

Private Finance and Climate Investment Needs: An Analytical Framework

Chen Chen, Charlotte Gardes-Landolfini, Annapurna Mitra, and Henk
Jan Reinders

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ABSTRACT: Achieving climate-related commitments and mitigating related risks to macroeconomic and financial stability require improving the conditions for private investment. Raising sufficient private finance is however challenging, particularly for emerging markets and developing economies. This paper develops an analytical framework to assess how reforms shape private climate finance. Key dimensions include macro-structural reforms to lower capital costs, measures to incentivise financing for climate-related investments, and blended financing that leverages public resources to attract private investment. To the extent the resulting externally-financed investments are resilience- and growth-enhancing, these can also support strengthening of the longer-term balance of payments position. Effective implementation may require international support, especially for developing economies.

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WORKING PAPERS

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Contents

Glossary	5
Executive Summary	6
Climate-Related Investment Needs and Financing Flows	8
Channels Affecting Private Climate Finance Flows	12
Macro-structural reforms	14
Climate Measures	17
Blended Finance	20
The Role of Budget and International Concessional Financing	23
Conclusion	25
Annex 1. Estimating climate finance needs and barriers to scale up climate finance in EMDEs	27
Annex 2. Typology of private climate finance instruments	32
References	38

BOXES

Box 1. Tracking climate finance flows: measurement and policy challenges	10
Box 2: Conceptualizing the Concessional Finance Need	13
Box 3. Country Platforms as a Solution to Scale Financing	21

FIGURES

Figure 1. Elevated Sovereign Spreads: Demonstrating the Need for Macrostructural Reforms to Cut Borrowing Costs (Average Sovereign CDS Spreads by Credit Rating Category)	15
Figure 2. Impact of Green Reforms Conditional on Structural Reform Gaps	17

TABLES

Table 1. Measures to Increase Private Climate Finance Flows	12
Table 2. Examples of reforms that support general economic development as well as climate-related	16
Table 3. Types of climate measures and typical instruments	18
Table 4. Potential Funds Available for Green and Resilience Investments by Repricing Carbon	24

Glossary

AEs	Advanced Economies
CDS	Credit Default Swaps
CFMACA	Coalition of Finance Ministers for Climate Action
COP	Conference of the Parties (to the UNFCCC)
DFI	Development Finance Institution
EMDEs	Emerging Market and Developing Economies
ESG	Environmental, Social and Governance
FDI	Foreign Direct Investment
GHG	Greenhouse gas
JTEPs	Just Energy Transition Partnerships
LICs	Low-Income Countries
LTS	Long-Term Strategies
NAP	National Adaptation Plan
NDBs	National Development Banks
NDC	Nationally Determined Contribution
MDBs	Multilateral Development Banks
ODA	Official Development Assistance
PPPs	Public-Private Partnerships
RSF	Resilience and Sustainability Facility
SDGs	Sustainable Development Goals
SIDs	Small Island Developing States
UNFCCC	United Nations Framework Convention on Climate Change
VAT	Value Added Tax

Executive Summary

It is widely recognized that climate-related shocks, such as those from extreme weather events, pose risks to both macroeconomic and financial stability (FSB, 2025a). Meanwhile, many countries are shifting towards a low-carbon economy, with a view to enhancing energy security and external balances by reducing fossil fuel imports. Investments in enabling a smooth transition to a low-carbon economy and supporting economic resilience are therefore of critical macroeconomic importance.

However, raising adequate private finance to meet these investment needs is proving challenging for many countries, especially emerging market and developing economies. This paper discusses several mechanisms to align the incentives for private climate investments with the projects available in developing countries. Given that domestic financial markets often lack depth, a significant proportion of this financing would be from foreign sources. To the extent that some of this financing is in the form of foreign direct investment (FDI) with longer time horizons and resilience- and growth-enhancing outcomes, these flows can also help strengthen the longer-term balance of payments position.

We develop an analytical framework that categorizes projects along a financing spectrum based on their broad risk-return profiles. We identify three key sets of instruments with which country authorities can attract private investment to build resilience in the face of climate-related risks and the transition to a low-carbon economy. These include broad macro-structural reforms, climate measures, and blended financing.

Macro-structural reforms aim to mitigate economy-wide risks and lower the costs of doing business, thereby expanding the pool of investment projects that can be commercially financed. A well-designed suite of climate measures that account for the economic externalities related to climate change—such as carbon pricing and technology development subsidies—create credible and durable price signals that improve risk-adjusted returns for low-carbon projects relative to high-carbon alternatives, thereby tilting the investment frontier toward “green” assets and away from “brown” ones. Finally, blended financing strategically deploys public resources—such as guarantees and concessional debt—to de-risk specific exposures and mobilize private investment at the project or portfolio levels. Blended financing is particularly relevant for projects that are close to being profitable for private investors. However, they also require strong safeguards to contain associated fiscal risks.

While many macro-structural and climate measures can be budget neutral—or even budget positive—most blended financing mechanisms, as well as some climate measures, require some form of public support. Therefore, the menu of measures may be limited or expanded depending on authorities’ ability to finance them through their budget—such as by reallocating resources spent on fossil fuel subsidies or by securing international concessional financing, particularly for developing economies¹.

¹ This working paper echoes key elements of the COP29 decision on a new collective quantified goal (NCQG) on climate finance, which calls on “all actors” to mobilize at least USD 1.3 trillion by 2035 and was further advanced at COP30 through a stronger focus on adaptation (at least triple adaptation finance by 2035), implementation, delivery pathways, and country ownership. COP29 emphasized reducing the cost of capital, mobilizing innovative financing instruments, and maintaining a balanced allocation between adaptation and mitigation finance. COP30 reinforced these priorities by highlighting the role of financial-sector reforms, MDB balance-sheet optimization, and de-risking instruments to crowd in private capital, particularly in emerging market and developing economies.

(continued...)

Introduction

Maintaining macroeconomic stability amidst climate challenges requires strong measures to proactively mitigate associated risks. Underinvestment in climate change adaptation and the energy transition may lead to global financial stability risks through greater exposure to systemic climate-related financial risks (IMF 2022).² However, currently, global capital allocation remains skewed, with large investments still directed towards high-carbon activities prone to climate-related risks, while financing for low-carbon and climate-resilient activities remains severely inadequate (IPCC 2022, Robins 2022). The energy transition would require a broad-based shift in investments from high-carbon to low-carbon sectors, including moving away from fossil fuels (IMF 2023a). Meanwhile, adaptation finance is critical for adjusting socioeconomic systems to both current and expected climate shocks, as well as for prompting climate-resilient development (IPCC 2022). International finance flows could be critical for vulnerable and developing countries with limited domestic resources.

Estimates for climate investment needs vary widely, depending on the scope and assumptions of the models used, however, far exceed the current annual flows (CPI 2025)³. Estimates of climate investment needs are highly sensitive to a series of underlying assumptions including climate scenarios (which further depend on global mitigation efforts), policy choices, and the timing of investments. However, regardless of the specific assumptions used in the estimations, EMDEs' climate investment needs are consistently in the magnitude of USD trillions. Current climate finance flows are tracked in a variety of ways. The two most used rely either on labelling the financial instrument used (e.g., green bonds) or based on whether the underlying project can be considered "green" based on a taxonomy or reference framework.

EMDEs face a wide range of challenges in balancing climate investment needs at the speed and scale required against other development priorities. EMDEs' gross needs for climate finance range between \$1.4 – 5 trillion annually for the next decade, where adaptation needs constitute USD 400 billion – USD 1 trillion of the annual needs up to 2030 (IMF, 2023a). Yet, climate finance flows to EMDEs remain relatively small, even when considering measurement uncertainties, especially in comparison to advanced economies. This disparity is particularly evident in clean energy investment, where EMDEs (excluding China) constitute only 15 percent of global clean energy expenditure. Meanwhile, fossil fuel investment (including coal) continues to increase in these countries (IEA 2024b, IMF 2023a).

Both COP29 and COP30 stressed the need to address barriers to accessing climate finance through streamlined processes, enhanced transparency, and country-driven strategies and investment plans (recital 21), alongside greater alignment between national climate strategies, development planning, and financing frameworks. COP30 further strengthened calls to mobilize MDB and private finance (recital 22) and to create enabling policy environments, emphasizing regulatory certainty, domestic reforms, and financial-system resilience as prerequisites for sustained climate investment (UNFCCC 2024; UNFCCC 2025).

² This paper's analysis of private climate finance focuses specifically on commercial financial institutions and corporations, which are central to closing the global climate investment gap. This approach inherently overlooks the non-negligible portion of climate investment driven by households, such as residential energy efficiency, small-scale solar, and electric vehicle adoption (as detailed in CPI 2025). The dynamics governing these household investments are fundamentally different, as they are driven by individual behavioral factors and direct consumer incentives, unlike the risk-return calculus guiding institutional investors. Consequently, policy instruments designed to stimulate household finance, like targeted tax incentives and specific regulations (e.g., efficiency standards), are distinct from those aimed at attracting institutional capital, requiring tailored policy discussions that may fall outside this paper's primary focus.

³ Despite global climate finance more than doubling between 2018 and 2023, global climate finance needs still significantly outstrip flows (CPI 2025).

The quality of a country's institutions and the resulting high cost of capital are significant constraints to scaling up climate finance in EMDEs⁴. This makes addressing climate finance fundamentally a development challenge. It requires navigating complex economic subsystems characterized by non-convexities and multiple market failures (Stern and Stiglitz 2022), with limited access to capital being just one among many. These failures are often compounded by systemic risks stemming from institutional weaknesses, which erode investor confidence and contribute to a high required rate of return on investments. Consequently, this underinvestment in both building resilience to climate change and the energy transition creates substantial economic and humanitarian costs and can ultimately pose risks to global financial stability (IMF 2022).

Fiscal sustainability concerns and limited international concessional financing constrain the space for public investments. Currently, EMDEs' climate investments are largely financed domestically (CPI, 2022). However, most EMDEs are facing challenges with respect to high debt levels and rising interest rates, increasing the cost of borrowing (Adrian, Gaspar and Gourinchas, 2024). Fiscal space for climate spending is further narrowed by competing spending needs, especially for development (IMF 2023b, UNDP 2023). Capital constrained EMDEs also face unique challenges to the shift to renewable energy while phasing out fossil fuels, given the upfront investments required for renewable energy generation (IEA 2024a, Gardes-Landolfini et al. 2023).

This paper examines channels through which domestic reforms and the availability of financial instruments affect private climate finance flows. We first discuss climate investment needs and then turn to options to increase private financing flows, focusing on (i) structural reforms, (ii) climate measures, and (iii) blended finance instruments to crowd-in private finance. We also discuss the role of public and other concessional financing resources to support adequate flows of private financing. We recognize that climate finance is a broad and ever evolving research topic, which encompasses numerous issues. Even though the paper proposes a broad framework that targets private finance, we do not intend to address all the related dimensions, nor do we aim to provide operational guidance for implementing the framework and climate measures more broadly. Although we take an EMDE perspective, the general framework presented in this paper also applies to AEs.

Climate-Related Investment Needs and Financing Flows

Total EMDE climate investment needs are substantially higher than existing financing flows. Typical breakdowns of climate finance flows include (1) transition (or mitigation) versus adaptation objectives, (2) international flows versus domestic flows (similarly global, regional, or local flows; IPCC 2022), (3) recipients in AEs versus EMDEs, (4) public sources versus private, and (5) market-based rates versus concessional rates. In addition, estimates of climate investment needs vary depending on the underlying assumptions used. These assumptions include: (1) temperature targets that dictate the carbon budgets within a given period; (2) policy scenarios that require investments at different levels; (3) timing of investments⁵; (4) technological change

⁴ The role of macro-structural reforms is not only relevant for improving domestic financing conditions, but also for reducing economy-wide risks that influence both domestic and foreign investors' pricing of risk. For the latter, their required return for investments in EMDEs remains strongly influenced by country-specific risk premia, including sovereign risk, currency and convertibility risks, macroeconomic volatility, and regulatory and policy uncertainty.

⁵ The longer the delay in meeting total climate investment needs, the higher the costs will be, both to mitigate global temperature rise and to deal with its impacts (CPI 2024). See Annex 1, figure 4.

and productivity levels, and (5) costs of higher-order effects, such as just transition⁶. The estimates for gross mitigation investment needs range from USD 2 – 9 trillion globally, with about a third needed in EMDEs. In addition, the maximum required investment for adaptation needs amounts to another USD 1 trillion⁷. Annex I provides details on commonly used methodologies and estimates⁸.

While some of the climate investment need could be achieved by redirecting capital from high emission activities, additional investments are required to meet climate-related objectives. For instance, investment needs in clean energy, around USD 3 trillion in total, account for both baseline clean energy fuel and the reduced investment in fossil fuels. The “net” investment needs, which combine the increased investment in clean energy and the reduced investment in fossil fuels⁹, would roughly be halved from the gross total for the EMDEs. Future climate investment needs—at least 12 percent of total EMDE investments (relative to the current 3 percent, IMF 2023a)—will soon exceed available financing capacity (Prasad and al. 2022).¹⁰ Hence, a comprehensive set of actions is needed to enable EMDE climate investments. These include macro-structural reforms and climate measures, which can provide an enabling environment and incentives to undertake climate investments. In addition, blended financing instruments may be used to alter the risk-return profiles of climate projects. Finally, for some projects, concessional financing will be essential and will have to be drawn from both government budgets and international official funds.

The imbalance between the supply and demand for climate finance remains a key bottleneck to scaling investment, particularly in EMDEs. While significant pools of capital are theoretically available—through institutional investors, multilateral development banks, and climate funds—the supply side is constrained by high perceived risks, weak regulatory environments, and insufficient risk-mitigation instruments (see Annex I). On the demand side, however, the pipeline of bankable, investment-ready projects remains limited in EMDEs (World Bank 2023) due to inadequate project preparation capacity, unclear policy signals, and underdeveloped financial ecosystems. Strengthening the investment environment thus serves a dual purpose: it reduces risks and the cost of capital for financiers, while simultaneously expanding the number of viable projects—helping to bridge the persistent gap between climate finance supply and demand.

⁶ The just energy and ecological transition involves a complex interplay of costs and benefits that can be categorized into two main effects: (i) upfront social costs (impacts on work and labor policies, such as those related to program retraining or social safety nets, and implementation costs of “green” labor policies), and (ii) costs related to higher-order effects, such as the impact on job markets (net effects on employment), social equity, and growth patterns, considering economic disruptions in regions and sectors dependent on carbon-intensive energy sources, for instance.

⁷ UNEP 2025 finds that the global adaptation finance gap is currently estimated to be US\$284–339 billion per year until 2035, as total financing needs of US\$365 billion annually are 12–14 times greater than the current flows (US\$26 billion in public finance and US\$4 billion in private finance).

⁸ The time profile of climate-related investment needs and financing availability is an important consideration, as aggregate estimates for 2030 and 2050 may mask non-linear dynamics, including periods of front-loaded investment (e.g., early infrastructure build-out) and later surges (e.g., replacement cycles and the decarbonization of hard-to-abate sectors). However, the paper does not attempt to quantify the distribution of financing requirements over time, as the existing literature does not provide a sufficiently robust and harmonized basis for producing credible year-by-year trajectories across countries and sectors: most widely used assessments of climate investment needs report results either as cumulative totals up to a target year or as average annual flows over a period, rather than as detailed time paths, reflecting substantial heterogeneity in underlying scenarios and modeling assumptions. The timing of investment requirements is also highly sensitive to assumptions regarding technology deployment, policy credibility, absorptive capacity, and the sequencing of reforms, which are difficult to standardize and would require strong additional modeling assumptions beyond the scope of this paper. This is consistent with broader assessment findings, such as those of the IPCC, emphasizing the large uncertainty surrounding the evolution and alignment of future financial flows over coming decades.

⁹ As underlined by IEA (2023), while achieving the net-zero scenario goals requires a massive and sustained increase in clean energy investment, the sequencing of the shift in energy investment: “Running ahead on scaling back fossil fuel investment before clean energy investment ramps up would push up prices and risk price spikes, and this would not necessarily advance secure transitions”. It is a point also raised in Gardes-Landolfini and al. 2023, given that continued strong investment in fossil fuels, even as investment in renewables grows, is consistent with the fact that, globally, energies have a “symbiotic” relationship with each other.

¹⁰ Delaying mitigation would substantially increase the humanitarian and economic cost of adaptation for EMDEs (see Annex 1).

Box 1. Challenges in tracking climate finance flows

Measuring climate finance flows can prove challenging in practice. Explicitly labeled climate finance flows are considered “tracked” climate finance. In theory, private climate finance instruments are generally of three main types, where finance is (i) raised with conditions on the *use of proceeds* (e.g., building renewable energy infrastructure); (ii) *outcome-based*, where the cost of capital is reduced if certain sustainability conditions are met; and (iii) based on *ESG ratings*, where the company’s overall performance is rated, which then determines its cost of capital. However, in practice, an accurate measure of these flows can prove challenging if: (i) the funds raised using these instruments may sometimes be used in projects without explicit transition or adaptation objectives or (ii) the funds are used for transition or adaptation projects but not explicitly labelled as such¹¹. Similar challenges may apply to public climate finance flows, which either arise in domestic government budgets or are provided through bilateral and multilateral channels.

Alternatively, taxonomies can be used to identify projects which correspond to specific criteria, and investments in these projects can be considered climate finance flows. This methodology is used by some organizations, for instance, the Climate Policy Initiative, which identifies projects based on their own taxonomy. Alternatively, the OECD’s measure of bilateral and multilateral official climate finance flows, is based on the information provided by donor agencies and international finance institutions, using the Rio Markers as the criteria for whether the project fulfils climate objectives (OECD 2017).

Getting better estimates of climate finance flows is essential to help country authorities identify and fill existing gaps at the aggregate, regional, and sectoral levels. The development of national and multinational regulatory standards or labels, which specify requirements for designating instruments as “green” (e.g., ICMA’s Green Bond Principles), has proven useful to mitigate “greenwashing” issues. The formulation of taxonomies can also provide a framework for project selection and the use of proceeds (NGFS 2022).

An important dimension in identifying climate-related investments is the treatment of “transition finance” flows. Transition investments are those required to support the decarbonization of entities or activities in hard-to-abate or other high emission sectors (e.g., diversification of energy production activities), as well as continued – though declining – high-emission investments in sectors that do not have credible low-emissions substitutes which are economically viable (OECD 2022, ETC 2023) – thereby supporting the whole-of-economy transition. Under specific circumstances, transition investments could also encompass investments for energy security or managed phase-out purposes (e.g., financing coal plant decommissioning projects), on the path of a low-carbon transition. They can also embed adaptation and resilience investments in areas such as early warning systems and resilient infrastructure and processes across sectors to increase energy efficiency, reduce economic damages from climate-enhanced extreme weather events, and maintain revenue streams (Climate Financial Risk Forum 2024, PRI 2025). Yet, transition finance may not be tracked if the underlying investments are not already meeting low-carbon (or other climate) thresholds or if they are not explicitly labelled or directly traceable to climate projects¹², e.g., supply chain resilience, energy efficiency benefits (The Rockefeller Foundation and BCG, 2022).¹ The G20 Transition Finance Framework¹³, for instance, includes measurement criteria such as a) compliance with high performance country- or sector-

¹¹ Since different jurisdictions are at various stages of developing regulatory regimes for climate finance, an emerging issue also relates to “financial carbon leakage” (IEA 2024), with corporates seeking funds in countries with weaker regulations, and thus potentially slowing climate financing.

¹² Bourguignon 2025 highlights that the ambiguous allocation and definition of climate finance between mitigation and adaptation objectives leads to inefficiencies in its distribution and delivery.

¹³ Available here: [TFF-2-pager-digital.pdf \(g20sfwg.org\)](https://www.g20.org/transition-finance-framework)

specific standards, benchmarks or thresholds for emissions (i.e., included in transition taxonomies); b) not hampering the development of low-emission activities; and c) not leading to carbon lock-in. These criteria are detailed in IMF, World Bank Group and OECD, 2023.

In this context, an emerging priority lies in the development of financial sector policies to support the credibility of transition finance. Among these policies, those related to market and corporate transparency will require non-financial and financial companies to articulate *transition plans*¹⁴ and related disclosures, which include concrete climate targets, actions, and accountability mechanisms on a multi-year basis (RMI 2025). These plans aim at supporting the alignment of companies' investments with jurisdictional (and/or regional) net-zero objectives, help monitor adjustments to climate risk drivers in the real economy, support adaptation and resilience (International Transition Plan Network 2024), and more broadly manage climate-related risks (FSB 2025b, OECD 2024, Tshazibana 2024¹⁵). Financial sector policies are also increasingly incorporating the development of *transition taxonomies*. These taxonomies help identify specific economic activities, technologies, and industrial processes that can significantly lower emissions, sometimes while managing any climate-related risks. By doing so, they align incentives and contribute to reducing emissions overtime, even in the highest emission sectors (Kachenoura and others 2024, Caldecott 2024, ICMA 2024). They can help direct investment toward sustainable activities and projects by enabling banks to finance client transitions, reducing due diligence costs, boosting investor confidence, and translating climate commitments into concrete actions for corporate and market behavior (Wong 2024). This approach aims at improving the understanding of which investments support a transition in line with the goals of the Paris agreement¹⁶. The targets and criteria set by these taxonomies may match a country's NDCs, long-term strategies and other climate commitments (e.g., adaptation) and sector-specific targets (IMF 2023a)¹⁷. This alignment creates a constructive feedback loop among government plans, corporate strategies, and the plans of financial institutions. Ultimately, these efforts support decarbonization and resilience planning in the real economy and influences valuations and investment, lending, and underwriting (CFMCA 2024)¹⁸.

¹⁴ Transition planning aims at coordinating the strategic delivery of the necessary strengthening of policy guidance, incentives, regulations and enabling conditions in a coordinated way (NGFS 2023, 2024).

¹⁵ "Data gaps remain a major obstacle to increasing climate financing. Financial regulators have an important role to play in addressing these gaps. Using appropriate taxonomy and disclosure rules in their regulatory and supervisory approaches can improve information flows and enhance the operations of financial markets. Embedding climate considerations in the governance and risk management practices of financial firms helps manage climate-related risks more effectively and improves the allocation of capital across the economy. The NGFS's work on transition planning provides important guidelines on how financial institutions can incorporate climate considerations in all aspects of their operations and manage climate-related risks during the transition".

¹⁶ In addition, sectoral transition plans can be devised, particularly in the energy sector, to support the achievement of countries' climate strategies and roadmaps, as well as the development of an investable pipeline of projects (IMF 2023). The same approach can be adopted for adaptation, converting national adaptation plans into adaptation investment plans with viable project pipelines: investment roadmaps identify projects and programs for funding by international and private financiers, linking to domestic climate finance tracking systems, including climate budget tagging (CPI and GCA 2023).

¹⁷ Given the need to finance the decarbonization of high-emitting and hard-to-abate sectors, transition taxonomies and planning frameworks and disclosures aim at integrating well-suited indicators and metrics for transition finance, e.g., managed phaseout of coal.

¹⁸ Reinforcing transition planning frameworks takes place in the context of the most recent round of NDC submissions following COP30. Building on the outcomes of the Global Stocktake, Parties are expected to strengthen ambition in line with the Paris Agreement, improve the articulation and assessment of financing needs, and further translate NDCs into credible, country-owned and investable plans.

Channels Affecting Private Climate Finance Flows

To raise private climate finance flows, we identify measures in three main reform areas. To most investors, investment decisions are primarily based on a trade-off between expected financial returns and investment risks. Hence more private financing can be obtained by reducing (perceived) investment risk, often approximated by the cost of capital, and improving private returns (Box 2).¹⁹ Importantly, while countries differ markedly in size, income level, and market depth, well-designed reforms can be effective regardless of scale. Against this backdrop the framework distinguishes three main channels: (i) macro-structural reforms, (ii) climate measures, and (iii) blended financing (Table 1). Macro-structural reforms mainly reduce economy-wide risks and costs of doing business, hence increasing the number of projects that can be fully financed on commercial terms. Climate measures, in turn, alter the relative attractiveness of “green” investments versus “brown” ones. Finally, blended finance leverages public resources (such as guarantees and concessional debt) to mobilize further private investment, usually at project or portfolio levels. Blended financing is particularly relevant for projects that are already close to being profitable for private investors and require strong safeguards to contain associated fiscal risks. Each reform area is further elaborated in the next sections.

Table 1. Channels Affecting Private Climate Finance Flows

Channel	Main objective	Example Measures
I. Macro-structural reforms	<i>Reduce economy-wide cost of capital</i>	- Improving institutions, governance, and the business environment - Market-based sectoral reforms (for example, energy sector liberalization) - Public investment management
II. Climate measures	<i>Improve profitability and reduce the cost of capital of climate-related investments</i>	- Eliminating fossil fuel subsidies and implementing carbon pricing - Increasing renewable energy subsidies - Regulation (for example, energy efficiency standards, zoning laws, and building codes) - Climate policy roadmaps - Financial sector policies, including robust climate information architecture (transition taxonomies and plans, disclosures, climate data)
III. Blended finance	<i>Crowd-in private investments using public resources</i>	- Equity or debt participation - Loan guarantees - Public-private partnerships

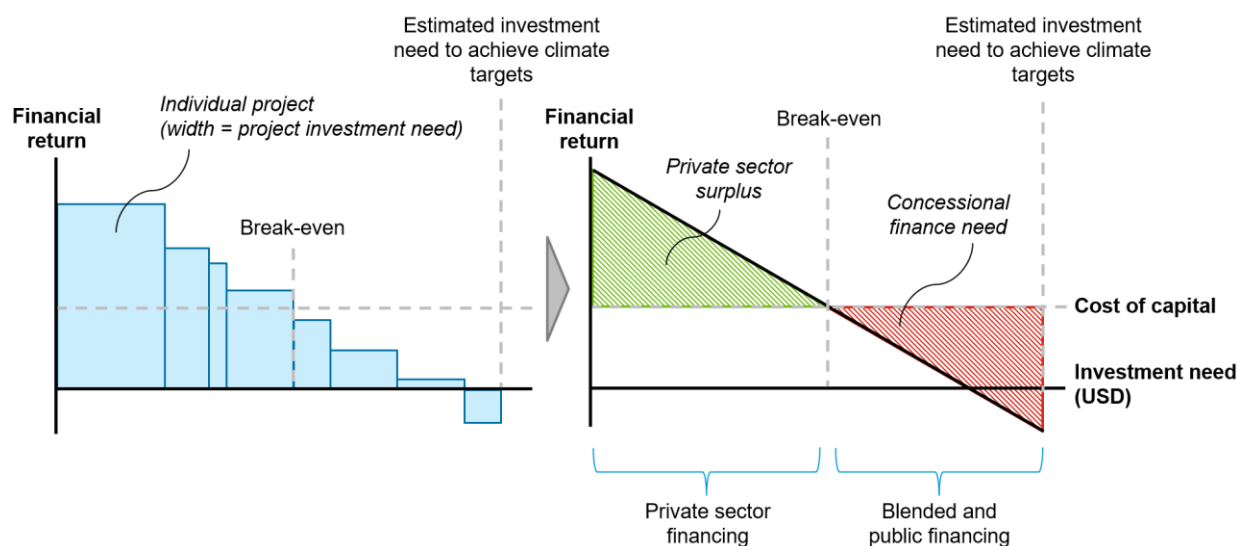
Source: IMF staff.

¹⁹ Box 2 conceptualizes the amount of private finance needed (versus blended and public finance) as a function of financial returns and the cost of capital in each jurisdiction. From a theoretical standpoint, any financially viable project should be financed privately, while projects with negative financial returns but that are nevertheless efficient (such as seawall protection against floods) should still be implemented however would likely need some government support. Different types of reforms can help increase the share of projects that can be financed privately and reduce the magnitude of government support.

Box 2: Conceptualizing the Concessional Finance Need

Climate investment needs are conceptualized as the minimum set of projects that are required to reach climate-related goals in a certain jurisdiction that meet country authorities' criteria, out of the set of all possible projects (e.g., the set of the most profitable and feasible projects that, combined, would achieve the jurisdiction's climate targets). The left panel in Figure B.1 illustratively shows the individual projects, with the height of the bar representing the financial returns of the project and the length of the bar representing the project investment need. Investment projects are ranked from high to low financial returns. The right panel provides an aggregated representation. Depending on the country, the downward slope of the curve may vary along the horizontal axis. The green triangle represents private sector (investor) surplus, defined as the difference between the cost of capital and the financial return (approximated by the internal rate of return) of the projects, while the red triangle represents a negative surplus or the concessional financing need. Conceptually, the area of the red triangle represents the grant equivalent of the total concessional financing need—indicating the amount of value needed to bring the financial returns of each project above the cost of capital and hence make them investable to private actors seeking market-based returns. The main rationale for providing (public) concessional financing would be the positive externalities (i.e., social returns larger than private returns) associated with the project.

Figure B.1. The range of projects attractive to private finance depends on their financial return and cost of capital

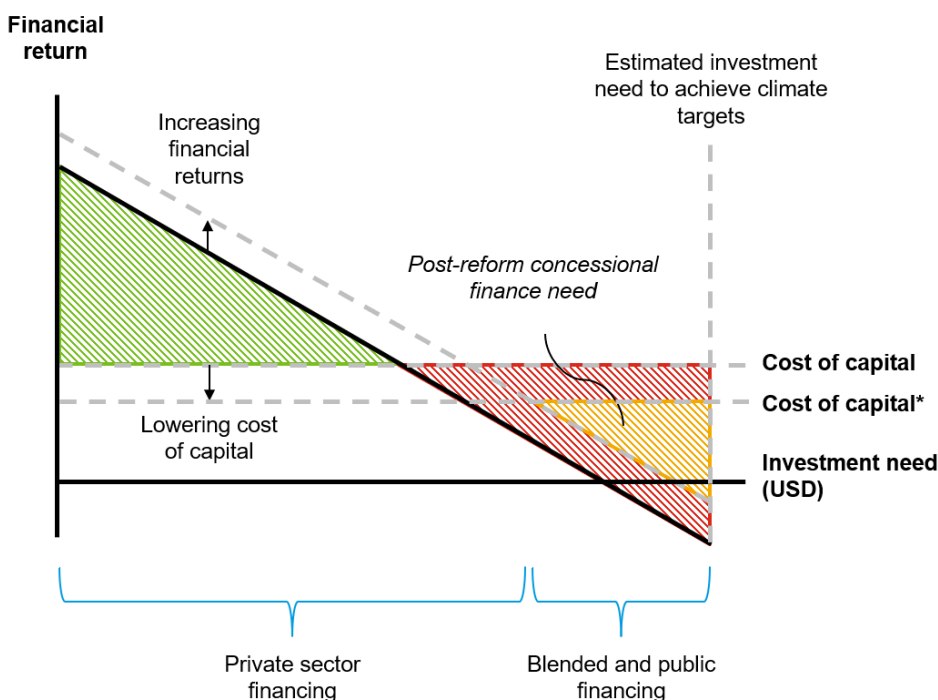


Note: Investment projects ranked from high to low financial returns. Depending on the country, the downward slope of the curve may vary along the horizontal axis and vary across time (e.g., due to technological progress and other cost reductions).
Source: IMF staff.

The proportion of projects that can be financed privately is not static and depends among others on implemented macro-structural reforms and climate measures. The share of total investment that can be financed fully privately is endogenous to key choices, such as the degree to which macro-structural reforms and climate measures are implemented. Figure B.2 shows that by reducing the cost of capital (either economy-wide or specifically for climate-related projects) or increasing the profitability of projects (for example, by adjusting relative prices between “green” and “brown” products, or by achieving economies of scale), the number of projects that can be fully privately financed increases. As a result, the amount of

concessional financing needed is reduced (with the orange triangle representing the post-reform situation). The lower cost of capital associated with foreign investments also reduces the overall external financing needs, thus reducing balance of payment vulnerabilities.

Figure B.2. Reforms can expand the range of projects which are profitable for the private sector, thereby reducing the need for blended and public financing.



Note: Investment projects ranked from high to low financial returns. Depending on the country, the downward slope of the curve may vary along the horizontal axis and vary across time (e.g., due to technological progress and other cost reductions).
Source: IMF staff.

Macro-structural reforms

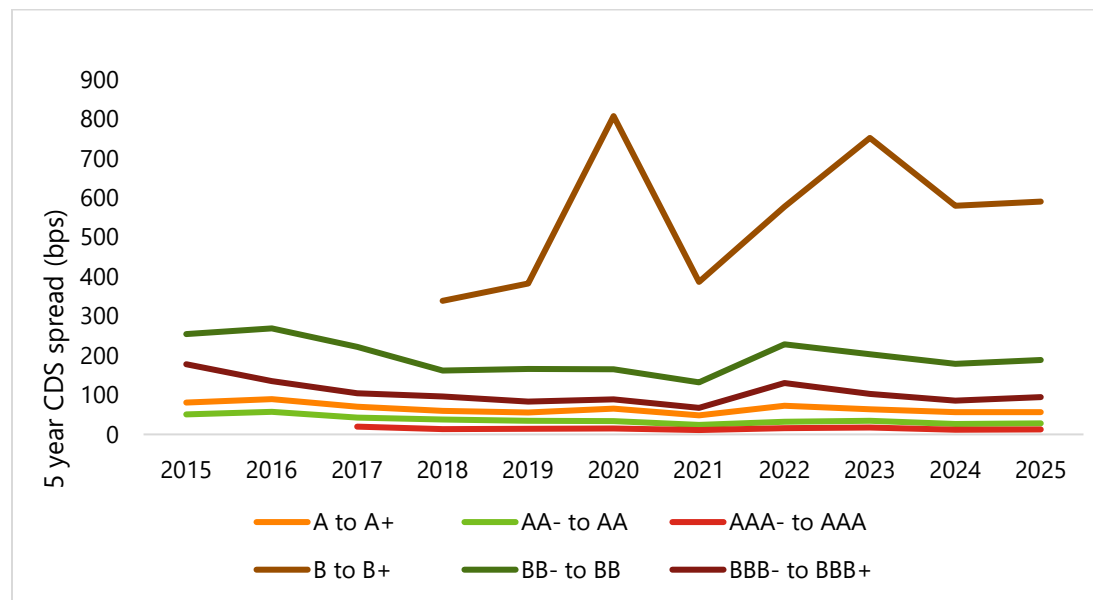
Macrostructural reforms are instrumental in reducing the economy-wide cost of capital, thereby stimulating private investment flows including for climate-related purposes. Macrostructural reforms broadly support broad economic development and productive financial inflows²⁰ by lowering cost of capital and further risks for investors.

²⁰ As analyzed by Jaumotte et al. (2024), structural factors such as trade and capital openness, adherence to the rule of law, and human capital account for cross-country variations in "green" foreign direct investment (FDI) inflows among EMDEs (refer to figure 6). These results are concordant with those of Budina and others 2023 indicating advancements in structural reforms generally lead to increased net FDI inflows.

In Figure 1, CDS spreads from 2015–2025 clearly illustrate that low sovereign risk (low CDS) equals a low cost of capital, evidenced by the stability of investment-grade spreads (under 100 bps). Conversely, high sovereign risk (high CDS) means a high cost of capital, as B-rated sovereign spreads displayed extreme volatility, surging near 800 bps during crises. This sovereign risk establishes the national "risk floor", making high, unstable spreads an important risk premium anchor for all domestic commercial debt and projects.

Strengthened macroeconomic stability (for example, contained inflation, debt sustainability) and improving governance (including control of corruption, rule of law, and policy predictability) both are requirements for a well-functioning economy. Furthermore, the external sector (including exchange rate stability) is important to attract foreign investment flows. Domestically, increasing local financing through robust financial intermediation, alongside the development of domestic capital and credit market development, is instrumental to efficiently allocating both domestic and international capital. Business regulation, such as market liberalization, energy market reforms, and reducing administrative requirements, could reduce the cost of doing business and associated regulatory risks especially in countries where institutions are relatively strong.²¹ Altogether, these reforms help reduce perceived investor risk and lower the cost of doing business —e.g., cost of capital, including for climate projects²² — resulting in a larger number of climate projects supported by private finance (IMF, 2015; Budina et al., 2023) and benefit a country's climate agenda (Ameli et al., 2021). Table 2 provides examples of reforms that help reduce economy-wide cost of capital, including for climate-related objectives.

Figure 1. Elevated Sovereign Risk Raises Borrowing Costs: CDS Spreads by Credit Rating (Average Sovereign CDS Spreads by Credit Rating Category)



Source: S&P Capital IQ, Bloomberg, IMF staff

²¹ At the project level, these risks include unclear goals, uneven policy implementation, insufficient regulations, or cumbersome procedures for obtaining project permits, which raise risk perceptions and cause investors to demand greater projected returns on investment or divert their investment (IEA 2024).

²² The business model of low-carbon technologies (e.g., renewable energy capacity, grids) and critical mining investments is intensive in capital expenditure and entails high upfront capital costs. By contrast, the cost structure of high-carbon technologies is tilted toward operational expenditure, and firms can use current revenues to pay for fuel. This makes the low-carbon technologies relatively more sensitive to increases in the cost of capital—and to interest rates (Gardes-Landolfini and al. 2023, IEA 2024).

Table 2. Examples of measures that support general economic development as well as climate-related investment.

Reform area	Example Reform Objectives
Macroeconomic stability	Low and stable inflation Debt sustainability
Governance	Control of corruption Rule of law Political stability (absence of violence) Regulatory quality / policy predictability
External sector	Exchange rate stability Trade and capital market openness
Business regulation	Market liberalization in climate-relevant sectors (e.g., energy, agriculture) Reducing administrative requirements / bureaucracy costs
Financial regulation	Financial market development (capital and credit) Improving interest rate controls

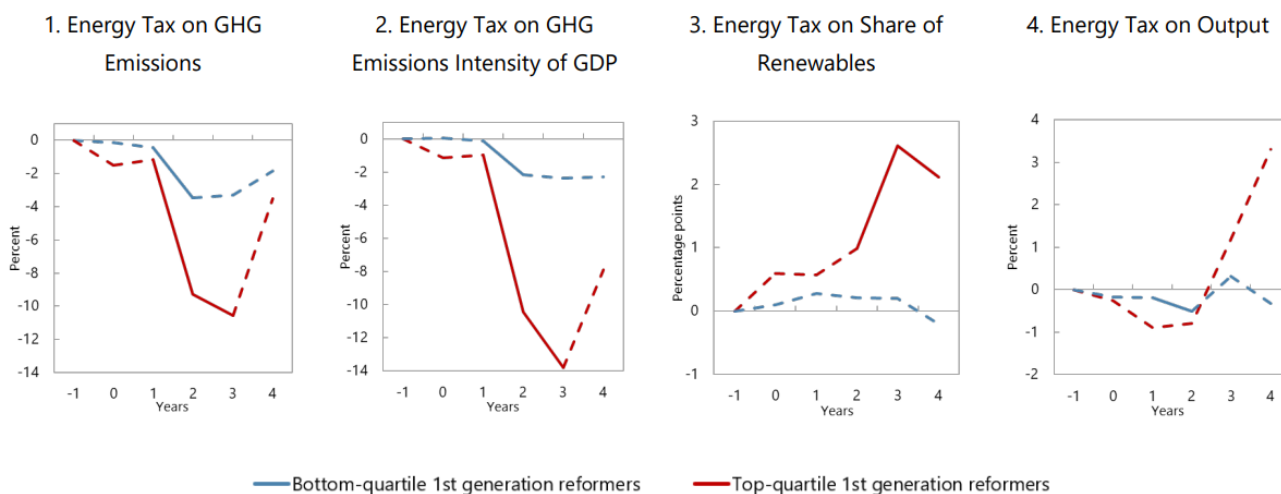
Source: adapted from Budina et al. (2023); IMF staff

Besides directly stimulating investment, structural reforms have the potential to make other policies more effective, including climate policies. For example, Budina et al. (2023) show that some climate policies such as energy taxes are more effective at decarbonizing the economy when preceded by macrostructural reforms. Figure 2 shows that the effect of energy taxation on GHG emissions and the share of renewables is moderated by the degree to which EMDEs have made progress with first-generation structural reforms. Findings show that compared with countries in the bottom-quartile of reform, countries in the top-quartile are more effective in implementing energy tax (with higher tax implemented and lower emission as results, Figure 2.1, 2.2, 2.3), and the impacts on outputs are not significant (Figure 2.4). Hence, without sound macrostructural foundations, climate measures are less likely to deliver on their intended outcomes. Moreover, especially in cases where structural reforms also make “brown” investment more attractive, there is a need for complementary reforms to address the relative attractiveness of “brown” versus “green” investments²³ – for example by implementing climate measures. Heterogeneity in economic conditions demands tailoring of countries’ macroeconomic policy and reform agendas. For instance, in countries with high debt or external vulnerabilities, more stable foreign direct investment may be preferable to more volatile debt flows. This would require prioritizing policies to improve the business environment and governance. On the other hand, large emerging markets, with greater

²³ In addition, investments in high-carbon or “brown” assets carry significant risks of lock-in, asset stranding, and crowding out “green” investment. “Brown” assets are also increasingly exposed to the risk of stranding as climate policies and market shifts make them economically unviable before the end of their expected lifetimes, potentially generating substantial financial losses. Moreover, capital allocated to “brown” projects can crowd out “green” investment by diverting scarce financial resources away from renewable energy, energy efficiency, and sustainable infrastructure, slowing the pace of the low-carbon transition and increasing the overall cost of achieving climate goals (Kemp-Benedict 2014, Semmler and others 2024).

macroeconomic stability and market access could prioritize financial market development and market liberalization to better incentivize climate finance flows.

Figure 2. Impact of Green Reforms Conditional on Structural Reform Gaps



Sources: Climate Watch; Fraser Institute; IMF, Climate Change Indicators Dashboard; IMF, *World Economic Outlook*; Our World in Data; World Bank; and IMF staff calculations.

Note: $t = 0$ is the year of the shock. The lines denote the response to a major historical change in the energy tax revenues-to-GDP ratio (two standard deviations, or 0.7 percentage point of GDP). The dashed line indicates statistical insignificance. The analysis is based on the full sample, which is made up of 72 EMDEs. The first-generation reform index is the simple average of governance, external sector, and business regulation reforms. We show the impact of climate policy stringency conditional on structural gaps in first-generation reforms. The energy tax shock is measured as the change in the residual term from an equation that regresses the energy tax revenue-to-GDP ratio on current and past growth (1 and 2 lags). See Annex 1, Section 1.2, for details. EMDEs = emerging market and developing economies; GHG = greenhouse gas.

Finally, public investment management reforms can support the creation of a pipeline of bankable projects which could attract private sector participation – either through PPPs or projects related to the public investments (as part of the entire ecosystem).²⁴ Key steps to create a project pipeline (and obtain private investor trust) are establishing a strategic project pipeline as the single-entry point for public investment, robust project appraisal and selection, open and transparent procurement, and dedicated institutional capacity for project preparation and project management (Eltokhy et al, 2024). Such reforms are especially relevant for LICs with a relatively large reliance on public sector investments.

Climate Measures

Strengthened climate measures aim to correct market failure and level the playing field for low-carbon projects. Well designed, communicated, and implemented climate measures can alter relative prices across different asset types, in a manner that provides policy certainty and helps secure large and front-loaded investments. Along with macro-structural reforms, climate measures enhance the profitability of climate-related projects and further improve the risk-return profiles of such projects. Effectively, they expand the range of viable projects for private investors and reduce the need for concessional financing. Different climate measures can be considered depending on the type of market failures (Table 3).

²⁴ In terms of the conceptual framework in Box 2, this would expand the set of feasible projects.

Price-based measures: Pricing measures are considered a cornerstone of climate reform packages and are often considered for their economic efficiency (e.g., de Mooij et al. 2012). Examples of price-based climate measures include carbon taxes, emission trading systems, and the phasing out of fossil fuel subsidies, where revenues/savings could potentially finance social protection tailored to benefit the most vulnerable during the energy transition and for investments in climate resilience.²⁵ IMF research estimates that fossil fuel price reform could reduce global carbon dioxide emissions to an estimated 43 percent below baseline levels in 2030, raise revenues worth 3.6 percent of global GDP, and prevent 1.6 million local air pollution deaths per year (Black and others 2023).

Non-price-based climate measures: These entail regulations (such as zoning laws supporting energy efficiency), emission/technology standards, climate policy roadmaps, building standards, and disclosure policies (Pryor and others 2023). They address technology market failures and informational, behavioral, and financial barriers. Risks related to current and future climate measures can be reduced through well-communicated and gradually phased-in climate strategies. A reform roadmap would envisage mid- to long-term climate measures, targets and the timing of implementation, backed by reliable data and project preparation (IEA 2024a) and compassing milestones and integrated planning for investment. Such a roadmap provides policy certainty that is necessary for transformation in the productive structure of the economy and help commit relatively large, front-loaded investments for the transition. In this context, the needed change in the underlying financial asset structure warrants a key role for financial sector policy tools (I4CE, 2023, UNCTAD, 2023)²⁶. These entail measures to change the demand for low-carbon and high-emission investments and relative prices, and to adequately assess climate-related risks, leading to lower credit risk and improved liquidity within the financial system (D’Orazio 2025, FSB, 2025a).

Table 3. Types of climate measures and typical instruments

Climate measures	Type of measure	Type of market failure	Examples of instruments
Price-based measures	Carbon pricing	Direct carbon pricing	Carbon taxes Emission Trading Systems Carbon crediting mechanisms Tradable performance standards
		Indirect carbon pricing	Fuel (excise) taxes Fuel subsidies (consumption) VAT deviations (VAT differential on fuels) Fossil fuel subsidies (production)
	Technology and production incentives	Renewable support	Feed-in tariffs, technology development subsidies.
		Other taxes and tradable standards	Clean energy standards, tradable renewable portfolio standards, energy efficiency tax credits, VAT differential on machinery, vehicle taxes.

²⁵ Removal of explicit subsidies would be more than sufficient to cover the substantial adaptation costs, for example, in the Middle East and Central Asia Region (Duenwald et al., 2022), as well as just transition mechanisms.

²⁶ The COP28 agreement “recognizes the role of the private sector and highlights the need to strengthen policy guidance, incentives, regulations and enabling conditions to reach the scale of investments required to achieve a global transition towards low greenhouse gas emissions and climate-resilient development” (paragraph 70, UNFCCC, First Global Stocktake, December 2023).

Non-price-based measures	Standards (non-tradable) and other regulations	Information, behavioral and financial barriers	Technology mandates, air pollution standards, fertilizer regulations, fuel efficiency, energy efficiency, building codes.
	Public investment		Public transportation infrastructure, other infrastructure for innovation.
	Information and financial sector policies	Information, behavioral and financial barriers	Certification, product labeling and rating (both financial and non-financial). Climate information architecture, including transition taxonomies and plans, disclosures. Financial market conduct and prudential policies.

Source: adapted from Pryor et al. (2023); IMF staff

An important category of non-pricing measures involves financial sector policies, including the development of a “prerequisite” policy package often referred to as the climate information architecture. It consists of three-tier components: (i) robust climate-related backward- and forward-looking data²⁷, (ii) a harmonized set of climate-related disclosure requirements, that are embedded into law and/or regulations and often supported by standards on relevant indicators and metrics to use to disclose²⁸, and (iii) transition taxonomies and plans, supported (or not) by mandatory disclosure requirements (IMF, 2023a) (see box 1). Enhanced climate data quality and comprehensive disclosure and taxonomies reduce information asymmetry, enabling dynamic, forward-looking climate risk analysis to help assess financial risks from disorderly transitions, such as stranded assets and greenwashing. Building on the climate information architecture, prudential policies and supervisory guidance can lead to better climate risk identification, pricing, and management.²⁹ This in turn can support the revision of the cost of capital for high and low carbon investments (Zhou and others 2024, Monasterolo et al., 2022). Therefore, these measures can help stabilize balance of payments by enabling more investment in “green” and transitioning sectors and exports/imports (supported by policy certainty), improving access to international finance for low-carbon and climate-resilient activities and projects and addressing the broader management of climate-related risks within the economy and financial sector (Alessi and Battiston 2022).

Furthermore, conduct and other financial sector policies can support the development of sustainable financial securities while ensuring the integrity of sustainability of climate-related claims, including addressing the risk of greenwashing.³⁰ They also include improving governance frameworks of non-financial and financial companies

²⁷ Climate-related financial data is a cornerstone of macroeconomic and financial stability. In this context, the IMF’s Data Standards Initiatives function as a rigorous transparency framework, ensuring that countries aiming for capital market access publish economic data with the discipline and timeliness investors demand. Since the tenth review in 2022, this initiative has evolved to explicitly include climate metrics - such as fossil fuel subsidies and financial risk indicators - as an encouraged category for all participants. By bridging the gap between raw environmental data and macroeconomic stability analysis through the Climate Change Indicators Dashboard, the Fund also provides the technical assistance, statistical databases, and global standards necessary to turn abstract climate variables into actionable financial insights. Ultimately, this work allows countries to close critical data gaps, strengthening their ability to analyze climate-related investment needs and manage climate-related financial risks.

²⁸ Disclosures and labels for financial instruments should also be refocused on climate impact and include adaptation (IMF 2023).

²⁹ Gasparini and al. 2024 identify a bias towards high-carbon assets that probably emerges from the backward-looking nature of risk estimates that affects the assessment of firms’ creditworthiness (i.e., using risk models that rely on the historical relationship between a firm’s financial performance and past risk as a predictor of future risk). As these models and underlying data foundations are ill-suited to capturing uncertain macro-economic outcomes, there is a need to develop robust forward-looking data and scenario analysis (Gardes-Landolfini and al. 2023, NGFS 2023), as well as to assess the effectiveness of existing financial regulations to identify and manage systemic sources of risk.

³⁰ Greenwashing refers to risks of misleading sustainability claims occurring and deceiving investors in their decisions. Yet, “pledges about future ESG performance, in particular net-zero commitments and so-called ‘transition plans’ are exposed to greenwashing risk.” (ESMA 2024). In this context, there is a close connection between the need to ensure the quality of climate-related and sustainability disclosures and the development of a robust transition finance framework. If fragmented, ultimately alignment approaches would miss the overriding aim of article 2.1c of the Paris Agreement (IMF 2023).

and strengthening the consideration of climate-related factors in corporate and sovereign credit risk ratings and address their welfare bias (Agawarla et al. 2022, IMF, 2023a, Gratcheva and Gurhy, 2024, NGFS, 2024). Finally, for AE financial regulators it is increasingly important to assess whether existing financial regulations are inadvertently obstructing scaling up flows of investment for sustainable assets in EMDEs (Lankes and Robins, 2023, Gasparini et al. 2024).

Blended Finance

When risk-return profiles are such that projects or portfolios cannot be fully privately financed despite price- and non-priced based reform development, blended financing can be explored. Blended finance is a strategic approach that combines different types of capital—private capital (agents seeking commercial return on behalf of principals, such as asset managers, endowments and commercial banks), development finance (focused on both financial and impact returns, often from institutions like MDBs and DFIs), and public capital (typically concessional funds from sources like ODA and philanthropies)—to achieve development and policy objectives (NGFS 2023). By strategically using public and development capital to mitigate risk and improve the return profile, blended finance mobilizes significantly more private capital toward projects that contribute to sustainable development, often facilitated through dedicated platforms and alliance (e.g., Convergence, G20 Bali Global Blended Finance Alliance, Sustainable Development Investment Partnership).

Although definitions differ within the blended finance ecosystem, blended finance structures typically refer to the strategic use of a limited number of concessional resources to mobilize financing from public and private financial institutions, among others to achieve climate impacts (NGFS, 2023). In most cases, the objective is to provide market returns for private investors, while supporting those projects that provide the highest social returns (for climate change transition/mitigation, this relates to GHG emission reduction of respective projects; for climate adaptation, it relates to climate risk and cost reduction of projects (OECD 2025a). For instance, portfolio-level blending involves creating a fund that uses public resources to attract private capital and then finances a portfolio of debt and/or equity investments. Project-level blending may involve employing public capital to provide a guarantee or first-loss investment to raise private instruments to an investment grade status by reducing risk (see Annex II for greater detail on blended finance instruments). Although blended finance is still nascent (with blended finance infrastructure deals attracting 40 cents of private capital for every \$1 worth of public or philanthropic money during 2013–2023 (World Bank 2024)), it aims at improving the risk–reward profile of investments and thereby broadening the range of private investors (IMF 2023a).

Since concessional funds are scarce, a key challenge with blended finance is to provide the minimum support necessary to make projects commercially viable and attract as much private finance as possible. Building appropriate governance and institutional capacity are also critical, especially for public-private partnerships (see box 2). Ultimately, while the deployment of concessional equity capital allows to maximize risk absorption capacity and catalyze private climate finance, blended finance structures may be optimized based on specific project and country circumstances (use of debt vs equity, loans vs guarantees, securitization and tranching, etc.) (IMF, 2022). A fund structured with public equity and private sector debt could provide further scale and diversification benefits (Prasad et al., 2022).

In addition, National Development Banks (NDBs) are also uniquely positioned to address market failures and mobilize private capital due to their deep understanding of a country's economic structure and developmental priorities. By leveraging this detailed knowledge, they can effectively mitigate the perceived risks of long-term and high-impact projects, thereby making them more attractive to private investors (Mariotti and others 2025).

NDBs also employ a range of collaborative instruments, including co-financing, risk-sharing mechanisms like partial credit guarantees, and blended finance to de-risk projects and crowd-in private investment. This strategic collaboration is crucial for financing critical sectors such as infrastructure and renewable energy, where the long payback periods and high initial capital outlays often deter commercial banks. Ultimately, NDBs can act as a pivotal bridge between public policy and private capital, channeling funds toward sustainable and inclusive economic development goals (Mazzucato, 2013)

A key challenge with blended financing structures is that they may elevate fiscal risks, especially in the event of the deterioration of the fiscal outlook and high levels of public debt. While blended finance offers promising avenue to catalyze needed private finance, governments need to stay vigilant to potential fiscal risks stemming from either additional fiscal burden or the mismanagement of public finance per se. Sometimes, these risks can be partially and proactively mitigated by maturing the public finance management system, and guidance from relevant global partnerships³¹ could help balancing the effectiveness of the instruments against fiscal costs. Meanwhile, relying mostly on macro-structural reforms and climate measures as described above—reducing the cost of capital and increasing profitability of climate project that lower the proportion of public financing in the blend—are still essential strategies to mobilize private finance for climate.

Such instruments, not unique to climate projects, are intended for investments facing structural financing gaps. As Figure 1.2 above shows, without robust macro-structural reforms and climate measures, reliance on blended finance becomes increasingly costly. It could therefore be reserved for particularly challenging projects - such as those with long payback periods, high upfront capital intensity, or significant demand uncertainty - where market solutions are insufficient, ensuring country authorities prioritize reforms that lower the cost of capital and boost project profitability before deploying costly public funds.

Box 3. Country Platforms as a Solution to Scale Financing

Objectives and Role of Country Platforms

Country platforms have emerged as a transformative approach to scaling financing for development and climate action³². They consist of three key elements: a political agreement that underpins a shared plan, the alignment of international finance with this plan, and the acceleration of climate action (Hadley and others 2022). These platforms represent a continuation of the “development effectiveness” agenda, as highlighted by the G20 Eminent Persons Group on Global Financial Governance in 2018³³ (G20 EPG 2018, Finance for Development Lab and C3A 2025).

³¹ Such as the Organization for Economic Co-operation and Development’s Development Assistance Committee Blended Finance Principles, the Development Finance Institution Working Group on Blended Concessional Finance, and the Global Network for Blended Finance.

³² Recent literature identifies three generations of platforms. The first includes Just Energy Transition Partnerships (JETPs), which focus on sector-specific approaches requiring strong capacity for long-term planning and political commitment from national authorities, as seen in South Africa, Indonesia, Vietnam, and Senegal. Following JETPs, more targeted platforms like Egypt’s Nexus for Water, Food, and Energy program have emerged. A potential third generation is now developing, aiming to transform national economies to meet climate and development goals. An initiative part of the Sevilla Platform for Action has been launched at the Fourth International Conference on Financing for Development in July 2025, to scale country-driven approaches to financing sustainable development and climate action, including with actionable finance strategies (Integrated National Financing Frameworks) and country platforms to deliver on nationally identified priorities.

³³ The document emphasized the need to establish effective country platforms to mobilize development partners and unlock investments, ensure government ownership and flexibility in partnerships, as well as coordinated operations between partners to enhance private sector investment and lower associated costs, and the development of regional platforms for cross-border projects to improve connectivity and create new supply chains.

At the country level, effective platforms depend on a high-ambition government plan that integrates well-coordinated³⁴ planning and budgeting capacities. This is bolstered by detailed investment objectives that development partners can endorse. Such alignment is crucial for enhancing effectiveness, removing key constraints, and matching domestically determined needs with institutions that possess varying capacities and risk appetites. A vital aspect of this strategy is the involvement of the private sector, which is essential for revitalizing efforts to scale up blended finance. By integrating private investors early and ensuring financial coordination with development partners, country platforms can significantly enhance their impact (Finance for Development Lab and C3A 2025). The overarching aim is to provide countries with a package of concessional financing that supports their goals while simultaneously aiding debt relief and enhancing aid effectiveness.

Enabling conditions to support successful country platforms during the design, planning, and implementation stages include adopting a programmatic approach and transition planning that links development strategies, NDCs, NAPs, and long-term strategies (LTS). Building institutional capacity and government arrangements is essential, as is ensuring whole-of-government and whole-of-society consultation to maintain political alignment and establish key performance indicators. This is increasingly achieved through convergence around core principles while retaining the flexibility to adapt to local contexts, thereby avoiding a one-size-fits-all solution³⁵ (Gul and others 2025, Kelsall and others 2024). This is why country platforms can vary from broad national programs to narrower, sector-specific partnerships, all emphasizing country partnership and coordinated finance (Gul and others 2025).³⁶

Country Examples

At the end of 2023, a Climate and Development Platform for Bangladesh was activated to enhance the nation's capacity to mitigate and adapt to the impacts of climate change (IMF, 2023). In December 2023, North Macedonia announced the establishment of an in-country platform to expedite a just energy transition, signing a partnership agreement as part of the Just Energy Transition Investment Platform³⁷. This initiative aims to adopt a programmatic approach through targeted, large-scale investments, ensuring an equitable low-carbon transition that utilizes concessional finance to promote inclusive growth.

Similarly, Brazil launched its platform in October 2024³⁸. This overarching ecological transformation plan incorporates taxonomy design, carbon market development, sovereign green bond issuance, and industrial policies. Coordinated by a dedicated task force that includes the ministries of finance, environment, foreign affairs, and the national development bank, the platform aligns with the country's broader plans and sub-

³⁴ Ministries of Finance and Development and/or Planning serve as key enablers and coordinators, collaborating with line ministries like the Ministry of Environment and regulatory bodies. They coordinate investment plans across sectors while mobilizing various tools and frameworks, including regulatory measures. The development of country platforms aims for a systemic financing approach that engages national and international actors.

³⁵ While there are several vertical and horizontal configurations of governance structures for country platforms (figure 1 in Gul and others 2025), they contribute to moving away from fragmented sector-specific, donor-driven projects toward programmatic financing that harmonizes access, and reporting processes and supports national and local strategies over the long term.

³⁶ Gul and others 2025 develop a typology of country platforms: comprehensive climate and development platforms (multi-sectors, aligning mitigation and adaptation pipelines with development goals), thematic or sectoral platforms (sectors with potential for scaling), climate domestic funds coordinating donor and national resources, and global and regional program-anchored country platforms. Their maturity levels still greatly differ.

³⁷ More information can be retrieved at: [CIF Approves \\$85 Million to Launch North Macedonia Coal Phase-Out | CIF News | Climate Investment Funds](#)

³⁸ More information can be retrieved at: [Brazil Climate and Ecological Transformation Platform - BIP — Ministério da Fazenda](#)

sectoral strategies. It focuses on advanced projects that can attract external funding, particularly from development partners and institutional investors (e.g., seven projects with a total investment target of \$10 billion, concentrating on energy, industry, mobility, and nature-based solutions, many of which may benefit from blended finance - such as green hydrogen, offshore wind, and biofuels). Projects are aimed to align with Brazil's Ecological Transformation Plan, Climate Plan, New Industry Brazil, and National Energy Transition Plan, with the taxonomy design playing a pivotal role. Additionally, they require substantial capital and support from the platform to effectively raise funds while providing socio-economic co-benefits, such as job creation and improved quality of life.

Colombia has also made strides by launching its country platform in January 2025³⁹, featuring 316 projects with a funding goal of \$38 million aimed at facilitating a socio-ecological transition. The objectives of this initiative include decarbonizing key sectors, particularly in energy and transportation; attracting private climate finance through a stable regulatory framework; and promoting social inclusion to ensure a just transition across all public policies, focusing on labor equality and climate justice. The platform will rely on guarantees and concessional financing, supported by inter-ministerial and inter-sectoral coordination, with a focus on capacity development for both the public and private sectors, including local communities and sub-national levels.

The IMF has recently played a role in advancing the development of country platforms within the Resilience and Sustainability Facility (RSF) framework ([Diallo and others, 2026](#)). By facilitating macro-critical policy reforms (fiscal, sectoral and financial), the RSF creates a conducive environment for climate finance, enhancing economic stability. Its capacity development activities empower national authorities with the necessary skills and institutional frameworks to effectively manage climate-related challenges. Additionally, the IMF convenes stakeholders through roundtables that foster dialogue across country authorities, international organizations, and the private sector, enabling collaborative identification of climate finance solutions. As of May 2026, such roundtables have taken place in various countries, including Barbados, Rwanda, Costa Rica, Jamaica, Bangladesh, Senegal, Kenya, Côte d'Ivoire, Benin, Papua New Guinea, Madagascar, and The Gambia. This multi-faceted approach not only unifies efforts to overcome barriers to climate financing but also enhances transparency around national climate priorities.

The Role of Budget and International Concessional Financing

While many macrostructural and climate measures can be budget neutral – or even budget positive – most blended financing mechanisms, as well as some climate measures, may require the use of public resources. For governments, this involves both policy choices as well as selecting the appropriate financial instruments to fund the projects. Depending on the nature of the project, the risk-return profile and available fiscal space, governments have access to a range of viable instruments. In projects which do not produce commercially attractive returns, blended finance can be used, i.e., utilizing public funds to crowd in private finance, by providing grants, concessional debt or guarantees. The role of these instruments is to transfer the minimum level of financial value required to make these projects commercially attractive, thus scaling up the finance

³⁹ More information can be retrieved at: [Colombia Launches the Country Platform in Washington, D.C.](#)

provided by governments.⁴⁰ There may also be a need to finance fully public projects in case of public or social goods, such as certain types of public infrastructure and early-stage research and development projects which have very limited near- and medium-term cash flows. Where resources are available or can be raised domestically, the government can directly fund these investments. However, when domestic fiscal space is limited, concessional funding from bilateral or multilateral partners will be needed to fill the gap. Public resources originate chiefly from the domestic public budget or from international concessional sources, such as from MDBs and other donors. Currently, EMDE climate investments are largely financed domestically (CPI 2022) while international concessional climate financing has only just passed the goal of US\$ 100 billion annually. However, rising climate investment needs—at least 12 percent of total EMDE investments (relative to the current 3 percent; IMF 2023a)—will soon far exceed available domestic public or private financing capacity (Prasad and others 2022). In fact, high private sector debt and capital costs (IMF 2023c) will weigh on the cost of capital, reducing the range of projects that could be financed by the private sector. Meanwhile, most EMDE governments are facing even more challenging situations with respect to high debt levels and rising interest rates, which magnifies macro-financial risks. Fiscal space for climate spending is further narrowed by competing spending needs, especially for economic and social development. Meanwhile implementation of macro-structural reforms and climate measures that could enhance private and blended climate finance, takes time. Part of this could be obtained by redirecting public fossil fuel investments (in the case of, for example, state owned enterprises) and by phasing out fossil fuel subsidies. The IEA estimates that up to \$1 trillion of funds could be available from phasing out from fossil fuel subsidies and an additional \$726 billion from redirecting fossil fuel investments (although for the most part, those are private in nature, Table 4).

Table 4. Potential Funds Available for Green and Resilience Investments by Repricing Carbon

Source	Amount	Source
Redirecting fossil fuel investments	Up to \$726 billion (2020)	IEA estimates for 2020
Phasing out fossil fuel subsidies	Up to \$1 trillion (2022) Up to \$750 billion (2010–21)	IEA estimates for 2022 and between 2010 and 2021 (only consumption subsidies)
Phasing out fossil fuel subsidies and including potential carbon price revenues	Up to \$7 trillion (2022)	IMF estimates for 2022 (includes implicit environmental costs and foregone carbon taxes)

Source: IMF staff; International Energy Agency (IEA).

Note: G20 = Group of Twenty; IEA = International Energy Agency.

⁴⁰ Among others, IMF 2023a estimates that with appropriate policies, EMDE government budget and international concessional financing for climate projects can be scaled up by 50 percent, with the remaining financing coming from the private sector. Separately, the IEA estimates that around \$100 billion annually in blended finance structures will be necessary to meet net zero targets for the energy sector in EMDEs. The G20 Independent Expert Group (IEG) estimates that climate challenges and progress towards sustainable development goals (SDGs) requires an additional \$3 trillion annually over the 2030 horizon. To complement official development assistance and private capital inflows, around \$2 trillion annually would need to come from the domestic public sector's budget.

The development of innovative financial instruments could play a role in increasing the flow of concessional finance; however, it does not seem to provide a silver bullet. Debt for climate swaps are being explored, which are partial debt relief operations conditional on debtor commitments to undertake climate-related investments. However, such swaps are generally considered a less efficient form of support than conditional grants and/or broad debt restructuring (Chamon and others 2022). Yet, in some circumstances they can help expand fiscal space and provide an alternative mechanism for climate finance flows when grants and concessional resources are not available. Another example is the use of pay-for-success instruments, such as environmental impact bonds, which tie financial return on investment to the climate-related environmental success of the intervention (Brand and others 2021), or outcome-based instruments, such as sustainability-linked sovereign debt instruments, that feature a contractually agreed sustainability performance target based on a key performance indicator, such as through a covenant linking the coupon of the bond (IMF 2022). These instruments face a variety of implementation challenges while there are essential regulatory and institutional prerequisites needed for them to operate effectively and achieve the intended scale. Annex II elaborates on innovative finance instruments.

Conclusion

This paper has outlined a menu of options which help EMDE governments increase private finance flows in order to support climate investments. We focus on three types of interventions, each related to a specific challenge to investors: (i) macro-structural reforms to reduce the economy-wide cost of capital, (ii) climate measures to improve profitability and reduce the cost of capital of low-carbon and sustainable projects, and (iii) blended financing to crowd-in private investments, thus leveraging concessional public resources. Climate financial sector measures are complementary to other non-pricing and pricing measures and need to be supported by credible climate strategies, commitments, and plans as those impact the cost of capital.

Undertaking climate investments at the required speed and scale is subject to several constraints: (a) while the long term impact of structural reforms on growth and investments is significant, implementation takes time, (b) climate measures impact sectoral investment decisions, as well as incomes and consumption, and must be timed appropriately to mitigate impacts on vulnerable sections of the population, and (c) fiscal sustainability concerns limit the quantum of public finance available both for direct investment and use in blended finance instruments.

Thus, the appropriate choice of instruments will require an understanding of country-level climate risks and climate priorities, as well as relevant sectors and investments. Building a project pipeline, with appropriate sequencing of investments is essential to avoid large-scale disruptions to the economy. In most cases, robust frameworks with ambitious and credible targets are a key pillar to attract private investments to “green” projects. Beyond the heterogeneity of climate needs, macroeconomic circumstances - including public fiscal space, the availability of official financial flows and the access to international financial markets - would shape countries’ financing mix. The balance of private financing versus public financing may differ across jurisdictions. For example, EMDEs with relatively strong state capacity, at or close to middle-income level, and with markets access, are likely to gain more from private capital mobilization. For smaller LICs with weaker capacity, where private financing may come with increased risks (such as boom-bust cycles in financing), public investment efficiency and official aid may be prioritized (Prasad et al., 2022; Eyraud et al., 2021). Finally, EMDEs commonly have broader development needs beyond climate. Measures to achieve climate targets (and attract

climate financing) could hence also be evaluated in terms of their effects on other country-specific development objectives.

Two important areas for future research are measuring the effectiveness of different instrument combinations and appropriately sequencing them for varied country circumstances. The effectiveness of specific measures (both macro-structural and climate-related) in raising climate finance could be further explored, allowing instruments to be ranked by effectiveness and scope. These would include financial sector policies (and more specifically the role of financial regulation and accounting rules) and the extent to which they sufficiently account for emerging sources of systemic risk. Future work could also examine global coordination on allocating international concessional financing, particularly in the context of fiscal constraints faced by advanced economies. Similarly, better understanding of domestic revenue mobilization, as well as ways for targeting government spending towards climate goals, will be essential. This analysis could be further refined to distinguish between measures most conducive to financing adaptation versus transition, including in the financial sector. Finally, given the large range of competing development needs, further work can be done on how to prioritize climate finance needs in the context of broader financing needs.

Annex 1. Estimating climate finance needs and barriers to scale up climate finance in EMDEs.

Estimating climate finance needs involves substantial uncertainties, and the scope of these estimations vary depending on their intended uses. But commonly used approaches broadly suggest that EMDE's annual financing needs are in the magnitude of trillions by mid-century⁴¹. The tables below outline the degrees of variation and the extent of convergence on the broad magnitudes⁴².

EMDE investment needs for transition make up about one-third of global needs, ranging from above US\$1 trillion to US\$4 trillion per year (Table A1).⁴³ Taking a broader view, which includes energy and land use systems, the needs could be several times higher, estimated at US\$4 trillion (McKinsey 2022). Garnering this level of financing is extremely challenging for EMDEs, as detailed in section 1 of this paper, especially as most face substantially high capital costs, which reflect investors' risk perceptions on a series of economic and political conditions, such as the exchange rate, institutional quality, and general investment climate. Repurposing EMDE fossil fuel subsidies toward low-emission assets could be part of the solution, where global spending on fossil fuel subsidies, concentrated in EMDEs, amounts to US\$1 trillion annually (IEA 2023).

Table A1. Investment Needs for Transition in Emerging Market and Developing Economies⁴⁴

Range (per year)	Scenario	Time Period	Source	Note
US\$1.4–US\$1.9 trillion	Net-zero by 2050	Through 2030	IEA and IFC (2023)	Energy only, based on achieving SDG 7 by 2030 (excluding China)
US \$1.3 -US\$1.7 trillion	1.5 C target	Through 2030	Songwe et al. (2022)	Energy only.
				Investment needs for energy transformation, including renewable energy expansion, investment in infrastructure, productivity improvement and decarbonizing end-use, green hydrogen, and cost

⁴¹ These include all non-advanced economies as EMDEs, with LICs representing a subset of 70 countries.

⁴² The UNFCCC Standing Committee on Finance published a first report on the determination of the needs of developing country parties related to implementing the Convention and the Paris Agreement in 2020. EMDEs identify their adaptation and mitigation needs in their national reports, adhering to UNFCCC guidelines and other methodologies tailored to their context. While methodologies used include quantitative and qualitative approaches, there are regional variations to identify finance, technology development, and capacity-building needs. The report identifies challenges (data inconsistencies, gaps and interpretation, coordination issues, and costing needs) and opportunities (support from institutions, platforms for sharing experiences, and initiatives for needs identification). Further work has been launched by the Standing Committee on Finance in the spring of 2024.

Available here: [Determination of the needs of developing country Parties | UNFCCC](#)

⁴³ These estimates are based on "gross" needs of clean energy investment. The "net" investment needs for specific climate target (e.g., net-zero by 2050), on the other hand, refer to the amount above the clean energy investment baseline (e.g., stated policy), considering the reallocation of existing finance from fossil-fuel investments. Globally, the "net" investment needs for net-zero transition could be between 30 – 40 percent of the gross total (e.g., IEA, 2021; McKinsey, 2022).

⁴⁴ Estimates of climate investment needs vary depending on the models used, each of which is based on different underlying assumptions and methodologies (IMF 2023a - refer to Online Annex 3.1.: Estimates for Climate Investment Needs). Estimates of investment needs for mitigation are derived from energy and climate models with different degrees of complexity, meanwhile relying on a host of assumptions on the evolution of technologies and the associated costs. Depending on the climate and technology scenarios used, these models estimate investment needs for various sectors and regions under specific climate targets and emission trajectories. Other factors, such as demographic and economic growth trajectories, timelines, regional considerations, modeling approaches, as well as the framing of investment needs (i.e. whether they represent gross or net needs, depending on the intended uses of the estimation), all contribute to the uncertainties embedded in the estimates.

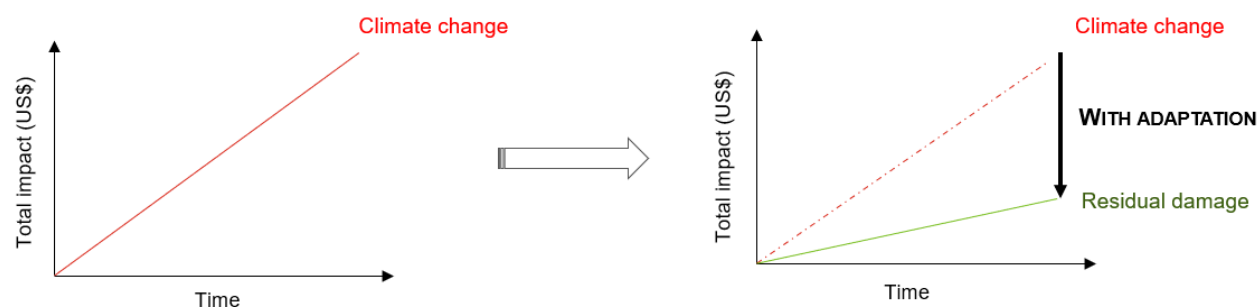
Range (per year)	Scenario	Time Period	Source	Note
				of phasing out coal (excluding China)
US\$1.4–US\$2.8 trillion	1.5–2 C target	Through 2030	IPCC (2022)	Across four sectors including energy efficiency, transport, electricity, and broad land use systems (Including China)
US\$3.9 trillion ⁴⁵	Net-zero by 2050	Through 2050	McKinsey (2022)	Total investment needs in fossil-fuel producing regions and developing countries (excluding China). Aggregate across seven energy and land use systems

Source: Compiled by IMF Staff.

Note: IEA = International Energy Agency; IFC = International Finance Corporation; IPCC = Intergovernmental Panel on Climate Change; SDG = Sustainable Development Goal.

Adaptation finance needs for EMDEs vary substantially across different estimates (Table A2), given large uncertainties around factors such as the timing of investments, the assumed climate change scenario, and methodological approaches used. The latest series of UNEP Adaptation Gap reports (2023, 2024, 2025) and CPI and GCA (2023) identified several major sources of uncertainties. Aligishiev and al. (2022) find global public adaptation needs are estimated to average about 0.25 per cent of world GDP annually, when restricted to adapting existing public assets and expanding small island state public assets. Meanwhile, self-assessments from countries (which include expanding currently scarce resilient public assets) often indicate significantly higher requirements - sometimes reaching 100 to 250 times the global average for certain lower-income vulnerable countries. In particular, adaptation finance needs tend to be higher when the implementation of global mitigation actions is insufficient or delayed, therefore they are closely linked to the warming trajectories (CPI, 2023) (figure 4). More specifically, the costs of adaptation can be assessed by estimating current and future climate change impacts and assessing the reduction in these impacts. However, there is a trade-off in the amount of adaptation undertaken, leading to residual damage costs. Increasing the quantity of adaptation leads to greater reductions in climate impacts and adaptation benefits, but also higher costs (UNEP, 2023).

Figure A1. Cost of inaction



Source: UNEP (2023)

⁴⁵ The total finance needs in developing countries are estimated to be 43 percent of global cost, which is US\$9.2 trillion in the same report.

Note: climate change impacts are for illustrative purposes, and don't show potential non-linearities and substantial uncertainties, especially related to potential tipping points.

In addition, estimates largely depend on how adaptation is framed, distinguishing between the need to adapt to current climate conditions versus potential future circumstances, and separating adaptation needs from overall development needs. Methodologically, regional or EMDE estimates also vary depending on whether the total is an aggregation of country-specific estimates of adaptation needs (“bottom-up” approach) or based on modeling exercises with underlying regional/global assumptions (“top-down” approach). Other methodological challenges include:

- Definitional variations that constrain comparability and transparency (given the wide range of adaptation solutions across sectors, different assumptions about future development levels, and different adaptation goals),
- Limited disclosures of resilient investments (given a lack of standards and disclosure requirements) and lack of impact metrics,
- Context dependency. Adaptation and resilience outcomes may highly depend on specific regional and/or local vulnerabilities, for instance depending on the spatial distribution of critical infrastructure, which makes it difficult to identify the expected outcomes of financial flows (Hallegatte and al. 2019). In addition, a limited understanding of adaptation goals complexifies credibility and tracking efforts.
- Institutional challenges may include confidentiality and data protection issues that may lead to under-reporting of intended objectives and achieved outcomes, fragmented data and reporting processes, and complex data collection organization.

Table A3. Investment Needs for Adaptation in Emerging Market and Developing Economies

Range (per year)	Time period	Source	Note
US\$250 billion	Through 2030	Bhattacharya, Songwe, Soubeyran and Stern (2024)	For EMDEs other than China.
US\$244 billion	Through 2030	UNEP (2023)	Aggregate costs over 12 sectors, including costs in developing countries, Least Developed Countries and Small Island Developing States
US\$417.2 billion ¹	Through 2030	Aligishiev, Massetti, and Bellon (2022)	Bottom-up aggregates. Strengthening resilience of infrastructure investment and stocks to current flood and storm risks as well as rising sea levels.
US\$764–US\$835 billion	Through 2030	UNFCCC 2021 on cost adaptation actions in NDCs	Bottom-up aggregates: summarizing cost information from 78 countries' own estimations.
US\$160–US\$340 billion	Through 2030	Sakai and others (2022)	Top-down, model-driven projections.
US\$315–US\$565 billion	Through 2050		Range depends on climate impact scenarios and other model assumptions.
US\$47–US\$1,088 billion (median \$295 billion a year)	Through 2050	IPCC (2022)	Summarizing projections from various sources. ² Range depends on climate impact scenarios and other model assumptions. The estimation includes very low estimations smaller than the current global goal for adaptation finance.

Source: Compiled by IMF Staff.

Note: IPCC = Intergovernmental Panel on Climate Change; NDCs = nationally determined contributions; UNFCCC = UN Framework Convention on Climate Change.

¹ Translated into US dollars from estimates of 0.6 percent of GDP for EMDEs.

² Including the UNEP projection from 2021.

1.C. Barriers to scale up climate finance in EMDEs

Barriers to deploy climate finance in EMDEs are significant (IMF 2023, NGFS 2023). The lack of an investment-grade sovereign credit rating for many EMDEs is a significant constraint to attracting private investment. Only about 60% of these markets and 8% of developing economies have an investment-grade rating, which serves as a benchmark for the credit rating of private entities. The distinction between instruments rated "investment grade" and those rated "below investment grade" is crucial in international capital markets, determining the potential investor base. Credit rating agencies do not reward middle- and lower-income countries that implement better climate measures, limiting the potential benefits of climate investments for credit ratings and financing costs. Capital allocation decisions of global financial institutions drive capital supply to EMDEs, and investors are concerned about perceived risk-return profiles, difficulties in navigating EMDEs' complexities, reputational risk, and stringent ESG regulations in advanced economies. Moreover, EMDEs lack well-structured, investable project pipelines, low domestic capital market development, and challenges in managing foreign exchange risk, which can hinder cross-border investment flows and local debt market development. Also, in addition to broad impediments to private finance, EMDEs face challenges unique to the shift to renewable energy while phasing out fossil fuels⁴⁶.

More specifically, adaptation finance faces significant challenges (OECD 2025a, IMF 2022). First, the conventional strategy for securing private funding for governmental expenditures in climate change adaptation involves the issuance of government debt on capital markets, with the revenues going toward adaptation initiatives. Yet, limited tax bases and borrowing capacities combined with increasing debt levels have limited EMDEs and low-income countries' ability to make domestic public investments in adaptation. Second, uncertainty about the economic consequences of climate change impacts and the efficiency of adaptation technologies are notable challenges, which are country-specific.

Crucially, private sector engagement is fundamentally limited because many priority projects are public goods. Adaptation activities which the public sector typically delivers, such as major flood protection infrastructure, involve public costs but provide public benefits (including for the private sector). Public goods are usually funded by governments because, due to their non-rivalrous and non-excludable characteristics, they will not be supplied—or will be severely undersupplied—by the private sector. Approximately 40 percent of publicly identified priority adaptation investments are classified as public goods, and a further 35 percent are in areas typically provided by the public sector, such as quasi-public goods (like climate-proofing new roads) or essential public services (UNEP 2025⁴⁷). Consequently, private sector investment

⁴⁶ Renewable energy production and distribution in EMDEs have high upfront fixed capital costs, and these projects carry significant policy risks, which companies struggle to price and manage compared to conventional market risks. Implementing these projects requires addressing prerequisite infrastructures, intermittency of renewables and storage capacity, supply chain issues, permits, and integration into the electricity distribution network. Despite recent improvements, investment in renewable energy in EMDEs still lags behind fossil fuel investments, with a target ratio of around 4:1 for renewable over fossil fuel investment required globally throughout this decade (IMF 2023).

⁴⁷ UNEP 2025 (Figure ES.4) categorizes adaptation activities into three distinct types: i) actions that are essentially public goods, such as flood protection infrastructure and adaptive social protection, characterized by public costs, public benefits, and little to no market return, thus requiring a greater role for public (international and national) finance, ii) activities like climate-proofing critical infrastructure or climate-smart agriculture, which provide joint costs and benefits, often with below-market returns; these rely on a mix of public and private sector funding, and iii) actions funded primarily by the private sector, such as climate-proofing private assets or enhancing resilience in supply chains, which offer commercial returns and involve private costs and benefits. The COP30 Brazilian (continued...)

is often unattractive due to underpriced risks, lack of access to finance in EMDEs, a lack of economies of scale and bankable projects, insufficient pricing of climate-related risks, gaps in climate data and models, challenges of quantifying societal benefits⁴⁸, and the limited set of laws and regulations to internalize the advantages of adaptation (for example, a lack of mandatory implementation of disaster risk management strategies and the under-development and implementation of taxonomies and transition plans for climate-resilient investments) alongside a growing but slow progress in adaptation planning (UNEP 2025). These inherent market failures, network resilience issues, and high upfront costs further limit adaptation finance. Finally, these challenges are exacerbated by technical and knowledge-based barriers and the fragmentation of the adaptation finance architecture that intensifies institutional and governance barriers (OECD 2023).

Presidency report on the Baku to Belém Roadmap to US\$1.3 trillion emphasizes that private finance is essential and can be achieved for scaling adaptation and resilience solutions, particularly by focusing on specific sectors like agriculture, water, infrastructure, and health. While public funds address initial gaps, corporations and financial institutions have a clear role in making their own value chains more sustainable and resilient to climate impacts, thereby protecting capital, reducing volatility, and driving sustained growth. This also presents an opportunity for the development of new nature-positive value chains and the creation of micro, small, and medium enterprises focused on the restoration of natural ecosystems and regenerative agriculture.

⁴⁸ Defining and attributing the results and impacts of adaptation-related investments are directly related to the difficulties in observing the effectiveness of an adaptation project unless climate risk materializes (e.g. often acute climate risk such as a drought) and in establishing the counterfactual (e.g. the capacity of a population to cope, adapt and overcome a climate-induced crisis without the intervention). These add to data gaps, unclear benchmarks/targets and rapidly shifting baselines ([OECD 2023](#)).

Annex 2. Typology of private climate finance instruments.

Type of financial instrument	Type of financing	Description and use cases	Role of the public sector	Potential design and implementation challenges
Debt instruments				
Use-of-proceeds debt instruments (bonds and loans). <i>Blue, green, social, sustainability, climate resilience</i>	Concessional financing	Instruments for which the issuer commits to investing the proceeds raised by the issuance to investments in projects with environmental and/or sustainability benefits (also referred to as climate, green, blue, social or sustainability projects). For a project to be labeled, the eligible project categories need to be specified in the loan or bond framework's use-of-proceeds section; the information/covenants relevant to the projects need to be identified in the facility agreement; and the issuer is required to represent the accuracy of any reporting. Climate impact is influenced by project financing, and refinancing can potentially reduce it. Instruments may lose their label if proceeds are not used according to the framework, without a direct incentive mechanism.	Most debt issuances in EMDEs receive technical assistance from multilateral development banks, which serve as market facilitators. Guarantees or a greater rate of return may be required to mitigate (real or perceived) risk and boost investor trust.	Issuance is usually subject to several requirements, including a robust pipeline of projects that may be funded using the revenues of instruments. More specifically, social debt instruments must identify target populations, and social outcomes may be difficult to quantify and follow. The same is true for sustainability and adaptation-related instruments (see Annex I).
Structured finance. (e.g., closed-end fixed	Concessional financing	Closed-end fixed income funds include green bonds issued by EMDE banks (against green loans) that are securitized	De-risking (purchase equity tranche/provide first-loss guarantee),	It requires existing bank loans and technical assistance

income funds, other pooled investment funds)	into green bonds, with the public sector assuming credit risk. This structure reduces credit risk (by elevating to investment-grade finance), scales, diversifies, and potentially reduces currency risk via pooling. Credibility is enhanced by the selection of qualified bank loans and the standard green bond certification process.	technical assistance	for banks to issue green bonds.
	More broadly, pooled investment funds combine capital from various entities to invest in projects aiming to align development or sectoral objectives with specific returns. The proportion of public finance in an investment can influence project development.		

Result-based financing instruments

1.

Outcome-based debt instruments (sustainability-linked bonds and loans).	Concessional financing	Instruments linked to the issuer's achievement of climate or broader sustainability goals, such as bond or loan instruments with guarantees and letters of credit. The progress or lack thereof towards achieving predefined KPIs can impact the instrument's coupon pricing structure. These instruments do not have use-of-proceeds criteria and can be used for general purposes of firm or government operations with explicit sustainability targets. Each KPI is linked to a trigger event that can modify the instrument's pricing structure if not achieved	Guarantees or a greater rate of return may be required to mitigate (real or perceived) risk and boost investor trust.	Sustainability performance targets determine potential climate impacts, and financial penalties serve as a commitment device. They need to be high enough to motivate issuers to achieve targets (IMF 2022). These instruments need to be supported by a plan to meet KPIs and are not suitable for all borrowers or issuers, depending on their sustainability credentials and their debt absorption
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		by a predetermined date. They are typically used to strengthen sustainability strategies or deliver on specific KPIs. Most climate-related targets focus on mitigation, but the addition of impact metrics that capture climate resilience improvements could allow firms or governments to utilize these debt instruments and increase financing for adaptation outcomes.		capacity. Borrower/project-funded sustainability-linked instruments also need to meet credit and default risk thresholds.
Pay-for-success bonds. (environmental impact bonds, conservation impact bonds)	Concessional financing	These instruments use a pay-for-success approach to provide capital from private investors for environmental projects. They are typically issued for one project or initiative and are used to pilot riskier investments or scale up existing solutions. Investors pay for the costs of deploying environmental solutions, and payers repay investors based on the achievement of agreed-upon environmental outcomes. They can be useful in cases where a project delivers climate change adaptation benefits but lacks traditional revenue streams. They can be used to address capacity limits in complex environmental projects and potential inefficiencies in public sector investment.	Direct investment; technical assistance.	They involve high financial and political risks for private investors, with payers typically public institutions or philanthropic foundations. They require a third party for structuring costs and are case-specific, time-intensive, and costly. Issuing these bonds can demonstrate funding willingness and set specific targets for success.
Payment for ecosystem services.	Concessional financing	They are transfers used for regulating ecosystem services, which involve payments from those who benefit from ecosystem	Grants, direct payments by governments,	PES uses public institutions and private property rights to provide benefits, with

services to providers like farmers' land trusts and stewards of protected areas. They operate on a "beneficiary pays principle" approach, generating income and funding for providers. Payments are linked to the successful provision of ecosystem services or the execution of activities that improve them. These schemes often focus on climate change mitigation and adaptation benefits, requiring tailored schemes and flexible contracts with suppliers.

technical assistance

subsidized schemes for limited-income owners. Public authorities need technical knowledge and monitoring capabilities.

Financial risk management instruments

Blended finance for infrastructure and other complex projects.

Blended finance

MDBs or the public sector make an equity or mezzanine investment or give a guarantee to de-risk and crowd in private investors, typically in new infrastructure projects or for the adoption of new technologies with potentially greater risks, such as in agriculture. It provides for the reduction of credit and political risks, as well as the resolution of information asymmetry issues.

Own resources for equity/mezzanine investment and guarantees; provide specialized expertise and technical assistance for project design and selection.

Complex contractual arrangements and large equity investments can lead to moral hazard and lower returns for equity investors. To avoid making large guarantees, projects need to be close to being "fundable" without them. Guarantor balance sheets often provide guarantees for the entire amount, making them less common than loans owing to lower costs and collateral. Guarantors need to select initiatives that are close to being "fundable" without guarantees.

Green revolving fund

Blended finance

A green revolving fund is an internal capital pool used to fund sustainability projects that generate cost savings. The funds are then used

Direct investment by governments, especially to finance adaptation

To seed the fund, sufficient cash is necessary. Green revolving funds seek projects that will

		to replenish the fund, allowing for reinvestment in future projects of similar value. This ongoing funding vehicle drives sustainability over time while generating cost savings and ensuring capital availability for important projects. Typically capitalized by public sources, revolving funds create a cycle of loans and repayments. They have been used to support small projects in developing countries, including adaptation, and enable community members to access funds at low interest rates with long repayment periods.	projects, seed funding by MDBs and DFIs.	repay/reseed the fund on a regular basis, which may make it difficult to support long-term initiatives.
Public-private partnerships (PPPs).	Blended finance	It is a long-term agreement between a private company and a government organization to provide a public asset or service. PPPs are designed to deliver public assets or services at a lower cost and with more efficiency than projects supported by the public sector. They distribute counterparty risks between public and private partners, with the public sector bearing the risks that are best suited for it. There is no conventional risk distribution methodology; nonetheless, it is determined by project features, revenues, commercial counterparty competence, and public sector institutional capabilities. PPPs may include adaptation and resilience into infrastructure projects,	Technical assistance, direct participation in the contract.	PPPs require long-term contracts, legal competence, and tight terms, with parties needing technical support due to complexity. Monitoring and assessment capabilities are necessary to meet PPP criteria.

with increased public
funding guaranteeing that
projects account for
expected physical climate
hazards and risks.

Source: IMF staff.

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