



Handbook Series December 2019



Watch for ESG Biases Bondholder Engagement Climate Risk & Sovereign Debt

ESG & High Yield Credits & SDGs Transition Bonds



SUSTAINABLE FIXED INCOME

insights NordSIP Handbooks are published by Big Green Tree Media AB Kungsgatan 8 111 47 Stockholm +46 70 9993966 Editor-in-Chief Aline Reichenberg Gustafsson aline@nordsip.com Director, Strategic Relations Kim Hansson kim@nordsip.com the editor's word 5 Pick & Choose **Economics Editor** Filipe Wallin Albuquerque filipe@nordsip.com 32 Workshop Discussion For advertising or other sales-related enquiries SDGs, Taxonomies & Disruptions email: sales@nordsip.com FOR INVESTMENT PROFESSIONALS ONLY about our partners Please read important Terms & Conditions on the last page of this docu-38 ment

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the editor's word

Pick and Choose

Last year, we chose to cover sustainable fixed income in our first Handbook edition. A couple of institutional investors had turned to NordSIP for inspiration in their quest to find sustainable fixed income managers. Hence the urge to provide our audience of professional investors with a handbook to guide them through their first steps.

This year, I am pleased to see how asset managers have pushed on. It is encouraging to see how much progress the market has made in just twelve months. While most of the strategies already launched some time ago, managers were still shy about their achievements. It always takes some time to build a credible track record.

Today, asset owners looking to find fixed income strategies with a sustainable angle have plenty of tools at their disposals, along the entire responsible investment-impact spectrum. Many managers have started acknowledging their power, as bondholders, and now dare talk about engagement more

broadly. Debt financing is, after all, an easier way to finance change than equity.

This is not the end of the road, however, and much is left to achieve. What should next years achievements to be about? For one, more of the same, of course. More engagement, more strategy innovations, more data analysis, more transparency from issuers, more sustainable bond issuances.

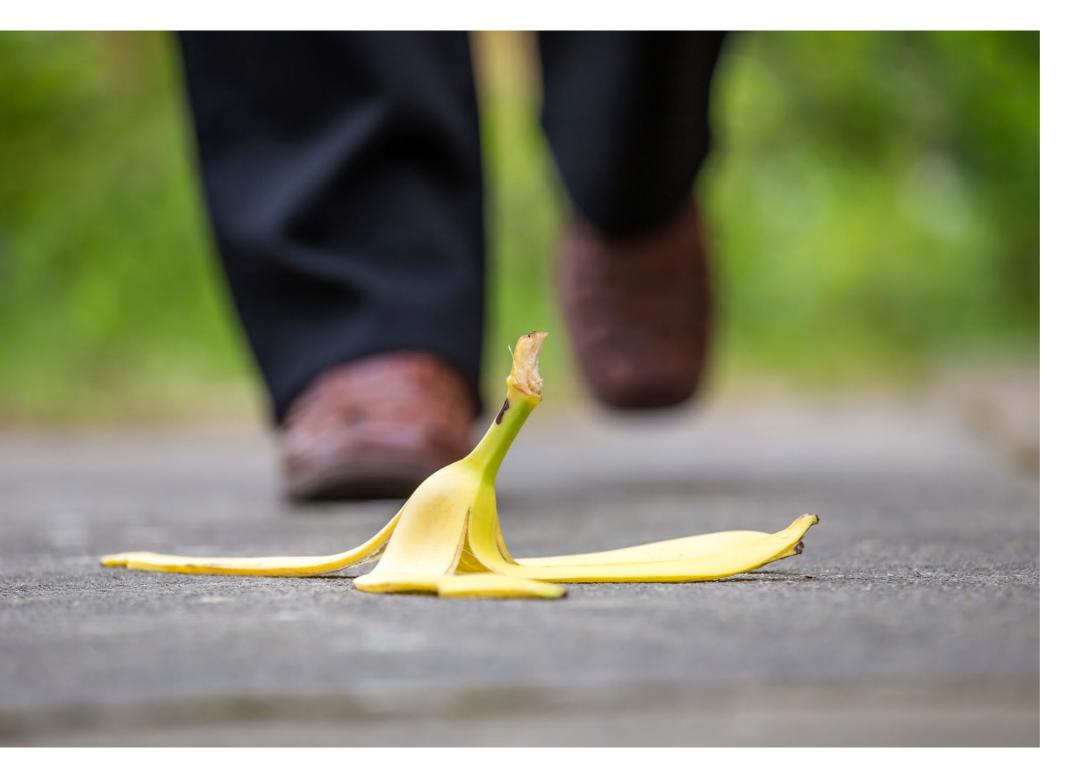
Most importantly, it's time for the asset owners to move their allocations towards the right products. Nordic investors might be slightly ahead of the curve, but not everyone had jumped on board yet. In a market where spreads are still razor thin, wouldn't it make sense to do the right thing, while risking very little?

There is no more room to ponder. It's time to pick and choose. And, hopefully, next year, we will report on the results generated by real capital shifts.



Aline Reichenberg Gustafsson, CFA

Editor-in-Chief NordSIP



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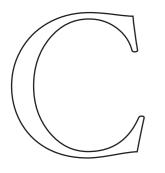
ESG Bond Investing

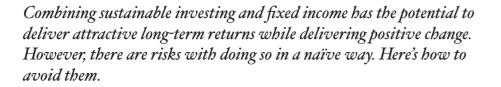
Avoiding the Pitfalls

by Mamadou-Abou Sarr & Manan Mehta

> Northern Trust Asset Management

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The ESG Advantage in the Bond Market

Sustainable investing and bond portfolios make for a good marriage because risk is a key focus for both. Bonds help manage risk through lower correlation and volatility versus equities. Sustainable investing aims to mitigate damage from climate change, poor labor relations, and fraudulent accounting practices, among others.

Bonds issued by companies with favorable environmental, social and governance (ESG) ratings tend to trade at tighter credit spreads and have longer durations. Based on our research and as presented in Exhibit 1, we find that bonds with higher ESG ratings offered downside mitigation during periods of

market turbulence despite their loose relationship* to traditional credit ratings.

This suggests that investing in companies with the highest ESG ratings may offer further downside mitigation above and beyond what their credit ratings would suggest. In other words, ESG considerations may provide an alternative long-term lens to evaluate credit. Credit ratings agencies are starting to take notice by exploring ways to incorporate environmental and climate change risks into their decisions.** That said, uncertainty remains around the timing, nature and magnitude of ESG risks. While keeping ESG in mind, investors should still focus on the primary drivers of fixed income returns such as key rate duration, sector, issuer and option adjusted spread.

Exhibit 1. ESG Characteristics and Performance ESG leaders tend to perform well during risk-off episodes



Mamadou-Abou Sarr

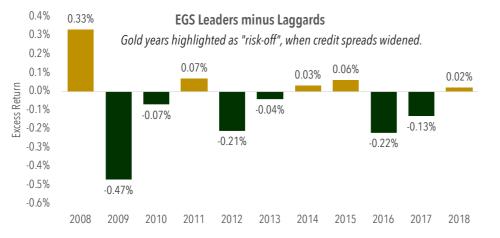
Sustainable Investing

Director of Product

Development &

Northern Trust Asset Management

Manan Mehta Senior Quantitative **Research Analyst** Northern Trust Asset Management



Source: Northern Trust Quantitative Research, MSCI, Bloomberg ICE Global Investment Grade corporate universe from 2007-2018. Returns represent annualized average excess returns of equally weighted portfolios for the Bloomberg ICE Global Investment Grade corporate universe formed as follows. ESG Leaders represent MSCI ESG Ratings of AAA or AA; ESG Laggards represent MSCI ESG Rating of B or CCC. Returns are gross of dividend withholding tax. Returns include backtested performance. Performance December 31, 2007 through December 31, 2018. Past performance is no guarantee of future results. Returns of the indexes also do not typically reflect the deduction of investment management fees, trading costs or other expenses. It is not possible to invest directly in an index.

Watch for Biases

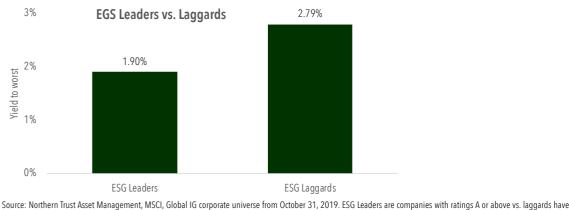
Bond investors who explore the world of sustainable investing should perform their due diligence and have a strong understanding of both ESG factors and the drivers of long-run bond returns. Taking a naïve approach by simply investing in top-rated ESG companies or applying standard exclusions of some industries could be fraught with unintended yield, duration, sector, and country risks. Investors should take intentional risks, and ensure they are compensated for those risks, to achieve the outcomes they seek.

For example, ESG ratings are based on rankings within industries independent of country and

Exhibit 2. ESG Yield Bias

lower yields.





ratings BBB or below.

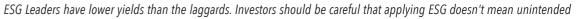
Exhibit 3. ESG Regional Bias

unintended country weights.

10%	7.80%	Overweight ESG Leaders		
5%		1.10%	0.80%	
0%				
-5%				
-10%		Underweigł	nt ESG Leade	er
-15%				
	Europe	Canada	U.K.	
urco: North	arn Truct Accat N	Innanament MSCI	Global IG corne	ora

ratings BBB or below.

sector. As Exhibit 2 illustrates, yields of ESG leaders tend to be lower, which may cause portfolio yield to fall short. Also, as shown in Exhibit 3, European companies are the most common ESG leaders while U.S. companies are often laggards. This could lead to too much emphasis on French companies and introduce sovereign risk. Standard exclusion practices may present problems as well. Screening for controversial weapons, fossil fuel reserves, and tobacco among others could introduce unintended sector weightings. Given these biases, combining ESG with fixed income means that investors should take appropriate risk controls for duration, spread, country and sector risks while favoring companies that are stronger than peers.







U.S. Australia Japan Source: Northern Trust Asset Management, MSCI, Global IG corporate universe from October 31, 2019. ESG Leaders are companies with ratings A or above vs. laggards have

Climate Change: Look Forward, Not Back

It is extremely difficult to model implications of climate-change to asset prices. But increasingly asset owners are lowering exposure to both fossil fuel reserves and carbon emissions as the first line of defense against the transition risks associated with climate change. In doing so, investors should not only focus on historical measures of carbon footprint. They should also favor companies that are taking steps to mitigate low carbon transition risks through renewable energy and clean-technology, in addition to other forward looking measures.

Avoiding the Pitfalls: Consider Factor Investing

In order to further bolster fixed income outcomes, our research shows that precisely targeting factors such as quality, value, size, momentum and low volatility has historically improved fixed income returns.*** Exhibit 4 shows the performance of the top 20% (based on our proprietary fixed income score) of each of the factors relative to the global corporate credit benchmark.

Combining factors with ESG can provide both positive risk and return outcomes while investing responsibly. So investors don't have to sacrifice performance to invest sustainably. In fact, combining high financial performers that also value sustainable business practices makes as much business sense as it makes good sense.

Guidelines to Get Started

As investors consider sustainable investing for their bond allocation, they should keep in mind these key ideas:

- Sustainable investing may be used when seeking to improve performance and manage risk in a fixed income allocation.
- Duration, spread, country and sector biases can manifest when adding sustainable investing or ESG into the investment process and they should be controlled for.
- ESG ratings should be considered as an additional factor to evaluate an issuer's long-term creditworthiness.
- Style factors such as quality and value may be combined with ESG factors to potentially improve risk-return outcomes.

These guidelines should provide a solid foundation when considering integrating ESG to your bond portfolios.

Exhibit 4. How Factors Work for Bonds

Value, momentum and low volatility have outperformed the broad global bond market.



Return of Style Factors

Source: Northern Trust Quantitative Research, January 31, 2003 to June 30, 2019. Past performance is no guarantee of future results. Returns of the indexes also do not typically reflect the deduction of investment management fees, trading costs or other expenses. All returns are gross of fees. It is not possible to invest directly in an index. Returns for the quintile one portfolio sorted on Northern Trust Asset Management factor score and debt cap-weighted.

Article Source/References:

*Alain Devalle, Simona Fiandrino and Valter Cantino. 2017 The Linkage between ESG Performance and Credit Ratings: A Firm-Level Perspective Analysis, International Journal of Business and Management

**S&P Global highlights 717 rating actions during 2015–2017, where environmental and climate risks were an important factor and 106 where those risks were key to a rating action

***Northern Trust Paper: Looking Beyond Term and Credit: Factors that Drive Performance of European Corporate Bonds

It is extremely difficult to model implications of climate-change to asset prices. But increasingly asset owners are lowering exposure to both fossil fuel reserves and carbon emissions as the first line of defense against the transition risks associated with climate change.

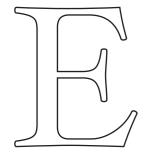




Credit Impact

Delivering Better Returns through the SDGs

by Aline Reichenberg Gustafsson, CFA



ESG and SDG Integration in Fixed Income

"Sustainability status does not cost investment performance," says Guido Moret, Head of Sustainability Integration Credits at Robeco. In his presentation, sustainability expert discussed his firm's approach to sustainability, its ESG and SDG integration methodologies and how this methodology benefits investors financially. He considered the differences between engagement in equity and in fixed income.

ESG & SDG integration – a win-win

"When considering our investments, we ask ourselves two questions: 'How does sustainable development affect a company?' and 'How does a company influence sustainable development?' To us, the first question is about ESG integration, whereas the second is about the internalisation of the SDGs into the investment process and making an impact in the world," Moret starts.

"ESG integration follows from financial materiality. The impact side is more about norm- and ethics-based choices, as well as avoiding harm. In our research process, we express both of these notions in the form of two combined scores. We have a fundamental credit score, the 'F-Score', where we take ESG integration into account. Then, we also have an SDG score, which is about the alignment of company with the UN's goals"

Guido Moret

Robeco

Head of Sustainability

Integration Credits

"These two notions of ESG integration and impact investing are related and we find that they often intersect. The way we see it, economic actors can have a negative or a positive impact on society. In the long run they will either pay for a negative impact or you will be rewarded for their positive impact. If you do good for society, in the long run, society will serve you well, financially."

ESG integration at Robeco

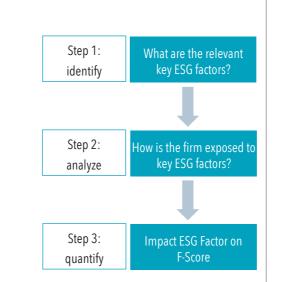
"For every credit that we cover, an analyst writes a report that consists of five different components: the business position, the corporate strategy, the financial profile and the corporate structure, which are traditional dimensions; they also assess the ESG profile. These five factors combined lead to a fundamental score. The weight of each element of the score is not equal or predefined to contribute to the final score. It can be that one of them or two of them in combination have an overwhelming effect on the fundamental score," continues Moret.

"Financial performance can be really poor, whereas the strategy is fine. The business position can be good, while the company's financials still look very modest. The score can also be depressed by a very low fundamental score from an ESG perspective. This means that the notion of sustainability is truly integrated in the investment process given that the S-Score is also determined by the ESG components. We identify the most material topics in the industry that the issuer belongs to, and then we look at how the company is exposed to those matters. This framework informs the conversation between the analyst and the portfolio managers on how all these five components weigh into the final S-Score."

Moret provides a numerical example: "If the S-Score is zero, it means that we haven't identified any additional risk than we would normally expect, be it from a fundamental, financial or ESG perspective. If we are able to find an attractive spread that is higher than the average, we would conclude that this is an attractive investment opportunity. At the other end of the performance bracket, we could also find a case where everything looks fundamentally quite weak, but the spread is actually quite tight."

"As you can see, the ESG integration components are very much about risk and financial materiality," Moret emphasises.

ESG integration in credits: Methodology



Impact assessment and the SDG alignment

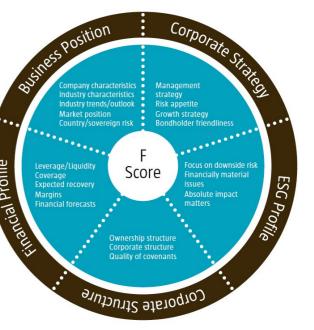
"On the other side we have the impact approach," the portfolio manager explains. "We use the 17 UN SDGs to define impact. Among other strategies, we also have a fund range that only invest in companies that are aligned with these goals or at least do not contribute negatively. However, even for all the other credit strategies we manage, which are not specifically targeted at the SDGs, we still calculate the score and take it into account at the credit committee. Indeed, a lack of SDG alignment may also translate into additional risk given the circular mechanism between the goals, ESG factors and future risk."

"Assessing SDG alignment is not easy," Moret admits. "There are 17 goals and 169 underlying targets. Most companies will most likely have some positive contribution to some of the goals or targets. However, you may also find some negative contributions. We are left to disentangle the good from the bad. How should we weigh environmental goals against the social goals, for example? To overcome this challenge, together with RobecoSAM, we developed a framework to make choices that are consistent."

"We have designed three steps. First, we look at the products or services that a company offers. Then we consider how a company provides these products or services and how it operates in general. Here we are talking about how the company behaves. We consider how it is managed, what are the environmental and the social management procedures of the company, what governance is like. The third step is to correct for controversies. The company may have the right policies in place, but it may all have failed or there may be issues in specific parts of the company. We need to take these issues into account. After completing these three assessments, we form a score that ranges from plus three to minus three."

"In about 15% of the cases, an SDG score that was given from a product perspective is adjusted, either up or down, based on behaviour. When controversies arise, such as spills, accounting fraud, bribery and child labour, the SDG score will be downgraded to a negative.

"The final SDG score is not 'netted'. If a company does well on one issue and poorly in another, we do not net the positive factor with the negative one to obtain a result of zero. Instead, if we have established that a company



contributes negatively to SDGs the final score is negative. The negative will overrule the positive. This conclusion stems from a principle that we want to do no harm with this fund range, above all else, and therefore invest only in those companies that are at least neutral in terms of SDG contribution. And therefore, by neutral we do not mean 'net neutral', but we do allow those companies in that may currently not generate any positive impact, as long as we exclude all the companies that have a negative contribution," Moret specifies.

"Every analyst is able to and is responsible to analyse the SDG score of all their companies. They follow the framework, and they know exactly what the KPIs are for their own sector. Over time, we have been able to show that SDG integration matters. In a preliminary study, we found a statistically significant difference between the sectors with several negative SDG scores and those with a high number of positive ones. 'Positive' sectors exhibit lower rates, higher returns and experience less downgrades and more upgrades than the 'negative' ones. Being sustainable has definitely no cost."

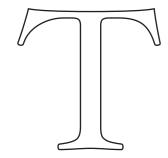


This article was originally published as a Research report produced by FTSE Russell, on November 25 2019 under the title: "How could climate change impact sovereign risk?" and was reproduced with permission. The publication in its original format is available here: https://content.ftserussell.com/sites/default/files/research/How%20could%20climate%20change%20impact%20sovereign%20risk%20FINAL.pdf

Sovereign Credit Risk

The Impact of Climate Change on Sovereign Risk

by FTSE Russell

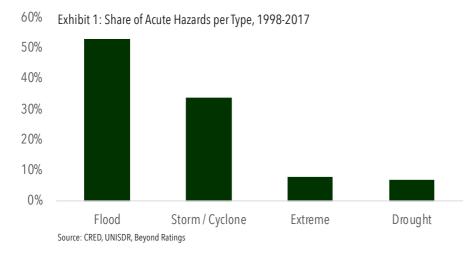


The concept of climate risk has gathered considerable momentum over the course of the past two decades, culminating in the agreement of the Parties (COP) during the Paris 21st Conference in 2015. It set ambitious country-level carbon emission targets with the long-term objective to limit the increase of global average temperature to well below 2 °C above preindustrial levels(1850-1900), and to limit the increase to 1.5 °C by 2100-a level widely regarded as the threshold for substantially reducing the societal and economic impact of climate change.

A wide spectrum of financial markets participants, such as investors, asset owners or central banks, are increasingly becoming aware of the issues related to the physical climate risks and the associated economic costs. While the level of awareness of the physical risks of climate change has never been higher, the complexity of the various climate risks factors and how they may impact specific financial assets is less well explored. This can be attributed to many factors, particularly the time-horizon of climate risks: paradoxically, the significant cost of climate change is back-loaded for future generations, and the current one has almost no direct incentive to address it. This, coupled with the inherent short-termism observed in the capital markets, lack of incentives for the current generation of market participants and the less-well understood interplay between a combination of financial and climate risk factors, suggests that markets require transparent and objective research and investment tools to help manage the emerging risks of climate change for a range of asset classes, including sovereign bonds.

The longer investment horizon of the sovereign bond asset class aligns well with the forecasted economic costs and associated challenges of climate change. Climate risks are likely to materialize well beyond the general short-term perspectives of financial investments but are likely to affect the long-term investment horizon of sovereign bond investors, such as banks and asset owners. Therefore, alongside traditional fundamental sources of relative value and risk, such as the perceived health of government finances, inflation expectations and the future path of interest rates, sovereign bond investors should increasingly consider the materiality of climate change.

As sovereign bonds represent an important asset class in the credit market, this seems to be a key part to address. In this paper, we introduce what could be the impact of climate change for sovereigns via the changes in fiscal policy, social contract and political stability, in both advanced and emerging economies.



Defining climate risks

Climate risks, as defined by Mark Carney in his famous 2015 speech "Breaking the tragedy of the horizon: climate change and financial stability"¹ are composed of two main sources: physical and transition risks. Each one would translate in rising financial instability in the future.

First, we discuss the characterization of climate risks, which can be divided between climate physical and transition risks. Second, we address the concern of the financial impact of these risks. We try to address both topics in this paper, introducing the integration of climate risks in sover eign risk assessment.

Physical risks: Climate-related hazards

Physical risks correspond to the potential economic and financial losses caused by climate-related hazards (Monnin, 20182). They can be divided in two main categories: (i) acute hazards and (ii) chronic hazards.

Acute hazards

Climate-related hazards are considered acute when they arise from extreme climate events, such as severe storms, cold waves, droughts, or floods (Monnin, 2018). As highlighted by Chart I, floods and storms or cyclones were the most frequent acute hazards between 1998-2017. Within these acute hazards, literature focuses mostly on cyclones and hurricanes, as 35% of the global population is seriously at risk from tropical cyclones (Hsiang and Jina, 2014³), making them one of the most broadly relevant forms of disasters, in addition to being one of the costliest (Bevere et al., 20114).Due to climate warming, the intensity of cyclones is expected to increase by 2-11% by 2100 as well as the frequency by 6-34% on global average, as the temperature increase at the surface of the ocean is a key driver in the formation of cyclones (Knutson et al.2010).

Chronic hazards

Climate-related hazards are considered chronic when they arise from progressive shifts in climate patterns, such as increasing temperature, sea-level rise and changes in precipitation (Monnin, 2018).Since the turn of the 20thcentury, the Earth's average surface temperature has increased significantly (by 1.5°C). The speed at which this increase has taken place in the past 30 to 40 years appears to be unprecedented in the past twenty thousand years (Mejia et al., 20185).Most scientists agree that such global increase is mainly driven by anthropogenic greenhouse gas (GHG)

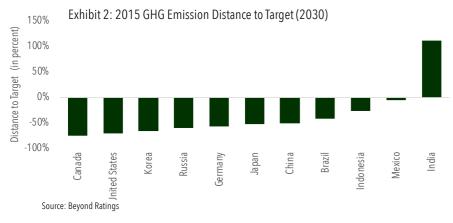
emissions, the central cause of global warming (Intergovernmental Panel on Climate Change, 2014⁶). This causality between GHG emissions and temperature increase is due to radiative forcing, corresponding to the GHG concentration in the atmosphere and generally measured in watt per square meter (W/m²) or in part per million air molecules (ppm). Scenarios of temperature increase are set according to scenarios on evolution of this GHG concentration, the representative concentration pathways (RCP). Although considerable uncertainty prevails on temperature projections, the scientific consensus predicts that without further action to tackle climate change, average temperatures could rise by 4°C or more by the end of the century if no mitigation policy is set (Mejia et al., 2018).

Transition risks: Meeting the target

Every year, the level of global CO2 emissions increases (emissions from fossil fuel consumption and cement production have increased by more than nine thousand million metric tons since 1900). As previously mentioned, the Paris 21st-COP in 2015 sets the long-term objective to limit the increase of global average temperature to well below 2 °C above pre-industrial levels (1850-1900),and to limit the increase to 1.5 °C by 2100. This implies ambitious plans toward the decarbonation of economies. This mitigation strategy would lead to transition risks, which can be defined as the risks of economic dislocation and financial losses associated with the process of adjusting toward a low-carbon economy (Monnin, 2018). Transition risks are driven by three main categories: (i) the level of ambition and path of the transition (ii) GHG content of the energy mix and (iii) energy intensity of the economy.

Ambition level and transition path

More commonly used goals, in terms of transition, include a level of GHG emissions, which leads to a limited increase in global temperatures of either 1.5°Cor2°C by 2100. The first target is the most ambitious and the one that minimizes the physical damages of climate change. The second target corresponds to the objectives of the Paris Agreement (2015). The Paris Agreement binds all signatories to provide Nationally Determined Contributions (NDCs), an outline of each country's strategy to reducing GHG emissions. Given that the sum of current NDCs would result in an average temperature increase in 2100 of the order of 3°C to 3.2°C (Giraud et al., 2017⁷), a national "carbon budget" (distance between the current GHG emissions level and this deter-



mined GHG emissions target) compliant with the 2°C objective has been determined using the Beyond Ratings' Climate Liabilities Assessment Integrated Methodology (CLAIM). This carbon budget corresponds to the amount of efforts needed in order to be 2°C compliant. The further the distance, the higher the efforts required to meet the transition target. The path itself, toward a reduction of emissions, can also have consequences for transition risks. Indeed, for an identical level of cumulative emissions reductions, an early and smooth transition should result in lower transition risks, compared to a late and sudden transition. Chart 2 represents the distance to target in 2030 for the 10 most GHG emitting countries in 2015. Required efforts are huge for the United States (-72% of GHG emissions) or Canada (-78%). Noteworthy, the CLAIM methodology attributes to India a carbon budget far higher than its current emissions (mainly due to the demographic factor).

GHG content of the energy mix

The importance of energy on GHG emissions is reflected by the fact that about 65% of emissions in the world are currently due to the use and production of energy (Marrero, 20108). Therefore, the current carbon content of the country's energy mix and its optimal decarbonation is an important part when considering transition risks. Exhibit 3 shows the optimal trajectory of energy mix decarbonation toward 2030 for China (Beyond Ratings' National Climate and Investment Pathway Methodology). Coal-fired generation is gradually replaced by solar and wind generation. The share of renewable energy (including hydroelectric

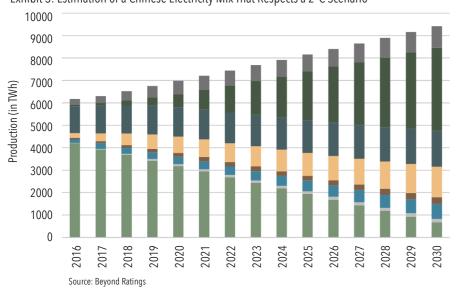


Exhibit 3: Estimation of a Chinese Electricity Mix That Respects a 2°C Scenario

production) increases from 25% today to 80% in 2030.

Energy intensity of the economy

Beside GHG intensity of the energy mix, another topic when assessing the risk linked with the overall GHG contents of an economy is the energy intensity of the output. Indeed, the impact of energy consumption on emissions would depend both on the primary energy mix and on the final use of this energy (Marrero, 2010). Meeting the emissions reduction target requires also to decouple energy and economic growth by minimizing energy intensity of the economic structure. This component of transition risks is driven by: (i) the energy efficiency and (ii) the sectoral distribution of the economy. The first is linked to the country's progress in technology, while the second is related to the choice of specialization of the country. Ultimately, both tends to be concomitant with the level of development.

How do climate risks translate into sovereign risk?

Once climate risks are described, one should ponder how these risks could translate into sovereign risk. Indeed, ultimately, the economic impacts of both physical and transition risks will weigh on public finances, and the social impacts could lead to an increase in political instability.

Physical risks: Impact would be nonlinear

Climate-related hazards disrupt the economy and potentially stress a country's financial and political stability. In this section, we analyze how physical risks could affect: (i) fiscal revenues; (ii) fiscal expenditures and (iii) political stability.

Impact on fiscal revenues

Burke et al.(2015⁹) highlight the non-linear effect of increasing temperature on economic output. Indeed, labour productivity exhibits highly non-linear responses to local temperature for all countries (even in advanced economies). The authors show that productivity is peaking at an annual average temperature of 13°C, declining strongly at higher temperatures. These results illustrate that economic activity in all regions is coupled to the global climate, and indicate that, if future adaptation follows past adaptation, unmitigated warming is expected to reshape the global economy by reducing average global incomes by roughly 23% by 2100, relative to scenarios without climate change. This declining productivity would affect government finances, as tax revenues are tied to the economic output.

Adaptation costs would weigh on fiscal expenditures

Alongside standard set of macroeconomic and structural policies, the International Monetary Fund (IMF) highlights in a recent working paper (Meija et al.,2019¹⁰) the need for specific strategies designed to adapt to climate change. These investments in "climate-smart infrastructure" (for example irrigation, drainage or seawalls) illustratethe adaptation costs of climate change, whichare expected toparticularly weigh on low-income countries government fiscal policy (Meija et al.,2019).

Climate migration could lead to increasing political instability

In addition to impacts on public finances, political instability could rise due to climate risks issues. This political instability could come from rising inequality, both within and between countries. As a distributional effect between countries, one could mention potential risks due to coming climate migration. Indeed, as highlighted by Black et al.(2011^{II}), the effects of global environmental change, including coastal flooding, reduced rainfall in drylands and water scarcity, will almost certainly alter patterns of human migration, leading to important population movements. As people living in less developed countries may be more likely to leave affected areas, that may cause conflicts in receiving areas (Reuveny, 2007¹²). Finally, within a country, climate change could lead to higher inequality due to some of the economic effects of slow growth regime (the Piketty hypothesis, Jackson et al.,2016¹³).

Transition risks: Managing mitigation policy

Efforts needed to meet the emissions target would be a function of both the ambition of emissions reduction and the path towards this transition. This could translate into sovereign risk through channels such as: (i) the mitigation costs and (ii) the potential negative impact of abrupt changes in tax policy on fiscal revenues.

Mitigation costs Regarding the

Regarding the fiscal implications of transition issues, emphasis should be put on the efficiency of government spending for mitigation. Indeed, green fiscal policy is not confined only to the use of taxes to incentivize more environmentally friendly production, transportation and consumption patterns, but it has also to do with government spending (through subsidies and investment) that affects the use of renewables, energy efficiency, energy storage, etc. Regarding the efficiency of this mitigation investment, literature states that: "green subsidies and green public investment improve ecological efficiency, but their positive environmental impact is partially offset by their macroeconomic rebound effects. A green fiscal policy mix derives better outcomes than isolated policies" (Dafermos and Nikolaidi, 2019¹⁴).

Negatively impacted industries could lower fiscal revenues

A poorly managed transition policy could lead to shocks on economic activity. Indeed, depending on the respective country's size of fossil fuel or renewable energy sectors, green policies, such as carbon taxes would impact positively or negatively firms' profitability, and then the economic activity. This phenomenon is highlighted by Battiston and Monasterolo (2019¹⁵): "2°C-aligned climate mitigation scenarios [...] leads to unanticipated shocks in economic trajectories of fossil fuel and renewable energy sectors[...]". This leads to potential shocks from firms' profitability to sectors' gross value added, and then would impact sovereign fiscal revenues.

Further research

Monitoring indicators, such as those mentioned in this study, can help to highlight potential weaknesses in terms of physical or transition risks, as well as the resilience of the country (and potential increase in political instability in case of a lack of resilience). In further research, emphasis should be put on modelling more precisely what could be the financial impact of climate risks in the sovereign asset class.

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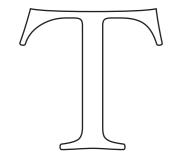
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High Yield

ESG & the Reality of the Bond Market

by Filipe Pires de Albuquerque





James Tomlins Fund Manager M&G Investments

Trade-offs in Sustainable Fixed Income

To James Tomlins, fund manager at M&G Investments, sustainable fixed income is about trade-offs, much like in politics. "At one end of the spectrum, there's ideological and theoretical purity, which is maybe a little unpractical and difficult to achieve results. At the other extreme, there complete pragmatism with complete disregard for ideology, which gets a lot done, but probably not what is good for the world," the fund manager explains.

"It's important that asset owners and asset managers be aware of the compromises underlying their investment choices, particularly in the field of sustainability, which can be very purist."

Avoiding the Bad

"Perhaps the simplest and oldest fixed income investment strategy is exclusions. It fits traditional ethical needs and is very easy to carry out. It is the most practical approach. However, the industry and the world has moved beyond this practice," Tomlins says

"We don't just want to avoid the bad. We also want to do good and help improve outcomes. Exclusions is the easiest approach to implement, it worked well in the past, but it falls short of today's standards for sustainable investors."

Liquidity Issues with Impact Investing

At the opposite end of the spectrum, Tomlins notes the trade-offs between the purest of sustainable strategies and liquidity needs. "Considering pure impact - in terms of project finance, moving away from green bonds - the theoretical element is great. Pure impact investments have clearly defined social and environmental outcomes. When investing in a wind farm, one knows exactly what the returns are both financially as well as in terms of decarbonisation."

"The practical hurdle is liquidity. Pure impact projects are private and normally illiquid. Without a secondary market, there is normally no way to trade the impact bond or loan. Lack of liquidity imposes restrictions on asset managers. It is necessary to have the right mandate, the right client base, and to be willing to sacrifice that liquidity. Pure impact works very well for the private debt space where liquidity requirements are low.'

Diversification Issues with Green Bonds

Tomlins points to green bonds as a middle point between exclusions and pure impact. Green bonds' main trade-off is between ease of impact and lack of diversification. "The good thing from a theoretical perspective is that green bonds are well defined, and the issuer universe is self-selecting," Tomlins explains. "If you are happy with the green bond framework and the use of proceeds, then green bonds will provide the desired impact."

"The disadvantage for investors is that it is focused on a concentrated universe of issuers. For investors comfortable with investment-grade (IG) and the quasi-sovereigns, green bonds are great. For those who would prefer to go into high yield (HY) issuers, the problem is that there are only around 10 HY green bond issuers, and one of them defaulted with a 95% loss for the bondholder."

"Green bonds are simple and easy to do if one is happy with the available investment options, but that simplicity is often achieved at the expense of diversification."

Making High Yield Green Bonds Work

According to M&G's fund manager, to overcome the issue of diversification in green bonds and delve deeper and more confidently into the HY market, investors need to let go of some of that simplicity and spend some time on investment analysis. "It's possible to reward industry leaders and create more positively aligned portfolio in corporate credits, but it is more complicated. The ability to identify industry leaders can be expensive in terms of time and resources. "We need complex analysis supported by robust but comparable ESG scoring methodologies. With a combination of external suppliers, and internal expertise, it is possible to build methodologies and frameworks that facilitate a safer entry into HY green bonds."

Tomlins' confidence in the possibility of pursuing a more amenable fixed-income strategy focused on HY green bonds stems from his own experience managing the M&G High Yield ESG fund. "The portfolio that we constructed has been running for a little over two years."

The solution involves combining traditional exclusions with ESG integration and engagement. While both steps are important to this approach, their effects are asymmetric. "Our experience is that exclusions focused on controversial sectors have relatively limited impact on both our investible universe and our portfolio. The only sectors that are really impactful are gaming - a relatively large High Yield sector, particularly in the US - and weapons and defence."

"ESG integration is by far and away the most impactful step." At this stage, based on external and internal ESG scores, fund managers reweight the portfolio from low scorers to high performers, according to Tomlins. "This is done on a sector-neutral basis to control for any investment bias. The result is a portfolio that scores significantly higher from an ESG perspective than the HY market average."

Although this approach does not necessarily exclude the energy sector in its first stage, Tomlins explains that, in his experience, the most controversial energy companies get dropped out in the re-weighting stage. "We don't invest in oil sands, that tend to score very poorly from an environ-



Lu Yu Deputy Fund Manager M&G Investments

mental perspective, but we do invest in names like Total, a fossil fuel business that is extremely proactive about transitioning away from fossil fuels and into renewables. Because such efforts score very highly in terms of ESG ratings that is reflected in our portfolio."

How Big is the Trade-off?

Tomlins' focus is on the need for open, honest and transparent dialogue between asset managers and their clients. "Going back to this idea of purity and practicality, if you have a hard exclusion on fossil fuels at your institution, the process I have just outlined is perhaps not the process for you. But energy is one of the biggest high beta sectors of the HY market, so that will significantly impact portfolio returns if it is excluded. Clients must acknowledge and accept that trade-off as well."

The HY and IG ESG scores are not too far apart, so a methodology such as Tomlins' does not have to give up so much in terms of ESG ratings. "Using the MSCI scores, we score a 5.6 out of 10. That may seem quite low for an ESG portfolio. However, when you look at the distribution of scores, the IG space looks quite similar to the equity space, i.e. it's a normal distribution. The HY space, however, has a leptokurtic distribution, meaning that it is skewed towards the low end, which makes a best-in-class approach very difficult."

"For example, if we were really focusing on optimising the ESG score and the ESG score alone it would be possible to get 9 out of 10 at the very thin end of the curve, which would just create a lot more concentration risk along the lines of what I mentioned at the start."

Tomlins also explains that in his experience, this approach is quite flexible and able to use internal assessments to correct third-party ESG ratings. "We have a specific decision tree mechanism so we can override the external rating if we think simply that the methodology has been misapplied. We did this in one case with Wind Tre at a time when they were the biggest creditor in the market. Due to some confusion at MSCI about entities within the company and the company itself, the data provider ended up downgrading the ESG rating of the company due to the mistaken conclusion that Wind Tre lacked a board, which negatively affected its governance score."

"They acknowledged their mistake once we pointed it out to them but informed us it would



take six months for them to correct their assessment. Instead of waiting, we documented the situation, brought it to an internal sustainable investment committee and, after their scrutiny, decided to keep the company in our portfolio."

Engagement

Going back to the second step of Tomlins' approach, his colleague and Deputy Fund Manager, Lu Yu, points out that the ESG scores can also be used as a basis for engagement. "We try to influence issuers and push them to improve, enhance their behaviour and disclosures. That's not always easy as a fixed income investor."

"In a typical engagement case, we involve three different parties within the asset management company to work with the issuer, including a fund manager like myself, the central ESG team, and the credit analyst who covers that company."

According to Yu, the fund manager acts as the driving force, identifying the reasons for engagement. There is a range of triggers for engagement. The company might be a large holding of the portfolio or the target of joint engagement with other investors. Engagement might be motivated by a single theme or by some specific ESG weakness of controversy. Alternatively, an attractive company that is unrated will attract engagement efforts to facilitate disclosure of material information.

"The responsibility of our central ESG team is to provide detailed engagement questions and assist us with their in-depth knowledge on certain topics. The credit analysts, all of which are sector-based, have a long experience with the issuer and have in-depth knowledge about the sector or topic. It is they who initiate the dialogue with the company and who own the communication process."

Yu discussed two engagement case-studies. "CPI is a large listed German and Czech property company. However, 95% of the company is controlled by a single shareholder, the founder, which represented a governance problem. The company is also a large holding of our HY fund, which was another motivating factor.

"CPI issued a bond early this year, and within two days of the debt issuance, an American hedge fund launched a litigation claim of US\$1 billion, which pushed the bond down five points. We needed to decide whether to drop the company or hold and let the storm pass. Through engagement with the CFO, we were able to gain a better understanding of the liability associated with the litigation claim, which we agreed seemed exaggerated. We were also able to voice our concern about the governance issues of the company, which led to the addition of an independent board member."

"Iceland is another holding of the fund, which operates as an unrated small frozen food-focused UK retailer. We engaged with this company because it is unrated and because towards the end of 2018, it claimed that it would go palm oil-free in their own brand of products. To understand this decision better, we talked to the head of ESG and with the director of sustainability, to understand better about the philosophy of the company so we would be more comfortable about this unrated holding. As a result of our engagement efforts, they have started setting up ESG guidelines and asked us for a meeting to discuss ESG KPIs."



Transition Bonds

Financing Brown to Green

> by Yo Takatsuki & Julien Foll



Financing the fight against climate change needs to shift up a gear and evolve. Since the introduction of green bonds, capital markets have made great strides in recent years to ensure that investment capital can fund projects mitigating global warming. But this is not enough - more needs to be done.

At AXA Investment Managers, we are aiming to do more - we are calling for the establishment of a new type of bond, distinct from green bonds, which we are calling "transition bonds".

While green bonds are intended for issuers to use the proceeds to finance environmentally-friendly projects, we see a significant gap where investors could step in and deliver real impact for companies which are not yet at this stage.

There is an opportunity to provide finance to companies, which are 'brown' today but have the ambition to transition to green in future. This includes firms that are not able to issue green bonds today, due to a lack of sufficiently green projects for which they can possibly use bond proceeds.

Transition bonds are intended to provide financing for such companies i.e. most businesses in the world today. We believe that this new form of financing can play a vital role in supporting the transition to a low-carbon society.

The guidelines that we set out here are not the finished article but are intended to kick-start a dialogue between issuers, investment banks, investors, policy makers and wider stakeholders.

We want to be at the centre of this dialogue and welcome your views. These guidelines represent part of our effort, to take the lead in establishing a new market for transition finance.



Yo Takatsuki Head of ESG Research and Active Ownership

AXA Investment Managers

Transition: The journey to change

Climate transition is built on the premise that shifting our energy mix away from what we have today, to what is needed to limit global warming to the '1.5-degree world' - will take incremental steps, and time.

The Intergovernmental Panel on Climate Change has stated that to reach a 1.5-degree world, the average investment in the energy system needs to be around \$2.4trillion per vear between 2016 and 2035, representing around 2.5% of global GDP. *

By 2050, annual investment in low-carbon energy technologies and energy efficiency needs to be increased by roughly a factor of five from today.

In the electricity generation sector for example, fossil fuels must decline, and clean renewable sources need to increase in the overall balance.

In the International Energy Agency's (IEA) Sustainable Development scenario - an accelerated clean energy transition plan which will put the world on track to meet goals related to climate change - universal access and clean air - global demand for coal needs to fall by more than 50% by 2040.**

As a result, the share of fossil fuels in electricity generation should drop from nearly 40% today to less than 10% in 2040.

In our view transition bonds are intended for companies which are:

- · in greenhouse gas-intensive industries such as materials, extractives, chemicals and transportation
- in industries which currently do not (and for the foreseeable future may not) have sufficient green assets to finance but do have financing needs to reduce their greenhouse gas foot-

Julien Foll



AXA

Investment

Managers

print of their business activities, as

well as their products and services

Transition bonds defined

Transition Bonds are any type of bond instrument where the proceeds will be exclusively used to fully, or partly finance, or refinance new and/or existing eligible transition projects, and which are aligned with the Transition Bond Guidelines.

We are calling for a high level of transparency and propose following the same structure as existing approaches to Green Bonds Principles, Social Bonds Principles and Sustainability Bonds Guidelines. Our transition bond approach is framed around the four core components of use of proceeds, process for project evalutaion and selection, management of proceeds and reporting.

Use of proceeds

Transition bonds' key characteristic is that the proceeds raised are used to finance projects within pre-defined climate transition-related activities. The eligible Transition Project categories include, but are not limited to:

Energy

- Cogeneration plants (Gas powered combine heat and power (CHP))
- Carbon Capture Storage
- Gas transport infrastructure which can be switched to lower carbon intensity fuels
- · Coal-to-gas fuel switch in defined geographical areas, with defined carbon avoidance performance
- Waste-to-energy

Transportation

- Gas powered ships
- Aircraft alternative fuel

Industry

· Cement, metals or glass energy efficiency investments - such as to reduce clinker ratio, use of recycled raw materials, smelting reduction and higher recycling

Process for project evaluation and selection

Transition bond issuers should give investors a clear description of the eligible assets, the eligibility criteria and the asset selection process. They should explain why these projects are important to finance from the perspective of commercial transformation and climate transition. We encourage detail on the projects' environmental objectives, alongside expected outcomes and impacts.

They should also consider whether these projects could lead to negative externalities which may harm other environmental and societal aims, such as those described in the United Nations Sustainable Development Goals.

Management of proceeds

The issuer should have sufficient guarantees in place to ensure the proceeds are effectively allocated to the eligible projects. This means the net proceeds of a transition bond should be tracked in a formal internal process, once the transition bond is outstanding, with the method verified by external audit.

Reporting requirements and key measures of impacts

Transparency is critical to investors. Issuers should prepare and maintain readily available and up-to-date information on the use of proceeds as well as informing investors of any material changes. Regular and comparable reporting on the environmental performances and outcomes of the financed projects is important.

Detailed impact assessments are good practice and we increasingly consider this type of reporting as necessary to our assessments and analysis. It allows us to measure and report on the environmental performance and impact of our portfolios. We also consider it evidence of a company's capability in understanding the positive impact of its commercial activities on society

and the environment. In this regard, we would ask transition bond issuers to publicly report:

- re-financing
- project
- scenario'.
- lot of power
- access to cleaner energy
- commodities
- chain disruptions

We encourage issuers to externally certify this information via an external audit and to publish this information in their annual report.

Issuer's sustainability strategy

Alongside the issuance-level components, we also want to establish clear expectations on the issuer's broader environmental strategy and practices. This is an additional component not currently explicit within the Green Bond Principles but which many leading investors in the market - such as

· The proportion of financing vs.

 The projects to which proceeds have been allocated (and if relevant the remaining unallocated proceeds) with the amounts allocated to each

The projects' estimated environmental and social performance and impact with appropriate indicators. We encourage issuers to use the indicators developed by the Green Bond Principles notably through its Impact Reporting Working Group. Explanation of the underlying methodology to assess impact is welcome. The indicator should be provided at an aggregated level and where possible also reported as per million euros invested in the bond for investors to directly calculate the impact of its investment. For example, this can include measures such as:

> avoiding greenhouse gas emissions. This should be considered in line with the IEA's pathway for a CO₂ emissions trajectory to limit the average global temperature increase to 2°C, known as the '2°C

> energy efficiency gains for industrial activities which consume a

> improvements in availability and

> reduction in the use of natural resources such as water and food

> increasing resilience of operations to climate change including reductions in production or supply AXA IM - are already actively considering when assessing green bonds for investment[1]. We believe the consideration of issuer-level practices is particularly important to legitimise transition bonds as an environmental investment.

Transition bond issuers should clearly communicate what climate transition means in the context of their current business model and their future strategic direction. Senior management and board directors should make a commitment to align their business with meeting the COP21 Paris Agreement goals.

The issuer's transition strategies should be intentional, material to the business and measurable. The Transition Bond must fit into the broader transition strategy. This should be defined by quantified short and longterm environmental objectives. Transition Bonds should be a tool to principally finance a share of the issuer's spending necessary to achieve targets.

Bond issuers are increasingly announcing environmental targets for 2030 or even as far in the future as 2050. While long-term objectives are welcomed, we ask for quantified shorter targets to assess the issuer's progress against its own transition pathway. We also encourage issuers to explain their board and senior management's strategic decision-making process and the capital expenditures needed to meet these targets. Issuers should ensure that their broader sustainability practices, such as policies and programmes, are capable of helping achieve the objectives.

In this way, we hope that a new market for transition bonds can be established. We believe transition bonds have the potential to give companies a new source of financing for the transformation of their business activities, that they could represent a new and attractive asset class for investors and ultimately accelerate the fight against climate change.

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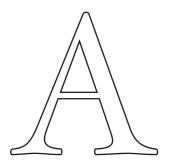
[1] For more information please refer to AXA Investment Manager's Climate Risks Policy. Intergovernmental Panel on Climate Change – 2018 International Energy Agency



Sustainable Fixed Income

SDGs, Taxonomies & Disruptions

by Aline Reichenberg Gustafsson, CFA



At a recent workshop on Sustainable Fixed Income held by NordSIP in Copenhagen, participants discussed the differences between approaches and regulatory support on both sides of the Atlantic, how to use of ESG data and the integration of ESG factors by standard credit rating agencies. Another issue debated at length was the power of ESG factors and their resilience to economic and financial volatility.

SDG Bonds

There is some work left to be done in sustainable fixed income, but the recent launch of SDGlinked bonds was an important step according to Fabien Collado, fixed income portfolio manager at AXA IM.

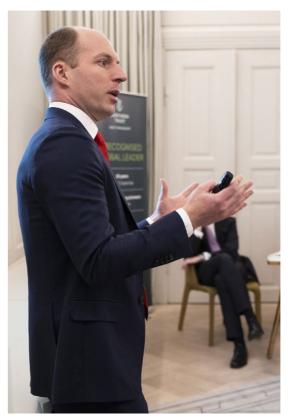
"The recent ENEL SDG-linked bond introduced the concept of linking financial returns with impact objective. We need these bonds, where the pay-out depends on whether the issuer can meet its impact goals," Fabien Collado, Portfolio Manager at AXA Investment Managers, explains. "That SDG bond was the first of its kind, and we expect it to start a trend, where investors look beyond the 'green' and do their homework, consider the SDGs carefully and decide for themselves whether the investment is right."

"However, this type of instrument still needs some fine-tuning to align everyone's incentives in the right way. At the moment, the bond provides a coupon step up if the issuer does not meet impact objectives." According to the portfolio manager, there is a danger that such a structure may create an incentive for investors to want to see the issuer fail. "It may be preferable to provide an investment that does the opposite so that the issuer is successful investors part-take in that success through returns.

EU Taxonomy and SASB

The issue of labels brought the discussion around to the topic of instrument classification, taxonomies and regulations. Inevitably the conversation turned to the incipient EU Taxonomy as well as to the work being carried out by the US-based Sustainability Accounting Standards Board (SASB). "The EU Taxonomy is foundational to many of the EU's other initiatives within the Sustainable Finance package," Guido Moret, Head of Sustainability Integration Credits at Robeco, noted. "It's going to have an impact, on its own as well as indirectly through the green bond standard, which will most likely be based on the taxonomy.

"It's something that will have an impact on the industry," Moret adds. "The taxonomy itself is mainly a library of economic activities, and whether and when they can be considered to be environmentally sustainable. But, in our case, on the credit side, I think this will first influence the green bonds market once the green bond standard, based on the taxonomy, is adopted."



Guido Moret Head of Sustainability Integration Credits Robeco



Fabien Collado Portfolio Manager AXA Investment Managers



Brad Camden **Director, Fixed Income Strategies** Northern Trust Asset Management

Across the Atlantic, investors are not entirely convinced by SASB's reporting capabilities, even if it is recognised as a useful tool. "SASB tries to help businesses manage and report on sustainability topics" says Brad Camden, Director of Fixed Income Strategy for Northern Trust Asset Management. "However, what we are finding is that not all of the SASB metrics are providing adequate coverage on disclosure topics, and the platform is not robust enough for us to integrate."

"We quite like the SASB framework as a tool to contextualise what is materially important for each industry," adds James Tomlins, Fund Manager at M&G Investments. "However, we decided to source our own data internally or filter external data through our analyst team. We use SASB as an initial step to challenge credit and investment analysts with regards to how we ought to be looking at these credits, from an ESG perspective."

"When we did our analysis, we added a few components, but, it's a very much similar approach taken by SASB," Collado agrees. "I like it because they have different metrics for different industries, which are relevant to that industry."



James Tomlins Fund Manager M&G Investments

"Moving to one terminology, or a taxonomy-enhanced framework will help everyone get on the same page. I think it's a necessary first step," Tomlins adds.

ESG Data & Rating Providers

To Tomlins, there's a parallel between today's ESG data providers and credit rating agencies (CRAs) of the past. "ESG methodologies today are like CRAs 15-20 years ago," he argues.

"Everyone claims to have an edge in their credit analysis. But everyone uses S&P and Moody's because clients need a comparable framework to assess risk across firms, and, across portfolios," Tomlins continues. "I think we're in a similar space, with MSCI and Sustainalytics. No one thinks they've got the right answer, but they provide a good benchmark of comparable metrics, across portfolios, and, across businesses."

"I completely agree," Camden says. "It's more about setting a baseline. The question is how to use the data to meet sustainable investing objectives and to offer solutions. We all know that the CRAs have some flaws. The same applies to MSCI and Sustainalytics in terms of ESG. What matters is

how one corrects for those flaws and incorporates the data into a solution."

Are CRAs Integrating ESG?

Collado is critical of CRAs' attitude to ESG risks. "They say that ESG has always been an important framework for them and that they have always done it. They don't acknowledge the fact that the credit firmware they have in place missed part of the risk, which I think is quite poor," the French portfolio manager says. "There's nothing wrong with admitting that ESG issues matter more now than they did five or ten years ago."

"Surveys show that nowadays, 75% of CEOs believe that ESG is important, but the figure was just over 20% ten years ago," Collado notes. "The market is more sensitive to it, and CRAs are more sensitive to it too. They should just acknowledge that. Instead, they insist that ESG is already incorporated into their credit rating framework and that if it's material, it's reflected into the credit rating. However, it's impossible to reconcile that view with downgrading a tobacco company by six notches on the back of an ADA regulation change."

Camden tries to see it from CRAs perspective. "They don't want to change their ratings methodology overnight. It has to be a slow evolution." However, he argues that some CRAs are more open to change than others. "Fitch seems to be most open, and then, probably Moody's, and, S&P last. There's a business incentive. Fitch is probably the least prominent of the three, so it is looking at ways to differentiate itself. Moody's has been slower, but we have seen changes over the last 18 to 24 months. As Fabien said, they insist that they have always incorporated it, but they are trying to take into account that the financial sector wants a lot more transparency."

"One contribution that CRAs have made is to help us push for more disclosures," Collado adds. "We all want more data as do they so when they take up ESG and ask for more data, we all benefit."

ESG and Market Instability

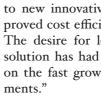
The impact of ESG factors may also vary depending on overall market conditions. "ESG is a useful risk indicator on the downside. As fixed income is an asymmetric asset class we'll always have to acknowledge those risk factors as useful investment indicators," Tomlins says. "In our experience, the ESG portfolio experiences fewer drawdowns than its non-ESG counterpart. It's easy to ignore it in a low default environment, where that factor doesn't have a huge impact on returns. However, if we go into a riskoff situation and default rates increase materially to 5%-8%, then I do believe that the ESG risk factor will have a much bigger impact on portfolio per-



formance and returns."

Another appeal of ESG factors is their long-term relevance. "ESG is here to stay regardless of the economic environment. Climate change and other ESG considerations about society and governance are always going to be pertinent even if the economic environment changes," Robeco's Moret argues. "It's an important source of additional information that is not only useful to clients that are looking to avoid negative impacts. As James said, if default rates go up and markets are more volatile, then additional information will become more valuable."

Camden agrees. "We're all investors, investing with imperfect information. Increased transparency offers more data to be analysed , which may lead



The Bifurcated US Market

Arguing about the relevance of ESG at different points in the credit cycle, Camden points out that a shift in market sentiment might just be what is needed to get the reluctant American investor on board. "I think we need some market turmoil to show what ESG can provide during a period of instability. When market volatility is low, particularly in a low-rate fixed income environment with tight credits spreads, the incorporation of ESG into the investment process is not as visible. We don't really see what value



to new innovative solutions and improved cost efficiency down the road. The desire for low cost transparent solution has had a significant impact on the fast growth of passive investESG analysis adds. We need market dislocation to promote change."

"The U.S is bifurcated," says Camden the American fixed-income portfolio manager. "It's often all or none," he adds. "Investors and asset owners are having a hard time taking that first step because they are finding that the solutions are not pure enough. We see a lot of demand for impact investing from the global family office space because of their desire to make a difference, but there are fewer suitable fixed income solutions for them. They feel that public markets don't make enough of a difference, so they go to private markets. On the other hand, some institutional investors still believe that ESG is going to sacrifice returns, so we need to educate them and dispel that myth."

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M&G is one of the billion in fixed in M&G naturally al has been financir Today, M&G has and private fixed measurable socia



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Sustainable Fixed Income

Handbook Series December 2019



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