

BlackRock

The big emerging question

How to finance the net-zero transition in emerging markets

BlackRock
Investment
Institute

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Summary

- **Climate change is a global problem: without a successful transition to net-zero everywhere, climate risk is unmanageable anywhere.** Emerging markets (EMs) are essential to the global transition – now accounting for 34% of global carbon emissions (excluding China) – but they are starved of capital to fund it.
- **We estimate EMs will need at least US\$1 trillion per year to achieve net-zero emissions by 2050 – more than six times current investment.** Given the collective interest in a successful transition and a shrinking window of time to act, we believe a much larger amount of public money needs to be directed from countries that can afford it to countries whose green transition is critical but underfunded.
- **The still unmet UN target for developed markets to mobilize \$100 billion annually of both public and private finance for the EM transition is therefore not sufficient, in our view.** We see a need for \$100 billion in the form of public budgetary resources (grant-equivalent financing) alone, to in turn be leveraged up to the needed \$1 trillion per year of public and private capital.
- **Global multilateral institutions have had limited success in attracting private capital at scale,** barely mobilizing a dollar of private capital for every public dollar spent. The main barrier to large-scale private capital flows in EMs is the typically high level of country risk, including political, legal, reputational and macroeconomic risk. Existing measures to mitigate this risk have not been effective in bringing in private capital at the scale needed.
- **Addressing the root causes of country risk would require institutional and structural reforms, which are underway in many cases, but will not deliver the needed level of de-risking quickly enough.**
- **Climate-specific capacity building will not address these broader risks, nor is there any private sector financial structure or financial engineering that will diversify the risk away.** The only way, in our view, to mobilize private capital at the scale and speed needed is through risk-burden sharing and greater public sector exposure to loss.
- **Public budgetary resources have been shown to be successful in attracting private capital.** They can absorb losses that would otherwise deter private investors, and can be used to leverage public finance in the form of loans, equity and guarantees, to in turn mobilize private capital. Absent a substantial improvement in the current poor mobilization ratios of public to private capital, we believe budgetary resources of at least \$100 billion a year – about six times current outlays – need to be committed by countries that can afford it.
- **This is an essential investment, in our view.** An annual public contribution of budgetary resources of \$100 billion over the next 20 years would avoid global damages of at least 10 times that in the event of a lack of climate action. And it's just a fraction of the \$9 trillion developed economies have spent (as at July 2, 2021) to cushion the impact of the pandemic. This shows that the collective will can be found to address urgent human and economic crises, like climate change.
- **For larger volumes of public budgetary resources to be effective in mobilizing private capital at scale, they need to be deployed following a number of key principles,** including significant de-risking and provision of finance at a facility level, rather than on a project-by-project basis. Tools with promise include green banks, mechanisms such as auctioned carbon price floors, securitization and suitably designed, facility-level credit enhancements.

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The shortfall

Emerging markets lack the capital investment to fund their green transition. We estimate the size of the investment shortfall and look at the barriers preventing private capital from flowing at scale.

Global crisis needs a global answer

Climate change is a global crisis that requires a global response. Without a successful green transition everywhere, climate risk is unmanageable anywhere. Reaching the globally agreed climate goals requires speed – notably a 50% reduction in emissions by 2030, [according to the UN](#). Emerging markets (EMs) account for an increasingly large share of global emissions – [now 34%, or 65% including China](#) – and much of the need for capital investment lies there. The choices these nations make as they build out their infrastructure will shape climate risk for all. But they are not able to meet their investment needs alone, and there is insufficient cross-border public or private finance arriving to fill the gap. It is therefore a matter of urgency that we address the massive shortfall of climate financing in these countries, in our view.

As a global asset manager and fiduciary to our clients, we know that many asset owners want to be part of the transition. From an investor perspective, climate risk is investment risk – and the transition provides an opportunity to contribute to a global effort and earn returns. Yet right now, private sector involvement in EM climate financing is limited.

Private capital to fund the transition is theoretically plentiful. But given the reality of poor investment conditions in most EMs, the simple fact is private capital will not flow sufficiently into EMs without more risk-sharing and greater public sector exposure to loss. Current strategies to entice private capital are not working at sufficient scale and speed, and climate change won't wait for EMs to undertake institutional reforms or become investment grade. While efforts can be made in parallel to address structural issues, if we are serious about slashing global emissions by half within 10 years, we need to act now within the existing EM financial architecture.

There is, in our view, no alternative but for countries with the capacity to commit additional public resources to climate action – predominantly in the OECD – to substantially increase the amount directed to EMs, to in turn mobilize exponentially more private capital. This presents a potential financial and political dilemma for developed market (DM) governments. But given the economic damage arising from failing to take action, we believe a greater financial commitment by DM governments is an essential investment and in their own interest given the global impact of climate change.

The shortfall in financing is not the only hurdle to a successful green transition in EMs – and consequently the world. Indeed, a multipronged effort is needed. We need improvements across the board:

- Better EM investment conditions
- Stronger international governance and organizational arrangements
- More efficient spending and effective financing structures
- Greater climate expertise on the ground
- A full pipeline of viable projects

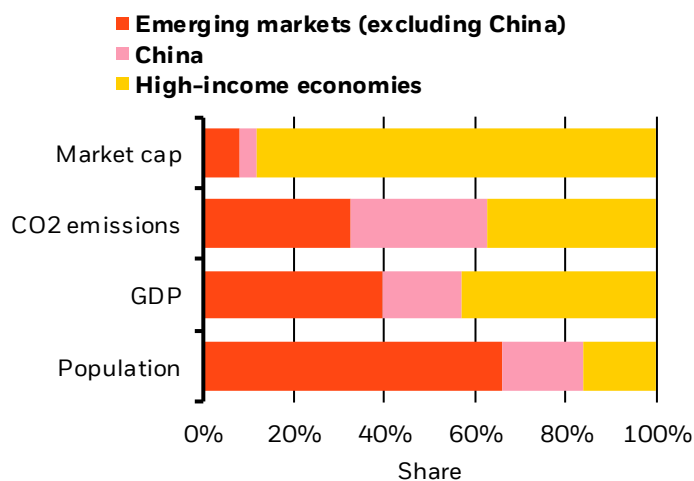
Climate financing cannot be totally divorced from development spending, in our view – green spending also needs to take into account EM development progress and priorities.

Drawing on our expertise as investment managers, we focus here on the size and causes of the financing challenge and how to best blend public and private finance at a level that will meet the need.

When talking about EMs, we exclude China given its greater capacity to self-finance its journey to net zero and contribute to the global effort. We take a conservative approach to our estimates to account for the degree of uncertainty when assessing financing needs and climate change impacts across a broad geography. And we recognize that some climate investment will involve the reallocation of capital rather than require additional funding.

Mismatched resources

Distribution of resources and assets in emerging and high-income economies



Sources: BlackRock Investment Institute, IMF, World Bank, MSCI, using data from Haver Analytics and Refinitiv DataStream, October 2021. Note: The chart shows the shares in different concepts of EMs (excluding China), China and high-income economies (i.e. rest of the world). EMs are those classified as low and middle-income countries by the World Bank. For market cap, this is the share of each group/country in total world stock market capitalization measured by the MSCI world stock market capitalization, as of 4 October 2021. For CO2 emissions, this is the share of each group/country in total world CO2 emissions in 2018 (latest data point). For GDP this is the share of each group/country in world GDP measured using Purchasing Power Parity exchange rates, as of 2019 (before the Covid shock). For population this is the share of each group/country in world population in 2020.

A decade late, a trillion short

How much will a successful green transition in EMs cost? Massive investment is needed to decarbonize every sector of the economy. We believe this could come at a cost of at least \$1 trillion per year. This figure is based on numerous studies of climate finance needs in EMs. Estimates vary depending on the underlying assumptions and given the uncertainties around modelling climate impacts. A [2018 study](#) puts the investment requirement for EMs excluding China at between \$0.4 trillion and \$1.4 trillion per year, while a [June 2021 report](#) from the International Energy Agency (IEA), World Bank and World Economic Forum states that over \$1 trillion per year will need to be invested in EMs through 2030 to get them tracking towards net-zero emissions by 2050.

Yet these estimates largely focus on the supply-side cost of climate mitigation – that is, the measures to tackle the *process* of climate change. If we also take into account the cost of adaptation (measures to protect against and limit the *damage* of realized and future climate change) and demand-side costs (such as reducing energy consumption), the figure would be significantly higher.

Given that the figures above do not include these extra unavoidable costs, an annual investment of \$1 trillion represents a reasonable estimate of the level of finance needed for the EM green transition, in our view – in reality it could be even higher than this.

How big is the investment shortfall?

Even taking this conservative view of the investment need, current financing is nowhere near sufficient. In 2020, investment in decarbonization in EMs (excluding China) amounted to just [\\$150 billion per year](#), according to the aforementioned IEA report – this is only a sixth of what's needed. See the chart below.

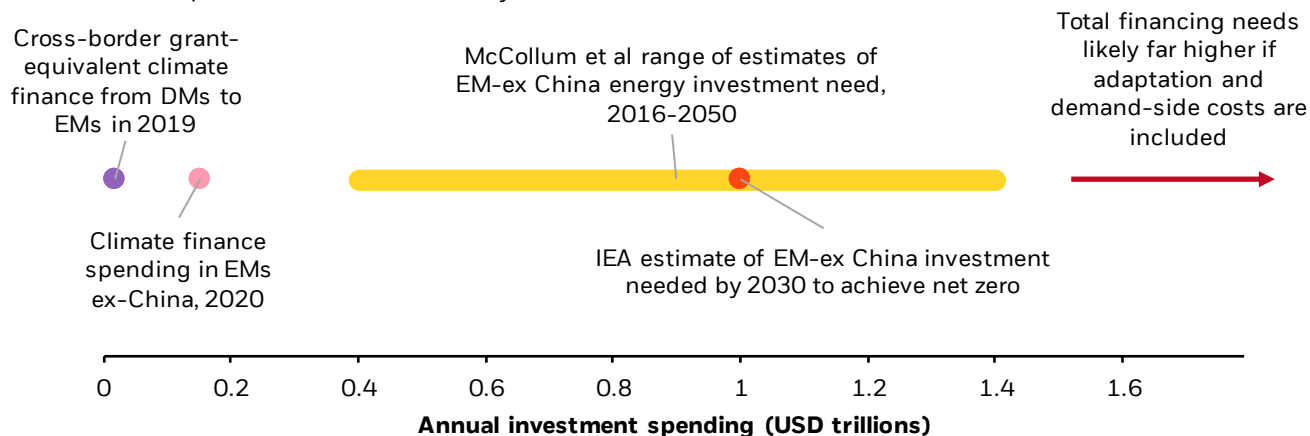
Some of this money comes from EMs themselves, and some is mobilized by DMs via official bilateral and multilateral channels and the private money they leverage. In 2019, DMs mobilized just \$80 billion, according to the [latest OECD data](#). This puts DMs still some way off meeting their commitment as part of the 2010 UN Framework Convention on Climate Change (UNFCCC) to mobilize from both public and private sources at least \$100 billion per year by 2020. Even meeting this pledge won't get us anywhere close to the at least \$1 trillion we believe is needed.

Breaking down the 2019 DM mobilization total, the vast majority of it (over 80%) was public money, and the overall volume has grown somewhat in recent years, largely delivered in the form of loans. Only a small share of this public money – [\\$16.7 billion](#) in 2019 – was actually grant-equivalent financing fueled by budgetary resources. This type of financing is crucial because it can be used to directly buy down EM risk and green technology premia.

The private component of the money mobilized by DMs actually declined slightly in 2019 versus 2018 – from an already low level. In 2019 less than 20% - or [\\$14 billion](#) – came from private sources. The investment needs of at least \$1 trillion per year are too high to be met by taxpayers alone. So the private component needs to be massively scaled up – and rapidly, in our view, given the potential consequences of an underfunded green transition in EMs for the whole world.

Current financing falling far short

Estimates of EM capital needs vs. current reality



Sources: BlackRock Investment Institute, McCollum et al 2018, 'Energy investment needs for fulfilling the Paris Agreement and achieving the Sustainable Development Goals', Nature; OECD [Climate Finance Provided and Mobilised by Developed Countries: Aggregate Trends Updated with 2019 Data](#), September 2021; IEA [Financing clean energy transitions in emerging and developing economies](#), June 2021.

Barriers to private capital flow

Why is private finance not flowing into EMs on the scale that's needed, given the investment opportunities that exist in the green transition? There are several factors at play.

First and foremost, **the EM investment landscape is viewed as high risk.**

- There are significant risks – related to political stability, legal enforcement, reputational concerns and macroeconomic management – that are difficult to diversify. None of these can be meaningfully solved by “climate policy”: working on climate-specific capacity building won't do anything to address the more fundamental country risks.
- For example, helping write better regulations to protect microgrid developers from future expansion of the central grid may help attract foreign investment, but does nothing to tackle, say, the lack of enforceability of private contracts in state courts – and that will be an overriding risk.
- These kinds of risk cannot be managed by clever private sector financial structures or financial engineering. But unless they are mitigated, private investors will continue to hold back.

As a result, the risk/reward balance is unfavorable for private investors and many are deterred – or prohibited – from investing in EMs.

Existing measures to mitigate this risk have not been effective in bringing in private finance at the scale needed.

- Reforms to domestic institutions, legal structures and macroeconomic environments to reduce EM risk will by their nature not happen on a relevant time horizon. If we want to achieve large-scale, rapid decarbonization within the decade, we cannot rely on gradual improvements in investment conditions. This is especially true because of the long development cycle of the relevant assets – buildings, power plants, steel mills.
- Measures taken by multilateral development banks (MDBs) and development finance institutions (DFIs) to mitigate country risks have been on too small a scale. For example, the provision of political risk guarantees or credit enhancements has been effective on a project-by-project basis. But much of their lending is done at below-market rates, which, although well intentioned, crowds out private capital and prevents the development of local capital markets in EMs.

- Public funding has also been ineffective in mobilizing private capital at scale. Existing grants or grant-equivalent finance is too targeted on funding individual projects – rather than being used to mitigate risks more broadly and crowd in private investment. A [review](#) of MDBs' climate finance in 2019 suggested that six of seven MDBs mobilized less than \$1 from the private sector for every \$1 of MDB climate finance. If the pace and scale of climate flows is to pick up as it needs to, either the input of public budgetary resources needs to increase radically, or this mobilization ratio will have to rise by an order of magnitude – or a combination of the two.
- Market failures impeding the flow of funding have not been effectively addressed by current approaches – for example unequal access to information that can make it difficult to decide where to invest, or underinvestment in projects that have a public benefit such as national electricity grids that may have low returns in isolation, but serve as a catalyst for further investment, say in green energy production.

Limits on current efforts to attract private capital

Institutional/structural reform takes time

DFI risk mitigation measures are deployed on too small a scale

Public money is too targeted on funding individual projects instead of reducing broader risk

Markets failures, e.g. unequal access to information, impede capital flow

Closing the gap

What can be done to meet the climate finance needs in emerging markets? We believe more public capital needs to be put at risk. We consider how much and how best to deploy it.

An essential investment

We believe the only way to overcome these obstacles to private capital flow – particularly the issue of EM investment risk – within the necessary time frame is for countries that can afford it to put up a greater supply of public budgetary resources to absorb the potential losses deterring private investors. This type of public finance has shown to be successful in attracting private capital because it provides investors with EM exposure at lower levels of risk.

Some countries already recognize the need to do more and are making a significant effort to expand the quantity and variety of financial support available to EMs seeking to reduce emissions. A variety of institutions beyond DFIs – including bilateral development finance institutions, bilateral aid agencies and multilateral climate funds – are funding first-of-their-kind investments, albeit most are still in pilot stage. U.S. President Joe Biden’s administration [announced](#) plans this year to double funds to help EMs deal with climate change to \$11.4 billion per year by 2024. But this pales in comparison with the [\\$23.2 billion](#) spent by the EU on climate finance in 2019. And in any case, these amounts are being put forward with an eye on the UN target of \$100 billion of blended public and private finance per year. The need is at least ten times larger, and in particular the share made up by public budgetary resources must be far bigger to attract the level of private finance needed.

To get to the \$1 trillion investment (six times current investment), unless current mobilization ratios improve, there is no way around increasing the volume of public budgetary resources to at least \$100 billion annually (six times DM grant-equivalent financing in [2019](#)).

The amount could be reduced if DFIs improve their mobilization ratios (see page 9). But given the timescale and DFIs’ difficulty in mobilizing private capital at scale, we believe the starting point is for governments to significantly scale up budgetary allocations.

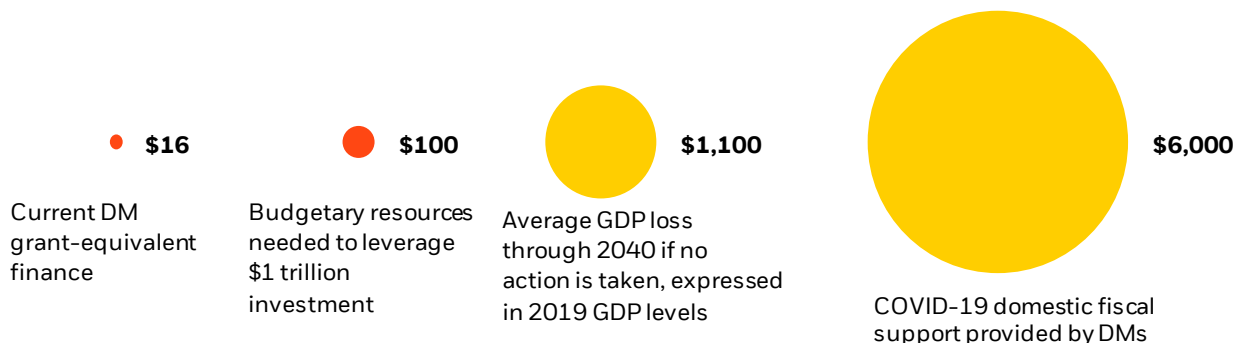
This money should be used to de-risk projects on the understanding that it might not be seen again, rather than be spent directly on projects looking for a return. This may be seen as a huge cost for DMs, but we believe it represents an essential investment. \$100 billion per year – or \$2 trillion cumulatively over the next 20 years – is only a fraction of the losses averted by a successful climate transition. We [estimate](#) a cumulative loss in global economic output of nearly 25% to 2040 – equivalent to more than \$21 trillion of 2019 GDP.¹ In 2017 alone, the U.S. Congress was forced to budget an additional [\\$136 billion](#) for unexpected spending to clean up climate-related weather disasters. Once we move past 2040, we expect the size of avoided economic damages for actions taken now to be substantially higher.

To further put this figure in context, \$100 billion per year over 20 years is only a fraction of the [\\$9 trillion](#) (as at July 2, 2021) of domestic DM fiscal support provided since 2020 to cushion the impact of the Covid-19 pandemic. Applying the same willingness to roll out material support for climate finance could help close the funding gap in time.

There are additional economic benefits to getting the transition right beyond only damages avoided. A [2021 IFC report](#) estimates that every \$1 million spent on renewable energy creates between 7.5 and 15 full-time jobs, and 7.7 in energy efficiency versus 2.7 in fossil fuels. It adds that from 2020-30, the approximately \$10 trillion of investment opportunities in a selection of EMs (including China) would directly create over 213 million new jobs globally.

Annual climate spending in context

Current and required annual grant-equivalent subsidy vs estimated annualized damages from inaction and annualized Covid-19 fiscal support provided by DMs (USD billions)



Forward-looking estimates may not come to pass. Sources: BlackRock Investment Institute, OECD, IMF. Note: Circles show the estimates of the average annual spending needs, economic damages or actual spending on a range of items. Current DM grant-equivalent finance is taken from the OECD’s latest assessment of DM climate finance flows to EMs. The budgetary resources needed to leverage \$1 trillion investment is our estimate of what’s needed to mobilize private sector finance so EMs can fully fund their green transition. The loss in global output is based on [previous work](#) estimating the global damages avoided through 2040 in a green transition vs business as usual, expressed in 2019 GDP levels with the total annual loss spread evenly over 20 years. The estimate of Covid-related fiscal support is derived from IMF estimates of the discretionary fiscal support measures introduced by DMs to address the domestic impact of the Covid-19 pandemic from 2020 to mid-2021. The average annual cost is derived by assuming that two-thirds of support was delivered in 2020.

¹ These estimates reflect [work done](#) as part of our climate-aware capital market assumptions, intended for professional investors, and are based on GDP being 2.3% lower in 20 years if no climate change mitigation measures are taken. Our model for a green transition combines the economic losses from physical damages related to climate change, the benefits and costs of energy transition, and other policy changes such as potential spending on green infrastructure.

Deploying public money effectively

Getting to the minimum \$1 trillion of annual investment needed requires either an increase in the supply of public budgetary resources by DMs to at least \$100 billion annually, or a significant increase in current DFI mobilization ratios. The more the latter is improved, the more the former can be reduced. In any case, the system of delivering climate finance to EMs needs to evolve quickly to enable funding to be scaled up. We see a number of key design features of measures that we believe will help unleash private finance at scale.

Public budgetary resources can play a critical role in **de-risking investment opportunities**.² Many of the undiversifiable risks discussed earlier such as country risk, could be reduced via this type of public finance – potentially unlocking substantial pools of private finance that are currently prevented from being invested in EMs generally. But some changes are needed to the current system in order to achieve this – for example through:

- A **first-loss arrangement** in which a DFI or other public finance institution – backed by government budgetary resources – would agree to take on part of the risks of an investment, including being the first to take on losses in the event of a default.
- More extensive participation of DFIs in investment projects, which could also **address broader reputational risks** around investing in particular countries – beyond the financial risk of investors not getting their money back. Greater budgetary resources that encourage deeper involvement of DFIs in climate finance could have a catalytic effect by reducing reputational risks, crowding in private finance.
- Deploying budgetary resources via a kind of guarantee or credit enhancement could enable **securitization of assets**, freeing up capital to then be recycled for new public investment – and provide an asset that private investors could buy, knowing that the public backing helps reduce the riskiness of the investment.
- Rather than invest directly in bankable projects themselves, DFIs could **prepare, originate, and structure bankable projects** and leverage their extensive country reach, historical underwriting performance, robust due diligence capabilities, preferred creditor status and investment-grade credit-enhancement products to help de-risk project portfolios for institutional investors to buy. As well as helping decide which projects should be financed, they could scale up their monitoring and impact measurement capabilities accordingly – providing accountability back to governments on the use of public resources.

² Diversification does not guarantee a profit or eliminate the potential for loss.

Budgetary resources have greatest power to scale up this de-risking by **providing finance at a facility level**, rather than on a project-by-project basis. This could happen in several ways, for example:

- Budgetary resources could be used as seed capital to set up a **green investment bank** in an EM economy. This would enable multiple projects to be funded in one move, rather than one by one. Since the green bank takes on the role of standardizing criteria for lending to investment projects, greater transparency will encourage greater private sector participation.
- A mechanism such as an **auctioned carbon price floor** which – backed by a letter of credit from a government or DFI, equivalent to a subsidy – can issue an investment instrument that is bankable. The fund that issues the instrument is, in effect, offering to act as a buyer of last resort. Capital is only called on if the carbon price drops below a pre-specified level, supporting decarbonization without investors taking on project completion risk.
- By subsidizing investment in projects that have significant benefits to society – such as national electricity grids – greater public funding can enable follow-on private investment in other areas such as green energy production. This could be achieved, for example, through a fund or green bank with a specific mandate to invest in sectors or projects that are viewed as important public goods.

The bottom line: A system that meets these key requirements can help ensure that the catalytic promise of significantly higher public budgetary resources can be realized, as well as improve the likelihood of raising the mobilization ratio of private finance, to ultimately deliver funding on the scale and at the pace needed to fund the green transition.

The examples discussed above provide some illustrations of how this could happen. In practice, a combination of measures will be needed. We have focused on measures that can be scaled up to deliver quickly, but maximizing impact per dollar spent will require significant changes to existing multilateral and bilateral delivery channels. It may even entail a complete overhaul of current institutions or the creation of new ones. That's for governments to determine, but in any event, action needs to be taken without delay.

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