GLOBAL EVOLUTION CLIMATE REPORT

TASK FORCE ON CLIMATE-RELATED FINANCIAL DISCLOSURES REPORT

2023

GlobalEvolution

Contents

1. Introduction

Being on a journey with the rest of the world to move towards a low-carbon future, we are dedicated to continuing exploring and understanding our role and responsibilities. We are therefore pleased to submit Global Evolution's third climate report following the Task Force on Climate-Related Financial Disclosures (TCFD) recommendations and to publicly declare our continued support for the TCFD principles.

As an emerging and frontier markets fixed income investment manager, we are on a dual mission to generate attractive returns for our clients whilst contributing to sustainability in the countries and companies where we invest. There is a general expectation for emerging market countries to play an important role in the global low-carbon transition by not following the same development path as that of advanced economies whose economic growth historically has been linked with rising carbon emissions. With an estimated financing gap of 95 trillion USD for emerging markets to reach net zero[1], investments in emerging markets are urgently needed to support their low-carbon transition in a fair and inclusive manner without these countries having to sacrifice growth and prosperity.

At the same time, the low-carbon transition and climate change more broadly entail financial risks and opportunities for investments. We are therefore of the conviction that thorough climate and sustainability analysis is integral to navigating the complexity of the global climate change trajectory and delivering long-term risk adjusted returns for our clients. With this report, we provide our clients and stakeholders with insights into our approach to analyzing and managing climate-related risks.

We also recognize that Global Evolution as a corporate entity is affected by climate change and the low-carbon transition, and we hold ourselves accountable for climate change by reviewing and taking climate action in relation to our own corporate activities and emissions, as we will demonstrate in this TCFD report.

Hence, this report reflects our dual approach to climate risks and opportunities, where we:

- As an **investment manager** conduct in-depth analysis of how we simultaneously can deliver long-term risk adjusted returns for our clients whilst contributing to sustainability in the countries and companies we invest
- As a **corporate entity** continuously monitor how our business activities are affected by climate and sustainability-related risks and opportunities and take action accordingly

This report is structured around the four pillars of the recommended TCFD disclosures including governance, strategy, risk management, and metrics and targets. Table 1 provides an overview of the recommended disclosures and the specific sections addressing these. We consider our climate and sustainability approach as ever-evolving, and we look forward to continuing the journey towards advanced investment decisions and positive impact on society in collaboration with our clients.

[1] Standard Chartered (2022). Just in time. https://www.sc.com/en/insights/just-in-time/

Table 1: Reading guide in line with TCFD recommended disclosures

TCFD Pillars	Recommended Disclosures	Chapter
Governance	a) Describe the board's oversight of climate-related risks and opportunities	2. Governance (p. 5)
	b) Describe management's role in assessing and managing climate-related risks and opportunities	2. Governance (p. 5)
Strategy	a) Describe the climate-related risks and opportunities the organization has identified over the short, medium, and long term	3. Strategy (p. 6-7)
	b) Describe the impact of climate-related risks and opportunities on the organization's businesses, strategy, and financial planning	3. Strategy (p. 7-10)
	c) Describe the resilience of the organization's strategy, taking into consideration different climate-related scenarios, including 2°C or lower scenario	3. Strategy (p. 10-11)
Risk Management	a) Describe the organization's processes for identifying and assessing climate-related risks	4. Risk management (p. 12-21)
	b) Describe the organization's processes for managing climate-related risks	
	c) Describe how processes for identifying, assessing, and managing climate-related risks are integrated into the organization's overall risk management	
Metrics and Targets	a) Disclose the metrics used by the organization to assess climate-related risks and opportunities in line with its strategy and risk management process	5. Metrics and targets (p. 22-26)
	b) Disclose Scope 1, Scope 2, and if appropriate, Scope 3 greenhouse gas (GHG) emissions, and the related risks	5. Metrics and targets (p. 26)
	c) Describe the targets used by the organization to manage climate-related risks and opportunities and performance against targets	5.2 Targets (p. 26-27)

2. Governance

Global Evolution has integrated environmental issues and dynamics into our investment process for several years, and the TCFD recommendations are well-designed to complement our investment process and consequently an initiative that we endorse and support. Since part of the company's philosophy is to leave a legacy of impact investing in partnership with our investors, which assists in the process of lifting nations out of poverty, the Board is involved in tracking, informing, and leading this path.

We believe that strong governance and ethical business practices are fundamental to ensure clients' and stakeholders' trust, and to maintain successful investment activities.

Global Evolution's ESG governance framework is structured as follows:

- The Board of Global Evolution Fondsmæglerselskab A/S exists partly to ensure that the investment process reflects the company's values and targets. The Board approves sustainability-related policies.
- The Executive Management is responsible for ensuring that ESG-related policies are in place and approved by the Board of Directors.
- The Research Department of the company is leading, developing, and implementing sustainability-related work. Led by the Research Director, the department is responsible for the entire ESG research and implementation for the sovereign and corporate emerging and frontier markets debt including the reporting to the TCFD, the PRI, the UN Global Compact, relations with the World Bank, and the Emerging Market Investor Alliance (EMIA). The responsibility for the work related to SFDR is shared responsibility with the head of Legal and Compliance.
- The Middle Office ensures the implementation of all ESG restrictions on funds and mandates, and Legal & Compliance monitors compliance with the ESG governance framework.
- All employees at Global Evolution are responsible for carrying out the firms ESG objectives and upholding the firm's policies and procedures.

3. Strategy

Climate change is one of the most critical issues facing society in the 21st century. Climate change entails risks and opportunities, and Global Evolution is committed to understanding and adapting to climate-related risks and opportunities, as well as managing material risks to our business and our clients' portfolios.

There are two overarching types of (interrelated) climate-related changes from which risks and opportunities arise for countries, companies, our clients' portfolios, and Global Evolution as a corporate entity:

- **Physical Risks** are the risks of damage to physical assets resulting from climatic changes. Risks can be both event-driven (e.g. storms and floodings) and longer-term shifts in climate patterns (e.g. rising temperatures and heat waves). Physical risks can lead to asset damage among sovereign and corporate entities, which can affect valuations and bond spreads.
- **Transition Risks** refers to risks arising from the global low-carbon transition. For sovereign and corporate entities, the low-carbon transition could lead to increased operational costs, shifting demands, and stranded assets.

Table 2 on the following page provides an overview of our assessment of potential risks and opportunities for Global Evolution as a corporate entity and for our investments. Our analysis is rooted in our belief that changing climate patterns and the global low-carbon transition can have material risks that should be managed systematically, while at the same time the same global trends create opportunities for our operational and investment activities. We have identified five climate-related categories with material risks and opportunities to Global Evolution:

- **Investments**: As an investment manager, the key climate-related risks and opportunities are to be found in our investment portfolios. Both climate-related physical and transition trends are material to sovereign and corporate entities. With a focus on fixed income investing in frontier and emerging markets, we are particularly attentive to the materiality of risks and opportunities on sovereign and corporate bond prices within this context.
- **Resource:** Companies are increasingly expected to use resources in a sustainable manner to reduce GHG emissions.
- **Product**: Changing climate-related trends can lead to shifting client preferences, which can affect the demand of companies' current product offerings and provide opportunities for new offerings.
- **Reputation:** How companies manage climate risks and opportunities can influence the public's perception of the company.
- **Regulatory:** The urgency for a global low-carbon transition leads to changing legislation to reduce the adverse impacts of climate change.

In line with TCFD recommendations, we consider short, medium, and long-term horizon of risks and opportunities. We consider short as <5 years, medium term as 5-10 years, and long term as >10 years.

Table 2: Overview of climate risks and opportunities

Climate-related changes	Category	Risk assessment	Opportunity assessment	Risk time horizon
Physical	Investments	In the short term, specific portfolio holding spreads may be affected from acute climate-related damages (e.g. from drought, floodings etc.). Over the longer term, shifts in climate patterns may affect the EM asset class given that EM tends to be more vulnerable than DM, which could lead to clients reallocating funds.	Issuers investing in planned, anticipatory adaptation can reduce vulnerabilities and realize opportunities associated with climate change, e.g. by investing in construction, infrastructure, and agriculture projects. This could increase issuers' resilience and have a positive effect on bond spreads.	Short to long-term
Transition	Investments	Specific portfolio spreads could be affected from the global low-carbon transition. E.g. issuers dependent on fossil fuels for generating economic output could see declining growth and stranded assets.	The low-carbon transition could become an engine for growth in emerging markets through the expansion of affordable energy and green jobs. Also, issuers rich in resources needed for the low-carbon transition, e.g. minerals, could benefit from increased demand and prices.	Medium to long-term
	Resource	As a corporate entity, Global Evolution is expected to pursue sustainable operations, e.g. reducing GHG emissions. Not finding the right balance could interfere with investments from missing information, e.g. from fewer investor trips that are high in GHG emissions.	As a corporate entity, Global Evolution can continue to pursue resource efficiency in operations to reduce GHG emissions.	Short to long-term
	Product	Global Evolution may not be able to meet client demands of climate-related products, especially given limited data availability in EM.	Global Evolution can continue to work on new product offerings to meet growing client demand for sustainability-aligned products.	Medium to long-term
	Reputation	Divergent views between Global Evolution and investors on EM issuers' carbon profile and sustainability actions could create reputational risks and impact Global Evolution's client relationships.	Global Evolution can strengthen its thought leadership status in the EM fixed income context, advocating for the importance of a just transition where no country should sacrifice growth and prosperity to reach net zero.	Medium to long-term
	Regulatory	New environmental and sustainability disclosure requirements could increase compliance costs and interfere with investment strategies. Failing to comply with regulations could result in fines for Global Evolution and reputational risks.	Global Evolution continues to adapt to legal frameworks and actively use frameworks to strengthen its ESG analysis.	Short-term

3.1. Climate consideration in corporate operations

In operating as a corporate entity, Global Evolution strives to manage climate-related risks identified in table 2 and pursue environmental sustainability by reducing GHG emissions and increasing efficiency.

Resources

In 2022, our parent company Conning Holdings Limited and its subsidiaries, including Global Evolution, were certified carbon neutral using high-quality instruments[2]. Through these efforts, Global Evolution contributed to the following projects in 2022:

- Gas Distribution Leak Reduction, Bangladesh
- Kulera REDD+ and Cookstoves, Malawi
- Water Filtration and Improved Cookstoves, Guatemala
- Industrial Process Emissions Reductions, USA
- Renewable Energy Portfolio, Global

In 2022, as part of our CarbonNeutral® Company Certification, we began calculating our company carbon footprint and plan to continue to do so going forward. This footprint was reviewed by a qualified independent third party in line with the requirements of The CarbonNeutral® Protocol.

Travelling is an important part of Global Evolution's investment process, as we through investor trips and road shows conduct due diligence and form bottom-up country views. However, we are mindful that travelling is carbon intensive. Therefore, we have since 2020 been offsetting carbon emissions from employee travels through our third-party validated CO_2 removal project with Goodwings, and plan to continue to do so on an annual basis. For past years, travel carbon offsets were achieved through a forest plantation project in Uruguay.

Our head office building in Kolding is equipped with photovoltaic solar panels, and renewable energy is sourced outside peak hours. In 2023, electric vehicle chargers have been installed to encourage employees to use electric transportation.

Products

Global Evolution continues to review its product portfolio to meet client demand. All our sovereign strategies comply with SFDR Level II requirements for article 8. Our corporate strategies are compliant with requirements for article 6, and are in the process of being upgraded to comply with article 8. We are in continuous dialogue with clients on developing climate-focused products.

Reputation

As an investment manager specialized in frontier and emerging markets and with ESG part of our DNA, we have extensive knowledge of challenges and opportunities in these markets. We continuously strive to stay ahead of the curve in following global tendencies and the implications for emerging markets and share our

[2] CarbonNeutral® company certification: Conning Holdings Limited (CHL) and its subsidiaries (together, "Conning") are certified as carbon neutral through the use of high-quality instruments, in accordance with The CarbonNeutral Protocol (https://www.carbonneutral.com/the-carbonneutral-protocol) and the GHG Protocol Scope 2 Guidance. All credits adhere to standards approved by the International Carbon Reduction and Offset Alliance (ICROA). To achieve this certification, Conning works with Climate Impact Partners, a specialist in carbon market solutions for climate action. As part of this certification, the firm's global operations complete an independent assessment of their greenhouse gas emissions.

internal research with investors. We actively engage in dialogue with our clients to position emerging markets fairly in the context of climate and sustainability-related risks and to align expectations as to actions taken to manage those risks.

Navigating the regulatory landscape

Compliance is a fundamental pillar of Global Evolution's business success and Global Evolution's sustainable future and we believe that strong governance and ethical business practices are fundamental to ensure clients' and stakeholders' trust, and to maintain successful investment activities.

In the area of sustainability integration both in our inward sustaining of the future success of our organization, and the outward, sustainability of the entities in which we invest, compliance is key to provide stewardship and controls in order to protect the interests of our clients and shareholders. Consequently, the areas of risk management, IT, operations, and investment management undergo substantial oversight and reporting requirements to ensure compliance with laws and regulations in the relevant areas.

3.2. Climate-related considerations in investment management

As an investment manager, key climate risks are found in our portfolios and investment management. The following pages outline Global Evolution's considerations as to how investments could be affected. Methodological considerations related to Global Evolution's assessment and integration of climate-related risks are provided in the later chapter on 'Risk Management'.

Physical Risks in fixed income investing

It is now widely accepted that the global climate is changing with the consequential need for human societies to adapt to both the changing climate as well as the resulting alterations to the natural environment. The effects of climate change will be felt both in the short term with acute climate-related natural disasters and in the longer term as climate patterns are changing. Acute and chronic climate events can among others lead to species extinction, and threats to prosperity, food, water supply and populations' health.

In the context of sovereign fixed income investments, acute weather events can lead to re-pricing sovereign debt and exacerbate fiscal vulnerabilities to a degree that can even trigger vulnerable countries into a default[3]. Over the longer term, chronic climate risks can have negative impacts on economies, e.g. through reduced productivity and lost revenues.

In the context of corporate fixed income investments, extreme weather events and changing climate patterns have implications for e.g. supply chains, industrial processes, and transportation infrastructure. While businesses can take specific actions to adapt to climate change, they are largely affected by the level of risk in the countries in which they operate, including climate change exposure and the complex political and socio-economic context that surrounds business operations and interests. Hence, corporate bond prices are likely to be affected by a variety of company and industry vulnerabilities and sovereign vulnerabilities.

However importantly, there are also opportunities associated with the physical consequences of climate change. Governments can introduce climate policies to strengthen the adaptive capacity and reduce vulnerabilities, which could trigger innovation and spur growth throughout the implementation. Companies can also take measures to protect their operations, and they can seize new investment opportunities as governments invest in strengthening their adaptive capacity.

[3] Mallucci, E. (2020). Natural disasters, climate change, and sovereign risk. FRB International Finance Discussion Paper, (1291).

Transition Risks in fixed income investing

The transition towards a global low-carbon economy could have a material impact on EM fixed income investing. In particular, economies and businesses that are carbon-intensive and dependent on fossil fuel revenues are at greater risk from reduced demand for fossil fuels and cross-border carbon policies.

Sovereign bonds could be subject to re-pricing in the case where transition risks materialize for national carbon intensive economies and economies dependent on fossil fuel revenues. Sovereign bond yield shocks from transition risks will most likely depend on the extent to which countries are dependent on carbon and fossil fuel revenues and the preventive efforts taken to reduce transition risks. Yet, the global green transition can also have positive implications for sovereign bond prices for countries that are rich in the resources needed for the green transition. In particular, the global demand for minerals will increase as more wind turbines, solar panels, electric vehicles, and battery storage among others are increasingly produced. Also, as countries invest in a greener economy, the economy could grow through infrastructure spending and job creation.

Similarly, materialized transition risks could have adverse effects on bond prices for carbon-intensive companies and companies dependent on fossil fuels. Some sectors are more exposed to transition risks than others, e.g. the energy and mining sectors that are carbon intensive and could be subject to higher taxes. Some sectors are better positioned to benefit from the green transition, e.g. renewable energy and waste management sectors. However, even businesses in exposed sectors could benefit from the green transition by taking measures to reduce carbon emissions and introduce sustainable processes and solutions, which could result in higher revenues. Hence, bond prices could be affected in both directions caused by a variety of drivers.

Understanding the materiality of transition risks is a challenging undertaking and is based on a variety of assumptions. As explained in the 'Risk Management' chapter, we monitor transition risk trends from top-down and bottom-up approaches. From a top-down perspective, transition risk trends are monitored on a more global level, while the bottom-up approach gives nuances to country-specific risks and opportunities.

3.3. Scenarios and resilience

Global Evolution considers three key scenarios, which each would have implications for the extent and severity of transition and physical risks to our portfolios. The scenarios provide a basis for our top-down monitoring of the developments in transition and physical risks and our bottom-up country assessments (as further elaborated upon in the chapter on 'Risk Management'). The scenarios are presented in table 3, which includes an overview of the underlying assumptions of the scenarios, implications for transition and physical risks (including market pricing), as well as considerations to Global Evolution's exposure and resilience under the three scenarios.

Table 3: Global Evolution Scenarios

Drivers	Orderly	Disorderly	House Hot World
Scenario description	Early, ambitious action	Late, disruptive, and unanticipated action	NDC or current policies
Policy action	Climate policies are introduced early and becomes gradually more stringent	Climate policies not introduced until 2030, but with urgent implications	Climate policies are implemented in some jurisdictions, but insufficient
Temperature	1.5°C	<2°C	2.6°C (NDCs) – >3°C (current policies)
Carbon reductions	Carbon emissions are gradually reduced	Rapid reduction of emissions	Emissions will continue to increase before eventually decreasing slightly
Transition risks implications	Economies adapt to the low-carbon transition resulting in lower GDP loss	Economies are not prepared for sudden carbon policies, resulting in higher GDP loss	Global transition efforts contribute to economies; economies will adapt to transition policies
Market pricing: Transition risks	Smooth price-in	Sudden price-in triggered by rapid policy action	Less significant price-in
Physical risks implications	Economies will adapt to the rising temperatures and changing weather patterns. Extreme weather events will continue as usual without significant surge.	Delayed action will cause a surge in extreme weather events.	Extreme weather events will be more frequent and severe over time from higher temperatures.
Market pricing: Physical risks	Less significant price-in	Progressive price-in	Progressive but more severe price-in
Global Evolution Exposure and Resilience	Many EM countries are dependent on fossil fuels for economic output, especially with many developed-economies emissions outsourced to these countries. However, EM countries also have the largest reserves of minerals needed for the green transition. The smooth transition allows for and adjust portfolios according to risks and opportunities.	The market value of Global Evolution's portfolios could take a sudden drop. Frontier countries are likely to be less affected due to their lower dependence on carbon, while more carbon and fossil-fuel dependent countries will be affected the most. Mineral supply is likely to be unable to meet sudden demand. Although policy action and reduction of emission is sudden compared to other scenarios we expect signals to show, allowing for some risk adjustment; however this scenario holds greatest risks to our portfolios.	Exposure to carbon and fossil fuel dependent EM economies does not entail significant risk as economies will need to adjust less and over longer time to the low-carbon transition. The slow transition allows for adjusting portfolios according to risks and opportunities. Severe price-in of physical risks is likely to hit EM countries the hardest due to their vulnerability to climate change.

Source: Global Evolution in-house assessment. Inspired by NGSF scenarios 2022[4]

[4] NGFS (2022). Climate Scenarios Database: Technical Documentation V.3.1. Accessed through https://www.ngfs.net/sites/default/files/media/2022/11/21/technical_documentation_ngfs_scenarios_phase_3.pdf and NGFS (2022) Scenarios for

4. Risk Management

We recognize the importance of assessing and managing climate and sustainability-related risks that can affect our business and investors. Sub-sections in this report's chapter on 'Strategy' outlined our current efforts to build resilience to risks as a corporate entity and provided some general considerations given to how physical and transition risks may affect our investments. Given that we have identified our investment activities as being at greatest risk, this chapter on 'Risk Management' will focus our approach to assessing and managing these risks associated with our investments.

Acknowledging the potential significant impact to our portfolios, we are committed to taking such risks into account alongside other financial and non-financial considerations. Climate and sustainability-related risks are increasingly becoming important considerations in our investment decisions, and we are dedicated to continuously expanding our knowledge of climate and sustainability risks and building upon and refining our approach.

In the management of climate-related risks, and ESG risks more broadly, we take a three-pillar approach of *negative screening*, *ESG integration*, and *engagement*. Table 4 provides an overview of these three pillars, while the remaining chapter gives more detailed information on our approach to managing risks within the three pillars.

Table 4: Managing ESG risks in investment decisions

Pillar	Objective	Approach
Negative screening	To exclude issuers with exceptional poor ESG performance	Our proprietary exclusion framework monitors basic ESG criteria, including environmental considerations, which are required to be above a certain threshold to be included into our investment universe.
ESG integration	To integrate climate-related risks and opportunities into our investment decisions	Proprietary analytical frameworks for holistic sovereign and corporate ESG assessment across a variety of ESG issues Country and company deep dives Thematic analysis on relevant ESG topics impacting investments, including physical and transition risks Quantitative models Portfolio monitoring
Engagement	To engage with governments on key risks and opportunities	Direct engagement with issuers Indirect engagement through organizations

Source: Global Evolution

central banks and supervisors. Accessed through https://www.ngfs.net/sites/default/files/medias/documents/ngfs_climate_scenarios_for_central_banks_and_supervisors_.pdf.pdf

4.1 ESG negative screening

Our negative screening analysis excludes countries and companies with exceptionally poor ESG levels. By design we only exclude a small part of our defined universe, as our investment philosophy favors issuers with opportunities for improvements, even when improving from very low levels.[5]

For our sovereign investments, we conduct a negative screening on a quarterly basis with a holistic view on environmental, social, and governance factors, using a combination of a quantitative model, qualitative assessment, and sanctions check. First, our quantitative model includes an assessment of the robustness of countries' environmental regulatory frameworks. Countries below a certain threshold are excluded from investments. Second, based on our additional qualitative assessment, we may decide to exclude countries when we find that the central government is extremely weak, ineffective, and/or negligible of human rights, however which is not captured in our quantitative framework. Lastly, we screen for EU, UN, US, OFAC, and UK sanctions; the nature of sanctions are reviewed, which can lead to a country being excluded from our investment universe.

Our corporate investments are subject to 3 levels of exclusion, including sanctions, sectors, and high-risk assessment. First, companies under EU, UN, UK, US and OFAC sanctions – or those at high risk of being subjected to sanctions – are excluded. Second, we exclude companies that derive any of their revenues from controversial sectors (weapons, tobacco, pornography) or more than one-third of revenues from coal mining or tar sands. Lastly, companies are excluded when they in our corporate ESG framework are identified as high risk with a negative outlook.

4.2 ESG integration

As a frontier and emerging markets investor, ESG considerations have been included in our investment decisions since our inception. Given emerging markets' lower income levels, ESG conditions are typically less developed and hence play an important role for countries' socio-economic and financial development. Therefore, by incorporating ESG factors alongside financial and non-financial considerations into our analysis, we form a more complete picture of risks and opportunities facing emerging markets countries and companies. The key approaches include ESG ratings, thematic analysis, qualitative country and company deep-dives, quantitative models, and portfolio monitoring.

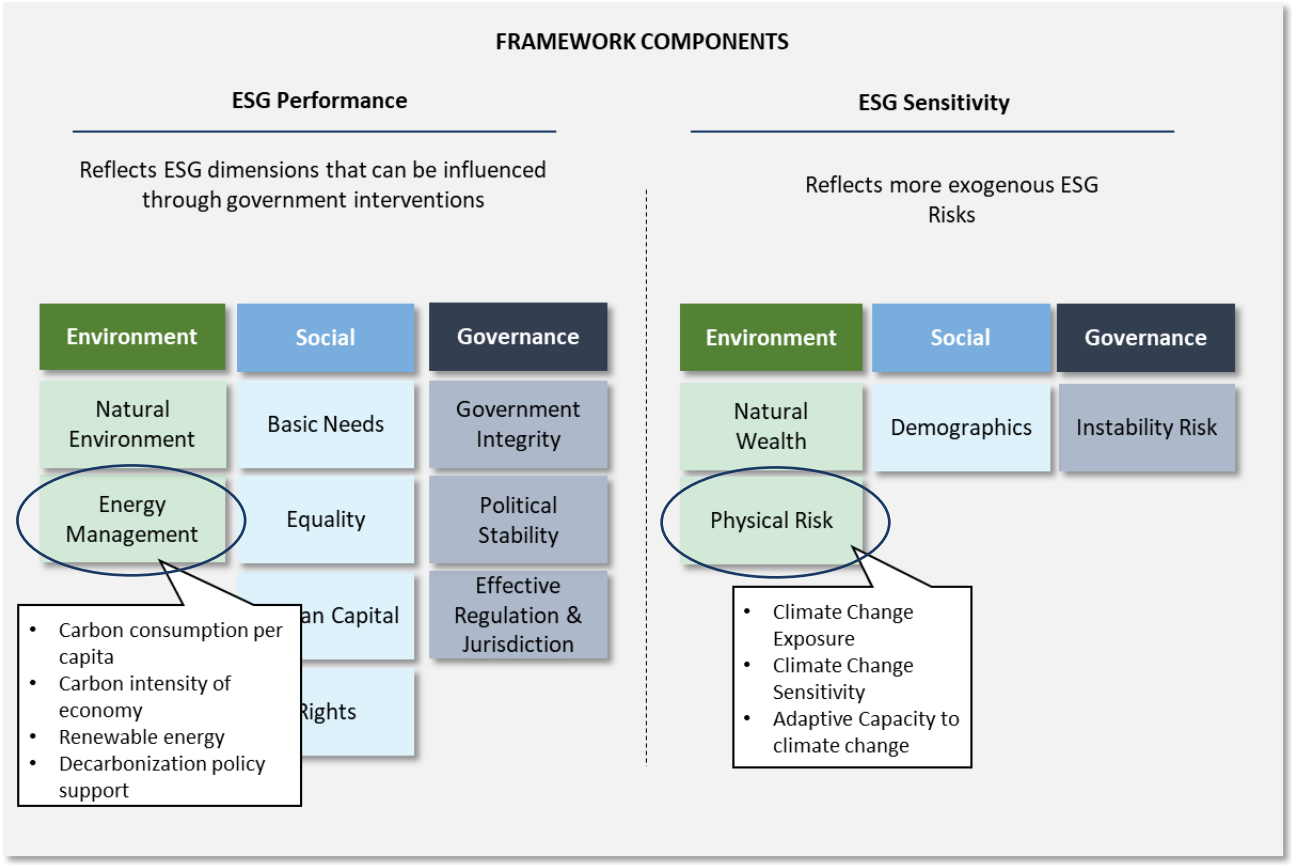
ESG ratings

In our investment process, we include insights from our extensive sovereign and corporate analytical ESG frameworks, which are designed to give detailed information of countries and companies' ESG metrics considered relevant to guide and shape portfolio managers' understanding of investment risks and opportunities.

Sovereign ESG framework: Our sovereign ESG framework integrates key environmental, social, and governance factors that are material to countries' socio-economic development, which is linked to borrowing costs. With our framework, we take a two-legged assessment approach to analyzing ESG performance and ESG sensitivity. The ESG performance assessment is designed for the purpose of rating sovereign ESG performance based on ESG factors that can largely be influenced through government interventions, whereas our ESG Sensitivity assessment is focused on monitoring ESG risks that are more exogenous and which governments will need to navigate and build resilience to (figure 1). The aim of this approach is to avoid penalizing countries for factors outside their influence; yet acknowledging that such ESG risks can have material risk to portfolio performance.

[5] ESG considerations thus play an important role in our assessment of creditworthiness along other factors such as macro-economic, financial and commodities. Consequently, even though we aim to achieve a positive ESG impact in the countries where we invest, there may be situations where we invest in countries where non-ESG factors outweigh a possible ESG downsides.

Figure 1: Sovereign ESG rating framework



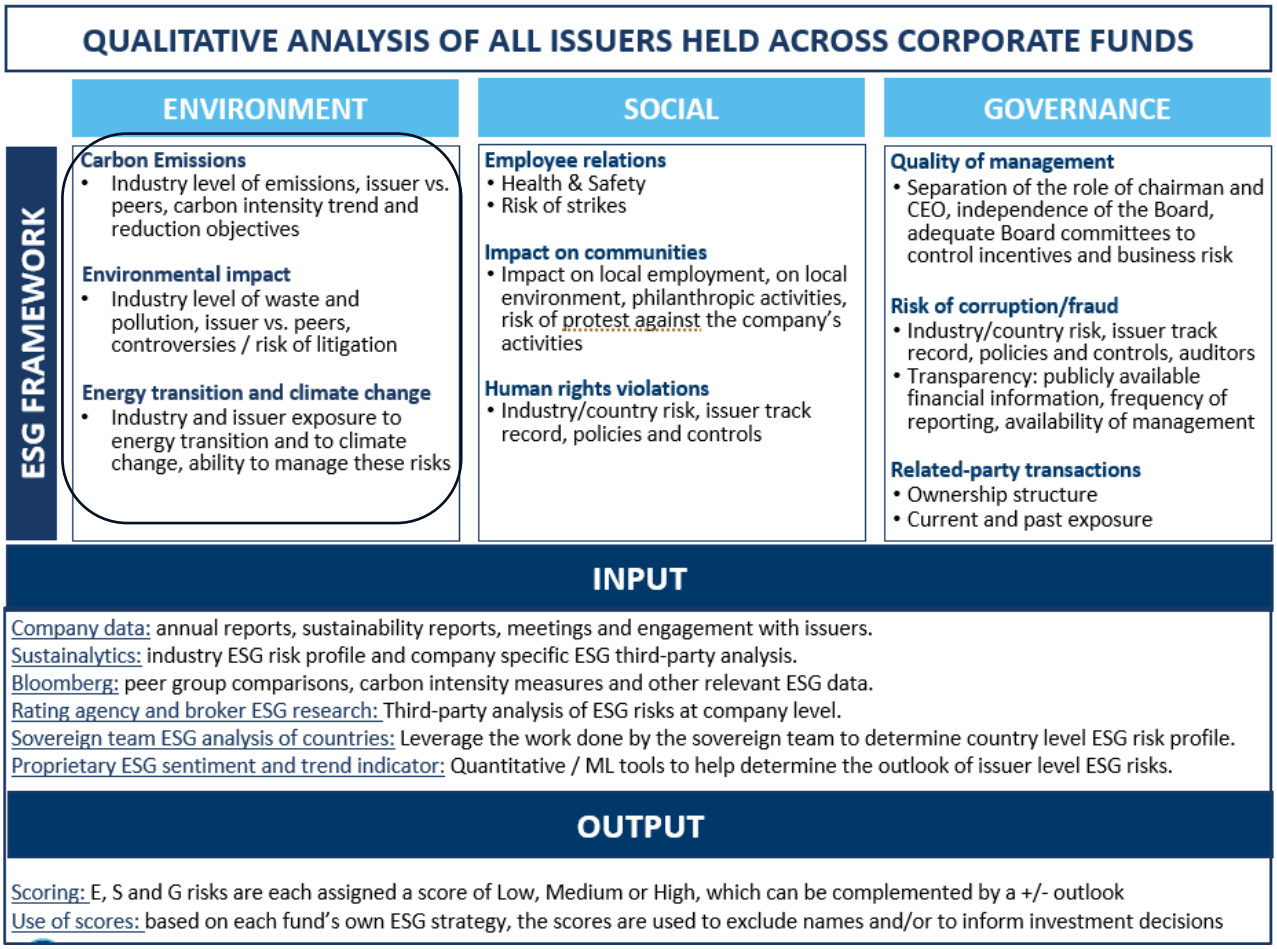
Source: Global Evolution

Governments can introduce carbon policies to drive a low-carbon transition, and hence factors related to transition risks are assessed as part of the energy management dimension under ESG performance. This dimension includes measures of carbon intensity, consumption per capita, renewable electricity, and de-carbonization policy support. However, acknowledging that emerging markets generally have done little to contribute to climate change, physical risks considerations are included into our ESG Sensitivity assessment. In this dimension of analysis, we both include the level of climate change exposure, climate change sensitivity, and adaptive capacity.

Our proprietary ESG ratings inform investment decisions and country overviews are easily available in an internal ESG platform, allowing to monitor levels and developments across ESG indices.

Corporate ESG Framework: Climate-related considerations are also included into our corporate ESG assessment. Figure 2 provides an overview of elements included into our ESG framework. Environmental considerations include a variety of metrics related to companies' emissions, their environmental impacts, and their exposure to transition and climate change. Recognizing that companies' sustainability risks are highly affected by country-level risk, our corporate sustainability analysis also relies on the insights from our sovereign ESG framework.

Figure 2: Corporate ESG rating framework



Qualitative country and company deep-dives

While our ESG assessment frameworks gives us important information on risk levels, we acknowledge that data can be slow-moving and lack availability – particularly in emerging markets. A key part of our risk assessment is therefore our in-house qualitative assessment of corporate and sovereign issuers. Our assessments allow us to understand recent developments not yet captured in quantitative data, understand underlying drivers of countries' ESG conditions and developments, and form a view of what can be expected going forward. To exemplify, a newly elected President to a country can implement a variety of reforms that will have important socio-economic implications, which however are likely to take years to show in ESG ratings.

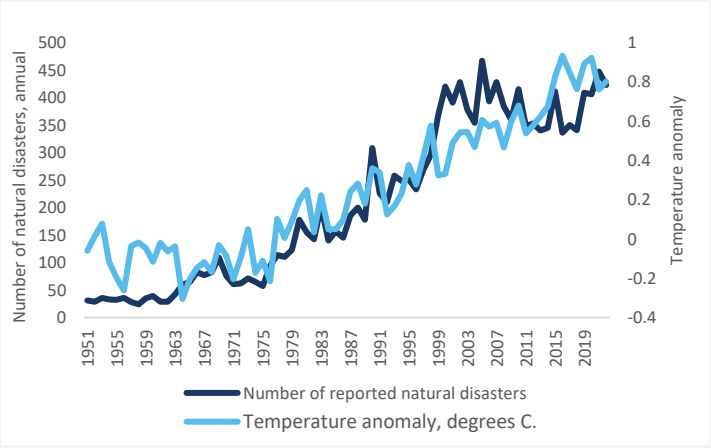
Thematic analysis

Our thematic analyses are aimed at understanding a variety of ESG issues that influence our investments. These analyses take the shape of both short insight briefings on current events and more thorough analysis of global trends. While our ESG frameworks do provide insights into climate and sustainability-related risks, we find that understanding physical and transition risks, require deeper insights which we develop through more thorough analysis and tools. We take a combination of top-down and bottom-up approaches to assessing climate-related analysis. Our top-down analysis provides us a wider context to understanding global climate-related developments, which can have material implications for emerging markets fixed income funding costs. Our bottom-up analysis is focused on issuer-specific risks and opportunities under the global climate-related developments. The following pages specific examples of Global Evolution's top-down and bottom-up analysis related to physical and transition risks.

Physical risks analysis

Global Evolution seeks to form a nuanced view of physical risks and the impact on investments. Physical risks are taken into account from both top-down and bottom-up perspectives to understand the wider context of physical risks and more country-specific idiosyncrasies. Below are examples of thematic risk analysis related to physical risks.

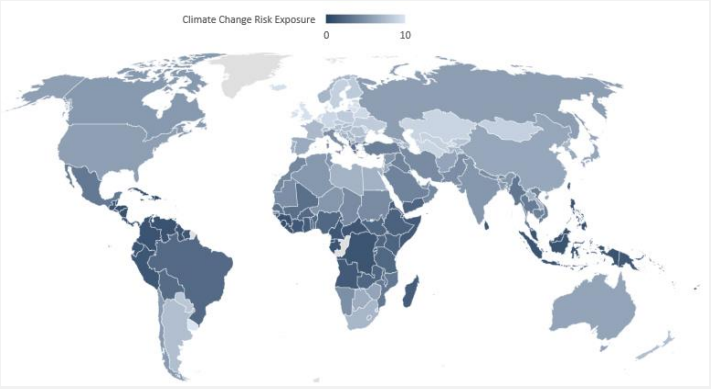
Figure 3: Natural disaster events and temperature anomaly



Top-down considerations: Global Evolution stays updated on the developments in climate change, e.g. temperature anomalies, weather conditions, and natural disaster events. Along with rising temperature anomalies, the number of natural disaster events across the world have risen ten-fold since the mid-1900s, although a more steady number of annually reported natural disasters have been reported over the past decades. Temperature anomalies have continued an upward trend, however with a small drop in 2020 and 2021.

Source: World in Data and Met Office Hadley Center. Prepared by Global Evolution

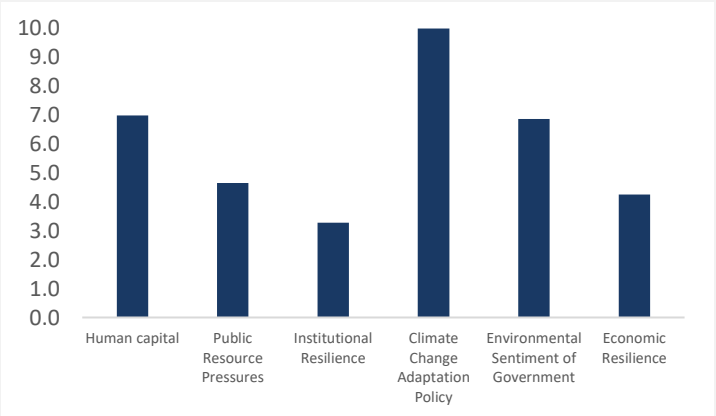
Figure 4: Exposure to climate change



Bottom-up country comparison: Comparing countries' exposure to the physical impacts of climate extremes and future changes in climate change over the coming decades, emerging markets are identified as particularly exposed, despite those countries having contributed the least to climate change. This makes physical risks a key topic for more in-depth analysis for investment risk management.

Source: Verisk Maplecroft, Q4-2023. Prepared by Global Evolution

Figure 5: Climate Change Adaptivity, Brazil



Bottom-up country analysis: Countries also differ in abilities to adjust to and take advantage of the physical consequences of climate change. Factors such as human capital, economic and institutional capacity and resilience are important factors to consider. Such indicators comprise a 'Climate Change Adaptivity' index, used to understand country-specific physical risk nuances.

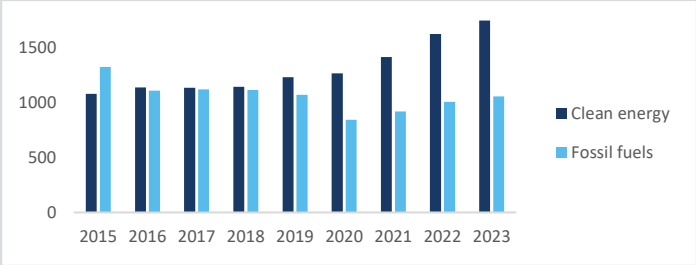
Source: Verisk Maplecroft, Q4-2024. Prepared by Global Evolution

These macro and country-level insights are also important for providing the context for company-specific exposure to physical risks.

Transition risks: Top-down analysis

Transition risks and opportunities transpire from the global transition towards a low-carbon economy. Such transition is expected to lead to stricter regulation, such as cap-and-trade system, more extensive cross-border carbon taxes, and lower demand for fossil fuels. The consequences of such developments could mean that fossil fuel producing nations will see fewer future revenues for their further development and asset diversification as well as stranded labor and fossil fuel assets. Carbon-intensive economies, i.e. economies dependent on fossil fuels for generating economic output, could be challenged from businesses' increased operational costs, decreased profitability, and stranded assets from non-viable business models. Such developments are likely to affect sovereign and corporate funding costs, and hence it is key for us to understand developments in the global low-carbon transition. Below are a few examples of Global Evolution's top-down transition risk monitoring.

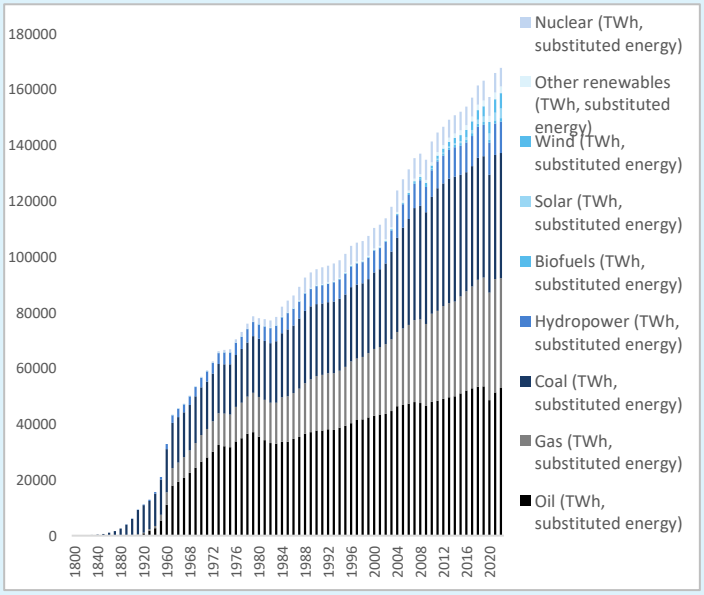
Figure 6: Investments in clean energy vs. fossil fuels , USD bn



Source: IEA

Investments in clean energy have peaked up notably since 2020 and is estimated to reach USD 1.6 trillion in 2023 – by far surpassing investments in fossil fuels. However, spending on upstream oil and gas is expected to rise by 7% in 2023, taking it back to 2019 levels, which is significantly higher than levels needed to reach net-zero by 2050.[6]

Figure 7: Global primary energy consumption by source, TWh



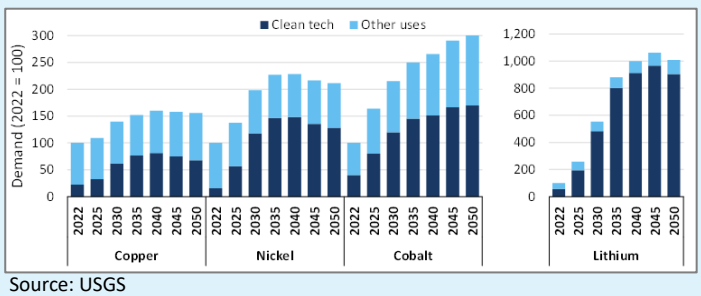
Source: Energy Institute Review of World Energy.

So far, renewable energy has only been an addition to fossil fuel output that has been growing on an annual basis except the drop in 2020 as consequence of the COVID-19 pandemic.

Indeed, fossil fuel consumption will need to decline to reduce global emissions to a level compatible with the Paris Agreement, however the trajectory towards reaching the goals is uncertain, can take many shapes, and actual success in reaching the goals is not guaranteed.

Monitoring global energy consumption provides signals related to the developments in the global low-carbon trajectory.

Figure 8: Global demand for selected metals



Source: USGS

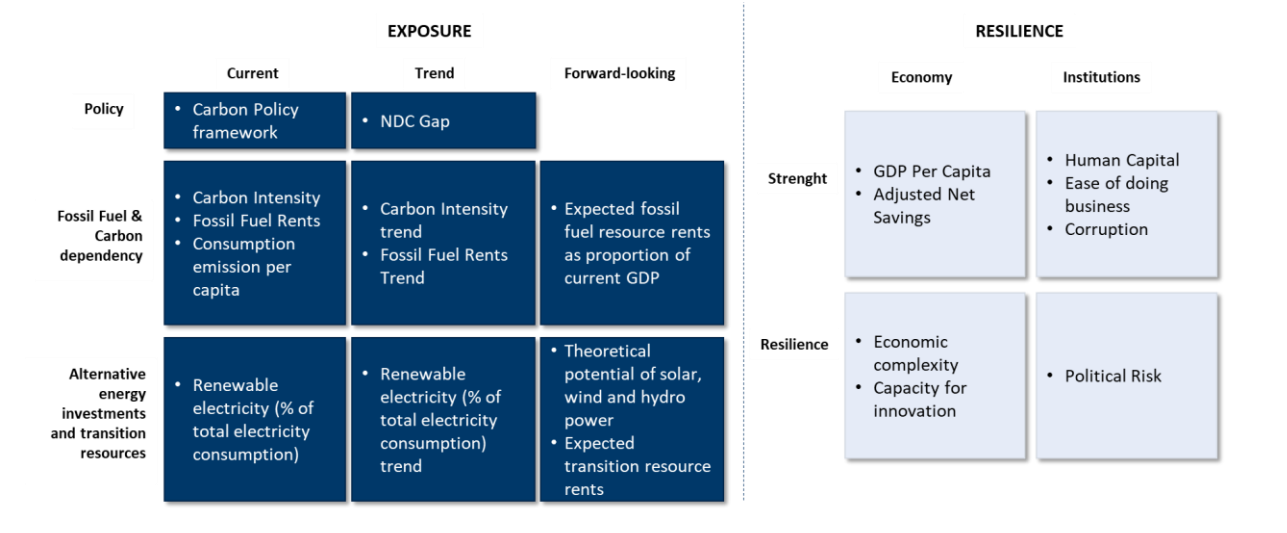
Under the net-zero emissions 2050 scenario, demand for key metals is set to accelerate, driven by investments in clean technologies such as batteries and solar and wind energy. EM countries are the most important producers of these metals, and hence increased clean energy investments will generate further investments into EM, which can contribute to further socio-economic development.

[6] https://www.iea.org/news/clean-energy-investment-is-extending-its-lead-over-fossil-fuels-boosted-by-energy-security-strengths

Transition risks continued.: Country bottom-up analysis

Assessing sovereign transition risks is no simple task and involves a variety of considerations. Deepening our understanding of potential risks, we have developed a proprietary transition risk assessment framework. Inspired by Peszko et al. (2020), we assess both exposure and resilience to transition risks. Exposure refers to the extent to which countries are exposed to economic hardship from a low-carbon transition, their position to transition away from fossil fuels, and their potential to benefit from a global low-carbon transition. Resilience relates to countries' capacity to respond to risks and opportunities, relating to the quality of institutions and flexibility of economic structures. Our transition risk framework comprises of 12 components divided into transition risk exposure (8 components) and transition risk resilience (4 components), as depicted in figure 9 below.

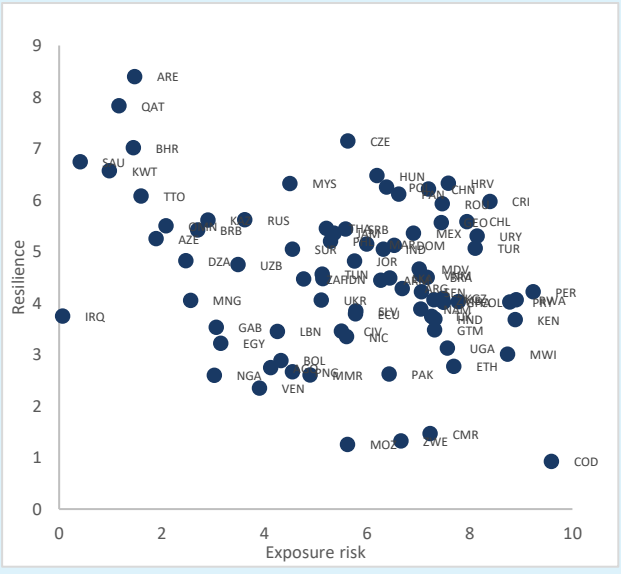
Figure 9: Global Evolution Transition Risk Framework



Notes: In assessing sovereign transition risk exposure, we take into consideration three dimensions; 1) sovereign policy frameworks for low-carbon transitions, 2) sovereign economies' fossil fuel and carbon dependency, and 3) renewable energy resources. We take a dynamic assessment approach by considering current levels, a 5-year trend , and a forward-looking view.
Source: Global Evolution

Based on this framework, we are able to rate countries' exposure and resilience relative to each other as depicted in figure 10 below.

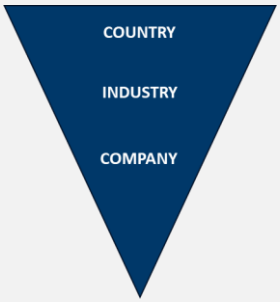
Figure 10: Transition Risk Exposure and Resilience



While our transition risk framework assists in identifying the extent of countries exposure and resilience relative to each other, the value of the framework lies as much in the identification of the underlying nature of risks and opportunities as outlined in the framework components. The nature of Qatar and UAE's transition risk exposure differs from that of South Africa and Indonesia, and so do their resilience. Qatar and UAE's exposure is explained by the exceptionally high dependence on fossil fuel rents that are at risk of being compromised as effect of reduced demand and prices. South Africa and Indonesia have much lower fossil fuel rents at risk, yet economic activities and infrastructure in these countries are carbon heavy. A low-carbon transition would require retirement of infrastructure and machinery leading to stranded assets. Global Evolution's internal ESG platform provides an overview of country-specific risks and opportunities pertaining to the global low-carbon transition.

Note: Transition risk exposure and resilience is normalized to scales 0-10 where 0= highest exposure / lowest resilience and 10=lowest exposure / highest resilience.
Source: Global Evolution proprietary framework

Physical and transition risks considerations for corporate investments



Our climate-related risk analysis for sovereign investments follows a top-down approach. Based on our sovereign ESG framework, we identify climate change and energy transition risks at the country level.

Within each country, we give considerations to the exposures of each industry's exposure to climate change and transition risks.

Finally, we analyze company-specific exposure and resilience to the climate-related risks within the industries in the context of the country-specific risks.

Examples of country-specific considerations

Some countries such as Chile have a clear roadmap for the energy transition, and the power generation sector is making progress to phase-out fossil fuels. Coal-fired power plants have difficulties finding new contracts and are dispatched after all other power sources are already used. Other countries, in the Middle East and Asia, have a high share of fossil-fuel in their electricity mix. Introduction of carbon pricing and investments needed to meet these countries' energy transition goals will also create challenges for many companies, while creating opportunities for others. Industries with high abatement costs (high costs to reduce their carbon footprint) include Cement, Steel, Chemicals, and Transportation. Other sectors, such as the Oil & Gas or Coal mining, suffer from reduced financing options because of the energy transition, as banks and capital market participants are restricting more and more their investments in these sectors. Regarding the power generation sector, countries have very different electricity mix. For example, LATAM countries tend to have a relatively high proportion of hydroelectric power generation capacity, sometime creating water rights issues with the agricultural sector. Production is regularly impacted by droughts.

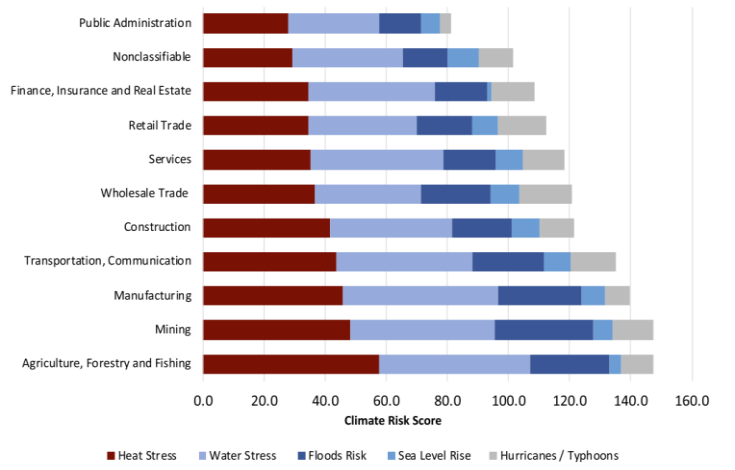
Examples of industry-specific considerations

The agricultural sector is particularly impacted negatively by extreme weather events destroying crops or reducing yields and is dependent on the availability of water for irrigation.

The mining industry is also highly exposed to climate change with infrastructure, equipment, and operations being exposed to damage from natural disasters, and reduced amounts of water being available for mining processes.

Other sectors are impacted, directly and indirectly, by climate change. The financial cost of adapting to climate change ultimately impacts the credit profile of companies to varying degree.

Figure 11: Sector-specific exposure to climate change

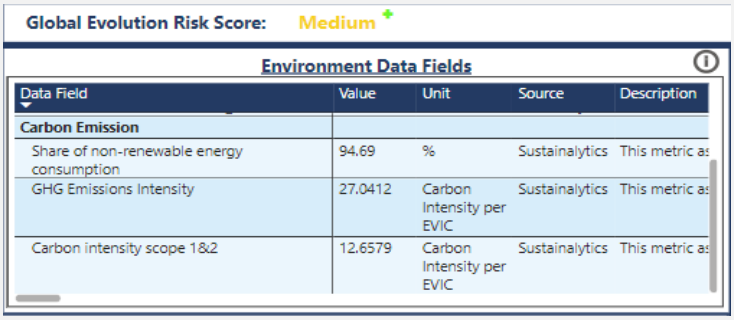


Source: Li & Gallagher (2022)[7]

Company-specific analysis

We monitor company-specific risks through our corporate ESG framework with data available in our in-house ESG platform. We supplement risk considerations with qualitative assessments based on a variety of sources to better understand a company's exposure and resilience to climate-change risks.

Figure 12: Company-specific analysis (snapshot from framework)



Data Field	Value	Unit	Source	Description
Carbon Emission				
Share of non-renewable energy consumption	94.69	%	Sustainalytics	This metric as
GHG Emissions Intensity	27.0412	Carbon Intensity per EVIC	Sustainalytics	This metric as
Carbon intensity scope 1&2	12.6579	Carbon Intensity per EVIC	Sustainalytics	This metric as

[7] Li, X., & Gallagher, K. P. (2022). Assessing the climate change exposure of foreign direct investment. Nature communications, 13(1), 1451.

Quantitative models

By integrating fundamental macroeconomic, financial and ESG factors into our valuation models, we estimate signals for valuations of sovereign credit spreads and currencies. Importantly, the approach we have developed integrates ESG factors directly into our valuation models. We believe and can econometrically document that such approach adds value in terms of estimating more accurate trade signals to inform our investment process.

Portfolio Monitoring

Global Evolution has developed a tool to monitor climate-related indicators, transition risks, and physical risks on a portfolio level. This is both because we find it valuable to quantitatively assess the effects on the climate of our portfolios but also because this is to an increasing extent requested by our clients. However, there is a deep uncertainty as to how and to what extend climate-related risks materialize, and (as will be further discussed under the 'metrics and targets' chapter of this report) climate-related indicators are not necessarily fair and constructive for the purpose of promoting a low-carbon transition.

While frameworks and climate-risk indicators help us identify countries at risk and the underlying drivers, our approach aims to minimize risks and leverage opportunities rather divesting from countries and corporates with high risk. This reflects our acknowledgement that frontier and emerging markets historically have contributed the least to climate change in the first place. Yet our approach is naturally also to be seen in the light of our fiduciary responsibility; and in the case that climate change risk materialize to financial performance, action is taken accordingly.

4.3. Engagements

Engagement is an integrated part of our investment process for both our sovereign and corporate investments. Global Evolution prioritizes engagements efforts to gain essential insights to our bottom-up country and company analysis. Seeking out more information on issuers' commitment and attitudes towards sustainability issues helps us become better informed around risks and opportunities.

As fixed income investors in emerging markets, we can provide crucial financing for governments and corporates in the world's less developed countries and raise awareness for global best practices with our focused ESG engagement. We are not prescriptive on issuers' expenditure, however we do engage in mutually respectful discussion around which initiatives and policies related to the environment, citizens' wellbeing, and governance practices could provide long-term benefits for all stakeholders.

We take the opportunity to convey our views on key ESG risks and opportunities in various settings. We engage directly with sovereign policy makers and companies individually or as part of small groups and as an active member of the Emerging Markets Investor Alliance (EMIA). Through EMIA, we collaborate with other asset managers on building advocacy campaigns targeted specific issuers. Among others, we are an active participant in a working committee focused on engagement with emerging markets governments to strengthen and achieve their Nationally Determined Commitments (NDCs) under the Paris Accord.

Example of Global Evolution sovereign engagement: Uzbekistan's fossil fuel subsidies

Background: Uzbekistan is a highly carbon-intensive country and fossil fuels are largely subsidized. Not only do fossil fuel subsidies entail structural risks for the government budgets and fiscal performance but also contribute to air pollution and health concerns, hamper countries' transition into more energy efficient economies, and disincentivize private investments in renewable energy capacity. Subsidies have fallen in Uzbekistan since 2018[8], however further steps to phase out fossil fuels are needed while also being attentive to the poorest groups in society that are typically affected the most from rising fuel prices. With an investor trip to Tashkent planned in September 2023, we saw the opportunity to discuss the phasing out of fossil fuels while protecting the economically vulnerable groups of society.

Engagement: In a meeting with the Ministry of Economy and Finance, representatives informed that the government is ready to partly remove energy subsidies for companies from October 2023 and is working towards reducing subsidies for consumers in 2024. In the meantime, the government is working on developing a targeted cash-transfer program for the poorest groups that will be affected the most by rising fuel prices. The Ministry expects to have necessary measures in place to reduce fossil fuel subsidies for consumers in May 2024.

Comment: We welcome the government's steps taken to reduce fossil fuel subsidies and the accompanying inclusive measure to counterbalance negative effects on poorer households. We find that these are important steps towards a more energy efficient economy and private investments in renewable energy. We also expect these measures to have a positive effect on income equality, as fossil fuel subsidies generally benefit richer households the most. Hence the removal of fossil fuel subsidies will withdraw benefits from the richer income groups while the introduction of income-dependent cash-transfers will benefit the poorer.

[8] https://www.iea.org/reports/solar-energy-policy-in-uzbekistan-a-roadmap/a-solar-energy-roadmap-for-uzbekistan-by-2030

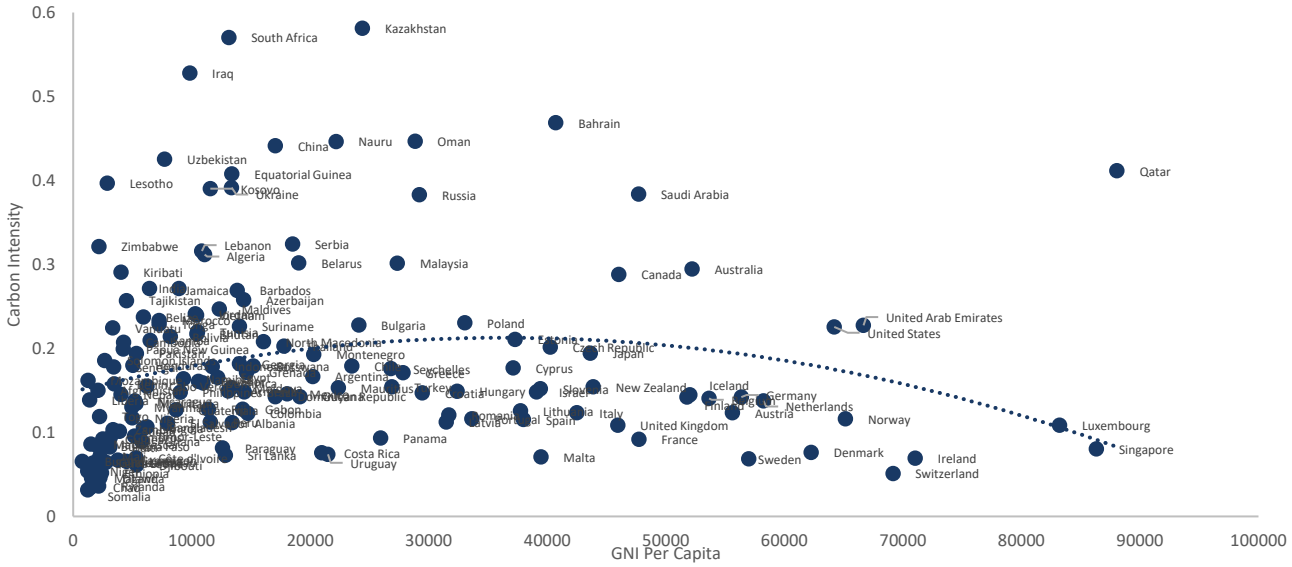
5. Metrics and Targets

This chapter introduces climate metrics monitored by Global Evolution and a discussion of these metrics in the context of emerging markets. We have adopted a variety of metrics – both externally sourced and internally constructed – that help us monitor our investments with a nuanced view. With frontier and emerging markets being the context for our investments, key challenges for us to overcome include data availability, quality and bias.

Data availability and quality is a key challenge in emerging markets. Given that the sustainability agenda is further advanced in developed countries, corporates in these countries are under stricter disclosure regulation as compared to emerging markets corporates. Many emerging markets corporates do not have neither resources nor incentives to collect and result ESG data. Also, a lacking standardized reporting framework entails the risk of data being inaccurate. This is particularly true for corporate metrics, while sovereign metrics are often reported by international organizations collaborating with government officials or local NGOs on reporting data based on a particular framework or estimate data themselves, which allows for greater data consistency across countries, although data is often estimates.

In addition, we are very mindful of many climate-related metrics being biased against emerging markets. Key to understanding this bias is to recognize that these countries face a dual challenge of simultaneously undergoing economic development and meeting growing expectations to commit to net zero climate ambitions. Historically, there has been a clear link between economic and environmental pollution growth with advanced economies bearing disproportionate responsibility for climate change. Yet, as these economies advanced, their economies increasingly decoupled from rising pollution and emissions. Theorists refer to this as the "environmental Kuznets curve", suggesting that environmental pollution, e.g. carbon emissions as used as example in figure 13, increases during industrialization yet start to decrease once the country reaches a tipping point at a certain income level that allows for investments in new technologies and diversifying the economy with higher national levels of human capital.[9] Mapping countries on the environmental Kuznets curve based on their income level and carbon intensity clearly illustrates that a vast number of countries have yet to undergo development. Hence, it is important to recognize that emerging markets' performance on climate-related metrics is related to their stage of development.

Figure 13: Environmental Kuznets curve



Source: Prepared by Global Evolution using data from The Global Carbon Project and World Bank

[9] Cole, M. A., & Neumayer, E. (2005). 19 Environmental policy and the environmental Kuznets curve: can developing countries escape the detrimental consequences of economic growth?. *Handbook of Global Environmental Politics*, 298.

Climate metrics: Bias against emerging markets

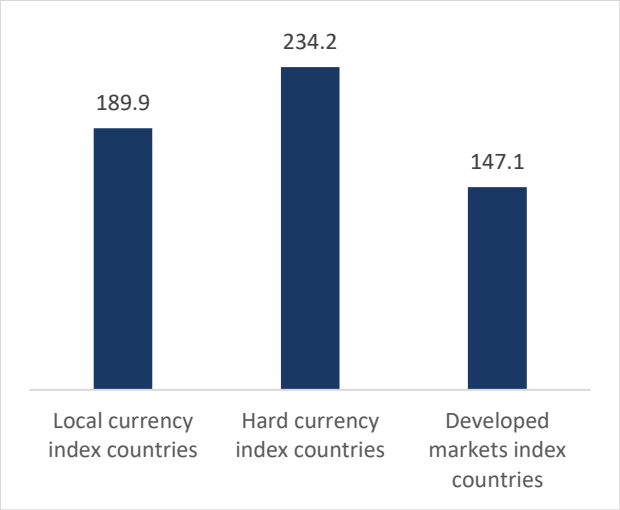
It is important to recognize that different carbon metrics lead to different conclusions and therefore should be monitored mindfully. In the following, we present two examples of carbon metrics leading to different conclusions and illustrating the importance of understanding the underlying drivers of countries' high vs. low emissions.

Carbon Intensity

Carbon intensity is a widely used metric – among other being the carbon-related metric required for disclosure under the European Finance Disclosure regulation. As evident in figure 14, emerging markets significantly underperform developed markets on carbon intensity. This can largely be explained by the Environmental Kuznets' curve presented on the previous page, where emerging markets are still undergoing development which eventually will lead to more efficient production processes and diversified economies.

It is also important to recognize that many developed countries have outsourced their carbon emissions to emerging markets through shifting more carbon-intensive goods in their import and less carbon intensive goods in their exports. This implies that much of developed markets' emissions are embedded in imported products, while emissions are registered as emitted in the exporting country.

Figure 14: Co2 intensity, kilo tons per GDP[10]



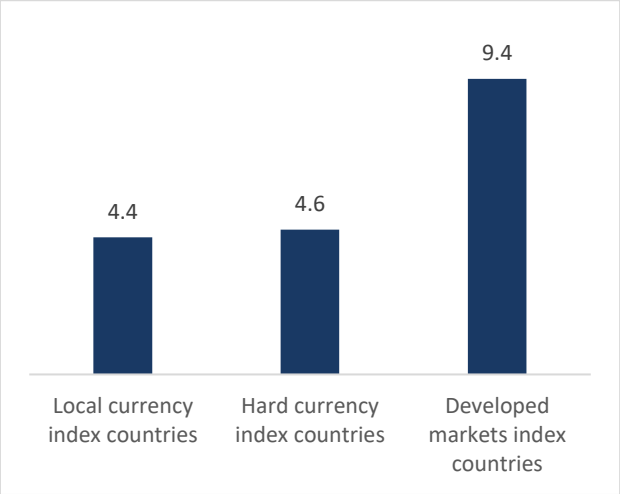
Note: Calculated as equally-weighed averages of index countries
Source: Global Carbon Project, IMF

Carbon consumption per capita

When adjusting carbon emissions data for imported and exported emissions and taking into account the size of the population, a very different picture is forming as depicted in figure 15. Developed markets' consumption emissions per capita exceed by far those of emerging markets' populations.

As emerging markets continue to develop, they are likely to increase the carbon consumption per capita: Infrastructure, housing, and other elements associated with development are typically based on carbon intensive materials (steel, cement etc.), which will contribute to rising emissions, while developed countries are likely to continue to exhibit declining consumption emissions per capita as most investments associated with development have already been made. Expectations to emerging markets emission reductions should therefore be seen in the light of fair transition, where no population is deprived human development.

Figure 15: Co2 consumption, tons Co2 per capita[11]



Note: Calculated as equally-weighed averages of index countries
Source: Global Carbon Project, World Bank

[10] GDP is adjusted for purchasing power parity and based on current international dollars. DM Index = ICE BofA Global Government Bond. LC index = JP Morgan GBI-EM Global Diversified. HC Index = JP Morgan EMBI Global Diversified. Please see index definitions at the back of this paper.
[11] See footnote 10 for index explanation.

We are committed to transparency in ESG reporting. Table 5 below provides an overview of the key metrics monitored for our sovereign investments. We monitor these metrics because they give relevant information to understand fund exposure and opportunities in relation to climate risks and they help us identify areas for further risk management and engagement priorities.

Table 5: Disclosure of key climate metrics – sovereign investments

Metric	Description	Data disclosure	Source
Total territorial Co2 emissions	Co2 emissions data include emissions from fossil fuel combustion and cement production taking place within national territory and offshore areas over which the country has jurisdiction. Equivalent to scope 1 and 3 emissions. Reported as million tons Co2.	198	Global Carbon Project
Carbon intensity	Territorial Co2 emissions divided by GDP at PPP, providing a direct measure of emissions intensity of the economy. Territorial Co2 emissions data include emissions from fossil fuel combustion and cement production. Reported as kilo tons Co2 per billion GDP, PPP, CID	214	Global Carbon Project; IMF/Haver
GHG Intensity	This indicator is monitored as part of European SFDR legislation and includes emissions from energy use and land use, land-use change and forestry, including CO_2, CH4, N20, and F-gases. GHG is divided by GDP, PPP, CID converted from USD to EUR (c.f. SFDR). Reported as kilo tons Co2 equivalent per million GDP, EUR.	372	Verisk Maplecroft; IMF/Haver
CO2 consumption per capita	Average carbon consumption per capita. Calculated as (territorial emissions – exported emissions + imported emissions)/population. Equivalent to scope 1 and 2 emissions divided by population size. Reported as tons Co2 per capita.	5.1	Global Carbon Project
Renewable electricity	Renewable electricity is the share of electricity generated by renewable power plants in total electricity generated by all types of plants. Reported as % renewable of total electricity supply.	37%	Verisk Maplecroft
Transition risk exposure	The extent to which countries are exposed to economic hardship from a low-carbon transition, their position to transition away from fossil fuels, and their potential to benefit from a global low-carbon transition. Indexed 0-10 (0=lowest exposure, 10=highest exposure)	5.5	Global Evolution proprietary framework
Transition risk resilience	The abilities of countries' capacity to respond to risks and opportunities, relating to the quality of institutions and flexibility of economic structures. (0=poorest adaptive capacity, 10=highest adaptive capacity)	4.8	Global Evolution proprietary framework
Physical risks exposure	The degree to which countries are currently exposed to the physical impacts of climate extremes, the changes in climate extremes, and the future changes in climate over the next three decades. Indexed 0-10 (0=lowest exposure, 10=highest exposure)	4.3	Verisk Maplecroft
Physical risks adaptive capacity	The abilities of a countries' institutions, economy and society to adjust to, or take advantage of, existing or anticipated stresses resulting from climate change. Indexed 0-10 (0=poorest adaptive capacity, 10=highest adaptive capacity)	5.3	Verisk Maplecroft

Note: All metrics are reported as weighted average of all Global Evolution sovereign investments as of December 31st 2022.

We also evaluate climate risks for the corporate issuers in which we invest, focusing on the metrics outlined in table 6. As previously alluded to, availability of climate-related data for the corporate EM asset class is an industry-wide issue; and currently, our data providers are unable to provide full coverage for each metric. We are therefore in the process of mapping corporate issuers and climate-related data for future reporting.

Table 6: Key climate metrics – corporate investments

Metric	Description	Data disclosure	Source
Scope 1, 2 and 3 CO2 and GHG emissions	This metric assesses the carbon intensity in terms of scope 1, 2, and 3 emissions for a given company, expressed in terms of tons of CO2 and tons GHG	N/A	
Scope 1 and 2 CO2/GHG intensity	tCo2/$mm Enterprise Value Including Cash	N/A	
Scope 1 and 2 CO2/GHG intensity	tCo2/$mm Revenues	N/A	
Carbon intensity vs. peer group	Bloomberg peer group quartile ranking and/or Sustainalytics peer group percentile ranking on carbon intensity	N/A	Company sustainability reports, Bloomberg, Sustainalytics based on data availability
% of non-renewable energy consumption	This metric assesses the share of non-renewable energy consumption as percentage of total energy consumption	N/A	
Water consumption/ intensity	The total volume of water withdrawn and consumed for own purpose and not returned to the same source or not considered useable by others (in cubic meters).	N/A	
Net zero target and intermediate carbon reduction target	Does the company has a target date to reach net zero (Y/N), and does it have intermediate targets (Y/N)	N/A	
Risk score contribution from climate-related risks	This metric is derived from Sustainalytics ESG risk score, and consist of the portion of the risk score attributable to climate-related risks	N/A	Sustainalytics

In 2022, as part of our CarbonNeutral® company certification[12], we began calculating our company carbon footprint and plan to continue to do so going forward. This footprint was reviewed by a qualified independent third party in line with the requirements of The CarbonNeutral Protocol. Table 7 illustrates the calculated estimates of Global Evolution's Scope 1 (direct emissions), Scope 2 (emissions from energy usage), and elements of Scope 3 (emissions from within the company's value chain, such as business travel, waste, and employee commutes).

Table 7: Metrics for corporate operations

Metric	Metric Value	Unit
Scope 1	65	Tons Co2 equivalent
Scope 2	45	Tons Co2 equivalent
Scope 3	187	Tons Co2 equivalent

Source: Proprietary by Global Evolution based on third-party provided estimation. Data is provided for full year 2022.

5.1. Targets

There is no doubt that climate action is among the most pressing issues of our times. Climate change has consequences for the natural environment and the livelihoods of billions of people. Developing countries are generally more exposed to physical risks compared to more advanced economies, despite developing countries having done the least to contribute to climate change in the first place. At the same time, all countries – regardless of their level of income – are expected to take measures towards low-carbon and energy efficient operations. Along with their decarbonization, they will also have to build greater resilience to the physical consequences of climate change.

In the light of richer nations having fueled their development and wealth with carbon – which has imposed physical risks on developing countries in particular – there is a fairness perspective to take into account when forming expectations of frontier and emerging markets' decarbonization. We believe that a just transition is needed, i.e. a global low-carbon transition where frontier and emerging markets should not sacrifice growth and prosperity as the world moves towards net zero.[13] It is important to recognize that frontier and emerging markets' lower development levels put them in a weaker position in terms of human and financial capital to diversity their economies to reduce dependence on fossil fuels and invest in technology for low-carbon development. Standard Chartered has identified a funding gap of USD 95 trillion dollars for emerging markets to transition to net zero.[14] Without support, emerging markets are unlikely to transition to net zero. Taking

[12] CarbonNeutral® company certification: Conning Holdings Limited (CHL) and its subsidiaries (together, "Conning") are certified as carbon neutral through the use of high-quality instruments, in accordance with The CarbonNeutral Protocol (https://www.carbonneutral.com/the-carbonneutral-protocol) and the GHG Protocol Scope 2 Guidance. All credits adhere to standards approved by the International Carbon Reduction and Offset Alliance (ICROA). To achieve this certification, Conning works with Climate Impact Partners, a specialist in carbon market solutions for climate action. As part of this certification, the firm's global operations complete an independent assessment of their greenhouse gas emissions.

[13] World Economic Forum (2022). Why net zero without a 'just transition' is not an option. https://www.weforum.org/agenda/2022/05/why-net-zero-without-a-just-transition-is-not-an-option/

[14] Standard Chartered (2022). Just in Time.

into consideration that climate change does not know national boundaries, collective responsibility and action is instrumental for emerging markets' low carbon transition.

For these reasons, we do not find it meaningful to set carbon reduction targets for our portfolios. Reductions could relatively easily be achieved simply by changing portfolio weightings, tilting towards better-performing countries. However, optimizing an emerging markets portfolio on carbon metrics, e.g. carbon intensity as is often the preferred choice among investors, would typically lead to funding being directed away from countries that have not yet developed the human capital and technological capacity needed for less carbon intensive processes. Directing capital away from these countries does not solve the underlying issue of these countries needing to build the capacity to reduce their emissions and would only lead to higher costs of capital, which is counter-intuitive to these countries' green transition and would only deepen global inequalities and social unrest.

6. Moving forward

We continue to expect the decarbonization agenda to an increasing extent will be driven by client and international demand for reporting and adherence to carbon targets and disclosures. As a result, the above sections reflect our current thinking but should be expected in the future to be enlarged and refined in terms of details and coverage.

While a solid framework is necessary for analyzing and integrating sustainability risk—including the decarbonization paradigm elaborated on in this year's TCFD report—the key challenge is still information and data on sustainability related metrics. The frequency of ESG data is low and scarce. However, this is also the biggest opportunity in sustainability-related research.

7. Definitions of Indices

Index	Definition
J.P. Morgan EMBI Global Diversified	is the J.P. Morgan EMBI Global Diversified Index (EMBI GD): The index is a market capitalization-weighted total return index of U.S. dollar and other currency denominated Brady bonds, loans, Eurobonds and local market debt instruments traded in emerging markets.
J.P. Morgan GBI-EM Global Diversified	is the J.P. Morgan Government Bond Index for Emerging Markets Global Diversified (J.P. Morgan GBI EM GD) : The index is a comprehensive global local emerging markets index, and consists of regularly traded, liquid fixed-rate, domestic currency government bonds to which international investors can gain exposure.
ICE Bofa Global Government Bond	The index tracks the performance of public debt of investment-grade sovereign issuers, issued and denominated in their own domestic market and currency. It is a market value-weighted measure of these bonds.

8. Disclaimer & Important Disclosures

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