



Dáire T. Dunne, CFA
Portfolio Manager



Wendy Cromwell, CFA
Director, Sustainable
Investment and Portfolio
Manager



Simon Henry, CFA
Portfolio Manager

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Climate change and emerging markets: assessing opportunities and challenges

KEY POINTS

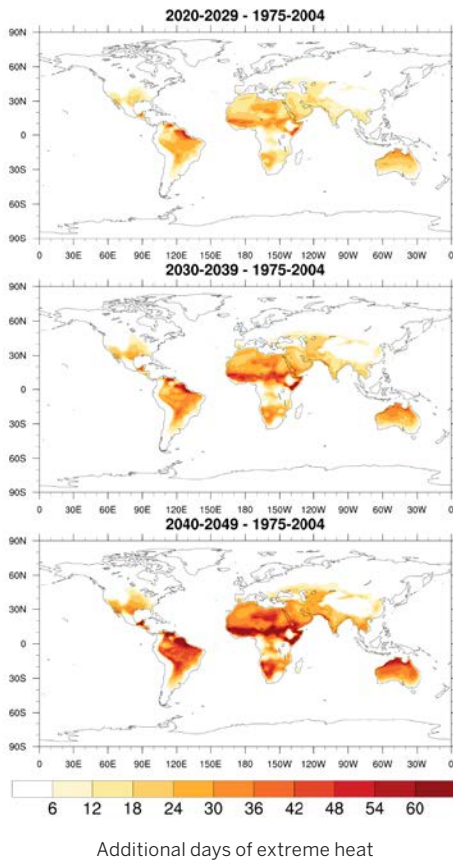
- Our research shows that climate change will affect emerging markets (EMs) unevenly.
- Given the differentiation of climate impacts, an investment framework may be constructive.
- We believe engaging with companies to help them build climate resiliency can reduce risk and unlock value.

Emerging markets (EMs) are on the front lines of climate change, facing challenges that could hamper economic development and jeopardise human health and capital assets. Physical climate risks such as extreme heat, droughts, supernormal rain events, water scarcity and poor air quality have already created systemic problems for many EMs. At the same time, transition risks stemming from changing policy and regulations can pose financial headwinds, particularly for carbon-intensive industries.

Companies across EMs, in a variety of countries and sectors, are preparing for climate change, either by developing innovative products that help society adapt to climate change, or by shifting business models and corporate policies to mitigate the risks. In this paper, we explore the intersection of EM investing and climate change by outlining investment opportunities and challenges and providing a framework for incorporating climate-related themes into an EM portfolio. We also share how we engage with companies to help them become more sustainable and competitive by preparing for climate change.

FIGURE 1

Changes in days of extreme heat over reference period



Source: Woodwell Climate Research Center

Why climate is a concern for EMs

Our work with Woodwell Climate Research Center (WCRC), formerly Woods Hole Research Center, the world's leading climate-research institute, studying the effects of climate change on capital markets confirms that EMs face significant headwinds from increasing temperatures which can exacerbate weather volatility, rainfall variability, water scarcity and droughts. According to WCRC projections, within the next few decades, many developing countries will experience multiple additional months with average daytime temperatures over 35° C (95° F), which can negatively impact human health and crop yields. (FIGURE 1).

Northern India is already experiencing deadly heat waves, defined as three or more consecutive days of 30°C “wet-bulb” temperatures, characterised by heat and humidity levels that prevent evaporation, such that the human body is unable to cool itself. The probability of these heat events occurring will continue to rise. China's temperatures are also rising quickly, making extreme heat waves a greater threat for the world's second-largest economy. By the next decade, our work shows that major agricultural-production regions in China, India and Brazil will contend with lethal heat waves as well as greater potential for floods, droughts, and year-over-year rainfall variability.

Exacerbating factor

Across EMs, low income levels and ageing infrastructure can exacerbate — or accelerate — the physical effects of climate change:

- While 90% of US and Japanese households have air conditioning (A/C), China has just 60% household A/C penetration, Mexico and Brazil 15%, and in India, just 5% of homes have A/C.¹
- Low-wage outdoor and migrant labourers in EM face health risks from pollution and extreme heat. Over 40% of India's labourers and 26% of China's work outside, mainly in agriculture.²
- Many EMs still use paving and rail materials that are vulnerable to extreme heat (or make it worse). Failure to repair or upgrade may mean dampened productivity and commercial activity.
- Hot, crowded urban areas are also a source of concern. Increased morbidity and decreased productivity in economic hubs such as Manila (36% of Philippine's GDP) or Nairobi (60% of Kenya's GDP) could put those economies at a significant disadvantage.
- Many EMs have large agriculture sectors. Important growing regions for corn, soy, maize and rice may contend with water scarcity, longer droughts, supernormal rainfall events and rainfall variability, all of which can be ruinous for crops, lowering yields and, in some cases, nutritional values.

Positive change creating investment opportunities

As daunting as these issues are from a macro perspective, we believe it is a mistake to assume that EMs will be poor investments over the next decade because of climate change. On the contrary, many EM governments are putting climate policies in place. While these may present financial hurdles, they can also encourage innovation, and they will almost certainly result in dispersion. We believe EMs may be fertile ground for active managers willing to do the work of understanding climate change and identifying potential opportunities and challenges.

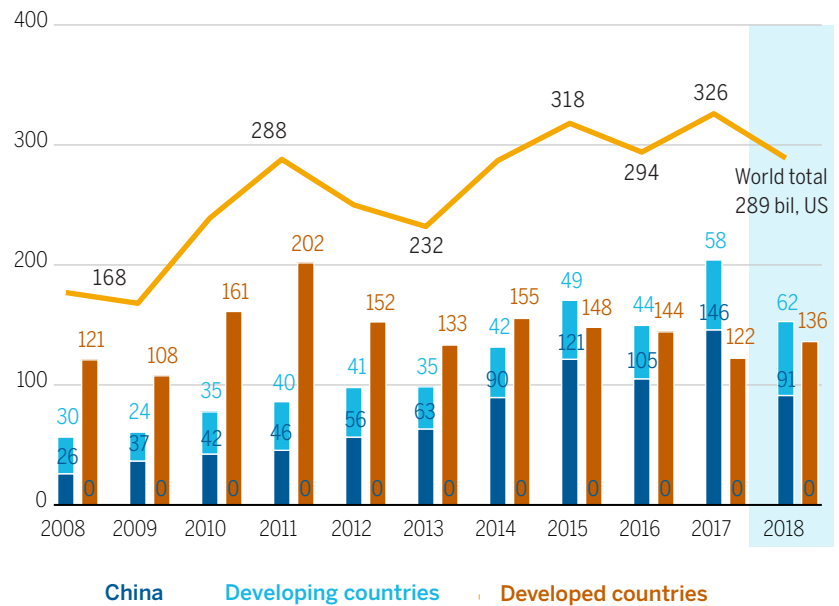
¹Share of households that have air conditioning (A/C) worldwide in 2016, by country, Statista.

²The World Bank, 2018 data.

Policies, regulatory mandates and incentives are in place across many EMs to lower carbon emissions, improve energy efficiency and energy security and build sustainable, climate-ready infrastructure. Differing policy responses will likely create dispersion among countries, sectors and companies, but so far, the aggregate efforts are notable:

- Developing countries are topping developed markets with increased renewable-energy capacity (FIGURE 2).
- Less traditional markets are stepping up as well. In 2018, Vietnam, South Africa, Mexico and Morocco had a combined clean energy investment of US\$16 billion, accounting for almost half of EMs' total investment — excluding China, India and Brazil.³
- China is expected to account for over 40% of the total clean energy mix by 2022 and is currently the global market leader in hydropower, bioenergy for electricity and heat and electric vehicles.⁴
- India has reduced its annual CO2 emissions by 38 million tonnes, mainly with energy-efficient appliances and the provision of clean cooking fuel to 80 million households.⁵
- Over the next five years, global geothermal capacity is expected to increase by 28%, with one-third of that growth driven by projects in Indonesia, the Philippines and Kenya.⁶

FIGURE 2
Global new investment in renewable power and fuels, 2008 – 2018 (US\$ bil)



Source: Renewables 2019 Global Status Report, Ren21

Framework for investing: climate adaptation and mitigation

As active managers, we aim to invest in companies we believe will outperform EM benchmarks and avoid those we believe will lag. Traditional EM indices are still heavily weighted towards carbon-intensive industries, which may be tested in coming years as priorities shift to ensure a sustainable, lower-carbon future. At the same time, many companies that are addressing climate change or are carbon-advantaged, and may therefore be relative outperformers, remain underrepresented in EM indices.

³ClimateScope 2019, Key Findings, BloombergNEF, 2019.

⁴“Three countries are leading the renewable energy revolution”, World Economic Forum, 2018.

⁵“India: Voluntary National Review 2020”, United Nations Sustainable Development Goals Knowledge Platform, 2020.

⁶“Renewables 2019: Market analysis and forecast from 2019 to 2024” IEA, October 2019.

We see two broad groups of companies that may benefit from climate change: those that help society adapt to physical climate changes, and those that help mitigate transition risks.

Adapting to physical climate changes

Adapting to higher heat, longer droughts, limited water access or other physical risks generally requires innovation. We believe companies developing climate-adaptation solutions could be among market leaders. Two adaptation themes that interest us are smart agriculture and cooling solutions.

Smart agriculture

In many parts of the world, the agricultural sector faces grave climate risks. The issue is particularly acute in EMs, many of which rely on agricultural exports and depend on domestic crops and livestock to feed their citizens. According to WCRC, water scarcity, heat and rainfall variability could negatively impact the production of key crops (maize, soybeans, rice and wheat) in China, Indonesia and India. Even Brazil and Argentina, which are at medium risk of chronic water scarcity according to WCRC, bear watching.

Amid land loss, water scarcity and labour-health concerns, India is focused on the mechanisation of agricultural production and post-harvest operations. While agriculture is 95% mechanised in the US and 75% mechanised in Brazil, just 40% of India's agricultural production is done mechanically.⁷ Moreover, small holder farmers are the predominant food growers in India. They are often marginalised, with little access to expensive technology. Empowering farmers through access to these tools can help enhance productivity and resource efficiency. For example, a simple shift from bullocks to tractors can accelerate plowing operations with less labour intensity and marginal differences in greenhouse gas (GHG) emission.

In this theme, the opportunity set includes companies investing capital and developing solutions for drought-resistant crops, healthier livestock, crop-protection technology and agricultural-productivity enhancements.

A cooler future

As living and working conditions become more difficult amid extreme heat, cooling systems will increasingly be a necessity in many EMs. Given current low A/C penetration, we expect demand among households and businesses to increase. White goods and industrial-cooling systems companies that can supply affordable, energy-efficient products may do well. Building products such as low-emissivity windows and installed solar-generated cooling systems also have potential, in our view.

A company in our opportunity set develops community-wide, underground cooling systems called district cooling. According to the company, approximately 70% of the energy consumed in the Middle East during summer months goes to cooling. District cooling has been found to be more energy efficient and cost effective and produce fewer carbon emissions than traditional infrastructure-cooling systems. With Middle Eastern states heavily reliant on fossil fuels, lowering the region's energy requirements will likely have a material positive impact. This company estimates that the CO₂ savings from its systems is equivalent to removing 260,000 cars from the road each year.

⁷Babu, D.S. Balachandra, "Farm Mechanization in India", Agricultural Machinery Manufacturers' Association report, 2018.



We believe companies that help slow the effects of climate change or more successfully flex and navigate regulatory and policy changes may also be relative outperformers.

Mitigating transition risks

We believe companies that help slow the effects of climate change or more successfully flex and navigate regulatory and policy changes may also be relative outperformers. In any industry, reducing emissions from operations or shrinking environment footprints via efficient use of resources, recycling efforts and waste management may be advantageous relative to industry peers that fail to take those steps. Companies that emphasise the production of climate-aware products could also be attractive. Two themes to watch in this category are environmental consciousness and energy efficiency.

Environmental consciousness

We believe the combination of government policy and consumers' environmental awareness has created a secular tailwind for renewable energy. Social pressures to address air pollution, water scarcity and food security will require aggressive policy responses. At the same time, carbon-pricing initiatives will lead to greater focus on emissions reductions. Investment opportunities include wind and solar power generation, water and waste management, electricity infrastructure and coal-to-gas transition.

In most developed markets, nearly 100% of coal burnt is for power generation, but in China, 40% of coal is burnt for nonelectricity applications, including household heating, which produces hazardous particulate and gas emissions. Even more alarming, the type of coal burnt for heat is a particularly bad pollutant: accounting for just 10% of all coal burnt, it causes nearly 50% of global coal pollution. Beijing strives to be coal-free by 2020, and many Chinese provinces are looking to eliminate coal used for heating. With the government championing a transition from coal to gas across northern China, we believe companies that can supply natural gas — a cleaner, safer alternative to coal — may be well positioned to benefit from this tailwind.

Energy efficiency

Policy is also increasingly geared towards reducing the energy-use intensity. Here again, targets for emissions reductions, as well as efforts to lower energy costs for consumers and increase national energy security, are among the reasons for the drive to efficiency. Globally, the transportation, construction and manufacturing sectors are the largest consumers of energy. We believe companies that help reduce the energy intensity of products, services or processes may be secular beneficiaries. Some examples of aligned investment opportunities include battery manufacturers, electric-vehicle component manufacturers and natural-gas distributors.

One segment that continues to be attractive is electric two-wheelers. The current global market for electric scooters and bikes is 40 million units per year, with 30 million sold in China alone. Today, the majority of bikes already in use are powered by heavy, lead-acid batteries. A lithium-ion battery pack has higher energy density, offering the user greater range from the same-sized pack, and is significantly lighter. The Chinese government has lent significant policy support for lithium-ion-powered scooters, in part by mandating weight and speed limits to which all of China's 200 million bikes need comply by 2022. Companies working to innovate and supply lithium-ion two-wheelers and batteries are squarely in our opportunity set.

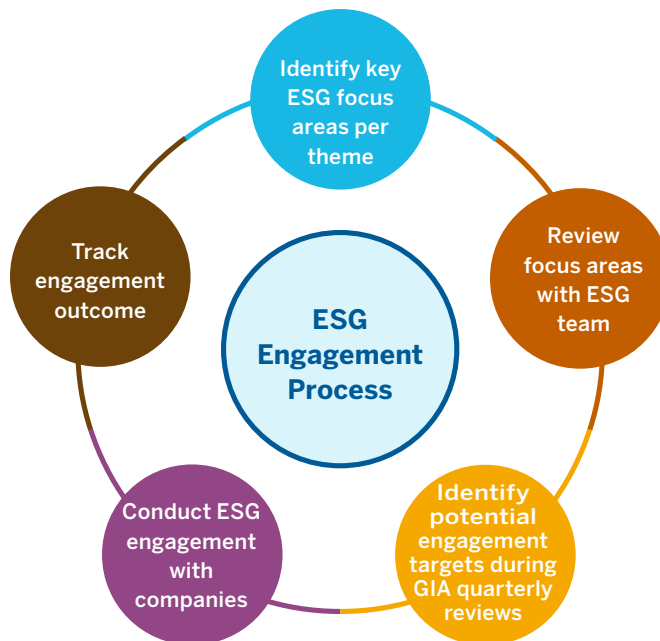
Engaging with companies on climate change

As active investors, we see engagement on environmental, social and governance (ESG) issues as an important means of identifying risks, unlocking value and enhancing the potential of companies we invest in. This is an ongoing, multifaceted process (FIGURE 3). We start by understanding the materiality of ESG focus topics, which vary by industry. Then, in collaboration with Wellington's ESG Research Team and global industry analysts (GIAs), we work to identify engagement targets and topics, conduct company engagements and track the outcomes from those discussions. Through these types of engagements, our team seeks to fulfill two objectives:

- Ensure portfolio companies are aligned with our investment process, our focus on sustainable economic development and our alpha-generation goals
- Share our views on a broad set of risk metrics that we believe will become more material over time and that we see as a key determinant of value creation

FIGURE 3

Engaging with EM company managements



For illustrative purposes only. | Whilst ESG factors are a consideration when determining allocations to individual companies, they will not necessarily result in the exclusion of an issuer or security from the investment universe. | Source: Wellington Management

About the authors

Dáire leads Wellington Management's multi-asset and thematic investment efforts for the Asia Pacific region. He and his team conduct research and manage portfolios focused on long-term structural themes influencing capital markets.

Wendy sets the research agenda and strategies for the firm's sustainable investment practice, including impact, climate and long-term engagement strategies. As vice chair, she is a senior member of the firm's management team and works with the CEO with respect to strategic initiatives and external affairs of the organisation. She also serves as a director on the board of the United Nations-supported Principles for Responsible Investment.

Simon is an emerging markets portfolio manager who conducts research focused on long-term structural themes affecting capital markets and alternative approaches to portfolio construction and risk management.

Wendy works in our Boston office, while Dáire and Simon are based in Singapore.

Climate engagement examples

In collaboration with our ESG Research Team and global industry analysts, we seek to identify companies that may benefit from further ESG engagement, including discussions about climate change. For example, we recently identified a company focused on energy transition, specifically, enabling the shift from heavy-polluting coal towards natural gas. To facilitate these efforts and mitigate potential negative externalities from the shift, we intend to help the company improve its data capture and reporting regarding GHG emissions, waste management and water management processes. We expect climate-related discussions to increase significantly in coming years.

We recently engaged with an Asian materials company for which detailed supply-chain information has been difficult to ascertain. During the engagement, we sought improvement on company reporting and greater overall transparency that could help us confirm that its raw materials — particularly cobalt — are clean and ethically sourced. We believe understanding the company's supply chain can help us determine where risks may reside that impact our expectations about company value. Senior company leaders told us that 25% of the cobalt is sourced from recycling, and 75% is sourced from a multinational commodity trading and mining company. The company said that it will retain this mix for the foreseeable future to ensure the cobalt is clean and ethical, noting that it has chosen to avoid independent mines where confirming this same information is difficult. We will continue to engage with this company to ensure it continues to offer transparency into its materials supply chain. We will also discuss its carbon emissions and preparations for regulatory changes.

Conclusion

We believe lasting economic development depends on four main structural shifts: improving living standards and enhancing inclusiveness, productivity, and sustainability. On a Venn diagram of those themes, climate change would intersect them all. In EMs, the growing middle class and younger populations that have come to know and expect improved standards of living are demanding cleaner air, safer water and dependable food supplies. Productivity stems, in part, from safe working conditions and a healthy labour force, both of which are threatened by climate change. Sustainability overall depends on creating economic, societal and environmental conditions that support livability and economic development for future generations. Left unaddressed, climate change jeopardises all of those structural themes.

While investors may assume they should avoid EM investments because of climate change, perhaps by screening out certain countries or sectors wholesale, we believe a better approach incorporates considerations around climate adaptation and mitigation within the investment process. Policies, regulations and incentives in some countries may create more flexible, sustainable macro economies and encourage innovation from the private sector to help combat climate change. The key takeaway is this: like every structural theme, climate change causes market dislocation and presents investment opportunities and challenges that active investors ignore to their own detriment. ■

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Emerging markets risk – Investments in emerging and frontier countries may present risks such as changes in currency exchange rates; less liquid markets and less available information; less government supervision

of exchanges, brokers and issuers; increased social, economic and political uncertainty; and greater price volatility. These risks are likely significantly greater relative to developed markets.

Common stock risk – Common stock is subject to many factors, including economic conditions, government regulations, market sentiment, local and international political events and environmental and technological issues as well as the profitability and viability of the individual company. Equity security prices may decline as a result of

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