PINEBRIDGE INVESTMENTS

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Managing Sustainability Risks in Developed Markets Fixed Income

Summary:

- As corporate sustainability reporting becomes standardized, investors will be able to quantify the potential effects of sustainability issues on their portfolios in terms of their cost of capital implications.
- PineBridge has introduced a set of key risk indicators (KRIs) at the industry level to gain an aggregate view of portfolio exposures to a particular sustainability dimension.
- Our research has found that, for developed markets investment grade fixed income, a handful of sustainability factors are likely to capture the most upside, as opposed to a resource-intensive analysis of all possible scenarios.
- By aligning their reference universe with metrics of sustainability risk such as KRIs, investors can employ environmental, social, and governance (ESG) issues as both risk diversifiers and alpha enhancers in their portfolios.

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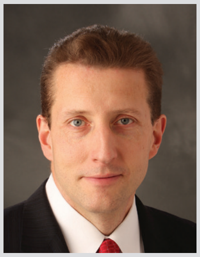

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Concerns among asset owners about how to best integrate sustainability considerations into the investment process of asset managers as well as corporate issuers continue to grow. Escalating environmental disasters, community and labor force unrest, and management of short-term earnings as opposed to long-term growth have investors focused on the potential reputational risk of gaining exposure to financial assets in headline-prone sectors of the economy.

As the disclosure of corporate sustainability risks moves down the path of standardization, investors will be able to quantify the potential effects on their portfolios. Since 2012, the Sustainability Accounting Standards Board (SASB) has taken ownership of addressing the need for standardized metrics of ESG reporting for publicly listed companies in the US by providing an evidence-based framework for disclosure of industry-specific sustainability metrics.

Here, we show how investors in developed markets, by analyzing a handful of key risk indicators (KRIs) in a portfolio, can search for sustainable assets with a favorable risk-return profile by prioritizing the analysis of sustainability dimensions at the industry level.

Standardization of disclosures is underway

While disclosure practices on sustainability issues have become widespread, they continue to lack consistency, comparability, and industry-specificity. In fact, approximately 60% of US public companies appear to adopt generic boilerplate statements in their disclosures, with over 80% of the voluntary reporting on sustainability topics still based off descriptive assessments rather than supported by quantitative measures.[1]

The work of SASB and that of its international counterparties, such as the Global Reporting Initiative (GRI) and the International Integrated Reporting Council (IIRC), addresses the subset of sustainability information that is material to investment outcomes. To be included in a SASB standard, an ESG issue must have clear evidence of operational and financial impact. For

[1] Deloitte (2016), Sustainability Disclosure: Getting ahead of the curve.

each industry in which a US public company operates, SASB considers a comprehensive list of sustainability topics, which is subsequently narrowed down to a smaller subset of material issues that are paired up with reference accounting metrics as defined by technical protocols.[2]

As a result, by analyzing the underlying drivers of operational impact, each of SASB's metrics is tied to specific financial outcomes in terms of either revenues and costs, assets and liabilities, and/or cost of capital. For example, when addressing workforce diversity in technology-oriented tasks, the financial outcomes of a more diverse employee base deal with, among others, gains associated with reputation and innovation advantages, which are captured by a stronger assets-versus-liabilities profile.

Sample Disclosure Topics: Assessing Materiality of Impact

Disclosure topic	Drug Safety and Side Effects	Energy-Efficient Chemicals Production	Operational Safety of Gas Pipelines	Diverse Technology Workforce
Drivers of impact	Customer demand, regulations affecting end use	Regulations, externalities and resource scarcity	Unanticipated operational disruptions, resource volatility	Reputation, innovation, physical/ direct market value impacts
Financial impact	Revenue	Cost	Cost of capital	Assets & liabilities

Source: SASB; iComply. As of 30 September 2017. For illustrative purposes only. We are not soliciting or recommending any action based on this material.

The introduction of standardized sustainability measurements beyond governance factors – on which bondholders have historically placed a premium – enables investors to swiftly integrate measurable performance indicators from ESG corporate reporting into the value assessment of public entities and that of their outstanding tradeable securities. To date, companies such as Barclays, Delta Air Lines, FMC Corporation, Microsoft, SAP, Solvay, and State Street, to name just a few, have already begun to reference their use of SASB's guidance and metrics in their sustainability reports.

How will investors benefit from these industry-specific measures of standardized corporate reporting?

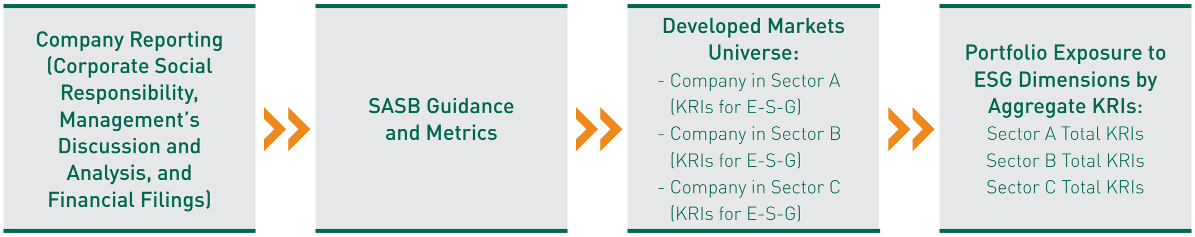
Standardized corporate reporting can help investors mitigate short-term litigation liabilities and long-term reputational risks on brand value. But, even more important, in our view, is that the use of standardized metrics of disclosure has the potential to further the assessment of cost of capital implications of ESG corporate practices. Specifically, by thinking of cost of capital first, bond investors will be able to:

- Define a measurable sustainability profile for a company. This will push rating agencies and issuers of sustainability "scoring" systems to include ESG dimensions in their assessments proactively and without bias.
- Gauge historical comparability of ESG-friendly corporate initiatives on the industry value and supply chains, including direct assessment of the effectiveness of compliance programs.
- Make sense of what-if sustainability scenarios by using industry statistics and relevant performance trends that adhere to the business dynamics of each publicly traded corporation in the US.

[2] The SASB Materiality Map highlights which sustainability issues are likely to have quantifiable material impacts on industries and corporations. https://www.sasb.org/materiality/sasb-materiality-map/

As a result, the prudent investor will be able to aggregate exposures to a particular sustainability dimension by assigning a targeted set of KRIs at the sector level from both company-reported data as well as SASB guidance on comparability of reference metrics.

Key Risk Indicators: From Company Reporting to Portfolio Analysis



Company Reporting (Corporate Social Responsibility, Management's Discussion and Analysis, and Financial Filings)

SASB Guidance and Metrics

Developed Markets Universe:
- Company in Sector A (KRIs for E-S-G)
- Company in Sector B (KRIs for E-S-G)
- Company in Sector C (KRIs for E-S-G)

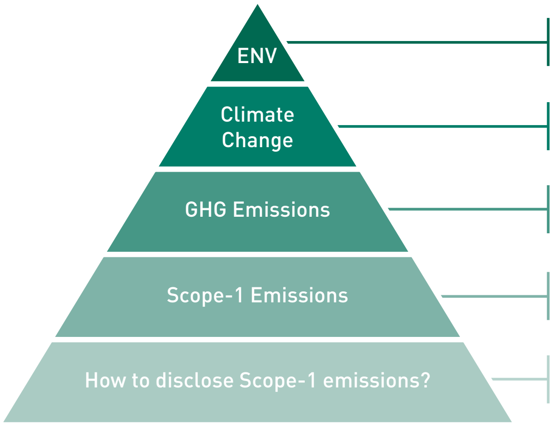
Portfolio Exposure to ESG Dimensions by Aggregate KRIs:
Sector A Total KRIs
Sector B Total KRIs
Sector C Total KRIs

Source: PineBridge Investments. For illustrative purposes only. We are not soliciting or recommending any action based on this material.

Example: Quantifying the impact of climate change in a portfolio[3]

As an example, we look down the path of a single issue through the lens of the SASB framework. We start with a chosen sustainability issue (climate change), assess the disclosure topic that is most commonly associated with this issue (greenhouse gas emissions, or GHG), and then focus on the SASB metric (Scope-1 emissions[4]) that is most likely to quantify the impact of climate change according to the relevant technical protocol by industry.

Mapping SASB Standards on the Issue of Climate Change to PineBridge KRIs



SASB STANDARD SETTING	PINEBRIDGE KRI MAPPING
SUSTAINABILITY DIMENSION	By investment strategy and customer guideline
SUSTAINABILITY ISSUE	By rate of occurrence of the issue in the investible universe
DISCLOSURE TOPIC	By access to reported data
ACCOUNTING METRIC	By industry
TECHNICAL PROTOCOL	By industry specific trends

Source: SASB and PineBridge Investments. For illustrative purposes only. We are not soliciting or recommending any action based on this material.

We found that, by assigning KRIs to the sustainability issues that affect our investible universe the most in terms of their material impact, we are able to look beyond the short-term nature of corporate headlines and capture the longer term trends that are most likely to yield near-term implications.

[3] SASB ESG Integration Insights, "Assessing the Carbon Footprint of a High-Quality Portfolio," Falsarone, A., Vanden Assem, R., 3Q 2017.
[4] As defined by SASB's sustainability accounting metric TR0201-01.

The trends unveiled by establishing KRIs at the sector level can be further aggregated across geographies and end markets to ultimately generate a transparent review of aggregate sustainability KRIs at the investment portfolio level. In fact, by focusing on only material issues to identify aggregate KRIs, investors are able to identify direct (active) exposures versus indirect (passive) exposures to ESG risks that stem from comparison of cross-industry trends through rigorous metrics mapped to the SASB protocols.

More importantly, in a forward-looking manner, assessment of "indirect" sector exposures to each sustainability dimension (i.e., portfolio exposures that are established by virtue of supply chain considerations) is also likely to isolate more attractive issuers from an ESG standpoint. These would be issuers that are pivoting toward embracing more precise operational and financial practices in the disclosure of ESG metrics and that are likely to enhance the sustainability profile of the aggregate portfolio in terms of ability to capture the value of sound ESG practices on both projected earnings and cost of capital.

As an example, let's consider the carbon footprint of a bond portfolio in terms of percentage of direct market value exposure to the energy sector versus the total number of sectors and issuers affected by the KRIs related to the GHG emissions disclosure topic.

Climate Change: Sample Industry-Level Metrics (How Impact/Metrics Differ by Industry)

	INDUSTRY	SASB DISCLOSURE TOPIC	SASB METRIC	PINEBRIDGE KEY RISK INDICATORS *
DIRECT	Oil & Gas	Reserves Valuation and Capex	Sensitivity of reserves to carbon pricing (MMbbls, MMscf), estimated emissions embedded in reserves (CO_2)	Average pricing of reserves (cost of carry)
	Electric Utilities	GHG Emissions & Energy Resource Planning	Scope-1 emissions (metric tons CO_2-e), percentage covered under a regulatory program (%)	Average pricing of reserves (cost of carry)
INDIRECT	Real Estate	Energy Efficiency of Buildings	Energy consumption intensity of portfolio (rate)	Consumption intensity by market share (rate)
	Airlines	Environmental Footprint of Fuel Use	Total fuel consumed (GJ), percentage (%) renewable	In-house renewable footprint vs. supply chain related
	Automobiles	Fuel Economy & Use-Phase Emissions	Sales-weighted average passenger fleet fuel economy, consumption, or emissions, by region (Mpg, L/km, gCO_2/km, km/L)	Capex devoted to fuel economy
	Banking & Insurance	Vulnerability of Assets to Climate Change	Amount ($) and percentage (%) of lending and project finance that employs integration of sustainability factors	In-house project finance footprint vs. supply chain related

Source: SASB classification and (*) sector KRIs identified by PineBridge Investments, as of 30 September 2017. For illustrative purposes only. We are not soliciting or recommending any action based on this material.

Our research indicates that more than half of the corporate issuers in our universe are affected by indirect exposure to environmental issues in terms of their need to pay a price to operate in environmentally sensitive supply chains. Yet, by employing a broad based metric such as GHG Scope-1 emissions, we would not be able to fully capture the extent to which sectors and individual issuers are materially affected by, in this case, carbon-sensitive processes. Therefore, lower aggregate CO_2 exposure versus the investible universe (i.e., focusing only on direct exposure predominantly from companies operating in the oil and gas and electric utilities sectors) does not guarantee a more sustainable portfolio profile in the short term. Indeed, managing the magnitude of the overweight in carbon-prone sectors such as automotive, airlines, real estate, and banking and insurance, as opposed to excluding individual energy issuers (and reducing the opportunity set), is likely to yield a more sustainable portfolio in the long term by ultimately allowing value capture through investments in companies that are aligning their businesses to succeed in a low-carbon economy.

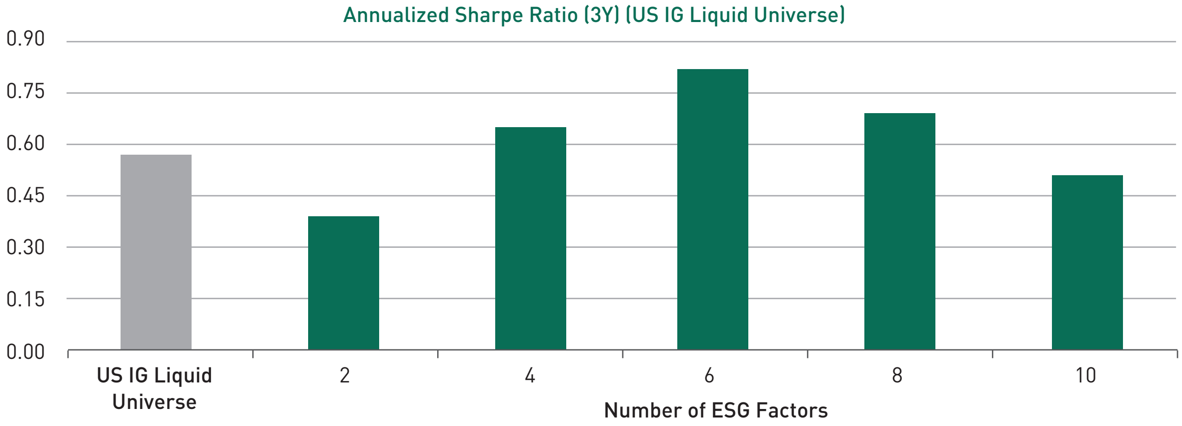
Sustainability KRIs can act as both risk diversifiers and alpha enhancers

Building an ESG compliant portfolio ultimately requires an investor to think of sustainability as an additional lever of risk-adjusted returns that needs to be measured at the aggregate portfolio level to truly understand its value. Should bond managers be thinking in terms of risk diversifiers or alpha enhancers as they integrate ESG considerations in portfolio construction?

To answer the question, we identified which sustainability factors within the ESG dimensions are most represented at the sector level in our reference universe: the developed markets investment grade liquid universe (i.e., the US publicly listed issuers with investment grade ratings and a trading window of their outstanding corporate bonds within one to three trading days). By overlaying the industry-level metrics provided by SASB, we began testing the anecdotal knowledge of the ESG impact we might expect to see in action across sectors and issuers over the most recent time horizon.

Our analysis suggests that by focusing on a handful of sustainability factors as opposed to dozens, over a three-year horizon, the Sharpe ratio generated by the reference universe is maximized, exceeding the alpha from the same universe without sustainability considerations by 1/4 of a percentage point. Specifically, we found a decay effect in terms of risk-adjusted performance to take place as more ESG dimensions are introduced. The decay is approximately 1/10 per additional ESG consideration introduced beyond an optimal threshold of six.

ESG Risk-Reward Maximized With Six Factors



Source: SASB industry classification, Bloomberg Barclays index data and PineBridge Investments, as of 31 December 2016. For illustrative purposes only. We are not soliciting or recommending any action based on this material.

Although six is not a magic number, at the sector level, we found a higher degree of positive correlation among factors as more granularity adds minimal information alpha. Intuitively, US public companies with high quality corporate ratings are most likely to have already achieved higher-than-average operational efficiency and governance excellence, while also pushing best practices along the value chain of their suppliers, the communities they touch as employers, and providers of services or goods. As more overseas companies become listed in the US and issue debt securities, the universe will continue to evolve along with the sustainability dimensions that reflect the industries represented in such a growing pool of debt issuers.

These insights allow us to point to the factors that are likely to affect the financial performance of the corporate debt in our universe and that of portfolio allocations over time. By taking it a step further, an investor is able to identify issuers that face the greatest sustainability headwinds in their sector, as well as the ones that have made the most progress relative to their peers and end markets.

Managing sustainability risks at the portfolio level

We provide an example of how the ESG profile of our universe has changed over the past two years. In 2016, we started to measure the concentration of sustainability risk at the industry level in terms of percentage of issuers affected by each factor as defined by SASB. We have noticed that governance issues have declined substantially year over year, while the potential impact from social issues has increased. The pressure of activist shareholders on targeted governance topics plus enhanced data security, customer and employee privacy threats posed by malware, and other cyber alarms are the likely contributors to such a structural shift.

By monitoring the risk profile of our universe, we are able to identify the leading sustainability risks in each of the ESG dimensions, which we refer to as “core ESG dimensions.” As an example, we note how water scarcity and the treatment of wastewater have been outpacing issues related to energy management for over half of the issuers in our universe, while data security and data privacy are quickly ranking as important as traditional measures such as employee health and safety. In terms of governance, the issue of managing innovation and disruption in the management of a product lifecycle at the strategy level of a corporation (where business and revenue models are housed) has become increasingly relevant and affects over 70% of the issuers under review.

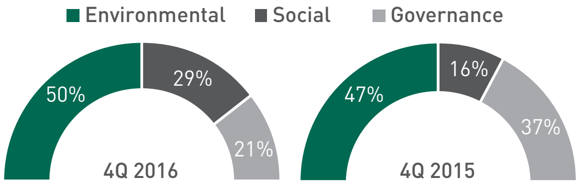
By aligning the reference universe with metrics of sustainability risk and trends identified through our KRI analyses at the industry level, investment managers are able to minimize exposure to emerging ESG dimensions that are less likely to be quantifiable in terms of materiality of financial and operational impact, while at the same time increasing risk exposures to sectors, companies, and underlying credit structures that are most likely to benefit bondholders.

US Investment Grade Liquid Universe: Core ESG Dimensions and Risk Concentration

Materiality Assessment (ESG Factor vs. % Issuers Affected)

	ESG Factors	% Issuers Affected	KRIs 3Yr Trend
E	Waste & Wastewater	50%	↗
E	Energy Mgmt	47%	↔
S	Employee Health & Safety	33%	↔
S	Data Security / Privacy	23%	↗
G	Product Lifecycle Mgmt	70%	↘
G	Systemic Risk Mgmt	40%	↗

ESG Risk Concentration (US IG Liquid Universe)



Source: SASB industry classification, Bloomberg Barclays index data, and PineBridge Investments, as of 31 December 2016. Note: The percentage of issuers affected does not total 100% as an issuer may be affected by multiple factors. For illustrative purposes only. We are not soliciting or recommending any action based on this material.

What's next?

As SASB's standardization efforts move to the codification phase in 2018, the level of insight that such metrics afford investors is likely to increase as reporting requirements slowly transition from voluntary to mandatory. Access to transparent and consistent data reported by companies in their regulatory filings will most likely enrich the framework of analysis used by UN Principles for Responsible Investment (PRI) signatory organizations and strengthen their toolkit as they fulfill their PRI commitments and adhere to the values that support such principles.[5] Integrating sustainability dimensions of businesses and broad sectors of the economy through comparable measures of material impact on financial accountability is likely to become a norm for all capital markets participants.

[5] The Investment Grade team at PineBridge is already represented in the inaugural cohort of FSA credential holders (Fundamentals of Sustainability Accounting), SASB's certification of proficiency in sustainability accounting, as one of only a dozen institutional investors which benefit from that training to date.

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