EXECUTIVE SUMMARY

Global warming threatens the planet and human livelihoods, with 2023 set to become the warmest year on record. Recognizing the threat, countries have set climate goals—for example, many countries have committed to reducing greenhouse gas emissions to net zero by midcentury—and have taken a range of policy actions. However, current and announced policies will fall short of achieving the 2015 Paris Agreement's temperature goals. Containing global warming will ultimately benefit everyone by mitigating the potential catastrophic consequences of climate change. However, it necessitates a radical economic transformation that could impose costs and benefits unevenly across people, firms, regions, and countries. With private financing playing a decisive role, the transition to low-carbon energy sources will require strong complementarities between public and private actors.

Relying on Spending Measures Will Be Costly

Many countries are facing high debt, rising interest rates, and weaker growth prospects. Debt-to-GDP ratios are projected to rise by 1 percentage point a year globally during 2023–28, faster than foreseen before the pandemic. These headwinds complicate efforts to tackle climate change.

Several economies are pursuing emission reduction policies that rely heavily on spending measures, such as increasing public investment and subsidies for renewable energy. Policies to reduce emissions are welcome efforts. Yet, in some cases, they entail large fiscal costs. Policymakers thus face a fundamental trade-off: On the one hand, relying mostly on spending-based measures to reach net zero goals by midcentury will become increasingly costly, possibly raising public debt by 45–50 percent of GDP for a representative large-emitting country, putting debt on an unsustainable path. On the other hand, limited climate action would leave the world exposed to adverse consequences from global warming. Macroeconomic risks would concomitantly rise. The trade-off can be relaxed by the use of carbon pricing, which is cost-effective in reducing emissions while also generating revenues to relieve the debt burden. However, carbon pricing is often unpopular, thus transforming the trade-off into a trilemma between achieving climate goals, fiscal sustainability, and political feasibility.

Such challenges are stark for emerging market and developing economies given their growth and development priorities. These economies also need to adapt to the consequences of climate change, adding to the already-sizable investment needs to meet the Sustainable Development Goals. They also have limited access to low-carbon technologies, even though existing technologies can enable countries to achieve about 90 percent of the emission cuts required by 2030 to meet the temperature goals. Fossil fuel-producing countries will also see sharp declines in commodity revenues if the world gets on track to achieving net zero emissions, presenting substantial challenges for public finances and economic diversification.

A Cleaner Future Is Possible with the Right Policies in Place

No single policy measure on its own can fully deliver on climate goals. The chapter presents a practical mix of policies accounting for their economic efficiency, administrative practicality, and political feasibility, among other attributes. From a macro-fiscal perspective, while policies should be tailored to country circumstances, carbon pricing should be an integral part of the policy mix. Although carbon pricing is necessary, it is not sufficient and should be complemented by other mitigation instruments—such as feebates, green subsidies, and regulation standards, among others—to promote innovation and deployment of low-carbon technologies and address market failures and network externalities. Fiscal transfers to vulnerable workers, families, and communities can help address concerns from higher energy prices. Successful experiences from countries at various stages of development show that this approach can help mitigate political hurdles associated with carbon pricing. These insights stand to benefit not

only the nearly 50 countries already with carbon pricing schemes in place (that will require further increases) but also the more than 23 countries currently contemplating their introduction.

Fiscal costs vary depending on the mix of revenue and spending policies. Analyses show that an appropriate mix and sequencing of revenue- and spending-based climate measures enacted now can help limit the fiscal costs of delivering the necessary emission reductions. In an indicative scenario, public debt in advanced economies would rise by 10–15 percent of GDP by 2050 (equivalent to an increase of primary deficits by 0.4 percentage point of GDP a year, on average, through 2050). Advanced economies with ample fiscal space could likely accommodate such a policy mix. Others with less fiscal space will need to prioritize spending (such as removing fossil fuel subsidies) and raise revenues to maintain debt sustainability. In either case, delayed action on carbon pricing would be very costly. Each year of delay is estimated to contribute an additional 0.8–2.0 percent of GDP a year to public debt.

Emerging market economies make up a notable share of global emissions. The expected increase in debt from a package of climate policies is estimated to be similar to advanced economies, at about 15 percent of GDP by 2050. The debt estimates are subject to large uncertainty, reflecting differences in investment and subsidies, compensation to households, fiscal space, and dependence on fossil fuels. The composition of the debt impact is notably different from advanced economies on account of higher mitigation investment needs, larger carbon revenue potential, and higher borrowing costs that are sensitive to debt. An increase in debt will be particularly challenging for emerging market and developing economies already experiencing high debt and rising interest costs, alongside sizable adaptation needs. These findings reinforce the need for improved expenditure efficiency, revenue mobilization, a greater role for private sector financing, and external financial support alongside knowledge transfers and diffusion of established low-carbon technologies. The IMF can also help by providing long-term financing under the Resilience and Sustainability Trust. Large uncertainty—arising from policy impacts and nonlinear impacts of climate change—suggests that incorporating climate action in debt sustainability analyses is crucial.

Governments Need to Facilitate the Green Transition for Firms

Firms play a crucial role in decarbonization efforts, and governments need to encourage firms to make the necessary transformation to a low-carbon future. In this regard, firm-level analysis indicates that regulations mandating firms to set or monitor emission targets are often associated with higher firm investment in low-carbon technologies. The surge in energy prices in 2022 has shown that firms are able to invest in energy efficiency and reduce energy consumption when confronted with large energy price shocks, suggesting that regulations, incentives, and carbon pricing schemes can accelerate firm decarbonization efforts.

Fiscal incentives (via tax credits or subsidies) can boost firm investment in low-carbon technologies, especially when firms feel confident about the impact of policies on their investment plans. Domestic policies therefore need to be well communicated to firms, including their horizon, coverage, and criteria for eligibility. Targeting fiscal incentives can help minimize their fiscal costs, as some firms will invest even without government support. This shows that both policy design and implementation matter. Green subsidies must be consistent with World Trade Organization rules to avoid unintended distortions to trade and a subsidy race across nations.

Climate change is a shared responsibility. No single country is able to solve it alone. Policymakers must accelerate and coordinate their efforts on all fronts to ensure a sustainable and resilient world for future generations.