR	**Vivian Guo, Research Analyst and ESG Coordinator**
MARKET PARTICIPANT TYPE	**Asset Manager**
TOTAL AUM	**US$118 billion (as at June 2018)**
FIXED INCOME AUM	**US$118 billion (as at June 2018)**
OPERATING COUNTRY:	**US**

ACTION AREA	Materiality of ESG factors ✔	Time horizons	Organisational approach	Transparency and communication

THE INVESTMENT APPROACH

ESG issues have always been central to Templeton Global Macro's (TGM) analysis of macroeconomic dynamics at the country level as government policy, social conditions and environmental challenges can directly affect economic performance and asset values. For this reason, TGM believes ESG is most effective when fully integrated into the research process, to identify both opportunities and risks. While we have always considered ESG factors, TGM recognised the need to establish a formalised, quantitative framework to enhance ESG discussions internally. Defining and assigning quantitative metrics to various ESG factors has promoted healthy debate within the team and allowed for greater cross-country comparison, contributing to greater precision in the investment process.

THE INVESTMENT PROCESS

TGM's ESG philosophy centres on the conviction that ESG change, or momentum, is a more effective tool for analysing economic and investment performance than level scores, particularly in emerging and frontier markets. The current industry focus on ESG level, which is closely related to income, results in a negative screen that locks capital away from low-income countries in need of it and pushes investment towards low-yielding markets. Shifting the emphasis to change in ESG allows investors to direct capital towards countries with improving fundamentals without sacrificing returns.

Combining and quantifying inherently fluid ESG factors is a complex challenge, but TGM has developed a propriety index, the TGM-ESGI. The team scores countries from 0 to 100 in 13 ESG sub-categories determined to have significant impact on macroeconomic conditions for current and projected categories (see Figure 62). The scoring metric is constructed by overlaying the view of TGM's research team onto a benchmark created by global indices. Analysts then adjust those benchmark scores based on their proprietary research and assign projected scores in anticipation of how they think these conditions are likely to evolve in the medium term. The change in score is simply the projected score minus the current score (see Figure 63).

Figure 62: ESG current scores. Source: TGM

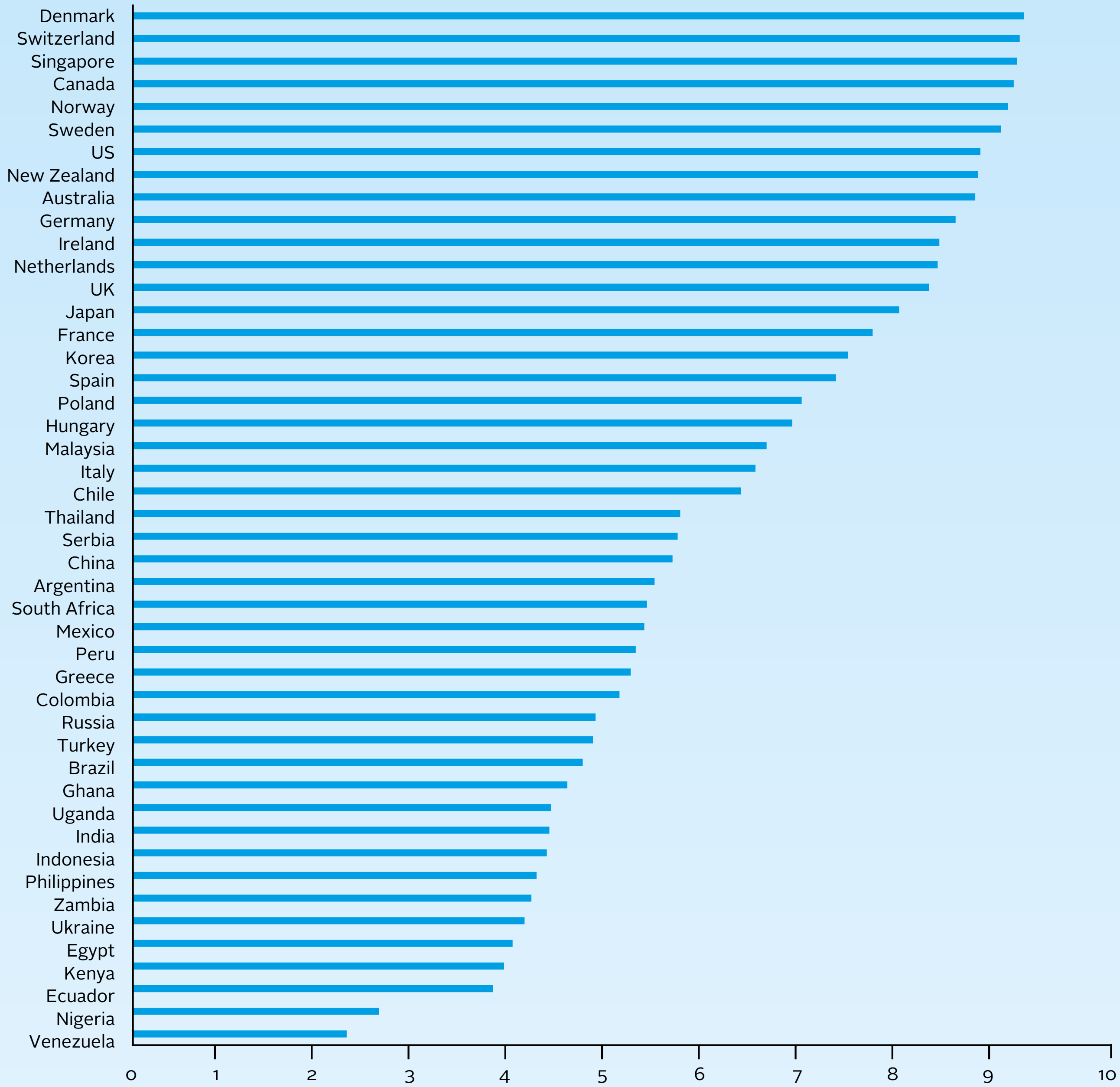
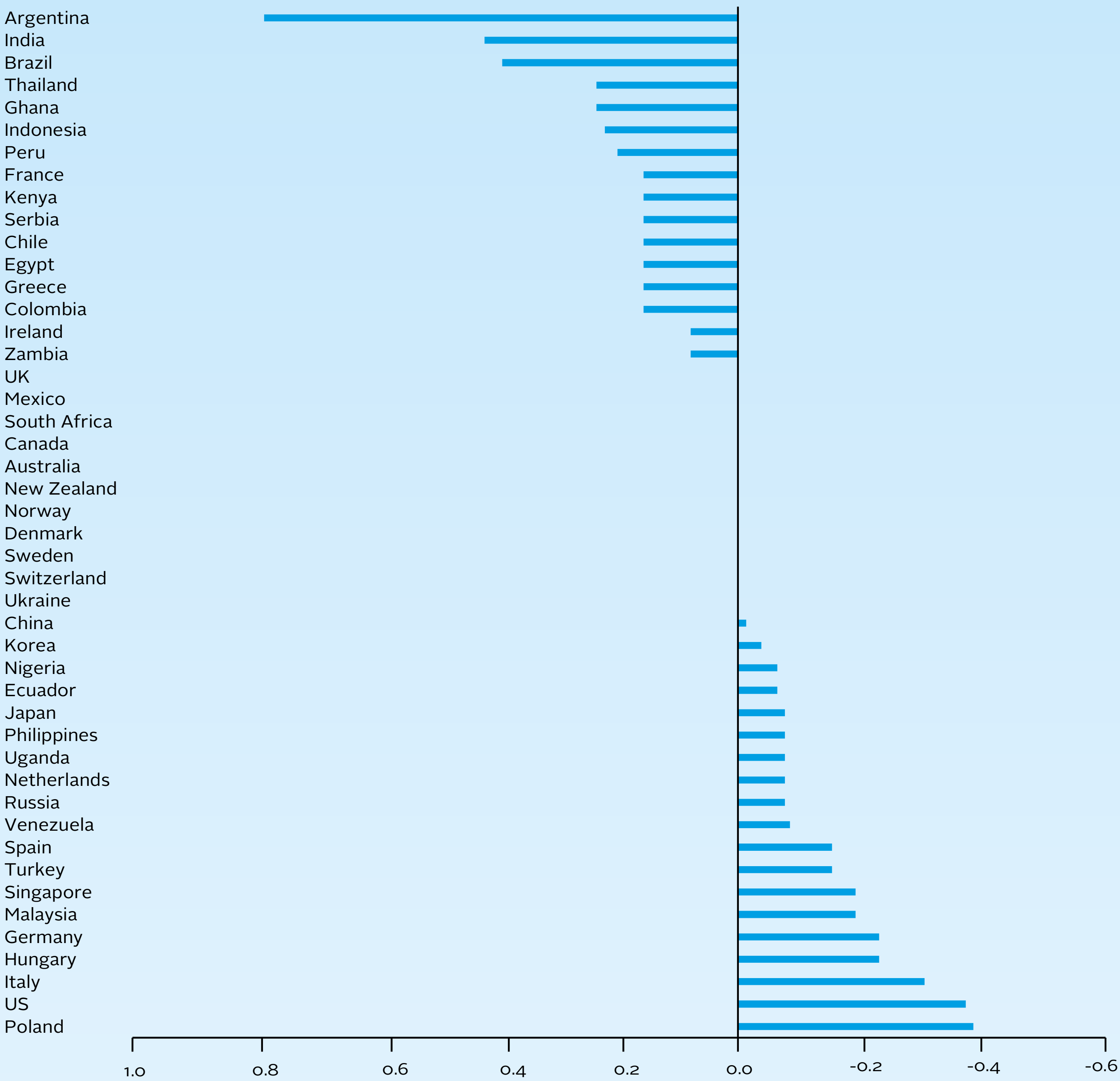


Figure 63: Change in ESG scores. Source: TGM

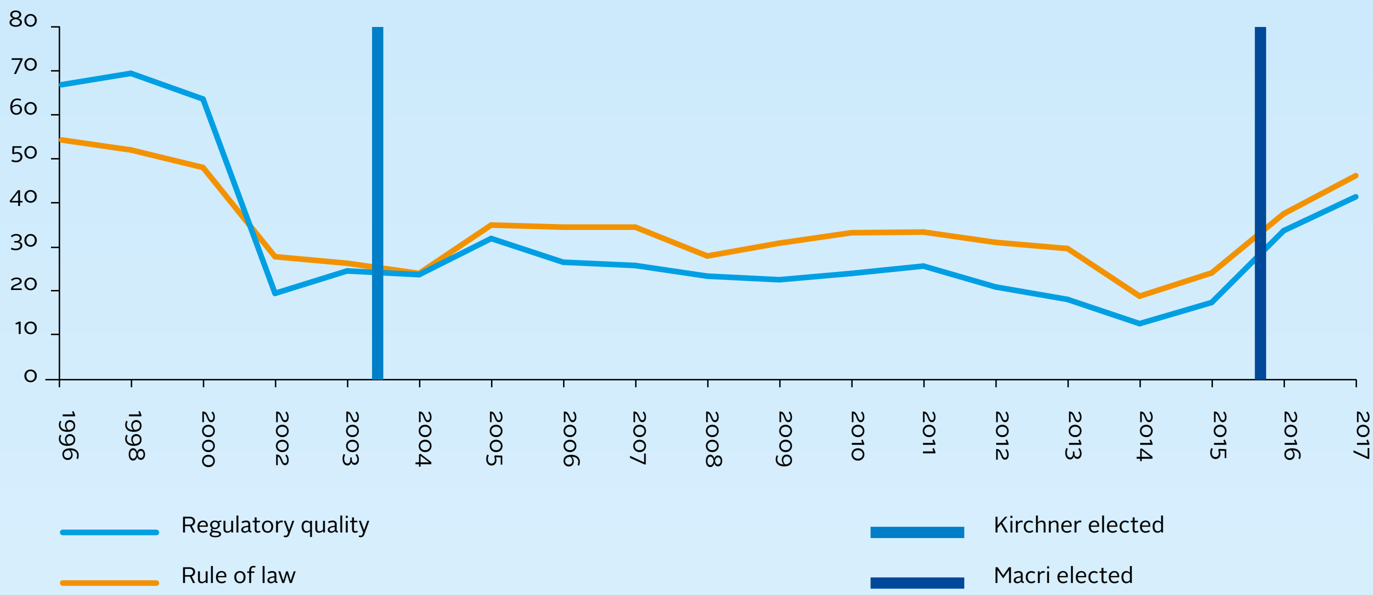


Note: the chart represents the changes projected by TGM in the three-year period starting from the first half of 2018.

THE INVESTMENT OUTCOMES

TGM's ESG process has not fundamentally changed the way the team conducts research, but has allowed for greater precision in identifying these issues. One case study in which there are numerous ESG factors at play is Argentina. Argentina was once among the wealthiest countries in Latin America, with a highly educated labour force and abundant natural resources. More than a decade of management under the previous administrations, however, resulted in isolationism, unsustainable economic policies and rampant corruption.

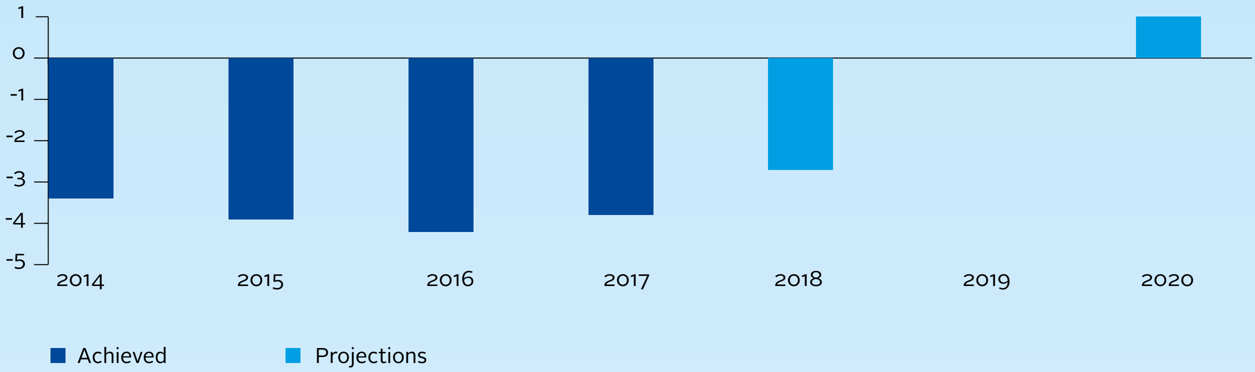
Figure 64: Argentina World Development Indicators. Source: World Bank



Under President Macri, elected in 2015, Argentina embarked on the tough road of restoring economic viability and re-establishing the country's credibility among foreign institutions. The government has focused on improving transparency, strengthening the rule of law and working in a bipartisan manner with opposition politicians. This has allowed the country to produce reliable statistics, spur foreign direct investment and enact politically-controversial reforms like subsidy removal (see Figure 64). The Argentinian people have also shown social cohesion in support of the government's policies, despite the short-term economic hardships that must be endured. It is for these reasons that Argentina displays significant improvement on the TGM-ESGI and why TGM chose to invest in 2016, working with the central bank to build out the country's long-term yield curve.

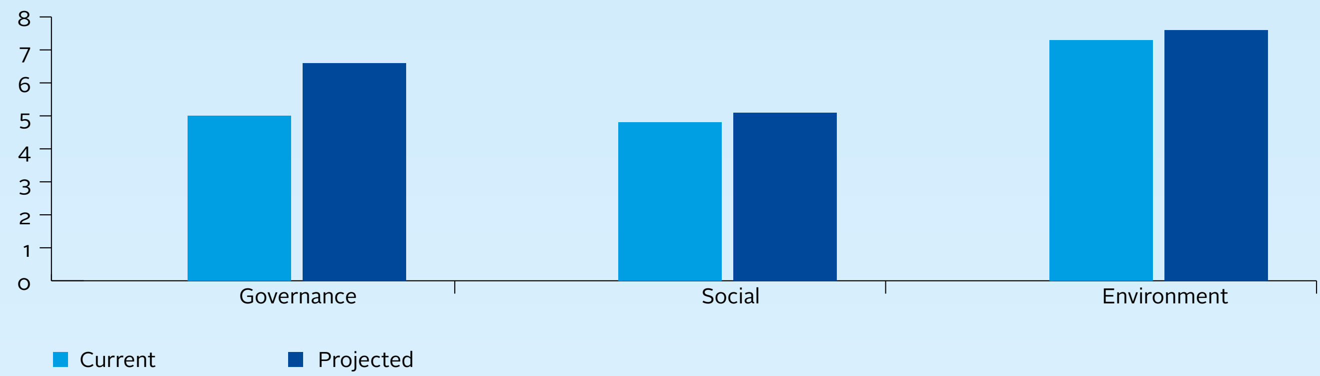
Argentina's resolve has been tested; in the face of intense pressures starting from mid-2018, the central bank has maintained its independence to hike rates and the administration has managed to work with Congress to approve a balanced primary budget for 2019 (see Figure 65). TGM believes CRAs and the investment community have become overly bearish on Argentina in the last six months, with S&P Global Ratings downgrading the country's long-term credit and US dollar spreads widening by approximately 300 bps since April. We have continued to hold local bonds despite this sell-off, as, in our opinion, market participants have overlooked improving fundamentals in the face of temporary volatility. What our ESG process shows is that Argentina remains dedicated to orthodox policy and committed to restoring economic sustainability (see Figure 66).

Figure 65: Public sector primary fiscal balance (percentage of GDP). Sources: Argentina Ministerio de Hacienda (with TGM calculations) and International Monetary Fund



Note: the primary fiscal balance is the difference between public sector revenues and expenditures net of interest payments. In 2019, this difference forecast is zero.

Figure 66: Argentina ESG scores. Source: TGM



KEY TAKEAWAYS

TGM believes ESG issues are fundamentally intertwined with sovereign economic performance in the medium to long term, and that a robust research process must include consideration of ESG factors. But rather than focusing on an absolute level, a forward-looking approach that focuses on momentum provides greater insight on economic development and potential financial return. Most importantly, ESG analysis requires patience. Investors must be able to endure periods of volatility and a sufficiently long time horizon to see ESG performance translate into economic conditions and asset price performance.

Visit: Templeton Global Macro (TGM)

APPENDIX 5
FORUM HOSTS AND PARTICIPANTS

Date	Location	Host	Number of attendees	Participating CRAs
25 September 2017	Berlin (Germany)	PRI in Person	Panel session	Moody's Investors Service
27 October 2017	The Hague (Netherlands)	Aegon AM	23	Moody's Investors Service
				S&P Global Ratings
2 November 2017	Toronto (Canada)	University of Toronto AM	28	DBRS*
				Moody's Investors Service
				S&P Global Ratings
3 November 2017	Montreal (Canada)	PSP Investments	26	DBRS*
				Moody's Investors Service
				S&P Global Ratings
10 November 2017	New York (US)	Neuberger Berman	28	Moody's Investors Service
				S&P Global Ratings
22 November 2017	London (UK)	Insight Investment, BNY Mellon	36	Beyond Ratings**
				Fitch Ratings
				Moody's Investors Service
				Scope Ratings
				S&P Global Ratings
5 December 2017	Stockholm (Sweden)	Öhman	18	Moody's Investors Service
				S&P Global Ratings
25 January 2018	Paris (France)	AXA Group	48	Beyond Ratings**
				Moody's Investors Service
				Scope Ratings
				S&P Global Ratings
26 January 2018	Frankfurt (Germany)	Deutsche Börse	20	Dagong Europe Credit Ratings
				Moody's Investors Service
				Rating Agentur Expert RA
				Scope Ratings
				S&P Global Ratings
29 January 2018	San Francisco (US)	Wells Fargo	Panel session	Moody's Investors Service
				S&P Global Ratings
26 February 2018	Sydney	Financial Services Council	29	Moody's Investors Service
				S&P Global Ratings
3 July 2018	Tokyo (Japan)	Nikko AM	95	Moody's Investors Service Japan
				S&P Global Ratings
				Japan Credit Rating Agency, Ltd.
				Rating and Investment Information, Inc.
5 July 2018	Singapore	Eastspring Investments	22	Moody's Investors Service
				RAM Rating Services Berhad
				S&P Global Ratings
10 July 2018	Hong Kong	Hong Kong Investment Funds Association (HKIFA)	21	Moody's Investors Service
				S&P Global Ratings
				Dagong Global Credit Rating (HK)
6 September 2018	Cape Town (South Africa)	Investec	27	Moody's Investors Service
				S&P Global Ratings
13 September 2018	San Francisco (US)	PRI in Person	Panel session	S&P Global Ratings

*DBRS is not a signatory to the ESG in Credit Ratings Statement but the PRI invited it to the events.
**Beyond Ratings is not a registered CRA yet but is a signatory of the ESG in Credit Ratings Statement.

INSTITUTIONAL INVESTOR SIGNATORIES OF THE ESG IN CREDIT RATINGS STATEMENT

ASSET MANAGERS

- Aberdeen Standard Investments
- ACTIAM
- Addenda Capital Inc,.
- Aegon AM
- Alberta IM Corporation
- AllianceBernstein Allianz Global Investors
- AlphaFixe Capital Inc,.
- AMP Capital
- Ardea IM
- Australian Ethical Investment Ltd..
- Aviva Investors
- AXA Investment Managers
- Bank J. Safra Sarasin Ltd.
- Barings, LLC
- BlueBay AM LLP
- BMO Global AM
- BNP Paribas AM
- Brandywine Global IM, LLC
- Breckinridge Capital Advisors
- British Columbia IM Corporation
- Brown Advisory Inc,orporate
- Caja Ingenieros Gestión SGIIC, SA
- Calvert Research and Management
- Candriam Investors Group
- Christian Brothers Investment Services Inc,.
- CIBC AM Inc,.
- Colchester Global Investors Ltd.
- Colonial First State Global AM
- Commonfund
- Connor, Clark & Lunn IM Ltd..
- DDJ Capital Management, LLC
- Delta Alternative Management
- Domini Impact Investments, LLC
- EGAMO
- Element Investment Managers
- Erste AM GmbH
- ESG Portfolio Management
- Federal Finance
- Fidelity International
- Fiera Capital Corporation
- Franklin Templeton Investments
- Futuregrowth AM
- Galliard Capital Management Inc,.
- Generation IM LLP
- Global Evolution
- Goldman Sachs AM
- Gramercy Funds Management
- Hermes IM
- HSBC Global AM
- IFM Investors
- Inc,ome Research & Management
- Insight Investment
- Investec AM
- IVM Caring Capital
- Janus Henderson Investors
- Jarislowsky, Fraser Ltd.
- Kempen Capital Management N.V.
- La Française Group
- Legal & General IM
- Leith Wheeler Investment Counsel Ltd.
- LocalTapiola
- Lombard Odier
- Longfellow IM Co., LLC
- M&G Investments
- Maple-Brown Abbott Ltd.
- Mariner Investment Group, LLC.
- MFS IM
- Mirova
- MN Investments
- Mondrian Investment Partners Ltd.
- Moneda AM
- Montrusco Bolton Investments Inc.
- Neuberger Berman Group, LLC
- Nikko AM Co., Ltd.
- NN Investment Partners
- Nomura AM Co., Ltd..
- OFI AM
- Öhman
- OP Wealth Management
- Ostrum AM
- Partners Group AG
- PGGM Vermogensbeheer B.V.
- PIMCO
- PineBridge Investments LLC
- Principal Global Investors LLC
- Prudential Portfolio Managers Ltd. (South Africa)
- Public Investment Corporation
- QIC Ltd.
- RBC Global AM
- RobecoSAM AG
- Royal London AM
- Sanlam IM
- Sarasin & Partners LLP
- Saturna Capital
- Schroders
- SEB Investment Management AB
- SKY Harbor Capital Management, LLC
- Sparinvest S.A.
- Stone Harbor Investment Partners LP
- Svenska Handelsbanken AB
- T&D AM Co., Ltd..
- Tareno AG
- T&D AM
- Tokio Marine AM Co., Ltd.
- Triodos IM B.V.
- UBS AM
- Union AM Holding AG
- Union Bancaire Privée
- Vancity IM
- Wellington Management Company LLP

ASSET OWNERS

- Allianz SE
- ASR Nederland N.V.
- AustralianSuper
- AXA Group
- Bâtirente
- British Columbia Municipal Pension Plan
- BT Pension Scheme
- Caisse de dépôt et placement du Québec
- CalPERS
- CCOO, FP
- CDC
- Challenger Ltd.
- Church of Sweden

- ERAFP
- First State Superannuation Scheme
- FRR
- Geroa Pentsioak EPSV
- HESTA Super Fund
- KfW Bankengruppe
- KLP
- Länsförsäkringar AB
- Local Government Superannuation Scheme
- Norwegian Government Pension Fund Norway
- Ontario Teachers' Pension Plan
- Pegaso - Fondo pensione complementare
- Pension Protection Fund
- Public Sector Pension Investment Board
- QBE Insurance Group Ltd.
- Régime de Retraite de l'Université de Montréal
- TPT Retirement Solutions
- Treehouse Investments, LLC
- University of Toronto AM Corporation
- Victorian Funds Management Corporation
- Wespath IM
- Zurich Insurance Group

Note: Asset Management (AM); Investment Management (IM)

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The Principles for Responsible Investment (PRI)

The PRI works with its international network of signatories to put the six Principles for Responsible Investment into practice. Its goals are to understand the investment implications of environmental, social and governance (ESG) issues and to support signatories in integrating these issues into investment and ownership decisions. The PRI acts in the long-term interests of its signatories, of the financial markets and economies in which they operate and ultimately of the environment and society as a whole.

The six Principles for Responsible Investment are a voluntary and aspirational set of investment principles that offer a menu of possible actions for incorporating ESG issues into investment practice. The Principles were developed by investors, for investors. In implementing them, signatories contribute to developing a more sustainable global financial system.

More information: www.unpri.org

The PRI is an investor initiative in partnership with UNEP Finance Initiative and the UN Global Compact.

United Nations Environment Programme Finance Initiative (UNEP FI)

UNEP FI is a unique partnership between the United Nations Environment Programme (UNEP) and the global financial sector. UNEP FI works closely with over 2 financial institutions that are signatories to the UNEP FI Statement on Sustainable Development, and a range of partner organisations, to develop and promote linkages between sustainability and financial performance. Through peer-to-peer networks, research and training, UNEP FI carries out its mission to identify, promote, and realise the adoption of best environmental and sustainability practice at all levels of financial institution operations.

More information: www.unepfi.org

United Nations Global Compact

The United Nations Global Compact is a call to companies everywhere to align their operations and strategies with ten universally accepted principles in the areas of human rights, labour, environment and anti-corruption, and to take action in support of UN goals and issues embodied in the Sustainable Development Goals. The UN Global Compact is a leadership platform for the development, implementation and disclosure of responsible corporate practices. Launched in 2, it is the largest corporate sustainability initiative in the world, with more than 8,8 companies and 4, non-business signatories based in over n6 countries, and more than 8 Local Networks.

More information: www.unglobalcompact.org