ESG Materiality Newsletter

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Limited

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Introduction

Welcome to our Global Emerging Markets (GEMs) **ESG Materiality** commentary – a bi-annual publication that demonstrates our engagement activity with portfolio companies and showcases holdings helping to create positive impacts in line with the UN's Sustainable Development Goals (SDGs)[1].

In the latest issue we focus on **China** and look at the crunch ESG risks and opportunities in the world's second-largest economy. We also provide an update on our **voting** and **engagement** activity over the last 12 months and outline our work on establishing a **climate risk framework**.

Lastly, we share reflections on the 28th United Nations Climate Change conference (**COP28**) in Dubai and profile the Brazilian railway company, **Rumo**. Rumo is a new addition to the portfolio and is making a crucial contribution to the country's net zero transition.

Our vision for responsible long-term investing in emerging market equities

At a glance

- We aim to select companies with attractive business models and management teams that are willing to confront sustainability challenges.
- We engage on material ESG issues, including issues which are relevant to achieving the UN's Sustainable Development Goals (SDGs); our engagements seek positive impact across value chains.
- We maintain a low carbon footprint and prioritise engagements with holdings with higher levels of emissions and/or climate related risks.

Portfolio snapshot

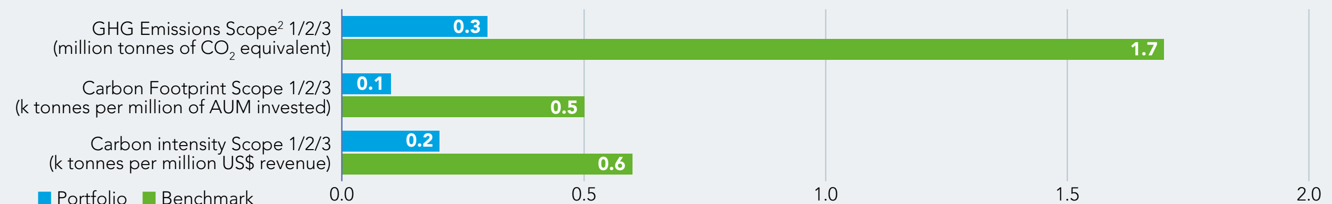
As at the end of November 2023, we engaged with companies representing **79%** of our assets under management (AUM), making progress in **45%** of these engagements over the last 12 months.

Percentage of engagement per theme:

Source: Federated Hermes as at 30 November 2023.

Our portfolio's carbon footprint, Q4 2023

Federated Hermes GEMs Equity Strategy vs. MSCI EM benchmark



Source: Federated Hermes as at 31 October 2023. The benchmark is the MSCI Emerging Markets Index

[1] **Sustainable Development Goals (SDGs):** The SDGs are a set of 17 interconnected goals that were adopted by all UN member states in 2015. They are a universal call to action to end poverty, protect the planet and improve the lives and prospects of everyone, everywhere, by 2030.

[2] **Scope emissions:** Scope 1, Scope 2, and Scope 3 is a classification system for greenhouse gas (GHG) emissions a firm creates through its operations, energy usage, and the wider value chain.

Corporate governance and voting

The GEMs team has continued efforts to improve **board diversity** and independence across various markets, through engagement and voting at company meetings, while also putting the spotlight on **remuneration**.

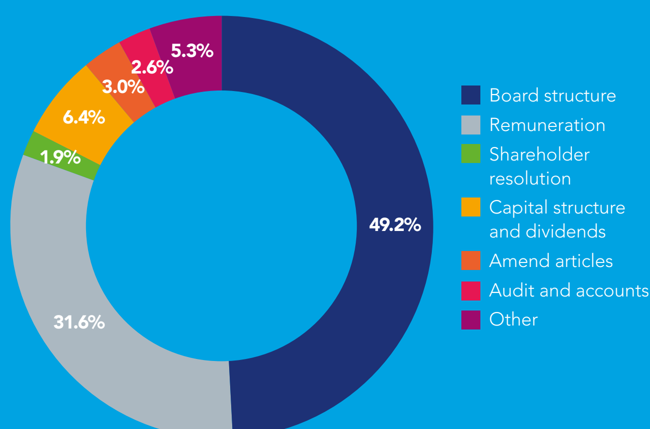
This reflects our focus on board effectiveness as a key driver of long-term value and our expectation that remuneration schemes are transparent and aligned to company performance and the creation of value for all stakeholders.

In the Global Emerging Markets (GEMs) Equity Strategy we voted against management on at least one issue at **51%** of all meetings over the last 12 months, with the majority of these votes against related to board structure. (see Figure 1 below) including at **Samsung Electronics**, **AIA Group**, **Dabur** and **Pidilite**, all of which do not fully meet our expectations on independence and/or diversity.

At **Samsung**, our concerns related to overall board composition with five executives (out of 11 directors in total) and independent directors typically having academic backgrounds and serving for short periods. We expressed our disappointment to the company at the missed opportunity to nominate an additional independent director with a business background, instead of proposing the re-election of an executive. At **AIA Group**, our votes reflected the fact that five out of 10 independent directors had tenure over nine years and board gender diversity (at 18%) is below our minimum expectations of 20%.

While there are improvements across emerging markets (EM), boards can be held back by a shallow pool of experienced independent directors, a lack of ambitious diversity policies, inadequate director training and limited financial expertise on audit committees, among other factors.

Figure 1: Breakdown of votes against management in last 12 months (per issue)



Source: Federated Hermes November 2023.

Expectations on **gender diversity** continued to tighten across Asia and global emerging markets. Hong Kong and Taiwan are phasing out single gender boards by 2024. At Taiwan's **LandMark Optoelectronics**, in light of the company appointing its first female director and making progress on board refreshment, we voted for a non-independent director despite overall board independence falling below our 50% threshold. We also observed some progress in China, with **Meituan** appointing its first female independent non-executive and **Estun Automation** its first female director, although both still fell below 20% board gender diversity.

Meanwhile, we saw positive moves on **ESG disclosure and governance**, with more companies publishing ESG reports and establishing board level Sustainability Committees or equivalent. We saw notable leadership in these areas in **India**.

We also observed some progress in China, with **Meituan** appointing its first female independent non-executive and **Estun Automation** its first female director, although both still fell below **20%** board gender diversity.

India – ESG disclosure leadership

Further to the 'Spotlight on India' in our ESG Materiality H1 2023 report,[3] news that the Securities and Exchange Board of India (SEBI) has mandated a higher level of external assurance makes India's requirements one of the most stringent in emerging markets and will affect the top 150 listed companies by market capitalisation from FY 2023-24.

It is notable that the mandatory indicators to be reported in the SEBI's Business Responsibility Sustainability Report (BRSR)[4] include metrics that reflect India's specific policy priorities such as 'openness of business' and 'inclusive development' (referring to job creation in small towns and sourcing from micro, small and medium enterprises (MSMEs) within India. These are not commonly featured in global ESG frameworks (such as MSCI and Sustainalytics) which may lead to an underrating of ESG performance because they do not capture local nuances. We always look to capture local contextual factors in assessing ESG performance to navigate any such issues.

[3] ESG Materiality, H1 2023 | Federated Hermes Limited (hermes-investment.com)
[4] Business Responsibility Sustainability Report (BRSR) – a mandatory disclosure requirement for top 1000 listed companies in India.

Spotlight on China

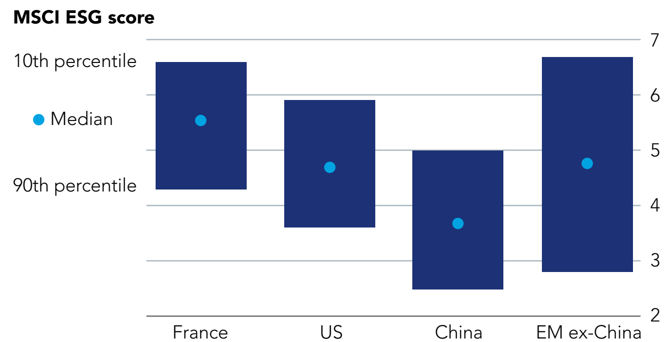
Overview

- ESG ratings consistently show Chinese companies lagging their EM peers on ESG, prompting questions about whether China is investable from an ESG perspective.
- While the ratings do not capture the full picture, there is no doubt that China is challenging for the ESG investor – despite various positive regulatory drivers for ESG in the country.
- Yet the world cannot win the fight against climate change without China successfully transitioning to a low carbon economy. Private investment is critical to help achieve this goal, alongside concerted government action.[5]
- China, meanwhile, continues to face economic headwinds, not least from the ongoing fallout from Covid-19, its struggling property sector and geopolitical tensions with the US.
- In this context, a bottom-up approach is needed to identify companies showing positive ESG momentum and openness to shareholder dialogue, while playing into long-term structural themes that will deliver sustainable growth.
- For the committed, long-term investor, it is entirely possible to achieve this through in-depth qualitative research *and* a focus on themes that are set to transform the Chinese economy – notably digitisation, automation, electrification and renewables – all of which have the potential to help achieve the UN SDGs, while addressing China's social and environmental challenges.

ESG ratings miss the full picture

ESG ratings consistently show Chinese companies lagging their EM peers on ESG (see Figure 3) with more controversies, weaker corporate governance scores and red flags concerning human rights, leading to questions about whether China is investable from an ESG perspective.

Figure 3: Median ESG scores are lower for Chinese companies



Sources: Financial Times/MSCI/JP Morgan Asset Management.

What is certain, however, is that the ratings do not capture the full picture. Many Chinese companies are penalised for lack of disclosure (understandably); while some global ESG issues can be more or less material in a Chinese context because of local nuances, such as different policy priorities.

One example can be found in the gaming sector, where more attention is given to preventing gaming addiction among adolescents as a response to local policy priorities. Such variations are not well reflected in global ESG frameworks which can also penalise Chinese state-owned enterprises (SOEs)[6] that still dominate the economic landscape (71% of Chinese companies listed on the Fortune 500 are SOEs[7]).

Regulatory action driving ESG gains

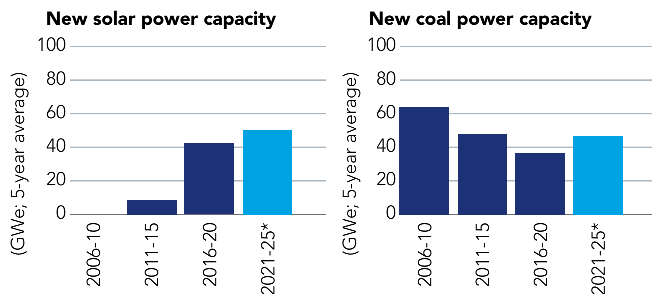
While China may not be seen as an ESG friendly market, regulatory action is driving improvements across the sustainability agenda.

The country's most significant achievement over the last 40 years has been the **lifting of 800 million people out of poverty** through rapid economic growth and government policies to alleviate poverty through the 'common prosperity' agenda, targeting regions disadvantaged by geography and a lack of economic opportunities. This change, in itself, has been instrumental in delivering a central aim of the UN SDGs.

[5] China accounts for 27% of global carbon dioxide and a third of the world's greenhouse gases. To reach net-zero emissions by 2060, the World Bank estimates China needs between US$14-17tn in additional investments for green infrastructure and technology in the power and transport sectors alone, and much of this will need to come from the private sector. China's Transition to a Low-Carbon Economy and Climate Resilience Needs Shifts in Resources and Technologies (worldbank.org).
[6] A state-owned enterprise (SOE) is a large organisation created by a country's government to carry out commercial activities.
[7] Fortune Favors the State-Owned: Three Years of Chinese Dominance on the Global 500 List | Trustee China Hand | CSIS.

On the environmental side, China remains an undisputed **global leader in solar and energy storage technologies** and has a sizeable wind turbine manufacturing supply chain. **Hydrogen** is also set to play a key role in China's decarbonisation efforts. While the Beijing government continues to order more coal (see Figure 4 below) it is also ramping up new solar capacity which will be instrumental in the country's bid to reach net zero by 2060.

Figure 4: Beijing government is ordering more solar (and more coal)



*Estimate based on reported government announcements, although not all capacity will necessarily be built.

Source: Economist Intelligence Unit / China National Energy Administration / China Electric Power Planning & Engineering Institute / EIU.

Outside of the energy sector, there is considerable government support for investments in **energy efficiency improvements** and process innovation, which are vital to achieving net zero. Progress on creating a circular economy[8] has been slower with the focus mainly on improving waste management, but it is progressing.

Meanwhile, large companies are aligning with the government's 2030 and 2060 targets with many going further to set **2050 targets** (800 companies so far according to the Carbon Trust)[9]. Supply chain emissions (Scope 3) remain under-reported, yet this a global issue. We have also seen Chinese export-focused firms spurred on by international regulations such as the EU's Carbon Border Adjustment Mechanism.

On governance, the State Council[10] has recently issued guidelines to drive **improvements in board composition**, including a welcome recommendation that all SOEs have a majority of independent directors and fully independent audit committees. Generally, the government is pushing for more mixed ownership and modernisation of SOEs. We are also seeing improvements in **ESG disclosure** requirements, with mandatory environmental reporting for high impact companies, albeit less advanced than neighbours such as India (where more comprehensive ESG reporting is mandatory for the top 1000 listed companies).

The social side is lagging

This progress is unfortunately not matched on the social side, notwithstanding the huge achievements on alleviating poverty through 'common prosperity' and some other areas of leadership (eg. protection of minors on gaming platforms, female participation in the workforce).

A recent report by Sheffield Hallam University[11] has flagged exposure to forced labour in China's solar and auto supply chains and the risks have been well documented in other industries such as agriculture.

Working conditions in manufacturing also remain an issue with high employee turnover (reaching 40% in some companies) indicating some underlying challenges. Internal migrant workers are also vulnerable to exploitation since, on migrating to urban areas to take up low paid manufacturing jobs, many still lack access to social benefits under the *hukou* (household) registration system.

Meanwhile, the **'996' work culture**[12] in the technology sector remains an issue in some areas despite government efforts to address it. Newer social issues – such as **digital rights, privacy** and **surveillance** – are also under the spotlight with technology companies coming under scrutiny for their data sharing policies with the Chinese government.

Vigilance to avoid or mitigate ESG risks

While some of these issues are by no means unique to China (modern slavery, for example, remains a global phenomenon and is reportedly higher in other EM countries[13]), they remain risks that require evaluation, mitigation, and when appropriate, avoidance.

[8] A circular economy is a type of economic system or model that minimises waste and pollution, maximises resource efficiency and reuse, and designs products and services to last longer or be recycled.
[9] Especially across ICT, textile and manufacturing sectors, some businesses are seeking to reach carbon neutrality ahead of national climate targets. Accelerate to Net Zero: a view from China | The Carbon Trust.
[10] The State Council is the chief administrative authority of the People's Republic of China. It is chaired by the premier and includes the heads of each of the constituent departments.
[11] Driving Force | Sheffield Hallam University (shu.ac.uk) + add link to solar report.
[12] The 996 working hour system is a work schedule practiced by some companies in China. It derives its name from its requirement that employees work from 9:00am to 9:00pm, six days per week.
[13] The Global Slavery Index identifies India, Indonesia and Mexico has having higher rates of modern slavery than China.

While not all state-owned enterprises (SOEs) are alike (see NARI Technology below), we avoid SOEs in traditional sectors where the risk of political interference is too high (for example, banks, property and heavy industry) and only invest in SOEs that demonstrate due consideration for minority shareholders.

State Owned Enterprise – NARI Technology

NARI Technology is an example of a SOE that is embracing more mixed ownership and is improving its corporate governance, demonstrating openness to engagement with minority shareholders. **NARI** provides grid automation equipment and software. The company is a beneficiary of rising digital grid spending which is needed to optimise power dispatch as China's renewable capacity rapidly increases.

We also avoid any sectors related to geopolitical issues, such as the US entity list and, more broadly, companies with higher labour-related risks such as the solar module industry.

Beyond these *de facto* exclusions, we look for companies that are demonstrating positive momentum and engage with them to mitigate outstanding risks. One example is **Alibaba** where we identified positive momentum and traction on engagement around topics such as climate change and human capital management (see Alibaba case study below). Other notable engagements have included food delivery group **Meituan** (rider wellbeing and safety), **Tencent** (data privacy, responsible AI – see case study below) and **JD.com** (climate and governance).

Alibaba

Establishing a human capital management strategy.

Details of engagement:

Alibaba is the world's largest retail commerce business in terms of gross merchandise value and China's largest e-commerce company, with a 45% market share in 2022. Alibaba's business extends into many areas beyond e-commerce, including logistics (Cainiao), cloud services, local consumer services, and digital media and entertainment.

We have been engaging with Alibaba on human capital management since June 2021, when we first expressed on a call with the company our desire to understand how it ensures employees are engaged and deliver high performance, while maintaining a good work-life balance. After a call with the company in 2022, we wrote to encourage Alibaba to articulate a human capital management strategy in its upcoming reporting, including key metrics and targets. In May 2023, we reiterated our expectations for improved disclosure.

Over the course of our engagement from 2021 to 2023, we have been encouraged by the company's efforts to improve its human capital approach. This includes engaging with employees, monitoring their satisfaction rate with their office environment, and providing training and dialogue with senior leadership. However, we have stressed that improving disclosure on the human capital strategy is desirable, especially given the importance of employee retention to Alibaba's business and investors' concerns about excessive working hours in the industry.

Outcomes and next steps:

While Alibaba has not published an overarching human capital management strategy document detailing its approach, the company has made substantial progress. Alibaba's FY 2022 ESG report highlighted the additional benefits provided to employees by its WeCare Program, which was launched in 2021. These additional benefits include companionship leave, parental leave, long-term service leave, travel subsidies, and flexible work arrangements for one day a week. Alibaba's FY 2022 ESG report, published in July 2023, included improved disclosure of key metrics such as employee turnover rates by gender, age and region. In the report, a breakdown by gender and employee level of training hours undertaken showed greater equity of hours provided, as well as an increase in the total amount of training. We view all of the above developments as constituting a comprehensive human capital management strategy.

> **Alibaba's FY 2022 ESG report, published in July 2023, included improved disclosure of key metrics such as employee turnover rates by gender, age and region.**

The next step will be for the company to ensure consistency and effectiveness of its human capital management approach across the Alibaba group of companies, following an ongoing group restructuring.

Opportunities for sustainable transformation

We look for companies that play into structural themes that deliver both sustainable growth and societal benefits – notably **digitisation, automation, electrification and renewables**.

Renewables present the most obvious ESG opportunity given China's global leadership in this space, provided ESG risks are navigated carefully. China's successful electric vehicle (EV) and renewable energy sector demonstrate that it is able to develop world-class companies that contribute significantly to the global effort to combat climate change.

We continue to identify new opportunities in the clean technology space. **BYD, the world's largest EV manufacturer**, is an exciting new name in the GEMs portfolio, with a long runway for growth. We are engaging with **BYD** on its material ESG issues (including climate risk, supply chain due diligence, and employee safety) and it is showing an openness to shareholder dialogue and developing positive momentum in these areas.

Digitisation and automation are already driving a profound shift in the Chinese economy, yet with more growth potential given low adoption in some industries. This includes adoption of **Artificial Intelligence (AI)** to improve business processes, automate services and improve decision-making. **Electrification** is critical to allow for integration of more renewables into the energy mix (see NARI Technology example above).

From an ESG perspective, we see positive impacts around digital and financial inclusion, not least connecting millions of SMEs (including smallholder farmers) to the wider economy. Companies such as **Alibaba** and **Tencent** are making a huge impact in this regard, from basic connection to markets for previously-excluded individuals and small businesses to adoption of AI to drive social and environmental change. For example, both companies have AI-driven healthcare applications, supporting health outcomes in rural communities, while Tencent is offering AI powered technologies to local governments to drive efficiencies in the provision of public services (eg. waste collection).

Meanwhile, automation companies such as **Shenzhen Inovance** and **Estun** are supporting their customers in generating energy efficiencies that are critical for the carbon transition, while also delivering benefits for workers in terms of health and safety (eg. machine substitution for the most dangerous tasks).

From a risk perspective, AI of course brings its own red flags and the need for strong governance including policies to ensure safety and avoid unintended consequences such as bias or discrimination. Meanwhile, the journey to automation needs careful steering to ensure workers are prepared for the changes.

Alongside EOS, we engage with companies on the **EOS Digital Rights principles**[14] to ensure effective AI governance and develop robust guardrails to mitigate risks. In particular, we ask companies to disclose the range of purposes for which they use algorithmic systems, explain how they work, and enable users to decide whether to allow them to shape their experiences. While the journey is not linear, we are seeing some good traction, including global leadership on some aspects (see case study on **Tencent** opposite).

CASE STUDY

Tencent

Adopting principles for the ethical use of AI

Tencent is a multinational technology and entertainment conglomerate and holding company headquartered in Shenzhen, China.

Details of engagement: In January 2019, we met with the company and encouraged it to disclose its consideration of business ethics, including AI ethics, in its next ESG report. In May 2019, we published our *Investor Expectations on Responsible AI and Data Governance* and shared them with Tencent. The expectations are based on six principles of trust: transparency, action, integrity, accountability, and safety. We recommended that the company adopt its own principles for the ethical use of AI given its application of machine learning for many functions.

We continued the dialogue in 2021 and, in 2022, we sent the company updated expectations on AI in our *Digital Rights Principles* in which we state that companies should disclose the range of purposes for which they use algorithmic systems, explain how they work, and enable users to decide whether to allow them to shape their experiences.

Outcomes and next steps:

Over the course of our engagement, the company's annually published ESG reports describe its evolving approach to AI. In 2019, the company's senior executive vice-president and chairman of group marketing and global brands publicly acknowledged the importance of ethical use of AI in a public forum in Dubai, by calling for 'AI for good'.

In 2021, the company published its first *Explainable AI Report*, which showcased its efforts to implement its vision of 'AI for Good'. The report discusses the regulatory policies, development principles, and industry practices of explainable AI. The report was the first of its kind in China. The company also spearheaded the development of two industry standards within the Shenzhen AI Industry Association, pertaining to cybersecurity for minors and facial recognition technology. The company provides numerous examples of its ethical use of AI, but not an exhaustive list, believing this would be burdensome.

Among the examples offered by the company was the integration of AI with medical services, and with food, energy and water provision. It said these are guided by its commitment to 'Tech for Good.' As AI continues to rapidly evolve, we will continue to engage the company focusing on the overlap with human capital management and wider societal outcomes.

[14] Hermes Investment Management (hermes-investment.com).

GEMs Equity climate risk framework

The GEMs strategy has developed a high-level climate risk framework with the goal of mitigating risks in the portfolio and identifying climate related opportunities.

Context

Emerging markets are more vulnerable to physical risks from climate change such as cyclones and flooding, as well from rising sea levels and heat waves[15].

On top of this, EM countries have less capacity to adapt to the negative effects of climate change in terms of sector-specific resources, with access to climate finance being a key barrier (see COP28 box below).

Over the long term, the transition risks faced by EM and developed markets (DM) align. But how and when these risks materialise will likely differ.

The decarbonisation of power generation, for example, is widely expected to be slower in EM. Emerging market governments are also working towards different national timeframes. India has set a target to become net zero by 2070, China by 2060, reflecting both countries' need to balance social, economic and environmental outcomes.

Assessing risk – key steps

The assessment of climate change risk in EM-listed equities requires three key steps:

Key steps	Transition risk	Physical risk
1.Vulnerability assessment	Assessing exposure based on the nature of the business, location of its operations and how and where its revenue is generated. Focus on emissions intensity and carbon regulation risk.	Assessing geographic exposure and resilience to acute and chronic[16] physical climate risks.[17]
2.Contextual adjustment	Adjusting for likelihood, severity and timing of transition impacts, considering mitigating factors.	Understanding the likely operational and supply chain impacts, including impacts on people (eg. safety, physical and online connectivity); productivity and business continuity; impacts to local infrastructure; and climate-related opportunities.
3.Modelling financial impact or risk premium	Key financial impacts to consider may include: inflationary costs, regulatory costs, capital expenditure (CapEx) requirements, revenue loss, stranded assets.	

Outcomes to date

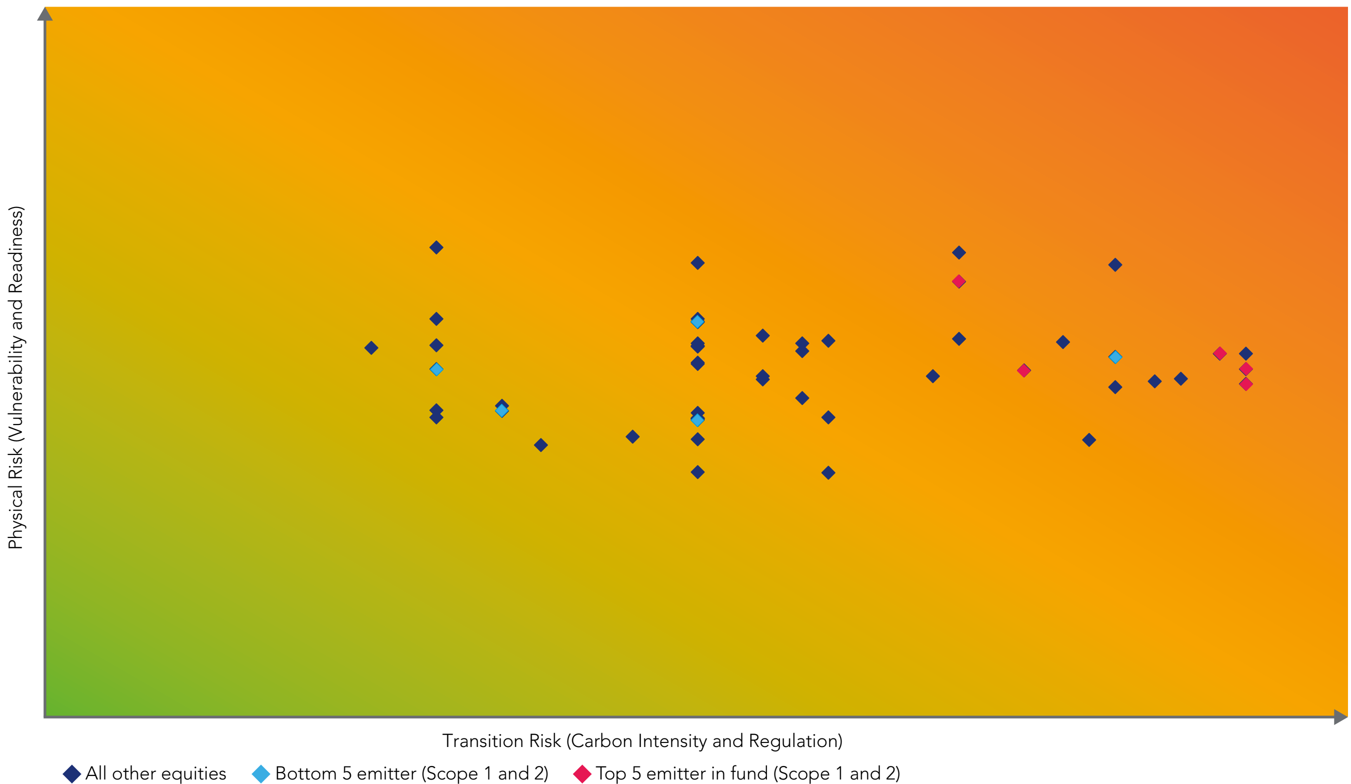
The key takeaways of our initial assessment were:

- **GEMs core Strategy companies tend to have 'medium' physical climate risk**. This is not surprising given the higher vulnerability and lower readiness of EMs to physical climate risks; as such we were not expecting many (or any) low risk names. The highest physical climate risk is concentrated in portfolio companies predominantly exposed to India.
- **The portfolio is highly diversified in terms of transition risk,** with a broad spread across lower, medium and higher transition risk scores. This is driven by a diversified portfolio both in terms of sectors and geographies as shown in Figure 2 below.
- Not surprisingly, the **top emitters** in the Strategy are exposed to higher transition risk.

[15] The risks of climate change can be divided into two categories: physical and transition risks. The physical risks are risks resulting from climatic events, such as wildfires, storms, and floods, whereas transition risks result from policy action taken to transition the economy away from fossil fuels.
[16] Acute physical risks refer to those that are event-driven, including increased severity of extreme weather events, such as cyclones, hurricanes, or floods. Chronic physical risks refer to longer-term shifts in climate patterns (e.g., sustained higher temperatures) that may cause sea level rise or chronic heat waves.
[17] This draws on the Notre Dame Global Adaptation Index's climate scores which consider each country's vulnerability and readiness. Country Index // Notre Dame Global Adaptation Initiative // University of Notre Dame.

The graphic below plots the relative physical and transition risk for each holding within the GEMs Equity fund. Each point on the graph represents a unique holding. The lowest and highest Scope 1 and 2 emitters within the fund are coloured in blue and red, respectively.

Figure 2: GEMs Equity – physical and transition risk matrix



Source: Federated Hermes 2023.

The next step (already underway) is a deep-dive assessment of higher risk names.

The implications of COP28 for EM

The United Nations Climate Change Conference (COP28) in Dubai represented another pivotal moment in the fight against climate change, with a 'global stock take' and a raft of new pledges. Many countries are now set to reboot their nationally determined contributions (NDCs). How do all these changes affect the risk and opportunity profile of corporates in emerging markets (EM)?

Climate finance

Historically, climate finance has been a challenge for emerging markets – **only 14% of global climate finance flowed to EM** in 2022 despite an estimated need to quadruple climate finance for emerging markets and developing economies (excluding China) by 2035. Emerging countries, meanwhile, have been disproportionately affected by climate change with high physical risk exposure and less readiness to respond amid escalating energy demands from their fast growing populations.

- COP28 saw positive momentum with the launch of the **Global Climate Finance Framework** and more than **US$57bn** in pledges to new and existing climate finance funds including a new 'loss and damage' fund that will boost infrastructure investment.
- Provisional assessments also indicate that the existing **US$100bn annual finance** commitment for 'developing nations' was met for the first time in 2022 and 2023.
- Meanwhile, **multilateral development banks** announced over **US$180bn** in new climate finance commitments, as well as partnerships for new innovative financial instruments targeted at unlocking capital barriers for EM.
- While we still need more buy-in for **wider financial architectural reform** to see a material shift in climate finance flows[18], this gives us cautious optimism that we will see **the pipeline of investable projects in EM** slowly increase over the next few years.

[18] Only 13 countries have signed the Global Climate Finance Framework to date.

Global renewables and energy efficiency pledge

- This pledge, signed by 113 countries, commits countries to **tripling renewables capacity by 2030** while also doubling the average annual rate of energy efficiency improvements.
- While implementation is dependent on finance flows, it is an impressive move forward and positive for EM, as countries such as **China** are already leaders in the space and may see increased demand for their renewable technology products.
- It also highlights opportunities in **power grid infrastructure** and suppliers as upgrades will be required to facilitate the increase.

'Transition away' from fossil fuels

- The 'global stock take' final language commits Paris signatories to "transitioning away from fossil fuels in energy systems, in a **just, orderly and equitable manner**, accelerating action in this critical decade, so as to achieve net zero by 2050 in keeping with the science".
- While the agreement avoids 'phase out' terminology we nevertheless regard it as a move forward, the first COP to directly address fossil fuels (other than coal).
- Notably, it recognises that countries have **different levels of responsibility** in tackling climate change and the need **for financial support for developing countries** – both important factors for EM.
- What this means for reviews of **nationally determined contributions** (NDCs) over the next year is uncertain, but we do not anticipate any significant upgrades from the largest emitters such as China or India.
- At a corporate level, while COP28 sends a positive signal, many EM companies are still reliant on changes in the cost profile of lower carbon technologies to facilitate investment in decarbonisation. Without these shifts, EM companies will face increasing **transition risks** as DM peers continue to receive the bulk of climate funding and are able to use it to decarbonise.

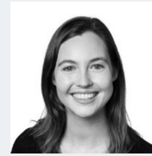
The GEMs team is closely tracking the risk levels faced by companies in the portfolio and engaging to understand their options in the face of these structural barriers and evolving opportunities.

ENGAGEMENT CASE STUDY

Rumo SA

Headlines:

- Rumo is a rail freight provider in Brazil, primarily serving the agricultural industry.
- While the company runs a diesel locomotive fleet, rail freight is inherently more sustainable than the alternative of road freight for ground transport, due to its lower energy and emissions intensity.
- By enabling modal switching from road transport the company is making a significant contribution to containing the energy demand of Brazil's transport sector.
- Full electrification is impractical currently due to cost, but the company is pursuing innovative alternatives including hybrid locomotives.
- Rumo has reduced Scope 1 and 2 emissions intensity by 30% in the last five years, and is developing a science-based interim emissions reduction target.
- We are engaging to ensure the company's transition is managed effectively.



Hayley McGuiness
Associate Director – Responsible Investing and Sustainability, Emerging Markets Equities

Sustainable Development Goal:

Context:

The role of rail freight in goods transport in Brazil

Rail freight accounts for 28% of global surface goods transport, alongside heavy trucks (45%) and medium trucks, light commercial vehicles and three-wheelers (27%)[19]. Penetration rates of rail freight differ by region; in Brazil rail freight makes up just 15% of total freight volume[20]. Brazilian railways predominantly move freight (as opposed to passengers), and are predominantly diesel powered. Rail freight is characterised as being a natural option in a country with Brazil's territorial dimensions and primary sectors e.g. iron ore and agriculture; and at the moment the country's rail freight sector is described as underutilised, especially in comparison to countries of a similar size. The Brazilian Government has put in place an ambitious plan to expand its freight-focused rail system to carry 40% of exports by 2035, up from 17% currently[21].

The state of rail freight electrification in Brazil

Rail is the most electrified mode of transport globally, with almost half of global freight rail currently electric. The remainder is diesel. However, in South America less than 5% of rail tracks are electrified (measured by kilometres and inclusive of freight and passenger tracks). Notably, full rail electrification refers to the use of both an electrified track and train. Brazilian rail freight routes, including Rumo's, cover particularly long distances. The infrastructure that would be required to enable full electrification is currently sparsely scattered along these routes, and expanding it to enable route electrification would likely be prohibitively expensive. Further there is a lack of requirements, or incentives, for electrification or lower carbon alternatives in the Brazilian Government's rail freight plan, resulting in full electrification being impractical and unlikely in the short to medium term for Brazil.

Rail as a transport decarbonisation pathway

Rail freight is inherently more sustainable than road freight due to its lower energy and emissions intensity, meaning it makes an important contribution to containing the energy demand of the transport sector (see Figure 5 below). For context, if all passenger and freight services currently carried by rail switched to road vehicles, such as cars and trucks, global oil demand from transport today would be 16% higher (8 mb/d) and global transport emissions would be 12% higher. The Boston Consulting Group estimates that rail freight uses 80% less energy than trucks per ton of freight carried and holds a four-to-one advantage over cars in terms of its emissions intensity[22]. Many of Brazil's roads are in poor condition and road freight distances are immense, further reducing fuel efficiencies and increasing the energy intensity of this form of freight. Further, long-distance road freight in Brazil presents significant safety issues due to driving in isolated areas, crime, unsafe roads and long hours, positioning rail freight as a safer alternative as well as offering lower emissions.

[19] IEA (2019), The Future of Rail, IEA, Paris https://www.iea.org/reports/the-future-of-rail, License: CC BY 4.

[20] A.G.Guimarães, A.Couto, A.Lobo, Rail freight production in Brazil: Projecting scenarios in times of global uncertainty, Journal of Rail Transport Planning & Management, Volume 27, 2023, 100403, ISSN 2210-9706, https://doi.org/10.1016/j.jrtpm.2023.100403. (https://www.sciencedirect.com/science/article/pii/S2210970623000355)

[21] C. Demony, L. Paraguassu, Brazil courts foreign investment to explain rail and highways, 21 September 2023, Reuters.

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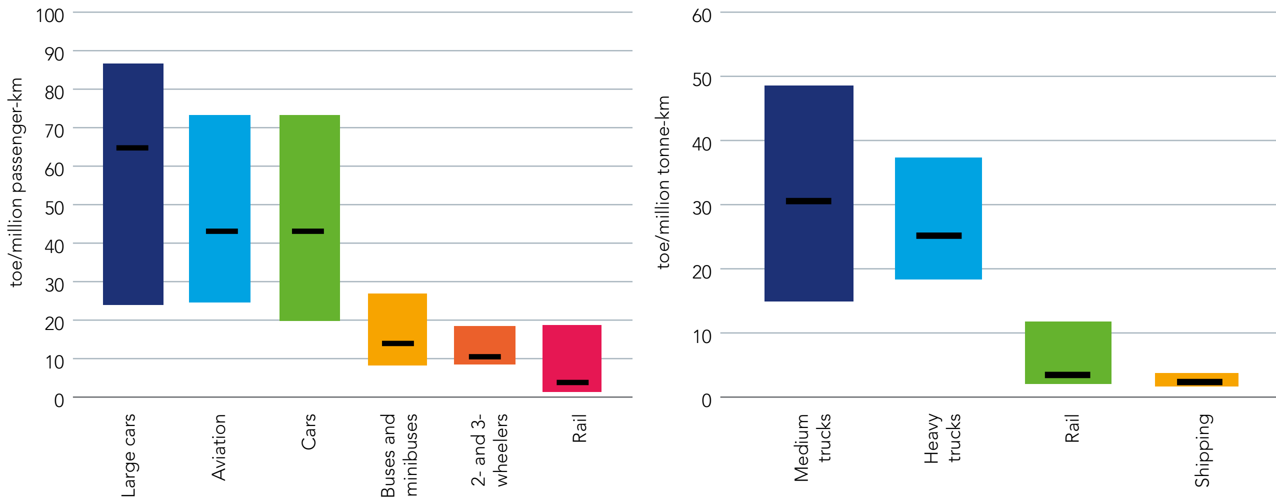
ENGAGEMENT CASE STUDY

Rumo SA continued

Figure 5: Energy intensity of different transport modes (2017)



Notes: toe = tonne oil equivalent. The boxes in this figure indicate the range of average energy intensity in various contries, while the horizontal lines represent the world averages.

Sources: IEA Mobility Model (IEA, 2018a), using assessments based on UIC (2018a); UITP (2018d); ITDP (2018a); National Bureau of Statistics of China (2018); Eurostat (2018); Indian Railways (2018a); Japan Ministry of Land, Infrastructure and Tourism (2018); AAR (2017) and Russian Federation State Statistics Service (2018).

Key message • Rail is the most energy-efficient means of motorised passenger transport, much more energy efficient than road freight.

Our view

Rumo is the largest railway operator in Brazil, and is therefore pivotal to freight transport decarbonisation for the country. Similar to traditional locomotive fleets globally, Rumo's fleet is diesel powered. While this positions the company as an energy consumer, rail freight is inherently more sustainable than the alternative of road freight for ground transport, due to its lower energy and emissions intensity. By enabling modal switching from road transport the company is making a significant contribution to containing the energy demand of Brazil's transport sector.

The company demonstrates maturity in ESG risk and opportunity management, with a considered and strategic approach to decarbonisation. Full scale electrification is largely impractical due to a high expense and lack of regulatory incentive for the region. However Rumo is still pursuing innovative alternatives, launching a trial of two hybrid locomotives in 2022, combining diesel engines and batteries, a technology that has only recently come to market. The company is strategically pursuing emissions reduction through operational measures, and as a result have achieved a 30% reduction in Scope 1 and 2 emissions intensity (gCO_2 equivalent/TKU) in the last five years (2018-2022) through efficiency gains and asset utilisation measures. Further, it is currently developing a science-based interim emissions reduction target which it intends to publish in the near future, alongside a plan for decarbonisation.

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