

**BlackRock**

**Investment perspectives**

Mega forces – Low-carbon transition  
November 2023

# Emerging markets: financing the transition

Emerging markets are pivotal to the global transition to a low-carbon economy. Reforms to plug the shortfall in investment could present both opportunities and risks for investors.

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# Summary

- The global transition to a low-carbon economy is one of five mega forces sweeping markets and economies. We see emerging markets (EM) playing a decisive role in this transition. Why? **We estimate EM economies will account for over half of energy demand and carbon emissions by 2050. We believe this means the shape and speed of EM transitions will in large part define the speed and shape of the global transition.**
- The consequences of a changing climate will be even more acute for EM than for developed markets (DM), in our view. We think several structural factors set EM countries apart from DM economies in the transition: **stronger growth in energy demand, a higher cost of capital to finance the transition, a larger share of hard-to-abate emissions – or those that can't be easily reduced by low-carbon technology – and greater exposure to physical climate damage.**
- These factors, plus the greater investment risk perceived broadly in these economies, mean **transition-related investment in EM will likely be notably lower than what they need** across a range of scenarios, in our view. Recent trends back this up: aggregate low-carbon investment in EMs excluding China and Russia has held flat while it has accelerated in DM and China. We estimate annual EM investment needs could be between 17-24 times higher than recent public commitments from DMs for climate finance, or public or private investments aimed at decarbonizing the economy or funding adaptation and resilience to physical climate change.
- **We think closing the gap would require significant public sector reforms and private sector innovation, resulting in greater "blending" of public and private capital – or blended capital.** Reforms being discussed include evolving the mandates and toolkits of multilateral development banks and public financial institutions like the World Bank.
- As proposed reforms take shape, **we see the potential for private capital to find new investment opportunities as part of filling the EM climate financing gap.** For example, the drive for public reforms and private innovation could create new private market infrastructure opportunities or increase the pool of green bond issuance by EM countries.
- Progress on these fronts could accelerate the most-likely path of our BlackRock Investment Institute Transition Scenario (BIITS) – yet they remain a key source of uncertainty. We examine the sensitivity of our base case transition view through two hypothetical scenarios: an accelerated case where reforms are assumed to lower the EM cost of capital and indirectly increase EM climate policy ambition, and one with an assumed persistent economic drag in EMs due to ongoing sluggish financing flows.
- **In our upside case, we find successful reforms could see low-carbon investment in EM increase, on average, by an additional U.S.\$200 billion a year – or U.S.\$4 trillion overall – above our base view of a major increase in investment between 2030–2050.** We find this may result in faster decarbonization in EM. **Yet if reform efforts prove less durable or effective than in our base case, we see investment levels reduced by roughly U.S.\$50 billion a year, along with lower economic growth, lower energy demand and a more divergent global transition.**
- We identify six challenges that could slow EM transitions through a macroeconomic drag: persistent macroeconomic risks, the economic ripple effects of shifting priorities of public financial institutions, risks to EM national climate commitments, the limited balance sheets of multilateral development banks (MDBs), a lack of available projects, and growing spreads between policy rates and rates of expected return on investments.

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# Structurally different transitions

In our 2021 paper *The Big Emerging Question*, we first set out why emerging markets (EM) are critical for the global transition to a low-carbon economy – yet face a sizeable shortfall of capital investment to fund the shift. We build on this with the help of the [BlackRock Investment Institute Transition Scenario \(BIITS\)](#) – our analytical framework to help assess, on behalf of our clients, how the low carbon transition is most likely to play out, based on what we know and expect today. The modelling that underpins the BIITS is based on assumptions we see as realistic today and is informed by the views of BlackRock’s portfolio managers. It focuses on what is most likely to occur, rather than on what anybody thinks should happen or a specific outcome. We exclude China from our classification of EM in this paper because we believe it has greater capacity to self-finance its transition. We also exclude Russia as we don’t see it receiving sizable transition-related foreign investment due to its invasion of Ukraine.

We acknowledge that EMs are historically least responsible for greenhouse gas emissions, most vulnerable to the physical risks of climate change, and least financially prepared to adapt to them. We also recognize the incredible diversity across EM economic structures, industries, and the outlook for future growth and decarbonization. Yet we see four structural differences that we believe distinguish their transitions from developed markets (DM) – and influence financing needs and likely flows.

First, **technology and energy system fundamentals**: Industrializing nations with strong growth and booming populations typically host more energy-intensive sectors, with a higher energy intensity of GDP and faster growing energy demand, according to the BIITS. We believe this combination of factors means EM countries may retire emitting assets more slowly, as new energy infrastructure is typically adding to total capacity to help meet growing needs rather than replacing high-carbon asset with low carbon ones. As a result, we believe EMs are most likely to make up a rising share of global energy needs and carbon emissions under a wide range of feasible transition speeds. See chart.

**Climate policy-driven divergence**. Unlike most DMs, many EMs lack the leeway to enter the green subsidy race or fund costly infrastructure projects, in our view. We see EM governments facing increasingly complex tradeoffs between decarbonization efforts versus energy access and security. Why? Macro effects of the transition: higher near-term energy prices, central banks holding policy tight amid persistent inflation, and escalating climate-related damages.

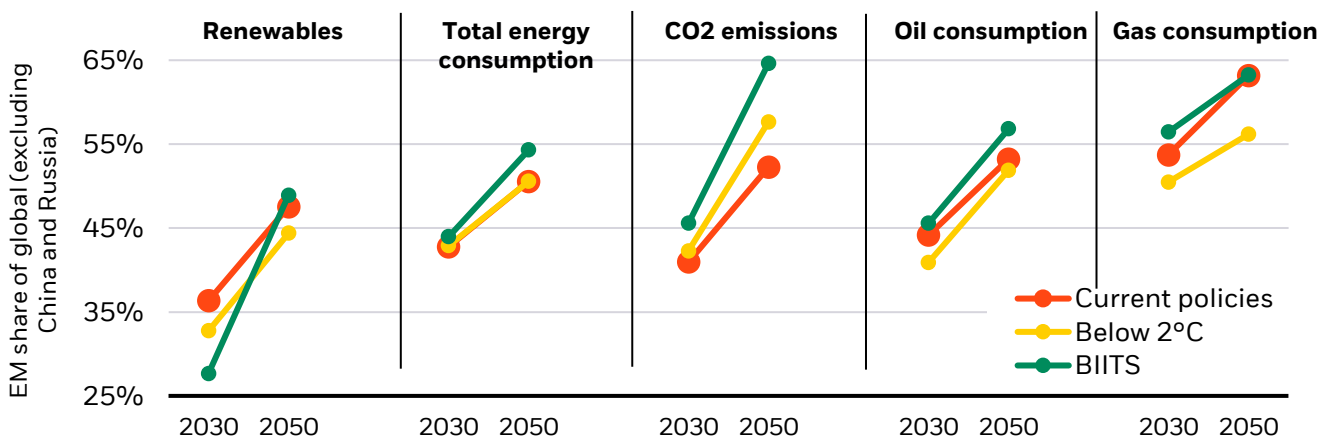
**Investor preferences**. Absent substantial reforms, we expect persistently higher costs of capital and technology in EM, mainly due to persisting real and perceived country and default risks.

**Physical climate damage**: Most climate scenarios, including the BIITS, expect EM to bear the larger share of expected climate-related GDP losses in coming decades. Why? Many EM countries are in tropical latitudes that are vulnerable to adverse climate events, such as floods, droughts or hurricanes. A high reliance on climate-sensitive sectors like agriculture is also a factor. These potential GDP losses may come from reduced productivity and the destruction of physical assets and infrastructure, and do not account for other important dimensions like wealth and well-being.

These four structural differences are intertwined. For instance, we see mounting loss and damage from physical climate change feeding into global climate negotiations and policy. They also underpin key uncertainties around our view of the speed and shape of the global transition. We see the scaling up of investments in EM low-carbon infrastructure as one of today’s biggest challenges for capital markets – a view shared by the [International Energy Agency](#), the [IMF](#) and the [G20](#). Yet it has direct ramifications on the quantity and split of physical and transition risks and opportunities globally.

## EM pivotal role in the transition

Emerging market share of global energy use excluding China and Russia, 2030 vs. 2050



Forward looking estimates may not come to pass. Source: BlackRock Investment Institute, Intergovernmental Panel on Climate Change (AR6), International Energy Agency (IEA), Inevitable Policy Response, Network for Greening the Financial System (NGFS), BP, November 2023. Note: The chart shows the average share of global for EM excluding China and Russia for each variable in 2030 and 2050 across a range of scenario providers listed in the sources. The dark orange lines show the trajectory of estimates based on a scenario that assumes no further changes to current climate policies. The yellow lines show estimates “below 2°C,” a group of scenarios that involves levels of climate policy that have a high likelihood of limiting warming to 2°C or less.

# Capital shortfall persists

Private infrastructure investment in low and middle-income countries has declined over the last 10 years, [World Bank data from 2022](#) show. Volumes in 2021 were less than half those in 2012 – and less than a third of that was in the energy sector. And yet global investments in the low-carbon transition began to rapidly accelerate in 2021, rising from a five-year average of U.S.\$1.2 trillion in 2020 to an estimated U.S.\$1.7 trillion this year, according to the [IEA](#). This difference is because nearly all growth in low-carbon transition investment has been in the U.S., Europe and China – most EM regions have seen very little growth. Some have even seen declines. See the chart on the left below. [IEA](#) data show annual clean energy investment in EM has flatlined since at least 2015, hovering around U.S.\$250 billion per year.

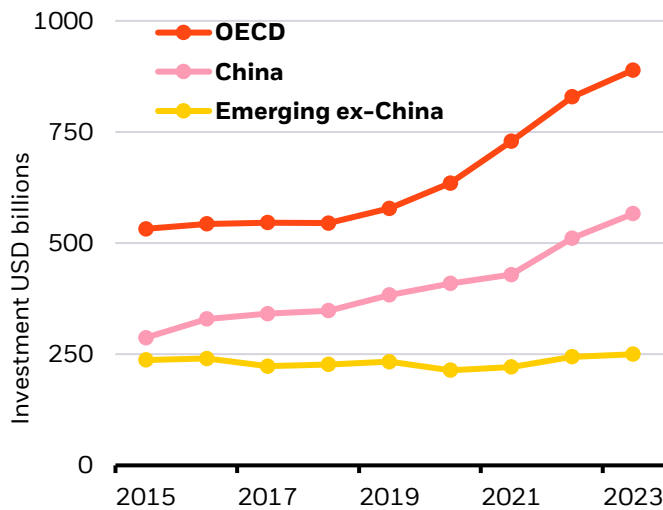
Why? First, we think EM countries are perceived as riskier on issues of governance, rule of law and streamlined business processes. Whether justified or not, this inflates risk premiums and reduces the pool of available capital. Foreign exchange risk can also be a deterrent. For instance, when the local currency weakens, revenues from local projects lose value in foreign currency terms. Hedging against this risk can be costly. And many EM countries are inherently vulnerable to climate risk given their geography – and typically also lack the physical infrastructure and financial resiliency to withstand those risks. This has led to a lack of insurance for such investment projects against physical damage – and makes such investment riskier and costlier to finance.

We think transition investment needs across EM are enormous – and not close to being met. Based on today’s investment trends, this shortfall will likely persist no matter how quickly or slowly the transition accelerates. The average annual investment needed to avoid the worst impacts of climate change are between 17–24 times higher than recent estimated public commitments to climate finance in EMs, based on a comparison of data from the OECD (in right chart below) and the IEA. Committed public and directly mobilized private climate finance by OECD governments has risen since 2013 and may have reached the goal of U.S.\$100 billion annually two years late, according to preliminary estimates by the OECD. This investment has been concentrated in decarbonization rather than in climate adaptation or resilience projects. See the chart on the right below.

We think public funding has been ineffective in mobilizing private capital at scale – and that’s where the multilateral development banks (MDBs) and public financial institutions can play a key role, in our view. They provide financial and technical support to EM countries to strengthen economies and reduce poverty. The chart on the right below again shows relatively flat levels of private capital even as public investment commitments rise. Existing grants or loans are too targeted on funding individual projects, we think. That capital would be better used, in our view, to mitigate risks more broadly and crowd in private investment. In 2022, the MDBs mobilized just \$0.80 of private capital for every \$1 of MDB climate-related investments in low-to-middle income countries, according to [joint self-reporting](#). The lack of fiscal space also plays a role, in our view. High levels of public debt in many EM countries makes attracting foreign direct investment into energy or climate resilience sectors more difficult, we think. Closing the EM financing gap to address these challenges would require some reform and innovation, in our view, as we discuss on the following page.

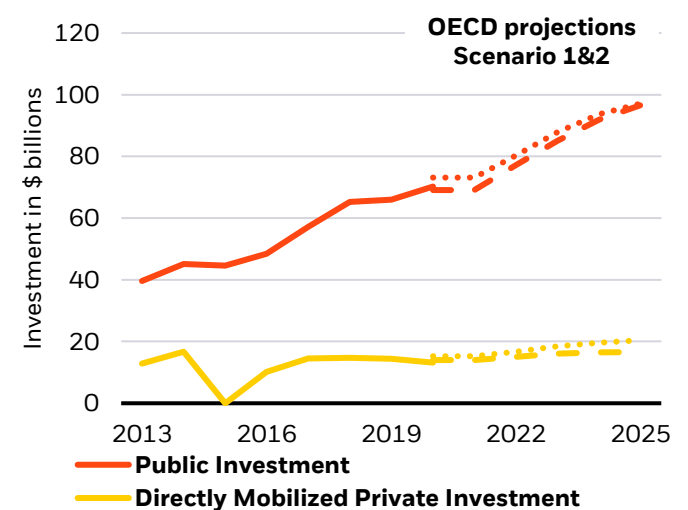
## DM and China lead clean energy investments

Annual clean energy investment, 2015-2023



## Mobilized private investment lags

EM public vs. private climate finance investment



Source: BlackRock Investment Institute, IEA; November 2023. Note: The chart shows annual clean energy investment across three regional groups. Per IEA groupings, advanced economies include the OECD member countries, Bulgaria, Croatia, Cyprus, Malta and Romania; emerging economies are the rest of the world, excluding China. Values in USD as of 2022.

Forward looking estimates may not come to pass. Source: BlackRock Investment Institute, OECD; November 2023. Note: The chart shows OECD estimates of historical and projected public and directly mobilized private climate finance investments. The latter are private investments that would not have occurred were it not for the public investment deployed alongside it. The OECD presents two scenarios for 2021–25: one where countries and MDBs deliver on climate finance commitments (resulting in higher values); the other includes delays due to factors like macro conditions and capacity constraints.

# Closing EM financing gaps

EMs are likely to bear the brunt of climate-related GDP losses, as we noted on page 3 – and this risk to growth, trade and investment can ripple through the global economy, in our view. This adds urgency to addressing the shortfall in EM climate finance. We think structural reforms of the MDBs are a key piece of the financing puzzle. Several reforms are already under consideration. Should a critical mass occur, we think they would foster a blending of public and private capital that could greatly boost funding for EM climate projects. We see near-term investment opportunities as a result.

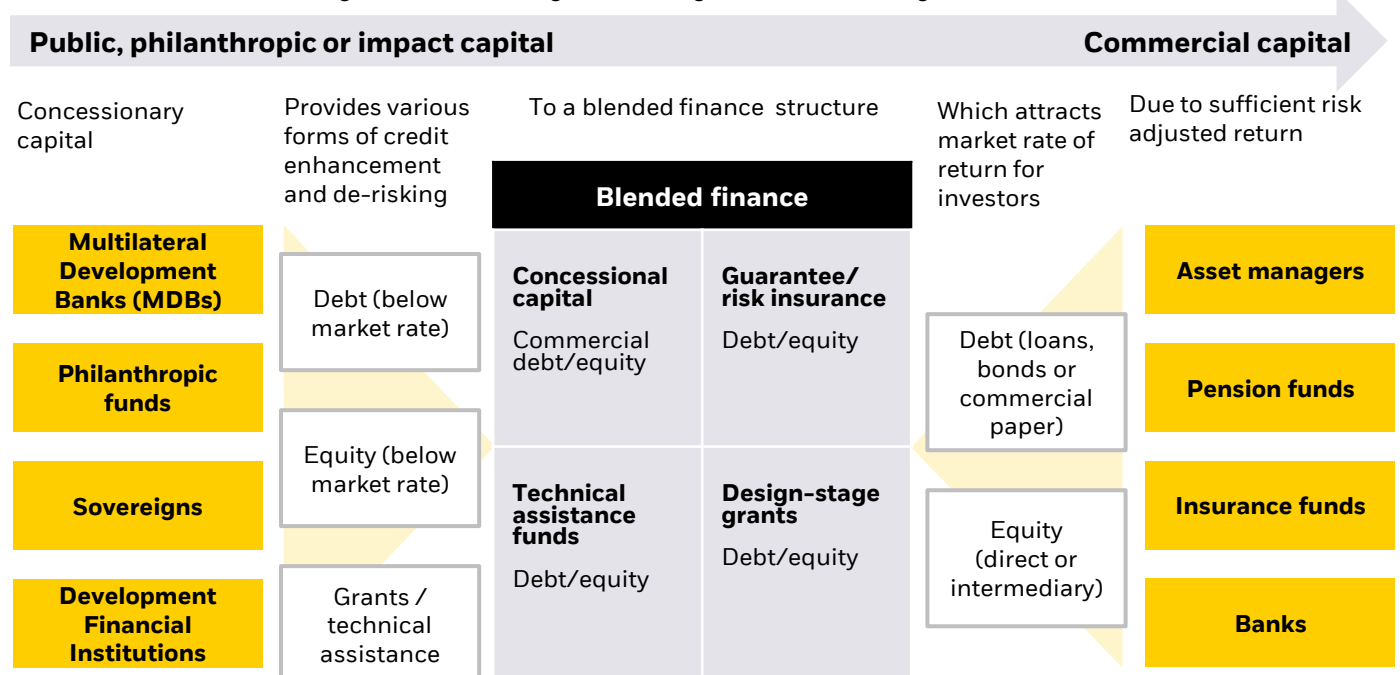
Modern challenges for MDBs – like climate change and pandemics – are inherently cross-border and complex. That makes them different from the challenges they were designed to address at their creation, such as helping crisis-hit economies, alleviating poverty and promoting economic development. We see two key shifts needed for these institutions to play a bigger role in the low-carbon transition. First, we think their role needs to evolve to facilitate private financing and backstop initial losses on EM infrastructure investments, particularly climate-related projects. This is partly about recognizing that economic development will depend on a stable climate. Second, their toolkits need to move beyond tackling country-level crises to addressing these interconnected, global challenges. These institutions could significantly amplify financing through formal capital increases or tweaks to reserve rules.

Tight limits on shareholder government budgets suggest MDBs will face pressure to mobilize meaningfully more private sector capital, in our view. Doing so ultimately requires them to increase risk-burden sharing with private investors. A crucial element, in our view, is callable or hybrid capital, or guarantees from government shareholders that can absorb losses in adverse scenarios. Progress here is well underway. According to think tank ODI, such modifications could enable MDBs to commit an additional \$500 billion to \$1 trillion without jeopardizing their AAA credit ratings. Further, new reserve rules could allow MDBs to raise capital from other types of clients. MDBs participating in more AAA-rated bond issuance could crowd in private capital on the other side of the balance sheet. Attractive yields with low perceived risk could be compelling in the new macro and market regime. Other avenues for expansion could involve hedging against currency risk or diversifying MDB models to broaden the range of clients, both sub and supranational.

Private innovation and blended finance will be crucial in closing the EM funding gap, we think. An illustration of blended finance in practice is below. For example, private institutional investors have co-invested in vehicles that fund low-carbon initiatives alongside public or philanthropic (concessional) capital, aiding the transition. They have also engaged in debt-for-nature or debt-for-climate swaps, helping governments refinance debt at a lower cost and use the savings for nature conservation or emission reductions. An as-of-yet untried approach is a "puttable green bond." Here a MDB backs individual bonds using an embedded put option – or the agreement to buy a bond from the holder – instead of guaranteeing entire portfolios. That means the MDB would step in to buy the bonds if their price falls to a preset level, not necessarily its original one. This would cut issuer borrowing costs. Through blended finance, MDBs can efficiently use their balance sheets to steer capital into a "sweet spot" of risk and return, leading to a scale-up of transition finance.

## The blended finance landscape

An illustration of how blending of various funding sources might work in financing the low-carbon transition



For illustrative purposes only. Source: BlackRock Investment Institute and Convergence, November 2023. Note: The schematic shows how the process of blended finance, where capital from public entities blends with private investment – and incentivizes it through various forms of credit enhancement and de-risking – may work in practice. For illustrative purposes only. Examples of blended finance structures listed in grey boxes are from <https://www.convergence.finance/blended-finance>

# Investment implications

We see public reforms having two key types of investment implication: their effect on the overall speed and shape of the transition and related physical climate change, and on investment opportunities in EM. We think the current drive for reform is likely to mean many EM countries decarbonize notably faster. That would directly affect our central estimate of the global transition pathway as mapped in the BIITS. See the bottom-left chart.

Below we test the sensitivity of our core outlook using two hypothetical scenarios. First, we stretch our assumptions about the impact of public reforms and private innovation on the effective cost of capital for low-carbon infrastructure projects and how a fall in the cost of finance in turn could affect climate policy ambition and stringency. Second, we assess the impact of an assumed drag on EM economic growth and climate policy associated with persistently sluggish finance flows. In both scenarios, we do not directly model the effects of specific reforms or investment amounts but construct a plausible scenario with a mix of factors that could have the combined effect we aim to gauge.

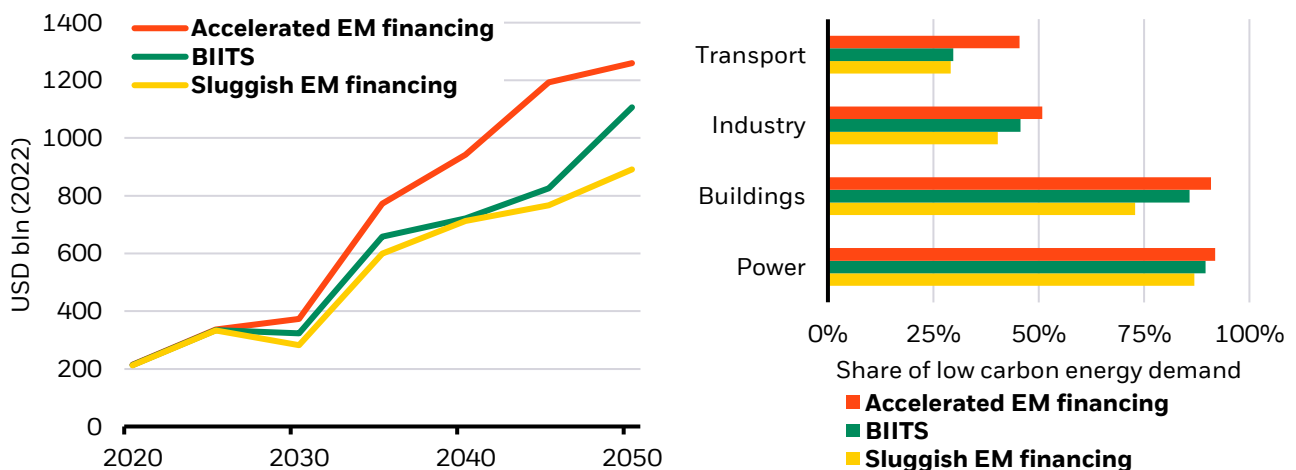
Our base case outlook sees a significant rise in EM low-carbon energy infrastructure investment, potentially tripling by 2040 and reaching \$1.1 trillion annually by 2050. In an upside scenario, we anticipate a further \$200 billion yearly from 2030 to 2050, totaling nearly \$4 trillion – a 25% increase on our base case. This surge would boost the share of low or no-carbon energy in total EM demand by 2.5% by 2050 versus our current projections. First movers would likely benefit from this long-term growth, in our view. Conversely, a scenario of stagnant investment sees a 4.5% annual drag on economic growth, with an overall 6% reduction in the share of low or no-carbon energy use by 2050. Post-2030 investments could drop by an average of \$50 billion yearly, resulting in a total reduction of over \$1 trillion. Such a scenario may lead to greater global economic fragmentation and a more divergent transition. See charts below.

With these reforms, we expect public financial institutions to more effectively facilitate private climate investment in EMs, potentially unlocking new investments in tangible assets like low-carbon power, transport and industry infrastructure, as well as climate resilience projects. These reforms could enable these institutions to increase project transparency, supporting larger initiatives. Yet investors who can assume these risks and meet their liquidity requirements may find attractive opportunities. We also expect these reforms to have indirect effects through investments that improve domestic institutions and governance. Increased investment could help reduce EM sovereign debt levels and risk premia in countries where climate risk looms large. This could, in turn, have the virtuous effect of improving fiscal outlooks and pushing down the cost of capital for infrastructure projects, in our view. While such private market investments offer diversification, they're complex and not suitable for all investors.

What are the most promising opportunities? The greatest potential for accelerated transitions is in high-growth, high-emission EM countries like India, Indonesia, Brazil and South Africa, in our view. Here, country-specific programs such as the [Just Energy Transition Partnership](#) are already making headway. By contrast, less developed, low-emission countries may see more funding for adaptation and climate resilience than for decarbonization. While vital, there's a risk that funders in such markets overlook other goals, such as boosting access to cheaper energy and powering industrial growth with increased energy supplies. We see opportunities for blended finance, in particular where public and private capital jointly invest in sectors burdened by high commodity or foreign exchange risks, but also where the success rate for developing projects can be low, or where technology or political risks are high.

## Assessing different EM financing scenarios

Levels of investment in low carbon energy supply and sectoral decarbonization progress by scenario



Source: BlackRock Investment Institute, November 2023. Notes: The left chart shows different scenarios for investment in low-carbon energy supply in EMs (excluding China and Russia) in the low-carbon transition relative to our base case scenario. In the accelerated EM financing scenario, we see an acceleration of flows into EM to help finance the transition that then has positive knock-on effects on climate policy, share of low-carbon energy versus high carbon and carbon emissions. The sluggish EM financing scenario represents a case where finance for EM transitions remains sluggish, with knock-on effects for economic growth and policy ambition in EMs, resulting in slower decarbonization and less low-carbon investment. The right chart shows the share of low carbon energy demand we see by EM sector in these scenarios. Forecasts may not come to pass.

# Challenges and risks

The success and efficacy of public reforms and the true scale of the market for private innovations is highly uncertain. Precedent in recent years suggests that reforms and capital increases will be more muted than most expect. The more bearish growth scenario presented on page 6 represents the hypothetical growth shock from reduced flows of capital to EM and resulting changes in energy demand and energy investment from our base case. If substantive reforms do not materialize, investment opportunities in low-carbon energy infrastructure will be more limited, and EM transitions will be slower and more divergent from DMs and between different EM countries. This could mean more physical climate risk and damages for all economies, but especially EM countries, possibly slowing growth even further. We identify six broad challenges and risks that could impact our expectations:

**Persistent macroeconomic risks:** MDBs can’t do it all, in our view. We think EM governments themselves still need to further improve transparency, governance, ease of doing business and fiscal stability to attract more private capital.

**Ripple effects of MDB shift:** One unintended consequence of reforms could be the inherent de-prioritization of other development objectives, we think. We also see a risk that the poorest nations get left behind as MDBs skew their attention to middle-income countries where the return on investment is likely to be greater in terms of economic development and equality. Poorer countries, which have lower emissions to begin with, may also get left behind if MDBs focus too much on decarbonization, at the expense of other development objectives like health, education, sanitation and climate adaptation.

**Risks to climate commitments:** If flows do not increase substantially, many EM countries may be unable to meet their national climate policy commitments, known as Nationally Determined Contributions (NDCs). Some 72% of EM NDCs are fully or partially conditional on receiving adequate international climate finance, according to ClimateWatch as of November 2023. See the chart. This may be hindered by perceptions of heightened sovereign credit risk. And it may result in increased physical risk for all portfolios, in our view.

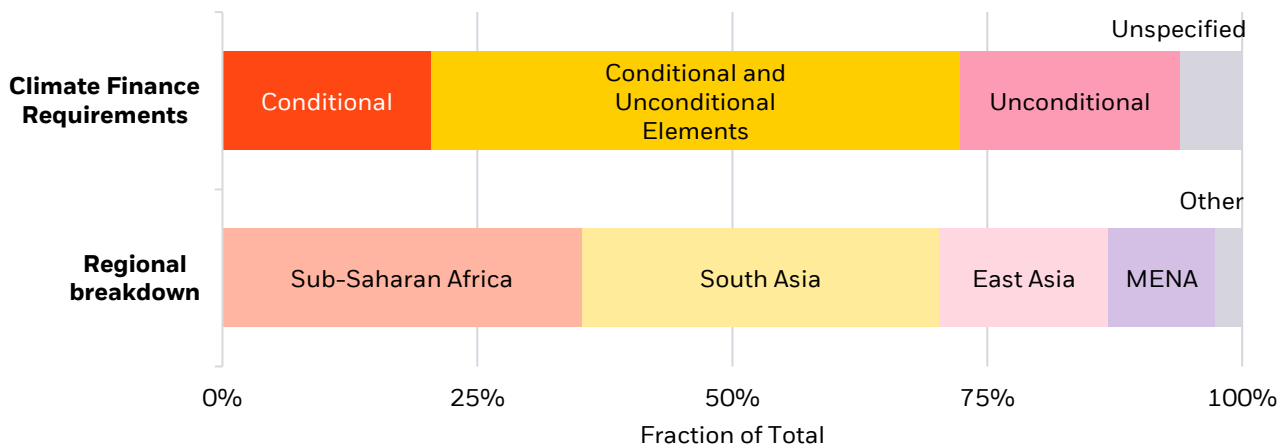
**Limited balance sheets of MDBs:** MDBs have a critical role but comprise a relatively small part of the solution, we think. If the balance sheets of all the MDBs were fully devoted to decarbonization and climate resilience, they would still comprise less than 4% of the finance needs to avoid the worst effects of climate change, according to the World Bank. Finite public climate finance can increasingly be deployed in more targeted ways to increase the mobilization of private money, in our view.

**Lack of available projects:** Even if EM climate finance increases dramatically, we think the scale and volume of infrastructure projects looking for capital is constrained. Capital needs for some projects can be too small for large institutions to finance cost effectively due to high overheads and other issues – and too disparate to aggregate into portfolios, we find. Blended finance instruments to support technical assistance and project preparation may help, in our view.

**Growing spreads between policy rates and hurdle rates:** Private sector hurdle rates, or the minimum rate of return for a project to be profitable, have not closely tracked policy rate changes, a University of Chicago study shows. That could limit how effective blended finance platforms are at quantifying and bridging the gap, in our view.

## Breaking down climate finance

Share of country climate pledges conditional on finance – and breakdown of finance requested by region



Source: BlackRock Investment Institute, ClimateWatch; November 2023. Note: The chart shows the share of country climate pledges that are contingent on finance (top bar) and the breakdown of finance by region, as requested in each country’s nationally determined contributions (bottom bar). MENA refers to Middle East and North Africa. “Unspecified” climate finance requirements are those where the NDC does not say whether it is conditional on receiving adequate climate finance or not. In the regional breakdown, “other” = other EM regions that are not listed. See <https://www.climatewatchdata.org/ndcs-explore> for more.

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