

INTERNATIONAL MONETARY FUND

FISCAL MONITOR

Fiscal Policy in
the Great Election Year

2024
APR



INTERNATIONAL MONETARY FUND

FISCAL MONITOR

Fiscal Policy in
the Great Election Year

2024
APR



©2024 International Monetary Fund

Cover and Design: IMF CSF Creative Solutions Division
Composition: Absolute Service, Inc.; and AGS, An RR Donnelley Company

Cataloging-in-Publication Data
IMF Library

Names: International Monetary Fund.

Title: Fiscal monitor.

Other titles: World economic and financial surveys, 0258-7440

Description: Washington, DC : International Monetary Fund, 2009- | Semiannual | Some issues also have thematic titles.

Subjects: LCSH: Finance, Public—Periodicals. | Finance, Public—Forecasting—Periodicals. | Fiscal policy—Periodicals. | Fiscal policy—Forecasting—Periodicals.

Classification: LCC HJ101.F57

ISBN: 979-8-40025-563-2 (paper)
979-8-40025-568-7 (PDF)
979-8-40025-577-9 (ePub)

Disclaimer: The *Fiscal Monitor* is a survey by the IMF staff published twice a year, in the spring and fall. The report analyzes the latest public finance developments, updates medium-term fiscal projections, and assesses policies to put public finances on a sustainable footing. The report was prepared by IMF staff and has benefited from comments and suggestions from Executive Directors following their discussion of the report on April 3, 2024. The views expressed in this publication are those of the IMF staff and do not necessarily represent the views of the IMF's Executive Directors or their national authorities.

Recommended citation: International Monetary Fund (IMF). 2024. *Fiscal Monitor: Fiscal Policy in the Great Election Year*. Washington, DC: IMF, April.

Publication orders may be placed online, by fax, or through the mail:
International Monetary Fund, Publication Services
PO Box 92780, Washington, DC 20090, USA
Telephone: (202) 623-7430 Fax: (202) 623-7201
E-mail: publications@imf.org
www.imfbookstore.org
www.elibrary.imf.org

CONTENTS

Assumptions and Conventions	vi
Further Information	vii
Preface	viii
Foreword	ix
Executive Summary	xi
Chapter 1. Fiscal Policy in the Great Election Year	1
Introduction	1
Recent Fiscal Developments and Outlook	3
The Great Election Year and Fiscal Politics	13
Fiscal Policy Sustainability and Structural Spending Pressures	14
Policy Conclusions	16
Box 1.1. US Fiscal Policy Uncertainty and Bond Spreads	19
Box 1.2. Building Tax Capacity in Low-Income and Emerging Market Economies	20
Box 1.3. Reform of the European Union Economic Governance Framework	21
References	22
Chapter 2. Expanding Frontiers: Fiscal Policies for Innovation and Technology Diffusion	25
Introduction	25
Directing Innovation toward Specific Sectors	26
Promoting Innovation at the Technology Frontier	30
Accelerating Technology Diffusion across Countries and Firms	34
Conclusion	39
Box 2.1. Industrial Policies for Innovation: Lessons from Historical Cases	41
Box 2.2. Fiscal Support for Green Innovation	43
Box 2.3. Addressing Barriers to the Diffusion of Green Technology	44
References	46
Economy Abbreviations	49
Glossary	51
Methodological and Statistical Appendix	55
Data and Conventions	55
Fiscal Policy Assumptions	58
Definition and Coverage of Fiscal Data	63
Table A. Economy Groupings	63
Table B. Advanced Economies: Definition and Coverage of <i>Fiscal Monitor</i> Data	67
Table C. Emerging Market and Middle-Income Economies: Definition and Coverage of <i>Fiscal Monitor</i> Data	68
Table D. Low-Income Developing Countries: Definition and Coverage of <i>Fiscal Monitor</i> Data	69

List of Tables	
Advanced Economies (A1–A8)	70
Emerging Market and Middle-Income Economies (A9–A16)	78
Low-Income Developing Countries (A17–A22)	86
Structural Fiscal Indicators (A23–A25)	92
Selected Topics	95
IMF Executive Board Discussion of the Outlook, April 2024	109
Figures	
Figure 1.1. Inflation Surprises and the Fiscal and Monetary Policy Mix	2
Figure 1.2. Postpandemic Fiscal Policy Legacies	2
Figure 1.3. Interest Payments	3
Figure 1.4. Evolution of Public Debt in the Two Giants: The United States and China	6
Figure 1.5. Nominal Yields and Term Premiums for 10-Year US Treasuries	6
Figure 1.6. Decomposition of Changes in US Core Inflation	6
Figure 1.7. Effect of Spikes in the US Primary Deficit on Nominal Term Premiums of Treasuries	7
Figure 1.8. Impact of Spillovers of US Long-Term Nominal Rates on Advanced and Emerging Market Economies	7
Figure 1.9. Median Changes in Emerging Market Bond Index Spreads, Selected Episodes	8
Figure 1.10. Monthly Sovereign Spreads in Emerging Market and Developing Economies	8
Figure 1.11. Changes in Sovereign Spreads and the Fiscal Outlook	8
Figure 1.12. The Evolution of Growth and Fiscal Imbalances in China	9
Figure 1.13. Fiscal Impact of China’s Slowdown in the Rest of the World	10
Figure 1.14. Primary Balances and Debt Levels in Advanced Economies, Emerging Markets, and Low-Income Developing Countries	11
Figure 1.15. Real Interest-Growth Differential in Low-Income Developing Countries	12
Figure 1.16. Effects of Election Years on Fiscal Deficits and Subcomponents	13
Figure 1.17. Political Parties’ Discourse and Fiscal Policy	14
Figure 1.18. Potential Annual Increases in Spending through 2030	15
Figure 1.19. Adjustment in Primary Deficits Required to Stabilize Public Debt	16
Figure 1.20. Primary Deficit Fan Chart and the Likelihood of Reaching the Debt-Stabilizing Primary Deficit for Italy	16
Figure 1.21. Public Gross Financing Needs	17
Figure 1.1.1. Fiscal Uncertainty in the United States	19
Figure 1.1.2. Response of Sovereign Spreads to Uncertainty Regarding US Fiscal Policy	19
Figure 1.2.1. Actual and Potential Taxes, 2020	20
Figure 1.3.1. Fiscal Balance and Government Debt, 2023	21
Figure 2.1. Withering Innovation, Productivity, and Technology Diffusion	26
Figure 2.2. Increasing Use of Industrial Policies for Innovation	27
Figure 2.3. Simulated Welfare Impact of Industrial Policy	28
Figure 2.4. Domestic Knowledge Spillovers, Select Economies	29
Figure 2.5. Optimal R&D Support by Sector	30
Figure 2.6. Governments Shifting R&D Support to Tax Incentives for Firms	31
Figure 2.7. Services Imports and Real FDI in Emerging Market and Developing Economies	34
Figure 2.8. Determinants of Services Imports and Real FDI into Emerging Market and Developing Economies	35

Figure 2.9. Effect of Enhanced Public Investment on Productivity and GDP	36
Figure 2.10. Firm TFP Gaps and the Impact of Policies on Diffusion to Laggards	38
Figure 2.11. Effect of Digital Adoption and Digital Infrastructure on Firm Productivity in the European Union	38
Figure 2.12. Simulation of the Labor Productivity Impact of Corporate Tax Reform across Firms in Emerging Market Economies	39
Figure 2.2.1. Impact of Green R&D Support on Green Innovation	43
Figure 2.3.1. Alternative Policies for Renewable Electricity: Benefits and Costs	44
Tables	
Table 1.1. General Government Fiscal Balance, 2019–29: Overall Balance	4
Table 1.2. General Government Debt, 2019–29	5
Table 2.1. Potential Rationales for Directing Innovation	27
Table 2.2. Budgetary Instruments to Promote Innovation	32
Online-Only Annexes	
Online Annex 1.1. Current Fiscal Estimations versus Prepandemic Projections for 2023 and 2024 by Structural Characteristics	
Online Annex 1.2. Econometric Analyses of Spillovers from Loose Fiscal Policy in the United States	
Online Annex 1.3. Election-Year Swings in Fiscal Policy	
Online Annex 1.4. Calculating the Medium-Term Spending Pressures	
Online Annex 1.5. Analysis of the Fan-Chart for Italy’s Primary Balance	
Online Annex 2.1. Model of Industrial Policy for Innovation	
Online Annex 2.2. Literature Review on Fiscal Instruments for Innovation	
Online Annex 2.3. Panel Regression Analysis of Fiscal Instruments for Innovation	
Online Annex 2.4. Analysis of Intellectual Property Regimes	
Online Annex 2.5. Impacts of Total R&D on GDP and Debt	
Online Annex 2.6. Accelerating Technology Diffusion Across Countries	
Online Annex 2.7. Accelerating Diffusion of Innovation across Firms – The Role of Government Policies	

ASSUMPTIONS AND CONVENTIONS

The following symbols have been used throughout this publication:

- . . . to indicate that data are not available
- to indicate that the figure is zero or less than half the final digit shown, or that the item does not exist
- between years or months (for example, 2008–09 or January–June) to indicate the years or months covered, including the beginning and ending years or months
- / between years (for example, 2008/09) to indicate a fiscal or financial year

“Billion” means a thousand million; “trillion” means a thousand billion.

“Basis points” refers to hundredths of 1 percentage point (for example, 25 basis points are equivalent to $\frac{1}{4}$ of 1 percentage point).

“n.a.” means “not applicable.”

Minor discrepancies between sums of constituent figures and totals are due to rounding.

As used in this publication, the term “country” does not in all cases refer to a territorial entity that is a state as understood by international law and practice. As used here, the term also covers some territorial entities that are not states but for which statistical data are maintained on a separate and independent basis.

FURTHER INFORMATION

Corrections and Revisions

The data and analysis appearing in the *Fiscal Monitor* are compiled by IMF staff at the time of publication. Every effort is made to ensure their timeliness, accuracy, and completeness. When errors are discovered, corrections and revisions are incorporated into the digital editions available from the IMF website and on the IMF eLibrary. All substantive changes are listed in the Table of Contents of the online PDF of the report.

Print and Digital Editions

Print

Print copies of this *Fiscal Monitor* can be ordered from the IMF Bookstore at imfbk.st/540741.

Digital

Multiple digital editions of the Fiscal Monitor, including ePub, enhanced PDF, and HTML, are available on the IMF eLibrary at www.elibrary.imf.org/APR24FM.

Download a free PDF of the report and data sets for each of the figures therein from the IMF website at www.imf.org/publications/fm, or scan the QR code below to access the *Fiscal Monitor* web page directly:



Copyright and Reuse

Information on the terms and conditions for reusing the contents of this publication are at www.imf.org/external/terms.htm.

PREFACE

The projections included in this issue of the *Fiscal Monitor* are drawn from the same database used for the April 2024 *World Economic Outlook* and *Global Financial Stability Report* (and are referred to as “IMF staff projections”). Fiscal projections refer to the general government, unless otherwise indicated. Short-term projections are based on officially announced budgets, adjusted for differences between the national authorities and the IMF staff regarding macroeconomic assumptions. The fiscal projections incorporate policy measures that are judged by the IMF staff as likely to be implemented. For countries supported by an IMF arrangement, the projections are those under the arrangement. In cases in which the IMF staff has insufficient information to assess the authorities’ budget intentions and prospects for policy implementation, an unchanged cyclically adjusted primary balance is assumed, unless indicated otherwise. Details on the composition of the groups, as well as country-specific assumptions, can be found in the Methodological and Statistical Appendix of the April 2024 *Fiscal Monitor*.

The *Fiscal Monitor* is prepared by the IMF Fiscal Affairs Department under the general guidance of Vitor Gaspar, Director of the Department. The project was directed by Era Dabla-Norris, Deputy Director. The main authors of Chapter 1 in this issue are Marcos Poplawski-Ribeiro (team lead) and Jiae Yoo (team co-lead), Hamid Davoodi, Enrico Di Gregorio, Carlos Eduardo Gonçalves, Gabriel Hegab, Youssef Kiendrebeogo, and Nicola Pierri, with contributions from Fritz Florian Bachmair, Nick Carroll, Shafik Hebous, Gee Hee Hong, Raphael Lam, Goesta Ljungman, Mario Mansour, Anh Dinh Minh Nguyen, Alessandro Scipioni, Mauricio Soto, and Charles Vellutini, with research support from Victoria Haver and Chenlu Zhang. The main authors of Chapter 2 are Daniel Garcia-Macia (team lead) and Li Liu (team co-lead), Alexandre Balduino Sollaci, Simon Black, Fernanda Brollo, Paolo Dudine, Tibor Hanappi, Salma Khalid, Anh Dinh Minh Nguyen, Roberto Piazza, Nicola Pierri, Alexandra Solovyeva, and Nate Vernon, with research support from Victoria Haver and Zhonghao Wei.

The Methodological and Statistical Appendix was prepared by Chenlu Zhang under the guidance of Alexandra Solovyeva. Alexandra Solovyeva and Jiae Yoo provided excellent communications support. Meron Haile and Andre Vasquez provided excellent coordination and editorial support. Wala’a El Barasse from the Communications Department led the editorial team and managed the report’s production, with editorial and production support from James Unwin, Katy Whipple, Michael Harrup, David Einhorn, Linda Long, Lucy Morales, and Absolute Service, Inc.

Inputs, comments, and suggestions were received from other departments in the IMF, including area departments—namely, the African Department, Asia and Pacific Department, European Department, Middle East and Central Asia Department, and Western Hemisphere Department—as well as the Communications Department, Institute for Capacity Development, Legal Department, Monetary and Capital Markets Department, Research Department, Secretary’s Department, Statistics Department, and Strategy, Policy, and Review Department. Chapter 2 of the *Fiscal Monitor* also benefited from comments by Ufuk Akcigit (University of Chicago), Salome Baslandze (Federal Reserve Bank of Atlanta), Kevin Bryan (University of Toronto), Diego Comin (Dartmouth College), Chiara Criscuolo (Organisation for Economic Co-operation and Development), Ugo Gentilini (World Bank), Anton Korinek (University of Virginia), Ruud de Mooij (IMF), and participants of the IMF workshop on “Making Innovation Work for All: The Role of Fiscal Policies” in January 2024. Both projections and policy considerations are those of the IMF staff and should not be attributed to Executive Directors or to their national authorities.

FOREWORD

Amid mounting debt, now is the time to bring back sustainable public finances.

As prospects for a soft landing have improved, especially in the United States, policy uncertainty has declined and risks around the world economic outlook are becoming better balanced (April 2024 *World Economic Outlook*). Inflation has fallen quickly in recent months, leading to an optimistic mood in financial markets. Markets seem convinced that most of the road to restoring global price stability is behind us, allowing major central banks to gradually ease monetary policy rates in coming quarters (April 2024 *Global Financial Stability Report*). Sovereign bonds spreads have narrowed, and countries in sub-Saharan Africa, which had been inactive in international capital markets since mid-2022, resumed bond issuance in early 2024.

After jumping to record levels in 2020—as part of the response to the COVID-19 pandemic—deficits and debt fell sharply in 2021 and 2022. But they increased in 2023, pausing progress toward normalization. In 2024, overall deficits are projected to narrow again.

Nevertheless, four years after the onset of the pandemic, public debts and deficits are higher and debts are projected to remain high. Chapter 1 of the *Fiscal Monitor* documents divergences in fiscal policies around the world. First, the projected rise in global public debt is mainly driven by China and the United States, where public debt is now higher and expected to grow faster than prepandemic projections. Fiscal policy developments in these major economies, notably in the United States, have implications for global financing conditions. In many other countries, fiscal policy is projected to reduce or to stabilize public-debt-to-GDP ratios, though at levels higher than before the pandemic. Yet primary deficits will remain above debt-stabilizing levels in 2029 under current projections in more than one-third of advanced and emerging market economies and more than one-quarter of low-income developing countries. Another divergent trend affects low-income developing countries. It is in these countries that

scarring from the pandemic is most significant. It is also in these countries that financing is most scarce, shaping the evolution of deficits and debt. These severe limits on policy space limit the ability of the state to support growth and development.

Six months ago, the *Fiscal Monitor* emphasized the policy trilemma associated with, first, strong spending pressures on national budgets—including from wages, pensions, health care, industrial policies, the environment, defense, and Sustainable Development Goals; second, political resistance to taxation; and third, the need to contain debt and deficits to deliver fiscal sustainability and financial stability. Now, higher interest rates and lower medium-term growth prospects add to the more challenging debt dynamics.

Furthermore, the risks of fiscal slippages are particularly pronounced this time around. In fact, 2024 is the year when the political aspect of the policy trilemma described here will exert a heavy influence, in the form of the Great Election Year. Eighty-eight countries have already held or will hold elections this year. Empirical evidence points to a bias toward fiscal slippages in elections years. And this time, the political discourse is particularly loud in favor of fiscal expansion.

In this context, durable and credible fiscal consolidation is needed to reestablish sound public finances, to build budgetary space for priority investments, and to deal with future shocks. Tackling debt and deficits today helps to avoid more painful adjustments later. Fiscal tightening would also be an important contribution to completing the last mile of disinflation (especially in economies characterized by excess demand).

But while domestic resource mobilization—including strong tax capacity, state capacity, and a mature domestic public debt market—favor sustainable development, they are far from sufficient. And, in the absence of economic growth, even sound public finances will be eventually undermined. In the long run, economic potential is mainly driven by productivity growth. And productivity growth, in turn, is driven by the production and diffusion of innovations.

Should we welcome or fear potentially disruptive innovations such as generative artificial intelligence? On one hand, we should welcome them, as they could generate a cascade of societal transformations that drive growth and development. We have seen the potential of technological advancements to deliver unprecedented levels of shared prosperity since the invention of the steam engine led to the first Industrial Revolution. At the same time, we should beware disruptive innovations, as they promote the automation of tasks, allowing machines to substitute

for human labor. Fiscal policies have a role to play in directing innovation and ensuring the overall gains are fairly and widely shared. Chapter 2 of the *Fiscal Monitor* delves into this issue, showing how a well-designed innovation fiscal policy mix, alongside other structural reforms, is key to deliver sustainable long-run growth. However, attaining the world's innovation potential requires deepening international cooperation.

Vitor Gaspar
Director of the Fiscal Affairs Department

Chapter 1: Fiscal Policy in the Great Election Year

Even as the economic and financial outlook for the global economy is stabilizing (April 2024 *World Economic Outlook*), efforts to normalize fiscal policy continue to struggle with the legacies of high debt and deficits while facing new challenges. After a brisk reduction in fiscal deficits and public debt levels in 2021–22, fiscal aggregates turned in 2023, halting progress toward policy normalization. Durable fiscal consolidation efforts are needed to safeguard sustainable public finances and rebuild buffers in a context of slowing medium-term growth prospects and high real interest rates. Fiscal tightening would also support the “last mile” of disinflation, especially in overheated economies.

Four years after the COVID-19 pandemic outbreak, fiscal deficits and debts are higher than prepandemic projections. Higher interest rates pushed up interest expenses, while spending on social benefits, subsidies, and transfers was buoyed by the extension of support measures enacted in response to the pandemic and energy price shocks. Many economies introduced new fiscal initiatives to cut taxes and social security contributions and increase spending through higher wage bills, social benefits, and industrial policy measures. These initiatives were only partially offset by revenue gains from past inflation as inflation surprises waned and tax brackets caught up with wage growth. Financing for most low-income developing economies remained scarce, determining the evolution of fiscal balances.

In 2024, overall primary deficits are expected to narrow to 4.9 percent of GDP. However, substantial risks to public finances remain, and resuming fiscal policy normalization will require significant efforts against several headwinds. The risks of fiscal slippages are particularly acute given that 2024 is what is being called the “Great Election Year”: 88 economies or economic areas representing more than half of the world’s population and GDP have already held or will hold elections during the year. Support for increased government spending has grown across the political

spectrum over the past several decades, making this year especially challenging, as empirical evidence shows that fiscal policy tends to be looser, and slippages larger, during election years.

While inflation has been easing, the pace of the last mile of its descent to target remains uncertain. Financing conditions are sensitive to the inflation outlook as well as to interest rates and fiscal policy developments in major economies. Loose fiscal policy and rising debt levels, in addition to monetary policy tightening, have contributed to the increase in long-term government yields and their heightened volatility in the *United States*, raising risks elsewhere through interest rate spillovers. Slowing growth and financial turbulence in *China* could weigh on global growth and trade, posing fiscal challenges for countries with strong trade and investment linkages. Governments may also feel pressure to further extend fiscal support in the event of renewed supply disruptions and price shocks. Finally, debt refinancing risks remain high for many countries.

Improvements in fiscal aggregates are expected to be modest under current policies. Deficits and debts are projected to remain higher over the medium term than was expected before the pandemic. Without decisive fiscal efforts, postpandemic fiscal policy normalization may remain incomplete in the years to come. Global public debt is projected to approach 99 percent of GDP by 2029, driven by *China* and the *United States* where, under current policies, public debt is projected to continue rising beyond historical peaks. Spending pressures to address structural challenges, including demographic and green transitions, are becoming more pressing. At the same time, slowing growth prospects and still-high interest rates are likely to further constrain fiscal space in most economies.

Fiscal consolidation is needed in most countries to strengthen debt sustainability and financial stability. While the pace of fiscal consolidation should be calibrated to strike a balance between fiscal risks and the strength of private demand, up-front actions are needed in many cases, especially where sovereign risks are elevated and a credible medium-term framework

is lacking. Crisis-era support measures should be immediately terminated, and the political budget cycle and the drive to further increase spending should be resisted. Reforms are needed to contain rising spending pressures—for instance, through entitlement reforms in advanced economies with aging populations and improving the targeting and efficiency of social safety nets to support the most vulnerable populations. A well-designed fiscal policy mix that supports innovation in the sectors with the largest spillovers and emphasizes public funding for fundamental research could substantially boost long-term growth for economies at the technology frontier (Chapter 2). Tax revenues should keep up with spending over time. Emerging market and developing economies have a significant scope to increase tax revenues by upgrading tax systems, expanding tax bases, and enhancing institutional capacity. This could also help pay for strategic public investments needed to facilitate the diffusion of green and digital technologies. A risk-based credible fiscal framework could help guide the process to rebuild fiscal space and reduce debt vulnerabilities.

Stronger international cooperation is needed to address multiple challenges that lie ahead. More rapid improvements in the global debt restructuring architecture, including through the Group of Twenty's Common Framework and enhancement of the global financial safety net, could help the most vulnerable economies in debt distress restore debt sustainability. Continued engagement on technical issues, including through the Global Sovereign Debt Roundtable, is essential. Efforts to improve fiscal and debt transparency would facilitate the debt restructuring process. International cooperation on corporate taxation and carbon pricing will encourage necessary investments by mobilizing resources to address common concerns.

Chapter 2: Expanding Frontiers: Fiscal Policies for Innovation and Technology Diffusion

Innovation—defined as the invention and introduction of new or improved products and processes—is a key driver of productivity growth and better living standards. Yet despite rapid advances in digital technologies and artificial intelligence (AI), productivity growth has fallen over the past two decades and global growth prospects for the medium term are weak. The pace of innovation is

unbalanced across sectors and increasingly driven by applied research that does not generate wide-ranging knowledge spillovers. Moreover, the diffusion of innovation across countries and firms has slowed, particularly the adoption of low-carbon and digital technologies.

Improving growth prospects is essential amid high government debt, population aging, climate change, and large convergence gaps across countries. But promoting long-term growth can be challenging in a more fiscally constrained world. This *Fiscal Monitor* shows that well-designed fiscal policies to stimulate innovation and the diffusion of technology can deliver faster productivity and economic growth across countries.

Directing Innovation to Specific Sectors: When and How

Industrial policy that steers innovation toward specific sectors such as “green” (low-carbon) technologies and AI is experiencing a resurgence in many major economies amid concerns about economic and national security, often at a hefty fiscal expense. History shows that industrial policy is prone to policy mistakes. Even when projects transform industries, they often entail high fiscal costs and negative cross-border spillovers.

This chapter presents a novel model-based framework to assess when and how fiscal support to innovation should be targeted to specific sectors. Industrial policy for innovation only generates productivity and welfare gains under restrictive conditions. Targeted sectors must generate measurable social benefits (such as lower carbon emissions or higher knowledge spillovers to other sectors), and implementation capacity must be strong. Welfare gains from industrial policy easily turn negative if subsidies are misdirected (for example, toward politically connected sectors) instead of being driven by social returns. Policies discriminating against foreign firms can prove particularly self-defeating, as a large share of knowledge is imported even in major advanced economies, and such policies can trigger costly retaliation.

The case for subsidizing innovation in AI is unclear, since the technology has already matured to the commercial adoption phase. Priority should be given to technologies that expand human capabilities and to facilitating the adoption of AI in sectors with greater social benefits.

A Pro-Innovation Fiscal Policy Mix

Advanced and emerging market economies need a policy mix that supports innovation more broadly at the global technology frontier, especially because fundamental research with broad applications is underfunded in many countries. But the efficiency of the innovation policy toolkit matters, particularly when fiscal space is limited. This chapter presents a cost-effective mix of complementary policies, focusing on design features. This mix entails a combination of public funding for fundamental research, research and development (R&D) grants for innovative start-ups, and R&D tax incentives to encourage applied innovation across firms. Close public–private cooperation can create positive synergies at a lower cost to public finances.

Analyses show that a well-designed innovation policy mix can yield substantial growth and fiscal dividends, raising long-term GDP by \$3 to \$4 for each dollar of fiscal cost. This implies that increasing R&D support by 0.5 percentage point of GDP annually, or about 50 percent of the current level in Organisation for Economic Co-operation and Development economies, could raise GDP by up to 2 percent and reduce the debt-to-GDP ratio for an average advanced economy over an eight-year horizon. Economies with ample fiscal space could accommodate this approach, but funding for innovation may be problematic for countries with immediate fiscal constraints.

Careful design and targeting of fiscal incentives across firms and along the innovation lifecycle is crucial to minimize fiscal costs and avoid capture by large established firms that could stymie innovation. To foster innovation, it is critical to develop a coherent and simple tax system with broad bases and low rates while instituting systematic evaluation. Complementary structural, competition, trade, and financial policies need to ensure a level playing field, reap gains from cooperation, and provide innovative firms with adequate access to financing.

Facilitating the Diffusion and Adoption of Technology

Countries below the technology frontier (primarily emerging market and developing economies) can reap larger productivity dividends by prioritizing policies

that promote the diffusion of technologies developed elsewhere.

Strategic public investments in human capital and infrastructure, especially in digital infrastructure and skills, facilitate the adoption of cross-border technology. A 1 percent increase in education spending can boost medium-term GDP by as much as 1.9 percent in emerging market and developing economies, on average, by increasing technology diffusion. Similarly, improving the quality of trade and transport infrastructure in an average low-income country to bridge one-third of the gap with emerging market economies could lift GDP by 0.6 percent over the medium term. Public investment and financing are particularly beneficial to overcome barriers to green diffusion, as many of the technologies needed to cut carbon emissions already exist.

Investments in digital skills and infrastructure can also accelerate the diffusion of technology from frontier (high-productivity) firms to laggard firms. Targeted fiscal incentives for technology upgrades (such as revenue-neutral investment tax credits for firms acquiring frontier technology) can further speed up green and digital technology diffusion, raising aggregate productivity.

To pay for such priority spending and reap its dividends for growth, countries need to improve the efficiency of expenditure and upgrade tax systems. A broad-based value-added tax with a simplified collection mechanism for services trade facilitates diffusion and can help raise revenue. Scaling back ineffective corporate tax incentives and effectively addressing international tax avoidance by multinationals would also help, increasing annual tax revenue by up to 1 percent of GDP in some developing economies.

Reaching the world's full innovative potential and accelerating the diffusion of technology requires maintaining and deepening international collaboration. Economies farther away from the technological frontier could lose the most from inward-looking policies, given their reliance on foreign technology. Coordinating innovation policies is critical to catalyze cross-border knowledge spillovers, harness the potential of ongoing green and digital transformations, and expand the frontier for all.

Introduction

Inflation has fallen, financing conditions have improved, and risks of major disruptions in the global economy have so far been averted. However, the distribution of debts, deficits, and public finance risks and vulnerabilities has changed little. While monetary policy remained restrictive in more than 85 percent of the world's economies in 2023, only half of them tightened fiscal policy, down from about 70 percent in 2022 (Figure 1.1, panel 1). Revenue windfalls from inflation surprises dwindled (Figure 1.1, panel 2),¹ and spending remained high as a result of legacies of fiscal measures to address the pandemic crisis and the introduction of new fiscal support measures in many economies. As a consequence, momentum toward fiscal policy normalization that would bring fiscal balances back to prepandemic levels faltered. Decisive fiscal consolidation efforts are needed to safeguard sustainable public finances and rebuild fiscal buffers in a context of elevated public debt, slowing medium-term growth prospects, and still-high interest rates. Fiscal adjustment will also support the “last mile” of disinflation, especially in overheated economies.

After sharp declines in 2021–22, global public debt edged up again in 2023 and remained above prepandemic levels by 9 percentage points of GDP (Gaspar, Poplawski-Ribeiro, and Yoo 2023). The share of low-income countries and emerging markets in or at high risk of debt distress remained elevated.² Revenues in advanced economies (excluding the *United States*) and emerging market economies (excluding *China*) exceeded prepandemic projections by about 1.4 percentage points of GDP, as past inflation provided a boost through bracket creep effects

(Figure 1.2, panel 1).³ However, primary spending remained more than 3 percentage points of GDP above prepandemic projections in advanced economies excluding the *United States* and over 2 percentage points of GDP in emerging market economies excluding *China*. Increased social spending was the main driver of higher spending in emerging market and developing economies.⁴ In advanced economies, higher spending reflected a slow unwinding of pandemic crisis subsidies and transfers (Figure 1.2, panel 2), alongside new industrial policy measures, subsidies, and tax incentives (*Japan, United States*). Higher nominal interest rates pushed up net interest outlays in most economies.

Risks to public finances remain high. Fiscal tightening is projected for 2024, but it is subject to considerable uncertainty. Long-term government bond yields in the *United States* remain elevated and sensitive to inflation developments and monetary policy decisions. This could lead to volatile financing conditions in other economies (Figure 1.3). In addition, weaker-than-expected economic activity in *China* could weigh on global growth and trade, creating fiscal challenges, especially for countries with close economic relationships with *China* through trade and investment channels.

The most acute risk to public finances arises from the record number of elections being held in 2024, which has led to it being dubbed the “Great Election Year.” Election years are often associated with fiscal slippage, and this risk is further amplified by the current context of increased demand for social spending. Finally, an intensification of geopolitical factors and natural disasters could add pressures to extend fiscal support.

Over the medium term, global public debt is projected to remain on an upward trend, driven by the world's two largest economies, *China* and the *United States*,

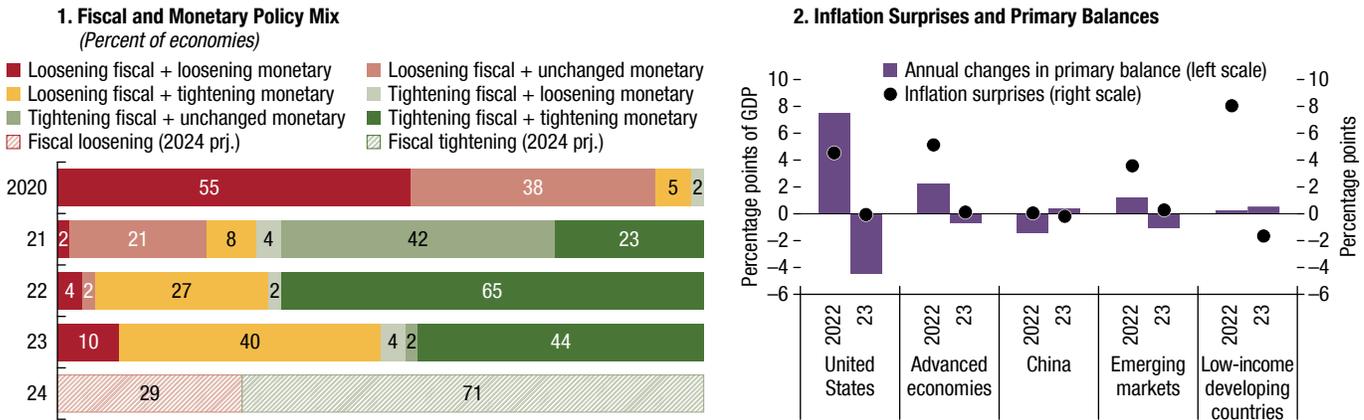
¹Inflation surprises refer to the component of actual inflation that was not expected by forecasters, who are proxied here by IMF forecasts. For public finances, it is critical to distinguish between the expected and unexpected components of high inflation, for the reasons discussed in Chapter 2 of the April 2023 *Fiscal Monitor*.

²Since 2020, *Argentina, Belize, Ecuador, Ethiopia, Ghana, Lebanon, Russia, Sri Lanka, Suriname, Ukraine, and Zambia* have defaulted.

³Bracket creep effects refer to situations in which inflation pushes taxpayers into higher income tax brackets or subjects them to higher tax rates over time, even though their real incomes have not increased (Beer, Griffiths, and Klemm 2023).

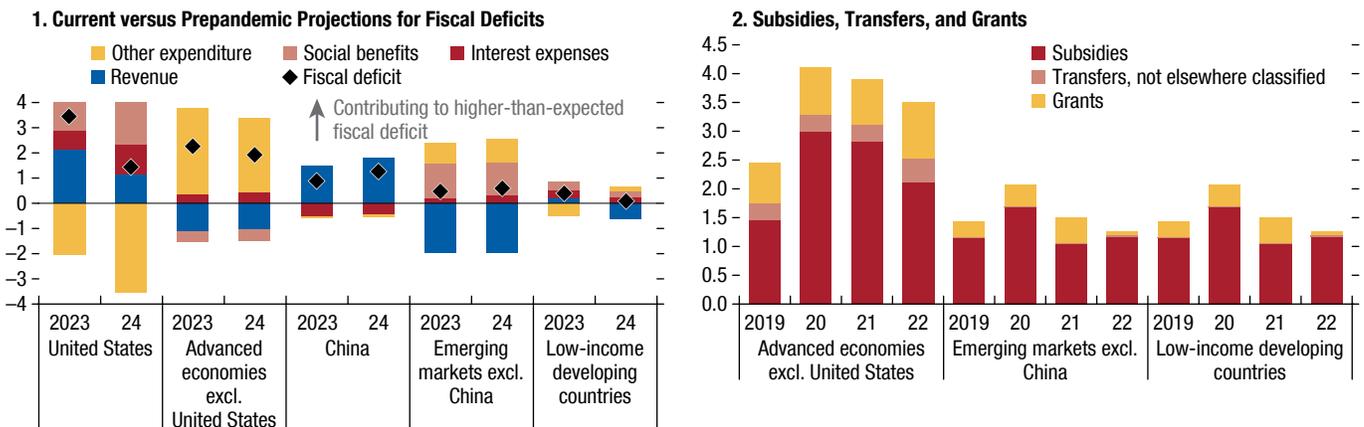
⁴Online Annex 1.1 further reports comparisons of current fiscal estimations for 2023 and projections for 2024 with respect to prepandemic projections, stratifying countries by initial levels of public debt and tax effort.

Figure 1.1. Inflation Surprises and the Fiscal and Monetary Policy Mix



Sources: Bank for International Settlements 2023; IMF, World Economic Outlook (WEO) database; and IMF staff calculations.
 Note: In panel 1, fiscal policy is tightening (loosening) if the annual change in the cyclically adjusted primary balance is positive (negative or zero). Monetary policy is tightening (loosening) if the annual change in the central bank policy rate is positive (negative or zero). The sample comprises 34 advanced economies and 20 emerging market economies. Panel 2 defines inflation surprises as differences between inflation forecasts from the April WEO of the following year and the October WEO of the previous year. The sample comprises 40 advanced economies, 89 emerging market economies, and 57 low-income developing countries. prj. = projected.

Figure 1.2. Postpandemic Fiscal Policy Legacies (Percentage points of GDP)



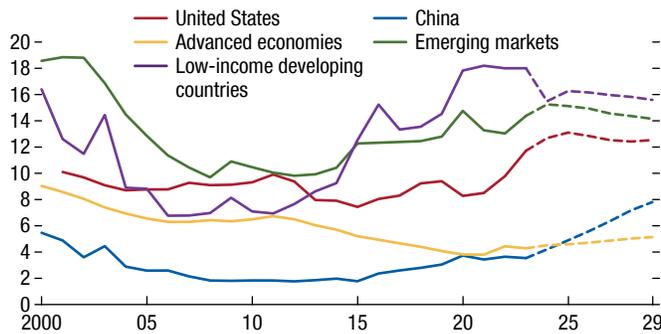
Sources: IMF, Government Finance Statistics database; IMF, World Economic Outlook (WEO) database; and IMF staff calculations.
 Note: In panel 1, for *China*, social benefit spending is not separately reported in the WEO. Current projections refer to the April 2024 WEO; prepandemic projections are from the October 2019 WEO. In panel 2, “Transfers” refers to fiscal allocations that are not classified as part of any other category, excluding current transfers to households that are already classified as social benefits. excl. = excluding.

where under current policies, public debt is projected to continue increasing beyond historical highs. In many other economies, gradual fiscal consolidation is projected to stabilize public-debt-to-GDP ratios, albeit at levels higher than those before the pandemic. Cuts in primary spending (by about 2 percentage points of GDP between 2024 and 2029, on average, if *China* and the *United States* are excluded from consideration) are expected to lead the adjustment. Revenues are projected to decline (by 0.8 percentage point of GDP) and interest expenses to rise (by about 0.2 percentage point of GDP). Despite

the planned adjustments, public gross financing needs are expected to remain elevated in many countries, indicating that fiscal policy will remain highly sensitive to financing conditions. Moreover, pressures to address long-standing challenges arising from climate and demographic transitions loom large, even as new mandates from industrial policies and defense spending are rising.

In emerging market and developing economies, achieving the UN Sustainable Development Goals will add to public expenses, notably in the context of elevated food insecurity and global poverty. Although

Figure 1.3. Interest Payments
(Percent of revenues)



Sources: IMF, World Economic Outlook database; and IMF staff calculations.

artificial intelligence could boost productivity and help improve revenue capacity in the coming years, its net fiscal impact is uncertain, as managing adverse effects on labor markets and levels of inequality will require fiscal support (Brollo and others 2024).

Many countries need larger fiscal adjustments than those currently envisaged to safeguard fiscal sustainability and rebuild buffers while protecting their most vulnerable populations. Delaying the consolidation could increase vulnerabilities and limit fiscal space to deal with future crises, potentially leading to a more painful fiscal adjustment and adverse financial consequences. Fiscal restraint in the near term could also support the disinflation process as inflation continues its final descent to target (April 2024 *World Economic Outlook*). Governments should immediately phase out legacies of pandemic-era fiscal policy, including measures to offset high energy prices, and pursue further reforms to curb rising spending. It is also imperative that spending increases be paired with corresponding rises in revenue over time. Accomplishing this will require enhancing the design of tax systems and bolstering institutional capacity. Given declining medium-term growth prospects, fiscal policy should encourage innovation, including in green sectors, and facilitate the adoption of technology to support higher productivity growth (Chapter 2). Careful design and targeting of fiscal incentives across firms and along the innovation life cycle are crucial to minimize fiscal costs and avoid misallocation.

Recent Fiscal Developments and Outlook

Following improvements in 2021–22, global fiscal deficits increased by 1.6 percentage points to 5.5 percent of GDP on average in 2023 (Table 1.1), and global public debt inched up by

about 2 percentage points to 93.2 percent of GDP (Table 1.2). With expenditures remaining virtually unchanged compared with 2022, a fall in revenues was the main driver of the uptick in fiscal deficits, as windfall revenues from inflation waned. Oil producers and commodity exporters reported much lower fiscal surpluses (0.5 percent of GDP) than in 2022, with a significant decline in revenues (about 3 percentage points of GDP, on average) as global commodity prices declined from their levels in 2022.

Fiscal tightening is projected to resume in 2024, albeit gradually, bringing the global deficit down to 4.9 percent of GDP. Moreover, fiscal consolidation over the medium term is expected to remain modest, with the overall deficit projected to stabilize at 4.3 percent of GDP by 2029, about 0.7 percentage point higher than in 2019. In many economies, the projected adjustment will help stabilize debt over the medium term. Nevertheless, global debt is projected to increase to close to 100 percent of GDP by 2029. The increase will be led by some large economies (for example, *China*, *Italy*, the *United Kingdom*, and the *United States*), which critically need to take policy action to address fundamental imbalances between spending and revenues.

The Two Largest Economies: Driving Global Trends

China and the *United States* critically shape global fiscal developments and outlooks. In both economies, public debt is projected under current policies to nearly double by 2053 (Figure 1.4). How these two economies manage their fiscal policies could therefore have profound effects on the global economy and pose significant risks for baseline fiscal projections in other economies.

United States

In 2023, the *United States* experienced remarkably large fiscal slippages, with the general government fiscal deficit rising to 8.8 percent of GDP from 4.1 percent of GDP in 2022, despite strong growth. Income tax revenues fell sharply, by 3.1 percentage points of GDP, owing to lower capital gains taxes in 2023 and delayed tax payment deadlines. Spending, in turn, increased by 1.3 percentage point of GDP.⁵

⁵Primary spending rose by 0.9 percentage point of GDP, with that rise reflecting, among others, the increase in mandatory spending (0.3 percentage point on Social Security and other health care programs), the new income-driven student debt repayment program (0.3 percentage point), increases in Federal Deposit Insurance Corporation outlays (0.2 percentage point), and a decline in income security program outlays (0.6 percentage point).

Table 1.1. General Government Fiscal Balance, 2019–29: Overall Balance
(Percent of GDP, unless noted otherwise)

	2019	2020	2021	2022	2023	Projections					
						2024	2025	2026	2027	2028	2029
World	-3.6	-9.5	-6.3	-3.9	-5.5	-4.9	-4.7	-4.5	-4.4	-4.4	-4.3
Advanced Economies	-3.0	-10.2	-7.2	-3.1	-5.6	-4.4	-4.2	-3.9	-3.8	-3.8	-3.6
Advanced Economies excl. US	-1.1	-7.6	-4.4	-2.4	-3.0	-2.7	-2.0	-1.8	-1.7	-1.7	-1.7
Canada	0.0	-10.9	-2.9	0.1	-0.6	-1.1	-0.9	-0.7	-0.7	-0.6	-0.4
Euro Area	-0.6	-7.0	-5.2	-3.7	-3.5	-2.9	-2.6	-2.5	-2.4	-2.3	-2.3
France	-3.1	-9.0	-6.5	-4.8	-5.5	-4.9	-4.9	-4.4	-4.3	-4.1	-3.9
Germany	1.5	-4.3	-3.6	-2.5	-2.1	-1.5	-1.3	-0.9	-0.7	-0.5	-0.5
Italy	-1.5	-9.4	-8.7	-8.6	-7.2	-4.6	-3.2	-3.0	-2.9	-3.0	-3.0
Spain ¹	-3.1	-10.1	-6.7	-4.7	-3.6	-3.1	-3.0	-3.2	-3.3	-3.0	-3.0
Japan	-3.0	-9.1	-6.1	-4.4	-5.8	-6.5	-3.2	-2.9	-3.1	-3.4	-3.8
United Kingdom	-2.5	-13.1	-7.9	-4.7	-6.0	-4.6	-3.7	-3.7	-3.6	-3.5	-3.4
United States ²	-5.8	-13.9	-11.1	-4.1	-8.8	-6.5	-7.1	-6.6	-6.2	-6.4	-6.0
Other Advanced Economies	-0.1	-4.8	-1.1	0.8	-0.1	0.0	0.2	0.4	0.5	0.6	0.5
Emerging Market and Developing Economies	-4.4	-8.5	-5.0	-4.9	-5.4	-5.5	-5.3	-5.2	-5.1	-5.1	-5.0
Emerging Market and Middle-Income Economies	-4.4	-8.7	-5.0	-4.9	-5.5	-5.6	-5.4	-5.3	-5.2	-5.2	-5.2
Emerging Markets excl. China	-3.2	-7.8	-4.0	-2.8	-4.2	-4.3	-3.7	-3.4	-3.3	-3.2	-3.1
Excluding MENA Oil Producers	-4.6	-8.8	-5.3	-5.7	-6.0	-6.1	-5.8	-5.7	-5.6	-5.6	-5.5
Asia	-5.7	-9.6	-6.3	-7.2	-6.7	-6.9	-7.0	-7.1	-7.0	-6.9	-6.9
China ³	-6.1	-9.7	-6.0	-7.5	-7.1	-7.4	-7.6	-7.8	-7.8	-7.8	-7.9
India	-7.7	-12.9	-8.6	-9.2	-8.6	-7.8	-7.6	-7.3	-7.0	-6.8	-6.6
Vietnam	-0.4	-2.9	-1.4	0.3	-1.6	-2.4	-2.4	-2.5	-2.5	-2.5	-2.5
Europe	-0.6	-5.4	-1.7	-2.4	-4.3	-4.0	-3.1	-2.6	-2.4	-2.4	-2.2
Russia	1.9	-4.0	0.8	-1.4	-2.3	-1.9	-1.2	-0.5	-0.2	-0.2	0.2
Latin America	-3.8	-8.3	-3.8	-3.3	-5.1	-4.7	-3.4	-3.1	-2.8	-2.6	-2.5
Brazil	-5.0	-11.9	-2.5	-3.1	-7.9	-6.3	-5.5	-5.2	-5.0	-4.6	-4.4
Mexico	-2.3	-4.3	-3.8	-4.3	-4.3	-5.9	-3.0	-2.7	-2.7	-2.7	-2.7
MENA	-2.3	-8.3	-1.9	3.8	0.6	-1.5	-1.1	-1.1	-1.3	-1.3	-1.3
Saudi Arabia	-4.2	-10.7	-2.2	2.5	-2.0	-2.8	-1.6	-2.0	-2.5	-2.5	-2.5
South Africa	-4.7	-9.6	-5.5	-4.3	-6.0	-6.1	-6.3	-5.6	-5.4	-5.6	-5.8
Low-Income Developing Countries	-4.0	-5.3	-4.6	-4.5	-4.0	-3.6	-3.4	-3.3	-3.2	-3.2	-3.2
Kenya	-7.4	-8.1	-7.2	-6.1	-5.3	-4.0	-3.2	-3.0	-3.1	-3.2	-3.5
Nigeria	-4.7	-5.6	-5.5	-5.4	-4.2	-4.6	-4.2	-3.6	-3.9	-4.3	-4.2
Oil Producers	0.0	-7.4	-0.6	3.0	0.4	-0.2	0.0	0.1	0.0	-0.1	-0.1
Memorandum											
World Output (percent)	2.8	-2.7	6.5	3.5	3.2	3.2	3.2	3.2	3.1	3.1	3.1

Source: IMF staff estimates and projections.

Note: All country averages are weighted by nominal GDP converted to US dollars (adjusted by purchasing power parity only for world output) at average market exchange rates in the years indicated and based on data availability. Projections are based on IMF staff assessments of current policies. For many economies, 2023 data are still preliminary. For country-specific details, see "Data and Conventions" and Tables A, B, C, and D in the Methodological and Statistical Appendix. excl. = excluding; MENA = Middle East and North Africa.

¹Including financial sector support.

²For cross-economy comparability, expenditure and fiscal balances of the *United States* are adjusted to exclude the imputed interest on unfunded pension liabilities and the imputed compensation of employees, which are counted as expenditures under the 2008 System of National Accounts (2008 SNA) adopted by the *United States* but not in countries that have not yet adopted the 2008 SNA. Data for the *United States* in this table may thus differ from data published by the US Bureau of Economic Analysis.

³*China's* deficit and public debt numbers presented in this table cover a narrower perimeter of the general government than the IMF staff estimates in *China* Article IV reports (see IMF 2024 for a reconciliation of the two estimates).

The overall fiscal deficit is projected to persist at more than 6 percent of GDP over the medium term.

Financing costs have increased substantially in recent years. Nominal yields on 10-year US Treasury bonds surged from below 1 percent in 2020 to 5 percent in October 2023, the highest level in 16 years, before receding to about 4 percent more recently (Figure 1.5) amid a rapid pickup in inflation and inflation

expectations. The ensuing monetary tightening cycle since 2022 has lifted markets' expectations regarding the paths of short-term interest rates and nominal yields of long-term bonds (see Chapter 1 of the October 2023 and the April 2024 *Global Financial Stability Reports*).

By adding to inflationary pressures, fiscal policy may also have affected nominal interest rates (see Chapter 2

Table 1.2. General Government Debt, 2019–29
(Percent of GDP)

	2019	2020	2021	2022	2023	Projections					
						2024	2025	2026	2027	2028	2029
Gross Debt											
World¹	84.2	99.4	94.7	91.3	93.2	93.8	95.1	96.3	97.1	98.1	98.8
Advanced Economies	103.9	122.4	116.2	111.2	111.0	111.2	112.4	113.4	114.0	114.7	115.1
Advanced Economies excl. US	100.9	115.6	110.0	104.2	102.0	101.3	100.9	100.7	100.3	100.2	99.7
Canada ²	90.2	118.2	113.5	107.4	107.1	104.7	102.1	100.2	98.6	97.1	95.4
Euro Area	84.1	97.2	94.7	90.8	88.6	88.7	88.3	88.2	87.9	87.9	87.7
France	97.4	114.7	113.0	111.8	110.6	111.6	112.8	113.4	114.1	114.6	115.2
Germany	59.6	68.8	69.0	66.1	64.3	63.7	62.3	61.0	59.8	58.7	57.7
Italy	134.2	154.9	147.1	140.5	137.3	139.2	140.4	142.6	143.1	144.7	144.9
Spain	98.2	120.3	116.8	111.6	107.5	106.3	104.9	105.0	105.1	104.6	104.2
Japan	236.4	258.3	253.9	257.2	252.4	254.6	252.6	251.3	251.0	251.0	251.7
United Kingdom	85.7	105.8	105.2	100.4	101.1	104.3	106.4	107.3	108.3	109.2	110.1
United States ²	108.1	132.0	125.0	120.0	122.1	123.3	126.6	128.9	130.7	132.6	133.9
Emerging Market and Developing Economies	55.0	64.6	63.9	64.0	68.0	69.4	71.3	73.3	75.0	76.7	78.1
Emerging Market and Middle-Income Economies	55.7	65.5	64.7	64.8	68.9	70.3	72.5	74.6	76.5	78.4	80.1
Emerging Markets excl. China	52.1	61.5	58.4	55.0	57.7	56.7	57.0	57.3	57.5	57.6	57.6
Excluding MENA Oil Producers	57.3	67.0	66.5	67.4	71.7	73.2	75.5	77.7	79.6	81.5	83.3
Asia	59.5	69.7	70.9	74.2	79.0	82.4	85.4	88.2	90.9	93.4	95.7
China ³	60.4	70.1	71.8	77.1	83.6	88.6	93.0	97.5	101.8	106.0	110.1
India	75.0	88.4	83.5	81.7	82.7	82.5	81.8	80.9	79.9	78.8	77.5
Vietnam	40.8	41.1	39.0	34.6	34.0	33.5	32.9	32.6	32.4	32.4	33.0
Europe	28.5	37.0	34.4	31.9	33.9	36.2	37.7	39.1	40.1	41.0	41.8
Russia	13.7	19.2	16.4	18.5	19.7	20.8	21.9	22.8	23.3	23.7	24.0
Latin America	67.6	76.6	70.8	68.3	74.1	68.5	68.4	68.2	67.9	67.6	67.2
Brazil ⁴	87.1	96.0	88.9	83.9	84.7	86.7	89.3	90.9	92.4	93.4	93.9
Mexico	51.9	58.5	56.9	54.2	53.1	55.6	55.4	55.4	55.6	55.8	56.1
MENA Region	43.4	54.6	51.5	43.5	43.1	42.3	41.4	42.0	42.6	43.4	44.0
Saudi Arabia	21.6	31.0	28.6	23.9	26.2	27.5	27.6	28.4	29.5	30.7	31.5
South Africa	56.1	68.9	68.8	71.1	73.9	75.4	77.9	80.0	81.9	83.8	85.7
Low-Income Developing Countries	42.9	49.4	49.2	50.5	53.2	51.8	50.0	49.0	47.3	46.3	45.2
Kenya	59.1	68.0	68.2	68.4	73.3	73.0	70.3	67.5	65.4	63.4	61.7
Nigeria	29.2	34.5	35.7	39.4	46.3	46.6	46.8	46.6	46.5	47.0	46.8
Oil Producers	45.5	59.8	55.1	48.8	50.8	50.1	50.1	50.3	50.4	50.7	50.8
Net Debt⁵											
World¹	68.3	79.7	77.3	73.8	74.7	75.3	76.4	77.1	77.6	78.3	78.7
Advanced Economies	74.9	86.7	84.0	80.9	81.9	82.5	83.8	84.7	85.4	86.2	86.8
Canada ²	8.7	16.1	14.3	15.6	12.8	13.3	13.4	13.3	13.1	13.1	12.9
Euro Area	69.1	79.0	77.6	75.5	74.5	74.9	74.9	75.1	75.1	75.4	75.4
France	88.9	101.2	100.4	101.2	102.4	103.4	104.6	105.2	105.8	106.4	106.9
Germany	40.3	45.7	46.8	47.1	46.4	46.4	45.7	45.0	44.3	43.6	43.0
Italy	121.7	141.5	134.8	129.1	126.6	128.9	130.3	132.8	133.5	135.4	135.8
Spain	83.7	103.1	101.2	97.4	93.3	92.4	91.4	91.5	91.8	91.8	91.8
Japan	151.7	162.0	156.4	150.3	155.9	157.7	155.7	154.1	153.3	152.9	152.9
United Kingdom	75.8	93.1	91.7	90.5	92.5	92.9	94.7	95.5	96.4	97.2	98.0
United States ²	83.2	98.0	97.8	94.7	96.3	97.6	100.7	102.9	104.6	106.5	108.0

Source: IMF staff estimates and projections.

Note: All country averages are weighted by nominal GDP converted to US dollars (adjusted by purchasing power parity only for world output) at average market exchange rates in the years indicated and based on data availability. Projections are based on IMF staff assessments of current policies. For many economies, 2022 data are still preliminary. For country-specific details, see "Data and Conventions" and Tables A, B, C, and D in the Methodological and Statistical Appendix. excl. = excluding; MENA = Middle East and North Africa.

¹ Gross and net debt averages do not include the debt incurred by the *European Union* and used to finance the grants portion of the NextGenerationEU package. This debt totaled €58 billion (0.4 percent of *European Union* GDP) as of December 31, 2021, and €158 billion (1 percent of *European Union* GDP) as of February 16, 2023. Debt incurred by the *European Union* and used to onlend to member states is included within member state debt data and regional aggregates.

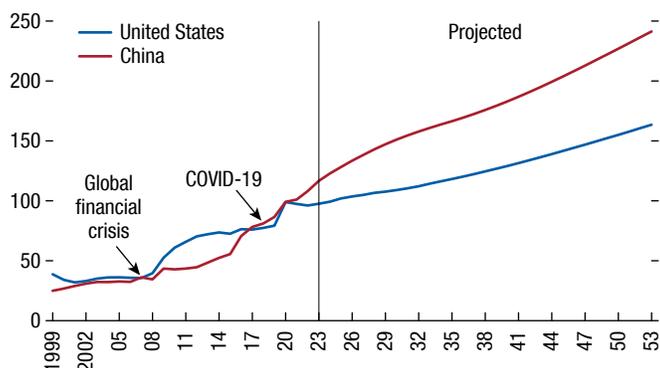
² For cross-economy comparability, gross and net debt levels reported by national statistical agencies for economies that have adopted the 2008 System of National Accounts (*Australia, Canada, Hong Kong SAR, United States*) are adjusted to exclude unfunded pension liabilities of government employees' defined-benefit pension plans.

³ *China's* deficit and public debt numbers presented in this table cover a narrower perimeter of the general government than the IMF staff estimates in *China* Article IV reports (see IMF 2024 for a reconciliation of the two estimates).

⁴ Gross debt refers to the nonfinancial public sector, excluding Eletrobras and Petrobras, and includes sovereign debt held on the balance sheet of the central bank.

⁵ Net debt refers to gross debt minus financial assets in the form of debt instruments.

Figure 1.4. Evolution of Public Debt in the Two Giants: The United States and China
(Percent of GDP)



Sources: IMF 2024; US Congressional Budget Office 2024; and IMF staff calculations.

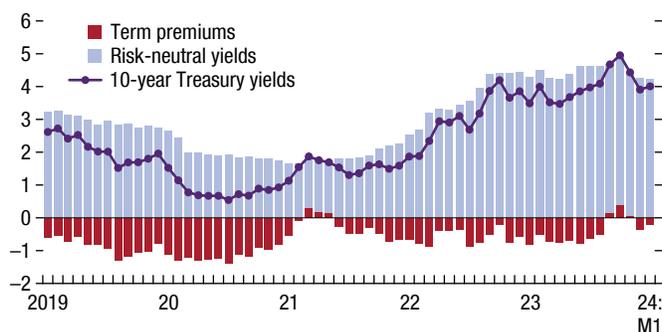
Note: For the *United States*, the figure shows federal debt held by the public under unchanged policies. For *China*, it shows augmented debt, which expands the perimeter of government to include the activity of local government financing vehicles (LGFVs), government guided funds, and special construction funds (see Table 4 and Appendix III in IMF 2024). This is different from debt numbers shown in Table 1.2 which excludes about one-third of local government financing vehicles debts that are categorized as government guaranteed debt or “possible to be recognized debt” as well as debt tied to special construction and government guided funds. The projection for the *United States* assumes unchanged policies over the forecast horizon. The projection for *China* reflects the IMF staff’s baseline scenario.

of the April 2023 *Fiscal Monitor*; see also Bianchi and Melosi 2022). Decomposing the drivers of core inflation empirically to parse the effects of fiscal shocks in the *United States* reveals that contributions from fiscal policy in cumulative terms remained statistically significant in 2023, at about 0.5 percentage point (Figure 1.6).

The rise in nominal term premiums also contributed to the surge in nominal Treasury yields in mid-2023.⁶ This rise reflects several factors, including the perceived risk of sustained inflation and uncertainty about the future path of monetary policy (US Congressional Budget Office 2023). Further, the Treasury’s plans to issue more debt, coinciding with quantitative tightening, likely contributed to heightened volatility in bond markets and a rise in term premiums (see Chapter 1 of the October 2023 and April 2024 *Global Financial Stability Reports*). Empirical evidence suggests that all else being equal, a 1 percentage point increase

⁶Nominal term premiums are the additional nominal returns to the short-term nominal interest rate paid to bondholders for the extra risk associated with holding long-term bonds. The estimation of nominal term premiums uses the methodology based on Adrian, Crump, and Moench (2013).

Figure 1.5. Nominal Yields and Term Premiums for 10-Year US Treasuries
(Percent)



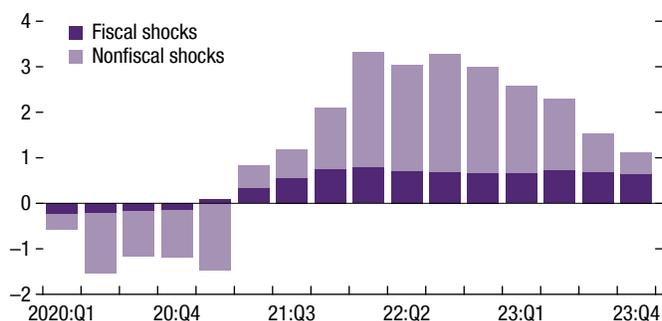
Source: Federal Reserve Bank of New York.

Note: The decomposition into monthly risk-neutral yields and term premiums is based on Adrian, Crump, and Moench (2013).

in the US primary deficit is associated with a rise in term premiums of about 11 basis points in the quarters that follow (Figure 1.7; Online Annex 1.2).

Large and sudden increases in nominal Treasury yields typically lead to surges in government bond yields and exchange rate turbulence in emerging market and developing economies. An empirical analysis to quantify the spillovers of US long-term nominal interest rates to nominal rates in other economies suggests that a 1 percentage point spike in US rates is associated with a rise in long-term nominal interest rates that peaks at 90 basis points in other advanced economies, with a persistent impact over

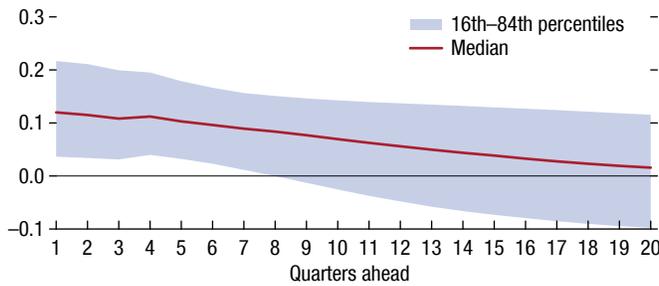
Figure 1.6. Decomposition of Changes in US Core Inflation
(Percentage points)



Sources: IMF, World Economic Outlook database; and IMF staff calculations.

Note: The model is estimated using a vector autoregression model including real GDP growth, year-over-year core inflation, the short-term interest rate, and the primary fiscal balance in percent of GDP. The fiscal shock is identified via sign restrictions only on the contemporaneous effects (that is, fiscal tightening raises the primary balance and lowers GDP growth or inflation). Nonfiscal factors represent the sum of aggregate demand shocks, aggregate supply shocks, and other factors. See Nguyen, Takizawa, and Vassileva (2023) for more details.

Figure 1.7. Effect of Spikes in the US Primary Deficit on Nominal Term Premiums of Treasuries
(Percent)



Sources: Adrian, Crump, and Moench 2013; Federal Reserve Bank of St. Louis; and IMF staff calculations.
 Note: The impulse response shows the impact of a temporary spike in the US primary deficit of 1 percentage point of GDP on US nominal term premiums. It is based on a Bayesian vector autoregression model using shock identification via sign restrictions. See Online Annex 1.2 for more details.

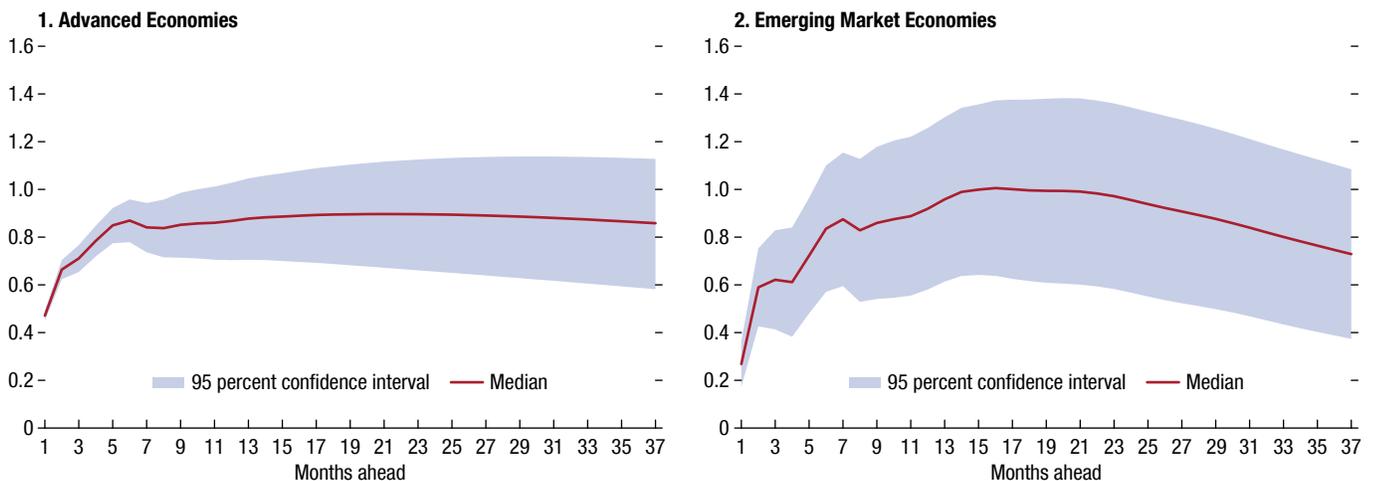
many months (Figure 1.8, panel 1; Online Annex 1.2). For emerging market economies, the same spike in US rates is associated with a peak increase in long-term interest rates of about 100 basis points (Figure 1.8, panel 2). Moreover, it is possible that uncertainty about US fiscal policy and long-term rates could adversely affect financial conditions elsewhere. Box 1.1 uses a novel news-based uncertainty measure to analyze how US fiscal policy uncertainty affects bond spreads in other economies.

In sum, the previous analysis points to risks from loose fiscal policy in the *United States* along several

dimensions. Loose US fiscal policy could make the last mile of disinflation harder to achieve while exacerbating the debt burden. Further, global interest rate spillovers could contribute to tighter financial conditions, increasing risks elsewhere.

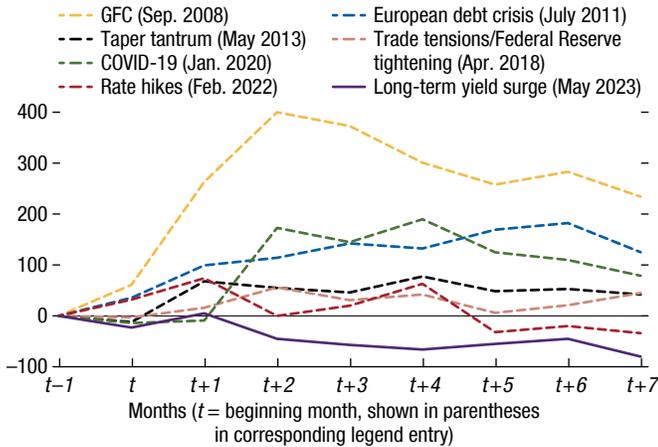
What implications have these developments had on emerging market and developing economies? In 2022–23, sovereign spreads in emerging market and developing economies had a relatively muted response compared with other bond market episodes, albeit with cross-country differences (Figure 1.9). In many emerging market and developing economies, especially those with relatively low risks associated with their levels of debt, sovereign spreads remained stable or even declined (Figure 1.10). Improved policy frameworks and relatively strong fiscal performances and outlooks likely contributed to favorable financing conditions, as countries that investors perceive as adopting sound fiscal policies tend to issue bonds at lower spreads (Laubach 2009; Cimadomo, Claeys, and Poplawski-Ribeiro 2016). Indeed, economies where primary deficits were expected to improve over the medium term experienced more favorable changes in spreads in 2023 (Figure 1.11). Fiscal structural reforms in recent decades to deepen local currency bond markets (for example, *Uruguay*) increased shares of domestic institutional investors, further helping insulate domestic financing conditions from external shocks (October 2023 *Global Financial Stability Report*).

Figure 1.8. Impact of Spillovers of US Long-Term Nominal Interest Rates on Advanced and Emerging Market Economies
(Percentage points)



Sources: Organisation for Economic Co-operation and Development database; and IMF staff calculations.
 Note: The impulse response shows, for each country group, the impact on a panel of economies of a temporary spike in the US long-term nominal interest rate of 1 percentage point, based on a panel vector autoregression estimation. See Online Annex 1.2 for more details.

Figure 1.9. Median Changes in Emerging Market Bond Index Spreads, Selected Episodes
(Basis points)

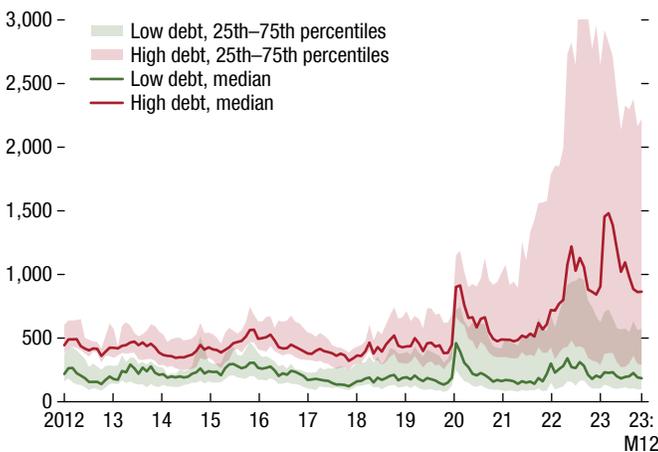


Sources: JPMorgan, Emerging Market Bond Index; and IMF staff calculations. Note: Each line in the figure tracks the changes in the median Emerging Market Bond Index from the value in the beginning month of an episode, shown in parentheses in the corresponding legend entry, over subsequent months. GFC = global financial crisis.

China

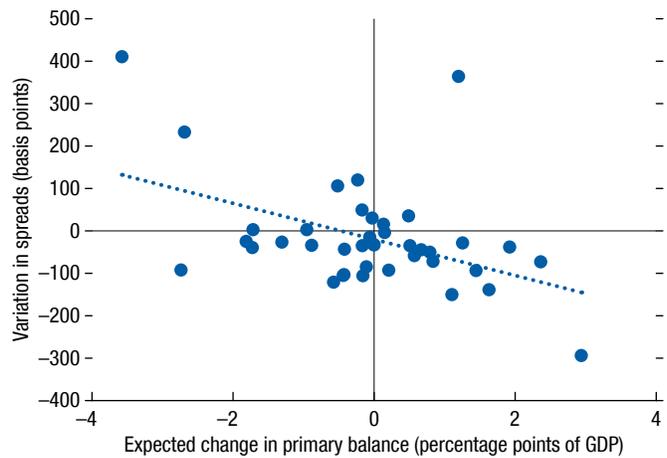
The overall fiscal deficit in *China* remained above 7 percent of GDP in 2023, as a modest increase in revenues offset spending increases. The fiscal deficit is projected to stay elevated and even to gradually rise to about 8 percent of GDP by 2029 as pension spending

Figure 1.10. Monthly Sovereign Spreads in Emerging Market and Developing Economies
(Basis points)



Sources: Haver Analytics; and IMF staff calculations. Note: “Low debt” (“High debt”) refers to countries with public debt levels in the bottom (top) third in the sample. The lines in the panel show the median of the distribution of the spreads, whereas shaded areas correspond to the interquartile range.

Figure 1.11. Changes in Sovereign Spreads and the Fiscal Outlook



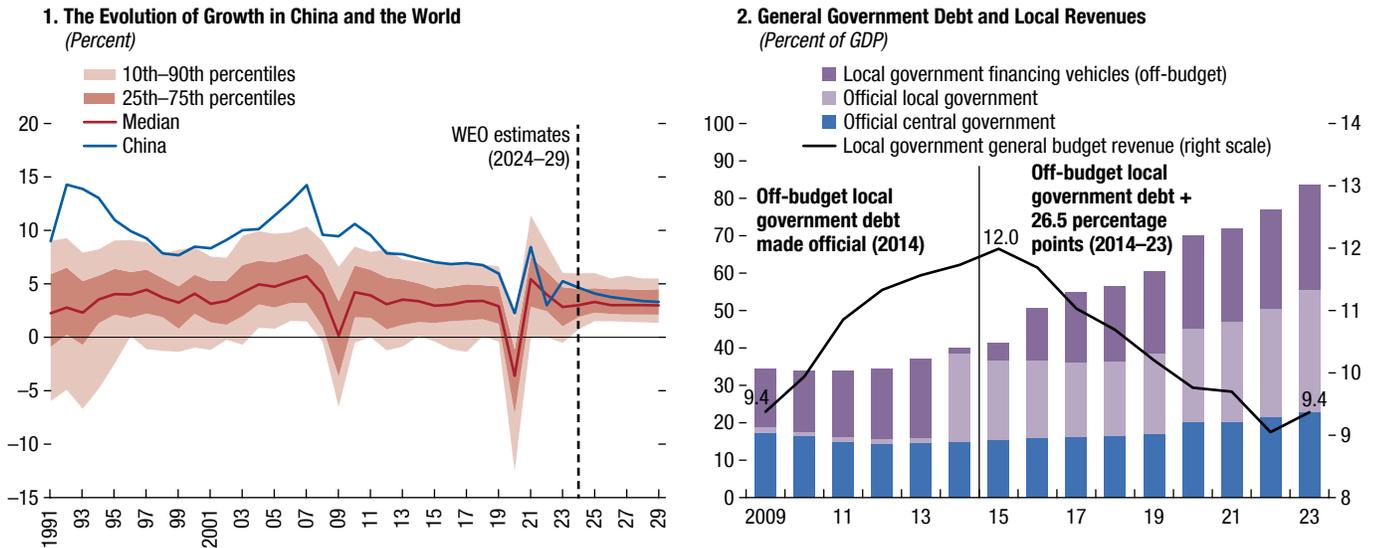
Sources: Haver Analytics; IMF, World Economic Outlook database; and IMF staff calculations. Note: The vertical axis captures the variation in spreads for 40 emerging market economies in 2023. The horizontal axis captures the expected change in the primary balance in percentage points of GDP between 2023 and 2028. The dotted line reports a linear regression of the chart data points.

and interest expenses gradually rise over the medium term. Despite very favorable interest-growth differentials, persistently large primary deficits are projected to continue raising public debt in the country.

China’s growth is expected to decline amid headwinds from a declining labor force and slowing productivity over the medium term (Figure 1.12, panel 1). Further, the ongoing property sector downturn is exerting a significant drag on growth, weighing on financial market and consumer sentiment, and putting strains on local government finances. Land sale revenues and debt financing through local government financing vehicles have been important sources of resources for local governments. Slowing land revenues, adding to pandemic-related fiscal costs, further widened local government primary deficits, which exceeded 10 percent of provincial GDP before central government transfers in many provinces in 2021. As a result of an increase in the amount of debt financed through local government financing vehicles by 16 percentage points of GDP since 2008, funding costs have soared in some fiscally weaker provinces, with increasing concerns about the sustainability of these vehicles (Figure 1.12, panel 2).⁷

⁷*China’s* public debt numbers cover a narrower perimeter of the general government than IMF staff estimates in *China* Article IV reports (see IMF 2024 for a reconciliation of the two estimates).

Figure 1.12. The Evolution of Growth and Fiscal Imbalances in China



Sources: IMF, World Economic Outlook (WEO) database; and IMF staff calculations.

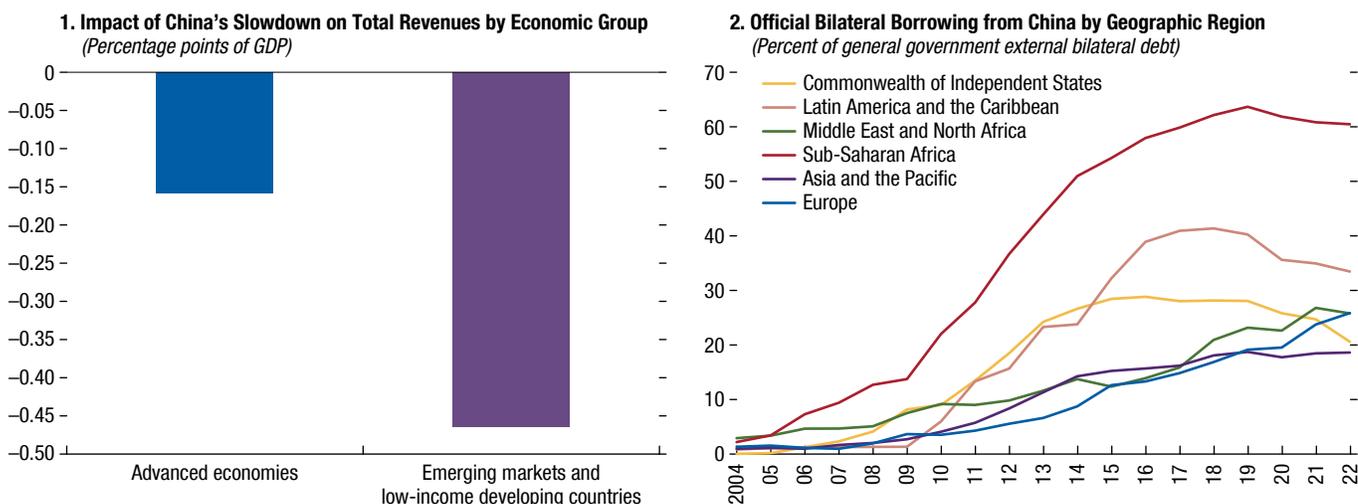
Note: In panel 2, official central government debt includes Ministry of Finance debt only, excluding bonds issued for bank recapitalization and asset management companies. Official local government debt includes local government bonds and explicit debt. Local government financing vehicle (LGFV) debt shows about two-thirds of total interest-bearing debt of LGFVs with listed bonds, which is categorized as the government’s explicit debt according to *China’s* National Audit Office report. The sum of the three components of the bars shown in the figure corresponds to the WEO definition of debt, which covers a narrower perimeter of the general government than the IMF staff’s estimate of “augmented debt” in the Article IV report for *China* (see Table 4 in IMF 2024 for details). The narrower perimeter excludes the remaining third of LGFV debt, which is categorized as government guaranteed debt or “possible to be recognized debt,” as well as debt tied to special construction and government-guided funds.

Economic and fiscal developments in *China* can have significant spillovers to economies in the rest of the world (see Box 1.2 in the April 2024 *World Economic Outlook*)—including on their public finances. A larger-than-expected slowdown of growth in *China*, potentially exacerbated by unintended fiscal tightening given significant fiscal imbalances in local governments, could generate negative spillovers to the rest of the world through lower levels of international trade, external financing, and investments.

In 2022, *China* imported more than 12 percent of global exports and more than 60 percent of commodities such as aluminum, iron ore, copper, and soybeans. Revenues from international trade and transactions represented 15 percent of total tax revenues in emerging market and developing economies on average in 2022. A slowdown in *China* and its accompanying weaker imports would thus have a direct impact on fiscal revenues in its main trading partners, especially commodity exporters (Roberts and others 2016; Wolf, Wang, and Tang 2023) and many low-income developing countries that rely heavily on trade revenues (October 2023 *Regional Economic Outlook: Sub-Saharan Africa*). A quantitative analysis based on the IMF’s Group of Twenty Model

(see Box 1.2 in the October 2023 *World Economic Outlook*), and an estimate of elasticities of revenue to growth, indicate that a slowdown in *China* could have a nontrivial impact on total revenue (Figure 1.13, panel 1). A decline of 1 percentage point in GDP growth in *China* over 2023–28 could result in an average drop in total revenues of about 0.5 percentage point of GDP in emerging market economies and low-income countries over the same period but have a more muted effect in advanced economies (less than 0.2 percentage point of GDP).

A slowdown in *China*, especially together with financial stress, could also lower levels of external financing and investment in recipient countries. *China* is a significant source of bilateral funding for governments in many emerging market and developing economies, especially those in *sub-Saharan Africa* and *Latin America and the Caribbean* (Figure 1.13, panel 2). Chinese commercial banks hold an increasing share of the debt stock in *sub-Saharan African* economies (Chen, Fornino, and Rawlings 2024). *China’s* outward direct investment, with an outstanding stock of about \$2.8 trillion in 2022, has also been an important source of financing for large investment projects and other initiatives in several economies, with economic

Figure 1.13. Fiscal Impact of China's Slowdown in the Rest of the World

Sources: IMF, World Economic Outlook database; World Bank, International Debt Statistics; and IMF staff calculations.

Note: The bars in panel 1 show the estimated average response of annual primary balances to GDP growth in *China* that is 1 percentage point lower in 2023–28. The growth spillover effects have been estimated, based on the IMF's Group of Twenty Model, as the percent deviation of GDP from the steady-state growth path in the absence of the shock to the Chinese economy (see Box 1.1 of the October 2023 *World Economic Outlook*; see also Chen, Fornino, and Rawlings 2024). The final impact on revenue is calculated by applying elasticities of revenues to growth, estimated with pooled mean group heterogeneous panel regressions, for 30 advanced economies, 29 emerging market economies, and 49 low-income developing countries. The period sample is from 1970 to 2019.

and fiscal implications different than those of bilateral lending (see Chapter 4 of the April 2024 *World Economic Outlook*).

Advanced Economies (excluding the United States): Slow Policy Normalization

Primary deficits in advanced economies increased by 0.6 percentage point to 2.1 percent of GDP on average in 2023 (Figure 1.14, panel 1). First, bracket creep effects waned as the inflation surprise dissipated. Second, governments did not fully phase out subsidies and transfers to mitigate the impact of energy price shocks despite a marked decline in energy prices in 2023. Some governments also extended certain pandemic-related support measures, such as the Superbonus program in *Italy*. Third, several economies (*Italy*, *Japan*) announced new fiscal stimulus plans, including costly changes to tax policy, social security contribution cuts, and new spending initiatives, often based on optimistic financing assumptions.

Most advanced economies are projected to resume fiscal consolidation in 2024, with primary deficits expected to decline to 1.7 percent of GDP, on average. Improvement hinges crucially on phasing out energy and other pandemic-era support measures. A gradual adjustment is projected over the medium term, with

the average primary deficit expected to approach 0.3 percent of GDP by 2029.

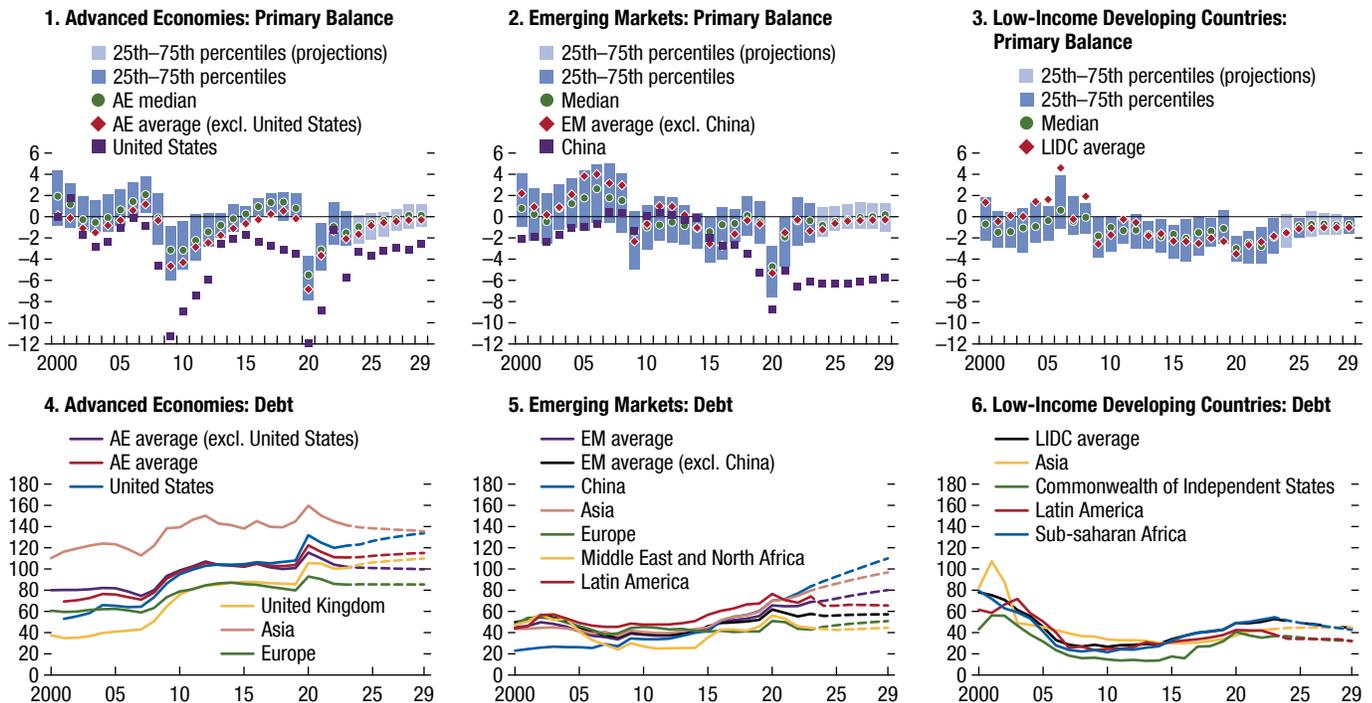
Public debt in advanced economies fell by slightly more than 2 percentage points to about 102 percent of GDP, on average, in 2023. It is projected to decline modestly over the medium term to 100 percent of GDP by 2029 (Table 1.2; Figure 1.14, panel 4). In some cases, recent policy changes, such as a significant cut to the National Insurance Contribution in the *United Kingdom*, although part-funded by well-conceived revenue raising measures, could worsen the debt trajectory in the medium term. Population aging and labor market mismatches are further expected to exert pressure on fiscal positions. For example, in *Belgium* and *Finland*, public debt is projected to increase by about 10 and 7 percentage points of GDP in five years, respectively.

Emerging Markets (excluding China): Higher Deficits in Some Large Economies

Primary deficits increased by 1 percentage point to 1.3 percent of GDP on average in emerging market economies in 2023 (Figure 1.14, panel 2).⁸

⁸Compared with projections in the April 2023 *Fiscal Monitor*, however, primary deficits have been revised downward in most economies, based on higher-than-expected economic growth.

Figure 1.14. Primary Balances and Debt Levels in Advanced Economies, Emerging Markets, and Low-Income Developing Countries
(Percent of GDP)



Source: IMF, World Economic Outlook database.
 Note: Panels 4, 5, 6 report statistics on general government debt. In those panels, beyond the income group averages, data for select economies or regional averages are further displayed. See Online Annex 1.2 for more details. AE = advanced economy; EM = emerging market; excl. = excluding; LIDC = low-income developing country.

In most commodity-exporting countries, revenues dropped significantly—by 1.1 percentage points of GDP on average—as global commodity prices eased. Spending remained high, likely reflecting the impact of high inflation in 2022–23. This included effects through indexation, which pushed up wage bills and social benefits (Balasundharam, Kayastha, and Poplawski-Ribeiro 2023), as well as the extension of pandemic-related support measures (for example, subsidies to provide free food grains in *India* and the Social Relief of Distress grant in *South Africa*). In some large emerging market economies, deficits widened substantially in the context of delivering on election pledges, through hikes in public wages, social support, and pensions, as well as in response to major natural disasters. Interest expenses also grew markedly in 2023, by 0.4 percentage point of GDP, on average.

Primary deficits in emerging market economies are projected to narrow to 1.2 percent of GDP in 2024, on average, and to continue trending down to reach 0.3 percent of GDP by 2029. Cuts in primary

spending are expected to drive the improvement. Revenues are projected to remain stable. Several economies with relatively high deficit levels are projected to undergo stronger fiscal consolidation over the medium term (for example, *Pakistan*). Some economies are implementing fiscal reforms to strengthen fiscal frameworks and boost potential growth. *Brazil*, for example, has introduced new fiscal rules and passed a reform to its value-added tax to streamline and improve the efficiency of its tax regime.

Average public debt in emerging market economies increased by 3 percentage points to about 58 percent of GDP in 2023 (Figure 1.14, panel 5) and is projected to remain largely unchanged over the medium term. In some large economies in this group, however, public debt is projected to rise rapidly. In *South Africa*, for example, the debt-to-GDP ratio is expected to increase by 12 percentage points, reflecting persistently weak growth and relatively high interest rates, almost reaching 86 percent of GDP by 2029.

External sovereign bond issuance in emerging market economies has increased substantially, with total issuance reaching more than \$68 billion in the first month of the year (for example, *Brazil, Chile, Hungary, Indonesia, Mexico, Poland, Romania, and Saudi Arabia*), more than 10 percent higher than during the same period in 2023. The ability to reenter international financial markets can give governments breathing room to finance priority spending, including investment for sustainable development. However, it can also add to debt vulnerabilities. Making use of enhanced borrowing possibilities while limiting the associated risks constitutes a difficult balancing act.

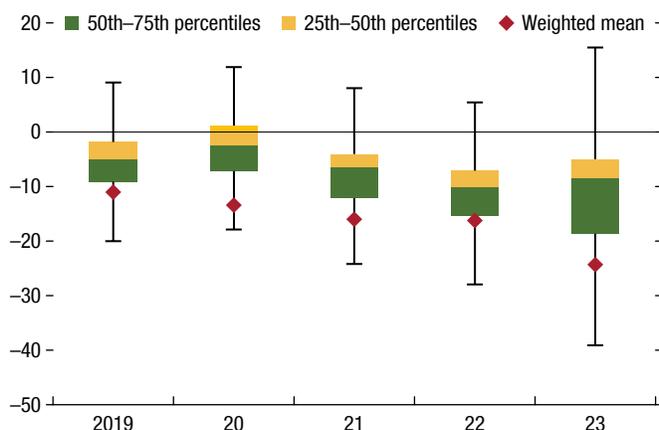
Low-Income Developing Countries: In Search of Fiscal Space

Many low-income developing countries continued to experience significant shocks in 2023, including regional conflicts and military coups. Nevertheless, primary deficits continued declining to 1.8 percent of GDP during the year (Figure 1.14, panel 3), likely limited by financing constraints (April 2023 *Regional Economic Outlook: Sub-Saharan Africa*). Elevated interest rates and a strong US dollar made servicing dollar-denominated debt more expensive. Aid flows, as well as financing from *China*, have also been declining for several years. Revenue-to-GDP ratios have stagnated, following their recovery in 2021–22. Primary spending has declined marginally, aided by continued withdrawal of pandemic-era and inflation-related support. Fiscal balances have improved only in *sub-Saharan Africa* (by 1.2 percentage points of GDP), with both lower spending and higher revenues.

Overall, primary deficits are projected to decline further in low-income developing countries in 2024 to 1.5 percent of GDP, on average, gradually falling to 1 percent by 2029, about 1.3 percentage point of GDP below their level in 2019. Revenues are expected to improve in many economies in this group, given, among other measures, new tax measures and reduced exemptions to the value-added tax (*Bangladesh*). Expenditures are expected to rise modestly.

Large shares of loans on concessional terms, high inflation, and resulting favorable interest-growth differentials (Figure 1.15) have helped contain average public-debt-to-GDP ratios in low-income developing

Figure 1.15. Real Interest-Growth Differential in Low-Income Developing Countries
(Percentage points)

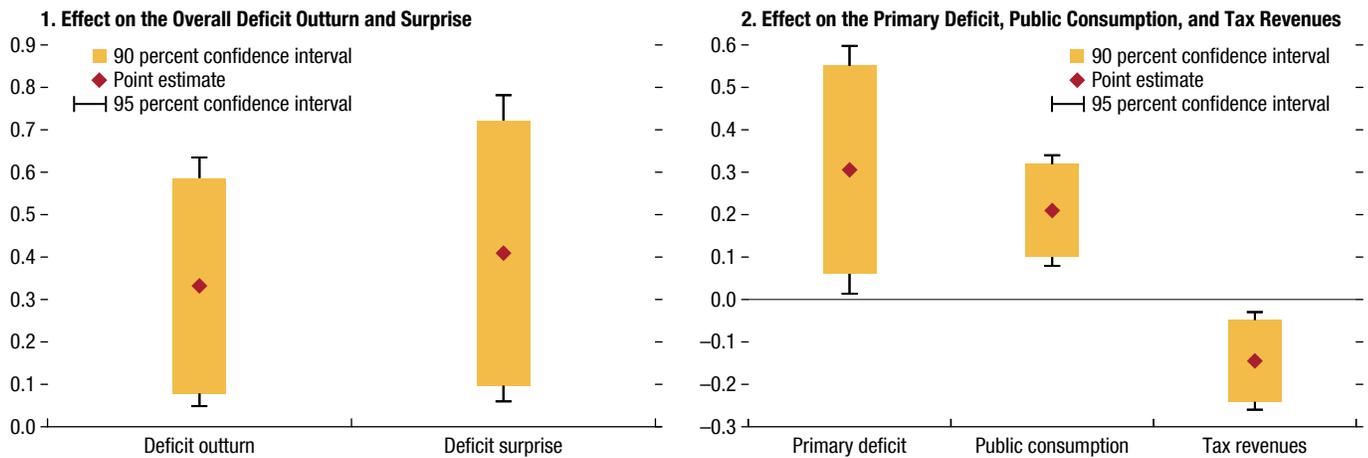


Sources: IMF, World Economic Outlook database; and IMF staff calculations. Note: Country data are weighted by a country's nominal GDP in US dollars for the low-income developing country average. Real effective interest rates are calculated by dividing interest expenses by the debt stock in the previous year and subtracting consumer price index inflation rates.

countries, at around 50 percent of GDP since 2020, on average. An exception was an uptick to 53 percent of GDP in 2023, largely driven by exchange rate depreciation in *Nigeria* (Figure 1.14, panel 6). However, countries are carrying heavy debt-service burdens, amounting to 13 percent of total spending and almost 25 percent of tax revenues, on average, in 2023 (about double the level 15 years ago). In *Nigeria*, the debt-service burden amounts to around 56 percent of tax revenues.

Such high debt-servicing costs prevent low-income developing countries from spending more on essential services and critical investment to improve economic resilience and reduce poverty. Economies in this country group are also borrowing increasingly on commercial terms, amplifying their exposure to interest rate and foreign exchange risks. Accordingly, risks associated with debt refinancing are high, as repayments of substantial amounts of external debt—about \$60 billion—are coming due in 2024–25, three times the average in the 2010s (Holland and Pazarbasioglu 2024). Several low-income developing countries returned to international markets after a hiatus in early 2024 (*Benin, Côte d'Ivoire, Kenya*), allowing them to refinance maturing debt. However, at present, governments should carefully consider the trade-offs between current financing and future fiscal

Figure 1.16. Effects of Election Years on Fiscal Deficits and Subcomponents
(Percent of GDP)



Sources: IMF, Fiscal Rules Dataset; IMF, World Economic Outlook (WEO) database; National Elections across Democracy and Autocracy data set; World Bank, World Development Indicators; and IMF staff calculations.

Note: The sample consists of 173 economies spanning the period from 1990 to 2020. The panel estimates use the generalized method of moments estimator. Deficit outturns are realized deficit values recorded in the WEO database, while deficit surprises are the difference between deficit outturns and their WEO expectation one year ahead. See Online Annex 1.3 for more details.

sustainability associated with issuing public debt at high costs (April 2024 *Regional Economic Outlook: Sub-Saharan Africa*).

The Great Election Year and Fiscal Politics

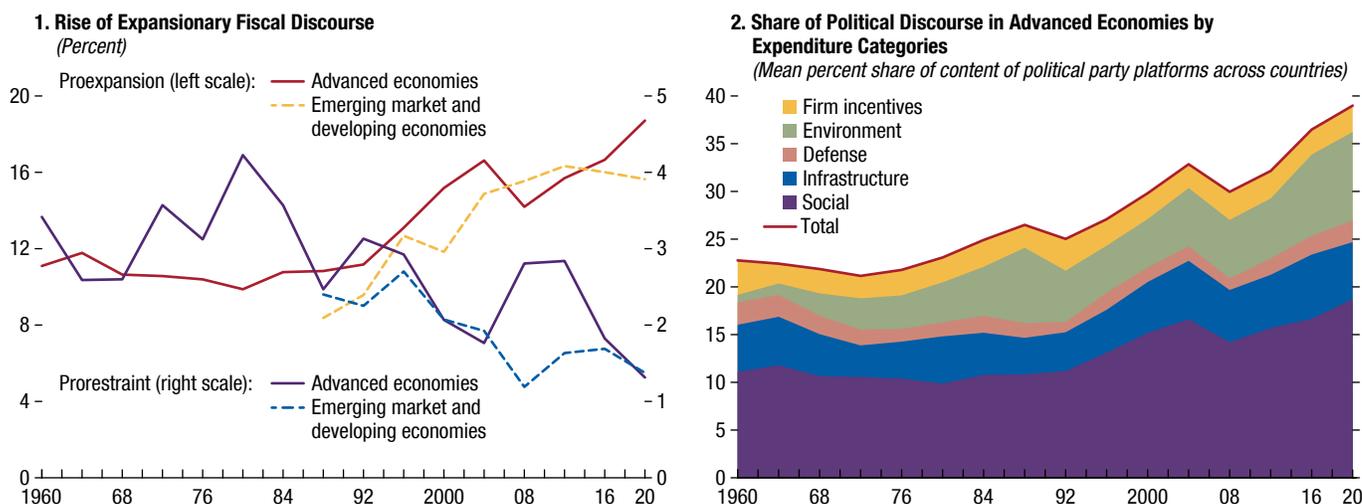
The record number of elections being held across the world in 2024 represents a salient risk with regard to fiscal consolidation prospects for the year. The 88 economies or economic areas that have already had or are expected to hold nationwide elections (parliamentary or presidential) include *Bangladesh, Brazil, the European Union, India, Indonesia, Mexico, Pakistan, Russia, the United Kingdom, and the United States*.⁹ Those economies represent more than half the world population (or 4.2 billion people) and 55 percent of global GDP.¹⁰

⁹Elections taking place in 2024 will add to the already significant elections that took place in 2022–23 in *Argentina, Brazil, Chile, Egypt, The Netherlands, Nigeria, Poland, Slovak Republic, and Türkiye*.

¹⁰The number of countries holding elections in 2024 is 60 when only economies or economic blocs with democratic regimes are taken into account, as assessed by Marshall and Gurr (2020). Democratic economies or economic blocs that are holding elections in 2024 make up 70 percent (3.2 billion) of the population in all democratic countries.

Empirical evidence shows that fiscal policy tends to be looser, and slippages larger, during election years, reflecting a “political budget cycle.”¹¹ Estimates show that deficit outturns in election years are higher than deficit outturns in other years by 0.3 percentage point of GDP on average (left bar of Figure 1.16, panel 1). The higher outturns are led by both higher spending and lower revenues by about 0.2 and 0.1 percentage point of GDP on average, respectively (Figure 1.16, panel 2; Shi and Svensson 2006). The analysis further shows that realized deficits are higher than their year-ahead projections by 0.4 percentage point of GDP (right bar of Figure 1.16, panel 1), indicating a considerable risk of slippages to the modest fiscal tightening projected for most economies in 2024. Such fiscal slippages could potentially add to inflationary pressures, especially in overheated economies. While higher deficits during election years are frequently followed by fiscal adjustments in postelection years, the adjustments are often partial (de Haan, Ohnsorge, and Yu 2023), and the increased fiscal volatility around elections could have potential adverse effects on long-term growth (Ebeke and Ölçer 2017; Fatás and Mihov 2013).

¹¹For a review of how political economy considerations affect fiscal policy, see Gaspar, Gupta, and Mulas-Granados (2017).

Figure 1.17. Political Parties' Discourse and Fiscal Policy

Sources: Cao, Dabla-Norris, and Di Gregorio (forthcoming); Manifesto Project Database; and IMF staff calculations.

Note: Manifesto Project data capture both spending intentions and value judgments. For each year in the figure, the year associated with the data refers to the first of four years the data cover. In panel 1, platform data are first averaged at the country-election level, then by country-year, and finally by four-year period. The vertical axes shows the mean outcomes across all country-years in each four-year period. In panel 2, the top red line sums the shares of all categories below it. The vertical axis reports the mean share of platform statements by policy realm in which a party potentially advocates for more government spending or support. "Social" includes support for the welfare state (for example, health, child, and elder care; pensions; and social housing) and education.

What makes this year different is not only the confluence of elections, but the fact that they will happen amid higher demand for public spending. New analysis of electoral platforms finds that support for higher spending has increased across a large swathe of countries since the 1990s (Figure 1.17, panel 1; Cao, Dabla-Norris, and Di Gregorio, forthcoming). Increased platform space in favor of social spending, including hard-to-reverse entitlements, has driven this trend (Figure 1.17, panel 2).¹² The bias toward higher spending is shared across the political spectrum, indicating substantial challenges in gathering support for consolidation in the years ahead, and particularly in a key election year like 2024.

Fiscal Policy Sustainability and Structural Spending Pressures

A series of shocks in recent years have weakened public finances, even as new spending pressures are mounting. A fundamental requirement for fiscal sustainability is that a government's revenues should

¹²Moreover, recent surveys such as Bianchi, Dabla-Norris, and Khalid (2024) show that households may not fully grasp the risks associated with public debt levels, which may further reduce the pressure on politicians to adopt fiscal consolidation as their political platform.

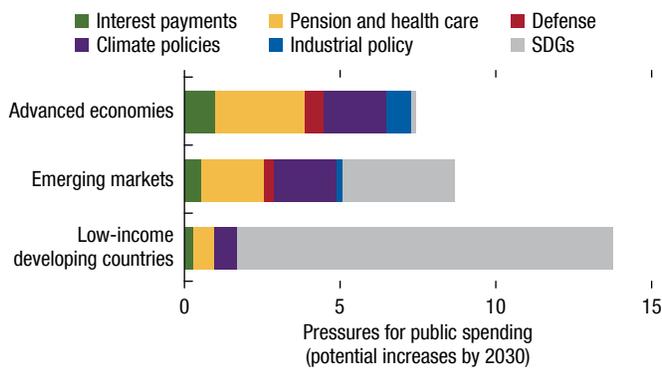
credibly match its total spending over time. If that requirement is violated, fiscal policy can become a source of instability. In many economies, however, public finances are on a precarious footing in their ability to address future shocks and structural challenges.

Mounting Spending Pressures

Addressing long-standing structural challenges requires a sizable amount of fiscal resources (Online Annex 1.4). Economies face pressing demands related to aging and climate, especially advanced economies where spending on industrial policies has also increased in recent years (Chapter 2).¹³ Emerging markets and low-income developing countries require considerable investment to close development gaps and achieve the UN Sustainable Development Goals. Taken together, these spending pressures will amount to additional annual expenditure by 2030 of about 7 percent of GDP in advanced economies, 9 percent of GDP in emerging markets, and 14 percent of GDP in low-income developing countries

¹³Chapter 2 discusses the precise conditions under which industrial policies are beneficial for innovation, namely when (1) externalities can be correctly identified and precisely measured, (2) domestic knowledge spillovers from innovation in targeted sectors are strong, (3) government capacity is sufficiently strong to prevent misallocation, and (4) policies do not discriminate against foreign firms.

Figure 1.18. Potential Annual Increases in Spending through 2030
(Percent of GDP)



Source: IMF staff calculations.

Note: Online Annex 1.4 provides details on the construction of this figure. For advanced and emerging market economies, climate policies include spending on both mitigation and adaptation. For low-income and developing countries, climate policies include spending only on adaptation. SDGs = UN Sustainable Development Goals.

(Figure 1.18). These spending amounts are very large and not fully incorporated in medium-term fiscal and financing plans, leading to considerable additional pressures. Financing this spending by issuing debt could undermine fiscal sustainability and financial stability, given already-elevated debt levels. Additional revenue mobilization is the way to reconcile spending demands with fiscal prudence.

Need for Fiscal Adjustment

Higher debt levels and interest-growth differentials require lower primary deficits to stabilize public-debt-to-GDP ratios.¹⁴ In 2023, the primary deficit required to stabilize debt levels decreased by close to 2 percentage points of GDP on average in advanced and emerging market economies.¹⁵

¹⁴The debt dynamics could look precarious even if interest-growth differentials turn negative again, as high and rising public debt levels could cause private capital to crowd out and lower long-term output (Cao, Gaspar, and Peralta-Alva 2024).

¹⁵The *debt-stabilizing primary balance* calculates the level of primary balance (p_t^*) that would stabilize a specific initial value of debt (d_{t-1})—in this case, the ratio of debt to GDP—in the previous year given the values of the nominal effective interest rate (r_t) and growth rate (g_t) in the contemporaneous year: $p_t^* = ((r_t - g_t)/(1 + g_t)) \times d_{t-1}$. To calculate the debt-stabilizing primary deficit, those primary balances are simply multiplied by -1 . As in Mauro and Zhou (2021), the effective interest rate is calculated here as the ratio of interest expenditure to debt stock plus the product of the share of debt in foreign currency and the depreciation rate of the local currency against the US dollar.

Primary deficits were above debt-stabilizing levels in more economies in 2023 than in 2022 (32 percent of advanced economies in 2023 compared with 11 percent in 2022, and 41 percent of emerging market economies in 2023 compared with 20 percent in 2022), indicating increased need for adjustment (Figure 1.19, panel 1).

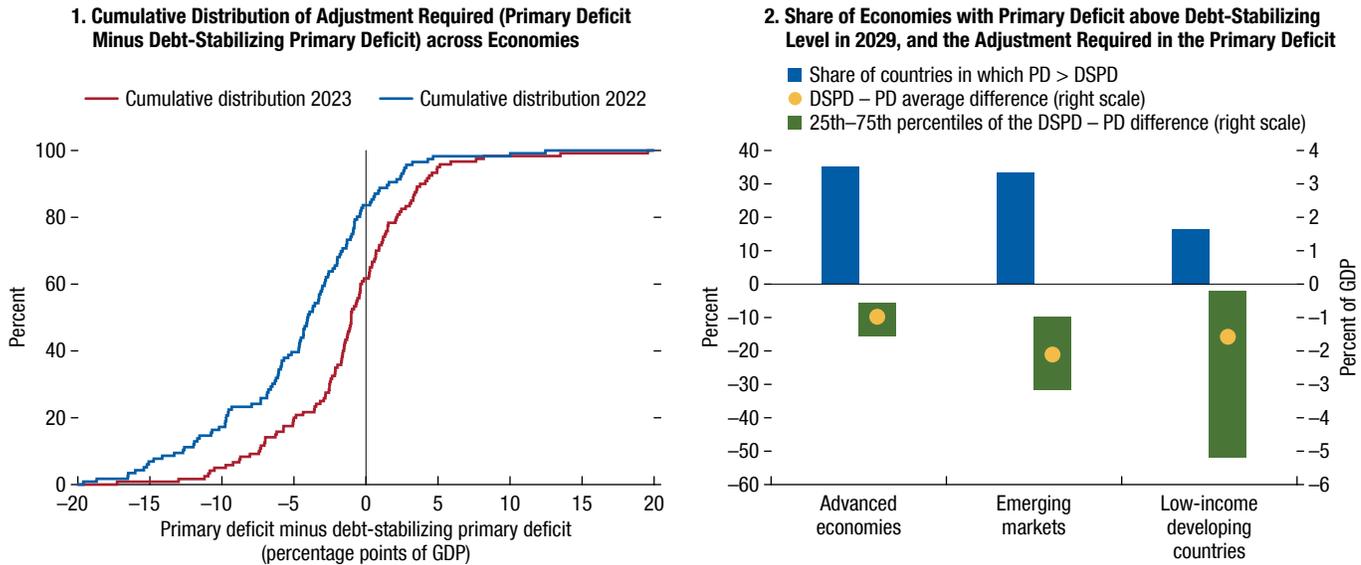
Risks to public finances are expected to remain elevated over the medium term. In about a third of advanced and emerging market economies and in almost a quarter of low-income developing countries, projected primary deficits will remain above debt-stabilizing levels in 2029 under current projections (Figure 1.19, panel 2). The average adjustment (or reduction) in primary deficits required to stabilize debt levels in these economies amounts to 1 percentage point of GDP in advanced economies, 2.1 percentage points of GDP in emerging markets, and 1.6 percentage points of GDP in low-income developing countries (Figure 1.19, panel 2). This represents about 13 percent of total revenues in low-income developing countries and around 5 percent of total revenues in other economies.

Statistical analysis of a country's historical track record with regard to adjustment can help gauge the likelihood it will attain the primary deficit needed to stabilize its debt. Figure 1.20 summarizes the distribution of statistical forecasts for the primary deficit for an example country, *Italy*, over the next two years. The figure presents a fan chart of the projected primary deficit obtained from the estimates for the country during that period.¹⁶ It shows that the likelihood that *Italy* will achieve the primary deficit needed to stabilize its debt level (estimated at more than 0.5 percent of GDP for 2024) is less than 50 percent, indicating the need for further fiscal efforts in the coming two years.

Public gross financing needs will remain at levels higher than those before the pandemic over the medium term based on high existing debt burdens and persistent fiscal deficits (Figure 1.21). *China* and the *United States* have large gross financing needs of more than 25 percent of GDP in the near term. Average financing needs are expected to remain at about 20 percent of GDP in advanced economies, excluding the *United States*, and more than 10 percent

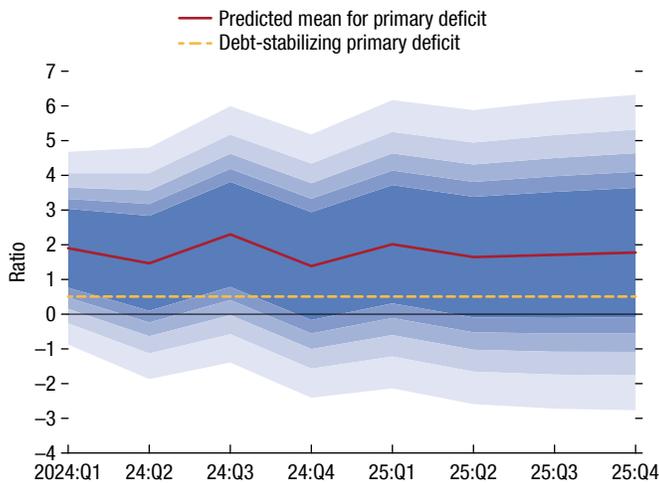
¹⁶The analysis uses probabilistic scenarios based on an autoregressive integrated moving-average econometric model; see Online Annex 1.5 for more details.

Figure 1.19. Adjustment in Primary Deficits Required to Stabilize Public Debt
(Percent of economies, unless specified otherwise)



Sources: IMF, World Economic Outlook database; and IMF staff calculations.
 Note: See footnote 15 in the chapter text for the formula used to calculate the debt-stabilizing primary deficit (DSPD). The sample includes 37 advanced economies and 83 emerging market economies, excluding a few with outlier values (below -20 and above 20 percent of GDP). In panel 1, the cumulative histogram shows the share of economies from the lowest to the highest level of the difference between the primary deficit (PD) and the DSPD, that is, PD - DSPD, in percentage points of GDP in each year. In panel 2, values in the bars indicate the share of economies with PD > DSPD in 2029. DSPD - PD difference reported for countries with PD > DSPD only. The dots in panel 2 correspond to weighted averages for each economic group.

Figure 1.20. Primary Deficit Fan Chart and the Likelihood of Reaching the Debt-Stabilizing Primary Deficit for Italy
(Percent of GDP)



Sources: Haver Analytics; and IMF staff calculations.
 Note: The analysis uses an autoregressive integrated moving-average econometric model with the following probabilities in the shaded areas, from darkest to lightest: 50, 60, 70, 80, and 90 percent. For example, the likelihood of Italy's deficit being smaller or equal to zero in 2025:Q4 in this figure is about 40 percent. Period sample ranges from the first quarter of 1999 to the fourth quarter of 2023. See Online Annex 1.5 for more details.

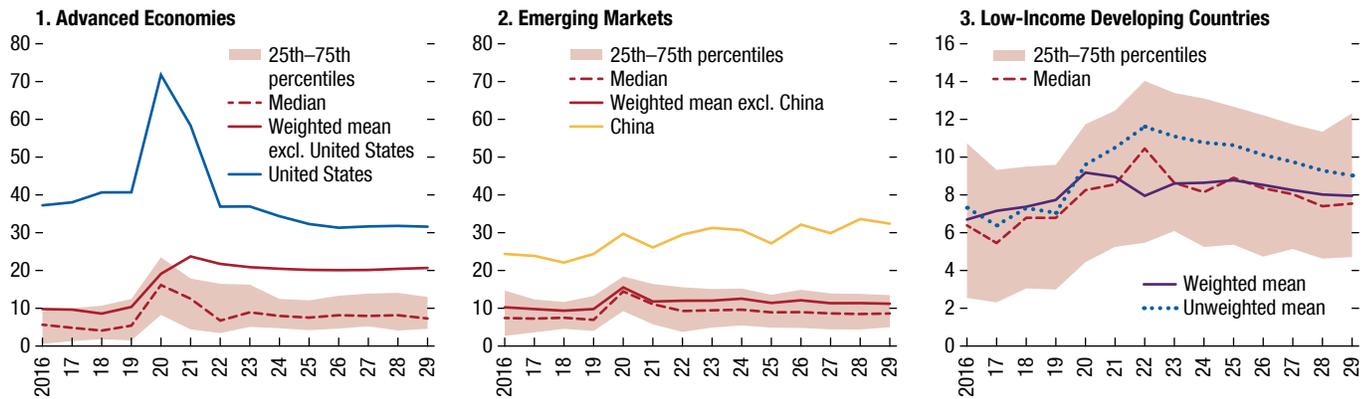
of GDP in emerging market economies, excluding *China*—substantially above prepandemic levels in both country groups. Debt risks have already materialized in many emerging market and developing economies as the number of countries in debt distress in that group almost quadrupled in seven years: from 5 in 2016 to 19 in 2023. Furthermore, at least 11 countries in that group have defaulted on at least a part of their external debt service since 2020.

Policy Conclusions

Momentum toward fiscal policy normalization faltered in 2023. Revenue windfalls from inflation surprises waned in line with easing inflationary pressures. Concurrently, spending remained high as a result of legacies of crisis-era fiscal measures to address the COVID-19 pandemic and the introduction of new fiscal support measures in many countries.

Although gradual fiscal tightening is projected to resume in 2024, the risks of fiscal slippages are particularly acute during this “Great Election Year” when numerous elections will be held in countries across the world. Deficits and debt levels are projected

Figure 1.21. Public Gross Financing Needs
(Percent of GDP)



Source: IMF staff calculations.

Note: Data have been retrieved from debt sustainability analyses for 26 advanced economies, 60 emerging market economies, and 58 low-income developing countries. The weighted average uses as weights the size of each economy in current dollar values in 2023. In panel 2, *China's* public gross financing needs are calculated based on the augmented debt definition which expands the perimeter of government to include the activity of local government financing vehicles, government guided funds, and special construction funds (see Table 4 and Appendix III in IMF 2024). excl. = excluding.

to remain above pre-pandemic levels in the near term. Spending pressures on budgets are mounting, and interest-growth differentials have increased. Moreover, the pace of disinflation as it travels its last mile is uncertain. Financing conditions remain challenging amid spillovers from high and volatile long-term interest rates in the *United States*. Uncertainties surrounding growth and finance in *China* are also clouding the global public finance outlook.

With major central banks expected to pivot to a less restrictive stance this year (April 2024 *World Economic Outlook*) and economies better able to absorb the economic effects of fiscal tightening, a renewed push toward consolidation is warranted.

Governments should calibrate the pace of consolidation to country-specific circumstances, striking a balance between fiscal risks and the strength of private demand to avoid disruptive adjustments. Fiscal consolidation can reduce public debt more effectively when designed adequately and undertaken while the economy is growing (see Chapter 3 of the April 2023 *World Economic Outlook*). Front-loaded consolidation would be particularly desirable for economies with high debt risks that lack credible medium-term frameworks. More generally, fiscal policy should not be the first line of defense, given elevated risks to public finances. Governments should shift gears from acting as an insurer of first resort to focusing on their core objectives of addressing

structural challenges, reducing poverty, and promoting sustainable growth by boosting innovation and productivity (Chapter 2).

How could a more decisive fiscal consolidation be achieved? For starters, legacies from crisis-era discretionary measures should be immediately phased out. Governments should also scale back regressive and inefficient fuel and energy subsidies and redirect resources toward targeted social protection programs that support their most vulnerable populations. Many advanced economies with aging populations should focus on containing spending pressures on health and pensions through entitlement reforms and other measures. Emerging market and developing economies should renew efforts to rationalize large government wage bills, reform social safety nets to increase targeting and reduce fragmentation, and further support the efficiency of social spending through well-implemented digitization (Amaglobeli and others 2023).

Governments should further ensure that revenues are commensurate with spending. The minimum corporate tax under Pillar Two of the Organisation for Economic Co-operation and Development's Inclusive Framework on Base Erosion and Profit Shifting could boost global corporate tax revenues by more than 6 percent by diminishing profit shifting and tax competition. Revamping domestic profit taxation by targeting excessive profits rather than the opportunity

cost of investment could further bolster revenues and improve efficiency (Hebous, Prihardini, and Vernon 2022). Emerging market and developing economies should mobilize additional revenue by broadening tax bases, which tends to be more growth-friendly than raising tax rates (Dabla-Norris and Lima 2023). This could be done, for example, by reducing ineffective tax expenditures. Also key to achieving tangible outcomes is to strengthen institutions by, among other actions, establishing robust tax policy units and harnessing digital technologies to enhance revenue administrations (Box 1.2; Benitez and others 2023).

Credible medium-term fiscal frameworks and modern public financial management systems would provide sound foundations for sustainable public finances. Frameworks should be risk-based and built on realistic financing assumptions, guiding the speed and ambition of fiscal consolidation efforts according to the level of fiscal risks (Caselli and others 2022). Credibility could be enhanced further by backing medium-term plans with strengthened forecasting capacity and by better integrating such plans into annual budgets alongside clear contingency plans for how governments will respond to unexpected growth and interest rate movements and other country-specific developments. Strong fiscal oversight by independent fiscal institutions endowed with sufficient resources to

effectively assess fiscal plans and communicate them to the public in a timely manner would help reinforce adjustment plans. Many economies are already revamping fiscal rules, as the *European Union* is doing to better align those rules with current challenges in its member states (Box 1.3).

Improving fiscal and debt transparency is also key to reducing debt vulnerabilities (IMF 2023a). Governments should provide more granular and timely information on debt, including the composition of creditors and instruments, exposure to risks (associated with interest rates, exchange rates, and refinancing), and the terms of individual debt contracts. Such transparency would allow for adequate assessment of fiscal risks, invite closer scrutiny, and potentially reduce reliance on nontraditional debt instruments. For countries in severe debt distress, debt restructuring could play a role in restoring the sustainability of public finances. Continued international cooperation, including through the Group of Twenty Common Framework and the Global Sovereign Debt Roundtable, is crucial to facilitate an efficient debt restructuring process. The Common Framework has begun to deliver on its potential, with encouraging progress in such countries as *Ghana*, which recently reached an agreement with official creditors on the treatment of debt.

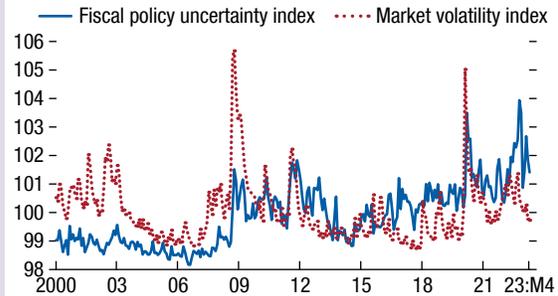
Box 1.1. US Fiscal Policy Uncertainty and Bond Spreads

This box presents an index of fiscal policy uncertainty for the United States and analyzes the impact of this uncertainty on the bond spreads of other economies.

Uncertainty surrounding future fiscal measures, or “fiscal policy uncertainty,” can have significant adverse economic and financial market effects. A novel monthly fiscal uncertainty index constructed by Hong, Nguyen, and Ke (2024) uses terms related to fiscal policy uncertainty as topic keywords to measure these effects. The index draws on news articles related to tax, government expenditure, public debt, and budget announcements. For example, the index shows a surge in fiscal policy uncertainty in the *United States* related to debt ceiling and government shutdown episodes (Figure 1.1.1).

An empirical analysis using the uncertainty index suggests that increased fiscal policy uncertainty in the *United States* is associated with higher borrowing costs in other advanced and emerging market economies (Figure 1.1.2). A rise in the US fiscal policy uncertainty index score of one standard deviation of its distribution, which corresponds to the increase in

Figure 1.1.1. Fiscal Uncertainty in the United States (Index)

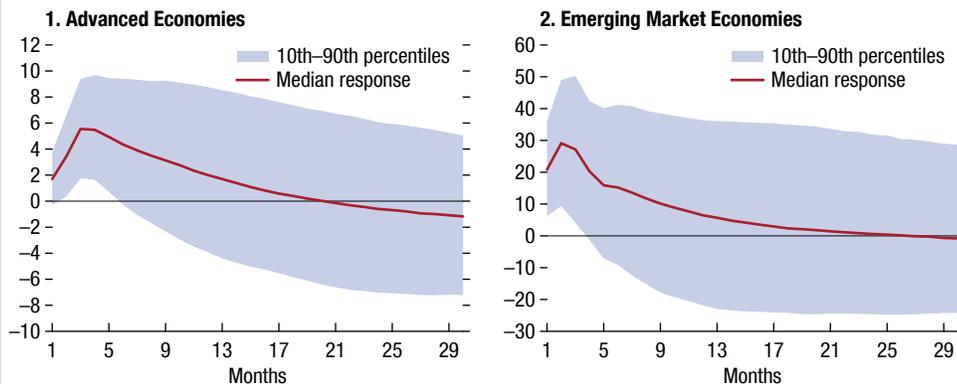


Source: Hong, Nguyen, and Ke 2024.

Note: Series are standardized with z mean equal to 100 and a standard deviation equal to 1. Hong, Nguyen, and Ke (2024) describe the methodology used to construct the fiscal uncertainty index.

fiscal uncertainty observed during the country’s debt ceiling deliberations in 2021, is associated with a peak increase in median sovereign spreads of 5 basis points in other advanced economies and 40 basis points in emerging market economies.

Figure 1.1.2. Response of Sovereign Spreads to Uncertainty Regarding US Fiscal Policy (Basis points)



Source: Hong, Nguyen, and Ke 2024.

Note: Shaded areas correspond to the 95 percent confidence interval. The analysis is based on a vector autoregression model comprised of the US fiscal policy uncertainty index in Hong, Nguyen, and Ke (2024); a global economic policy uncertainty index in Baker, Bloom, and Davis (2016); US stock prices and policy rates; and sovereign spreads in advanced and emerging market economies, using Cholesky decomposition, with the US fiscal policy uncertainty indicator as the most exogenous variable. See Hong, Nguyen, and Ke (2024) for the empirical methodology and more details.

Box 1.2. Building Tax Capacity in Low-Income and Emerging Market Economies

This box explores which reforms low-income countries and emerging market economies could pursue to enhance tax capacity and revenue mobilization.

Enhancing tax capacity—the policies and institutions as well as the technical capabilities to collect tax revenue—is crucial for the functioning of government. Progress in mobilizing tax revenue has stalled since the 2008 global financial crisis. Benitez and others (2023) show that the average tax-to-GDP ratio in emerging market and developing economies has increased by 3.5 to 5 percentage points since the early 1990s, with taxes on consumption primarily driving the increase. Some countries increased their tax revenue by more than 5 percentage points of GDP (for example, *Albania, Argentina, Armenia, Brazil, and Georgia*). However, nearly all this progress occurred before 2008, suggesting that recent shocks have posed significant challenges to mobilizing tax revenue and made sustained progress elusive. Economies grappling with fragility have encountered acute institutional hurdles to developing their tax systems. Resource-rich economies have generally substituted resource revenues for tax revenues.

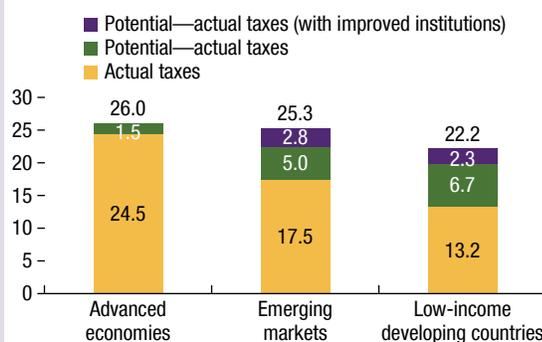
Research shows that emerging market and developing economies have untapped tax revenue potential of up to 9 percent of GDP (Figure 1.2.1). This potential varies with income levels, with low-income developing countries having a slightly greater potential than emerging market economies. The empirical results importantly suggest a statistically significant and strong correlation between strengthening institutions and mobilizing revenues.

Countries can tap this potential by building medium-term reform plans that focus on a few tax instruments and by enhancing institutional capacity. A narrow focus on tax system reform is unlikely to yield substantial revenues.¹ Strengthening institutional capacity can be addressed by such steps as:

- Improving the design of core domestic taxes, including value-added, excise, and personal and

¹For examples of such a narrow focus, see IMF (2023b).

Figure 1.2.1. Actual and Potential Taxes, 2020
(Percent of GDP)



Source: Benitez and others 2023.

Note: Potential taxes are defined as in Benitez and others (2023), excluding social security contributions.

corporate income taxes. Low-income developing countries, for instance, could double revenue from value-added taxes without increasing tax rates by curbing preferential treatments and improving compliance.

- Broadening tax bases by rationalizing tax expenditures, taxing capital income more neutrally, and implementing effective property taxes to fund local governments.
- Using excise taxes—particularly fuel excises and other forms of carbon pricing—to mitigate health- and climate-related costs while balancing equity and efficiency considerations.
- Improving institutions that govern the tax system and manage tax reform by putting in place adequate staffing to analyze and monitor the impact of tax policies, upgrading the professionalization of officials working on tax design and implementation, better using digital technologies, and ensuring transparency and certainty regarding how policy and administration are translated into legislation.
- Prioritizing and coordinating reforms across government agencies to reflect broader institutional and policy contexts, which would enhance tax design and acceptance by citizens.

Box 1.3. Reform of the European Union Economic Governance Framework

This box discusses the reformed economic governance framework for the European Union.

In February 2024, the Council of the European Union and European Parliament reached agreement on a new economic governance framework for *European Union* members (European Commission 2024). Recognizing fiscal challenges faced by each member state (Figure 1.3.1), country-specific medium-term adjustment paths are derived on the basis of a common framework. Adjustment is specified in terms of net primary expenditure, excluding, for example, interest expenditure, cyclically unemployment expenditure, and expenditure on EU programs.

While the baseline adjustment period is four years, countries committing to reforms that enhance economic resilience and growth, or strengthen fiscal sustainability, can extend it to seven years, thereby avoiding sharp annual fiscal adjustment.

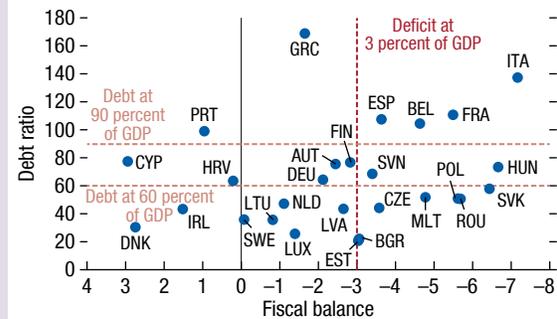
Restoring and securing fiscal sustainability is specified in two dimensions. Public debt should be plausibly placed on a downward path, or if already low, maintained at prudent levels. This criterion is assessed through a debt-sustainability analysis according to a common European Commission methodology. The framework requires an adjustment large enough to put debt on a continuously declining path for 10 years following the end of the adjustment. Fiscal deficits, if high, should be brought below 3 percent of GDP by the end of the adjustment period and maintained below this level for the 10 years following the adjustment period.

The framework also includes two minimum adjustment safeguards: a debt sustainability safeguard and a deficit resilience safeguard. Over the adjustment period, the debt-to-GDP ratio should fall on average by no less than 1 percentage point of GDP annually if debt is above 90 percent of GDP and by 0.5 percentage point of GDP annually if debt is between 60 and 90 percent of GDP. The structural primary balance should improve by 0.4 (0.25) percentage point of potential GDP annually or more for countries with a four-year (seven-year) adjustment period until the general government structural balance is above -1.5 percent of potential GDP.

Member states that do not comply with fiscal requirements under the framework—either by having

Figure 1.3.1. Fiscal Balance and Government Debt, 2023

(Percent of GDP)



Source: IMF, World Economic Outlook database.

Note: Data labels in the figure use International Organization for Standardization (ISO) country codes.

a deficit exceeding 3 percent of GDP or by not implementing the agreed net expenditure path—can be placed in an Excessive Deficit Procedure. While in an Excessive Deficit Procedure, the country is required to make a minimum annual adjustment of 0.5 percent of GDP to return to compliance with the framework.¹ If subject to the Excessive Deficit Procedure, a member state is excluded from the annual debt-reduction requirement under the debt sustainability safeguard.

The framework represents a clear improvement. Relying on multiyear nominal expenditure paths facilitates compliance monitoring. Governments are required to formulate realistic medium-term plans and encouraged to enact growth- and sustainability-enhancing reforms. Nonetheless, the adjustment paths still require political support for their implementation. The new framework also requires governments to ensure strong medium-term budgetary frameworks and independent national fiscal councils with sufficient independence and resources to carry out fiscal oversight on plans and realism of forecasts (Arnold and others 2022).

¹Although the minimum adjustment is generally defined in terms of the structural balance, as a transition measure during 2025–27, it can be adjusted to consider higher interest expenses.

References

- Adrian, Tobias, Richard K. Crump, and Emanuel Moench. 2013. "Pricing the Term Structure with Linear Regressions." *Journal of Financial Economics* 110 (1): 110–38.
- Amaglobeli, David, Ruud de Mooij, Andualem Mengistu, Mariano Moszoro, Manabu Nose, Soheib Nunhuck, Sailendra Pattanayak, and others. 2023. "Transforming Public Finance through GovTech." IMF Staff Discussion Note 23/04, International Monetary Fund, Washington, DC.
- Arnold, Nathaniel G, Ravi Balakrishnan, Bergljot B Barkbu, Hamid R Davoodi, Andresa Lagerborg, Waikie R Lam, Paulo A Medas, and others. 2022. "Reforming the EU Fiscal Framework: Strengthening the Fiscal Rules and Institutions." IMF Departmental Paper 2022/014, International Monetary Fund, Washington, DC.
- Baker, Scott R., Nicholas Bloom, and Steven J. Davis. 2016. "Measuring Economic Policy Uncertainty." *The Quarterly Journal of Economics* 131 (4): 1593–636.
- Balasundharam, Vybhavi, Arika Kayastha, and Marcos Poplawski-Ribeiro. 2023. "Inflation Indexation in Public Finances: A Global Dataset on Current Practices." IMF Working Paper 23/264, International Monetary Fund, Washington, DC.
- Beer, Sebastian, Mark Griffiths, and Alexander Klemm. 2023. "Tax Distortions from Inflation: What Are They? How to Deal with Them?" IMF Working Paper 23/18, International Monetary Fund, Washington, DC.
- Benitez, Juan Carlos, Mario Mansour, Miguel Pecho, and Charles Vellutini. 2023. "Building Tax Capacity in Developing Countries." IMF Staff Discussion Note 23/006, International Monetary Fund, Washington, DC.
- Bianchi, Francesco, Era Dabla-Norris, and Salma Khalid. 2024. "Public Perceptions on Sovereign Debt: Evidence from 16 Economies." Unpublished, International Monetary Fund, Washington, DC.
- Bianchi, Francesco, and Leonardo Melosi. 2022. "Inflation as a Fiscal Limit." Working Paper 2022–37, Federal Reserve Bank of Chicago.
- Brollo, Fernanda, Era Dabla-Norris, Ruud de Mooij, Daniel Garcia-Macia, Li Liu, and Anh Nguyen. 2024. "Ensuring a Fair Distribution of Gains and Opportunities from Gen-AI: Role of Fiscal Policies." Unpublished, International Monetary Fund, Washington, DC.
- Cao, Yongquan, Era Dabla-Norris, and Enrico Di Gregorio. Forthcoming. "Fiscal Discourse and Fiscal Policy." International Monetary Fund, Washington, DC.
- Cao, Yongquan, Vitor Gaspar, and Adrian Peralta-Alva. 2024. "Costly Increases in Public Debt When $r < g$." IMF Working Paper 24/10, International Monetary Fund, Washington, DC.
- Caselli, Francesca, Hamid Davoodi, Carlos Goncalves, Gee Hee Hong, Andresa Lagerborg, Paulo Medas, Anh Dinh Minh Nguyen, and others. 2022. "The Return to Fiscal Rules." IMF Staff Discussion Note 22/002, International Monetary Fund, Washington, DC.
- Chen, Wenjie, Michele Fornino, and Henry Rawlings. 2024. "Navigating the Evolving Landscape of China and Africa's Economic Engagements." Unpublished, International Monetary Fund, Washington, DC.
- Cimadomo, Jacopo, Peter Claeys, and Marcos Poplawski-Ribeiro. 2016. "How Do Experts Forecast Sovereign Spreads?" *European Economic Review* 87: 216–35.
- Dabla-Norris, Era, and Frederico Lima. 2023. "Macroeconomic Effects of Tax Rate and Base Changes: Evidence from Fiscal Consolidations." *European Economic Review* 153: 104399.
- De Haan, Jakob, Franziska Ohnsorge, and Shu Yu. 2023. "Election-Induced Fiscal Policy Cycles in Emerging Market and Developing Economies." CEPR Discussion Paper 18708, Centre for Economic Policy Research, London.
- Ebeke, Christian H., and Dilan Ölçer. 2017. "Fiscal Policy over the Election Cycle in Low-Income Countries." In *Fiscal Politics*, edited by Vitor Gaspar, Sanjeev Gupta, and Carlos Mulas-Granados. Washington, DC: International Monetary Fund.
- European Commission. 2024. "Commission welcomes political agreement on a new economic governance framework fit for the future." Press Release. February 2024.
- Fatás, Antonio, and Ilian Mihov. 2013. "Policy Volatility, Institutions, and Economic Growth." *The Review of Economics and Statistics* 95 (2): 362–76.
- Gaspar, Vitor, Sanjeev Gupta, and Carlos Mulas-Granados, eds. 2017. *Fiscal Politics*. Washington, DC: International Monetary Fund.
- Gaspar, Vitor, Marcos Poplawski-Ribeiro, and Jiae Yoo. 2023. "Global Debt Is Returning to Its Rising Trend." *IMF Blog*, September 13.
- Hebous, Shafik, Dinar Prihardini, and Nate Vernon. 2022. "Excess Profit Taxes: Historical Perspective and Contemporary Relevance." IMF Working Paper 22/187, International Monetary Fund, Washington, DC.
- Holland, Allison, and Ceyla Pazarbasioglu. 2024. "How to Ease Rising External Debt-Service Pressures in Low-Income Countries." *IMF Blog*, January 24.
- Hong, Gee Hee, Anh D. M. Nguyen, and Barry Ke. 2024. "The Economic Impact of Fiscal Policy Uncertainty: Evidence from a Novel Cross-Country Database." Unpublished, International Monetary Fund, Washington, DC.
- International Monetary Fund (IMF). 2023a. "Making Public Debt Public—Ongoing Initiatives and Reform Options." IMF Policy Paper 23/034, International Monetary Fund, Washington, DC.
- International Monetary Fund (IMF). 2023b. "International Corporate Tax Reform." IMF Policy Paper 23/001, International Monetary Fund, Washington, DC.

- International Monetary Fund (IMF). 2024. “2023 Article IV Consultation—Press Release; Staff Report; and Statement by the Executive Director for the People’s Republic of China.” IMF Country Report 24/38, International Monetary Fund, Washington, DC.
- Laubach, Thomas. 2009. “New Evidence on the Interest Rate Effects of Budget Deficits and Debt.” *Journal of the European Economic Association* 7 (4): 858–85.
- Marshall, Monty G., and Ted R. Gurr. 2020. “Polity5: Political Regime Characteristics and Transitions, 1800–2018: Dataset Users’ Manual.” Center for Systemic Peace, Vienna, VA.
- Mauro, Paolo, and Jing Zhou. 2021. “ $r - g < 0$: Can We Sleep More Soundly?” *IMF Economic Review* 69: 197–229.
- Nguyen, Anh Dinh Minh, Hajime Takizawa, and Iglia Vassileva. 2023. “Inflation Dynamics in Bulgaria: The Role of Policies.” IMF Working Paper 23/212, International Monetary Fund, Washington, DC.
- Roberts, Ivan, Trent Saunders, Gareth Spence, and Natasha Cassidy. 2016. “China’s Evolving Demand for Commodities.” In *RBA Annual Conference Volume*, edited by John Simon, 107–58. Sydney: Reserve Bank of Australia.
- Shi, Min, and Jakob Svensson. 2006. “Political Budget Cycles: Do They Differ across Countries and Why?” *Journal of Public Economics* 90 (8–9): 1367–89.
- US Congressional Budget Office. 2023. “The Economic Outlook.” In *The Budget and Economic Outlook: 2023 to 2033*. Washington, DC: US Congressional Budget Office.
- Wolf, Alex, Julia Wang, and Yuxuan Tang. 2023. “Investment Strategy: Will China’s Recovery Drive Commodity Prices Higher?” J.P. Morgan Private Bank, Baltimore, MD. <https://privatebank.jpmorgan.com/apac/en/insights/markets-and-investing/will-china-s-recovery-drive-commodity-prices-higher>.

Introduction

Global productivity growth and innovation have weakened over the past two decades (Figure 2.1, panel 1), and medium-term growth expectations have dimmed (Goldin and others 2024; see also the April 2024 *World Economic Outlook*). Innovation—defined as the invention and introduction of new or improved products and processes—is the ultimate driver of long-term productivity growth and better living standards because it expands the frontier of what is possible for society. Yet despite rapid advancements in digital technologies, innovation has become costlier to produce (Bloom and others 2020), unbalanced across sectors (Acemoglu, Autor, and Patterson 2023), and increasingly driven by applied rather than fundamental research that generates wide-ranging knowledge spillovers (Akcigit, Hanley, and Serrano-Velarde 2021). Moreover, the diffusion of innovation across countries and firms has slowed (Andrews, Criscuolo, and Gal 2016; Dabla-Norris and others 2023). While the contribution of emerging market and developing economies to innovation has grown, large cross-country technology gaps remain (Figure 2.1, panel 2).

Reversing the trend of declining productivity growth and lifting growth prospects is critical in the face of record levels of government debt, climate and demographic transitions, and long-standing development gaps. However, innovation in the low-carbon (“green”) technologies needed to accelerate a reduction in carbon emissions has slowed in recent years (Hasna and others 2023), and the diffusion of existing low-carbon technologies to emerging market and developing economies faces obstacles. Looking ahead, advancements in emerging transformative technologies, specifically generative artificial intelligence (AI), present growth opportunities but also new challenges. Adoption of those technologies will likely be uneven and could widen divides across countries and firms, among other risks (see the April 2024 *Global Financial Stability Report*). Uncertainty also remains as to how quickly AI will translate into higher aggregate productivity.

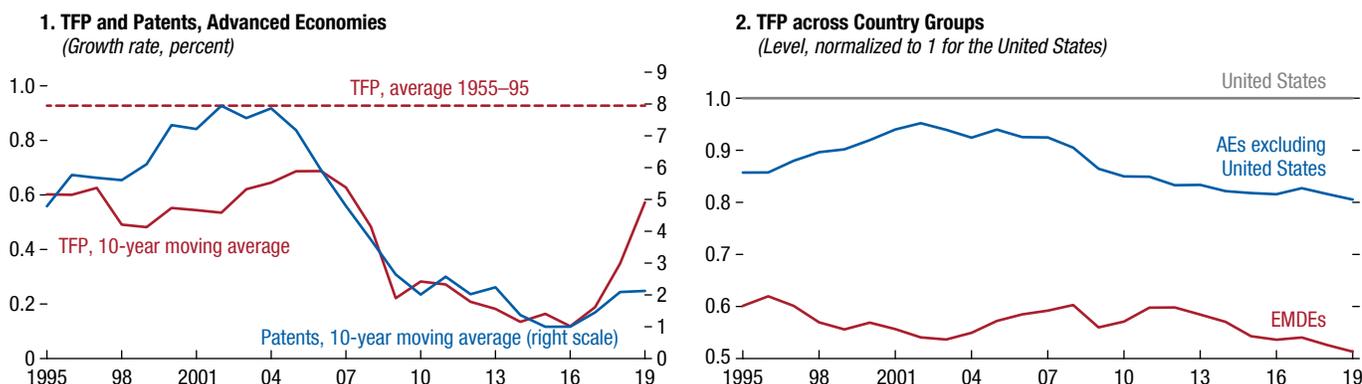
Fiscal policies are key to pick up the pace of innovation for countries at the technology frontier.¹ Private investors often fail to capture the full social benefits of innovation, leading to insufficient research and development (R&D) efforts, particularly in fundamental research that drives innovation. This suggests a role for public policy to bridge the gap (Bloom, Schankerman, and Van Reenen 2013; see also the April 2016 *Fiscal Monitor*). Public support can be even more beneficial in sectors or technologies where innovation yields additional public goods, such as reductions in emissions and improvements in public health.

In recent decades, public spending on fundamental research has fallen behind the rising contribution of the private sector, which tends to be more commercially oriented and incremental in nature. More recently, many major economies have turned to a more directed approach motivated by concerns about economic and national security, using industrial policies to favor innovation in specific sectors, and limiting international diffusion of technologies. This raises important questions about the productivity benefits and costs associated with industrial policy.

Countries below the technology frontier, in turn, may lack the preconditions to adopt—that is, recognize, assimilate, and apply—technologies developed elsewhere, particularly green, digital, and AI technologies that require specialized infrastructure and skills. Even in advanced economies, most firms are not at the frontier, suggesting large payoffs from broader adoption of technology. Fiscal policies that remove barriers to technology diffusion can thus complement other structural and financial policies to speed up productivity growth and lift growth prospects.

This chapter examines the role of fiscal policies in promoting the diffusion of innovation and technology, with an emphasis on harnessing the potential of green and digital technologies. Given elevated debt levels and limited fiscal space in many countries (see Chapter 1),

¹Countries at the technology frontier include mostly advanced economies and a few emerging market economies, although this can vary across sectors and technologies and over time.

Figure 2.1. Withering Innovation, Productivity, and Technology Diffusion

Sources: European Patent Office, PATSTAT; Penn World Tables; and IMF staff estimates.

Note: AEs = advanced economies; EMDEs = emerging market and developing economies; TFP = total factor productivity.

the chapter focuses on policy design features and assesses their growth and fiscal effects. The analysis tackles the following three questions:

- *Should governments play a role in the direction of innovation using industrial policy?* What are the costs and benefits of fiscal support for directed innovation in specific sectors?
- *What is the most effective mix of fiscal instruments to support innovation more broadly at the technology frontier?* How should policies be designed to support innovation? And what are the potential gains from such policies?
- *What fiscal policies can facilitate technology diffusion to countries and firms below the technology frontier?* How can barriers to the diffusion of green and advanced digital technologies in emerging market and developing economies be overcome?

The chapter shows that using industrial policy to promote innovation delivers returns only if social benefits (or “externalities”) are well measured, knowledge spillovers from subsidized sectors are high, administrative capacity is strong, and policies do not discriminate against foreign firms. A well-designed fiscal policy mix that supports innovation more broadly across sectors and emphasizes public funding for fundamental research can substantially boost long-term growth for economies at the technology frontier. While such policies pay for themselves in the long term, funding them may require countries with more limited fiscal space to reprioritize expenditure or improve revenue mobilization. For economies

and firms below the frontier, facilitating technology adoption with strategic public investments and tax reforms should be the priority. The chapter focuses on domestic policies but also highlights the role of international coordination to catalyze cross-border knowledge spillovers.

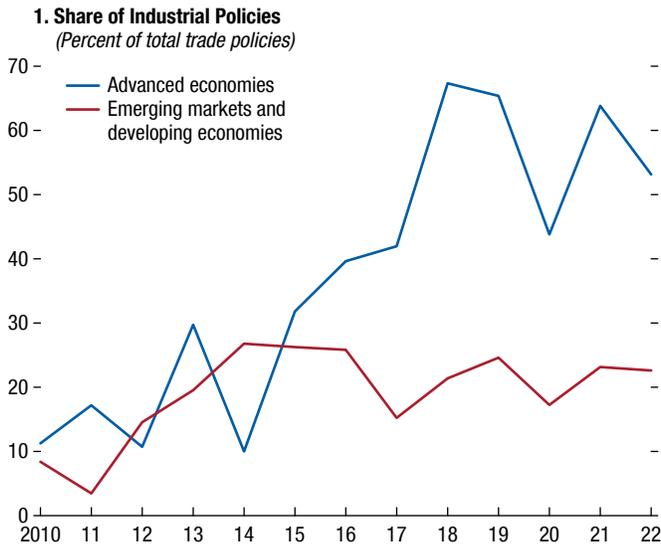
The diffusion of innovation and technology is notoriously difficult to measure. The chapter uses alternative measures depending on the specific analysis, including innovation inputs—such as R&D expenditures by the private and public sectors—and innovation outputs—such as growth in patents, and labor productivity or total factor productivity (TFP).²

Directing Innovation toward Specific Sectors

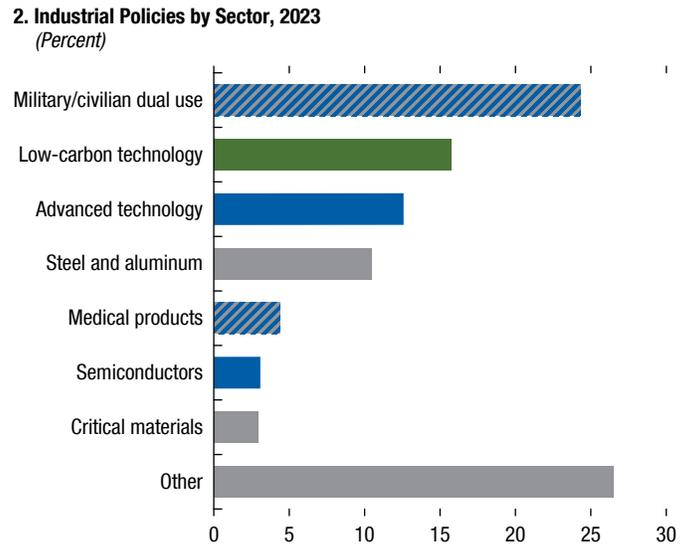
The recent strategic push for industrial policies in large economies (Figure 2.2, panel 1) has brought to the fore the question of whether and under what conditions governments should direct fiscal support toward innovation in specific sectors or technologies. Recent industrial policy initiatives in advanced economies—such as the CHIPS Act and Inflation Reduction Act in the *United States*, the Green Deal Industrial Plan in the *European Union*, the New Direction on Economy and Industrial Policy

²No measure is perfect—not all innovation is recorded as research and development or patented, while total factor productivity captures other channels such as improved allocative efficiency. The spread of digital products further complicates measuring total factor productivity, as the market prices of those products tend to be less representative of consumer value than is the case for other products.

Figure 2.2. Increasing Use of Industrial Policies for Innovation



Sources: Global Trade Alert database; Juhász and others 2022; and authors' calculations.



Sources: Evenett and others 2024; and IMF staff estimates.
Note: Green sectors are highlighted in green and high-tech sectors in blue. Sectors with blue and gray stripes include technologies that are both advanced and non-advanced economies.

in *Japan*, and the K-Chips Act in *Korea*—as well as long-standing policies in large emerging market economies such as *China*, share a strong emphasis on innovation in specific sectors, among other objectives. Most packages include fiscal incentives for innovation in green and advanced technology sectors (such as AI and semiconductors) (Figure 2.2, panel 2), with a heavy reliance on costly subsidies.

Governments may want to direct the course of innovation for various reasons, including addressing market failures—that is, externalities related to climate and public health, knowledge spillovers to other sectors, supply chain resilience, and national

security (Table 2.1). Historical experience suggests that getting industrial policy right is a tall order (Box 2.1). Whereas policies may help some firms become more productive, they can also lead to inefficient allocation of resources. Indeed, an abundance of failed programs in countries with strong institutions shows that it is difficult to avoid policy mistakes. Even when projects succeed in transforming industries, such as Airbus in the *European Union* and electric vehicles in *China*, they can incur high fiscal costs and, in some cases, generate negative cross-border spillovers.

This section develops a model-based framework to assess conditions under which sector-specific fiscal

Table 2.1. Potential Rationales for Directing Innovation

Target	Rationale
Green innovation	Accelerate the development of green technologies, as current innovation can persistently determine the path of future technology.
Labor market effects	Discourage labor-saving technologies that disrupt labor markets (for example, generative artificial intelligence).
Spillovers to other sectors	Support sectors that generate more innovation spillovers to other sectors in order to lift productivity growth; laggard sectors can act as bottlenecks to aggregate growth.
Defense/self-sufficiency	Develop domestic innovation in strategic technologies (for example, civilian–military dual use).
International competitiveness	Develop domestic technologies to capture global market shares or improve terms of trade.
Local spillovers	Promote agglomeration spillovers from innovation hubs.

Sources: Acemoglu and others 2012; Acemoglu and Johnson 2023; Acemoglu, Autor and Paterson 2023; Bai, Jin and Lu 2023; Carlino and Kerr 2015; Hidalgo and Hausman 2009; and Liu and Ma 2023.

Note: The table summarizes commonly provided rationales for directing innovation. Not all of the rationales may be feasible in practice.

support for innovation is preferable to sector-neutral support (“horizontal” policies) (Online Annex 2.1).³ Based on the framework, an important benefit of directed innovation is that it allows for targeting support to sectors that generate higher knowledge spillovers to other domestic sectors (measured by cross-sector patent citations). This, in turn, raises economy-wide innovation, productivity growth, and welfare. Targeting also allows for redirecting innovation to greener sectors, thereby reducing negative emissions externalities over time and further increasing welfare. In practice, however, support may not be allocated to the right sectors, lowering the benefits of industrial policies. For example, subsidies may be diverted to politically connected sectors instead of being solely driven by social returns. Benefits are also limited for sectors and countries that rely on foreign knowledge spillovers, as these are less likely to be affected by domestic innovation policy.

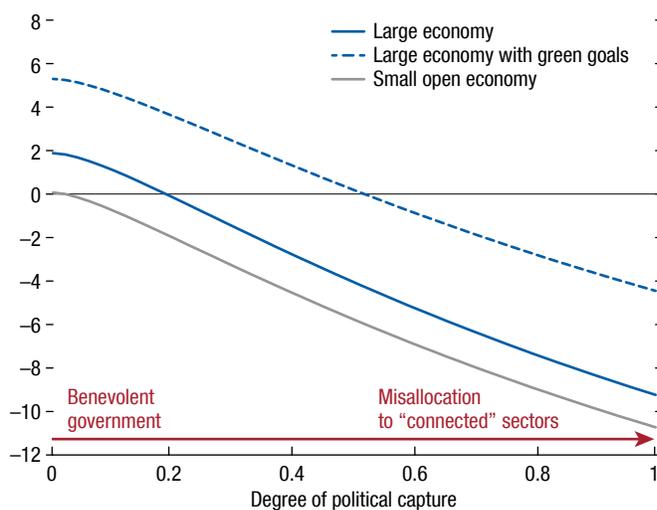
An illustrative simulation indicates the welfare implications of industrial policy. For a large, advanced economy (for example, the *United States*), targeting support to sectors with larger knowledge spillovers can increase welfare by 2 percent (in consumption-equivalent terms) compared to an equivalent amount of sector-neutral support (Figure 2.3). This estimate assumes there is no misallocation of fiscal support. The welfare gains rise to 5 percent when the government considers emissions-reduction goals and directs innovation to sectors with higher green intensity (measured by the share of green patents). This is because, in addition to promoting knowledge spillovers across firms, support for green innovation complements carbon pricing and other environmental policies in reducing emissions externalities (Box 2.2). Further, emissions are relatively easy to measure.

Implementation challenges, however, can lower the economic and social benefits of industrial policy. The model simulations show that as the degree of political capture increases, industrial policy can result in welfare losses even in a large economy with green goals (Figure 2.3).⁴ In the analysis, the political

³The framework is based on a model of endogenous innovation with a sectoral network of knowledge spillovers (an extension of Liu and Ma (2023)).

⁴In the model simulation, this occurs when the weight on politically connected sectors reaches 0.5, equivalent to a worsening of the allocation of resources by 10 percent of the gap between the *United States* and large emerging market economies (Hsieh and Klenow 2009).

Figure 2.3. Simulated Welfare Impact of Industrial Policy
(Consumption-equivalent change relative to no industrial policy, percent)



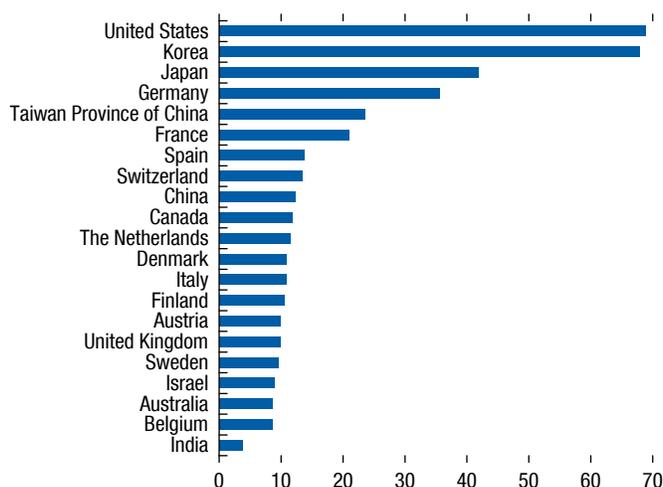
Sources: Diez, Fan, and Villegas-Sánchez 2021; European Patent Office, PATSTAT; Liu and Ma 2023; World Intellectual Property Organization, Green Inventory; and IMF staff simulations.

Note: The figure presents simulations from an endogenous innovation model with a sectoral network, based on Liu and Ma 2023. The government chooses sectoral research and development subsidies to capture cross-sector knowledge spillovers (measured by patent citation linkages) and emissions-reduction goals (dashed line), but may favor politically connected sectors (proxied by sector markups). The lines in the figure show differences relative to sector-neutral support. For details, see Online Annex 2.1.

weight of a sector is proxied with market power, in line with evidence that firms with larger market shares tend to employ more politicians per worker (Akcigit, Baslandze, and Lotti 2023), and that political connections can drive the market valuation of listed firms and the allocation of government spending (Acemoglu and others 2016; Choi, Penciakova, and Saffie 2021). More broadly, the effectiveness of industrial policies can also be hindered by information asymmetries between the government and firms, such as mislabeling of projects, inefficient government administration, inertia in policies (Juhász, Lane, and Rodrik 2023), and uncertainty about—or misgauging of—the social benefits.

Not all countries benefit equally from industrial policy. The ability to influence cross-sector knowledge spillovers is generally more limited in small or more open economies because a larger share of their knowledge flows come from abroad (Figure 2.4) or are exported. More open economies are also less able to complement R&D support with production or demand-side subsidies, as they are more integrated in global markets and supply chains.

Figure 2.4. Domestic Knowledge Spillovers, Select Economies
(Patent citations from own country, percent of total)



Sources: European Patent Office, PATSTAT; and IMF staff estimates.
Note: The figure displays the within-country average of domestic patent citations across all sectors. Patents are attributed to countries based on the location of their inventors. For details, see Online Annex 2.1.

Taking a representative small open economy at the technology frontier, where only 10 percent of knowledge spillovers originate domestically (compared with almost 70 percent in the *United States*), the simulations show limited gains from targeted support even in the absence of implementation frictions (Figure 2.3). However, the analysis also implies that small economies specializing in frontier sectors with mostly domestic spillovers can benefit from directing innovation (Figure 2.4). This could explain industrial successes in *Korea* and *Taiwan Province of China* (Cherif and Hasanov 2019). Moreover, smaller countries can coordinate their policies to account for the knowledge spillovers between each other (an example is the *European Union's* Horizon Europe Program).

An important corollary of these findings is that geoeconomic fragmentation could be self-reinforcing and hard to reverse. This is because larger research-intensive economies tend to have more domestic spillovers and, as such, greater incentives to implement industrial policies, which often entail preferential treatment for domestic industries (Evenett and others 2024). As most of the stock of knowledge is imported even for most countries at the technology frontier, policies discriminating against foreign firms can prove self-defeating and trigger costly retaliation.

In sum, industrial policy for innovation can only be beneficial if the following conditions hold:

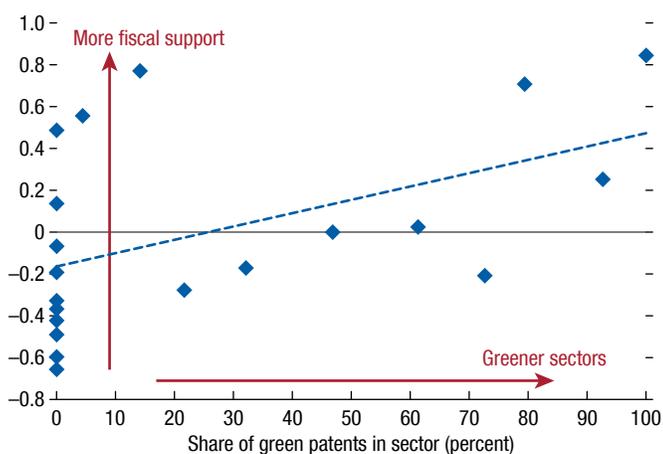
- Externalities can be correctly identified and precisely measured (for example, carbon emissions).
- Domestic knowledge spillovers from innovation in targeted sectors are strong.
- Government capacity is high enough to prevent misallocation (for example, to politically connected sectors).
- Policies do not discriminate against foreign firms, so as to avoid triggering retaliation by trade partners.

As with any model-based analysis, tractability demands that the framework leave out a number of factors that could affect the policy conclusions. One such issue is that welfare gains are calculated relative to the distribution of R&D support under no industrial policies. In practice, countries typically have in place innovation policies that directly or indirectly subsidize specific sectors (for example, place-based policies when sectors are geographically concentrated). As a result, comparing the optimal distribution with the actual distribution of innovation support could result in lower estimated gains than shown here. The simulation also assumes that governments take the path of foreign innovation as given. For large economies, knowledge spillovers to other countries could be beneficial if they improve the quality of imported products. On the other hand, knowledge spillovers could allow competitors to gain global market shares, spurring countries to restrict knowledge outflows (Garcia-Macia and Goyal 2020). As such, assuming that governments account for foreign knowledge spillovers could either amplify or mitigate the gains from industrial policy.

The analysis also sheds light on how to optimally allocate R&D across sectors. While greener sectors should receive more support given emissions externalities, the relationship is not linear (Figure 2.5). The degree to which innovation in each sector benefits other sectors also plays a big role. Not all green sectors are equally central in terms of their knowledge spillovers, and knowledge can spill over between green and brown sectors over time, diluting the effects of targeting green sectors.

Innovation policy in large economies has also focused on AI (for example, AI Next and AI Institutes in the *United States* and the *European Union's* Partnership on AI, Data and Robotics), or on key inputs to AI such as semiconductors. The simulation results show that in contrast to green sectors, sectors

Figure 2.5. Optimal R&D Support by Sector
(Change in R&D relative to no industrial policy, logs)



Sources: Diez, Fan, and Villegas-Sánchez 2021; European Patent Office, PATSTAT; Liu and Ma 2023; World Intellectual Property Organization, Green Inventory; and IMF staff simulations.

Note: Simulations from an endogenous innovation model with a sectoral network, based on Liu and Ma 2023. The dashed line shows the average increase in a sector's R&D support (relative to uniform support) as the green intensity of the sector increases. Sectors are aggregated into 20 bins (shown in dots) and the y-axis is rescaled to a zero mean. R&D = research and development.

currently projected to be more exposed to AI may not necessarily warrant greater fiscal support because they do not generate higher spillovers, on average (Online Annex 2.1). Of course, innovation in AI technology could lead to higher research spillovers over time, including in health and green sectors with high social returns, which are not captured in the model. That said, global corporate investment in AI has soared more than 10-fold in the past decade (Maslej and others 2023). After decades of research, often funded by governments, AI technology has matured to the commercial adoption phase. More generally, an assessment of fiscal incentives for AI needs to consider not only their impact on innovation but also their implications for other objectives such as the government budget and labor market effects. As such, priority could be given to technologies that expand human capabilities and to facilitating AI adoption in sectors with higher social benefits.

Overall, these results point to the importance of exercising caution when using industrial policies for innovation. Even as multiple social goals—most prominently, reducing emissions—call for greater innovation in some sectors than others, implementing industrial policies effectively is

challenging. It requires sufficient information, including on the nature of market failures, input-output linkages, supply chains, administrative capacity, and influence over global innovation flows. Governments deploying industrial policies should strengthen technical capacity to vet subsidized projects (see the discussion in the next section), establish clear benchmarks, conduct exhaustive assessment of fiscal costs and risks, recalibrate support as conditions change, foster competition, and seek international collaboration.

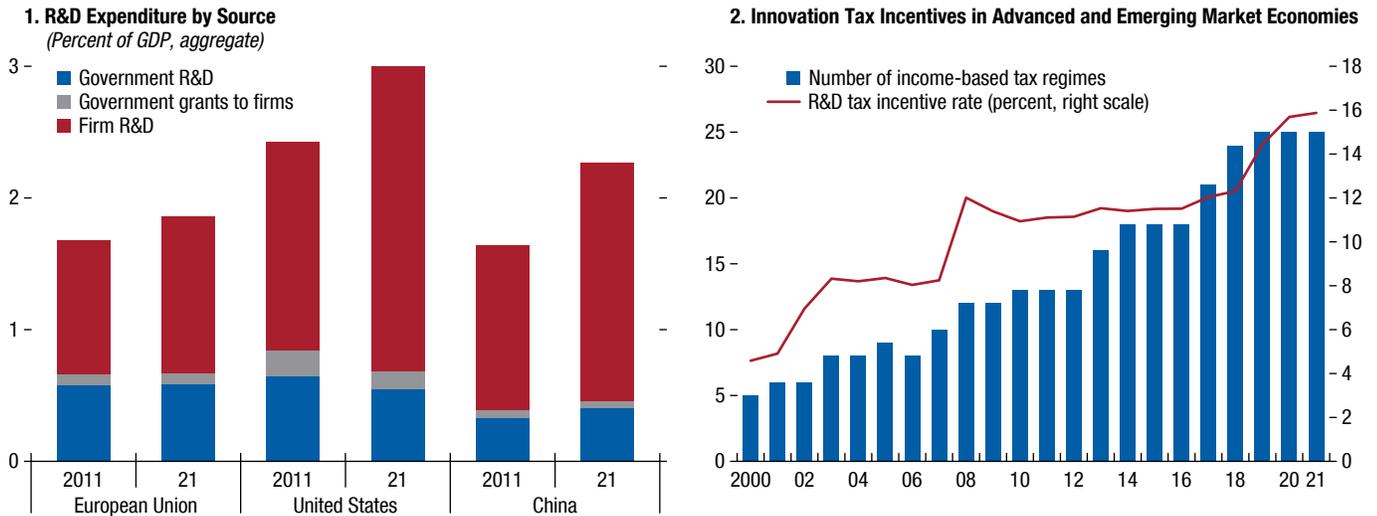
Promoting Innovation at the Technology Frontier

Directing innovation to specific sectors delivers gains under fairly restrictive conditions, and widespread use of industrial policies can entail large fiscal costs. This section discusses how advanced and emerging market economies at the technology frontier should design a broader innovation policy toolkit using cost-effective fiscal instruments at a juncture of limited fiscal space and appropriate targeting to account for the nature of research (fundamental versus applied), the innovation lifecycle, and firm characteristics (age, financing constraints).

The mix of innovation policy instruments used by governments has evolved over past decades. Government spending has been increasingly tilted toward incentivizing firm R&D. Whereas public R&D has remained stable at about 0.5 percent of GDP in Organisation for Economic Co-operation and Development (OECD) economies (Figure 2.6, panel 1), funding for fundamental research has stagnated even as the implicit subsidy rate to firm R&D expenditure from tax incentives (such as tax credits) has almost tripled since 2000 (Figure 2.6, panel 2).

Governments have also rapidly increased the use of other instruments such as patent boxes (used in 21 of 38 OECD economies as of 2022), which tax income derived from patents at a lower rate. Consequently, private sector innovation has increased (measured by firm R&D) but tends to be commercially oriented and incremental in nature even as innovation depends more on fundamental scientific advances funded by public research. How countries at the technology frontier can rebalance this using an appropriate policy mix is discussed in the next section.

Figure 2.6. Governments Shifting R&D Support to Tax Incentives for Firms



Sources: González Cabral and others 2023; Organisation for Co-operation and Development (OECD); and IMF staff calculations.
 Note: Firm R&D includes that which is financed by firms (potentially supported by tax incentives but excluding government grants to firms). Government R&D is that which is financed by the government excluding grants to firms. The R&D tax incentive rate is based on implicit effective subsidies. Income-based tax regimes include patent boxes, among other instruments. The panel 2 sample consists of 40 countries including OECD economies plus *China, Romania, Russia, and South Africa*. R&D = research and development.

Designing an Efficient and Cost-Effective Innovation Toolkit

Governments need to design an innovation toolbox that effectively combines different instruments that account for economic efficiency, fiscal costs, policy objectives, and design features. The analysis of cost-effectiveness of commonly deployed budgetary instruments for innovation draws on a meta-study of existing literature and new empirical estimates. For each policy instrument, Table 2.2 shows the estimated increase in total R&D expenditure per dollar of fiscal cost, together with policy guidelines.⁵

Overall, public research, R&D tax incentives, and research grants (all highlighted in green in Table 2.2) are consistently found to be the most cost-effective tools. In particular, tax incentives and grants lead on average to almost one additional dollar in total R&D expenditure per dollar of fiscal cost, with slightly larger effects for financially constrained firms (Agrawal, Rosell, and Simcoe 2020). One benefit of tax incentives is that all private R&D activities get equal treatment. The drawback, however, is that private sector R&D decisions may not adequately address

the complex knowledge spillovers associated with innovation. Policy objectives also matter: Grants can be more useful for start-ups (typically young and small firms) at earlier stages of the financing cycle, whereas tax incentives can be cheaper to administer but require that firms have sufficient internal funding.⁶

Public research is found to have the largest “bang for the buck,” with more than one additional dollar in total R&D per dollar of fiscal cost. This is not surprising, as public research funding tends to focus on fundamental research, which has high knowledge spillovers benefiting more sectors in more countries, and for a longer time than applied research by firms (see the October 2021 *World Economic Outlook*). Overall, subsidies are especially useful for supporting the research component of R&D—the early phase of the innovation process when knowledge spillovers tend to be larger (see the April 2016 *Fiscal Monitor*). Tax incentives can complement these subsidies by providing across-the-board incentives to all firms investing in R&D. The different innovation tools can also work together to reinforce synergies between firms, universities, and public research institutes (Arora

⁵Online Annex 2.2 discusses the estimates based on the literature, while Online Annexes 2.3 and 2.4 describe the empirical approaches.

⁶These can include tax credits, enhanced allowances, accelerated depreciation, and special deductions for labor taxes or social security contributions.

Table 2.2. Budgetary Instruments to Promote Innovation

Instrument	Impact on Total R&D per Dollar Spent		Policy Guidelines
	IMF Staff Estimates	Literature	
R&D tax incentives	[0.7,0.9]	[0.2,1.5]	Better for mature firms and for horizontal support Preferable if tax credit is refundable
Patent boxes (intellectual property regimes)	Small	~0	Induce profit-shifting/excessive patenting BEPS Action 5 reform effect still uncertain ¹
R&D grants	n.a.	[0.5,1.5]	Better for younger firms and for targeting sectors with high social returns
Public R&D	[1.2, 1.5]	>1	Better for fundamental research and for targeting sectors with high social returns
Moonshot projects	n.a.	Inconclusive	Can have strong relocation effects

Sources: Organisation for Economic Co-operation and Development (OECD); and IMF staff estimates. See Online Annex 2.2 for literature sources.

Note: Instruments found to be most cost-effective are highlighted in green. IMF staff estimates are based on an ordinary least squares panel regression with country and year fixed effects, controlling for macroeconomic factors and the corporate income tax rate. The sample consists of 40 countries including OECD economies and *China, Romania, Russia, and South Africa* during 2000–21. Intervals in brackets refer to the 25th and 75th percentiles of the coefficient distribution, respectively. All coefficients in the table are statistically significant at the 95 percent confidence level. For more details on IMF staff estimates, see Online Annexes 2.3 and 2.4. For the literature estimates, see Online Annex 2.2. n.a. = not applicable; R&D = research and development.

¹ The OECD/Group of Twenty Base Erosion and Profit Shifting (BEPS) Project Action 5, effective since December 2015, requires firms benefiting from intellectual property regimes to conduct substantial R&D activity in the country offering the patent box.

and others 2023), increasing the cost-effectiveness of innovation and higher education policies.

Combining these results with estimates of the output response to R&D from the literature, the implied fiscal multiplier—the increase in output per dollar of fiscal cost—is 3 to 4 over the long term for the most effective tools (Online Annex 2.5). This implies that increasing fiscal support for R&D by 0.5 percentage point of GDP (or about 50 percent of the current level in OECD economies) through a combination of public research funding, grants to firms, and tax credits could raise GDP by up to 2 percent. The GDP impact reflects the complementarity between public and private research. The innovation policy mix also lowers the public-debt-to-GDP ratio by about 0.5 percentage point over an eight-year horizon, as the initial increase in debt from higher fiscal spending is gradually offset by higher GDP and revenue (Online Annex 2.5). However, while innovation policies can pay for themselves in the long term, countries with limited fiscal space may need to raise revenue or reprioritize other spending to finance the short-term costs of those policies (see Chapter 1).

These estimates are based on the observed effects of existing policies for an average OECD economy. Fiscal costs and growth effects will vary depending on the policy mix adopted, the human capital base, and other country characteristics. For instance, the reduction in the debt-to-GDP ratio will tend to be larger in economies with higher initial debt ratios. Tilting support toward public research, which entails large knowledge spillovers but is underfunded, could

yield larger payoffs at a lower cost and over a longer period. Moreover, GDP gains from subsidies could be higher if targeting is improved and domestic innovation spillovers are high, as discussed in the previous section.

Indeed, policy design and targeting are critical to driving productivity and growth payoffs. The world's top 2,500 R&D investors account for close to 90 percent of global business R&D expenditure and 60 percent of patent filings for all technologies (Amoroso and others 2021), and the share of innovation done by more established firms has been growing relative to entrants (Garcia-Macia, Hsieh, and Klenow 2019).⁷ Social returns to innovation can be considerably smaller if large firms or market leaders use defensive patenting to cement market power and block more innovative competitors, suggesting that tax incentives must be kept simple to maximize take-up across firms. Incentives also tend to be more cost-effective when they only reward incremental R&D and avoid favoring incumbents or state-owned enterprises.⁸ Public funding for research and grants

⁷This concentration of innovation is particularly pronounced in high-tech sectors such as software and computer services, pharmaceuticals, and biotechnology. See Akcigit and Kerr (2018), Argente and others (2020), and Akcigit and Goldschlag (2023) for a discussion of how large established firms can impede innovation.

⁸Tax incentives for innovation may become less effective because of the global minimum tax agreed upon by the members of the Inclusive Framework. This occurs, for instance, if tax relief reduces the effective tax rate below the global minimum rate of 15 percent (IMF 2023).

is better suited to target specific types of innovation or sectors, including nonmarket sectors, but, as discussed earlier, such funding requires sufficient administrative capacity.

The effectiveness of other fiscal instruments in driving innovation and productivity growth is less clear cut. “Moonshot” projects that focus on a single mission (Mazzucato 2018) can catalyze resources for narrow goals (for example, developing vaccines against COVID-19), but evidence on their broader efficacy is inconclusive. Patent boxes or intellectual property regimes, which offer preferential tax treatment to income from protected intellectual property assets (for example, patents, trademarks, or copyrights), tend to reward more established and less financially constrained firms. They have also been prone to profit shifting by multinationals in the past, leading to a small overall impact on domestic innovation activity. Firm R&D spending increased after the 2015 international tax reform required firms benefiting from patent boxes to conduct substantial R&D activity in the country offering the patent box (Online Annex 2.3). However, a quasi-experimental regression analysis suggests that these gains were limited to countries that had adopted patent boxes before the reform (Online Annex 2.4).

Overall, R&D tax incentives that reward expenditures or inputs are preferable to patent boxes for outputs, especially since AI-driven business models increase the potential for large established firms to take advantage of preferential tax rates on intellectual property.

Complementary Pro-Innovation Policies

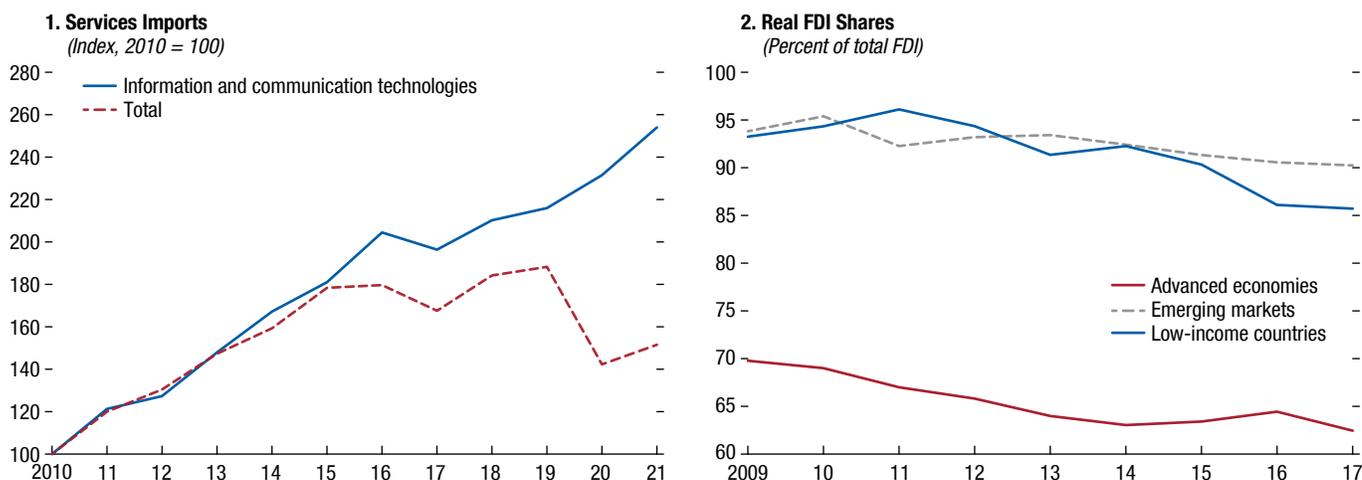
Fiscal instruments are not the only policies that drive innovation. Further, a sizable fraction of innovation is not formally classified as R&D or patents and as such not directly affected by fiscal incentives. This highlights the importance of a broader pro-innovation policy mix:

- *Broader fiscal policies* can have a strong effect on innovation (Akcigit, Baslandze, and Stantcheva 2016) and potentially reinforce direct innovation incentives. A well-designed corporate income tax system, with generous loss carryforward rules and refundable tax credits, can best provide risk sharing throughout the innovation lifecycle and alleviate financing constraints, especially

for start-ups (Hall 2022). More generally, developing a coherent and simple tax system—characterized by broad bases and low rates while instituting systematic evaluation—is critical to foster innovation. On the expenditure side, public procurement should be sufficiently open, transparent, and flexible to avoid discriminating against innovative firms. Sound fiscal frameworks and institutions are needed to implement a cost-effective policy mix.

- *Structural and competition policies* should strike a balance between lowering barriers to entry for new innovative firms and maintaining robust competition, especially amid rising corporate market power and concentration (Akcigit and others 2021), while securing the intellectual property rights of successful innovators. Even when well-calibrated, intellectual property rights confer temporary monopoly power, which delays the widespread dissemination of innovation to competitors and slows technology adoption. This could, at times, run counter to society’s broader goals. Policies should ensure a level playing field for different types of firms, including state-owned enterprises.
- *Trade policies* should strive to support open markets that allow a free exchange of ideas, key to advancing research at the frontier and facilitating scientific collaboration across borders. Fragmentation could lead to large productivity losses by hindering the exchange of knowledge (Baba and others 2023).
- *Financing policies* should improve access to financing vehicles across firms, which usually take the form of equity, as innovation is risky and produces intangible assets that are harder to use as loan collateral (Garcia-Macia 2017) but may also require different tools along the innovation lifecycle (Armitage, Bakhtian, and Jaffe 2023).

Fiscal policies also need to ensure that the gains from innovation are broadly distributed across society, as technological progress does not always “lift all boats.” Technological advances offer prospects for higher productivity and stronger growth but can lead to structural change that creates new jobs and sectors while displacing and transforming others. Brollo and others (forthcoming) discuss the upgrades to social protection and tax systems needed to manage the effects of disruptive technological transformation.

Figure 2.7. Services Imports and Real FDI in Emerging Market and Developing Economies

Sources: Organisation for Economic Co-operation and Development/World Trade Organization, Balanced Trade in Services dataset; and IMF staff calculations.

Sources: Damgaard, Elkjaer, and Johannesen 2024; and IMF staff calculations.

Note: In panel 1, indices are constructed for the aggregate value of imports of all services and for that of information and communication technology services. Panel 2 shows average shares of real inward FDI in total inward FDI positions across country groups. Real FDI equals total FDI excluding FDI in the same country with no productive activities, including little or no physical presence, employment, production, and no other activities other than holding and financing. FDI = foreign direct investment.

Accelerating Technology Diffusion across Countries and Firms

Worldwide, innovation is highly concentrated—the top seven economies at the technology frontier account for more than half of global R&D spending.⁹ Homegrown innovation is costly, but economies below the technology frontier (largely emerging market and developing economies) can benefit from foreign knowledge spillovers to accelerate their growth potential and develop their own innovation capacity. Broader technology adoption across firms is also needed to narrow productivity gaps between top firms (those at the technology frontier) and laggards.¹⁰ The role of fiscal policy in facilitating these processes in the face of ongoing climate and digital transitions is discussed in the next sections.

⁹According to the United Nations Conference on Trade and Development's Frontier Technology Readiness Index, the top seven frontier economies are (in the order of the index) the *United States*, the *United Kingdom*, *Germany*, *Korea*, *France*, *The Netherlands*, and *Sweden*, although *China* has risen to become a major contributor to R&D spending. The index ranks countries based on five areas: information and communications technology deployment, skills, R&D activity, industry activity, and access to finance.

¹⁰Even in advanced economies, most firms are not at the frontier. For example, in *Australia*, only 2 percent of businesses operate at the global frontier (Productivity Commission 2023).

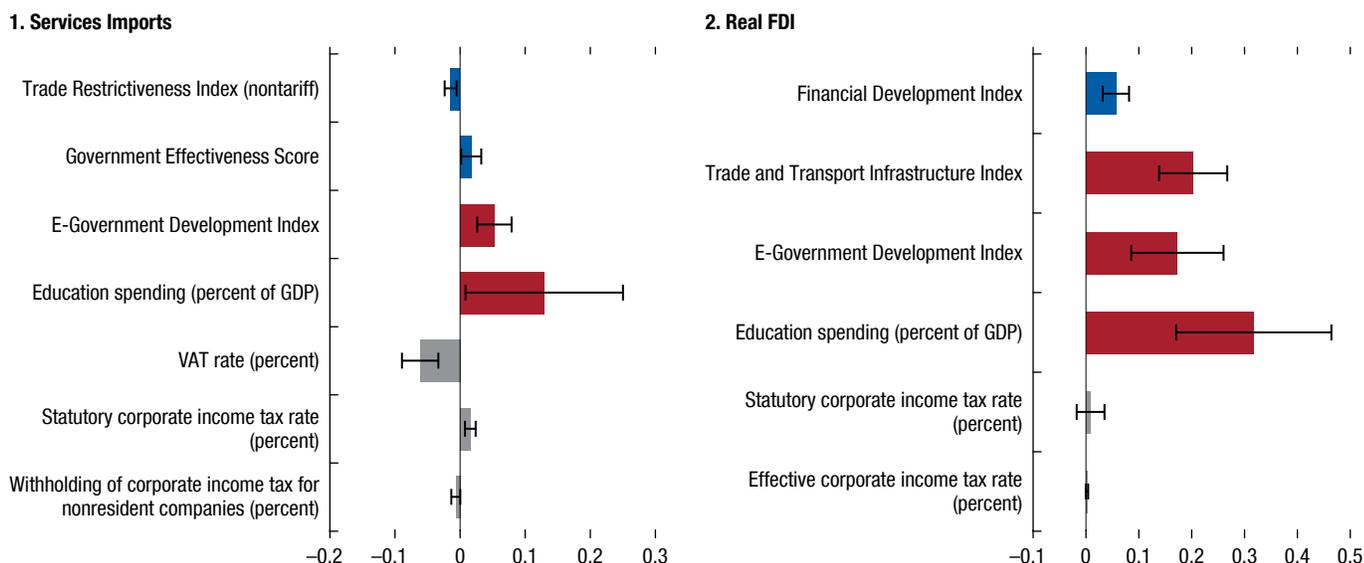
Channels of Cross-Border Diffusion to Emerging Market and Developing Economies

Cross-border technology is diffused through flows of goods, services, capital, people, and information (Keller 2010). Two distinct channels for sharing innovation stand out in the context of ongoing green and digital transformations:

- *Imports of services.* The diffusion literature has primarily focused on trade in goods, but cross-border trade in services, and particularly digital services (Figure 2.7, panel 1), has grown faster than trade in goods, accounting for a quarter of global gross exports in 2023. Boosted by innovations in information and telecommunications, the globalization of services has defied geoeconomic fragmentation and is considered the new driving force of global integration (Georgieva and Okonjo-Iweala 2023).
- *Real foreign direct investment (FDI).* Multinational affiliates receive technology from parent firms (Carr, Markusen, and Maskus 2001), including green, digital, and AI-enabled technologies, which then diffuse that technology to local firms through investments.¹¹

¹¹The scale of real FDI—physical investment made by multinationals—is not reflected in traditional FDI data (Figure 2.7, panel 2), which measure financial flows of multinationals, including flows that have no direct correspondence with real investment. For instance, traditional FDI data include conduit FDI flows that pass through multiple countries before generating real investment somewhere else, estimated at about 40 percent of global FDI (Aykut, Sanghi, and Kosmidou 2017; Damgaard, Elkjaer, and Johannesen 2024).

Figure 2.8. Determinants of Services Imports and Real FDI into Emerging Market and Developing Economies
(Coefficient estimates)



Sources: Damgaard, Elkjaer, and Johannesen 2024; GeoDist (CEPII); International Bureau of Fiscal Documentation; IMF, April 2023 *World Economic Outlook*; IMF, World Revenue Longitudinal Database (WoRLD); Organisation for Economic Co-operation and Development, Balanced Trade in Services database; Penn World Tables; World Bank; UN E-Government Knowledgebase; and IMF staff calculations.

Note: The figure panels show estimated coefficients from augmented gravity equations for the monetary value of bilateral services imports and (log) bilateral inward real FDI positions. Estimates for services imports are obtained from a Poisson pseudo maximum likelihood panel regression for 70 emerging market and developing economies during 2009–21. Estimates for real FDI are from a panel regression for 21 emerging market and developing economies during 2009–17. Each estimate can be interpreted as an “estimate times 100 percent” increase in services imports or real FDI position after a unit increase in the corresponding explanatory variable. All indices are standardized on a yearly basis. The whiskers indicate 95 percent confidence intervals. FDI = foreign direct investment; VAT = value-added tax.

An initial step establishes the link between these channels of knowledge transfer and innovation activity and productivity in recipient countries. Analysis of a panel of emerging market and developing economies provides evidence that knowledge spillovers through real FDI stimulate domestic patent activity, and that both services trade and FDI increase domestic productivity (Online Annex 2.6). Notably, services imports stimulate greater diffusion than goods imports. By making increasing use of available foreign knowledge embodied in these channels, emerging market and developing economies can boost their own innovation activity and increase productivity through the adoption of existing technologies.

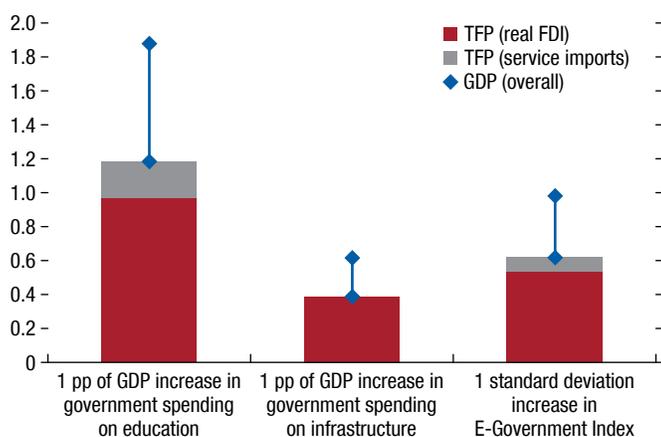
Technology diffusion through trade and investment is not automatic. Economists have long emphasized that assimilating and productively using foreign know-how requires absorptive capacity (Cohen and Levinthal 1990; Comin and Mestieri 2018). This points to an important role for fiscal policies in supporting innovation diffusion and adaptation, as discussed in the next section.

Supporting Diffusion with Public Investment

Public spending policies can help maximize the absorption of existing innovations on the technology frontier, including by facilitating trade in services and real FDI. A gravity model of the determinants of services imports and real FDI flows to emerging market and developing economies is used to disentangle the contribution of specific policies. Policies aimed at building human capital and improving connectivity through better digital and physical infrastructure are estimated to be key determinants (Figure 2.8; Online Annex 2.6).¹² For instance, a 1 percentage point of GDP increase in education spending in emerging market and developing economies is associated with a 13 percent

¹²The gravity model allows for gauging the role of fiscal policies in facilitating the bilateral flow of trade and capital between countries at the technology frontier and recipient emerging market and developing economies. The model controls for standard determinants such as size, income levels, geographic distance, technological differences, and other nonpolicy factors (such as price differentials and regulatory frameworks).

Figure 2.9. Effect of Enhanced Public Investment on Productivity and GDP
(Percent change)



Sources: Damgaard, Elkjaer, and Johannesen 2024; IMF, April 2023 *World Economic Outlook*; Organisation for Economic Co-operation and Development/World Trade Organization, *Balanced Trade in Services* database; Penn World Tables; UN E-Government Knowledgebase; World Bank; and IMF staff calculations. Note: The figure shows the estimated impact of policy changes on growth in TFP and GDP in emerging market and developing economies through real FDI and services imports channels. These combine estimates from diffusion regressions for TFP with augmented gravity models for services imports and real FDI. Blue markers indicate the range of changes in GDP growth, depending on the response of capital. FDI = foreign direct investment; pp = percentage point; TFP = total factor productivity.

increase in their services imports and a 32 percent increase in real FDI inflows.¹³

Upgrading digital infrastructure and skills can enable emerging market and developing economies to share in the productivity gains from digital technologies, including AI (OECD 2022; Calvino and Fontanelli 2023). Enabling policies include government support to achieve universal connectivity by incentivizing or directly investing in building internet infrastructure and making internet access more affordable. While education spending matters, the quality and adaptability of education systems can make a difference. Programs to promote digital literacy and technical skills can help close digital adoption gaps. GovTech—upgrades in the technologies used by governments—can further lower barriers to diffusing knowledge by improving the efficiency of public spending and the delivery of education services.¹⁴

¹³Government spending on education in emerging market and developing economies averages about 5 percent of GDP, implying that a 1 percentage point of GDP increase is equivalent to a 20 percent increase in education spending.

¹⁴An increase in internet use from 10 to 90 percent of the population is associated with a rise in average primary and secondary education scores of up to 25 percent (Amaglobeli and others 2023).

The productivity and growth dividends of public investments in these areas can be significant. Combining the estimated effects of policies with their impact on productivity in recipient countries suggests that a 1 percent of GDP increase in education spending (closing the gap between advanced and emerging markets and developing economies) can boost GDP by 1.9 percent over the medium term (Figure 2.9; Online Annex 2.6). Similarly, improving the quality of trade and transport infrastructure in an average low-income country to bridge one-third of the gap with emerging market economies—with an estimated average fiscal cost of 1 percent of GDP—increases GDP by 0.6 percent.¹⁵ These estimates only account for the effects of investments through increased services imports and real FDI, and their overall impact could be much larger.¹⁶

Strategic public investments can therefore lead to large payoffs over time but must be supported by sound public investment management frameworks. This demands carefully selecting investment projects to ensure high economic and social returns and strengthening fiscal frameworks and institutions to improve spending efficiency. Public–private partnerships can support the execution and financing of projects, but they require strong capacity to reduce risks to the budget. For low-income developing countries and some emerging market economies, tighter budgets and elevated debt levels will likely continue to constrain investment, which points to the need to improve domestic revenue mobilization (as discussed in the next section).

Not all countries are equally likely to benefit from international technology transfers. Technology needs in many low-income countries can differ from the technologies used in more research-intensive economies (Acemoglu and Zilibotti 2001; Moscona and Sastry 2022). This technology mismatch causes productivity to persistently differ across countries and cluster in places that are similar to the economies where research takes place. Foreign aid can be an important conduit for R&D spillovers to developing economies, but coordinated investments in R&D on technologies more suited to their environments may be needed.

¹⁵Based on the World Bank's estimates of public investment spending on infrastructure for a sample of more than 70 developing countries over 2010–18 (Foster, Rana, and Gorgulu 2022).

¹⁶For example, for every dollar spent on education, as much as \$10 to \$15 could be generated in economic growth (UNESCO 2012).

Climate change could also be a driver of future technological mismatches, particularly in agriculture. As such, resolving technology mismatches should be at the center of global R&D policy to combat climate change.

Tax Policy to Facilitate Diffusion (and Pay for Spending)

Bolstering tax policy and administration can also help overcome barriers to technology diffusion to emerging market and developing economies, while also mobilizing needed revenue to finance public investments. Consumption taxes and corporate income taxes (CITs) are the most important revenue sources for emerging market and developing economies. For instance, value-added taxes (VATs) account for 33 percent of their tax revenue, whereas CITs account for more than 15 percent, with a relatively large share of the latter contributed by multinationals. Given the importance of these revenue sources, the analysis points to three key priorities (Figure 2.8; Online Annex 2.6):

- *Strengthening the VAT to raise revenue from rising services imports is preferable to turnover taxes.* Countries should use the VAT to mobilize revenue from growing services imports, instead of relying on turnover-based taxes such as digital services taxes levied on gross revenues from social media platforms, internet search engines, and online marketplaces. Estimates suggest that the current revenue yields from a digital services tax are low, and that the expansion of such taxes could deter entry by smaller firms, contributing to higher market concentration in the tech sector (Dabla-Norris and others 2021).¹⁷ VAT administration should adapt to emerging challenges in taxing imported services, particularly those in digital forms (Brondolo 2021), through simplified collection mechanisms (for example, reverse charge and vendor collection).
- *Scaling back ineffective corporate tax incentives can help pay for public investment.* The empirical evidence suggests that statutory CITs and effective CIT rates for multinationals do not significantly affect real investment flows to developing countries (Figure 2.8). Instead of using ineffective investment tax incentives, developing countries

should focus on improving governance and invest in fundamentals to facilitate real FDI and services imports (see the April 2016 *Fiscal Monitor*; see also Online Annex 2.6). This point is reinforced by the global minimum tax currently being implemented by several countries that will make certain tax incentives redundant (IMF 2023). Fiscal proceeds can be sizable: removing CIT incentives could raise tax revenue by almost 1 percent of GDP in emerging market and developing economies (Vazquez and Miguel 2022).

- *Strengthening CITs to limit profit-shifting by multinationals will safeguard revenue.* Despite advances in global tax cooperation, the rise of complex, intangible, and technology-heavy business models has created challenges for taxing corporate profits in countries where multinationals do most of their business. Developing countries should strengthen their CIT policies with robust withholding taxes on outbound payments for services imports—which are estimated to reduce firms’ incentives to inflate costs and lower CIT liabilities—and simplified anti-tax avoidance rules (IMF 2023; see also the April 2022 *Fiscal Monitor*).

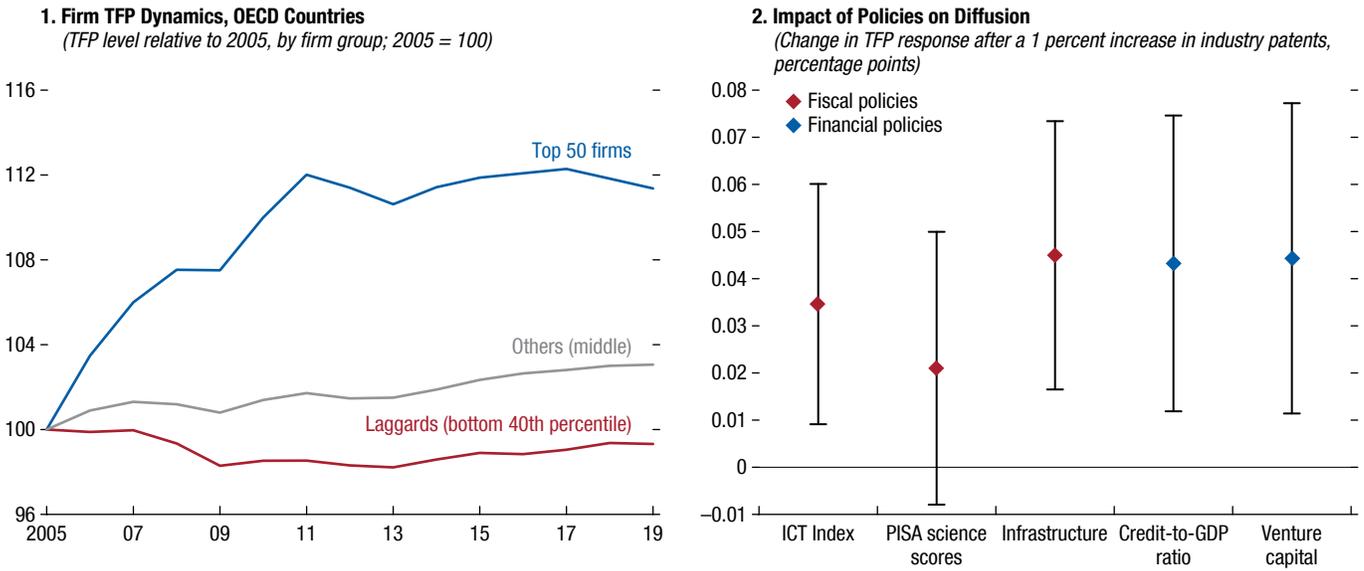
Facilitating Technology Diffusion across Firms

While the preceding section highlighted the role of fiscal policies in driving cross-border technological spillovers and their effects on productivity, this section and those that follow explore the role of fiscal policy in facilitating technology diffusion across firms. Slowing diffusion of technology from frontier firms to laggards—defined here as firms in the bottom 40 percent of the country-specific firm distribution—is a main culprit behind the aggregate productivity slowdown in many countries (Andrews, Criscuolo, and Gal 2016; Figure 2.10, panel 1). Diffusion from top firms in the digital sector has been particularly weak and is a trend that could intensify with the uneven penetration of AI and other digital technologies (Berlingieri and others 2020).

Fiscal policies can help speed up technology diffusion from firms at the technology frontier to laggard firms. Analysis of a large sample of firms from advanced and emerging market economies shows that frontier innovation in an industry (measured by global patent growth in that industry) plays a role in boosting productivity growth of individual firms, implying that, on average, innovation partly diffuses within industries

¹⁷Digital service taxes could also result in retaliatory tariffs between market and residence countries of digital service providers.

Figure 2.10. Firm TFP Gaps and the Impact of Policies on Diffusion to Laggards



Sources: European Patent Office, PATSTAT; IMF, Financial Development Index; IMF, October 2023 *World Economic Outlook*; Orbis; World Economic Forum 2019; The Global Competitiveness Report 2019; and IMF staff estimates.

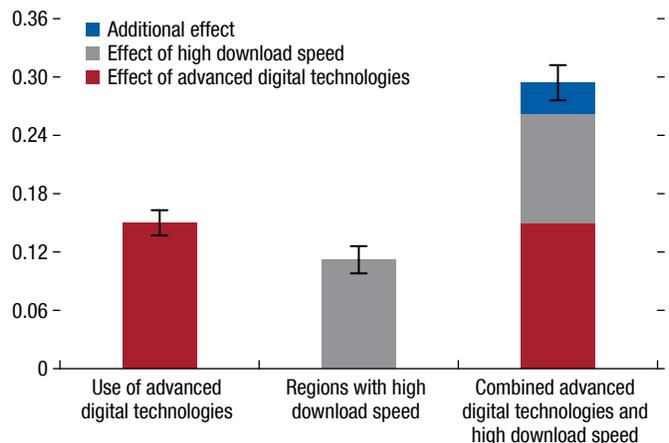
Note: Panel 2 shows the estimated coefficients from a panel regression model for 43 countries over 1995–2020. The dependent variable is log changes in TFP. The coefficient displayed shows the percent increase in growth of log TFP after a 1 percent increase in the growth of global patents for firms in countries where the policy variable is one standard deviation higher than the sample average. Whiskers indicate 90 percent confidence intervals. Coefficient estimates are for laggard firms only, with laggards defined as firms with TFP below the 40th percentile of TFP distribution by country, sector, and year. Policy and structural variables are standardized. Coefficients in red and blue refer to variables related to spending policies and financing policies, respectively. Standard errors are clustered at the country-industry level. ICT = information and communication technology; OECD = Organisation for Economic Co-operation and Development; PISA = Programme for International Student Assessment; TFP = total factor productivity.

(Online Annex 2.7).¹⁸ Further, public investments in education and physical and digital infrastructure are associated with faster diffusion to laggard firms (Figure 2.10, panel 2).

For example, enhancing infrastructure quality in an emerging market to the average level in advanced economies can almost double the impact of global patent growth in lifting the TFP of laggard firms. This is corroborated by evidence from Europe: gains from digitalization are larger for firms located in regions with better digital infrastructure and faster internet speeds (Figure 2.11). This suggests that public investment can amplify the effect of advanced digital technology in boosting firm productivity (European Investment Bank, 2024).

¹⁸To distinguish high-value inventions from the large number of patents that get filed globally, patent growth in the analysis is defined in terms of the growth of international patent families, with a patent family consisting of all the patents that cover the same invention, and with the family containing patents that have been filed in more than one jurisdiction.

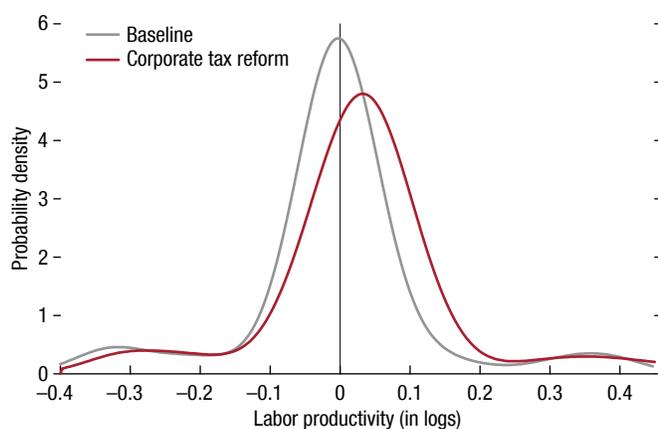
Figure 2.11. Effect of Digital Adoption and Digital Infrastructure on Firm Productivity in the European Union
(Labor productivity in logs)



Source: European Investment Bank 2024.
Note: Based on an ordinary least square regression controlling for firm size, firm age, country, and sector (three groups of European Union countries and four macroeconomic sectors). Regions with high download speed are defined by Eurostat as NUTS 2 regions with average download speed higher than the median download speed across all regions. The whiskers indicate 95 percent confidence intervals. NUTS = nomenclature of territorial units of statistics.

Figure 2.12. Simulation of the Labor Productivity Impact of Corporate Tax Reform across Firms in Emerging Market Economies

(Probability density function, percent; productivity in logs)



Sources: Capelle and others 2023; Compustat; and IMF staff simulations. Note: Based on a heterogeneous-firm general equilibrium model with different capital vintages, calibrated to *Brazil, China, India, Indonesia, Malaysia, South Africa, and Thailand*. The reform includes a 12 percent tax deduction rate on investment in the newest vintage of capital, financed with a 5 percentage point increase in profit taxes. The resulting gains in aggregate labor productivity and consumption are 2.7 and 3.4 percent, respectively.

A broad policy mix affecting incentives and capabilities is needed to boost technology diffusion to laggard firms. This includes robust competition policy that ensures a level playing field and adequate financing policies. Evidence suggests that the availability of credit and venture capital is associated with stronger diffusion to laggard firms (Figure 2.10, panel 2), as these firms tend to be smaller and have less shareholder funds. Regional initiatives can complement domestic policies to prioritize acceleration of green and digital diffusion, particularly for countries with limited fiscal space.

Accelerating Diffusion with Targeted Fiscal Incentives

Countries can also use targeted incentives to foster the uptake of new technologies. Illustrative simulation based on a model of firms that can invest in older or newer capital vintages (Capelle and others 2023) shows that targeted fiscal incentives for technology upgrades can lift productivity across firms. For example, a revenue-neutral corporate tax reform that shifts the tax burden away from frontier investment can encourage 30 percent of local firms in emerging market economies to upgrade technology (Figure 2.12).

This leads to higher aggregate labor productivity, consumption, and welfare over the medium term if local knowledge spillovers are considered.¹⁹ To maximize their impact on accelerating diffusion, incentives need to be well communicated (regarding their horizon, coverage, and eligibility criteria), transparently presented in budgets under a strong governance framework, and effectively implemented.

Targeted fiscal incentives are increasingly being used to promote domestic adoption and production of green technologies. Removing barriers to green diffusion is key, as many of the low-carbon technologies already exist. The model simulation shows that tax reforms to encourage technology upgrades reduce greenhouse gas emissions, as newer technologies tend to emit less. Incentives to stimulate diffusion of green technologies should be embedded in a broader mix of fiscal climate-mitigation policies—combining carbon pricing with phasing out fossil fuel subsidies, building public infrastructure, strengthening procurement, and reducing bureaucracy (Box 2.3).

Conclusion

Global growth has weakened, and productivity has slowed despite rapid advancements in AI and other digital technologies. Improving growth prospects is essential in the face of high government debt, population aging, climate change, and large convergence gaps across countries. But promoting long-term growth can be challenging in a fiscally constrained world. Carefully designed fiscal policies to stimulate innovation, together with measures to broaden technology diffusion, can deliver faster productivity and economic growth for all countries.

The recent turn to industrial policies to support innovation in specific sectors and technologies is not a panacea for higher productivity growth. Such policies are only advisable when the social benefits can be clearly identified (for example, emissions reductions), knowledge spillovers from innovation in targeted sectors are strong, and sufficient administrative capacity is in place. Higher subsidies for green innovation may be warranted given the imperative to decarbonize economies, but these should be

¹⁹Challenges can arise in designing and implementing targeted subsidy schemes because they require a careful delineation of eligibility criteria and effective monitoring to prevent “relabeling” (firms reclassifying unqualified spending to benefit from preferential treatment).

transparent, focused on environmental objectives, and complemented with robust carbon pricing, and should avoid discrimination against entrants. In general, governments deploying industrial policies should invest in administrative capacity, recalibrate support as conditions change, and foster competition.

For advanced and emerging market economies close to the technology frontier, a well-designed pro-innovation fiscal policy mix can substantially lift productivity, boost GDP, and reduce debt-to-GDP ratios over the long term. This entails a complementary mix of public investment for fundamental research, grants for innovative start-ups (especially in high-social-return sectors like green technologies), and tax incentives to encourage applied innovation across firms, alongside strengthened linkages between business and research and education institutions. Complementary structural, competition, trade, and financial policies are needed to provide a level playing field, avoid concentration of market power, and ensure adequate access to financing along the innovation cycle, particularly for long-horizon green energy projects.

Emerging market and developing economies below the technology frontier should focus on a well-calibrated policy mix to facilitate adoption of existing technologies. Investments in and more effective implementation of digital infrastructure,

education, and training programs can accelerate diffusion, including to laggard firms. Removing barriers to diffusion of green technology requires investing in key complementary infrastructure, alongside adequate carbon pricing that aligns private sector incentives and helps to finance these initiatives. As digitalization enables new forms of cross-border trade and FDI, taxation of these activities will need to be adapted to facilitate diffusion while generating revenue. Priorities include using a broad-based VAT instead of tariffs or turnover taxes, scaling back costly tax incentives, and closing loopholes that allow for international tax avoidance.

Reaching the world's full innovative potential and accelerating technology diffusion will not be possible without protecting and deepening international collaboration. Inward-looking industrial policies lead to a costly race in subsidies and trade restrictions. Economies farther away from the technological frontier will lose the most, given their reliance on foreign technology. Coordinating innovation policies is critical to catalyze cross-border spillovers and boost innovation capacity and global economic growth. Not all foreign technologies benefit developing countries, however, so addressing technology mismatches should be at the center of global innovation policy, especially to combat climate change.

Box 2.1. Industrial Policies for Innovation: Lessons from Historical Cases

This box reviews cases of industrial policy for innovation and their varied outcomes. Policy mistakes are common, and initiatives that do successfully transform industries often grapple with high fiscal costs and, in some cases, negative cross-border spillovers.

Airbus in the European Union (EU). EU governments have invested heavily since the 1970s to develop a continental champion of commercial aircraft: Airbus. Governments initially provided subsidized loans, and later reimbursable advances linked to sales, which share downside risk with government (Olienyk and Carbaugh 2011). Government support was motivated by the “natural monopoly” features of aircraft production, with strong scale economies provided by high fixed costs and learning by doing (Baldwin and Krugman 1988). The EU also had an interest in repatriating profits that previously accrued to the quasi-monopoly of US-based Boeing, even if the entrance of a new producer meant lowering production efficiency globally (Brander and Spencer 1985).

Through successful innovation in industrial processes, Airbus managed to break Boeing’s monopoly. According to Neven, Seabright, and Grossman (1994), Airbus benefited Europe, earning a rate of return between 6 and 11 percent, and likely generating positive innovation spillovers to other firms. But it also had some negative cross-border spillovers. While aircraft producer prices only dropped by 3.5 percent, Boeing’s profits fell by more than \$100 billion, competitive pressures from other US producers decreased, and commercial aviation’s production costs rose because of Boeing’s reduced economies of scale and scope. Moreover, the *United States* reciprocated the EU’s intervention with increased support for Boeing, eventually leading to lengthy trade disputes at the World Trade Organization (Irwin and Pavcnik 2004).

Electric vehicles in China. *China* made a strategic decision to prioritize electric vehicles in 2009, when the market was still virtually nonexistent, with the Plan to Adjust and Revitalize the Auto Industry (Branstetter and Li 2023). Key goals were technological self-reliance, avoiding dependence on oil imports, and reducing emissions (Gomes, Pauls, and ten Brink 2023). The government initially leveraged public procurement and required carmakers to prioritize electric vehicles. Later, the government introduced various incentives for consumers (subsidies, tax breaks, and free license plates),

estimated at \$50 billion from 2011 to 2019 (Li and others 2020) and supported infrastructure development (for example, charging stations). Competition gradually increased as the government allowed foreign companies to manufacture in *China*, favoring consumer choice.

These efforts helped Chinese manufacturers reach (and expand) the technology frontier and become global sales leaders by the time foreign demand for electric vehicles took off. However, assessing the program’s net benefits is not straightforward. Supply-side incentives are hard to quantify, and while some subsidies have been phased out, the overall fiscal cost may have increased over time with the booming market size (electric vehicle purchase tax breaks are expected to cost \$72 billion over 2024–27). There is also evidence of excessive entry, with hundreds of domestic producers in early years leading to a wave of consolidations and exits (Branstetter and Li 2023). Finally, the benefit of lower emissions from vehicles has been partly offset by increased coal-based electricity generation (Rapson and Muehlegger 2022).

Less transformative cases. The history of industrial policy for innovation is also filled with projects that failed to be transformative and were eventually discontinued, including in economies at the technology frontier.

Japan’s Fifth Generation Computer Systems Program was a government-industry research consortium set up in 1982, funded by the government and tasked with developing parallel computers for artificial intelligence. The objective was visionary, but the design and timing limited success. A narrow focus on the university system failed to attract a diverse pool of researchers, while the project’s long horizon discouraged firm participation and patenting. Competing technologies developed faster than expected, and the project ended after 13 years (Odagiri, Nakamura, and Shibuya 1997).

The *United States* created the Synthetic Fuels Corporation (SFC) in 1980 after the energy crises of the 1970s to finance (through direct loans and guarantees) private projects that developed commercial synthetic fuel plants. The SFC was allocated a large budget (3 percent of 1980 GDP spread over 12 years), but take-up was limited by conflicting conditionality (in terms of both project scale and geographic diversification), and the program’s economic justification waned when oil prices normalized. When it was terminated in 1986, the SFC had used only about 1 percent of its budget.

Box 2.1 (continued)

France's Minitel was a precursor to the internet launched in 1980. At its apex, it provided more than 26,000 services (including online purchases) to about 25 million users. The state-owned telephone company provided the terminals for free, collected revenue from user charges, and granted permissions for new services. But because it was a centralized system, Minitel failed to penetrate foreign markets and soon became obsolete because of the internet. Despite still being profitable, the system shut down in 2012.

Notably, even though these specific projects were abandoned, their sectors eventually became

commercially viable, underscoring the difficulty for governments to pick the right projects at the right time and successfully implement all of the steps needed for widespread adoption. More generally, assessing industrial policies for innovation requires going beyond success stories and considering the full sample of attempted projects. It also requires using a comprehensive measure of net fiscal costs, which includes both direct subsidies for innovation as well as other producer and consumer subsidies, and contingent liabilities from public lending, minus any additional revenues.

Box 2.2. Fiscal Support for Green Innovation

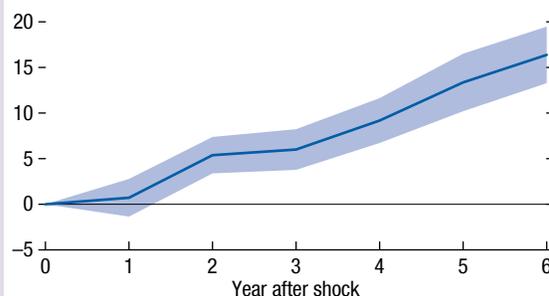
This box discusses the effects of fiscal support for green innovation and outlines design principles for green research and development (R&D) subsidies, including adequate targeting, transparency, and coordination with other policies and trade partners.

Tackling climate change requires a drastic reduction in emissions, which is possible only if global energy consumption transitions to predominantly zero-carbon-emissions energy sources. Technological advances to drive down the cost of clean energy are a key part of any strategy to minimize the economic impact of that switch. Recent empirical studies find that R&D subsidies and other expenditure tools such as feed-in tariffs can be effective in accelerating green innovation (Newell 2015; Bettarelli and others 2023; Hasna and others 2023). A one-standard-deviation increase in the Organisation for Economic Co-operation and Development's green R&D support index is estimated to raise the number of green patents by about 15 percent after six years (Figure 2.2.1).

Green R&D subsidies should be uniquely targeted to environmental objectives, complementing core decarbonization policies (Black, Parry, and Zhunussova 2023). They should be time-bound, cost-effective, and transparent, and administered within an appropriate institutional framework to minimize implementation risks. Subsidies should also be consistent with countries' legal obligations under the World Trade Organization, minimize adverse spillovers, and avoid barriers to technology transfers, especially to developing countries (see Box 2.3).

Fiscal support should also be carefully targeted along the innovation cycle and complemented with financing policies where needed. For example, higher subsidies may be appropriate for fundamental research and early-stage technologies that generate more knowledge spillovers or face

Figure 2.2.1. Impact of Green R&D Support on Green Innovation
(Change in green patents, percent)



Sources: Bettarelli and others 2023; International Renewable Energy Agency; Organisation for Economic Co-operation and Development (OECD); and IMF staff estimates.

Note: Cumulative change in green patents at the country-sector level after a one-standard-deviation increase in the green R&D support index (R&D subcomponent of technology in the OECD Environmental Policy Stringency Index). For details, see Bettarelli and others 2023, Section 4.1. The figure shows the point estimate (line) surrounded by 90 percent confidence bands (shaded area), with standard errors clustered at the country-sector level. R&D = research and development.

tighter financing constraints (Armitage, Bakhtian, and Jaffe 2023).

However, governments should also avoid a “valley of death” in financing for intermediate-stage technologies, when some projects become unsuitable for either venture capital or project finance given long horizons for adoption and large fixed costs and risks (Khatcherian 2022). More broadly, governments should bundle the multiple instruments for green innovation into a coherent policy package that addresses coordination problems (for example, convergence on standards and the integrability of networks), provides the necessary infrastructure, trains the workforce, and shapes clear processes for financing and assessing compliance.

Box 2.3. Addressing Barriers to the Diffusion of Green Technology

This box discusses how fiscal policies can help overcome barriers to diffusing green technologies, using the power sector as a case study to illustrate policy options to lower the cost of investment and other barriers.

Various obstacles hinder the diffusion of green technologies to emerging market and developing economies (see the October 2023 *Global Financial Stability Report*). High capital costs as a result of shallow domestic credit markets, low creditworthiness of electricity purchasers, and other macroeconomic risks increase the relative costs of green technologies (Black, Parry, and Zhunussova 2023; Gautam, Purkayastha, and Widge 2023; IEA 2023). Energy pricing regimes favor fossil fuels because of the lack of carbon pricing and the presence of large fossil fuel subsidies (see the October 2023 *Fiscal Monitor*). Other barriers that contribute to low domestic uptake include (1) missing complementary infrastructure (for example, charging stations for electric cars and electricity transmission connecting prospective renewable generation sites to end users), (2) limited understanding of adoption costs and benefits, and (3) imperfect power sector regulatory and market design.

A coordinated and coherent mix of fiscal policies can help reduce these barriers and stimulate imports of green technologies and foreign direct investment (Hasna and others 2023; see also the October 2023 *Fiscal Monitor*). Combining carbon pricing with phasing out fossil fuel subsidies and revenue-neutral “feebates” or tradable standards remains the primary policy tool to reduce emissions and incentivize the adoption of green technology (see the October 2019 and October 2023 *Fiscal Monitor*).

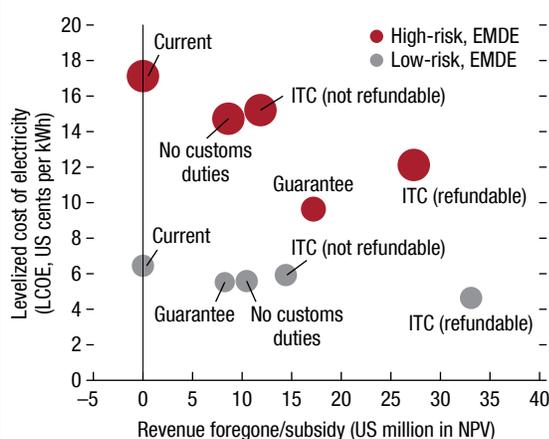
Other non-price market failures and affordability barriers need to be addressed differently. Public procurement and direct spending on infrastructure, compensating for its underprovision in markets, helps the private sector deploy and produce green technologies (Jaffe, Newell, and Stavins 2005; Pigato and others 2020). Means-tested subsidies that lower upfront costs either through rebates or concessionary interest rates can improve affordability, equity, and financial inclusion, although their fiscal costs need to be managed. These measures should be carefully designed with clear strategic objectives and articulated within a policy mix (Altenburg and Assmann 2017).

The power sector requires special attention because of its market structure and importance for economy-wide decarbonization and development.

Decarbonizing the transport, industry, and construction sectors through green electrification requires large renewable energy investments. However, these investments only become profitable after a decade, and electricity can seldom be traded across borders. Investors are therefore exposed to the host country’s macroeconomic risks but require certain long-term revenue in a stable currency to raise financing (IEA/IFC 2023; IRENA 2023). These issues are exacerbated when the primary electricity purchaser is a state-owned entity with a poor credit rating.

The policy mix to address power-sector-specific barriers is analyzed by modeling the levelized cost of electricity for a stylized 100 megawatt solar power project (Figure 2.3.1). The results show that policies that reduce the cost of capital, such as guarantees and improved macroeconomic stability, are most effective

Figure 2.3.1. Alternative Policies for Renewable Electricity: Benefits and Costs
(Levelized cost of electricity, in cents of US dollars/kWh)



Source: IMF staff estimates.

Note: Revenue foregone is estimated by comparing government revenue under the existing fiscal regime to that of the reform option. The levelized cost of electricity is the minimum price needed for the investor to achieve its required return on investment. Bubble size reflects the investor’s cost of capital according to Climate Policy Initiative 2023, which is 25 percent for a high-risk country and 12 percent for a low-risk country, lowered to 15 percent and 10 percent for each with a guarantee. While not explicitly shown, the guarantee results in a contingent liability for the issuer equal to the difference between the net present value of payments for electricity at the investor’s discount rate before and after the guarantee. The ITC is assumed to be 30 percent of capital costs, and custom duties are about 25 percent for key project capital inputs. EMDE = emerging market and developing economy; ITC = investment tax credit; kWh = kilowatt hour; NPV = net present value.

Box 2.3 (continued)

for countries with high credit risk and limited fiscal space. Guarantees, however, result in a contingent liability, requiring fiscal risks to be carefully managed. Countries with lower credit risk can also consider other well-designed and cost-effective fiscal incentives, including investment tax credits.

Customs duties on green technology are highly distortionary because they impose a cost early in a project's lifecycle and are invariable to its underlying

profitability, underscoring the need for open trade policies in developing countries. Advanced economies, in turn, should avoid export restrictions on green inputs and, together with multilateral development banks, provide concessionary financing through guarantees to promote investment and help de-risk a jurisdiction as well as technical assistance (see the October 2023 *Global Financial Stability Report*).

References

- Acemoglu, Daron, Philippe Aghion, Leonardo Bursztyn, and David Hemous. 2012. “The Environment and Directed Technical Change.” *American Economic Review* 102 (1): 131–66.
- Acemoglu, Daron, David Autor, and Christina Patterson. 2023. “Bottlenecks: Sectoral Imbalances and the US Productivity Slowdown.” NBER Working Paper 31427, National Bureau of Economic Research, Cambridge, MA.
- Acemoglu, Daron, and Simon Johnson. 2023. *Power and Progress: Our 1000-Year Struggle Over Technology and Prosperity*. New York: Public Affairs.
- Acemoglu, Daron, Simon Johnson, Amir Kermani, James Kwak, and Todd Mitton. 2016. “The Value of Connections in Turbulent Times: Evidence from the United States.” *Journal of Financial Economics* 121 (2): 368–91.
- Acemoglu, Daron, and Fabrizio Zilibotti. 2001. “Productivity Differences.” *The Quarterly Journal of Economics* 116 (2): 563–606.
- Agrawal, Ajay, Carlos Rosell, and Timothy Simcoe. 2020. “Tax Credits and Small Firm R&D Spending.” *American Economic Journal: Economic Policy* 12 (2): 1–21.
- Akcigit, Ufuk, Salomé Baslandze, and Francesca Lotti. 2023. “Connecting to Power: Political Connections, Innovation, and Firm Dynamics.” *Econometrica* 91 (2): 529–64.
- Akcigit, Ufuk, Salomé Baslandze, and Stefanie Stantcheva. 2016. “Taxation and the International Migration of Inventors.” *The American Economic Review* 106 (10): 2930–981.
- Akcigit, Ufuk, Wenjie Chen, Federico J. Díez, Romain Duval, Philipp Engler, Jiayue Fan, Chiara Maggi, and others. 2021. “Rising Corporate Market Power: Emerging Policy Issues.” IMF Staff Discussion Note 2021/001, International Monetary Fund, Washington, DC.
- Akcigit, Ufuk, and Nathan Goldschlag. 2023. “Where Have All the ‘Creative Talents’ Gone? Employment Dynamics of US Inventors.” NBER Working Paper 31085, National Bureau of Economic Research, Cambridge, MA.
- Akcigit, Ufuk, Douglas Hanley, and Nicolas Serrano-Velarde. 2021. “Back to Basics: Basic Research Spillovers, Innovation Policy, and Growth.” *The Review of Economic Studies* 88 (1): 1–43.
- Akcigit, Ufuk, and William R. Kerr. 2018. “Growth through Heterogeneous Innovations.” *Journal of Political Economy* 126 (4): 1374–443.
- Altenburg, T., and C. Assmann (eds.). 2017. *Green Industrial Policy. Concept, Policies, Country Experiences*. Geneva, Bonn: UN Environment; German Development Institute/Deutsches Institut für Entwicklungspolitik.
- Amaglobeli, David, Ruud A. de Mooij, Andualem Mengistu, Mariano Moszoro, Manabu Nose, Soheib Nunhuck, Sailendra Pattanayak, and others. 2023. “Transforming Public Finance through GovTech.” IMF Staff Discussion Note 2023/004, International Monetary Fund, Washington, DC.
- Amoroso, Sara, Leonidas Aristodemou, Chiara Criscuolo, Antoine Dechezleprete, Helene Dernis, Nicola Grassano, Laurent Moussiégt, and others. 2021. “World Corporate Top R&D Investors: Paving the Way for Climate Neutrality.” EUR 30884 EN, Publications Office of the European Union, Luxembourg.
- Andrews, Dan, Chiara Criscuolo, and Peter N. Gal. 2016. “The Best versus the Rest: The Global Productivity Slowdown, Divergence across Firms, and the Role of Public Policy.” OECD Productivity Working Paper 5/2016, Organisation for Economic Co-operation and Development, Paris.
- Argente, David, Salomé Baslandze, Douglas Hanley, and Sara Moreira. 2020. “Patents to Products: Product Innovation and Firm Dynamics.” Unpublished.
- Armitage, Sarah C., Noël Bakhtian, and Adam B. Jaffe. 2023. “Innovation Market Failures and the Design of New Climate Policy Instruments.” NBER Working Paper 31622, National Bureau of Economic Research, Cambridge, MA.
- Arora, Ashish, Sharon Belenzon, Larisa C. Cioaca, Lia Sheer, and Hansen Zhang. 2023. “The Effect of Public Science on Corporate R&D.” NBER Working Paper 31899, National Bureau of Economic Research, Cambridge, MA.
- Aykut, Dilek, Apurva Sanghi, and Gina Kosmidou. 2017. “What to Do When Foreign Direct Investment Is Not Direct or Foreign: FDI Round Tripping.” Policy Research Working Paper 8046, World Bank, Washington, DC.
- Baba, Chikako, Ting Lan, Aiko Mineshima, Florian Misch, Magali Pinat, Asghar Shahmoradi, Jiaxiong Yao, and others. 2023. “Goeconomic Fragmentation: What’s at Stake for the EU.” IMF Working Paper 2023/245, International Monetary Fund, Washington, DC.
- Bai, Yan, Keyu Jin, and Dan Lu. 2023. “Technological Rivalry and Optimal Dynamic Policy in an Open Economy.” NBER Working Paper 31703, National Bureau of Economic Research, Cambridge, MA.
- Baldwin, Richard, and Paul Krugman. 1988. “Industrial Policy and International Competition in Wide-Bodied Jet Aircraft. Trade Policy Issues and Empirical Analysis.” In *Economics of Commercial Aircraft*, edited by Ivan L. Pitt and John R. Norsworthy. New York: Springer.
- Berlingieri, Giuseppe, Sara Calligaris, Chiara Criscuolo, and Rudy Verlhac. 2020. “Laggard Firms, Technology Diffusion and Its Structural and Policy Determinants.” Technology and Industry Policy Paper 86, OECD Publishing, Paris.
- Bettarelli, Luca, Davide Furceri, Pietro Pizzuto, and Nadia Shakoor. 2023. “Environmental Policies and Innovation in Renewable Energy.” IMF Working Paper 2023/180, International Monetary Fund, Washington, DC.
- Black, Simon, Ian Parry, and Karlygash Zhunussova. 2023. “Is the Paris Agreement Working? A Stocktake of Global Climate Mitigation.” IMF Staff Climate Note 2023/002, International Monetary Fund, Washington, DC.
- Bloom, Nicholas, Charles I. Jones, John Van Reenen, and Michael Webb. 2020. “Are Ideas Getting Harder to Find?” *American Economic Review* 110 (4): 1104–44.

- Bloom, Nicholas, Mark Schankerman, and John Van Reenen. 2013. "Identifying Technology Spillovers and Product Market Rivalry." *Econometrica* 81 (4): 1347–93.
- Blander, James A., and Barbara J. Spencer. 1985. "Export Subsidies and International Market Share Rivalry." *Journal of International Economics* 18: 83–100.
- Branstetter, Lee G., and Guangwei Li. 2023. "The Challenges of Chinese Industrial Policy." In *Entrepreneurship and Innovation Policy and the Economy*, Volume 3, edited by Benjamin Jones and Josh Lerner. Chicago: University of Chicago Press.
- Brollo, Fernanda, Era Dabla-Norris, Ruud de Mooij, Daniel Garcia-Macia, Li Liu, and Anh Nguyen. Forthcoming. "Ensuring a Fair Distribution of Gains and Opportunities from Gen-AI: Role of Fiscal Policies." IMF Staff Discussion Note, International Monetary Fund, Washington, DC.
- Brondolo, John D. 2021. "Administering the Value-Added Tax on Imported Digital Services and Low-Value Imported Goods." IMF Technical Notes and Manuals 2021/004, International Monetary Fund, Washington, DC.
- Calvino, Flavio, and Luca Fontaneli. 2023. "A Portrait of AI Adopters across Countries: Firm Characteristics, Assets' Complementarities and Productivity." Technology and Industry Working Paper 2023/02, OECD Publishing, Paris.
- Capelle, Damien, Divya Kirti, Nicola Pierri, and Germán Villegas Bauer. 2023. "Mitigating Climate Change at the Firm Level: Mind the Laggards." IMF Working Paper 2023/242, International Monetary Fund, Washington, DC.
- Carlino, Gerald, and William R. Kerr. 2015. "Agglomeration and Innovation." In *Handbook of Regional and Urban Economics*, Volume 5, edited by Gilles Duranton, J. Vernon Henderson, and William C. Strange. Amsterdam: North Holland.
- Carr, David L., James R. Markusen, and Keith E. Maskus. 2001. "Estimating the Knowledge-Capital Model of the Multinational Enterprise." *American Economic Review* 91 (3): 693–708.
- Cherif, Reda, and Fuad Hasanov. 2019. "The Leap of the Tiger: Escaping the Middle-Income Trap to the Technological Frontier." *Global Policy* 10 (4): 497–511.
- Choi, Joonkyu, Veronika Penciakova, and Felipe Saffie. 2021. "Political Connections, Allocation of Spending, and the Jobs Multiplier." Finance and Economics Discussion Series Paper 2021–005R1, Federal Reserve Board, Washington, DC.
- Cohen, Wesley M., and Daniel A. Levinthal. 1990. "Absorptive Capacity: A New Perspective on Learning and Innovation." *Administrative Science Quarterly* 35 (1): 128–52.
- Comin, Diego, and Martí Mestieri. 2018. "If Technology Has Arrived Everywhere, Why Has Income Diverged?" *American Economic Journal: Macroeconomics* 10 (3): 137–78.
- Dabla-Norris, Era, Tidiane Kinda, Kaustubh Chahande, Hua Chai, Yadian Chen, Alessia De Stefani, Yosuke Kido, and others. 2023. "Accelerating Innovation and Digitalization in Asia to Boost Productivity." IMF Departmental Paper 2023/001, International Monetary Fund, Washington, DC.
- Dabla-Norris, Era, Ruud de Mooij, Andrew Hodge, Jan Loeprick, Dinar Prihardini, Alpa Shah, Sebastian Beer, and others. 2021. "Digitalization and Taxation in Asia." IMF Departmental Paper 2021/017, International Monetary Fund, Washington, DC.
- Damgaard, Jannick, Thomas Elkjaer, and Niels Johannesen. 2024. "What Is Real and What Is Not in the Global FDI Network?" *Journal of International Money and Finance* 140: 102971.
- Díez, Federico, Jiayue Fan, and Carolina Villegas-Sánchez. 2021. "Global Declining Competition?" *Journal of International Economics* (32): 103492.
- European Investment Bank. 2024. *EIB Investment Report 2023/24*. Luxembourg.
- Evenett, Simon, Adam Jakubik, Fernando Martín, and Michele Ruta. 2024. "The Return of Industrial Policy in Data." IMF Working Paper 2024/001, International Monetary Fund, Washington, DC.
- Foster, Vivien, Anshul Rana, and Nisan Gorgulu. 2022. "Understanding Public Spending Trends for Infrastructure in Developing Countries." Policy Research Working Paper 9903, World Bank, Washington, DC.
- Garcia-Macia, Daniel. 2017. "The Financing of Ideas and the Great Deviation." IMF Working Paper 2017/176, International Monetary Fund, Washington, DC.
- Garcia-Macia, Daniel, and Rishi Goyal. 2020. "Technological and Economic Decoupling in the Cyber Era." IMF Working Paper 20/257, International Monetary Fund, Washington, DC.
- Garcia-Macia, Daniel, Chang-Tai Hsieh, and Peter J. Klenow. 2019. "How Destructive Is Innovation?" *Econometrica* 87 (5): 1507–41.
- Gautam, Kushagra, Dhruva Purkayastha, and Vikram Widge. 2023. "Cost of Capital for Renewable Energy Investments in Developing Economies." CPI Discussion Paper, Climate Policy Initiative, San Francisco, CA.
- Georgieva, Kristalina, and Ngozi Okonjo-Iweala. 2023. "World Trade Can Still Drive Prosperity." *Finance and Development* 60 (2): 10–11.
- Goldin, Ian, Pantelis Koutroumpis, Francois Lafond, and Julian Winkler. 2024. "Why Is Productivity Slowing Down?" *Journal of Economic Literature* 62 (1): 196–268.
- Gomes, Alexandre De Podestá, Robert Pauls, and Tobias ten Brink. 2023. "Industrial Policy and the Creation of the Electric Vehicles Market in China: Demand Structure, Sectoral Complementarities and Policy Coordination." *Cambridge Journal of Economics* 47: 45–66.
- González Cabral, Ana Cinta, Silvia Appelt, Tibor Hanappi, Fernando Galindo-Rueda, Pierce O'Reilly, and Massimo Bucci. 2023. "A Time Series Perspective on Income-Based Tax Support for R&D and Innovation." Taxation Working Paper 62, OECD Publishing, Paris.

- Hall, Bronwyn H. 2022. “Tax Policy for Innovation.” In *Innovation and Public Policy*, edited by Austan Goolsbee and Benjamin F. Jones. Cambridge, MA: National Bureau of Economic Research.
- Hasna, Zeina, Florence Jaumotte, Jaden Kim, Samuel Pienknagura, and Gregor Schwerhoff. 2023. “Green Innovation and Diffusion: Policies to Accelerate Them and Expected Impact on Macroeconomic and Firm-Level Performance.” IMF Staff Discussion Note 2023/008, International Monetary Fund, Washington, DC.
- Hidalgo, César A., and Ricardo Hausmann. 2009. “The Building Blocks of Economic Complexity.” *Proceedings of the National Academy of Sciences* 106 (26): 10570–75.
- Hsieh, Chang-Tai, and Peter J. Klenow. 2009. “Misallocation and Manufacturing TFP in China and India.” *The Quarterly Journal of Economics* 124 (4): 1403–48.
- International Energy Agency (IEA). 2023. “Cost of Capital Observatory.” Paris.
- International Energy Agency (IEA) and International Finance Corporation (IFC). 2023. “Scaling up Private Finance for Clean Energy in Emerging and Developing Economies.” Paris.
- International Monetary Fund (IMF). 2023. “International Corporate Tax Reform.” IMF Policy Paper 2023/001, Washington, DC.
- International Renewable Energy Agency (IRENA). 2023. “The Cost of Financing for Renewable Power.” Abu Dhabi.
- Irwin, Douglas A., and Nina Pavcnik. 2004. “Airbus versus Boeing Revisited: International Competition in the Aircraft Market.” *Journal of International Economics* 64: 223–45.
- Jaffe, Adam B., Richard G. Newell, and Robert N. Stavins. 2005. “A Tale of Two Market Failures: Technology and Environmental Policy.” *Ecological Economics* 54: 164–74.
- Juhász, Réka, Nathan Lane, Emily Oehlsen, and Verónica C. Pérez. 2022. “The Who, What, When, and How of Industrial Policy: A Text-Based Approach.” Unpublished.
- Juhász, Réka, Nathan J. Lane, and Dani Rodrik. 2023. “The New Economics of Industrial Policy.” NBER Working Paper 31538, National Bureau of Economic Research, Cambridge, MA.
- Keller, Wolfgang. 2010. “International Trade, Foreign Direct Investment, and Technology Spillovers.” In *Handbook of the Economics of Innovation*, edited by Bronwyn H. Hall, and Nathan Rosenberg. Amsterdam: Elsevier.
- Khatcherian, Karine. 2022. “Barriers to the Timely Deployment of Climate Infrastructure.” Technical Report, Prime Coalition, Cambridge, MA.
- Li, Shanjun, Xianglei Zhu, Yiding Ma, Fan Zhang, and Hui Zhou. 2020. “The Role of Government in the Market for Electric Vehicles. Evidence from China.” Group Policy Research Paper, World Bank, Washington, DC.
- Liu, Ernest, and Song Ma. 2023. “Innovation Networks and R&D Allocation.” NBER Working Paper 29607, National Bureau of Economic Research, Cambridge, MA.
- Maslej, Nestor, Loredana Fattorini, Erik Brynjolfsson, John Etchemendy, Katrina Ligett, Terah Lyons, James Manyika, and others. 2023. “The AI Index 2023 Annual Report.” AI Index Steering Committee, Institute for Human-Centered AI, Stanford University, Stanford, CA.
- Mazzucato, Mariana. 2018. “Mission-Oriented Innovation Policies: Challenges and Opportunities.” *Industrial and Corporate Change* 27 (5): 803–15.
- Moscona, Jacob, and Karthik Sastry. 2022. “Inappropriate Technology: Evidence from Global Agriculture.” <http://dx.doi.org/10.2139/ssrn.3886019>.
- Neven, Damien, Paul Seabright, and Gene M. Grossman. 1994. “European Industrial Policy: The Airbus Case.” *Economic Policy* 10: 313–58.
- Newell, Richard. 2015. “The Role of Technology Policy Alongside Carbon Pricing.” In *Implementing a US Carbon Tax: Challenges and Debates*, edited by Ian Parry, Adele Morris, and Robertson C. Williams III. London: Routledge.
- Odagiri, Hiroyuki, Yoshiaki Nakamura, and Minoru Shibuya. 1997. “Research Consortia as a Vehicle for Basic Research: The Case of a Fifth Generation Computer Project in Japan.” *Research Policy* 26 (2): 191–207.
- Olienyk, John, and Robert J. Carbaugh. 2011. “Boeing and Airbus: Duopoly in Jeopardy?” *Global Economy Journal* 11: 1–9.
- Organisation for Economic Co-operation and Development (OECD). 2022. “Harnessing the Power of AI and Emerging Technologies.” Science, Technology and Industry Working Paper 2022/14, OECD Publishing, Paris.
- Pigato, Miria A., Simon J. Black, Damien Dussaux, Zhimin Mao, Miles McKenna, Ryan Rafaty, and Simon Touboul. 2020. *Technology Transfer and Innovation for Low-Carbon Development. International Development in Focus*. Washington, DC: World Bank.
- Productivity Commission. 2023. “5-Year Productivity Inquiry: Innovation for the 98%.” *Inquiry Report* 5 (100), Canberra.
- Rapson, David S., and Erich Muehlegger. 2022. “The Economics of Electric Vehicles.” NBER Working Paper 29093, National Bureau of Economic Research, Cambridge, MA.
- UN Educational Scientific and Cultural Organization (UNESCO). 2012. *UNESCO Global Monitoring Report*. Paris.
- Vazquez, Campos, and Raymundo Miguel. 2022. “Measurement of Tax Expenditures in Latin America.” Project Document LC/TS.2022/148, Economic Commission for Latin America and the Caribbean, Santiago.
- World Economic Forum (WEF). 2019. *Global Competitiveness Report*. Geneva: WEF.

ECONOMY ABBREVIATIONS

Code	Name	Code	Name
AFG	Afghanistan	DNK	Denmark
AGO	Angola	DOM	Dominican Republic
ALB	Albania	DZA	Algeria
AND	Andorra	ECU	Ecuador
ARE	United Arab Emirates	EGY	Egypt
ARG	Argentina	ERI	Eritrea
ARM	Armenia	ESP	Spain
ATG	Antigua and Barbuda	EST	Estonia
AUS	Australia	ETH	Ethiopia
AUT	Austria	FIN	Finland
AZE	Azerbaijan	FJI	Fiji
BDI	Burundi	FRA	France
BEL	Belgium	FSM	Micronesia, Federated States of
BEN	Benin	GAB	Gabon
BFA	Burkina Faso	GBR	United Kingdom
BGD	Bangladesh	GEO	Georgia
BGR	Bulgaria	GHA	Ghana
BHR	Bahrain	GIN	Guinea
BHS	Bahamas, The	GMB	Gambia, The
BIH	Bosnia and Herzegovina	GNB	Guinea-Bissau
BLR	Belarus	GNQ	Equatorial Guinea
BLZ	Belize	GRC	Greece
BOL	Bolivia	GRD	Grenada
BRA	Brazil	GTM	Guatemala
BRB	Barbados	GUY	Guyana
BRN	Brunei Darussalam	HKG	Hong Kong Special Administrative Region
BTN	Bhutan	HND	Honduras
BWA	Botswana	HRV	Croatia
CAF	Central African Republic	HTI	Haiti
CAN	Canada	HUN	Hungary
CHE	Switzerland	IDN	Indonesia
CHL	Chile	IND	India
CHN	China	IRL	Ireland
CIV	Côte d'Ivoire	IRN	Iran
CMR	Cameroon	IRQ	Iraq
COD	Congo, Democratic Republic of the	ISL	Iceland
COG	Congo, Republic of	ISR	Israel
COL	Colombia	ITA	Italy
COM	Comoros	JAM	Jamaica
CPV	Cabo Verde	JOR	Jordan
CRI	Costa Rica	JPN	Japan
CYP	Cyprus	KAZ	Kazakhstan
CZE	Czech Republic	KEN	Kenya
DEU	Germany	KGZ	Kyrgyz Republic
DJI	Djibouti	KHM	Cambodia
DMA	Dominica	KIR	Kiribati

Code	Name	Code	Name
KNA	St. Kitts and Nevis	ROU	Romania
KOR	Korea	RUS	Russian Federation
KWT	Kuwait	RWA	Rwanda
LAO	Lao P.D.R.	SAU	Saudi Arabia
LBN	Lebanon	SDN	Sudan
LBR	Liberia	SEN	Senegal
LBY	Libya	SGP	Singapore
LCA	St. Lucia	SLB	Solomon Islands
LKA	Sri Lanka	SLE	Sierra Leone
LSO	Lesotho	SLV	El Salvador
LTU	Lithuania	SMR	San Marino
LUX	Luxembourg	SOM	Somalia
LVA	Latvia	SRB	Serbia
MAR	Morocco	SSD	South Sudan
MDA	Moldova	STP	São Tomé and Príncipe
MDG	Madagascar	SUR	Suriname
MDV	Maldives	SVK	Slovak Republic
MEX	Mexico	SVN	Slovenia
MHL	Marshall Islands	SWE	Sweden
MKD	North Macedonia	SWZ	Eswatini
MLI	Mali	SYC	Seychelles
MLT	Malta	SYR	Syria
MMR	Myanmar	TCD	Chad
MNE	Montenegro	TGO	Togo
MNG	Mongolia	THA	Thailand
MOZ	Mozambique	TJK	Tajikistan
MRT	Mauritania	TKM	Turkmenistan
MUS	Mauritius	TLS	Timor-Leste
MWI	Malawi	TON	Tonga
MYS	Malaysia	TTO	Trinidad and Tobago
NAM	Namibia	TUN	Tunisia
NER	Niger	TUR	Türkiye
NGA	Nigeria	TUV	Tuvalu
NIC	Nicaragua	TWN	Taiwan Province of China
NLD	Netherlands, The	TZA	Tanzania
NOR	Norway	UGA	Uganda
NPL	Nepal	UKR	Ukraine
NRU	Nauru	URY	Uruguay
NZL	New Zealand	USA	United States
OMN	Oman	UZB	Uzbekistan
PAK	Pakistan	VCT	St. Vincent and the Grenadines
PAN	Panama	VEN	Venezuela
PER	Peru	VNM	Vietnam
PHL	Philippines	VUT	Vanuatu
PLW	Palau	WSM	Samoa
PNG	Papua New Guinea	YEM	Yemen
POL	Poland	ZAF	South Africa
PRT	Portugal	ZMB	Zambia
PRY	Paraguay	ZWE	Zimbabwe
QAT	Qatar		

Automatic stabilizers Revenue and some expenditure items built in the budget that adjust automatically to cyclical changes in the economy—for example, as output falls, revenue collections decline and unemployment benefits increase, which “automatically” provides demand support.

Balance sheet Statement of the values of the stock positions of assets owned and liabilities owed by a unit, or group of units, drawn up in respect of a particular point in time.

Base erosion and profit shifting (BEPS) Tax planning strategies used by multinational enterprises that exploit gaps and mismatches in tax rules to avoid paying tax.

Burden or incidence Refers to whose economic welfare is reduced by a policy and by how much. It is quite different from the formal or legal incidence—fuel suppliers, for example, may be responsible for remitting tax payments to the national tax authority, but they may bear little economic incidence if they can charge higher prices.

Carbon tax or carbon pricing A tax imposed on CO₂ releases emitted largely through the combustion of carbon-based fossil fuels. Administratively, the easiest way to implement the tax is through taxing the supply of fossil fuels—coal, oil, and natural gas—in proportion to their carbon content.

Common framework for debt restructuring Multilateral initiative launched by the International Monetary Fund and the World Bank in November 2021 aiming to provide a coordinated and comprehensive approach to address the debt vulnerabilities and sustainability challenges faced by low-income countries (LICs).

Core inflation A measure of inflation that excludes certain volatile or temporary price changes in specific goods or services, usually food and energy prices, that can distort the overall inflation rate.

Coverage of public benefits Share of individuals or households of a particular socioeconomic group who receive a public benefit.

Cyclically adjusted balance (CAB) Difference between the overall balance and the automatic stabilizers; equivalently, an estimate of the fiscal balance that would apply under current policies if output were equal to potential.

Cyclically adjusted primary balance (CAPB) Cyclically adjusted balance excluding net interest payments (interest expenditure minus interest revenue).

Debt distress Situation in which a borrower, typically a country or an entity, faces significant challenges in meeting its debt obligations, leading to concerns about its ability to service or repay its debts without experiencing severe financial difficulties or defaulting on its obligations.

Debt restructuring Process by which the terms and conditions of existing debt obligations are modified or renegotiated between borrowers and creditors to address financial difficulties and improve the borrower’s ability to meet its debt obligations. It can take various forms and may involve changes to the repayment schedule, interest rates, principal amount, or other terms of the debt agreement.

Debt-stabilizing primary balance Level of primary balance that would stabilize the ratio of debt to GDP in the previous year given the values of the nominal effective interest rate and growth rate in the contemporaneous year.

Debt transparency Degree to which a government provides comprehensive and accessible information about its debt obligations, including the amount of debt, terms and conditions, repayment schedules, and associated risks. It encompasses more granular and more timely information on debt, including creditor and instrument compositions, exposures to risks (those associated with interest rates, exchange rates, and refinancing), and details on the terms of individual debt contracts.

Disinflation The process of bringing inflation down or restoring price stability.

Externality A cost imposed by the actions of individuals or firms on other individuals or firms (possibly in the future, as in the case of climate change) that the former do not consider.

Fan chart Distribution of statistical forecasts for a particular indicator. In the chapter case, that was the primary deficit.

Fiscal adjustment Fiscal policy that reduces government deficits and government debt.

Fiscal buffer Fiscal space created by saving budgetary resources and reducing public debt in good times.

Fiscal consolidation See *Fiscal adjustment*

Fiscal deficit outturn Realized deficit values, in the chapter as recorded in the World Economic Outlook database.

Fiscal deficit surprises Difference between deficit outturns and their expectation one year ahead.

Fiscal entitlements Government expenditures or benefits that individuals or groups are legally entitled to receive under specific fiscal policies or programs. They take various forms, including social welfare programs, pension and retirement benefits, tax deductions or credits, and government contracts or subsidies.

Fiscal framework The set of rules, procedures, and institutions that guide fiscal policy.

Fiscal multiplier Measures the impact of discretionary fiscal policy on output. Usually defined as the ratio of a change in output to an exogenous change in the fiscal deficit with respect to their respective baselines.

Fiscal policy normalization Policies or process that would bring fiscal balances back to pre-pandemic levels.

Fiscal policy uncertainty Uncertainty surrounding future fiscal measures.

Fiscal rules Lasting constraints on fiscal policy through predetermined numerical limits on aggregate fiscal indicators (such as the budget balance, government expenditure, debt).

Fiscal slippage A situation where a government's actual fiscal performance deviates from its planned or targeted fiscal targets, usually resulting in higher-than-expected budget deficits, increased public debt, or a combination of both.

Fiscal space The room for undertaking discretionary fiscal policy (increasing spending or reducing taxes) relative to existing plans without endangering market access and debt sustainability.

Fiscal stance An assessment of the fiscal stance refers to a sense of the impact of fiscal policy on domestic demand and financial resources.

Fiscal tightening See *Fiscal adjustment*

General government All government units and all nonmarket, nonprofit institutions that are controlled and mainly financed by government units comprising the central, state, and local governments; includes social security funds and does not include public corporations or quasi corporations.

Government financing needs (also *Gross financing needs*) Overall new borrowing requirement plus debt maturing during the year.

Government guarantees Governments can undertake payment of a debt or liabilities in the event of a default by the primary creditor. The most common type is a government-guaranteed loan, which requires government to repay any amount outstanding on a loan in the event of default. In some contracts, governments provide a revenue or demand guarantee. The budget costs related to guarantees are usually not recognized in the budget without any upfront cost, but they create a contingent liability, with the government exposed to future calls on guarantees and fiscal risks.

GovTech Upgrades in the technologies used by governments.

Greenhouse gas A gas in the atmosphere that is transparent to incoming solar radiation but traps and absorbs heat radiated from the earth. CO₂ is easily the most predominant greenhouse gas.

Gross debt All liabilities that require future payment of interest and/or principal by the debtor to the creditor. This includes debt liabilities in the form of special drawing rights, currency, and deposits; debt securities; loans; insurance, pension, and standardized guarantee programs; and other accounts payable.

(See the IMF's 2001 *Government Finance Statistics Manual* and *Public Sector Debt Statistics Manual*.) The term “public debt” is used in the *Fiscal Monitor*, for simplicity, as synonymous with gross debt of the general government, unless specified otherwise. (Strictly speaking, public debt refers to the debt of the public sector as a whole, which includes financial and nonfinancial public enterprises and the central bank.)

Gross financing needs See *Government financing needs*

Independent fiscal institutions A permanent agency or institution with a statutory or executive mandate to assess publicly and independently fiscal policy, fiscal plans, and fiscal performance against official objectives, such as long-term sustainability of public finances and macroeconomic stability.

Industrial policy Targeted government interventions aimed at supporting specific domestic firms, industries, or economic activities to achieve certain national (economic or noneconomic) objectives.

Inflation A general increase in the price level of goods and services in the economy leading to a fall in the purchasing value of money.

Labor force participation The share of population of working age that is either looking for a job or working. It measures the availability of labor for productive activities in an economy.

Local government financial vehicle Financing entity established by local governments in some countries to fund infrastructure projects and other local development initiatives.

Loss carryforward rules Tax measures that aim to provide liquidity to firms by allowing for carrying current operating losses forward to following tax years to recover income taxes paid in these years.

Net debt Gross debt minus financial assets corresponding to debt instruments. These financial assets are monetary gold and special drawing rights; currency and deposits; debt securities; loans, insurance, pensions, and standardized guarantee programs; and other accounts receivable. In some countries, the reported net debt can deviate from this definition based on available information and national fiscal accounting practices.

Nominal term premiums Additional nominal returns to the short-term nominal interest rate paid to bondholders for the extra risk associated with holding long-term bonds.

Nonfinancial public sector General government plus nonfinancial public corporations.

Official bilateral borrowing Process by which a government or a public sector entity borrows funds directly from another government or official institution of a foreign country.

Output gap Deviation of actual from potential GDP, in percent of potential GDP.

Overall fiscal balance Net lending and borrowing, defined as the difference between revenue and total expenditure, using the IMF's 2001 *Government Finance Statistics Manual* (GFSM 2001). Does not include policy lending. For some countries, the overall balance is still based on the GFSM 1986, which defines it as total revenue and grants minus total expenditure and net lending.

Political budget cycle Phenomenon where governments adjust their fiscal policies and spending priorities in anticipation of upcoming elections in order to improve their chances of winning or maintaining political power.

Potential output Estimate of the level of GDP that can be reached if the economy's resources are fully employed.

Potential revenue It is the total tax revenue that a government could collect if all taxable entities fully comply with tax laws and regulations. It considers factors such as tax rates, economic activity, tax compliance, and enforcement measures.

Price subsidies Price subsidies are measures that keep prices for end users below market levels or for suppliers above market levels. Subsidies can take various forms including direct transfers and indirect support such as tax exemptions, price controls, or rebates.

Primary balance Overall balance excluding net interest payments (interest expenditure minus interest revenue).

Progressive (or regressive) taxes Taxes that feature an average tax rate that rises (or falls) with income.

Public debt See *Gross debt*

Public sector Includes all resident institutional units that are deemed to be controlled by the government. It includes general government and resident public corporations.

Quantitative tightening Also known as balance sheet normalization, these are monetary policies aimed at reducing a central bank's balance sheet.

Real foreign direct investment (FDI) Physical foreign direct investment made by multinationals. Real FDI excludes investment without productive activities, including little or no physical presence, employment, production, and no other activities than holding and financing.

Regressive policy Imposes a larger burden as a share of consumption on lower income households than on higher income households; a progressive policy does the opposite.

Research and development Innovative activities undertaken by corporations or governments in developing new products or technologies.

Social benefit spending Social benefit refers to the allocation of resources by governments to provide assistance, support, or services to individuals or groups within society who may need help due to various reasons such as unemployment, disability,

poverty, old age, or other circumstances. Social benefit spending typically encompasses a range of programs and initiatives aimed at improving the well-being and quality of life of citizens. It has three broad categories: (1) social safety net programs (noncontributory transfer programs to ensure a minimum level of economic well-being); (2) social insurance programs (contributory interventions to help people better manage risks), and (3) labor market programs to insure individuals against unemployment risks and improve job search prospects.

Sovereign bond spreads Difference in yields between the government bonds of different countries, typically measured against a benchmark such as the bonds of the United States or Germany. They represent the additional yield investors demand for holding the bonds of a particular country compared to a safer or more stable reference bond.

Sustainable Development Goals A collection of 17 goals set by the United Nations General Assembly in 2015 covering global warming, poverty, health, education, gender equality, water, sanitation, energy, urbanization, environment, and social justice. Each goal has a set of targets to achieve, and in total, there are 169 targets.

Tax capacity The policies and institutions for collecting, and technical capabilities to collect, tax revenue.

METHODOLOGICAL AND STATISTICAL APPENDIX

This appendix comprises four sections. “Data and Conventions” describes the data and conventions used to calculate economy group composites. “Fiscal Policy Assumptions” summarizes the country-specific assumptions underlying the estimates and projections for 2024–29. “Definition and Coverage of Fiscal Data” summarizes the classification of countries in the various groups presented in the *Fiscal Monitor* and details the coverage and accounting practices underlying each country’s *Fiscal Monitor* data. Statistical tables on key fiscal variables complete the appendix. Data in these tables have been compiled on the basis of information available through April 1, 2024.

Data and Conventions

Country-specific data and projections for key fiscal variables are based on the April 2024 World Economic Outlook database, unless indicated otherwise, and compiled by IMF staff. Historical data and projections are based on the information IMF country desk officers gather in the context of their missions and through their ongoing analysis of the evolving situation in each country; data are updated continually as more information becomes available. Structural breaks in data may be adjusted to produce smooth series through splicing and other techniques. IMF staff estimates serve as proxies when complete information is unavailable. As a result, *Fiscal Monitor* data may differ from official data in other sources, including the IMF’s *International Financial Statistics* and the *Government Finance Statistics Manual* (GFSM 2014).

Sources for fiscal data and projections not covered by the World Economic Outlook database are listed in the respective tables and figures.

Country classification in the *Fiscal Monitor* divides the world into three major groups: 41 advanced economies, 96 emerging market and middle-income economies, and 58 low-income developing countries. *Fiscal Monitor* tables display 37 advanced economies, 40 emerging market and middle-income economies, and 39 low-income developing countries. The countries in the tables generally represent the largest countries within each group based on the size of their GDP in current

US dollars. Data for the full list of economies can be found at <https://www.imf.org/external/datamapper/datasets/FM>. The seven largest advanced economies as measured by GDP (Canada, France, Germany, Italy, Japan, the United Kingdom, the United States) constitute the subgroup of major advanced economies, often referred to as the Group of Seven. The members of the euro area are also distinguished as a subgroup. Composite data shown in the tables for the euro area cover the current members for all years, even though membership has increased over time. Data for most European Union member countries have been revised following their adoption of the updated European System of National and Regional Accounts (ESA 2010). Low-income developing countries are countries that have per capita income levels below a certain threshold (set at \$2,700, as of 2016, as measured by the World Bank Atlas method), structural features consistent with limited development and structural transformation, and external financial relationships insufficiently open for the countries to be considered emerging market economies. Emerging market and middle-income economies include those not classified as advanced economies or low-income developing countries. See Table A, “Economy Groupings,” for more details.

Most fiscal data for advanced economies refer to the general government, whereas data for emerging market and developing economies often refer to only the central government or the budgetary central government (for specific details, see Tables B–D). All fiscal data refer to calendar years, except in the cases of The Bahamas, Bangladesh, Barbados, Bhutan, Botswana, Dominica, Egypt, Eswatini, Ethiopia, Fiji, Haiti, Hong Kong Special Administrative Region, India, the Islamic Republic of Iran, Jamaica, Lesotho, Malawi, the Marshall Islands, Mauritius, Micronesia, Myanmar, Namibia, Nauru, Nepal, Pakistan, Palau, Puerto Rico, Rwanda, Samoa, Singapore, St. Lucia, Thailand, Tonga, and Trinidad and Tobago, for which data refer to the fiscal year. For economies whose fiscal years end before June 30, data are recorded in the previous calendar year. For economies whose fiscal years end on or after June 30, data are recorded in the current calendar year.

Composite data for country groups are weighted averages of individual-country data, unless specified otherwise. Data are weighted by annual nominal GDP converted to US dollars at average market exchange rates as a share of the group GDP.

For the purpose of data reporting in the *Fiscal Monitor*, the Group of Twenty member aggregate refers to the 19 country members and does not include the European Union.

In most advanced economies, and in some large emerging market and middle-income economies, fiscal data follow the GFSM 2014 or are produced using a national accounts methodology that follows the 2008 System of National Accounts (SNA) or ESA 2010, both broadly aligned with the GFSM 2014. Most other countries follow the GFSM 2001, but some countries, including a significant proportion of low-income developing countries, have fiscal data based on the GFSM 1986. The overall fiscal balance refers to net lending and borrowing by the general government. In some cases, however, the overall balance refers to total revenue and grants minus total expenditure and net lending.

The fiscal gross and net debt data reported in the *Fiscal Monitor* are drawn from official data sources and IMF staff estimates. Whereas attempts are made to align gross and net debt data with the definitions in the GFSM, data limitations or specific country circumstances can cause these data to deviate from the formal definitions. Although every effort is made to ensure the debt data are relevant and internationally comparable, differences in both sectoral and instrument coverage mean that the data are not universally comparable. As more information becomes available, changes in either data sources or instrument coverage can give rise to data revisions that are sometimes substantial.

As used in the Fiscal Monitor, the term “country” does not always refer to a territorial entity that is a state as understood by international law and practice. As used here, “country” also covers some territorial entities that are not states but whose statistical data are maintained separately and independently.

Australia: For cross-economy comparability, gross and net debt levels reported by national statistical agencies for economies that have adopted the 2008 SNA (Australia, Canada, Hong Kong Special Administrative Region, the United States) are

adjusted to exclude the unfunded pension liabilities of government employees’ defined-benefit pension plans.

Bangladesh: Data are on a fiscal year basis.

Brazil: The Brazil team is transitioning to GFSM 2014, with adjustments for the period 2001–09. Municipalities’ primary balances follow below-the-line borrowing requirements from 2001 to 2022. Accrual data for non-interest revenues are not available. Gross public debt includes the Treasury bills on the central bank’s balance sheet, including those not used under repurchase agreements. Net public debt consolidates nonfinancial public sector and central bank debt. The authorities’ definition of general government gross debt excludes government securities held by the central bank, except the stock of Treasury securities the central bank uses for monetary policy (those pledged as security reverse repurchase agreement operations). According to the authorities’ definition, gross debt amounted to 72.9 percent of GDP at the end of 2022.

Canada: For cross-economy comparability, gross and net debt levels reported by national statistical agencies for economies that have adopted the 2008 SNA (Australia, Canada, Hong Kong Special Administrative Region, the United States) are adjusted to exclude unfunded pension liabilities of government employees, defined-benefit pension plans. Canada’s net debt corresponds to net financial liabilities as reported by Statistics Canada and includes equity and investment fund shares, which Canada has built up substantially. Statistics Canada has made a recent methodological change to value assets at market value instead of book value, which has decreased net debt.

Chile: Cyclically adjusted balances refer to the structural balance, which includes adjustments for output and commodity price developments.

China: Deficit and public debt numbers cover a narrower perimeter of the general government than IMF staff estimates in China Article IV reports (see IMF 2022 Article IV Staff Report for a reconciliation of the two estimates). Public debt data include central government debt as reported by the Ministry of Finance, explicit local government debt, and shares of contingent liabilities the government may incur, based on estimates from the National Audit Office estimate. IMF staff estimates exclude central government debt issued for China Railway.

Relative to the authorities' definition, consolidated general government net borrowing excludes transfers to and from stabilization funds but includes state-administered funds, state-owned enterprise funds, and social security contributions and expenses, as well as some off-budget spending by local governments. Deficit numbers do not include some expenditure items, mostly infrastructure investment financed off budget through land sales and local government financing vehicles. Fiscal balances are not consistent with reported debt, because no time series of data in line with the National Audit Office debt definition is published officially.

Colombia: Gross public debt refers to the combined public sector, including Ecopetrol and excluding Banco de la República's outstanding external debt.

Dominican Republic: The fiscal series have the following coverage: the public debt, debt service, and cyclically adjusted or structural balances are for the consolidated public sector (which includes the central government, the rest of the nonfinancial public sector, and the central bank). The remaining fiscal series are for the central government.

Egypt: Data are on a fiscal year basis.

Ethiopia: Data are on a fiscal year basis. Gross debt refers to the nonfinancial public sector, excluding Ethiopian Airlines.

Fiji: Data are on a fiscal year basis.

Greece: General government gross debt follows the GFSM 2014 definition and includes the stock of deferred interest.

Haiti: Data are on a fiscal year basis.

Hong Kong Special Administrative Region: Data are on a fiscal year basis. Cyclically adjusted balances include adjustments for land revenue and investment income. For cross-economy comparability, gross and net debt levels reported by national statistical agencies for economies that have adopted the 2008 SNA (Australia, Canada, Hong Kong Special Administrative Region, the United States) are adjusted to exclude the unfunded pension liabilities of government employees' defined-benefit pension plans.

Iceland: Gross debt excludes insurance technical reserves (including pension liabilities) and other accounts payable.

India: Data are on a fiscal year basis.

Iran, Islamic Republic of: Data are on a fiscal year basis.

Ireland: For 2015, if the conversion of the government's remaining preference shares to

ordinary shares in one bank is excluded, then the fiscal balance is -1.1 percent of GDP. Cyclically adjusted balances reported in Tables A3 and A4 exclude financial sector support measures. Ireland's 2015 national accounts were revised as a result of restructuring and relocation of multinational companies, which resulted in a level shift of nominal and real GDP. For more information, see "National Income and Expenditure Annual Results: 2015," <http://www.cso.ie/en/releasesandpublications/er/nie/nationalincomeandexpenditureannualresults2015/>.

Japan: Gross debt is on an unconsolidated basis.

Mexico: General government refers to the central government, social security funds, public enterprises, development banks, the national insurance corporation, and the National Infrastructure Fund, but excludes subnational governments.

Myanmar: Data are on a fiscal year basis.

Nepal: Data are on a fiscal year basis.

Norway: Cyclically adjusted balances correspond to the cyclically adjusted non-oil overall or primary balance. These variables are a percentage of non-oil potential GDP.

Pakistan: Data are on a fiscal year basis.

Peru: Cyclically adjusted balances include adjustments for commodity price developments.

Singapore: Data are on a fiscal year basis.

Spain: Overall and primary balances include financial sector support measures estimated to be 0.3 percent of GDP for 2013, 0.1 percent of GDP for 2014, 0.1 percent of GDP for 2015, and 0.2 percent of GDP for 2016.

Sweden: Cyclically adjusted balances account for output and employment gaps.

Switzerland: Data submissions at the cantonal and commune levels may be subject to sizable revisions. Cyclically adjusted balances include adjustments for extraordinary operations related to the banking sector.

Thailand: Data are on a fiscal year basis.

Türkiye: Projections in the *Fiscal Monitor* are based on the IMF-defined fiscal balance, which excludes some revenue and expenditure items included in the authorities' headline balance.

Turkmenistan: IMF staff estimates and projections of the fiscal balance exclude receipts from domestic bond issuances as well as privatization operations in line with GFSM 2014. The authorities' official estimates, which are compiled using domestic

statistical methodologies, include bond issuance and privatization proceeds as part of government revenues.

United States: For cross-economy comparability, expenditures and fiscal balances are adjusted to exclude the imputed interest on unfunded pension liabilities and the imputed compensation of employees, which are counted as expenditures under the 2008 SNA adopted by the United States. Data for the United States may thus differ from data published by the US Bureau of Economic Analysis. In addition, gross and net debt levels reported by the Bureau of Economic Analysis and national statistical agencies for other economies that have adopted the 2008 SNA (Australia, Canada, and Hong Kong Special Administrative Region) are adjusted to exclude the unfunded pension liabilities of government employees defined-benefit pension plans.

Uruguay: Starting in October 2018, Uruguay's public pension system has been receiving transfers in the context of a new law that compensates persons affected by the creation of the mixed pension system. These funds are recorded as revenues, consistent with the IMF's methodology. Therefore, data for 2018–22 are affected by these transfers, which amounted to 1.2 percent of GDP in 2018, 1.0 percent of GDP in 2019, 0.6 percent of GDP in 2020, 0.3 percent of GDP in 2021, 0.1 percent of GDP in 2022, and 0 percent thereafter. See IMF Country Report 19/64 for further details. The disclaimer about the public pension system applies only to the revenues and net lending/borrowing series. The coverage of the fiscal data for Uruguay was changed from consolidated public sector to nonfinancial public sector with the October 2019 *World Economic Outlook*. In Uruguay, nonfinancial public sector coverage includes central government, local government, social security funds, nonfinancial public corporations, and Banco de Seguros del Estado. Historical data were also revised accordingly. Under this narrower fiscal perimeter—which excludes the central bank—assets and liabilities held by the nonfinancial public sector where the counterpart is the central bank are not netted out in debt figures. In this context, capitalization bonds issued in the past by the government to the central bank are now part of the nonfinancial public sector debt.

Venezuela: Fiscal accounts include the budgetary central government, social security funds, FOGADE (insurance deposit institution), and a sample of public enterprises, including Petróleos de Venezuela, S.A. (PDVSA). Data for 2018–22 are IMF staff estimates.

Fiscal Policy Assumptions

Historical data and projections of key fiscal aggregates are in line with those of the April 2024 *World Economic Outlook*, unless noted otherwise. For underlying assumptions other than on fiscal policy, see the April 2024 *World Economic Outlook*.

Short-term fiscal policy assumptions are based on officially announced budgets, adjusted for differences between the national authorities and IMF staff regarding macroeconomic assumptions and projected fiscal outturns. Medium-term fiscal projections incorporate policy measures judged likely to be implemented. When IMF staff has insufficient information to assess the authorities' budget intentions and prospects for policy implementation, an unchanged structural primary balance is assumed, unless indicated otherwise.

Afghanistan: Data for 2021 and 2022 are reported for selected indicators, with estimates for fiscal data. Estimates and projections for 2023–29 are omitted because of an unusually high degree of uncertainty given that the IMF has paused its engagement with the country owing to a lack of clarity within the international community regarding the recognition of a government in Afghanistan.

Algeria: Projections for 2024–29 are based on IMF staff estimates, 2023 intra-year budget outturns, and the authorities' 2024 budget law and medium-term budget plans.

Argentina: Fiscal projections are based on the available information regarding budget outturn, budget plans, and IMF-supported program targets for the federal government; on fiscal measures announced by the authorities; and on IMF staff's macroeconomic projections.

Australia: Fiscal projections are based on data from the Australian Bureau of Statistics, the fiscal year (FY)2023/24 budgets published by the Commonwealth Government and the respective state/territory governments, and IMF staff's estimates and projections.

Austria: Fiscal projections are based on the 2024 budget. The NextGenerationEU fund and the latest announcement on fiscal measures have also been incorporated.

Belgium: Projections are based on the Belgian Stability Program 2023–26, the 2024 Budgetary Plan, and other available information on the authorities’ fiscal plans, with adjustments for IMF staff’s assumptions.

Brazil: Fiscal projections for 2024 reflect the current policy in place.

Cambodia: Historical fiscal and monetary data are from the Cambodia authorities. Projections are based on IMF staff’s assumptions given discussions with the authorities.

Canada: Projections use the baseline forecasts from the Government of Canada’s 2023 Fall Economic Statement and the latest provincial budget updates. IMF staff make some adjustments to these forecasts, including those for differences in macroeconomic projections. IMF staff’s forecast also incorporates the most recent data releases from Statistics Canada’s National Economic Accounts, including quarterly federal, provincial, and territorial budgetary outturns.

Chile: Fiscal projections are based on the authorities’ budget projections, adjusted to reflect IMF staff’s macroeconomic projections.

China: IMF staff’s fiscal projections incorporate the 2024 budget as well as estimates of off-budget financing.

Colombia: Projections are based on the authorities’ policies and projections reflected in the 2023 Financing Plan and the 2023–2034 Medium-Term Fiscal Framework, adjusted to reflect IMF staff’s macroeconomic assumptions.

Croatia: Projections based on macro framework and authorities’ medium-term fiscal guidelines.

Cyprus: Projections are based on staff’s assessment of authorities’ budget plans and staff’s macroeconomic assumptions.

Czech Republic: The fiscal projections are based on the authorities’ latest-available convergence program, budget and medium-term fiscal framework, as well as IMF staff’s macroeconomic framework. Structural balances are net of temporary fluctuations in some revenues and one-offs. COVID-19–related one-offs are, however, included.

Denmark: Estimates for the current year are aligned with the latest official budget numbers,

adjusted where appropriate for IMF staff’s macroeconomic assumptions. Beyond the current year, the projections incorporate key features of the medium-term fiscal plan as embodied in the authorities’ latest budget. Structural balances are net of temporary fluctuations in some revenues (for example, North Sea revenue, pension yield tax revenue) and one-offs (COVID-19–related one-offs are, however, included).

Egypt: Fiscal projections are mainly based on budget sector operations. Projections are based on the budget for FY2022/23 and the IMF’s macroeconomic outlook.

Estonia: The forecast incorporates the authorities’ budget for 2024, adopted tax changes, recent developments, and staff’s macroeconomic assumptions.

Finland: Fiscal projections are based on the authorities’ projections which reflect their latest medium-term fiscal plan, adjusting where appropriate for IMF staff’s macroeconomic and other assumptions.

France: Projections for 2023 onward are based on the 2018–24 budget laws, Stability Program 2023–27, draft medium-term programming bill, and other available information on the authorities’ fiscal plans, adjusted for differences in revenue projections and assumptions on macroeconomic and financial variables.

Germany: Projections are based on the latest approved federal budget, draft federal budget (if applicable), EU Stability Programme, and medium-term budget plan. They also take into account data updates from the federal statistical office (Destatis) and the Ministry of Finance.

Ghana: Government debt and interest rate projections are based on a pre-debt restructuring scenario.

Greece: Data since 2010 reflect adjustments in line with the primary balance definition under the enhanced surveillance framework for Greece.

Hong Kong Special Administrative Region: Projections are based on the authorities’ medium-term fiscal projections for expenditures.

Hungary: Fiscal projections include IMF staff’s projections for the macroeconomic framework and fiscal policy plans announced in the 2023 and 2024 budgets.

India: Projections are based on available information on the authorities’ fiscal plans, with adjustments

for IMF staff's assumptions. Subnational data are incorporated with a lag of up to one year; general government data are thus finalized well after central government data. IMF and Indian presentations differ, particularly regarding disinvestment and license-auction proceeds, net versus gross recording of revenues in certain minor categories, and some public sector lending. Starting with FY2020/21 data, expenditure also includes the off-budget component of food subsidies, consistent with the revised treatment of food subsidies in the budget. IMF staff adjust expenditure to take out payments for previous years' food subsidies, which are included as expenditure in budget estimates for FY2020/21.

Indonesia: IMF staff's projections are based on maintaining a neutral fiscal stance going forward, accompanied by moderate tax policy and administration reforms, some expenditure realization, and a gradual increase in capital spending over the medium term in line with fiscal space.

Ireland: Fiscal projections are based on the country's Budget 2023.

Italy: IMF staff's estimates and projections are informed by the fiscal plans included in the government's 2024 budget and the updated national accounts for 2023. The stock of maturing postal bonds is included in the debt projections.

Japan: The projections reflect fiscal measures the government has already announced, with adjustments for IMF staff's assumptions.

Kazakhstan: Fiscal projections are based on the budget law and IMF staff's projections.

Korea: The forecast incorporates authorities' annual budget, any supplementary budget, any proposed new budget, the medium-term fiscal plan, and IMF staff estimations.

Lebanon: Revenue projections are based on the macroeconomic assumptions and revenue buoyancy of various taxes, based on staff's understanding of the authorities' tax policy measures. Expenditure projections are based on the macroeconomic assumptions and staff's understanding of the authorities' expenditure plans. Data and projections for 2023–29 are omitted owing to an unusually high degree of uncertainty.

Libya: IMF staff's judgments are based on 2023 fiscal accounts.

Malaysia: Fiscal projections are based on budget

numbers, discussion with the authorities, and IMF staff estimates.

Mali: Fiscal projections are based on approved budget and IMF staff estimates for past and current year, authorities' medium-term fiscal framework, and IMF staff estimates for outer years.

Malta: Projections are based on the authorities' latest budget document, adjusted for the IMF staff's macroeconomic and other assumptions.

Mexico: The 2020 public sector borrowing requirements estimated by IMF staff adjust for some statistical discrepancies between above-the-line and below-the-line numbers. Fiscal projections for 2024 are informed by the estimates in Criterios 2025; projections for 2024 onward assume continued compliance with rules established in the Federal Budget and Fiscal Responsibility Law.

Moldova: Fiscal projections are based on various bases and growth rates for GDP, consumption, imports, wages, and energy prices and on demographic changes.

Myanmar: Fiscal projections are made based on budget numbers and changed macro environment.

The Netherlands: Fiscal projections for 2023–29 are based on IMF staff's forecast framework and are also informed by the authorities' draft budget plan and Bureau for Economic Policy Analysis projections.

New Zealand: Fiscal projections are based on the FY2023/24 Half-Year Economic and Fiscal Update.

Nicaragua: Fiscal projections use the latest forecast from Nicaragua's Finance Ministry and IMF staff's assumptions.

Niger: Fiscal data contain outturns as of the end of 2022. Fiscal sector projections are based on the 2023 and 2024 budget.

Nigeria: Fiscal projections are based on macro framework, reflecting the authorities' recent reforms, as well as the 2023 budget.

Norway: The fiscal projections are based on the 2024 budget and subsequent ad hoc updates.

Philippines: Revenue projections reflect IMF staff's macroeconomic assumptions and incorporate the updated data. Expenditure projections are based on budgeted figures, institutional arrangements, and current data in each year.

Poland: Data are based on ESA-95 2004 and prior. Data is based on ESA 2010 beginning in 2005 (accrual basis). Projections begin in 2023, based on the 2023 budgets and subsequently announced fiscal measures.

Portugal: The projections for the current year are based on the authorities' approved budget, adjusted to reflect IMF staff's macroeconomic forecast. Projections thereafter are based on the assumption of unchanged policies. Projections for 2024 reflect information available in the 2024 budget proposal.

Romania: Fiscal projections reflect legislated changes up to the end of 2022 and measures announced in 2023. Medium-term projections include assumptions about gradual implementation of measures and disbursement in the framework of the European Union's Recovery and Resilience Facility.

Russian Federation: The fiscal rule was suspended in March 2022 by the government in response to the sanctions imposed after the invasion of Ukraine, allowing for windfall oil and gas revenues above benchmark to be used to finance a larger deficit in 2022 as well as savings accumulated in the National Welfare Fund. The 2023–25 budget was based on a modified rule with a two-year transition period which set the benchmark oil and gas revenues fixed in rubles at Rub 8 trillion, compared with a fixed benchmark oil price at \$40 a barrel under the 2019 fiscal rule. However, in late September 2023, the Ministry of Finance proposed reverting to the earlier version of the fiscal rule from 2024 onward to determine the price of oil and gas revenues but sets the benchmark oil price at \$60 a barrel. The new rule allows for higher oil and gas revenues to be spent, but it simultaneously targets a smaller primary structural deficit.

Saudi Arabia: IMF staff's baseline fiscal projections are based primarily on the understanding of government policies as outlined in the 2024 budget and recent official announcements. Export oil revenues are based on World Economic Outlook database baseline oil price assumptions and the IMF staff's understanding of oil production adjustments under the OPEC+ (Organization of the Petroleum Exporting Countries, including Russia and other non-OPEC oil exporters) agreement and those unilaterally announced by Saudi Arabia.

Singapore: FY2023 projections are based on revised figures based on budget execution through the end of 2023. FY2024 projections are based on the initial budget of February 16, 2024. Staff projections include (1) an increase in the Goods and Services Tax from 8 to 9 percent on January 1, 2024; and (2) an increase of the carbon tax from S\$5 a ton to

S\$25 a ton in 2024 and 2025 and S\$45 a ton in 2026 and 2027.

Slovak Republic: The fiscal projection is based on the 2023 Stability Program and takes into consideration available data for 2023.

Spain: Fiscal projections for 2023 assume energy support measures amounting to 1 percent of GDP, which are phased out throughout 2024. Figures for 2021–28 reflect disbursements of grants and loans under the European Union's Recovery and Resilience Facility.

Sri Lanka: Fiscal projections are based on IMF staff's judgment.

Sudan: Projections reflect staff's analysis based on the assumption that the conflict will end by mid-2024.

Sweden: Fiscal estimates are based on the authorities' budget projections, adjusted to reflect IMF staff's macroeconomic forecasts.

Switzerland: The projections assume that fiscal policy is adjusted as necessary to keep fiscal balances in line with the requirements of Switzerland's fiscal rules.

Türkiye: The basis for the projections is the IMF-defined fiscal balance, which excludes some revenue and expenditure items that are included in the authorities' headline balance.

United Kingdom: Fiscal projections are based on the March 2024 forecast from the Office for Budget Responsibility (OBR) and the January 2024 release on public sector finances from the Office for National Statistics. IMF staff's projections take the OBR forecast as a reference and overlay adjustments (for differences in assumptions) to both revenues and expenditures. IMF staff's forecasts do not necessarily assume that the fiscal rules announced on November 17, 2022, will be met at the end of the forecast period. Data are presented on a calendar year basis.

United States: Fiscal projections are based on the February 2024 Congressional Budget Office baseline and the latest treasury monthly statement, adjusted for IMF staff's policy and macroeconomic assumptions. Projections incorporate the effects of the Fiscal Responsibility Act.

Uruguay: Historical fiscal and monetary data are from the Uruguayan authorities. Projections are based on the authorities' policies and projections, adjusted to reflect IMF staff's macroeconomic assumptions and assessment of policy plans.

Venezuela: Projections for 2024–29 are omitted due to an unusual high degree of uncertainty.

Vietnam: Projections starting in 2024 use authorities' 2024 budget numbers and IMF staff's own projections.

Yemen: Hydrocarbon revenue projections are based on World Economic Outlook database assumptions for hydrocarbon prices and authorities' projections for oil and gas production. Non-hydrocarbon revenues largely reflect

authorities' projection and the evolution of other key indicators. Over the medium term, we assume conflict resolution, a recovery in economic activity, and additional expenditures associated with reconstruction costs.

Zambia: Government net and gross debt projections for 2024–29 are omitted due to debt restructuring.

Definition and Coverage of Fiscal Data

Table A. Economy Groupings

The following groupings of economies are used in the *Fiscal Monitor*. Data for all the economies can be found here: <https://www.imf.org/external/datamapper/datasets/FM>.

Advanced Economies	Emerging Market Economies	Low-Income Developing Countries	G7 Countries	G20 ¹ Countries	Advanced G20 ¹ Countries	Emerging G20 Countries
Andorra	Albania	Afghanistan	Canada	Argentina	Australia	Argentina
Australia	Algeria	Bangladesh	France	Australia	Canada	Brazil
Austria	Angola	Benin	Germany	Brazil	France	China
Belgium	Antigua and Barbuda	Bhutan	Italy	Canada	Germany	India
Canada	Argentina	Burkina Faso	Japan	China	Italy	Indonesia
Croatia	Armenia	Burundi	United Kingdom	France	Japan	Mexico
Cyprus	Aruba	Cambodia	United States	Germany	Korea	Russian Federation
Czech Republic	Azerbaijan	Cameroon		India	United Kingdom	Saudi Arabia
Denmark	Bahamas, The	Central African Republic		Indonesia	United States	South Africa
Estonia	Bahrain	Chad		Italy		Türkiye
Finland	Barbados	Comoros		Japan		
France	Belarus	Congo, Democratic Republic of the		Korea		
Germany	Belize	Congo, Republic of		Mexico		
Greece	Bolivia	Côte d'Ivoire		Russian Federation		
Hong Kong SAR	Bosnia and Herzegovina	Djibouti		Saudi Arabia		
Iceland	Botswana	Eritrea		South Africa		
Ireland	Brazil	Ethiopia		Türkiye		
Israel	Brunei Darussalam	Gambia, The		United Kingdom		
Italy	Bulgaria	Ghana		United States		
Japan	Cabo Verde	Guinea				
Korea	Chile	Guinea-Bissau				
Latvia	China	Haiti				
Lithuania	Colombia	Honduras				
Luxembourg	Costa Rica	Kenya				
Macao SAR	Dominica	Kiribati				
Malta	Dominican Republic	Kyrgyz Republic				
Netherlands, The	Ecuador	Lao P.D.R.				
New Zealand	Egypt	Lesotho				
Norway	El Salvador	Liberia				
Portugal	Equatorial Guinea	Madagascar				
Puerto Rico	Eswatini	Malawi				
San Marino	Fiji	Mali				
Singapore	Gabon	Mauritania				
Slovak Republic	Georgia	Moldova				
Slovenia	Grenada	Mozambique				
Spain	Guatemala	Myanmar				
Sweden	Guyana	Nepal				
Switzerland	Hungary	Nicaragua				
Taiwan Province of China	India	Niger				
United Kingdom	Indonesia	Nigeria				
United States	Iran	Papua New Guinea				
	Iraq	Rwanda				
	Jamaica	São Tomé and Príncipe				
	Jordan	Senegal				
	Kazakhstan	Sierra Leone				
	Kosovo	Solomon Islands				
	Kuwait	South Sudan				
	Lebanon	Somalia				
	Libya	Sudan				
	Malaysia	Tajikistan				
	Maldives					
	Marshall Islands					

Table A. Economy Groupings (continued)

Advanced Economies	Emerging Market Economies	Low-Income Developing Countries	G7 Countries	G20 ¹ Countries	Advanced G20 ¹ Countries	Emerging G20 Countries
	Mauritius	Tanzania				
	Mexico	Timor-Leste				
	Micronesia	Togo				
	Mongolia	Uganda				
	Montenegro, Rep. of	Uzbekistan				
	Morocco	Yemen				
	Namibia	Zambia				
	Nauru	Zimbabwe				
	North Macedonia					
	Oman					
	Pakistan					
	Palau					
	Panama					
	Paraguay					
	Peru					
	Philippines					
	Poland					
	Qatar					
	Romania					
	Russian Federation					
	Samoa					
	Saudi Arabia					
	Serbia					
	Seychelles					
	South Africa					
	Sri Lanka					
	St. Kitts and Nevis					
	St. Lucia					
	St. Vincent and the Grenadines					
	Suriname					
	Thailand					
	Tonga					
	Trinidad and Tobago					
	Tunisia					
	Türkiye					
	Turkmenistan					
	Tuvalu					
	Ukraine					
	United Arab Emirates					
	Uruguay					
	Vanuatu					
	Venezuela					
	Vietnam					
	West Bank and Gaza					

Note: G7 = Group of Seven; G20 = Group of Twenty.

¹ Does not include European Union aggregate.

Table A. Economy Groupings (continued)

Euro Area	Emerging Market and Middle-Income Asia	Emerging Market and Middle-Income Europe	Emerging Market and Middle-Income Latin America	Emerging Market and Middle-Income Middle East, North Africa, and Pakistan	Emerging Market and Middle-Income Africa
Austria	Brunei Darussalam	Albania	Antigua and Barbuda	Algeria	Angola
Belgium	China	Azerbaijan	Argentina	Bahrain	South Africa
Croatia	Fiji	Belarus	Aruba	Egypt	
Cyprus	India	Bosnia and Herzegovina	Bahamas, The	Iran	
Estonia	Indonesia	Bulgaria	Barbados	Iraq	
Finland	Malaysia	Hungary	Belize	Jordan	
France	Maldives	Kazakhstan	Bolivia	Kuwait	
Germany	Marshall Islands	Kosovo	Brazil	Lebanon	
Greece	Micronesia	Montenegro	Chile	Libya	
Ireland	Mongolia	North Macedonia	Colombia	Morocco	
Italy	Nauru	Poland	Costa Rica	Oman	
Latvia	Palau	Romania	Dominica	Pakistan	
Lithuania	Philippines	Russia	Dominican Republic	Qatar	
Luxembourg	Samoa	Serbia	Ecuador	Saudi Arabia	
Malta	Sri Lanka	Türkiye	El Salvador	Tunisia	
Netherlands	Thailand	Ukraine	Grenada	United Arab Emirates	
Portugal	Tonga		Guatemala		
Slovak Republic	Tuvalu		Guyana		
Slovenia	Vanuatu		Jamaica		
Spain	Vietnam		Mexico		
			Panama		
			Paraguay		
			Peru		
			St. Kitts and Nevis		
			St. Lucia		
			St. Vincent and the Grenadines		
			Suriname		
			Trinidad and Tobago		
			Uruguay		
			Venezuela		

Table A. Economy Groupings (continued)

Low-Income Developing Asia	Low-Income Developing Latin America	Low-Income Developing Sub-Saharan Africa	Low-Income Developing Others	Low-Income Oil Producers	Oil Producers
Bangladesh	Haiti	Benin	Afghanistan	Chad	Algeria
Bhutan	Honduras	Burkina Faso	Djibouti	Congo, Rep. of.	Angola
Cambodia	Nicaragua	Burundi	Kyrgyz Republic	Nigeria	Azerbaijan
Kiribati		Cameroon	Mauritania	Timor-Leste	Bahrain
Lao P.D.R.		Central African Republic	Moldova	Yemen	Brunei Darussalam
Myanmar		Chad	Somalia		Chad
Nepal		Comoros	Sudan		Canada
Papua New Guinea		Congo, Dem. Rep. of the	Tajikistan		Congo, Republic of
Solomon Islands		Côte d'Ivoire	Uzbekistan		Ecuador
Timor-Leste		Eritrea	Yemen		Equatorial Guinea
		Ethiopia			Gabon
		Gambia, The			Guyana
		Ghana			Iran
		Guinea			Iraq
		Guinea-Bissau			Kazakhstan
		Kenya			Kuwait
		Lesotho			Libya
		Liberia			Nigeria
		Madagascar			Norway
		Malawi			Oman
		Mali			Qatar
		Mozambique			Russian Federation
		Niger			Saudi Arabia
		Nigeria			Timor-Leste
		Rwanda			Trinidad and Tobago
		São Tomé and Príncipe			Turkmenistan
		Senegal			United Arab Emirates
		Sierra Leone			Venezuela
		South Sudan			Yemen
		Tanzania			
		Togo			
		Uganda			
		Zambia			
		Zimbabwe			

Table B. Advanced Economies: Definition and Coverage of Fiscal Monitor Data

	Overall Fiscal Balance ¹			Cyclically Adjusted Balance			Gross Debt		
	Coverage		Accounting Practice	Coverage		Accounting Practice	Coverage		Valuation of Debt ²
	Aggregate	Subsectors		Aggregate	Subsectors		Aggregate	Subsectors	
Andorra	GG	CG,LG,SS	A	...	...	...	GG	CG	Nominal
Australia	GG	CG,SG,LG,TG	A	GG	CG,SG,LG,TG	GG	GG	CG,SG,LG,TG	Current market
Austria	GG	CG,SG,LG,SS	A	GG	CG,SG,LG,SS	GG	GG	CG,SG,LG,SS	Face
Belgium	GG	CG,SG,LG,SS	A	GG	CG,SG,LG,SS	GG	GG	CG,SG,LG,SS	Face
Canada	GG	CG,SG,LG,SS	A	GG	CG,SG,LG,SS	GG	GG	CG,SG,LG,SS	Face
Croatia	GG	CG,LG	A	GG	CG,LG	GG	GG	CG,LG	Nominal
Cyprus	GG	CG,LG,SS	A	GG	CG,LG,SS	GG	GG	CG,LG,SS	Face
Czech Republic	GG	CG,LG,SS	A	GG	CG,LG,SS	GG	GG	CG,LG,SS	Nominal
Denmark	GG	CG,LG,SS	A	GG	CG,LG,SS	GG	GG	CG,LG,SS	Face
Estonia	GG	CG,LG,SS	C	...	...	...	GG	CG,LG,SS	Nominal
Finland	GG	CG,LG,SS	A	GG	CG,LG,SS	GG	GG	CG,LG,SS	Face
France	GG	CG,LG,SS	A	GG	CG,LG,SS	GG	GG	CG,LG,SS	Face
Germany	GG	CG,SG,LG,SS	A	GG	CG,SG,LG,SS	GG	GG	CG,SG,LG,SS	Face
Greece	GG	CG,LG,SS	A	GG	CG,LG,SS	GG	GG	CG,LG,SS	Nominal
Hong Kong SAR	GG	CG	C	GG	CG	GG	GG	CG	Face
Iceland	GG	CG,LG,SS	A	GG	CG,LG,SS	GG	GG	CG,LG,SS	Face
Ireland	GG	CG,LG,SS	A	GG	CG,LG,SS	GG	GG	CG,LG,SS	Nominal
Israel	GG	CG,LG,SS	Mixed	GG	CG,LG,SS	GG	GG	CG,LG,SS	Nominal
Italy	GG	CG,LG,SS	A	GG	CG,LG,SS	GG	GG	CG,LG,SS	Face
Japan	GG	CG,LG,SS	A	GG	CG,LG,SS	GG	GG	CG,LG,SS	Current market
Korea	CG	CG,SS	C	CG	CG,SS	GG	GG	CG,SS	Nominal
Latvia	GG	CG,LG,SS	C	GG	CG,LG,SS	GG	GG	CG,LG,SS	Nominal
Lithuania	GG	CG,LG,SS	A	GG	CG,LG,SS	GG	GG	CG,LG,SS	Nominal
Luxembourg	GG	CG,LG,SS	A	GG	CG,LG,SS	GG	GG	CG,LG,SS	Face
Malta	GG	CG,SS	A	GG	CG,SS	GG	GG	CG,SS	Nominal
The Netherlands	GG	CG,LG,SS	A	GG	CG,LG,SS	GG	GG	CG,LG,SS	Nominal
New Zealand	GG	CG,LG	A	GG	CG,LG	GG	GG	CG,LG	Current market
Norway	GG	CG,LG,SS	A	GG	CG,LG,SS	GG	GG	CG,LG,SS	Current market
Portugal	GG	CG,LG,SS	A	GG	CG,LG,SS	GG	GG	CG,LG,SS	Nominal
Singapore	GG	CG	C	GG	CG	GG	GG	CG	Nominal
Slovak Republic	GG	CG,LG,SS	A	GG	CG,LG,SS	GG	GG	CG,LG,SS	Face
Slovenia	GG	CG,LG,SS	A	GG	CG,LG,SS	GG	GG	CG,LG,SS	Face
Spain	GG	CG,SG,LG,SS	A	GG	CG,SG,LG,SS	GG	GG	CG,SG,LG,SS	Nominal
Sweden	GG	CG,LG,SS	A	GG	CG,LG,SS	GG	GG	CG,LG,SS	Nominal
Switzerland	GG	CG,SG,LG,SS	A	GG	CG,SG,LG,SS	GG	GG	CG,SG,LG,SS	Nominal
United Kingdom	GG	CG,LG	A	GG	CG,LG	GG	GG	CG,LG	Nominal
United States	GG	CG,SG,LG	A	GG	CG,SG,LG	GG	GG	CG,SG,LG	Nominal

Note: Coverage: CG = central government; GG = general government; LG = local governments; SG = state governments; SS = social security funds; TG = territorial governments. Accounting practice: A = accrual; C = cash; Mixed = combination of accrual and cash accounting.

¹In many economies, fiscal data follow the IMF's *Government Finance Statistics Manual 2014*. The concept of overall fiscal balance refers to net lending and borrowing of the general government. In some cases, however, the overall balance refers to total revenue and grants minus total expenditure and net lending.

²"Nominal" refers to debt securities that are valued at their nominal values, that is, the nominal value of a debt instrument at any moment in time is the amount that the debtor owes to the creditor. "Face" refers to the undiscounted amount of principal to be repaid at (or before) maturity. The use of face value as a proxy for nominal value in measuring the gross debt position can result in an inconsistent approach across all instruments and is not recommended, unless nominal and market values are not available. "Current market" refers to debt securities that are valued at market prices; insurance, pension, and standardized guarantee schemes are valued according to principles that are equivalent to market valuation; and all other debt instruments are valued at nominal prices, which are considered to be the best generally available proxies for their market prices.

Table C. Emerging Market and Middle-Income Economies: Definition and Coverage of Fiscal Monitor Data

	Overall Fiscal Balance ¹			Cyclically Adjusted Balance			Gross Debt			Valuation of Debt ²
	Coverage		Accounting Practice	Coverage		Accounting Practice	Coverage		Subsectors	
	Aggregate	Subsectors		Aggregate	Subsectors		Aggregate	Subsectors		
Algeria	CG	CG	C	...	...	...	CG	CG	CG	Face
Angola ³	GG	CG,LG	Mixed	...	...	...	GG	CG,LG	CG,LG	Nominal
Argentina	GG	CG,SG,SS	C	CG	CG	...	CG	CG	CG	Nominal
Belarus ⁴	GG	CG,LG,SS	C	...	...	...	GG	CG,LG,SS	CG,LG,SS	Nominal
Brazil	GG	CG,SG,LG,SS	C	GG	CG,SG,LG,SS	...	GG	CG,SG,LG,SS	CG,SG,LG,SS	Nominal
Bulgaria	GG	CG,LG,SS	C	GG	CG,LG,SS	...	GG	CG,LG,SS	CG,LG,SS	Nominal
Chile	GG	CG,LG	A	CG	CG	...	GG	CG,LG	CG,LG	Face
China	GG	CG,LG,SS	C	GG	CG,LG,SS	...	GG	CG,LG,SS	CG,LG,SS	Face
Colombia ⁵	GG	CG,SG,LG,SS	Mixed	GG	CG,SG,LG,SS	...	GG	CG,SG,LG,SS	CG,SG,LG,SS	Face
Dominican Republic	CG	CG,LG,SS,MMPC	Mixed	PS	CG,LG,SS,MMPC	...	PS	CG,LG,SS,MMPC	CG,LG,SS,MMPC	Face
Ecuador	NFPS	CG,SG,LG,SS,NFPC	Mixed	NFPS	CG,SG,LG,SS,NFPC	...	NFPS	CG,SG,LG,SS,NFPC	CG,SG,LG,SS,NFPC	Nominal
Egypt	GG	CG,LG,SS	C	GG	CG,LG,SS	...	GG	CG,LG,SS	CG,LG,SS	Nominal
Hungary	GG	CG,LG,SS,MMPC	A	GG	CG,LG,SS,MMPC	...	GG	CG,LG,SS,MMPC	CG,LG,SS,MMPC	Face
India	GG	CG,SG	C	GG	CG,SG	...	GG	CG,SG	CG,SG	Nominal
Indonesia	GG	CG,LG	C	GG	CG,LG	...	GG	CG,LG	CG,LG	Face
Iran	CG	CG	C	...	...	...	CG	CG	CG	Nominal
Kazakhstan	GG	CG,LG	C	...	...	...	GG	CG,LG	CG,LG	Nominal
Kuwait	GG	CG,SS	Mixed	...	...	...	GG	CG,SS	CG,SS	Nominal
Lebanon	CG	CG	Mixed	CG	CG	...	CG	CG	CG	Nominal
Malaysia	GG	CG,SG,LG	C	GG	CG,SG,LG	...	GG	CG,SG,LG	CG,SG,LG	Nominal
Mexico	PS	CG,SS,MMPC,NFPC	C	PS	CG,SS,MMPC,NFPC	...	PS	CG,SS,MMPC,NFPC	CG,SS,MMPC,NFPC	Nominal
Morocco	CG	CG	A	...	...	...	CG	CG	CG	Face
Oman	CG	CG	C	...	...	...	CG	CG	CG	Face
Pakistan	GG	CG,SG,LG	C	...	...	...	GG	CG,SG,LG	CG,SG,LG	Nominal
Peru	GG	CG,SG,LG,SS	C	GG	CG,SG,LG,SS	...	NFPS	CG,SG,LG,SS,NFPC	CG,SG,LG,SS,NFPC	Face
Philippines	GG	CG,LG,SS	C	GG	CG,LG,SS	...	GG	CG,LG,SS	CG,LG,SS	Nominal
Poland	GG	CG,LG,SS	A	GG	CG,LG,SS	...	GG	CG,LG,SS	CG,LG,SS	Face
Qatar	CG	CG	C	...	...	...	CG	CG	CG	Nominal
Romania	GG	CG,LG,SS	C	GG	CG,LG,SS	...	GG	CG,LG,SS	CG,LG,SS	Nominal
Russian Federation	GG	CG,SG,SS	Mixed	GG	CG,SG,SS	...	GG	CG,SG,SS	CG,SG,SS	Current market
Saudi Arabia	CG	CG	C	...	...	...	CG	CG	CG	Nominal
South Africa ⁶	GG	CG,SG,SS	C	GG	CG,SG,SS	...	GG	CG,SG,SS	CG,SG,SS	Nominal
Sri Lanka	CG	CG	C	...	...	...	CG	CG	CG	Nominal
Thailand ⁷	PS	CG,BCG,LG,SS	A	PS	CG,BCG,LG,SS	...	PS	CG,BCG,LG,SS	CG,BCG,LG,SS	Nominal
Türkiye	GG	CG,LG,SS	A	GG	CG,LG,SS	...	GG	CG,LG,SS	CG,LG,SS	Nominal
Ukraine	GG	CG,LG,SS	C	GG	CG,LG,SS	...	GG	CG,LG,SS	CG,LG,SS	Nominal
United Arab Emirates	GG	CG,BCG,SG,SS	Mixed	...	...	...	GG	CG,BCG,SG,SS	CG,BCG,SG,SS	Nominal
Uruguay	NFPS	CG,LG,SS,MMPC,NFPC	A	...	...	...	NFPS	CG,LG,SS,MMPC,NFPC	CG,LG,SS,MMPC,NFPC	Face
Venezuela ⁸	GG	BCG,NFPC	C	GG	BCG,NFPC	...	GG	BCG,NFPC	BCG,NFPC	Nominal
Vietnam	GG	CG,SG,LG	C	GG	CG,SG,LG	...	GG	CG,SG,LG	CG,SG,LG	Nominal

Note: Coverage: BCG = budgetary central government; CG = central government; GG = general government; LG = local governments; NFPC = nonfinancial public corporations; NFPS = nonfinancial public sector; MMPC = nonmonetary financial public corporations; PS = public sector; SG = state governments; SS = social security funds. Accounting practice: A = accrual; C = cash; Mixed = combination of accrual and cash accounting.

¹In many economies, fiscal data follow the IMF's *Government Finance Statistics Manual 2014*. The concept of overall fiscal balance refers to net lending and borrowing of the general government. In some cases, however, the overall balance refers to total revenue and grants minus total expenditure and net lending.

²"Nominal" refers to debt securities that are valued at their nominal values, that is, the nominal value of a debt instrument at any moment in time is the amount that the debtor owes to the creditor. "Face" refers to the undiscounted amount of principal to be repaid at (or before) maturity. The use of face value as a proxy for nominal value in measuring the gross debt position can result in an inconsistent approach across all instruments and is not recommended, unless nominal and market values are not available. "Current market" refers to debt securities that are valued at market prices; insurance, pension, and standardized guarantee schemes are valued according to principles that are equivalent to market valuation; and all other debt instruments are valued at nominal prices, which are considered to be the best generally available proxies of their market prices.

³Gross debt includes the domestic and external debt of the central government; the external debt of the state-owned oil company, Sonangol, and the state-owned airline, TAAG; public guarantees; and reported external liabilities of other state entities, including external arrears.

⁴Gross debt refers to general government public debt, including publicly guaranteed debt.

⁵Revenue is recorded on a cash basis and expenditure on an accrual basis.

⁶Coverage for South Africa is consolidated government, which serves as a good proxy for the general government. It includes the national and provincial governments and certain public entities, while local governments are only partly covered. The subnational government debt is estimated to be limited given the available data from the South African Reserve Bank.

⁷Data for Thailand do not include the debt of specialized financial institutions (SFI/MMPC) without a government guarantee.

⁸The fiscal accounts include the budgetary central government, social security, FOGADE (an insurance deposit institution), and a sample of public enterprises, including Petróleos de Venezuela, S.A. (PDVSA). Data for 2018–22 are IMF staff estimates.

Table D. Low-Income Developing Countries: Definition and Coverage of Fiscal Monitor Data

	Overall Fiscal Balance ¹			Cyclically Adjusted Balance			Gross Debt		
	Coverage		Accounting Practice	Coverage		Accounting Practice	Coverage		Valuation of Debt ²
	Aggregate	Subsectors		Aggregate	Subsectors		Aggregate	Subsectors	
Afghanistan	CG	CG	C	...	...	...	CG	CG	Nominal
Bangladesh	CG	CG	C	CG	CG	...	CG	CG	Nominal
Benin	CG	CG	C	...	...	...	CG	CG	Nominal
Burkina Faso	CG	CG	CB	...	...	...	CG	CG	Face
Cambodia	CG	CG, LG	A	CG, LG	CG, LG	...	CG	CG, LG	Face
Cameroun	CG	CG	C	...	...	...	CG	CG	Nominal
Chad	NFPS	CG, NFPC	C	...	...	...	CG	CG	Face
Congo, Democratic Republic of the	CG	CG, LG	C	...	...	...	GG	CG, LG, NFPC	Nominal
Congo, Republic of	CG	CG	A	...	...	...	CG	CG	Nominal
Côte d'Ivoire	CG	CG, SS	Mixed	...	...	...	CG	CG, NFPC	Nominal
Ethiopia	GG	CG, SG, LG	C	...	...	...	NFPS	CG, SG, LG, NFPC	Nominal
Ghana	CG	CG	CB	...	...	...	CG	CG	Face
Guinea	CG	CG	Mixed	...	...	...	CG	CG	Nominal
Haiti ³	CG	CG	C	...	...	...	CG	CG	Nominal
Honduras	GG	CG, LG, SS	Mixed	GG	CG, LG, SS	...	GG	CG, LG, SS	Nominal
Kenya	CG	CG	C	...	...	...	CG	CG	Current market
Kyrgyz Republic	GG	CG, LG, SS	C	...	...	...	GG	CG, LG, SS	Face
Lao P.D.R. ⁴	CG	CG	C	CG	CG	...	CG	CG	Nominal
Madagascar	CG	CG, LG	CB	...	...	...	NFPS	CG, LG, NFPC	Nominal
Malawi	CG	CG	C	...	...	...	CG	CG	...
Mali	CG	CG	Mixed	...	...	...	CG	CG	Nominal
Moldova	GG	CG, LG, SS	C	GG	CG, LG, SS	...	GG	CG, LG, SS	Nominal
Mozambique	CG	CG, SG	Mixed	CG	CG, SG	...	CG	CG, SG	Nominal
Myanmar ⁵	NFPS	CG, NFPC	C	...	...	...	NFPS	CG, NFPC	Face
Nepal	CG	CG	C	CG	CG	...	CG	CG	Face
Nicaragua	GG	CG, LG, SS	C	GG	CG, LG, SS	...	GG	CG, LG, SS	Nominal
Niger	CG	CG	A	...	...	...	CG	CG	Nominal
Nigeria	GG	CG, SG, LG	C	...	...	...	GG	CG, SG, LG	Current market
Papua New Guinea	CG	CG	C	...	...	...	CG	CG	Face
Rwanda	GG	CG, LG	Mixed	...	...	...	CG	CG	Nominal
Senegal	CG	CG	C	...	...	...	PS	CG, LG, SS, NFPC	Nominal
Sudan	CG	CG	Mixed	...	...	...	CG	CG	Nominal
Tajikistan	GG	CG, LG, SS	C	...	...	...	GG	CG, LG, SS	Nominal
Tanzania	CG	CG, LG	C	...	...	...	CG	CG, LG	Nominal
Uganda	CG	CG	C	...	...	...	CG	CG	Nominal
Uzbekistan ⁶	GG	CG, SG, LG, SS	C	...	...	...	GG	CG, SG, LG, SS	Nominal
Yemen	GG	CG, LG	C	...	...	...	GG	CG, LG	Nominal
Zambia	CG	CG	C	...	...	...	CG	CG	Nominal
Zimbabwe	CG	CG	C	...	...	...	CG	CG	Current market

Note: Coverage: CG = central government; GG = general government; LG = local governments; NFPC = nonfinancial public corporations; NFPS = nonfinancial public sector; SG = state governments; SS = social security funds. Accounting practice: A = accrual; C = cash; CB = commitments based; Mixed = combination of accrual and cash accounting.

¹ In many countries, fiscal data follow the IMF's *Government Finance Statistics Manual 2014*. The concept of overall fiscal balance refers to net lending and borrowing of the general government. In some cases, however, the overall balance refers to total revenue and grants minus total expenditure and net lending.

² "Nominal" refers to debt securities that are valued at their nominal values, that is, the nominal value of a debt instrument at any moment in time is the amount that the debtor owes to the creditor. "Face" refers to the undiscounted amount of principal to be repaid at (or before) maturity. The use of face value as a proxy for nominal value in measuring the gross debt position can result in an inconsistent approach across all instruments and is not recommended, unless nominal and market values are not available. "Current market" refers to debt securities that are valued at market prices; insurance, pension, and standardized guarantee schemes are valued according to principles that are equivalent to market valuation; and all other debt instruments are valued at nominal prices, which are considered to be the best generally available proxies of their market prices.

³ Haiti's fiscal balance and debt data cover the central government, special funds and programs (Fonds d'Entretien Routier and Programme de Scolarisation Universelle, Gratuite, et Obligatoire), and the state-owned electricity company EDH.

⁴ Lao P.D.R.'s fiscal spending includes capital spending by local governments financed by loans provided by the central bank.

⁵ Overall and primary balances in 2012 are based on monetary statistics and are different from the balances calculated from expenditure and revenue data.

⁶ Uzbekistan's listing includes the Fund for Reconstruction and Development.

Table A1. Advanced Economies: General Government Overall Balance, 2015–29
(Percent of GDP)

	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
Average	-2.6	-2.7	-2.4	-2.4	-3.0	-10.2	-7.2	-3.1	-5.6	-4.4	-4.2	-3.9	-3.8	-3.8	-3.6
Euro Area	-1.9	-1.5	-0.9	-0.4	-0.6	-7.0	-5.2	-3.7	-3.5	-2.9	-2.6	-2.5	-2.4	-2.3	-2.3
G7	-3.0	-3.3	-3.3	-3.4	-3.8	-11.6	-8.7	-4.1	-7.0	-5.5	-5.3	-4.9	-4.7	-4.8	-4.6
G20 Advanced	-2.9	-3.1	-3.1	-3.1	-3.7	-11.2	-8.3	-3.9	-6.6	-5.2	-5.0	-4.6	-4.4	-4.5	-4.2
Andorra	1.7	4.1	3.3	2.7	2.3	-1.1	-1.2	4.8	2.2	2.3	2.6	2.7	2.6	2.5	2.6
Australia	-2.8	-2.4	-1.7	-1.3	-4.4	-8.7	-6.5	-2.3	-0.9	-1.3	-1.4	-1.1	-0.8	-0.5	-0.3
Austria	-1.0	-1.5	-0.8	0.2	0.6	-8.0	-5.8	-3.5	-2.4	-2.6	-2.3	-2.0	-2.0	-1.9	-1.9
Belgium	-2.4	-2.4	-0.7	-0.9	-2.0	-8.9	-5.4	-3.5	-4.6	-4.4	-4.7	-5.0	-5.4	-5.4	-5.6
Canada	-0.1	-0.5	-0.1	0.4	0.0	-10.9	-2.9	0.1	-0.6	-1.1	-0.9	-0.7	-0.7	-0.6	-0.4
Croatia	-3.5	-1.0	0.8	0.1	2.2	-7.3	-2.5	0.1	0.2	-1.5	-1.3	-1.1	-1.0	-1.0	-1.0
Cyprus ¹	0.1	0.3	1.9	-3.6	1.3	-5.7	-1.9	2.4	2.9	2.5	2.4	2.3	1.4	1.0	0.8
Czech Republic	-0.6	0.7	1.5	0.9	0.3	-5.8	-5.1	-3.2	-3.6	-2.2	-1.8	-1.6	-1.3	-0.9	-1.9
Denmark	-1.3	-0.1	1.8	0.8	4.1	0.4	4.1	3.3	2.7	1.5	0.8	0.2	-0.1	-0.2	-0.4
Estonia	-0.4	-1.0	-1.0	-1.1	0.1	-5.4	-2.5	-1.0	-3.0	-3.5	-3.2	-3.0	-2.7	-2.7	-2.7
Finland	-2.4	-1.7	-0.7	-0.9	-0.9	-5.6	-2.8	-0.8	-2.8	-3.5	-3.4	-3.1	-2.8	-2.3	-2.3
France	-3.6	-3.6	-3.0	-2.3	-3.1	-9.0	-6.5	-4.8	-5.5	-4.9	-4.9	-4.4	-4.3	-4.1	-3.9
Germany	1.0	1.2	1.3	1.9	1.5	-4.3	-3.6	-2.5	-2.1	-1.5	-1.3	-0.9	-0.7	-0.5	-0.5
Greece	-3.0	0.3	1.1	0.8	-0.1	-10.5	-7.5	-2.4	-1.6	-0.9	-0.9	-1.0	-1.3	-1.4	-1.4
Hong Kong SAR	0.6	4.4	5.5	2.3	-0.6	-9.2	0.0	-6.6	-5.7	-4.5	-2.5	-1.3	0.4	2.0	2.0
Iceland	-0.4	12.5	1.0	1.0	-1.6	-8.9	-8.5	-4.0	-2.0	-2.1	-1.9	-1.5	-1.6	-1.6	-1.6
Ireland ¹	-2.0	-0.8	-0.3	0.1	0.5	-5.0	-1.5	1.7	1.5	1.4	1.3	1.1	0.8	0.6	0.5
Israel	-1.2	-1.7	-1.2	-3.6	-3.9	-10.8	-3.7	0.6	-5.0	-8.2	-5.4	-4.2	-4.3	-4.2	-4.2
Italy	-2.6	-2.4	-2.4	-2.2	-1.5	-9.4	-8.7	-8.6	-7.2	-4.6	-3.2	-3.0	-2.9	-3.0	-3.0
Japan	-3.7	-3.6	-3.1	-2.5	-3.0	-9.1	-6.1	-4.4	-5.8	-6.5	-3.2	-2.9	-3.1	-3.4	-3.8
Korea	0.5	1.6	2.2	2.6	0.4	-2.2	0.0	-1.6	-1.0	-0.6	0.1	0.2	0.2	0.2	0.2
Latvia	-1.5	-0.5	-0.8	-0.7	-0.4	-3.7	-5.5	-3.7	-2.7	-3.0	-2.5	-1.9	-1.2	-1.2	-1.2
Lithuania	-0.2	0.3	0.5	0.6	0.3	-7.2	-1.0	-0.7	-0.8	-2.6	-1.7	-1.3	-1.3	-1.2	-1.1
Luxembourg	1.3	1.9	1.4	3.0	2.2	-3.4	0.6	-0.3	-1.4	-2.1	-1.5	-1.3	-1.4	-1.5	-1.5
Malta	-0.9	1.1	3.3	2.0	0.5	-9.6	-7.4	-5.6	-4.8	-4.4	-4.0	-3.6	-2.9	-2.8	-2.8
The Netherlands	-1.9	0.1	1.4	1.5	1.8	-3.7	-2.2	-0.1	-1.1	-2.0	-2.2	-2.7	-2.8	-3.3	-3.3
New Zealand	0.4	1.0	1.4	1.3	-2.5	-4.3	-3.2	-3.5	-3.5	-3.5	-2.6	-1.7	-1.1	-0.4	-0.1
Norway	6.0	4.0	5.0	7.8	6.5	-2.6	10.3	25.4	14.2	14.9	13.3	12.3	11.5	10.9	10.4
Portugal	-4.3	-1.9	-3.0	-0.3	0.1	-5.8	-2.9	-0.3	1.0	0.2	0.2	0.2	0.2	0.2	0.2
Singapore	2.9	3.3	5.2	3.7	3.8	-6.7	1.1	1.2	3.6	5.1	3.6	3.3	3.1	2.8	2.7
Slovak Republic	-2.7	-2.6	-1.0	-1.0	-1.2	-5.4	-5.4	-2.4	-6.4	-6.0	-6.1	-5.6	-5.7	-5.7	-5.6
Slovenia	-2.8	-1.9	-0.1	0.7	0.7	-7.6	-4.6	-3.0	-3.4	-3.0	-2.7	-2.5	-2.5	-2.2	-2.2
Spain ¹	-5.3	-4.3	-3.1	-2.6	-3.1	-10.1	-6.7	-4.7	-3.6	-3.1	-3.0	-3.2	-3.3	-3.0	-3.0
Sweden	0.0	1.0	1.4	0.8	0.5	-2.8	0.0	1.3	-0.1	-0.7	-0.2	0.3	0.3	0.3	0.3
Switzerland	0.5	0.2	1.1	1.3	1.3	-3.0	-0.3	1.2	0.5	0.5	0.2	0.2	0.2	0.2	0.2
United Kingdom	-4.6	-3.3	-2.5	-2.3	-2.5	-13.1	-7.9	-4.7	-6.0	-4.6	-3.7	-3.7	-3.6	-3.5	-3.4
United States ²	-3.5	-4.4	-4.8	-5.3	-5.8	-13.9	-11.1	-4.1	-8.8	-6.5	-7.1	-6.6	-6.2	-6.4	-6.0

Source: IMF staff estimates and projections. Projections are based on staff assessments of current policies (see "Fiscal Policy Assumptions" in text).

Note: For country-specific details, see "Data and Conventions" in text and Table B. G7 = Group of Seven; G20 = Group of Twenty.

¹Data include financial sector support. For Cyprus, 2014 and 2015 balances exclude financial sector support.

²For cross-economy comparison, the expenditures and fiscal balances of the United States are adjusted to exclude the imputed interest on unfunded pension liabilities and the imputed compensation of employees, which are counted as expenditures under the 2008 System of National Accounts (2008 SNA) adopted by the United States, but not in economies that have not yet adopted the 2008 SNA. Data for the United States in this table may therefore differ from data published by the US Bureau of Economic Analysis.

Table A2. Advanced Economies: General Government Primary Balance, 2015–29
(Percent of GDP)

	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
Average	-1.1	-1.1	-1.0	-0.9	-1.6	-9.0	-5.8	-1.3	-3.8	-2.4	-2.1	-1.8	-1.6	-1.6	-1.3
Euro Area	0.1	0.4	0.8	1.2	0.8	-5.7	-3.9	-2.2	-2.0	-1.2	-0.8	-0.5	-0.4	-0.3	-0.2
G7	-1.3	-1.6	-1.6	-1.6	-2.1	-10.0	-7.0	-1.8	-4.7	-3.0	-2.7	-2.3	-2.1	-2.1	-1.8
G20 Advanced	-1.3	-1.5	-1.4	-1.4	-2.1	-9.7	-6.7	-1.8	-4.4	-2.8	-2.5	-2.1	-1.9	-1.9	-1.6
Andorra	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Australia	-1.9	-1.5	-0.8	-0.4	-3.6	-7.8	-5.6	-1.4	0.2	0.0	0.0	0.4	0.7	0.9	1.1
Austria	0.7	0.1	0.6	1.4	1.7	-6.9	-4.9	-2.8	-1.6	-1.6	-1.2	-0.8	-0.8	-0.7	-0.6
Belgium	0.2	0.0	1.4	1.0	-0.3	-7.2	-4.0	-2.3	-3.1	-2.7	-2.8	-3.0	-3.2	-3.2	-3.2
Canada	0.6	0.1	0.1	0.5	0.1	-10.5	-3.6	-0.3	-0.1	-0.5	-0.5	-0.3	-0.2	-0.1	0.0
Croatia	-0.4	1.8	3.2	2.2	4.2	-5.5	-1.1	1.3	1.5	-0.3	0.0	0.2	0.3	0.4	0.3
Cyprus ¹	3.0	2.7	4.2	-1.4	3.3	-3.7	-0.3	3.8	4.3	3.9	3.8	3.7	2.9	2.6	2.3
Czech Republic	0.3	1.5	2.1	1.5	0.8	-5.2	-4.5	-2.7	-2.7	-1.2	-0.7	-0.5	-0.2	0.2	-0.8
Denmark	-0.6	0.4	1.7	0.4	3.9	0.1	3.7	3.1	2.3	1.0	0.3	-0.3	-0.5	-0.7	-0.9
Estonia	-0.4	-1.0	-1.1	-1.2	0.1	-5.4	-2.5	-0.9	-2.8	-2.9	-2.6	-2.3	-2.0	-2.1	-2.0
Finland	-2.3	-1.4	-0.4	-0.7	-0.8	-5.5	-2.9	-0.8	-2.7	-3.2	-3.1	-2.8	-2.4	-2.0	-2.0
France	-1.8	-1.9	-1.3	-0.7	-1.7	-7.8	-5.2	-3.0	-3.8	-2.9	-2.7	-2.1	-1.6	-1.3	-1.1
Germany	2.0	2.1	2.2	2.7	2.1	-3.9	-3.1	-2.0	-1.4	-0.7	-0.4	0.0	0.2	0.4	0.4
Greece	0.6	3.5	4.3	4.2	2.9	-7.5	-5.0	0.1	1.1	2.1	2.1	2.1	2.1	2.1	2.1
Hong Kong SAR	0.6	3.6	4.7	1.0	-2.2	-11.1	-2.7	-9.8	-8.0	-6.9	-3.8	-2.0	-0.2	1.5	1.6
Iceland	3.2	15.5	3.9	3.1	0.5	-6.8	-6.2	-0.9	0.4	-0.4	-0.5	-0.2	0.0	0.1	0.3
Ireland ¹	0.3	1.5	1.6	1.7	1.7	-4.0	-0.8	2.3	2.1	2.1	1.9	1.7	1.3	1.1	0.9
Israel	0.6	0.2	0.7	-1.4	-2.0	-9.0	-1.0	3.8	-2.0	-5.3	-2.5	-1.3	-1.3	-1.3	-1.3
Italy	1.4	1.3	1.2	1.3	1.7	-6.1	-5.4	-4.5	-3.6	-0.6	0.9	1.2	1.4	1.3	1.3
Japan	-2.6	-2.5	-2.2	-1.7	-2.4	-8.4	-5.5	-3.9	-5.6	-6.4	-3.0	-2.7	-2.8	-2.8	-2.9
Korea	0.2	1.4	1.8	2.1	-0.1	-2.7	-0.4	-1.9	-1.2	-0.7	0.1	0.2	0.3	0.3	0.3
Latvia	0.3	0.7	0.3	0.2	0.5	-2.9	-4.8	-3.2	-2.1	-2.1	-1.5	-0.8	-0.4	-0.4	-0.4
Lithuania	1.5	1.8	1.7	1.6	1.2	-6.5	-0.5	-0.3	-0.1	-1.8	-0.8	-0.4	-0.1	0.1	0.2
Luxembourg	1.1	1.6	1.1	2.8	2.0	-3.7	0.3	-0.6	-1.7	-2.4	-1.9	-1.9	-2.0	-2.2	-2.3
Malta	1.5	3.2	5.1	3.4	1.8	-8.3	-6.3	-4.7	-3.7	-3.0	-2.4	-1.9	-1.1	-0.9	-0.9
The Netherlands	-1.0	1.0	2.2	2.2	2.4	-3.2	-1.9	0.3	-0.5	-1.3	-1.4	-1.8	-1.9	-2.2	-2.2
New Zealand	1.0	1.6	2.0	1.9	-1.9	-3.7	-2.5	-2.7	-2.3	-1.8	-0.7	0.2	1.0	1.7	2.0
Norway	3.4	1.5	2.6	5.7	4.5	-4.6	9.1	24.2	9.7	11.2	10.2	9.7	9.3	8.8	8.4
Portugal	-0.1	1.9	0.7	2.9	2.9	-3.1	-0.6	1.5	2.9	2.5	2.5	2.5	2.4	2.4	2.4
Singapore	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Slovak Republic	-1.2	-1.2	0.2	0.1	-0.2	-4.3	-4.5	-1.7	-5.6	-5.0	-4.9	-4.2	-4.3	-4.4	-4.2
Slovenia	0.0	0.7	2.1	2.5	2.2	-6.2	-3.5	-2.1	-2.5	-1.9	-1.6	-1.4	-1.3	-1.0	-0.8
Spain ¹	-2.7	-1.9	-0.9	-0.4	-1.0	-8.1	-4.8	-2.6	-1.8	-0.8	-0.4	-0.4	-0.6	-0.3	-0.3
Sweden	0.0	0.9	1.3	0.7	0.5	-2.9	-0.1	1.5	0.4	-0.3	0.1	0.6	0.5	0.6	0.5
Switzerland	0.8	0.4	1.3	1.4	1.4	-2.9	-0.2	1.3	0.6	0.6	0.3	0.3	0.3	0.3	0.3
United Kingdom	-3.1	-1.7	-0.7	-0.6	-1.0	-12.0	-5.6	-1.0	-3.6	-2.3	-1.3	-1.2	-1.0	-0.8	-0.6
United States ²	-1.7	-2.4	-2.8	-3.1	-3.5	-11.9	-8.8	-1.3	-5.8	-3.3	-3.7	-3.2	-2.9	-3.1	-2.6

Source: IMF staff estimates and projections. Projections are based on staff assessments of current policies (see "Fiscal Policy Assumptions" in text).

Note: "Primary balance" is defined as the overall balance, excluding net interest payments. For country-specific details, see "Data and Conventions" in text and Table B. G7 = Group of Seven; G20 = Group of Twenty.

¹ Data include financial sector support. For Cyprus, 2014 and 2015 balances exclude financial sector support.

² For cross-economy comparison, the expenditures and fiscal balances of the United States are adjusted to exclude the imputed interest on unfunded pension liabilities and the imputed compensation of employees, which are counted as expenditures under the 2008 System of National Accounts (2008 SNA) adopted by the United States, but not in economies that have not yet adopted the 2008 SNA. Data for the United States in this table may therefore differ from data published by the US Bureau of Economic Analysis.

Table A3. Advanced Economies: General Government Cyclically Adjusted Balance, 2015–29
(Percent of potential GDP)

	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
Average	-2.0	-2.2	-2.4	-2.6	-3.3	-7.8	-6.8	-4.9	-5.7	-4.6	-4.4	-4.1	-3.9	-4.0	-3.8
Euro Area	-0.6	-0.5	-0.6	-0.4	-0.8	-4.4	-4.2	-3.9	-3.4	-2.6	-2.4	-2.3	-2.3	-2.2	-2.2
G7	-2.2	-2.7	-3.1	-3.3	-4.0	-9.0	-8.1	-5.7	-6.9	-5.4	-5.2	-4.8	-4.6	-4.7	-4.5
G20 Advanced	-2.1	-2.5	-2.8	-3.0	-3.8	-8.6	-7.7	-5.5	-6.5	-5.1	-4.9	-4.5	-4.3	-4.4	-4.2
Andorra	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Australia ¹	-2.6	-2.2	-1.5	-1.0	-4.1	-7.8	-6.0	-2.3	-1.1	-1.5	-1.5	-1.1	-0.8	-0.5	-0.3
Austria	-0.6	-1.3	-0.9	-0.3	0.2	-6.8	-4.5	-4.3	-2.3	-2.1	-2.1	-1.9	-2.0	-1.9	-1.9
Belgium	-2.4	-2.3	-0.8	-1.2	-2.7	-6.2	-5.3	-4.0	-5.0	-4.6	-4.8	-5.0	-5.4	-5.5	-5.6
Canada	0.0	-0.1	-0.3	0.1	-0.2	-9.3	-2.3	-0.2	-0.6	-0.9	-0.9	-0.7	-0.7	-0.6	-0.5
Croatia	-3.1	-0.8	0.9	0.2	2.1	-5.4	-3.5	-0.8	-0.5	-1.9	-1.5	-1.2	-1.0	-1.0	-1.0
Cyprus	2.3	1.4	1.9	2.8	1.0	-3.4	-1.8	1.4	2.0	1.7	1.7	1.7	1.0	0.7	0.6
Czech Republic	-0.4	0.7	0.8	0.1	-0.8	-5.5	-5.4	-3.4	-3.1	-1.8	-1.7	-1.5	-1.3	-0.9	-1.9
Denmark	-0.6	-0.4	0.8	-0.3	3.5	3.0	3.4	2.3	2.0	0.6	0.2	0.2	-0.1	-0.2	-0.4
Estonia	-0.2	-0.7	-1.4	-1.5	-0.4	-4.8	-3.3	-1.1	-1.9	-2.2	-2.7	-2.7	-2.6	-2.7	-2.7
Finland	0.1	-0.4	-0.9	-1.0	-1.3	-3.6	-2.5	-1.0	-1.5	-1.8	-2.2	-2.3	-2.3	-2.1	-2.3
France	-2.1	-2.0	-2.0	-1.8	-3.1	-6.0	-5.1	-4.2	-4.9	-4.4	-4.4	-4.1	-4.0	-3.9	-3.8
Germany	1.2	1.1	0.8	1.5	1.3	-2.9	-3.0	-2.9	-1.9	-0.9	-0.8	-0.7	-0.6	-0.5	-0.5
Greece	4.1	6.7	6.4	4.9	2.8	-2.4	-3.9	-1.8	-1.6	-1.2	-1.2	-1.3	-1.4	-1.4	-1.4
Hong Kong SAR	0.7	4.7	5.5	2.3	0.3	-5.5	1.0	-4.6	-4.4	-3.4	-1.6	-0.6	0.8	2.2	2.0
Iceland	0.1	11.8	0.0	-1.0	-3.3	-5.3	-6.3	-4.8	-3.0	-2.3	-1.8	-1.4	-1.5	-1.6	-1.6
Ireland ²	-1.4	-1.5	-0.9	-0.3	0.3	-4.3	-2.3	1.5	1.4	1.3	1.3	1.1	0.8	0.6	0.5
Israel	-0.8	-1.6	-1.3	-3.9	-4.3	-9.5	-3.5	-0.2	-5.3	-7.7	-5.7	-4.4	-4.3	-4.2	-4.2
Italy	-0.1	-0.6	-1.3	-1.4	-0.9	-6.0	-6.8	-8.6	-7.5	-4.8	-3.6	-2.8	-2.3	-2.4	-2.5
Japan	-4.5	-4.5	-3.7	-3.0	-3.3	-8.1	-5.4	-4.3	-5.8	-6.6	-3.2	-2.9	-3.1	-3.4	-3.9
Korea	0.7	1.8	2.3	2.6	0.5	-1.5	0.1	-1.7	-0.9	-0.5	0.1	0.2	0.2	0.2	0.2
Latvia	-1.8	-1.1	-1.9	-2.2	-1.1	-2.2	-5.8	-4.3	-2.3	-2.5	-2.2	-1.7	-1.1	-1.2	-1.2
Lithuania	0.1	0.6	0.5	0.5	0.1	-5.9	-1.9	-1.3	-0.8	-2.5	-1.7	-1.3	-1.3	-1.2	-1.1
Luxembourg	1.7	1.1	1.0	3.0	1.9	-2.6	-0.6	-1.2	-1.4	-1.4	-1.1	-1.2	-1.4	-1.5	-1.6
Malta	-1.5	2.0	2.5	0.6	-1.8	-5.6	-6.6	-5.9	-5.3	-4.8	-4.2	-3.6	-3.0	-2.8	-2.7
The Netherlands	-1.8	0.2	0.7	0.5	0.6	-1.2	-2.1	-1.3	-1.4	-1.7	-1.8	-2.5	-2.9	-3.3	-3.3
New Zealand	-0.4	0.1	0.3	0.2	-2.8	-4.7	-4.5	-5.1	-4.9	-4.2	-2.8	-1.9	-1.2	-0.5	-0.3
Norway ²	-7.0	-7.8	-8.1	-7.5	-7.9	-12.1	-10.9	-9.5	-9.6	-10.1	-10.3	-10.2	-10.1	-10.1	-10.1
Portugal	-1.1	0.2	-2.3	-0.5	-0.7	-2.7	-1.5	-1.4	0.1	0.0	0.0	0.1	0.2	0.2	0.2
Singapore	-0.7	0.7	1.8	0.7	1.7	-7.9	-1.2	-0.7	1.0	0.9	1.2	0.9	0.8	0.5	0.3
Slovak Republic	-3.3	-3.1	-1.5	-1.6	-1.7	-3.9	-5.0	-2.3	-6.2	-5.8	-6.1	-5.6	-5.7	-5.7	-5.6
Slovenia	-1.1	-1.1	-0.4	-0.5	-1.0	-6.5	-5.7	-3.9	-3.7	-3.0	-2.7	-2.5	-2.4	-2.2	-2.2
Spain ²	-2.1	-2.5	-2.4	-2.2	-3.1	-4.5	-4.0	-4.5	-3.7	-3.2	-3.2	-3.2	-3.3	-3.1	-3.0
Sweden ²	-0.7	0.7	0.9	0.3	-0.1	-1.5	-0.5	0.6	0.0	-0.1	0.2	0.5	0.4	0.4	0.3
Switzerland ²	0.5	0.2	1.1	1.1	1.2	-2.3	-0.2	1.0	0.5	0.6	0.3	0.2	0.2	0.2	0.2
United Kingdom ^{2,3}	-3.4	-2.3	-2.1	-2.0	-2.4	-11.0	-7.3	-5.7	-6.1	-3.9	-2.9	-3.0	-3.2	-3.3	-3.3
United States ^{2,3}	-2.5	-3.6	-4.3	-5.1	-6.0	-10.6	-10.8	-6.8	-8.6	-6.7	-7.1	-6.5	-6.2	-6.4	-5.9

Source: IMF staff estimates and projections. Projections are based on staff assessments of current policies (see "Fiscal Policy Assumptions" in text).

Note: For country-specific details, see "Data and Conventions" in text and Table B. G7 = Group of Seven; G20 = Group of Twenty.

¹Data are based on the fiscal year-based potential GDP.

²Data for these economies include adjustments beyond the output cycle.

³For cross-economy comparison, the expenditures and fiscal balances of the United States are adjusted to exclude the imputed interest on unfunded pension liabilities and the imputed compensation of employees, which are counted as expenditures under the 2008 System of National Accounts (2008 SNA) adopted by the United States, but not in economies that have not yet adopted the 2008 SNA. Data for the United States in this table may therefore differ from data published by the US Bureau of Economic Analysis.

Table A4. Advanced Economies: General Government Cyclically Adjusted Primary Balance, 2015–29
(Percent of potential GDP)

	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
Average	-0.5	-0.7	-0.9	-1.1	-1.9	-6.6	-5.5	-3.1	-3.9	-2.6	-2.3	-1.9	-1.7	-1.7	-1.5
Euro Area	1.4	1.3	1.1	1.3	0.7	-3.1	-2.9	-2.3	-1.9	-0.9	-0.6	-0.4	-0.2	-0.2	-0.1
G7	-0.6	-1.0	-1.4	-1.5	-2.2	-7.4	-6.4	-3.5	-4.5	-2.9	-2.6	-2.2	-2.0	-2.1	-1.7
G20 Advanced	-0.6	-0.9	-1.2	-1.3	-2.2	-7.2	-6.1	-3.3	-4.3	-2.7	-2.4	-2.0	-1.8	-1.9	-1.6
Andorra	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Australia ¹	-1.6	-1.3	-0.6	-0.1	-3.3	-7.0	-5.1	-1.4	0.0	-0.2	0.0	0.3	0.7	0.9	1.1
Austria	1.2	0.4	0.6	1.0	1.3	-5.8	-3.7	-3.6	-1.5	-1.1	-0.9	-0.8	-0.8	-0.7	-0.6
Belgium	0.2	0.0	1.3	0.6	-1.0	-4.6	-3.9	-2.8	-3.5	-2.9	-2.9	-3.1	-3.2	-3.2	-3.2
Canada	0.6	0.5	-0.1	0.2	0.0	-8.8	-2.9	-0.6	-0.1	-0.3	-0.4	-0.3	-0.2	-0.1	0.0
Croatia	0.0	2.0	3.3	2.3	4.1	-3.7	-2.1	0.5	0.8	-0.7	-0.2	0.2	0.3	0.4	0.3
Cyprus	4.3	3.2	3.6	4.5	2.6	-1.9	-0.6	2.4	3.0	2.8	2.8	2.8	2.2	1.9	1.8
Czech Republic	0.5	1.5	1.5	0.7	-0.3	-4.9	-4.8	-2.8	-2.3	-0.8	-0.6	-0.5	-0.2	0.2	-0.8
Denmark	0.2	0.1	0.7	-0.7	3.2	2.7	3.0	2.0	1.5	0.1	-0.2	-0.3	-0.5	-0.7	-0.9
Estonia	-0.3	-0.8	-1.5	-1.5	-0.4	-4.8	-3.4	-1.0	-1.6	-1.6	-2.1	-2.1	-1.9	-2.1	-2.0
Finland	0.3	-0.1	-0.7	-0.9	-1.2	-3.5	-2.5	-1.1	-1.4	-1.5	-1.9	-2.0	-2.0	-1.8	-2.0
France	-0.3	-0.3	-0.4	-0.2	-1.7	-4.9	-3.9	-2.4	-3.3	-2.4	-2.3	-1.7	-1.4	-1.1	-0.9
Germany	2.2	2.0	1.7	2.3	1.9	-2.5	-2.6	-2.4	-1.2	-0.1	0.1	0.2	0.3	0.4	0.4
Greece	7.1	9.5	9.2	8.0	5.7	0.2	-1.6	0.7	1.1	1.9	1.8	1.9	2.0	2.1	2.1
Hong Kong SAR	0.7	3.9	4.7	0.9	-1.3	-7.3	-1.7	-7.7	-6.6	-5.8	-2.9	-1.3	0.2	1.8	1.6
Iceland	3.6	14.8	3.1	1.2	-1.1	-3.3	-4.1	-1.6	-0.6	-0.6	-0.4	-0.1	0.0	0.2	0.3
Ireland ²	1.0	0.8	1.0	1.3	1.6	-3.3	-1.5	2.1	2.0	1.9	1.9	1.7	1.3	1.1	0.9
Israel	0.9	0.3	0.7	-1.7	-2.4	-7.7	-0.9	3.0	-2.3	-4.9	-2.8	-1.4	-1.4	-1.3	-1.3
Italy	3.7	3.0	2.2	2.0	2.3	-2.9	-3.6	-4.6	-3.9	-0.8	0.5	1.4	1.9	1.8	1.8
Japan	-3.4	-3.4	-2.7	-2.2	-2.6	-7.5	-4.8	-3.9	-5.7	-6.5	-3.0	-2.7	-2.8	-2.8	-3.0
Korea	0.4	1.5	2.0	2.2	0.0	-2.0	-0.3	-1.9	-1.1	-0.6	0.1	0.2	0.3	0.3	0.3
Latvia	0.0	0.1	-0.8	-1.2	-0.2	-1.4	-5.0	-3.8	-1.7	-1.6	-1.1	-0.6	-0.3	-0.4	-0.4
Lithuania	1.8	2.1	1.8	1.6	1.1	-5.2	-1.4	-0.9	-0.1	-1.7	-0.8	-0.4	-0.1	0.1	0.2
Luxembourg	1.5	0.9	0.8	2.8	1.7	-2.9	-0.9	-1.5	-1.6	-1.7	-1.5	-1.7	-2.0	-2.2	-2.4
Malta	0.8	4.1	4.3	2.1	-0.5	-4.4	-5.6	-5.0	-4.2	-3.5	-2.6	-1.9	-1.1	-0.9	-0.9
The Netherlands	-0.8	1.1	1.6	1.2	1.2	-0.7	-1.8	-0.9	-0.8	-1.1	-1.0	-1.7	-1.9	-2.2	-2.2
New Zealand	0.3	0.7	0.9	0.8	-2.2	-4.0	-3.7	-4.2	-3.7	-2.5	-1.1	0.0	0.8	1.6	1.7
Norway ²	-10.1	-10.7	-10.9	-10.1	-10.3	-14.4	-12.6	-11.5	-15.6	-15.2	-14.6	-13.9	-13.2	-13.0	-12.8
Portugal	3.0	3.9	1.3	2.7	2.2	-0.1	0.8	0.4	2.1	2.2	2.3	2.4	2.4	2.4	2.4
Singapore	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Slovak Republic	-1.8	-1.6	-0.3	-0.5	-0.6	-3.0	-4.1	-1.5	-5.4	-4.8	-4.9	-4.2	-4.4	-4.4	-4.3
Slovenia	1.6	1.5	1.8	1.3	0.6	-5.1	-4.6	-2.9	-2.8	-2.0	-1.6	-1.4	-1.3	-0.9	-0.8
Spain ²	0.4	-0.2	-0.2	0.0	-1.0	-2.6	-2.1	-2.3	-1.8	-0.8	-0.6	-0.5	-0.6	-0.3	-0.3
Sweden ²	-0.7	0.7	0.9	0.3	-0.2	-1.6	-0.6	0.8	0.4	0.4	0.5	0.8	0.5	0.6	0.6
Switzerland ²	0.8	0.4	1.3	1.1	1.3	-2.3	0.0	1.1	0.6	0.7	0.3	0.3	0.3	0.3	0.2
United Kingdom ²	-1.9	-0.7	-0.2	-0.3	-0.9	-9.9	-5.1	-2.0	-3.7	-1.7	-0.5	-0.5	-0.6	-0.6	-0.6
United States ^{2,3}	-0.8	-1.6	-2.3	-2.9	-3.7	-8.6	-8.5	-4.0	-5.5	-3.4	-3.7	-3.1	-2.9	-3.1	-2.5

Source: IMF staff estimates and projections. Projections are based on staff assessments of current policies (see "Fiscal Policy Assumptions" in text).

Note: "Cyclically adjusted primary balance" is defined as the cyclically adjusted balance plus net interest payable/paid (interest expense minus interest revenue) following the *World Economic Outlook* convention. For economy-specific details, see "Data and Conventions" in text and Table B. G7 = Group of Seven; G20 = Group of Twenty.

¹Data are based on the fiscal year–based potential GDP.

²The data for these economies include adjustments beyond the output cycle.

³For cross-economy comparison, expenditures and fiscal balances of the United States are adjusted to exclude the imputed interest on unfunded pension liabilities and the imputed compensation of employees, which are counted as expenditures under the 2008 System of National Accounts (2008 SNA) adopted by the United States, but not in economies that have not yet adopted the 2008 SNA. Data for the United States in this table may therefore differ from data published by the US Bureau of Economic Analysis.

Table A5. Advanced Economies: General Government Revenue, 2015–29
(Percent of GDP)

	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
Average	36.1	35.9	35.8	35.9	35.6	36.0	37.0	37.4	35.5	35.9	36.0	36.2	36.3	36.2	36.3
Euro Area	46.4	46.3	46.2	46.4	46.3	46.4	47.0	46.8	46.4	46.3	46.4	46.4	46.3	46.3	46.3
G7	36.2	35.9	35.7	35.7	35.5	36.0	37.0	37.4	35.1	35.7	35.8	36.1	36.2	36.2	36.3
G20 Advanced	35.5	35.3	35.1	35.2	35.0	35.5	36.5	37.0	34.8	35.3	35.3	35.7	35.7	35.7	35.8
Andorra	35.0	38.6	38.2	38.6	38.2	41.3	37.9	39.7	38.8	38.5	39.4	39.5	39.5	39.6	39.6
Australia	34.5	34.8	35.0	35.6	34.5	35.7	35.4	35.3	36.2	35.2	33.9	33.7	33.8	33.9	34.0
Austria	50.0	48.5	48.5	48.9	49.2	48.8	50.4	49.6	49.1	49.5	49.3	49.2	49.2	49.2	49.2
Belgium	51.3	50.8	51.3	51.4	49.9	49.9	49.5	49.6	50.1	50.7	50.6	50.5	50.5	50.6	50.6
Canada	40.0	40.3	40.3	41.0	40.6	41.4	42.5	41.1	41.8	41.1	41.1	41.1	41.1	41.1	41.1
Croatia	44.1	44.9	44.9	45.3	46.4	46.7	46.1	45.0	46.4	45.7	46.1	45.5	43.4	43.4	43.6
Cyprus	39.5	37.5	38.3	39.0	39.4	38.5	40.0	41.2	42.9	43.4	43.4	43.3	42.7	42.7	42.7
Czech Republic	41.3	40.5	40.5	41.5	41.3	41.5	41.4	41.4	42.5	41.7	41.3	41.3	41.0	40.7	40.5
Denmark	53.2	52.4	52.3	51.3	53.8	53.9	53.9	48.3	49.5	49.2	49.2	49.1	49.3	49.3	49.3
Estonia	39.1	38.4	38.2	38.1	39.3	39.4	39.4	38.8	40.1	40.8	40.5	41.1	40.6	40.5	40.6
Finland	54.1	53.9	53.0	52.5	52.4	51.6	53.0	52.7	52.5	51.7	51.6	51.5	51.5	51.4	51.4
France	53.2	53.0	53.5	53.4	52.3	52.4	52.6	53.5	51.8	52.0	51.9	51.8	51.8	51.8	51.8
Germany	45.1	45.5	45.5	46.3	46.5	46.1	47.3	47.0	46.1	46.3	46.5	46.7	46.9	47.1	47.3
Greece	48.6	50.6	49.8	49.7	48.0	49.7	50.2	50.5	47.1	46.8	47.0	46.1	44.9	43.9	43.7
Hong Kong SAR	18.6	22.6	22.9	20.7	20.4	20.7	23.7	21.6	18.2	19.6	20.7	21.5	21.7	22.2	22.2
Iceland	43.1	59.0	45.4	44.8	42.0	42.2	41.1	42.5	43.1	43.0	41.9	41.2	40.9	40.9	40.9
Ireland	27.0	27.4	25.8	25.4	24.8	22.2	22.9	22.9	24.7	25.1	25.1	25.1	24.9	24.8	24.8
Israel	36.4	36.2	37.2	35.6	34.8	34.1	36.5	37.2	34.0	35.7	35.3	35.5	35.6	35.8	36.0
Italy	47.8	46.7	46.3	46.2	47.0	47.4	47.5	47.7	47.8	46.3	47.1	47.1	47.0	47.0	47.0
Japan	33.6	33.6	33.6	34.3	34.2	35.5	36.4	37.6	36.5	35.8	36.5	36.5	36.5	36.5	36.5
Korea	20.3	21.1	21.8	22.9	22.9	22.9	25.7	27.1	23.9	23.9	24.4	24.4	24.4	24.4	24.4
Latvia	35.9	35.6	35.7	37.3	37.3	37.7	37.6	37.2	37.1	37.8	37.6	37.6	37.6	37.5	37.5
Lithuania	34.2	33.6	32.9	33.7	34.0	34.7	36.1	35.5	37.1	35.9	36.0	35.9	35.8	35.9	35.8
Luxembourg	41.7	41.9	42.6	45.3	45.3	43.5	43.4	43.6	46.4	47.0	47.8	47.9	48.2	48.4	48.7
Malta	37.7	37.5	37.7	37.9	36.2	35.7	35.5	33.8	35.1	34.1	33.7	33.4	33.3	33.3	33.3
The Netherlands	42.9	43.8	43.8	43.8	43.9	44.1	43.8	43.4	43.0	43.0	43.2	43.3	43.4	43.3	43.4
New Zealand	37.6	37.4	37.0	37.4	36.3	37.7	38.6	38.4	37.6	37.7	38.2	38.6	38.9	39.1	38.3
Norway	54.2	54.4	54.2	55.5	56.7	54.2	56.6	63.1	59.1	58.2	55.6	55.0	54.6	54.6	54.5
Portugal	43.8	42.9	42.4	42.9	42.5	43.4	44.6	43.8	43.4	43.4	43.3	43.1	42.7	42.6	42.6
Singapore	17.3	18.6	18.9	17.6	17.8	17.4	16.8	16.6	18.6	18.5	19.2	19.5	19.8	19.8	19.8
Slovak Republic	42.9	40.0	38.5	38.7	39.3	39.4	40.2	39.8	41.5	41.0	40.0	39.3	38.9	38.9	39.0
Slovenia	45.9	44.2	44.0	44.2	44.1	43.7	44.9	44.1	44.0	44.2	43.5	43.5	43.5	43.5	43.6
Spain	38.7	38.2	38.2	39.2	39.2	41.8	43.3	42.6	42.8	43.0	42.9	42.8	42.0	42.0	42.0
Sweden	48.4	49.8	49.6	49.6	48.7	48.3	48.1	48.1	47.1	47.4	47.9	48.9	48.9	48.9	48.9
Switzerland	33.0	32.7	33.6	33.0	33.3	34.0	34.2	33.1	32.5	32.5	32.4	32.4	32.4	32.4	32.4
United Kingdom	35.8	36.3	36.7	36.6	36.3	36.8	38.0	39.7	38.6	39.5	39.9	39.6	39.6	39.6	39.7
United States	31.5	31.0	30.4	30.0	30.0	30.7	31.7	32.7	29.3	30.5	30.4	31.0	31.2	31.2	31.3

Source: IMF staff estimates and projections. Projections are based on staff assessments of current policies (see "Fiscal Policy Assumptions" in text).

Note: For economy-specific details, see "Data and Conventions" in text and Table B. G7 = Group of Seven; G20 = Group of Twenty.

Table A6. Advanced Economies: General Government Expenditure, 2015–29
(Percent of GDP)

	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
Average	38.7	38.6	38.2	38.3	38.6	46.2	44.2	40.5	41.1	40.3	40.2	40.1	40.0	40.1	39.9
Euro Area	48.4	47.7	47.1	46.9	46.9	53.4	52.2	50.5	49.9	49.2	49.0	48.8	48.7	48.6	48.7
G7	39.2	39.2	39.0	39.1	39.3	47.6	45.7	41.5	42.1	41.2	41.1	41.1	41.0	41.0	40.8
G20 Advanced	38.4	38.4	38.1	38.2	38.7	46.6	44.8	40.9	41.4	40.5	40.3	40.3	40.2	40.2	40.0
Andorra	33.3	34.6	34.9	35.9	35.8	42.3	39.0	34.9	36.5	36.2	36.8	36.8	36.9	37.1	37.0
Australia	37.2	37.3	36.7	36.8	38.9	44.4	41.8	37.6	37.1	36.6	35.3	34.8	34.6	34.4	34.3
Austria	51.0	50.1	49.3	48.8	48.7	56.8	56.2	53.2	51.6	52.1	51.6	51.2	51.2	51.2	51.2
Belgium	53.7	53.1	52.0	52.3	51.9	58.8	54.8	53.2	54.8	55.1	55.3	55.5	55.8	56.1	56.2
Canada	40.0	40.8	40.5	40.7	40.6	52.4	45.4	41.0	42.4	42.2	42.0	41.9	41.8	41.7	41.6
Croatia	47.6	46.0	44.1	45.1	44.2	54.0	48.6	44.9	46.2	47.2	47.4	46.6	44.4	44.4	44.6
Cyprus	39.5	37.3	36.4	42.6	38.1	44.2	41.9	38.8	39.9	40.9	41.0	41.0	41.3	41.7	41.8
Czech Republic	41.9	39.8	39.0	40.6	41.1	47.2	46.5	44.6	46.1	43.9	43.1	42.8	42.3	41.6	42.4
Denmark	54.5	52.5	50.5	50.5	49.7	53.5	49.8	45.0	46.8	47.7	48.5	49.0	49.3	49.5	49.7
Estonia	39.5	39.4	39.2	39.3	39.1	44.9	41.9	39.8	43.1	44.3	43.8	44.0	43.2	43.2	43.2
Finland	56.5	55.6	53.6	53.4	53.3	57.2	55.8	53.5	55.3	55.2	55.1	54.6	54.3	53.7	53.7
France	56.8	56.7	56.5	55.6	55.4	61.3	59.1	58.3	57.3	56.9	56.8	56.3	56.1	56.0	55.7
Germany	44.1	44.4	44.2	44.3	45.0	50.5	50.9	49.5	48.3	47.8	47.8	47.6	47.6	47.6	47.8
Greece	51.6	50.3	48.7	48.9	48.1	60.2	57.7	52.9	48.8	47.7	47.8	47.1	46.2	45.3	45.1
Hong Kong SAR	18.0	18.3	17.4	18.4	21.0	29.9	23.7	28.2	23.9	24.1	23.1	22.8	21.4	20.2	20.2
Iceland	43.5	46.4	44.4	43.8	43.6	51.1	49.5	46.5	45.1	45.0	43.8	42.7	42.5	42.5	42.5
Ireland	29.0	28.1	26.1	25.3	24.3	27.2	24.4	21.2	23.2	23.7	23.9	24.0	24.1	24.2	24.3
Israel	37.5	37.9	38.4	39.2	38.7	44.9	40.1	36.6	39.0	43.8	40.7	39.7	39.8	40.0	40.2
Italy	50.3	49.1	48.8	48.4	48.5	56.8	56.3	56.3	55.0	50.9	50.3	50.1	49.8	49.9	50.0
Japan	37.3	37.2	36.7	36.7	37.3	44.5	42.5	41.9	42.2	42.3	39.7	39.4	39.6	39.9	40.2
Korea	19.7	19.5	19.6	20.4	22.6	25.1	25.7	28.7	24.9	24.5	24.3	24.3	24.2	24.2	24.2
Latvia	37.4	36.1	36.5	38.1	37.7	41.4	43.2	40.9	39.8	40.8	40.0	39.5	38.8	38.7	38.7
Lithuania	34.4	33.3	32.4	33.2	33.7	41.9	37.1	36.1	37.9	38.5	37.7	37.2	37.1	37.1	36.8
Luxembourg	40.4	40.0	41.3	42.3	43.1	47.0	42.9	43.9	47.8	49.1	49.3	49.2	49.5	49.8	50.2
Malta	38.5	36.4	34.5	36.0	35.7	45.3	42.9	39.4	39.8	38.4	37.7	37.0	36.2	36.1	36.1
The Netherlands	44.8	43.6	42.5	42.3	42.1	47.8	46.1	43.5	44.1	45.0	45.3	45.9	46.2	46.6	46.7
New Zealand	37.2	36.5	35.6	36.1	38.8	42.1	41.8	42.0	41.1	41.3	40.8	40.4	39.9	39.5	38.4
Norway	48.2	50.4	49.2	47.7	50.2	56.7	46.3	37.6	45.0	43.4	42.3	42.6	43.1	43.7	44.1
Portugal	48.1	44.8	45.4	43.2	42.4	49.2	47.5	44.1	42.4	43.2	43.1	42.9	42.4	42.3	42.3
Singapore	14.4	15.3	13.6	13.9	14.0	24.1	15.7	15.4	15.1	13.4	15.5	16.2	16.7	17.0	17.2
Slovak Republic	45.6	42.5	39.5	39.7	40.5	44.8	45.6	42.3	47.9	47.0	46.2	44.8	44.6	44.6	44.5
Slovenia	48.7	46.2	44.1	43.5	43.4	51.4	49.5	47.0	47.4	47.2	46.2	46.0	45.9	45.8	45.8
Spain	44.0	42.5	41.3	41.8	42.3	51.9	50.0	47.4	46.4	46.2	46.0	46.0	45.3	45.0	45.0
Sweden	48.4	48.8	48.3	48.8	48.1	51.1	48.1	46.8	47.2	48.0	48.1	48.6	48.6	48.6	48.6
Switzerland	32.5	32.4	32.4	31.7	32.0	37.0	34.5	31.9	32.0	32.0	32.1	32.2	32.2	32.2	32.2
United Kingdom	40.4	39.6	39.2	38.9	38.7	49.9	45.9	44.4	44.7	44.1	43.6	43.3	43.2	43.1	43.1
United States ¹	35.0	35.3	35.2	35.3	35.8	44.6	42.8	36.8	38.1	37.0	37.5	37.6	37.5	37.6	37.2

Source: IMF staff estimates and projections. Projections are based on staff assessments of current policies (see "Fiscal Policy Assumptions" in text).

Note: For economy-specific details, see "Data and Conventions" in text and Table B. G7 = Group of Seven; G20 = Group of Twenty.

¹For cross-economy comparison, expenditures and fiscal balances of the United States are adjusted to exclude the imputed interest on unfunded pension liabilities and the imputed compensation of employees, which are counted as expenditures under the 2008 System of National Accounts (2008 SNA) adopted by the United States, but not in economies that have not yet adopted the 2008 SNA. Data for the United States in this table may therefore differ from data published by the US Bureau of Economic Analysis.

Table A7. Advanced Economies: General Government Gross Debt, 2015–29
(Percent of GDP)

	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
Average ¹	103.2	105.6	103.2	102.8	103.9	122.4	116.2	111.2	111.0	111.2	112.4	113.4	114.0	114.7	115.1
Euro Area	91.3	90.4	88.1	86.1	84.1	97.2	94.7	90.8	88.6	88.7	88.3	88.2	87.9	87.9	87.7
G7	116.3	119.4	117.2	117.0	118.0	139.6	132.8	126.7	126.1	126.5	128.4	129.7	130.6	131.8	132.5
G20 Advanced	110.7	113.7	111.5	111.4	112.8	133.4	126.8	121.4	121.1	121.5	123.3	124.5	125.3	126.3	126.9
Andorra	41.0	39.8	37.9	36.3	35.4	46.4	48.6	38.9	36.4	34.7	33.4	32.3	31.3	30.8	30.3
Australia ²	37.7	40.6	41.2	41.7	46.7	57.0	55.5	50.1	49.4	49.6	49.3	48.8	47.5	45.7	43.8
Austria	84.4	82.5	78.6	74.1	70.6	83.0	82.5	78.4	75.5	75.4	75.4	75.5	75.8	76.0	76.0
Belgium	105.2	105.0	102.0	99.9	97.6	111.8	108.0	104.3	104.5	105.4	107.1	109.2	111.5	113.5	115.6
Canada ²	92.0	92.4	90.9	90.8	90.2	118.2	113.5	107.4	107.1	104.7	102.1	100.2	98.6	97.1	95.4
Croatia	83.0	79.5	76.3	73.1	70.9	86.8	78.1	68.2	63.5	59.5	58.4	57.1	56.0	54.9	54.0
Cyprus	106.8	102.6	92.6	101.1	93.0	114.9	99.3	85.6	77.4	70.7	65.1	60.0	56.0	52.8	50.0
Czech Republic	39.7	36.6	34.2	32.1	30.0	37.7	42.0	44.2	44.2	45.1	45.2	45.1	44.7	43.7	43.9
Denmark	39.8	37.2	35.9	34.0	33.7	42.3	36.0	29.8	30.4	29.2	28.6	28.6	28.8	29.1	29.6
Estonia	10.1	10.0	9.1	8.2	8.5	18.6	17.8	18.5	20.7	23.0	25.5	27.6	29.3	30.9	32.4
Finland	68.3	68.0	66.0	64.8	64.9	74.7	72.6	73.5	76.7	80.0	82.6	84.7	85.8	86.5	87.2
France	95.6	98.0	98.1	97.8	97.4	114.7	113.0	111.8	110.6	111.6	112.8	113.4	114.1	114.6	115.2
Germany	71.9	69.0	65.2	61.9	59.6	68.8	69.0	66.1	64.3	63.7	62.3	61.0	59.8	58.7	57.7
Greece	179.1	183.7	183.2	190.7	185.5	213.2	201.1	179.5	168.8	158.8	152.0	148.1	144.5	141.5	138.8
Hong Kong SAR ²	0.1	0.1	0.1	0.1	0.3	1.0	1.9	4.3	6.5	9.0	11.2	12.9	13.0	14.5	16.1
Iceland	97.3	82.5	71.7	63.2	66.5	77.5	74.8	67.4	64.8	58.7	56.2	53.5	50.9	48.6	46.5
Ireland	76.5	74.4	67.4	62.9	57.1	58.1	54.4	44.4	43.3	41.2	38.6	36.4	34.7	33.3	32.1
Israel	63.2	61.8	59.8	60.1	59.2	70.9	67.8	60.5	61.9	67.3	67.3	67.8	68.1	68.3	68.5
Italy	135.3	134.8	134.2	134.5	134.2	154.9	147.1	140.5	137.3	139.2	140.4	142.6	143.1	144.7	144.9
Japan	228.3	232.4	231.3	232.4	236.4	258.3	253.9	257.2	252.4	254.6	252.6	251.3	251.0	251.0	251.7
Korea	40.8	41.2	40.1	40.0	42.1	48.7	51.3	53.8	55.2	56.6	57.3	57.9	58.4	58.9	59.4
Latvia	37.1	40.4	39.0	37.0	36.7	42.2	44.0	41.5	43.5	43.2	42.9	42.6	41.8	41.0	40.2
Lithuania	42.7	39.9	39.3	33.7	35.8	46.2	43.4	37.8	35.6	36.2	35.7	35.0	34.2	33.5	32.7
Luxembourg	21.1	19.6	21.8	20.9	22.4	24.6	24.5	24.7	25.7	28.0	28.7	29.5	30.1	30.7	31.3
Malta	56.2	54.7	47.8	43.4	40.0	52.2	53.9	51.6	51.8	53.6	55.0	56.3	56.2	56.1	55.9
The Netherlands	64.6	61.9	57.0	52.4	48.5	54.7	51.6	50.1	47.2	47.7	48.2	48.9	49.8	51.1	52.6
New Zealand	34.2	33.4	31.1	28.1	31.8	43.3	47.5	47.2	45.9	47.4	48.7	48.8	48.8	47.5	45.4
Norway	34.3	37.9	38.3	39.4	40.6	46.1	41.7	36.3	41.8	38.0	35.5	34.3	32.9	31.5	30.0
Portugal	131.2	131.5	126.1	121.5	116.6	134.9	124.5	112.4	99.0	94.7	90.8	87.0	83.5	80.1	76.9
Singapore	102.2	106.5	107.8	109.4	127.8	148.1	142.9	158.2	162.1	162.5	163.1	163.8	164.5	165.2	165.6
Slovak Republic	51.7	52.3	51.5	49.4	48.0	58.9	61.1	57.8	57.9	59.3	60.3	63.5	66.7	69.7	72.4
Slovenia	82.6	78.5	74.2	70.3	65.4	79.6	74.4	72.3	68.5	67.5	67.1	66.4	65.7	64.8	63.4
Spain	103.3	102.7	101.8	100.4	98.2	120.3	116.8	111.6	107.5	106.3	104.9	105.0	105.1	104.6	104.2
Sweden	43.7	42.3	40.7	39.2	35.6	39.9	36.5	32.9	35.9	36.0	35.0	34.0	33.0	32.2	31.4
Switzerland	42.2	40.9	41.8	39.8	39.6	43.2	41.1	37.6	38.3	36.7	35.6	34.3	33.3	32.1	31.1
United Kingdom	87.9	87.8	86.7	86.3	85.7	105.8	105.2	100.4	101.1	104.3	106.4	107.3	108.3	109.2	110.1
United States ²	104.6	106.6	105.5	106.8	108.1	132.0	125.0	120.0	122.1	123.3	126.6	128.9	130.7	132.6	133.9

Source: IMF staff estimates and projections. Projections are based on staff assessments of current policies (see "Fiscal Policy Assumptions" in text).

Note: For economy-specific details, see "Data and Conventions" in text and Table B. G7 = Group of Seven; G20 = Group of Twenty.

¹The average does not include the debt incurred by the European Union and used to finance the grants portion of the NextGenerationEU package. This totaled €58 billion (0.4 percent of EU GDP) as of December 31, 2021, and €158 billion (1 percent of EU GDP) as of February 16, 2023. Debt incurred by the European Union and used to onlend to member states is included within member state debt data and regional aggregates.

²For cross-economy comparison, gross debt levels reported by national statistical agencies for economies that have adopted the 2008 System of National Accounts (Australia, Canada, Hong Kong SAR, United States) are adjusted to exclude unfunded pension liabilities of government employees' defined-benefit pension plans.

Table A8. Advanced Economies: General Government Net Debt, 2015–29
 (Percent of GDP)

	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
Average ¹	75.1	76.7	74.2	74.1	74.9	86.7	84.0	80.9	81.9	82.5	83.8	84.7	85.4	86.2	86.8
Euro Area	75.1	74.6	72.5	70.8	69.1	79.0	77.6	75.5	74.5	74.9	74.9	75.1	75.1	75.4	75.4
G7	86.0	87.9	85.6	85.7	86.4	99.6	97.3	93.5	94.7	95.5	97.3	98.6	99.6	100.8	101.7
G20 Advanced	80.9	82.7	80.3	80.6	81.6	94.4	92.1	88.7	90.0	90.9	92.6	93.8	94.7	95.8	96.5
Andorra	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Australia ²	22.1	23.4	23.3	24.1	27.8	36.0	35.6	30.1	28.3	29.1	29.3	28.8	27.6	26.0	24.3
Austria	58.2	56.8	56.0	50.6	47.9	59.3	60.2	58.2	56.7	57.4	58.2	58.9	59.7	60.3	60.7
Belgium ³	92.0	91.2	88.3	86.4	84.8	97.3	93.4	90.7	91.5	93.0	95.1	97.5	100.2	102.6	105.0
Canada ²	18.5	18.0	12.7	11.7	8.7	16.1	14.3	15.6	12.8	13.3	13.4	13.3	13.1	13.1	12.9
Croatia	69.8	67.5	64.4	61.1	57.9	69.7	63.0	53.1	50.0	46.9	46.4	45.8	45.2	44.6	44.1
Cyprus	90.6	85.3	76.9	54.2	48.7	58.5	53.9	46.9	...	...	...	...	...	...	...
Czech Republic	28.1	25.0	21.5	19.6	18.1	23.6	26.4	29.9	30.0	30.2	29.8	29.4	28.8	27.5	27.5
Denmark	16.2	17.5	15.8	13.4	12.3	14.9	9.5	5.2	2.5	1.0	0.2	0.0	0.1	0.3	0.7
Estonia	-2.0	-1.9	-1.8	-1.8	-2.2	3.0	4.5	4.0	5.0	8.3	11.5	14.3	16.6	18.8	20.9
Finland ⁴	18.4	21.2	21.8	24.5	27.0	33.2	34.3	32.9	34.3	36.8	38.9	40.6	41.9	42.8	43.6
France	86.3	89.2	89.4	89.2	88.9	101.2	100.4	101.2	102.4	103.4	104.6	105.2	105.8	106.4	106.9
Germany	52.2	49.3	45.5	42.8	40.3	45.7	46.8	47.1	46.4	46.4	45.7	45.0	44.3	43.6	43.0
Greece	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Hong Kong SAR ²	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Iceland ⁵	78.1	67.7	60.3	50.7	54.4	60.9	59.8	56.0	54.8	49.3	47.3	45.1	43.0	41.1	39.4
Ireland ⁶	65.6	65.5	58.6	54.1	48.9	49.6	44.5	37.2	37.4	34.0	30.5	27.4	24.9	22.9	20.9
Israel	59.9	58.4	56.6	57.1	56.8	66.6	64.2	58.6	60.2	65.6	65.7	66.3	66.7	66.9	67.2
Italy	122.2	121.6	121.3	121.8	121.7	141.5	134.8	129.1	126.6	128.9	130.3	132.8	133.5	135.4	135.8
Japan	144.4	149.5	148.1	151.1	151.7	162.0	156.4	150.3	155.9	157.7	155.7	154.1	153.3	152.9	152.9
Korea	9.5	9.7	9.6	9.6	11.7	18.3	20.8	23.4	24.7	26.2	26.8	27.4	28.0	28.5	29.0
Latvia	31.4	31.2	30.5	28.6	28.2	32.6	33.4	32.3	34.7	34.8	35.1	35.1	34.7	34.3	33.7
Lithuania	35.4	32.9	32.9	27.7	30.3	40.8	38.7	33.8	31.9	32.6	32.3	31.7	31.1	30.5	29.8
Luxembourg	-12.5	-12.1	-11.8	-11.8	-14.1	-10.5	-10.8	-7.8	-6.1	-2.7	-0.3	1.7	3.6	5.3	6.9
Malta	47.8	41.8	35.4	32.6	29.0	41.8	43.7	46.4	47.1	49.3	50.9	52.5	52.6	52.7	52.7
The Netherlands	53.3	51.5	46.6	42.9	39.8	44.8	42.2	41.0	38.6	39.1	39.5	40.1	40.8	41.8	43.1
New Zealand	7.3	6.6	5.6	4.7	6.9	10.4	14.0	18.0	20.5	23.3	24.8	25.4	25.4	24.7	23.7
Norway	-85.1	-83.7	-78.6	-70.9	-74.2	-79.0	-83.1	-63.9	-99.4	-103.2	-108.0	-116.0	-124.0	-131.8	-138.9
Portugal	121.0	119.4	116.0	113.4	109.9	123.0	117.4	106.7	95.0	90.8	87.1	83.5	80.1	76.8	73.7
Singapore	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Slovak Republic	47.3	46.9	45.8	43.4	43.1	48.9	49.6	48.1	49.8	53.0	55.8	59.2	62.3	65.2	67.8
Slovenia	63.6	62.7	60.2	53.4	49.5	56.7	55.8	55.2	52.3	51.5	51.2	50.7	50.2	49.5	48.4
Spain	86.0	87.1	86.2	84.9	83.7	103.1	101.2	97.4	93.3	92.4	91.4	91.5	91.8	91.8	91.8
Sweden	11.1	8.7	6.1	6.0	4.9	8.4	7.5	6.3	10.6	11.5	11.6	11.5	11.4	11.5	11.5
Switzerland	21.0	21.6	20.8	18.7	17.3	20.4	20.6	17.2	17.8	16.3	15.1	13.9	12.8	11.6	10.7
United Kingdom	79.3	78.8	77.2	76.6	75.8	93.1	91.7	90.5	92.5	92.9	94.7	95.5	96.4	97.2	98.0
United States ²	81.1	82.0	80.6	81.4	83.2	98.0	97.8	94.7	96.3	97.6	100.7	102.9	104.6	106.5	108.0

Source: IMF staff estimates and projections. Projections are based on staff assessments of current policies (see "Fiscal Policy Assumptions" in text).

Note: For economy-specific details, see "Data and Conventions" in text and Table B. G7 = Group of Seven; G20 = Group of Twenty.

¹The average does not include the debt incurred by the European Union and used to finance the grants portion of the NextGenerationEU package. This totaled €58 billion (0.4 percent of EU GDP) as of December 31, 2021, and €158 billion (1 percent of EU GDP) as of February 16, 2023. Debt incurred by the European Union and used to onlend to member states is included within member state debt data and regional aggregates.

²For cross-economy comparison, net debt levels reported by national statistical agencies for economies that have adopted the 2008 System of National Accounts (Australia, Canada, Hong Kong SAR, United States) are adjusted to exclude unfunded pension liabilities of government employees' defined-benefit pension plans.

³Belgium's net debt series has been revised to ensure consistency between liabilities and assets. "Net debt" is defined as gross debt (Maastricht definition) minus assets in the form of currency and deposits, loans, and debt securities.

⁴Net debt figures were revised to include only categories of assets corresponding to the liabilities covered by the Maastricht definition of "gross debt."

⁵"Net debt" for Iceland is defined as gross debt minus currency and deposits.

⁶"Net debt" for Ireland is defined as gross general debt minus debt instrument assets, namely, currency and deposits, debt securities, and loans. Net debt was previously defined as general government debt less currency and deposits.

Table A9. Emerging Market and Middle-Income Economies: General Government Overall Balance, 2015–29
(Percent of GDP)

	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
Average	-4.0	-4.4	-3.8	-3.5	-4.4	-8.7	-5.0	-4.9	-5.5	-5.6	-5.4	-5.3	-5.2	-5.2	-5.2
Asia	-3.1	-3.7	-3.6	-4.2	-5.7	-9.6	-6.3	-7.2	-6.7	-6.9	-7.0	-7.1	-7.0	-6.9	-6.9
Europe	-2.6	-2.6	-1.7	0.4	-0.6	-5.4	-1.7	-2.4	-4.3	-4.0	-3.1	-2.6	-2.4	-2.4	-2.2
Latin America	-5.8	-5.2	-5.3	-5.0	-3.8	-8.3	-3.8	-3.3	-5.1	-4.7	-3.4	-3.1	-2.8	-2.6	-2.5
MENA	-7.5	-8.6	-4.7	-1.4	-2.3	-8.3	-1.9	3.8	0.6	-1.5	-1.1	-1.1	-1.3	-1.3	-1.3
G20 Emerging	-4.2	-4.4	-4.1	-4.0	-5.1	-9.3	-5.3	-5.9	-6.3	-6.3	-6.1	-6.1	-6.1	-6.1	-6.0
Algeria	-13.9	-11.8	-7.5	-6.2	-8.5	-10.5	-6.3	-2.5	-3.0	-8.5	-7.8	-6.7	-6.7	-6.7	-6.7
Angola	-2.9	-4.5	-6.6	2.3	0.8	-1.9	3.8	0.7	-0.1	2.7	3.1	2.6	2.6	1.5	0.6
Argentina	-6.0	-6.7	-6.7	-5.4	-4.4	-8.7	-4.3	-3.9	-4.2	0.0	0.7	-0.4	1.2	1.5	1.9
Belarus	-3.0	-1.7	-0.3	1.8	0.9	-2.9	-1.7	-4.5	-2.3	-1.6	-1.6	-1.8	-1.9	-2.0	-2.1
Brazil	-8.8	-7.6	-8.5	-7.0	-5.0	-11.9	-2.5	-3.1	-7.9	-6.3	-5.5	-5.2	-5.0	-4.6	-4.4
Bulgaria	-2.8	1.5	0.8	0.1	-1.0	-2.9	-2.8	-0.8	-3.1	-2.7	-2.9	-3.4	-2.7	-2.7	-2.6
Chile	-2.1	-2.7	-2.6	-1.5	-2.7	-7.1	-7.5	1.4	-2.2	-1.9	-1.2	-0.3	-0.1	0.0	0.0
China ¹	-2.5	-3.4	-3.4	-4.3	-6.1	-9.7	-6.0	-7.5	-7.1	-7.4	-7.6	-7.8	-7.8	-7.8	-7.9
Colombia	-3.5	-2.3	-2.5	-4.7	-3.5	-7.0	-7.1	-6.2	-2.7	-3.3	-3.1	-2.8	-2.6	-2.4	-2.1
Dominican Republic	0.0	-3.1	-3.1	-2.2	-3.5	-7.9	-2.9	-3.2	-3.3	-3.0	-2.7	-2.6	-2.4	-2.2	-2.1
Ecuador ²	-6.9	-10.3	-5.8	-2.8	-3.5	-7.4	-1.6	0.0	-3.5	...	...	...	...	...	...
Egypt	-10.4	-11.8	-9.9	-9.0	-7.6	-7.5	-7.0	-5.8	-5.8	-10.9	-9.3	-7.1	-4.8	-3.5	-2.4
Hungary	-2.0	-1.8	-2.5	-2.1	-2.0	-7.6	-7.2	-6.2	-6.7	-5.2	-4.3	-3.2	-2.9	-2.6	-2.6
India	-7.2	-7.1	-6.2	-6.4	-7.7	-12.9	-8.6	-9.2	-8.6	-7.8	-7.6	-7.3	-7.0	-6.8	-6.6
Indonesia	-2.7	-2.6	-2.3	-1.7	-2.1	-6.1	-4.4	-2.2	-1.6	-2.2	-2.7	-2.6	-2.5	-2.4	-2.4
Iran	-1.5	-1.8	-1.6	-1.6	-4.5	-5.2	-3.2	-2.8	-2.3	-3.0	-3.4	-3.7	-3.8	-3.9	-4.1
Kazakhstan	-6.3	-4.5	-4.3	2.6	-0.6	-7.0	-5.0	0.1	-1.5	-2.2	-1.9	-2.0	-2.1	-2.5	-2.4
Kuwait	16.7	13.3	16.8	17.3	11.1	-4.0	8.9	30.6	29.4	27.3	28.1	27.9	27.4	26.9	26.5
Lebanon	-7.5	-8.9	-8.7	-11.3	-10.4	-3.5	0.6	-6.1	...	...	...	...	...	...	...
Malaysia ³	-2.5	-2.6	-2.4	-2.6	-2.0	-4.9	-6.0	-4.8	-4.4	-3.5	-3.5	-3.4	-3.4	-3.3	-3.2
Mexico	-3.9	-2.7	-1.0	-2.1	-2.3	-4.3	-3.8	-4.3	-4.3	-5.9	-3.0	-2.7	-2.7	-2.7	-2.7
Morocco	-4.5	-4.4	-3.2	-3.4	-3.6	-7.1	-6.0	-5.4	-4.4	-4.3	-3.8	-3.2	-3.1	-3.1	-3.0
Oman	-13.5	-19.6	-10.5	-6.7	-4.8	-15.7	-3.1	10.1	5.9	3.7	3.6	3.9	3.6	3.5	3.5
Pakistan	-4.7	-3.9	-5.2	-5.7	-7.8	-7.0	-6.0	-7.8	-7.8	-7.4	-7.3	-5.8	-5.1	-4.6	-4.6
Peru	-2.0	-2.2	-2.8	-2.0	-1.4	-9.0	-2.5	-1.4	-2.8	-2.5	-1.8	-1.1	-0.3	-0.3	-0.2
Philippines	0.1	-0.7	-0.8	-1.5	-1.5	-5.5	-6.2	-5.5	-5.1	-4.1	-3.6	-2.9	-2.4	-2.0	-1.9
Poland	-2.6	-2.4	-1.5	-0.2	-0.7	-6.9	-1.8	-3.7	-5.6	-5.5	-4.8	-4.5	-4.4	-4.1	-4.1
Qatar	18.4	-9.2	-6.8	2.3	1.0	-2.1	0.2	10.4	5.4	5.1	4.7	4.7	4.3	4.0	3.8
Romania	-1.3	-2.5	-2.9	-2.7	-4.6	-9.6	-6.7	-5.8	-5.7	-6.2	-6.5	-6.4	-6.2	-5.8	-5.8
Russian Federation	-3.4	-3.7	-1.5	2.9	1.9	-4.0	0.8	-1.4	-2.3	-1.9	-1.2	-0.5	-0.2	-0.2	0.2
Saudi Arabia	-15.5	-13.7	-8.9	-5.5	-4.2	-10.7	-2.2	2.5	-2.0	-2.8	-1.6	-2.0	-2.5	-2.5	-2.5
South Africa	-4.4	-3.7	-4.0	-3.7	-4.7	-9.6	-5.5	-4.3	-6.0	-6.1	-6.3	-5.6	-5.4	-5.6	-5.8
Sri Lanka	-6.6	-5.0	-5.1	-5.0	-7.5	-12.2	-11.7	-10.2	...	...	...	...	...	...	...
Thailand	0.1	0.6	-0.4	0.1	0.4	-4.5	-6.7	-4.5	-3.2	-3.7	-3.4	-3.4	-3.3	-3.2	-3.1
Türkiye	-0.9	-1.6	-1.7	-3.2	-4.8	-4.7	-3.0	-1.1	-5.5	-5.4	-3.7	-3.2	-3.3	-3.4	-3.3
Ukraine	-1.2	-2.5	-2.4	-2.1	-2.1	-5.9	-4.0	-15.7	-19.7	-13.7	-7.3	-4.7	-3.5	-2.6	-2.3
United Arab Emirates	-6.6	-3.1	-0.2	3.8	2.6	-2.5	4.0	9.9	6.3	4.5	4.0	3.7	3.5	3.3	3.1
Uruguay ⁴	-1.9	-2.7	-2.5	-1.9	-2.6	-4.7	-2.6	-2.5	-3.1	-2.8	-2.5	-2.2	-2.1	-2.1	-2.0
Venezuela	-8.1	-8.5	-13.3	-30.3	-10.0	-5.0	-4.6	-6.0	-3.4	...	...	...	...	...	...
Vietnam	-5.0	-3.2	-2.0	-1.0	-0.4	-2.9	-1.4	0.3	-1.6	-2.4	-2.4	-2.5	-2.5	-2.5	-2.5

Source: IMF staff estimates and projections. Projections are based on staff assessments of current policies (see "Fiscal Policy Assumptions" in text).

Note: For country-specific details, see "Data and Conventions" in text and Table C. G20 = Group of Twenty; MENA = Middle East and North Africa.

¹ China's deficit and public debt numbers presented in this table cover a narrower perimeter of the general government than IMF staff's estimates in China Article IV reports (see IMF 2024 for a reconciliation of the two estimates).

² The data for Ecuador reflect net lending/borrowing of the nonfinancial public sector.

³ The general government overall balance in 2019 includes a one-off refund of tax arrears in 2019 of 2.4 percent of GDP.

⁴ Data are for the nonfinancial public sector, which includes central government, local government, social security funds, nonfinancial public corporations, and Banco de Seguros del Estado. The coverage of fiscal data was changed from the consolidated public sector to the nonfinancial public sector with the October 2019 submission. With this narrower coverage, the central bank balances are not included in the fiscal data. Historical data were also revised accordingly. Starting in October 2018, the public pension system has been receiving transfers in the context of a new law that compensates persons affected by the creation of the mixed pension system. These funds are recorded as revenues, consistent with the IMF's methodology. Therefore, data for 2018–22 are affected by these transfers, which amounted to 1.2 percent of GDP in 2018, 1.0 percent of GDP in 2019, 0.6 percent of GDP in 2020, 0.3 percent of GDP in 2021, 0.1 percent of GDP in 2022, and 0 thereafter. See IMF Country Report No. 19/64 for further details. The disclaimer about the public pension system applies only to the revenues and net lending/borrowing series.

Table A10. Emerging Market and Middle-Income Economies: General Government Primary Balance, 2015–29
(Percent of GDP)

	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
Average	-2.3	-2.7	-2.0	-1.7	-2.7	-6.9	-3.2	-3.1	-3.4	-3.4	-3.1	-3.0	-2.8	-2.7	-2.6
Asia	-1.9	-2.4	-2.1	-2.7	-4.2	-7.9	-4.7	-5.6	-5.0	-5.0	-5.0	-4.9	-4.7	-4.5	-4.4
Europe	-1.4	-1.5	-0.7	1.5	0.4	-4.4	-0.7	-1.4	-3.0	-2.5	-1.4	-0.9	-0.8	-0.7	-0.6
Latin America	-1.6	-1.7	-1.5	-1.1	-0.3	-5.1	-0.6	0.5	-0.6	-0.4	0.5	0.8	1.0	1.0	1.1
MENA	-7.4	-8.4	-4.6	-0.7	-1.4	-7.6	-0.8	4.4	1.1	-0.3	0.1	0.0	-0.1	-0.1	-0.1
G20 Emerging	-2.4	-2.8	-2.2	-2.2	-3.3	-7.5	-3.5	-4.1	-4.2	-4.1	-3.8	-3.7	-3.6	-3.4	-3.3
Algeria	-13.7	-11.6	-6.7	-5.7	-8.0	-9.7	-5.7	-1.3	-1.8	-6.7	-5.9	-4.7	-4.5	-4.3	-4.3
Angola	-1.1	-1.7	-3.0	7.0	6.4	5.0	9.0	4.7	5.5	8.0	8.3	7.5	6.6	6.1	4.5
Argentina	-4.4	-4.8	-4.2	-2.2	-0.4	-6.2	-2.5	-1.7	-1.8	2.2	2.9	3.2	3.4	3.6	3.7
Belarus	-1.3	0.3	1.6	3.8	2.6	-1.2	-0.2	-3.0	-0.7	0.0	0.0	-0.2	-0.5	-0.6	-0.7
Brazil	-0.4	-1.6	-2.2	-1.0	-0.3	-7.9	2.0	2.1	-1.9	-0.6	-0.3	0.0	0.4	0.6	0.9
Bulgaria	-2.4	1.8	1.2	0.3	-0.8	-2.8	-2.8	-0.8	-3.0	-2.6	-2.6	-2.7	-2.0	-2.0	-2.0
Chile	-1.9	-2.4	-2.3	-1.1	-2.4	-6.6	-6.9	1.8	-1.8	-1.0	-0.3	0.6	0.8	1.0	1.0
China	-2.0	-2.7	-2.6	-3.5	-5.2	-8.8	-5.1	-6.6	-6.1	-6.3	-6.3	-6.3	-6.1	-5.9	-5.8
Colombia	-1.7	-0.4	-0.5	-2.5	-1.0	-4.4	-4.4	-2.4	1.1	1.0	0.8	0.8	1.0	0.8	0.7
Dominican Republic	2.3	-0.6	-0.5	0.4	-0.7	-4.7	0.2	-0.4	-0.1	0.5	0.8	0.9	1.0	1.1	1.2
Ecuador ¹	-6.4	-9.7	-4.7	-1.4	-1.9	-5.8	-1.4	0.5	-2.5	...	...	...	...	...	...
Egypt	-3.9	-4.1	-2.4	-0.4	1.3	1.2	1.1	0.4	1.1	1.7	3.0	3.9	4.4	4.3	4.3
Hungary	1.3	1.2	0.1	0.2	0.1	-5.4	-5.1	-4.0	-2.8	-1.4	-0.8	-0.5	-0.3	0.0	0.0
India	-2.7	-2.5	-1.5	-1.7	-3.0	-7.3	-3.4	-4.3	-3.4	-2.4	-2.2	-2.1	-2.1	-2.0	-2.0
Indonesia	-1.4	-1.1	-0.7	0.0	-0.4	-4.0	-2.4	-0.2	0.5	-0.2	-0.6	-0.4	-0.3	-0.2	-0.2
Iran	-1.4	-1.3	-1.0	-0.7	-3.4	-4.1	-2.1	-2.0	-1.8	-1.1	-1.2	-1.2	-1.1	-1.0	-0.9
Kazakhstan	-5.9	-4.3	-5.2	1.8	-0.8	-7.7	-4.4	0.8	-0.6	-1.3	-0.7	-0.7	-0.8	-1.1	-1.1
Kuwait ²	0.0	-4.8	-0.1	1.9	-4.8	-24.8	-7.0	15.8	10.6	7.5	7.5	6.5	5.4	4.4	3.6
Lebanon	1.4	0.4	0.8	-1.4	-0.3	-0.5	1.9	-5.6	...	...	...	...	...	...	...
Malaysia	-0.9	-0.8	-0.6	-0.8	0.0	-3.0	-3.9	-2.7	-2.1	-1.2	-0.9	-0.8	-0.6	-0.5	-0.5
Mexico	-1.2	0.3	2.5	1.5	1.4	-0.5	0.0	0.7	1.5	-0.9	1.3	1.5	1.4	1.2	1.1
Morocco	-2.0	-2.0	-0.9	-1.2	-1.4	-4.6	-3.9	-3.2	-2.3	-1.9	-1.2	-0.8	-0.6	-0.5	-0.5
Oman	-14.1	-20.0	-11.1	-5.2	-4.6	-13.0	-0.9	10.7	6.5	4.4	4.4	4.5	4.1	4.0	3.9
Pakistan	-0.5	-0.1	-1.4	-1.8	-3.0	-1.5	-1.1	-3.0	-0.9	0.4	0.5	0.4	0.4	0.4	0.5
Peru	-1.1	-1.2	-1.8	-0.8	-0.2	-6.9	-1.2	0.0	-1.3	-1.0	-0.4	0.2	0.8	0.8	0.7
Philippines	2.1	1.0	0.9	0.2	0.1	-3.7	-4.4	-3.5	-2.9	-1.7	-1.0	-0.3	0.0	0.3	0.3
Poland	-0.8	-0.7	0.1	1.2	0.6	-5.6	-0.7	-2.1	-3.8	-3.4	-2.6	-2.2	-2.2	-2.0	-1.9
Qatar	19.9	-7.7	-5.4	3.7	2.7	0.2	2.0	11.7	6.7	6.2	5.8	5.7	5.4	5.0	4.8
Romania	-0.1	-1.3	-1.8	-1.4	-3.4	-8.3	-5.3	-3.8	-3.8	-4.0	-4.3	-4.3	-4.0	-3.6	-3.5
Russian Federation	-3.1	-3.2	-1.0	3.4	2.2	-3.7	1.1	-1.1	-2.0	-1.7	-0.9	-0.2	0.0	0.0	0.3
Saudi Arabia	-17.5	-16.5	-11.3	-6.0	-4.2	-12.5	-2.0	2.3	-2.0	-2.6	-1.4	-1.8	-2.2	-2.1	-2.0
South Africa	-1.4	-0.6	-0.8	-0.4	-1.1	-5.5	-1.3	0.3	-1.0	-0.9	-0.9	0.1	0.5	0.6	0.6
Sri Lanka	-2.1	-0.2	0.0	0.6	-1.9	-5.9	-5.7	-3.7	...	...	...	...	...	...	...
Thailand	1.1	1.4	0.5	1.1	1.4	-3.5	-5.5	-3.1	-2.0	-2.4	-2.0	-2.1	-1.9	-1.8	-1.7
Türkiye	0.9	-0.2	-0.3	-1.7	-2.9	-2.8	-1.3	0.1	-3.7	-2.8	-0.5	0.2	0.1	0.0	0.1
Ukraine	3.0	1.6	1.4	1.2	1.0	-3.0	-1.1	-12.6	-15.8	-8.2	-2.8	-0.7	0.2	0.8	1.0
United Arab Emirates	-6.3	-2.9	0.0	4.0	2.9	-2.2	4.3	10.4	6.9	5.2	4.7	4.5	4.2	4.0	3.8
Uruguay ³	0.2	-0.3	-0.2	0.5	-0.5	-2.1	-0.6	-0.5	-0.9	-1.1	-0.8	-0.5	-0.4	-0.3	-0.2
Venezuela	-6.8	-7.7	-13.1	-30.3	-10.0	-4.9	-4.6	-5.9	-3.2	...	...	...	...	...	...
Vietnam	-3.4	-1.6	-0.4	0.5	1.0	-1.5	-0.2	1.2	-0.7	-1.4	-1.5	-1.5	-1.5	-1.5	-1.5

Source: IMF staff estimates and projections. Projections are based on staff assessments of current policies (see "Fiscal Policy Assumptions" in text).

Note: "Primary balance" is defined as the overall balance, excluding net interest payments. For country-specific details, see "Data and Conventions" in text and Table C. G20 = Group of Twenty; MENA = Middle East and North Africa.

¹The data for Ecuador reflect primary balance of the nonfinancial public sector.

²Interest revenue is proxied by IMF staff estimates of investment income. The country team does not have the breakdown of investment income between interest revenue and dividends.

³Data are for the nonfinancial public sector, which includes central government, local government, social security funds, nonfinancial public corporations, and Banco de Seguros del Estado. The coverage of fiscal data was changed from the consolidated public sector to the nonfinancial public sector with the October 2019 submission. With this narrower coverage, the central bank balances are not included in the fiscal data. Historical data were also revised accordingly. Starting in October 2018, the public pension system has been receiving transfers in the context of a new law that compensates persons affected by the creation of the mixed pension system. These funds are recorded as revenues, consistent with the IMF's methodology. Therefore, data for 2018–22 are affected by these transfers, which amounted to 1.2 percent of GDP in 2018, 1.0 percent of GDP in 2019, 0.6 percent of GDP in 2020, 0.3 percent of GDP in 2021, 0.1 percent of GDP in 2022, and 0 thereafter. See IMF Country Report No. 19/64 for further details. The disclaimer about the public pension system applies only to the revenues and net lending/borrowing series.

Table A11. Emerging Market and Middle-Income Economies: General Government Cyclically Adjusted Balance, 2015–29
(Percent of potential GDP)

	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
Average	-3.6	-3.8	-3.6	-3.7	-4.6	-7.3	-5.0	-5.5	-5.9	-6.0	-5.9	-5.8	-5.7	-5.7	-5.6
Asia	-2.8	-3.6	-3.5	-4.2	-5.5	-8.1	-5.8	-6.6	-6.5	-6.8	-7.1	-7.2	-7.1	-7.1	-7.1
Europe	-2.2	-2.1	-1.5	-0.1	-0.9	-4.6	-1.9	-2.9	-4.7	-4.4	-3.4	-2.8	-2.6	-2.5	-2.4
Latin America	-5.7	-4.7	-5.0	-4.3	-3.4	-6.5	-3.7	-3.6	-5.3	-4.6	-3.4	-3.2	-2.9	-2.7	-2.6
MENA	-9.6	-9.6	-7.0	-5.0	-5.7	-6.6	-4.4	-2.4	-2.9	-4.2	-4.8	-4.0	-3.3	-2.8	-2.3
G20 Emerging	-3.6	-3.9	-3.8	-3.9	-4.9	-7.8	-5.0	-5.7	-6.3	-6.4	-6.3	-6.3	-6.2	-6.2	-6.2
Algeria	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Angola	-0.9	-2.6	-4.5	3.3	1.9	1.1	4.1	0.8	0.4	2.1	2.6	2.4	2.6	1.7	0.9
Argentina	-6.2	-6.0	-7.2	-5.0	-3.4	-5.0	-3.5	-4.5	-4.1	1.9	2.0	0.4	1.4	1.5	1.9
Belarus	-2.3	0.0	0.4	1.5	0.3	-3.1	-2.6	-3.9	-2.5	-2.3	-2.7	-3.4	-3.9	-4.5	-4.8
Brazil	-8.6	-6.0	-7.2	-6.2	-4.5	-10.1	-2.0	-3.1	-8.2	-6.6	-5.7	-5.4	-5.0	-4.6	-4.4
Bulgaria	-2.7	1.4	0.6	-0.2	-1.9	-1.3	-3.0	-1.4	-3.2	-2.7	-2.9	-3.4	-2.7	-2.7	-2.6
Chile ¹	0.5	-1.0	-2.0	-1.5	-1.7	-1.6	-11.7	-1.3	-3.6	-2.6	-2.0	-0.8	-0.8	-0.5	-0.5
China	-2.2	-3.1	-3.2	-4.1	-5.8	-8.4	-5.6	-6.6	-6.6	-7.2	-7.5	-7.8	-7.8	-7.8	-7.9
Colombia	-3.9	-2.6	-2.3	-4.1	-2.3	-4.7	-6.7	-6.7	-2.6	-2.8	-2.8	-2.8	-2.6	-2.4	-2.1
Dominican Republic	-4.2	-3.8	-3.7	-3.3	-3.2	-7.6	-3.4	-3.5	-3.7	-3.8	-3.5	-3.2	-3.0	-2.7	-2.5
Ecuador ²	-6.4	-10.5	-4.1	-2.7	-3.6	-11.0	-2.8	-1.0	-3.4	...	...	...	...	...	...
Egypt	-10.8	-11.4	-10.1	-9.0	-7.3	-6.6	-7.2	-6.1	-5.7	-6.1	-8.3	-6.4	-4.3	-3.1	-1.9
Hungary	-2.3	-1.8	-2.8	-3.0	-3.7	-6.2	-7.5	-7.3	-6.3	-4.6	-4.0	-3.0	-2.8	-2.6	-2.7
India	-7.0	-7.4	-6.2	-6.8	-7.6	-9.1	-8.3	-9.3	-8.7	-7.9	-7.7	-7.3	-7.0	-6.8	-6.6
Indonesia	-2.8	-2.5	-2.2	-1.6	-2.1	-5.3	-3.8	-2.0	-1.6	-2.2	-2.7	-2.6	-2.5	-2.5	-2.4
Iran	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Kazakhstan	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Kuwait	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Lebanon	-11.6	-11.5	-13.7	-12.7	-18.3	-12.1	-2.4	0.2	...	...	...	...	...	...	...
Malaysia	-2.6	-2.7	-2.6	-3.6	-4.1	-4.0	-5.2	-5.1	-4.5	-3.6	-3.6	-3.5	-3.4	-3.3	-3.2
Mexico	-4.1	-3.9	-2.7	-2.7	-2.8	-3.6	-3.3	-4.2	-4.5	-6.2	-3.1	-2.7	-2.7	-2.7	-2.7
Morocco	-3.5	-2.0	-3.0	-2.7	-3.8	-5.2	-6.0	-5.3	-4.5	-4.4	-3.9	-3.3	-3.2	-3.1	-3.1
Oman	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Pakistan	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Peru	-1.5	-1.8	-2.2	-2.1	-1.3	-7.3	-4.1	-2.2	-2.6	-2.5	-2.2	-1.8	-1.2	-1.2	-1.1
Philippines	0.2	-0.8	-0.8	-1.5	-1.5	-3.3	-5.3	-5.6	-5.2	-4.2	-3.6	-2.9	-2.4	-2.0	-1.9
Poland	-2.2	-1.7	-1.6	-1.5	-2.4	-5.4	-2.1	-5.0	-5.1	-4.9	-4.5	-4.5	-4.4	-4.1	-4.1
Qatar	-4.8	-7.4	-2.8	2.4	0.9	-6.8	2.3	7.7	3.5	3.1	2.0	1.4	1.0	1.0	1.1
Romania	-1.0	-1.8	-3.2	-3.7	-5.6	-8.3	-6.5	-6.0	-5.6	-6.1	-6.3	-6.4	-6.1	-5.8	-5.7
Russian Federation	-3.1	-3.2	-1.0	2.9	2.0	-4.4	0.5	-1.3	-2.5	-2.3	-1.5	-0.6	-0.3	-0.3	0.1
Saudi Arabia	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
South Africa	-4.2	-3.6	-3.8	-3.7	-4.4	-5.9	-5.1	-5.1	-6.4	-6.4	-5.8	-5.5	-5.4	-5.6	-5.8
Sri Lanka	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Thailand	0.4	0.8	-0.4	-0.1	0.3	-3.5	-5.6	-3.9	-2.9	-4.4	-5.1	-5.5	-6.0	-5.5	-5.5
Türkiye	-1.3	-1.4	-2.4	-3.6	-4.1	-3.2	-3.4	-1.7	-6.4	-6.5	-4.6	-3.9	-3.9	-3.9	-3.8
Ukraine	1.5	-0.9	-1.4	-2.2	-1.7	-4.4	-3.3	-15.0	...	...	...	...	...	...	...
United Arab Emirates	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Uruguay ³	-2.1	-2.7	-2.7	-1.9	-2.0	-2.9	-1.5	-2.1	-2.4	-2.5	-2.2	-2.0	-1.9	-2.0	-1.9
Venezuela	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Vietnam	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...

Source: IMF staff estimates and projections. Projections are based on staff assessments of current policies (see "Fiscal Policy Assumptions" in text).

Note: "Cyclically adjusted primary balance" is defined as the cyclically adjusted balance plus net interest payable/paid (interest expense minus interest revenue) following the World Economic Outlook convention. For country-specific details, see "Data and Conventions" in text and Table C. G20 = Group of Twenty; MENA = Middle East and North Africa.

¹ Data for these economies include adjustments beyond the output cycle. For country-specific details, see "Data and Conventions" in text and Table C.

² The data for Ecuador reflect cyclically adjusted primary balance of the nonfinancial public sector.

³ Data are for the nonfinancial public sector, which includes central government, local government, social security funds, nonfinancial public corporations, and Banco de Seguros del Estado. The coverage of fiscal data was changed from the consolidated public sector to the nonfinancial public sector with the October 2019 submission. With this narrower coverage, the central bank balances are not included in the fiscal data. Historical data were also revised accordingly. Starting in October 2018, the public pension system has been receiving transfers in the context of a new law that compensates persons affected by the creation of the mixed pension system. These funds are recorded as revenues, consistent with the IMF's methodology. Therefore, data for 2018–22 are affected by these transfers, which amounted to 1.2 percent of GDP in 2018, 1.0 percent of GDP in 2019, 0.6 percent of GDP in 2020, 0.3 percent of GDP in 2021, 0.1 percent of GDP in 2022, and 0 thereafter. See IMF Country Report No. 19/64 for further details. The disclaimer about the public pension system applies only to the revenues and net lending/borrowing series.

Table A12. Emerging Market and Middle-Income Economies: General Government Cyclically Adjusted Primary Balance, 2015–29
(Percent of potential GDP)

	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
Average	-1.6	-1.9	-1.6	-1.7	-2.7	-5.4	-3.1	-3.5	-3.7	-3.6	-3.4	-3.3	-3.1	-3.0	-2.9
Asia	-1.7	-2.2	-2.0	-2.7	-4.1	-6.5	-4.3	-5.0	-4.8	-4.9	-5.0	-5.0	-4.8	-4.6	-4.5
Europe	-0.9	-0.9	-0.4	1.0	0.1	-3.6	-0.8	-2.0	-3.4	-2.8	-1.7	-1.1	-0.9	-0.8	-0.7
Latin America	-1.3	-1.2	-1.1	-0.4	0.1	-3.4	-0.5	0.4	-0.8	-0.3	0.5	0.8	1.0	1.0	1.1
MENA	-5.8	-5.3	-3.1	-0.7	-1.1	-2.1	-0.1	1.3	0.8	1.3	0.4	1.0	1.2	1.4	1.6
G20 Emerging	-1.7	-2.1	-1.8	-2.0	-3.1	-5.9	-3.2	-3.8	-4.1	-4.1	-3.9	-3.8	-3.6	-3.5	-3.4
Algeria	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Angola	0.7	-0.1	-1.3	7.7	7.0	6.8	9.2	4.8	5.8	7.6	8.0	7.4	6.6	6.2	4.8
Argentina	-4.6	-4.1	-4.7	-1.8	0.5	-2.8	-1.7	-2.3	-1.7	4.0	4.2	3.9	3.6	3.6	3.7
Belarus	-0.6	1.9	2.3	3.5	2.1	-1.4	-1.1	-2.4	-0.9	-0.6	-1.0	-1.7	-2.4	-3.0	-3.4
Brazil	-0.2	-0.2	-1.1	-0.3	0.2	-6.2	2.4	2.1	-2.2	-0.9	-0.5	-0.2	0.3	0.6	0.9
Bulgaria	-2.3	1.7	0.9	0.0	-1.7	-1.2	-3.0	-1.4	-3.1	-2.6	-2.6	-2.7	-2.0	-2.0	-2.0
Chile ¹	0.7	-0.7	-1.7	-1.2	-1.4	-1.1	-11.1	-0.8	-3.3	-1.7	-1.1	0.0	0.1	0.4	0.4
China	-1.7	-2.5	-2.5	-3.3	-4.9	-7.5	-4.7	-5.7	-5.6	-6.1	-6.2	-6.3	-6.1	-5.9	-5.8
Colombia	-2.1	-0.6	-0.3	-1.9	0.1	-2.3	-4.0	-2.9	1.2	1.4	1.1	0.8	1.0	0.8	0.7
Dominican Republic	-1.9	-1.3	-1.2	-0.7	-0.5	-4.6	-0.3	-0.6	-0.5	-0.4	0.0	0.3	0.4	0.6	0.8
Ecuador ²	-5.9	-9.9	-3.0	-1.3	-2.1	-9.1	-2.6	-0.6	-2.5	...	...	...	...	...	...
Egypt	-4.4	-3.7	-2.6	-0.5	1.5	2.0	0.8	0.1	1.1	6.5	3.9	4.6	4.9	4.8	4.8
Hungary	1.1	1.3	-0.1	-0.6	-1.4	-4.0	-5.3	-4.9	-2.3	-0.8	-0.4	-0.2	-0.2	0.0	0.0
India	-2.5	-2.8	-1.4	-2.0	-2.9	-3.9	-3.1	-4.3	-3.4	-2.5	-2.2	-2.1	-2.1	-2.0	-2.0
Indonesia	-1.4	-1.1	-0.6	0.1	-0.3	-3.3	-1.8	0.0	0.5	-0.2	-0.6	-0.4	-0.3	-0.3	-0.2
Iran	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Kazakhstan	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Kuwait	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Lebanon	-2.8	-2.1	-3.9	-2.1	-7.4	-9.3	-1.3	0.7	...	...	...	...	...	...	...
Malaysia	-1.0	-0.9	-0.8	-1.7	-2.0	-2.1	-3.1	-3.0	-2.2	-1.3	-1.0	-0.8	-0.7	-0.5	-0.5
Mexico	-1.4	-0.9	0.9	1.1	0.9	0.0	0.4	0.8	1.4	-1.1	1.3	1.5	1.4	1.2	1.1
Morocco	-1.0	0.5	-0.7	-0.5	-1.7	-2.7	-3.9	-3.1	-3.1	-2.0	-1.3	-0.9	-0.7	-0.6	-0.5
Oman	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Pakistan	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Peru	-0.6	-0.9	-1.2	-0.9	-0.1	-5.3	-2.8	-0.8	-1.1	-1.0	-0.8	-0.5	-0.1	-0.1	-0.2
Philippines	2.2	1.0	0.8	0.1	0.1	-1.7	-3.5	-3.6	-2.9	-1.7	-1.0	-0.3	0.0	0.3	0.3
Poland	-0.5	0.0	-0.1	-0.1	-1.0	-4.1	-1.0	-3.4	-3.3	-2.9	-2.4	-2.2	-2.2	-2.0	-1.9
Qatar	-3.4	-6.1	-1.6	3.9	2.5	-5.1	3.9	9.1	4.9	4.4	3.2	2.4	2.1	2.0	2.1
Romania	0.2	-0.6	-2.1	-2.3	-4.5	-7.0	-5.0	-4.0	-3.7	-3.9	-4.1	-4.3	-4.0	-3.5	-3.5
Russian Federation	-2.8	-2.8	-0.5	3.4	2.3	-4.1	0.8	-1.0	-2.2	-2.1	-1.2	-0.3	-0.1	-0.1	0.2
Saudi Arabia	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
South Africa	-1.2	-0.5	-0.6	-0.3	-0.9	-2.1	-1.1	-0.6	-1.5	-1.2	-0.4	0.2	0.5	0.6	0.6
Sri Lanka	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Thailand	1.4	1.6	0.5	0.9	1.3	-2.6	-4.3	-2.6	-1.7	-3.0	-3.6	-4.0	-4.4	-4.0	-4.0
Türkiye	0.6	0.0	-1.1	-2.1	-2.2	-1.4	-1.7	-0.4	-4.5	-3.8	-1.4	-0.4	-0.5	-0.5	-0.3
Ukraine	5.4	3.0	2.3	1.1	1.3	-1.6	-0.5	-11.8	...	...	...	...	...	...	...
United Arab Emirates	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Uruguay ³	0.1	-0.3	-0.3	0.5	0.1	-0.4	0.4	-0.1	-0.2	-0.8	-0.6	-0.3	-0.2	-0.2	-0.1
Venezuela	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Vietnam	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...

Source: IMF staff estimates and projections. Projections are based on staff assessments of current policies (see "Fiscal Policy Assumptions" in text).

Note: "Cyclically adjusted primary balance" is defined as the cyclically adjusted balance plus net interest payable/paid (interest expense minus interest revenue) following the World Economic Outlook convention. For country-specific details, see "Data and Conventions" in text and Table C. G20 = Group of Twenty; MENA = Middle East and North Africa.

¹Data for these economies include adjustments beyond the output cycle. For country-specific details, see "Data and Conventions" in text and Table C.

²The data for Ecuador reflect cyclically adjusted primary balance of the nonfinancial public sector.

³Data are for the nonfinancial public sector, which includes central government, local government, social security funds, nonfinancial public corporations, and Banco de Seguros del Estado. The coverage of fiscal data was changed from the consolidated public sector to the nonfinancial public sector with the October 2019 submission. With this narrower coverage, the central bank balances are not included in the fiscal data. Historical data were also revised accordingly. Starting in October 2018, the public pension system has been receiving transfers in the context of a new law that compensates persons affected by the creation of the mixed pension system. These funds are recorded as revenues, consistent with the IMF's methodology. Therefore, data for 2018–22 are affected by these transfers, which amounted to 1.2 percent of GDP in 2018, 1.0 percent of GDP in 2019, 0.6 percent of GDP in 2020, 0.3 percent of GDP in 2021, 0.1 percent of GDP in 2022, and 0 thereafter. See IMF Country Report No. 19/64 for further details. The disclaimer about the public pension system applies only to the revenues and net lending/borrowing series.

Table A13. Emerging Market and Middle-Income Economies: General Government Revenue, 2015–29
(Percent of GDP)

	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
Average	27.8	27.4	27.6	28.1	27.6	25.7	26.7	27.0	27.2	26.9	26.9	26.9	26.8	26.8	26.8
Asia	26.2	26.0	26.1	26.2	25.4	23.5	24.6	24.1	24.6	24.1	24.2	24.3	24.4	24.5	24.6
Europe	33.3	33.6	33.6	35.0	34.9	34.4	34.4	33.8	34.6	35.0	35.3	35.5	35.3	35.3	35.4
Latin America	30.6	30.8	30.5	30.3	30.7	28.6	29.8	31.4	30.2	30.6	30.5	30.5	30.5	30.6	30.6
MENA	26.4	24.0	25.7	29.3	29.4	26.6	28.2	31.4	30.3	28.9	29.0	28.5	27.9	27.4	26.9
G20 Emerging	28.4	28.3	28.4	28.5	27.9	25.8	26.9	26.8	27.1	26.8	26.9	26.9	27.0	27.0	27.0
Algeria	27.0	25.3	28.7	30.1	28.6	27.0	26.2	29.6	31.1	27.8	26.8	26.4	25.7	25.4	25.2
Angola	24.1	17.5	17.5	22.9	21.2	21.3	23.3	23.2	20.0	20.8	20.1	19.4	18.4	17.9	16.3
Argentina	35.4	34.9	34.4	33.5	33.7	33.8	33.5	34.0	32.2	34.5	34.9	34.7	34.8	34.9	35.1
Belarus	38.8	39.0	38.7	39.6	38.3	35.2	35.3	32.1	33.8	35.1	35.4	35.4	35.2	35.1	35.1
Brazil	40.3	41.0	39.8	40.5	41.8	38.0	40.4	42.6	40.0	40.9	41.2	41.3	41.3	41.5	41.6
Bulgaria	34.6	34.3	32.9	34.4	34.9	34.9	35.8	36.9	34.7	36.3	36.2	35.6	35.7	35.6	35.6
Chile	22.9	22.7	22.9	24.1	23.8	22.0	26.1	28.0	24.7	25.8	26.0	26.0	26.0	26.0	26.0
China	29.0	28.9	29.2	29.0	28.1	25.7	26.6	26.0	26.8	26.2	26.3	26.5	26.7	26.9	27.0
Colombia	27.8	27.7	26.8	30.0	29.4	26.6	27.2	27.8	32.3	30.6	29.8	29.4	29.6	29.6	29.6
Dominican Republic	16.6	13.9	14.0	14.2	14.4	14.2	15.6	15.3	16.0	15.9	15.3	15.3	15.3	15.3	15.3
Ecuador ¹	37.2	33.9	34.7	38.1	36.3	32.9	35.8	38.8	36.2	...	...	...	...	...	...
Egypt	20.9	19.2	20.7	19.7	19.3	18.2	18.6	18.9	17.0	17.5	18.4	19.5	20.8	21.1	20.8
Hungary	48.4	45.0	44.3	44.0	44.0	43.9	41.2	42.6	40.8	42.3	42.2	42.4	42.0	42.7	42.6
India	19.9	20.1	20.0	20.0	19.2	18.2	20.4	19.8	20.2	20.1	20.2	20.3	20.3	20.4	20.4
Indonesia	14.9	14.4	14.2	14.9	14.3	12.4	13.7	15.2	15.0	15.2	15.3	15.4	15.4	15.5	15.5
Iran	14.8	15.3	15.5	13.6	9.7	7.8	11.0	11.0	11.2	11.1	11.1	11.1	11.2	11.2	11.3
Kazakhstan	16.6	17.0	19.8	21.4	19.7	17.5	17.1	21.8	21.9	20.1	20.0	19.7	19.5	19.3	19.3
Kuwait	71.9	67.3	68.3	68.1	61.7	60.6	59.2	70.2	80.2	77.7	76.9	76.5	75.9	75.5	75.2
Lebanon	19.2	19.4	21.9	21.0	20.8	16.0	9.8	6.5	...	...	...	...	...	...	...
Malaysia	22.2	20.3	19.6	20.2	21.6	20.1	18.4	19.9	18.9	17.6	17.0	16.8	16.7	16.7	16.7
Mexico	22.7	23.8	24.0	22.8	23.0	23.5	23.0	24.3	24.4	24.4	24.1	23.8	23.8	23.6	23.5
Morocco	23.9	24.1	24.6	24.2	23.8	27.0	25.3	28.7	28.5	28.2	27.5	26.9	26.6	26.5	26.3
Oman	31.1	25.0	29.0	31.6	33.9	28.9	33.0	39.7	32.1	31.0	30.3	29.4	28.4	27.5	27.4
Pakistan	13.1	13.8	14.0	13.4	11.3	13.3	12.4	12.1	11.4	12.5	12.4	12.4	12.3	12.3	12.4
Peru	20.2	18.7	18.1	19.3	19.8	17.8	21.0	22.0	19.7	20.0	20.1	20.1	20.1	20.2	20.3
Philippines	17.9	18.3	18.7	19.4	20.2	20.4	21.0	20.4	20.1	20.7	21.3	21.7	22.1	22.3	22.5
Poland	39.1	38.9	39.9	41.2	41.1	41.3	42.3	40.2	42.0	43.1	44.3	45.3	44.2	43.8	43.9
Qatar	57.0	30.9	27.8	31.2	33.5	32.6	29.6	34.6	29.8	29.1	28.8	28.5	27.6	27.4	27.4
Romania	32.8	29.3	28.2	29.0	28.8	28.6	30.4	31.0	31.5	30.6	31.7	32.0	31.5	31.4	31.4
Russian Federation	31.9	32.9	33.4	35.5	35.7	35.2	35.4	34.2	34.5	35.6	35.9	36.3	36.3	36.7	37.1
Saudi Arabia	24.4	20.8	23.2	28.5	29.5	28.4	29.5	30.7	30.3	28.5	29.7	29.4	28.4	27.4	26.5
South Africa	25.8	26.2	25.8	26.4	26.7	25.0	27.1	27.7	27.0	27.1	27.1	27.1	27.2	27.2	27.2
Sri Lanka	12.6	13.2	12.8	12.6	11.9	8.8	8.3	8.3	...	...	...	...	...	...	...
Thailand	22.3	21.9	21.1	21.5	21.0	20.4	20.0	20.1	20.0	20.1	20.3	20.3	20.4	20.6	20.7
Türkiye	31.9	32.5	31.2	30.8	30.1	29.4	27.8	26.6	28.4	29.9	29.7	29.5	29.5	29.5	29.5
Ukraine	41.9	38.3	39.3	39.8	39.4	39.7	36.5	50.3	55.2	43.6	41.5	40.7	41.2	41.0	40.7
United Arab Emirates	20.7	29.7	28.0	30.5	31.0	28.7	30.4	32.8	32.2	31.2	30.7	30.4	29.9	29.6	29.3
Uruguay ²	26.5	27.0	27.2	28.5	27.9	28.1	27.6	27.6	27.7	27.8	27.8	27.8	27.8	27.8	27.8
Venezuela	14.9	11.2	8.5	6.9	10.1	4.5	7.2	8.3	11.0	...	...	...	...	...	...
Vietnam	19.2	19.1	19.6	19.5	19.4	18.4	18.7	19.0	18.2	18.5	18.6	18.8	19.0	19.1	19.2

Source: IMF staff estimates and projections. Projections are based on staff assessments of current policies (see "Fiscal Policy Assumptions" in text).

Note: For country-specific details, see "Data and Conventions" in text and Table C. G20 = Group of Twenty; MENA = Middle East and North Africa.

¹The data for Ecuador reflect revenue of the nonfinancial public sector.

²Data are for the nonfinancial public sector, which includes central government, local government, social security funds, nonfinancial public corporations, and Banco de Seguros del Estado. The coverage of fiscal data was changed from the consolidated public sector to the nonfinancial public sector with the October 2019 submission. With this narrower coverage, the central bank balances are not included in the fiscal data. Historical data were also revised accordingly. Starting in October 2018, the public pension system has been receiving transfers in the context of a new law that compensates persons affected by the creation of the mixed pension system. These funds are recorded as revenues, consistent with the IMF's methodology. Therefore, data for 2018–22 are affected by these transfers, which amounted to 1.2 percent of GDP in 2018, 1.0 percent of GDP in 2019, 0.6 percent of GDP in 2020, 0.3 percent of GDP in 2021, 0.1 percent of GDP in 2022, and 0 thereafter. See IMF Country Report No. 19/64 for further details. The disclaimer about the public pension system applies only to the revenues and net lending/borrowing series.

Table A14. Emerging Market and Middle-Income Economies: General Government Expenditure, 2015–29
(Percent of GDP)

	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
Average	31.8	31.7	31.4	31.5	32.0	34.4	31.7	31.8	32.6	32.5	32.2	32.2	32.1	32.0	31.9
Asia	29.3	29.7	29.7	30.4	31.0	33.0	30.9	31.2	31.3	31.0	31.2	31.4	31.4	31.5	31.5
Europe	35.9	36.3	35.3	34.6	35.5	39.8	36.1	36.2	38.9	39.0	38.3	38.1	37.7	37.7	37.7
Latin America	36.4	36.1	35.9	35.3	34.5	36.9	33.6	34.7	35.3	35.3	33.9	33.6	33.4	33.2	33.1
MENA	34.0	32.6	30.3	30.7	31.8	34.9	30.0	27.6	29.7	30.3	30.0	29.7	29.2	28.6	28.2
G20 Emerging	32.6	32.8	32.5	32.6	33.0	35.1	32.1	32.7	33.4	33.2	33.0	33.1	33.0	33.0	33.0
Algeria	40.9	37.2	36.2	36.2	37.1	37.5	32.5	32.0	34.1	36.3	34.7	33.2	32.4	32.1	31.9
Angola	27.1	22.0	24.1	20.6	20.4	23.3	19.5	22.5	20.1	18.1	17.0	16.8	15.9	16.4	15.7
Argentina	41.4	41.5	41.1	38.9	38.1	42.5	37.8	37.8	36.4	34.5	34.2	35.1	33.6	33.4	33.2
Belarus	41.8	40.7	39.0	37.8	37.4	38.0	37.1	36.6	36.1	36.8	37.0	37.2	37.1	37.1	37.2
Brazil	49.1	48.6	48.3	47.5	46.8	49.9	42.9	45.6	47.9	47.2	46.7	46.5	46.3	46.1	46.0
Bulgaria	37.3	32.7	32.0	34.3	35.9	37.8	38.6	37.7	37.7	39.0	39.2	39.0	38.3	38.3	38.2
Chile	25.0	25.4	25.5	25.6	26.5	29.1	33.6	26.6	26.9	27.7	27.1	26.2	26.1	26.0	26.0
China	31.6	32.3	32.6	33.3	34.2	35.4	32.7	33.5	33.9	33.6	34.0	34.3	34.5	34.7	34.8
Colombia	31.3	30.0	29.3	34.7	32.9	33.5	34.3	33.9	35.0	33.9	32.9	32.3	32.3	32.0	31.7
Dominican Republic	16.7	17.0	17.1	16.4	17.9	22.1	18.5	18.5	19.3	18.9	18.0	17.8	17.7	17.5	17.3
Ecuador ¹	44.1	44.2	40.5	41.0	39.8	40.2	37.4	38.7	39.7	...	...	...	...	...	...
Egypt	31.3	31.0	30.6	28.6	26.9	25.7	25.5	24.7	22.7	28.5	27.7	26.6	25.6	24.6	23.2
Hungary	50.4	46.8	46.7	46.1	46.1	51.4	48.4	48.8	47.4	47.5	46.4	45.6	44.9	45.3	45.2
India	27.1	27.2	26.2	26.3	26.8	31.0	29.0	29.0	28.8	28.0	27.8	27.5	27.3	27.2	27.0
Indonesia	17.6	16.9	16.4	16.6	16.4	18.4	18.1	17.4	16.6	17.4	18.0	17.9	17.9	17.9	17.9
Iran	16.3	17.0	17.1	15.3	14.1	13.0	14.2	13.8	13.5	14.2	14.5	14.7	14.9	15.2	15.4
Kazakhstan	22.9	21.5	24.1	18.8	20.2	24.5	22.1	21.7	23.4	22.3	21.9	21.7	21.6	21.8	21.7
Kuwait	55.2	54.0	51.5	50.8	50.6	64.6	50.3	39.6	50.8	50.4	48.8	48.6	48.5	48.6	48.7
Lebanon	26.7	28.3	30.6	32.3	31.2	19.6	9.1	12.7	...	...	...	...	...	...	...
Malaysia	24.7	22.9	22.0	22.8	23.6	25.0	24.4	24.7	23.3	21.1	20.5	20.2	20.1	20.1	19.9
Mexico	26.6	26.5	25.0	25.0	25.2	27.8	26.8	28.6	28.7	30.3	27.1	26.5	26.4	26.2	26.2
Morocco	28.4	28.6	27.8	27.7	27.4	34.1	31.3	34.1	33.0	32.5	31.2	30.1	29.7	29.5	29.3
Oman	44.5	44.6	39.4	38.3	38.8	44.5	36.1	29.6	26.2	27.3	26.7	25.5	24.8	24.0	23.9
Pakistan	17.8	17.7	19.1	19.1	19.1	20.3	18.5	20.0	19.2	19.9	19.6	18.1	17.5	17.0	16.9
Peru	22.2	20.9	21.0	21.2	21.2	26.8	23.5	23.4	22.4	22.5	21.9	21.2	20.5	20.5	20.5
Philippines	17.8	19.0	19.5	20.9	21.7	25.9	27.2	25.9	25.2	24.8	24.8	24.6	24.5	24.3	24.4
Poland	41.7	41.3	41.4	41.4	41.9	48.2	44.1	43.9	47.6	48.6	49.0	49.7	48.6	47.9	48.0
Qatar	38.6	40.1	34.7	28.9	32.5	34.7	29.4	24.3	24.4	24.0	24.1	23.8	23.3	23.3	23.6
Romania	34.2	31.8	31.0	31.7	33.3	38.2	37.1	36.8	37.1	36.9	38.1	38.4	37.6	37.3	37.2
Russian Federation	35.3	36.6	34.8	32.6	33.8	39.2	34.7	35.5	36.8	37.5	37.1	36.8	36.5	36.9	36.9
Saudi Arabia	39.9	34.5	32.1	34.0	33.7	39.1	31.7	28.3	32.3	31.3	31.3	31.5	30.9	29.9	29.0
South Africa	30.2	29.9	29.9	30.2	31.4	34.6	32.6	32.0	32.9	33.2	33.5	32.8	32.6	32.8	33.0
Sri Lanka	19.3	18.2	17.9	17.5	19.5	21.0	20.0	18.5	...	...	...	...	...	...	...
Thailand	22.2	21.3	21.5	21.4	20.6	24.9	26.8	24.5	23.2	23.8	23.6	23.7	23.7	23.8	23.9
Türkiye	32.9	34.1	32.8	34.0	34.9	34.1	30.8	27.7	33.9	35.4	33.4	32.7	32.8	32.9	32.8
Ukraine	43.0	40.8	41.6	41.9	41.5	45.6	40.5	66.0	74.9	57.3	48.9	45.4	44.7	43.6	43.0
United Arab Emirates	27.2	32.8	28.1	26.7	28.4	31.1	26.4	22.9	25.9	26.6	26.7	26.6	26.4	26.3	26.2
Uruguay ²	28.4	29.7	29.7	30.3	30.5	32.7	30.2	30.2	30.8	30.5	30.2	30.0	29.9	29.9	29.8
Venezuela	22.9	19.7	21.8	37.2	20.1	9.5	11.9	14.3	14.4	...	...	...	...	...	...
Vietnam	24.2	22.2	21.5	20.5	19.8	21.3	20.1	18.7	19.9	20.8	21.0	21.3	21.5	21.6	21.7

Source: IMF staff estimates and projections. Projections are based on staff assessments of current policies (see "Fiscal Policy Assumptions" in text).

Note: For country-specific details, see "Data and Conventions" in text and Table C. G20 = Group of Twenty; MENA = Middle East and North Africa.

¹The data for Ecuador reflect expenditure of the nonfinancial public sector.

²Data are for the nonfinancial public sector, which includes central government, local government, social security funds, nonfinancial public corporations, and Banco de Seguros del Estado. The coverage of fiscal data was changed from the consolidated public sector to the nonfinancial public sector with the October 2019 submission. With this narrower coverage, the central bank balances are not included in the fiscal data. Historical data were also revised accordingly.

Table A15. Emerging Market and Middle-Income Economies: General Government Gross Debt, 2015–29
(Percent of GDP)

	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
Average ¹	44.3	49.8	51.9	53.2	55.7	65.5	64.7	64.8	68.9	70.3	72.5	74.6	76.5	78.4	80.1
Asia	45.0	51.7	55.0	56.3	59.5	69.7	70.9	74.2	79.0	82.4	85.4	88.2	90.9	93.4	95.7
Europe	30.3	31.2	29.3	29.0	28.5	37.0	34.4	31.9	33.9	36.2	37.7	39.1	40.1	41.0	41.8
Latin America	56.9	60.6	62.9	66.6	67.6	76.6	70.8	68.3	74.1	68.5	68.4	68.2	67.9	67.6	67.2
MENA	33.7	41.7	41.9	40.1	43.4	54.6	51.5	43.5	43.1	42.3	41.4	42.0	42.6	43.4	44.0
G20 Emerging	43.8	49.9	52.9	54.5	57.5	67.2	66.7	68.0	73.5	75.3	78.1	80.7	83.2	85.6	87.8
Algeria	7.7	18.1	24.0	34.5	40.9	46.0	55.1	48.1	49.5	46.4	49.7	51.9	54.5	57.0	59.5
Angola	57.1	75.7	69.3	93.0	113.6	138.7	83.7	64.8	84.5	70.3	61.8	54.8	48.2	44.0	41.3
Argentina	52.6	53.1	57.0	85.2	89.8	103.8	80.8	84.7	154.5	86.2	79.5	69.5	59.8	53.5	47.9
Belarus	53.0	53.5	53.2	47.5	41.0	47.5	41.2	41.3	45.0	48.6	47.6	47.9	47.1	46.0	45.1
Brazil	71.7	77.4	82.7	84.8	87.1	96.0	88.9	83.9	84.7	86.7	89.3	90.9	92.4	93.4	93.9
Bulgaria	25.4	27.0	22.9	20.1	18.3	23.2	22.5	21.5	22.0	23.4	24.9	26.9	28.3	29.6	30.8
Chile	17.4	21.1	23.7	25.8	28.3	32.4	36.4	37.8	39.4	40.5	40.8	41.3	41.6	41.7	41.5
China ²	41.5	50.7	55.0	56.7	60.4	70.1	71.8	77.1	83.6	88.6	93.0	97.5	101.8	106.0	110.1
Colombia	50.4	49.8	49.4	53.6	52.4	65.7	64.0	60.1	52.5	54.4	55.6	55.7	55.4	55.2	54.5
Dominican Republic	44.7	46.6	48.9	50.5	53.6	71.5	63.2	59.5	60.9	59.5	58.7	57.1	55.3	53.3	51.3
Ecuador	36.0	45.6	47.0	49.1	51.7	63.1	61.6	57.0	54.7	...	...	...	...	...	...
Egypt	83.8	91.6	97.8	87.9	80.1	86.2	89.9	88.5	95.9	96.4	82.6	77.3	71.1	65.7	60.8
Hungary	75.8	74.9	72.1	69.1	65.3	79.3	76.7	73.9	73.4	74.7	73.4	72.4	71.2	69.7	68.2
India	69.0	68.9	69.7	70.4	75.0	88.4	83.5	81.7	82.7	82.5	81.8	80.9	79.9	78.8	77.5
Indonesia	27.0	28.0	29.4	30.4	30.6	39.7	41.1	40.1	39.9	39.3	39.3	39.3	39.2	39.0	38.7
Iran	37.0	47.9	45.0	42.9	46.6	48.3	42.4	35.8	28.3	25.5	25.7	24.9	24.8	25.8	26.9
Kazakhstan	21.9	19.7	19.9	20.3	19.9	26.4	25.1	23.5	23.0	24.2	26.5	29.2	31.2	33.6	35.9
Kuwait	4.6	9.9	19.7	14.3	10.7	10.6	7.6	2.9	3.2	7.1	12.2	17.1	19.3	23.9	25.0
Lebanon	140.8	146.4	150.0	155.1	172.3	150.6	349.9	283.2	...	...	...	...	...	...	...
Malaysia	57.0	55.8	54.4	55.6	57.1	67.7	69.2	65.6	67.3	66.4	66.3	66.8	67.7	68.3	68.8
Mexico	51.0	55.0	52.5	52.2	51.9	58.5	56.9	54.2	53.1	55.6	55.4	55.4	55.6	55.8	56.1
Morocco	58.4	60.1	60.3	60.5	60.3	72.2	69.5	71.6	70.6	70.4	69.4	68.2	67.5	66.8	66.1
Oman	13.9	29.3	40.1	44.7	52.5	67.9	61.3	39.8	36.4	35.4	33.5	31.6	30.0	28.7	28.7
Pakistan	57.9	60.8	60.9	64.8	77.5	79.6	73.5	76.2	77.1	71.8	69.6	68.4	66.8	64.8	63.1
Peru	24.0	24.3	25.2	26.0	27.0	34.9	36.1	33.9	32.1	33.0	33.3	33.2	32.6	32.1	31.6
Philippines	39.7	37.4	38.1	37.1	37.0	51.6	57.0	57.4	56.6	56.9	56.7	55.7	54.3	52.7	51.0
Poland	51.3	54.5	50.8	48.7	45.7	57.2	53.6	49.3	50.8	55.1	57.7	59.5	61.4	62.6	63.9
Qatar	35.5	46.7	51.6	52.2	62.1	72.6	58.4	42.5	39.4	37.3	36.1	35.0	33.4	32.8	32.6
Romania	39.4	39.5	37.1	36.2	36.6	49.4	51.7	50.5	50.7	53.0	56.2	59.1	61.4	63.5	65.5
Russian Federation	15.3	14.8	14.3	13.6	13.7	19.2	16.4	18.5	19.7	20.8	21.9	22.8	23.3	23.7	24.0
Saudi Arabia	5.7	12.7	16.5	17.6	21.6	31.0	28.6	23.9	26.2	27.5	27.6	28.4	29.5	30.7	31.5
South Africa	45.2	47.1	48.6	51.5	56.1	68.9	68.8	71.1	73.9	75.4	77.9	80.0	81.9	83.8	85.7
Sri Lanka	76.3	75.0	72.3	83.6	82.6	96.7	102.7	115.5	...	...	...	...	...	...	...
Thailand	42.6	41.7	41.8	41.9	41.1	49.4	58.3	60.5	62.4	64.5	65.5	65.8	65.1	64.6	64.4
Türkiye	27.2	27.7	27.8	29.9	32.4	39.4	40.4	30.8	28.9	30.9	31.0	32.0	32.1	33.0	33.6
Ukraine	79.3	79.5	71.6	60.4	50.6	60.5	48.9	78.4	82.9	94.0	96.7	95.9	93.8	91.2	88.2
United Arab Emirates	16.1	19.3	21.9	21.3	26.8	41.1	35.9	31.1	30.9	30.3	30.3	30.1	29.7	29.3	28.8
Uruguay ³	57.8	56.4	55.8	57.9	59.6	68.1	64.1	60.3	60.3	61.9	62.2	62.3	62.3	62.3	62.3
Venezuela	129.8	138.4	133.6	174.6	205.1	327.7	248.4	159.5	148.2	...	...	...	...	...	...
Vietnam	46.1	47.5	46.3	43.5	40.8	41.1	39.0	34.6	34.0	33.5	32.9	32.6	32.4	32.4	33.0

Source: IMF staff estimates and projections. Projections are based on staff assessments of current policies (see "Fiscal Policy Assumptions" in text).

Note: For country-specific details, see "Data and Conventions" in text and Table C. MENA = Middle East and North Africa.

¹ The average does not include the debt incurred by the European Union and used to finance the grants portion of the Next Generation EU (NGEU) package. This totaled €58 billion (0.4 percent of EU GDP) as of December 31, 2021, and €158 billion (1 percent of EU GDP) as of February 16, 2023. Debt incurred by the European Union and used to on-lend to member states is included within member state debt data and regional aggregates.

² China's deficit and public debt numbers presented in this table cover a narrower perimeter of the general government than IMF staff's estimates in China Article IV reports (see IMF 2024 for a reconciliation of the two estimates).

³ Data are for the nonfinancial public sector, which includes central government, local government, social security funds, nonfinancial public corporations, and Banco de Seguros del Estado. The coverage of fiscal data was changed from the consolidated public sector to the nonfinancial public sector with the October 2019 submission. With this narrower coverage, the central bank balances are not included in the fiscal data. Historical data were also revised accordingly.

Table A16. Emerging Market and Middle-Income Economies: General Government Net Debt, 2015–29
(Percent of GDP)

	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
Average ¹	28.0	33.6	35.2	36.0	37.7	44.9	44.4	42.0	42.8	44.0	44.6	45.4	46.0	46.5	46.7
Asia	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Europe	28.1	30.1	28.8	29.0	28.9	35.2	35.9	30.3	30.5	33.3	35.0	36.5	37.9	39.0	39.9
Latin America	34.6	39.9	42.2	42.7	43.9	51.1	48.3	48.3	50.0	51.7	52.8	53.6	54.3	54.8	54.8
MENA	10.4	24.5	26.1	27.0	31.5	40.6	42.4	35.9	36.9	36.1	34.2	34.5	34.7	35.2	35.3
G20 Emerging	25.1	30.9	34.2	34.9	36.5	43.2	42.3	40.1	42.6	44.2	45.3	46.3	47.3	48.1	48.4
Algeria	-6.8	11.8	19.0	23.1	27.1	38.7	45.4	35.6	40.1	43.8	47.2	49.5	51.6	53.6	56.2
Angola	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Argentina	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Belarus	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Brazil	35.6	46.1	51.4	52.8	54.7	61.4	55.1	56.1	60.9	61.4	64.2	66.1	67.9	69.2	69.5
Bulgaria	15.4	11.3	10.3	9.0	8.4	13.3	12.7	11.5	13.3	15.1	17.0	19.3	20.9	22.5	24.0
Chile	-3.5	0.9	4.4	5.7	8.0	13.3	20.2	19.5	22.8	23.9	24.5	24.2	23.7	23.1	22.4
China ²	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Colombia	42.1	38.6	38.6	43.1	43.1	54.6	54.1	51.4	44.4	48.3	49.2	49.6	49.6	49.3	48.8
Dominican Republic	37.2	38.5	40.3	41.4	43.4	57.5	49.5	46.6	47.6	46.6	45.9	44.4	42.8	41.0	39.2
Ecuador	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Egypt	75.3	81.6	86.6	80.7	74.6	80.6	85.2	83.9	91.2	91.7	77.9	72.6	66.4	61.0	56.1
Hungary	68.3	65.5	63.6	60.1	57.5	66.0	65.6	63.6	59.7	61.0	59.7	58.7	57.5	56.0	54.6
India	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Indonesia	22.0	23.5	25.3	26.7	27.0	36.1	37.8	37.3	37.2	36.8	37.0	37.2	37.2	37.2	37.0
Iran	21.6	36.4	32.9	31.5	36.8	40.3	36.1	29.7	23.1	20.9	21.5	20.9	21.0	22.1	23.3
Kazakhstan	-30.8	-23.8	-15.8	-15.8	-13.9	-8.6	-3.3	-1.2	0.2	1.5	2.5	3.7	4.9	6.4	7.7
Kuwait	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Lebanon	134.4	140.7	144.4	150.8	167.1	147.9	346.4	280.5	...	...	...	...	...	...	...
Malaysia	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Mexico	44.9	47.2	44.5	43.6	43.3	50.2	49.3	48.1	47.9	50.3	50.2	50.2	50.4	50.6	50.8
Morocco	57.8	59.6	59.9	60.2	60.0	71.6	68.9	71.1	69.8	69.5	68.6	67.4	66.6	66.0	65.3
Oman	-37.0	-24.2	-10.4	6.4	11.2	27.7	24.9	10.3	4.1	1.6	0.3	-1.1	-2.2	-3.3	-4.8
Pakistan	53.3	55.1	55.9	59.9	70.2	72.9	66.0	69.9	72.1	67.9	66.3	65.4	64.1	62.5	60.9
Peru	5.3	6.9	8.7	10.1	11.1	21.0	19.8	19.9	21.4	22.9	23.7	23.7	23.1	22.4	21.7
Philippines	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Poland	46.4	47.9	44.4	41.5	38.5	44.9	40.7	37.3	39.8	44.6	47.7	49.8	51.9	53.2	54.6
Qatar	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Romania	28.3	26.8	25.9	26.2	28.6	37.8	40.5	39.1	39.7	42.3	45.8	48.8	51.2	53.5	55.7
Russian Federation	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Saudi Arabia	-40.8	-22.8	-10.7	-3.8	1.6	10.2	11.1	8.6	14.1	15.8	16.6	17.8	19.5	21.2	22.4
South Africa	41.0	42.1	43.8	46.6	50.6	62.1	63.0	66.4	69.5	72.5	75.5	77.8	79.8	81.9	83.9
Sri Lanka	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Thailand	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Türkiye	22.8	23.3	22.1	24.0	25.5	30.2	33.8	23.4	22.8	25.5	25.9	27.0	28.1	29.1	29.7
Ukraine	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
United Arab Emirates	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Uruguay ³	44.4	44.3	44.2	46.6	49.9	57.3	54.1	51.6	52.4	54.0	54.4	54.6	54.7	54.7	54.7
Venezuela	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Vietnam	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...

Source: IMF staff estimates and projections. Projections are based on staff assessments of current policies (see "Fiscal Policy Assumptions" in text).

Note: For country-specific details, see "Data and Conventions" in text and Table C. G20 = Group of Twenty; MENA = Middle East and North Africa.

¹ The average does not include the debt incurred by the European Union and used to finance the grants portion of the NextGenerationEU package. This totaled €58 billion (0.4 percent of EU GDP) as of December 31, 2021, and €158 billion (1 percent of EU GDP) as of February 16, 2023. Debt incurred by the European Union and used to on-lend to member states is included within member state debt data and regional aggregates.

² China's deficit and public debt numbers presented in this table cover a narrower perimeter of the general government than IMF staff's estimates in China Article IV reports (see IMF 2024 for a reconciliation of the two estimates).

³ Data are for the nonfinancial public sector, which includes central government, local government, social security funds, nonfinancial public corporations, and Banco de Seguros del Estado. The coverage of fiscal data was changed from the consolidated public sector to the nonfinancial public sector with the October 2019 submission. With this narrower coverage, the central bank balances are not included in the fiscal data. Historical data were also revised accordingly.

Table A17. Low-Income Developing Countries: General Government Overall Balance, 2015–29
(Percent of GDP)

	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
Average	-3.6	-3.7	-3.9	-3.6	-4.0	-5.3	-4.6	-4.5	-4.0	-3.6	-3.4	-3.3	-3.2	-3.2	-3.2
Oil Producers	-4.5	-5.2	-5.3	-4.1	-4.4	-5.3	-5.1	-4.8	-4.0	-4.1	-3.8	-3.5	-3.4	-3.7	-3.7
Asia	-3.0	-3.2	-3.7	-3.8	-4.6	-5.1	-4.3	-4.1	-4.7	-4.6	-4.5	-4.6	-4.5	-4.5	-4.4
Latin America	-1.2	-0.6	-0.7	-1.0	-0.6	-3.3	-2.5	0.3	-0.2	1.4	-0.7	-0.6	-0.5	-0.5	-0.5
Sub-Saharan Africa	-4.0	-4.5	-4.5	-3.9	-4.0	-5.8	-5.3	-5.2	-4.0	-3.6	-3.1	-3.0	-2.9	-2.8	-2.7
Others	-3.1	-2.2	-2.2	-1.9	-3.0	-3.5	-2.1	-2.7	-3.6	-3.1	-2.5	-2.5	-2.2	-2.2	-2.2
Afghanistan	-1.4	0.1	-0.7	1.6	-1.1	-2.2	-0.5	-1.0	...	...	...	...	...	...	...
Bangladesh	-3.3	-3.2	-4.2	-4.1	-5.4	-4.8	-3.6	-4.1	-4.6	-4.6	-4.6	-5.0	-5.0	-5.0	-5.0
Benin	-5.6	-4.3	-4.2	-3.0	-0.5	-4.7	-5.7	-5.6	-4.5	-3.7	-2.9	-2.9	-2.9	-2.9	-2.9
Burkina Faso	-2.1	-3.1	-6.9	-4.4	-3.4	-5.2	-7.5	-10.7	-6.8	-5.7	-4.7	-3.8	-3.0	-3.0	-3.0
Cambodia	-0.5	-0.2	-0.6	0.5	2.2	-2.5	-5.2	0.2	-2.2	-1.7	-1.7	-1.7	-1.5	-1.6	-1.6
Cameroon	-4.2	-5.9	-4.7	-2.4	-3.2	-3.2	-3.0	-1.1	-0.7	-0.4	-0.4	-0.8	-0.9	-0.9	-1.3
Chad	-3.3	-1.5	-0.2	1.4	-0.1	1.2	-1.4	4.2	-1.3	-1.0	-0.7	-0.9	-1.3	-1.6	-2.0
Congo, Democratic Republic of the	0.7	-0.5	0.7	-0.8	-2.4	-3.2	-1.8	-0.5	-2.2	-1.6	-1.2	-0.9	-0.8	-0.7	-0.9
Congo, Republic of	-17.8	-14.5	-5.6	5.2	4.3	-1.1	1.6	8.9	3.6	4.9	3.6	3.0	3.8	4.4	5.4
Côte d'Ivoire	-2.0	-3.0	-3.3	-2.9	-2.2	-5.4	-4.8	-6.6	-5.2	-4.0	-3.0	-3.0	-3.0	-3.0	-2.5
Ethiopia	-1.9	-2.3	-3.2	-3.0	-2.5	-2.8	-2.8	-4.2	-2.5	-2.0	-2.5	-3.0	-3.0	-3.0	-2.7
Ghana	-4.0	-6.7	-4.0	-6.8	-7.5	-17.4	-12.0	-11.8	-4.6	-5.0	-4.3	-3.6	-3.1	-3.0	-3.4
Guinea	-6.6	-0.1	-2.1	-1.1	-0.3	-3.1	-1.7	-0.8	-1.6	-3.0	-2.6	-2.6	-2.5	-2.3	-2.3
Haiti	-1.5	0.1	-0.3	-1.1	-2.0	-2.1	-2.3	-1.8	0.8	6.7	-0.9	-1.0	-1.4	-1.7	-1.8
Honduras	-0.8	-0.4	-0.4	0.2	0.1	-4.5	-3.1	1.6	-1.2	-1.7	-1.6	-1.4	-1.1	-1.2	-1.1
Kenya	-6.7	-7.5	-7.4	-6.9	-7.4	-8.1	-7.2	-6.1	-5.3	-4.0	-3.2	-3.0	-3.1	-3.2	-3.5
Kyrgyz Republic	-2.5	-5.8	-3.7	-0.6	-0.1	-3.1	-0.7	-0.3	2.0	-1.4	-2.0	-2.1	-2.4	-2.9	-3.0
Lao P.D.R.	-5.6	-5.1	-5.5	-4.5	-3.2	-5.6	-0.7	0.1	-0.4	-1.4	-1.2	-1.5	-2.6	-2.6	-2.6
Madagascar	-2.9	-1.1	-2.1	-1.3	-1.4	-4.0	-2.8	-5.5	-4.9	-3.8	-4.6	-4.1	-3.6	-3.7	-3.5
Malawi	-4.2	-4.9	-5.2	-4.3	-4.5	-8.2	-8.6	-9.4	-7.6	-6.6	-7.5	-5.2	-4.3	-2.5	-1.9
Mali	-1.8	-3.9	-2.9	-4.7	-1.7	-5.4	-4.8	-4.9	-4.8	-4.2	-3.6	-3.0	-3.0	-3.0	-3.0
Moldova	-1.9	-1.5	-0.7	-0.9	-1.5	-5.3	-2.6	-3.2	-5.0	-4.7	-3.8	-3.4	-3.1	-2.5	-2.2
Mozambique	-6.6	-5.1	-2.0	-5.5	1.7	-4.6	-3.9	-5.2	-2.7	-3.3	-1.2	0.1	1.5	3.2	3.9
Myanmar	-2.8	-3.9	-2.9	-3.4	-3.9	-5.9	-7.0	-6.0	-6.1	-5.8	-5.9	-5.6	-5.2	-5.1	-4.7
Nepal	0.6	1.2	-2.7	-5.8	-5.0	-5.4	-4.0	-3.2	-5.8	-4.9	-4.3	-3.7	-3.2	-2.7	-2.3
Nicaragua	-1.5	-1.8	-1.6	-3.0	-0.3	-2.6	-1.4	0.3	0.7	0.8	1.3	1.5	1.5	1.8	1.8
Niger	-6.7	-4.5	-4.1	-3.0	-3.6	-4.8	-5.9	-6.8	-5.5	-4.1	-3.0	-3.0	-3.0	-3.0	-3.0
Nigeria	-3.8	-4.6	-5.4	-4.3	-4.7	-5.6	-5.5	-5.4	-4.2	-4.6	-4.2	-3.6	-3.9	-4.3	-4.2
Papua New Guinea	-4.5	-4.7	-2.5	-2.6	-4.4	-8.9	-6.8	-5.3	-4.4	-4.0	-2.6	-1.4	0.1	0.2	0.4
Rwanda	-2.7	-2.3	-2.5	-2.6	-5.1	-9.5	-7.0	-5.7	-5.5	-7.0	-3.4	-2.6	-2.7	-1.9	-2.4
Senegal	-3.7	-3.3	-3.0	-3.7	-3.9	-6.4	-6.3	-6.6	-4.9	-3.9	-3.1	-3.0	-3.0	-3.0	-3.1
Sudan	-3.9	-3.9	-6.1	-7.9	-10.8	-5.9	-0.3	-2.1	-3.3	-2.5	-1.9	-1.3	-1.2	-1.2	-1.1
Tajikistan	-2.0	-2.9	-5.6	-2.7	-2.0	-4.3	-0.7	-0.2	-1.0	-2.5	-2.5	-2.5	-2.5	-2.5	-2.5
Tanzania	-3.2	-2.1	-1.2	-2.0	-2.1	-2.6	-3.5	-3.9	-3.5	-2.7	-2.6	-2.7	-2.7	-2.7	-2.7
Uganda	-2.6	-2.6	-3.8	-3.0	-4.8	-7.8	-7.5	-6.3	-5.0	-4.1	-3.6	-3.7	-3.3	-2.6	-2.5
Uzbekistan	-0.3	0.7	1.2	1.8	-0.3	-3.3	-4.6	-4.3	-4.9	-3.7	-2.6	-2.7	-2.6	-2.6	-2.6
Yemen	-8.7	-8.5	-4.9	-7.8	-5.9	-4.5	-0.9	-2.7	-4.5	-3.8	-3.7	-4.7	-2.0	-1.9	-1.7
Zambia	-8.9	-5.7	-7.5	-8.3	-9.4	-13.8	-8.1	-7.8	-6.8	-6.1	-5.4	-6.6	-4.7	-3.8	-3.4
Zimbabwe	-1.8	-6.6	-10.3	-5.4	-0.9	0.8	-2.2	-6.0	-7.8	-9.9	-9.8	-9.7	-9.8	-9.8	-9.7

Source: IMF staff estimates and projections. Projections are based on staff assessments of current policies (see "Fiscal Policy Assumptions" in text).

Note: For country-specific details, see "Data and Conventions" in text and Table D.

Table A18. Low-Income Developing Countries: General Government Primary Balance, 2015–29
(Percent of GDP)

	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
Average	-2.3	-2.3	-2.5	-2.0	-2.3	-3.5	-2.7	-2.4	-1.8	-1.5	-1.1	-1.1	-1.0	-1.0	-1.0
Oil Producers	-3.0	-3.7	-4.0	-2.5	-2.8	-3.2	-2.8	-2.1	-0.9	-1.0	-0.4	0.0	0.0	-0.3	-0.1
Asia	-1.6	-1.8	-2.4	-2.3	-3.1	-3.4	-2.5	-2.2	-2.7	-2.7	-2.3	-2.4	-2.2	-2.3	-2.2
Latin America	-0.7	-0.1	-0.2	-0.4	0.2	-2.5	-1.6	1.2	1.2	2.4	0.2	0.3	0.3	0.3	0.3
Sub-Saharan Africa	-2.7	-2.9	-2.8	-2.0	-2.0	-3.7	-2.9	-2.6	-1.4	-1.0	-0.5	-0.4	-0.4	-0.4	-0.3
Others	-1.8	-1.3	-2.0	-1.7	-2.8	-3.1	-1.8	-2.4	-3.0	-2.5	-1.8	-1.8	-1.5	-1.4	-1.4
Afghanistan	-1.3	0.2	-0.6	1.7	-1.0	-2.2	-0.5	-1.0	...	...	...	...	...	...	...
Bangladesh	-1.6	-1.6	-2.6	-2.5	-3.7	-3.0	-1.6	-2.1	-2.6	-2.8	-2.3	-2.5	-2.5	-2.6	-2.6
Benin	-5.0	-3.4	-2.8	-1.4	1.1	-2.7	-3.5	-3.9	-2.8	-2.1	-1.3	-1.4	-1.4	-1.4	-1.5
Burkina Faso	-1.5	-2.2	-6.1	-3.3	-2.2	-3.8	-5.7	-8.8	-4.5	-3.0	-1.8	-0.8	-0.4	-0.5	-0.5
Cambodia	-0.3	0.0	-0.3	0.8	2.4	-2.3	-4.9	0.5	-2.0	-1.5	-1.5	-1.5	-1.3	-1.4	-1.4
Cameroon	-3.9	-5.2	-3.9	-1.5	-2.2	-2.3	-2.0	-0.3	0.4	0.6	0.6	0.2	0.2	0.2	-0.3
Chad	-2.0	0.0	1.0	2.2	0.6	2.0	-0.6	5.3	-0.1	0.1	0.8	0.1	-0.3	-0.8	-1.1
Congo, Democratic Republic of the	1.0	-0.2	1.0	-0.4	-2.2	-3.0	-1.4	-0.2	-1.9	-1.2	-0.9	-0.5	-0.4	-0.4	-0.6
Congo, Republic of	-17.2	-12.7	-4.0	7.0	7.2	0.1	3.7	11.5	6.6	7.4	6.2	5.6	6.2	6.6	7.4
Côte d'Ivoire	-0.9	-1.7	-2.0	-1.6	-0.7	-3.6	-2.8	-4.4	-2.6	-1.7	-0.6	-0.7	-0.8	-0.8	-0.3
Ethiopia	-1.5	-1.8	-2.8	-2.5	-2.0	-2.4	-2.2	-3.5	-1.9	-1.4	-1.5	-1.7	-1.7	-1.6	-1.2
Ghana	0.9	-1.5	1.2	-1.4	-2.0	-11.2	-4.8	-4.4	-0.5	0.5	1.5	1.5	1.5	1.5	1.3
Guinea	-5.7	0.9	-1.2	-0.3	0.2	-2.4	-1.1	0.1	-0.9	-2.0	-1.4	-1.5	-1.4	-1.5	-1.4
Haiti	-1.4	0.3	-0.2	-0.9	-1.7	-1.9	-2.0	-1.5	1.1	6.8	-0.8	-0.9	-1.3	-1.6	-1.7
Honduras	0.0	0.2	0.2	0.8	0.8	-3.6	-2.1	2.6	0.7	-0.4	-0.3	-0.2	0.1	0.0	0.1
Kenya	-4.2	-4.7	-4.2	-3.5	-3.8	-4.2	-3.1	-1.7	-0.4	1.0	1.5	1.4	1.3	1.2	0.9
Kyrgyz Republic	-1.7	-4.9	-2.9	0.4	0.8	-2.1	0.0	0.8	3.3	-0.3	-0.8	-0.8	-1.0	-1.3	-1.2
Lao P.D.R.	-4.8	-4.2	-4.7	-3.3	-1.9	-4.1	0.3	1.5	2.1	2.2	1.7	1.3	0.1	0.1	0.0
Madagascar	-2.2	-0.4	-1.4	-0.6	-0.7	-3.2	-2.2	-4.9	-4.2	-2.9	-3.8	-3.1	-2.9	-2.8	-2.7
Malawi	-1.9	-1.8	-2.4	-1.6	-1.5	-5.0	-4.6	-4.6	-3.0	0.2	-0.1	2.3	2.9	4.3	4.4
Mali	-1.2	-3.3	-2.0	-3.9	-0.7	-4.2	-3.5	-3.4	-3.3	-2.5	-1.9	-1.3	-1.3	-1.3	-1.3
Moldova	-1.2	-0.4	0.5	0.0	-0.7	-4.5	-1.8	-2.2	-3.2	-3.1	-2.1	-1.9	-1.7	-1.1	-0.8
Mozambique	-5.4	-2.6	1.0	-1.1	4.9	-1.7	-1.2	-2.2	0.7	0.9	2.0	2.8	3.9	5.0	5.3
Myanmar	-1.6	-2.6	-1.5	-1.6	-2.4	-4.2	-5.0	-3.3	-3.5	-3.0	-3.1	-2.6	-2.1	-2.0	-1.6
Nepal	0.9	1.5	-2.4	-5.4	-4.5	-4.7	-3.2	-2.3	-4.5	-3.7	-3.1	-2.4	-1.9	-1.4	-1.0
Nicaragua	-1.1	-1.2	-0.7	-1.9	1.0	-1.4	-0.2	1.6	2.2	2.5	2.6	2.6	2.6	2.6	2.6
Niger	-6.3	-3.8	-3.4	-2.1	-2.6	-3.8	-4.8	-5.5	-4.1	-2.6	-1.8	-1.8	-1.8	-1.7	-1.7
Nigeria	-2.7	-3.4	-4.1	-2.6	-3.0	-3.5	-3.1	-2.6	-1.0	-1.1	-0.4	0.2	0.1	-0.2	-0.1
Papua New Guinea	-2.8	-2.8	-0.4	-0.2	-1.9	-6.2	-4.4	-2.9	-1.9	-1.5	-0.3	0.9	2.4	1.9	2.0
Rwanda	-1.8	-1.3	-1.5	-1.4	-3.8	-7.9	-5.2	-3.9	-3.2	-4.5	-1.0	-0.4	-0.5	0.3	-0.4
Senegal	-2.1	-1.6	-1.1	-1.7	-1.9	-4.4	-4.3	-4.4	-2.3	-1.2	-0.7	-0.7	-0.7	-0.6	-0.7
Sudan	-3.2	-3.5	-5.6	-7.7	-10.6	-5.9	-0.2	-1.9	-3.3	-1.9	-1.4	-0.8	-0.7	-0.8	-0.7
Tajikistan	-1.5	-2.2	-5.2	-1.6	-1.2	-3.4	0.2	0.5	-0.3	-1.8	-1.7	-1.9	-1.8	-1.9	-1.7
Tanzania	-1.7	-0.6	0.4	-0.2	-0.3	-0.9	-1.8	-2.0	-1.4	-0.7	-0.6	-0.5	-0.5	-0.5	-0.5
Uganda	-1.2	-0.6	-1.8	-1.2	-2.7	-5.5	-4.6	-3.2	-1.8	-0.9	-0.4	-0.5	-0.3	0.2	-0.1
Uzbekistan	-0.4	0.6	0.9	1.4	-0.5	-3.3	-4.8	-4.4	-4.6	-3.3	-2.0	-2.0	-1.9	-1.9	-1.9
Yemen	-2.6	-3.2	-4.7	-7.8	-5.7	-2.6	0.2	-1.7	-3.5	-2.7	-2.6	-3.8	-1.2	-1.1	-1.0
Zambia	-6.0	-2.2	-3.5	-3.5	-2.5	-7.8	-2.1	-1.6	0.2	0.8	1.6	0.8	1.6	2.0	1.8
Zimbabwe	-0.9	-6.0	-9.4	-4.4	-0.5	0.9	-1.7	-5.7	-7.7	-9.5	-9.5	-9.6	-9.6	-9.6	-9.6

Source: IMF staff estimates and projections. Projections are based on staff assessments of current policies (see "Fiscal Policy Assumptions" in text).

Note: "Primary balance" is defined as the overall balance, excluding net interest payments. For country-specific details, see "Data and Conventions" in text and Table D.

Table A19. Low-Income Developing Countries: General Government Revenue, 2015–29
(Percent of GDP)

	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
Average	13.4	12.9	13.2	13.9	13.6	12.9	13.5	14.3	14.4	15.3	15.6	15.9	16.0	16.0	16.0
Oil Producers	8.1	6.0	7.1	9.1	8.5	7.3	7.8	10.0	10.6	13.3	13.6	14.1	14.4	13.9	14.2
Asia	12.9	12.3	11.8	12.6	11.8	11.7	12.1	11.8	11.3	11.7	12.1	12.6	12.7	12.8	12.8
Latin America	20.6	21.8	21.4	20.9	21.1	19.8	20.1	20.8	20.0	22.0	20.6	21.1	21.4	21.7	21.9
Sub-Saharan Africa	12.3	11.7	12.7	13.2	13.1	12.3	13.0	13.8	14.3	15.4	15.6	15.9	15.9	15.9	15.9
Others	18.0	17.1	17.0	20.3	20.0	18.8	19.8	23.6	23.0	23.3	24.1	24.6	25.3	25.4	25.6
Afghanistan	24.6	28.2	27.1	30.6	26.9	25.7	17.4	15.1	...	...	...	...	...	...	...
Bangladesh	8.2	8.4	8.1	8.9	8.1	8.5	9.4	8.9	8.3	8.8	9.3	9.9	10.0	10.2	10.2
Benin	12.6	11.1	13.6	13.6	14.1	14.4	14.1	14.3	14.9	15.2	15.7	16.0	16.5	16.9	17.3
Burkina Faso	18.3	18.6	19.3	19.8	20.0	19.4	20.4	21.7	22.2	21.8	22.7	23.3	23.8	24.0	24.2
Cambodia	14.7	15.7	16.3	17.6	19.8	17.8	15.8	17.0	15.5	14.7	14.8	14.9	14.9	14.9	14.9
Cameroon	15.8	14.3	14.5	15.5	15.4	13.4	14.0	15.9	16.0	16.0	15.5	15.6	15.7	15.8	15.6
Chad	10.5	9.5	11.1	11.0	10.4	15.5	12.4	18.0	19.1	15.9	15.9	15.2	15.0	14.5	14.1
Congo, Democratic Republic of the	15.9	13.5	11.1	10.9	11.0	9.4	12.0	16.9	15.1	14.6	14.4	14.6	14.7	14.9	14.8
Congo, Republic of	23.5	24.3	21.0	23.0	24.5	20.0	22.6	31.8	26.5	26.5	25.8	25.2	25.0	24.6	24.5
Côte d'Ivoire	14.5	14.6	14.8	14.7	15.0	15.0	15.7	15.0	16.0	16.5	17.0	17.5	18.0	18.2	18.5
Ethiopia	15.4	15.6	14.7	13.1	12.8	11.7	11.0	8.5	8.2	8.3	8.3	8.4	8.4	8.5	8.5
Ghana	14.6	13.1	13.6	14.1	15.0	14.1	15.2	15.8	15.7	16.7	17.3	18.2	18.1	18.0	18.0
Guinea	15.2	16.0	15.3	14.9	14.7	14.0	13.5	13.7	13.9	13.4	13.2	13.6	13.8	13.9	14.1
Haiti	11.3	10.7	9.9	10.1	7.6	7.9	7.0	6.6	6.7	13.0	7.0	7.6	8.1	8.6	8.9
Honduras	25.2	27.0	26.5	26.4	25.8	23.4	25.3	25.5	24.7	25.3	25.6	25.7	25.7	25.7	25.7
Kenya	17.1	17.9	17.8	17.5	17.0	16.7	16.8	17.3	18.0	19.2	19.4	19.5	19.5	19.5	19.5
Kyrgyz Republic	35.6	33.1	33.3	32.5	30.8	29.0	31.4	36.5	40.7	37.5	36.2	35.6	35.2	34.7	34.4
Lao P.D.R.	20.2	16.0	16.3	16.2	15.4	13.0	15.0	14.8	15.7	15.7	15.8	15.9	16.0	16.1	16.1
Madagascar	10.2	12.4	12.8	13.0	13.9	12.4	10.9	10.8	13.2	13.3	12.4	12.9	13.2	13.2	13.3
Malawi	15.4	14.8	15.8	15.0	14.8	14.5	15.0	17.3	18.0	17.7	18.3	18.0	18.6	19.0	18.7
Mali	19.1	18.3	20.1	15.6	21.5	20.5	21.5	20.3	21.5	21.6	21.9	22.6	23.4	23.9	24.1
Moldova	30.0	28.6	30.3	30.7	30.5	31.4	32.0	33.2	32.7	32.0	32.6	33.5	33.5	33.6	33.8
Mozambique	25.6	23.7	27.0	25.5	29.7	27.7	26.9	28.4	28.0	26.7	27.1	27.4	26.5	26.1	25.8
Myanmar	21.4	19.6	17.9	17.6	16.3	16.8	16.4	16.6	17.3	17.6	17.9	18.2	18.4	18.7	18.9
Nepal	18.2	20.1	20.9	22.2	22.4	22.2	23.3	23.1	19.3	19.6	20.7	21.4	22.1	22.7	23.1
Nicaragua	23.8	24.9	25.6	24.6	27.4	26.7	29.1	29.3	27.2	26.9	27.0	27.1	27.0	27.0	26.9
Niger ¹	17.5	14.9	15.4	18.2	18.0	17.5	18.4	14.8	10.5	15.5	16.9	17.2	17.8	17.7	17.8
Nigeria	7.3	5.1	6.6	8.5	7.8	6.5	7.1	9.0	9.6	12.4	12.8	13.3	13.2	12.7	13.0
Papua New Guinea	18.3	16.1	15.9	17.7	16.3	14.7	15.1	16.7	18.3	18.2	18.5	18.9	19.3	19.5	19.9
Rwanda	23.9	22.9	22.6	23.8	23.1	23.9	24.6	23.9	22.6	22.0	24.0	23.8	23.8	24.3	22.7
Senegal	19.3	20.7	19.5	18.9	20.3	20.2	19.5	19.9	21.2	22.0	22.5	23.1	23.3	23.4	23.9
Sudan	8.5	6.1	6.7	8.9	7.8	4.8	9.5	15.6	5.3	6.7	10.0	10.5	11.0	11.0	11.0
Tajikistan	29.9	29.7	28.1	28.2	26.8	24.8	27.0	27.7	27.7	27.1	28.6	29.1	29.2	28.2	27.7
Tanzania	14.0	14.8	15.4	15.3	15.2	14.9	14.9	15.2	15.6	16.4	16.6	16.7	16.7	16.7	16.7
Uganda	12.3	12.5	12.5	13.2	13.5	13.7	14.0	13.8	14.1	15.4	16.2	17.3	17.8	18.1	18.4
Uzbekistan	24.3	24.0	23.5	26.5	26.8	25.5	25.9	30.5	28.8	28.8	29.0	29.2	29.3	29.3	29.4
Yemen	10.7	7.6	3.5	6.4	7.3	6.2	7.3	9.5	6.9	6.9	7.2	11.6	17.3	17.4	17.9
Zambia	18.8	18.2	17.5	19.4	20.4	20.3	22.4	20.4	20.9	21.2	21.9	21.9	22.0	22.6	22.6
Zimbabwe	18.7	17.0	17.6	14.8	10.8	13.3	15.3	16.6	16.5	16.5	16.5	16.5	16.4	16.4	16.4

Source: IMF staff estimates and projections. Projections are based on staff assessments of current policies (see "Fiscal Policy Assumptions" in text).

Note: For country-specific details, see "Data and Conventions" in text and Table D.

¹These estimates and projections include grants.

Table A20. Low-Income Developing Countries: General Government Expenditure, 2015–29
(Percent of GDP)

	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
Average	17.1	16.6	17.1	17.5	17.5	18.2	18.2	18.8	18.4	18.9	18.9	19.3	19.3	19.2	19.2
Oil Producers	12.6	11.3	12.4	13.2	12.9	12.5	12.9	14.8	14.6	17.4	17.4	17.6	17.8	17.7	17.8
Asia	15.9	15.5	15.5	16.3	16.4	16.8	16.3	15.8	16.0	16.3	16.6	17.2	17.2	17.3	17.2
Latin America	21.8	22.4	22.2	21.9	21.7	23.1	22.6	20.4	20.2	20.6	21.3	21.6	21.9	22.2	22.4
Sub-Saharan Africa	16.3	16.2	17.2	17.1	17.0	18.1	18.3	19.0	18.3	19.0	18.7	18.9	18.8	18.7	18.6
Others	21.1	19.3	19.2	22.2	22.9	22.2	21.9	26.3	26.6	26.4	26.6	27.2	27.5	27.6	27.7
Afghanistan	25.9	28.0	27.7	28.9	28.0	27.9	17.9	16.1	...	...	...	...	...	...	...
Bangladesh	11.5	11.6	12.2	13.0	13.6	13.3	13.0	13.0	12.9	13.4	13.9	14.9	15.0	15.1	15.2
Benin	18.2	15.4	17.8	16.6	14.6	19.1	19.9	19.9	19.3	18.9	18.6	18.9	19.4	19.8	20.2
Burkina Faso	20.4	21.6	26.3	24.2	23.4	24.5	27.9	32.4	29.0	27.4	27.4	27.1	26.8	27.0	27.2
Cambodia	15.1	15.9	16.9	17.1	17.6	20.3	21.0	16.8	17.8	16.5	16.5	16.5	16.4	16.5	16.5
Cameroon	20.1	20.2	19.2	18.0	18.7	16.6	16.9	17.1	16.6	16.3	16.0	16.4	16.6	16.6	16.9
Chad	13.8	10.9	11.2	9.6	10.5	14.3	13.8	13.9	20.4	17.0	16.6	16.1	16.2	16.1	16.1
Congo, Democratic Republic of the	15.2	13.9	10.4	11.7	13.3	12.6	13.8	17.5	17.4	16.2	15.5	15.5	15.5	15.7	15.7
Congo, Republic of	41.3	38.8	26.6	17.8	20.2	21.1	20.9	22.8	23.0	21.6	22.2	22.2	21.3	20.2	19.1
Côte d'Ivoire	16.5	17.6	18.1	17.6	17.2	20.4	20.5	21.6	21.2	20.4	19.9	20.5	21.0	21.2	21.0
Ethiopia	17.3	17.9	18.0	16.1	15.4	14.5	13.8	12.7	10.8	10.3	10.8	11.4	11.4	11.5	11.2
Ghana	18.6	19.9	17.6	20.9	22.5	31.5	27.2	27.7	20.4	21.7	21.6	21.8	21.2	21.1	21.4
Guinea	21.7	16.1	17.3	16.0	15.0	17.1	15.2	14.5	15.5	16.4	15.8	16.2	16.4	16.3	16.4
Haiti	12.7	10.5	10.2	11.3	9.6	10.0	9.3	8.3	5.8	6.3	7.9	8.6	9.5	10.3	10.7
Honduras	26.0	27.4	26.9	26.2	25.7	27.8	28.4	23.8	26.0	27.0	27.2	27.1	26.8	26.8	26.9
Kenya	23.8	25.4	25.2	24.5	24.4	24.8	24.0	23.4	23.3	23.2	22.6	22.6	22.7	22.8	23.0
Kyrgyz Republic	38.1	38.9	37.0	33.1	30.8	32.1	32.1	36.8	38.7	38.9	38.1	37.8	37.6	37.6	37.4
Lao P.D.R.	25.8	21.1	21.8	20.7	18.6	18.5	15.7	14.7	16.1	17.1	17.0	17.4	18.6	18.7	18.7
Madagascar	13.0	13.5	14.9	14.4	15.4	16.4	13.7	16.3	18.1	17.1	17.1	17.0	16.8	16.9	16.8
Malawi	19.5	19.7	21.0	19.4	19.3	22.7	23.6	26.7	25.5	24.3	25.9	23.3	22.9	21.5	20.6
Mali	20.9	22.3	22.9	20.3	23.1	25.9	26.3	25.2	26.3	25.8	25.5	25.6	26.4	26.9	27.1
Moldova	31.9	30.1	31.0	31.5	32.0	36.7	34.6	36.4	37.8	36.8	36.4	36.9	36.6	36.1	36.0
Mozambique	32.2	28.7	29.0	31.0	28.0	32.2	30.8	33.6	30.6	30.0	28.3	27.3	25.1	22.9	21.9
Myanmar	24.2	23.4	20.8	21.0	20.3	22.6	23.3	22.6	23.4	23.4	23.7	23.7	23.6	23.8	23.7
Nepal	17.7	19.0	23.6	28.0	27.3	27.6	27.2	26.3	25.1	24.4	25.0	25.1	25.3	25.4	25.5
Nicaragua	25.3	26.8	27.3	27.6	27.6	29.3	30.4	28.9	26.5	26.1	25.7	25.6	25.4	25.2	25.1
Niger	24.2	19.4	19.5	21.2	21.6	22.4	24.3	21.6	16.0	19.5	19.9	20.2	20.8	20.6	20.8
Nigeria	11.0	9.8	12.0	12.8	12.5	12.1	12.6	14.4	13.8	17.0	17.0	16.9	17.0	16.9	17.2
Papua New Guinea	22.8	20.9	18.4	20.3	20.7	23.5	22.0	21.9	22.7	22.2	21.1	20.2	19.3	19.2	19.5
Rwanda	26.6	25.1	25.1	26.4	28.2	33.5	31.6	29.7	28.1	28.9	27.4	26.5	26.6	26.1	25.2
Senegal	22.9	24.0	22.5	22.6	24.2	26.6	25.8	26.6	26.1	26.0	25.6	26.1	26.4	26.4	27.0
Sudan	12.4	10.0	12.8	16.8	18.7	10.7	9.7	17.7	8.6	9.2	11.9	11.8	12.2	12.2	12.1
Tajikistan	31.9	32.7	33.8	30.9	28.8	29.2	27.6	28.0	28.8	29.6	31.1	31.6	31.7	30.7	30.2
Tanzania	17.2	16.9	16.6	17.3	17.3	17.4	18.4	19.1	19.1	19.2	19.3	19.3	19.4	19.4	19.4
Uganda	14.9	15.2	16.3	16.2	18.3	21.4	21.5	20.1	19.1	19.5	19.8	21.0	21.2	20.7	20.9
Uzbekistan	24.6	23.3	22.3	24.6	27.1	28.7	30.5	34.8	33.8	32.5	31.7	31.8	32.0	31.9	31.9
Yemen	19.4	16.1	8.4	14.3	13.2	10.6	8.2	12.2	11.4	10.6	10.9	16.3	19.3	19.3	19.6
Zambia	27.6	23.9	25.0	27.7	29.8	34.0	30.5	28.2	27.7	27.4	27.3	28.5	26.6	26.4	26.0
Zimbabwe	20.5	23.7	27.9	20.2	11.7	12.5	17.5	22.6	24.3	26.4	26.2	26.2	26.2	26.2	26.1

Source: IMF staff estimates and projections. Projections are based on staff assessments of current policies (see "Fiscal Policy Assumptions" in text).

Note: For country-specific details, see "Data and Conventions" in text and Table D.

Table A21. Low-Income Developing Countries: General Government Gross Debt, 2015–29
(Percent of GDP)

	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
Average	33.9	37.2	40.1	41.1	42.9	49.4	49.2	50.5	53.2	51.8	50.0	49.0	47.3	46.3	45.2
Oil Producers	24.5	28.8	30.1	31.9	33.4	38.4	38.9	41.7	49.0	49.9	49.5	48.6	47.6	47.2	46.2
Asia	30.3	30.3	30.9	32.3	34.0	37.6	41.1	42.6	43.6	44.6	44.7	44.9	44.8	44.8	44.9
Latin America	31.4	32.8	33.9	35.6	37.9	42.6	42.3	42.0	38.3	34.4	34.2	34.1	34.0	33.9	32.2
Sub-Saharan Africa	32.8	37.0	39.8	41.6	43.0	49.5	50.6	52.7	54.9	53.1	50.8	49.1	47.3	45.7	44.0
Others	45.3	51.5	65.8	67.3	70.2	89.4	69.1	63.4	80.0	74.0	68.1	66.7	60.6	59.1	57.8
Afghanistan	9.2	8.4	8.0	7.4	6.3	7.8	11.5	10.9	...	...	...	...	...	...	...
Bangladesh	28.2	27.7	28.3	29.6	32.0	34.5	35.6	37.9	39.8	41.4	41.8	42.4	42.6	43.0	43.5
Benin	30.9	35.9	39.6	41.1	41.2	46.1	50.3	54.2	54.2	53.4	52.4	51.4	50.5	49.7	48.9
Burkina Faso	31.3	32.9	33.9	38.1	41.9	43.8	55.6	58.4	61.9	63.3	63.4	63.0	61.9	60.7	59.4
Cambodia	23.3	21.8	22.6	21.1	20.8	25.5	26.3	25.7	25.9	26.4	26.2	25.5	25.1	25.0	25.1
Cameroon	31.6	32.1	36.5	38.3	41.6	44.9	46.8	45.3	41.9	39.2	36.5	34.6	32.9	31.6	30.7
Chad	32.1	38.1	36.8	33.3	38.0	41.2	42.1	35.9	35.1	32.3	31.4	30.5	30.1	30.1	30.1
Congo, Democratic Republic of the	16.0	18.8	18.5	14.8	14.8	16.2	15.7	14.3	14.3	11.1	8.9	7.3	5.9	4.7	3.7
Congo, Republic of	74.2	84.6	88.5	71.2	77.6	102.5	97.8	92.5	100.8	94.6	89.4	83.6	76.9	69.1	59.5
Côte d'Ivoire	29.2	31.1	32.6	35.3	37.2	46.3	50.2	55.3	57.1	57.7	56.9	56.2	55.5	55.0	53.8
Ethiopia	50.7	51.8	55.3	58.4	54.7	53.7	53.8	47.1	38.0	30.5	28.6	28.4	27.6	27.2	26.4
Ghana ¹	53.9	55.9	57.0	62.0	58.3	72.3	79.2	93.3	86.1	83.6	80.9	77.9	74.9	72.0	69.7
Guinea	44.4	43.0	41.9	39.3	38.6	47.8	42.7	40.2	40.3	35.1	32.6	30.8	29.2	27.9	27.3
Haiti	23.9	24.4	22.5	24.1	26.5	22.3	28.9	28.9	25.9	14.9	14.4	14.2	14.5	15.0	15.5
Honduras	38.3	39.4	41.3	42.4	42.9	52.4	50.2	49.2	44.5	44.6	44.5	44.0	43.6	43.1	39.6
Kenya	45.8	50.4	53.9	56.4	59.1	68.0	68.2	68.4	73.3	73.0	70.3	67.5	65.4	63.4	61.7
Kyrgyz Republic	67.1	59.1	58.8	54.8	48.8	63.6	56.2	49.2	49.5	47.2	45.6	44.7	44.5	45.0	45.5
Lao P.D.R.	53.1	54.5	57.2	60.6	69.1	78.7	95.9	134.5	122.8	115.5	104.9	97.2	94.8	91.4	88.1
Madagascar	44.1	40.3	40.1	42.9	41.3	51.9	51.8	53.4	56.6	56.1	55.6	55.9	56.1	56.3	56.0
Malawi	35.5	37.1	40.3	43.9	45.3	54.8	61.5	75.8	81.3	74.9	74.6	73.2	71.5	67.7	63.7
Mali	30.7	36.0	36.0	37.5	40.7	46.9	50.3	52.9	53.0	55.1	55.7	55.5	55.4	55.4	55.5
Moldova	42.4	39.2	34.9	31.8	28.8	36.6	33.6	34.9	34.7	37.3	35.2	32.9	31.9	31.4	29.8
Mozambique	86.0	124.8	103.8	105.5	98.3	120.0	104.3	99.3	91.9	96.9	94.7	91.4	76.8	61.6	42.4
Myanmar	36.4	38.3	40.1	40.4	38.8	40.6	61.3	62.4	59.3	58.5	59.8	60.7	61.0	61.3	61.2
Nepal	25.7	25.0	25.0	31.1	34.0	43.3	43.3	43.1	40.3	43.0	44.2	44.9	45.2	44.9	44.3
Nicaragua	28.9	30.9	33.8	37.4	41.1	47.3	46.2	44.1	41.3	39.2	38.0	37.0	36.1	35.0	34.2
Niger	29.9	32.8	36.5	37.0	39.8	45.0	51.3	50.7	51.8	48.9	47.4	46.5	46.2	46.0	45.8
Nigeria ²	20.3	23.4	24.3	27.7	29.2	34.5	35.7	39.4	46.3	46.6	46.8	46.6	46.5	47.0	46.8
Papua New Guinea	29.9	33.7	32.5	36.7	40.6	48.7	52.6	48.3	51.9	52.0	51.5	49.6	46.1	43.4	40.6
Rwanda	32.4	36.5	41.3	45.0	49.9	65.6	66.7	61.1	62.1	69.9	71.7	71.6	69.9	65.5	61.8
Senegal ³	44.5	47.5	61.1	61.5	63.6	69.2	73.3	76.0	79.6	72.5	67.6	67.5	67.4	66.0	66.0
Sudan	93.2	109.9	149.5	186.7	200.2	275.2	187.8	185.8	316.5	280.3	262.9	280.3	258.7	270.4	284.7
Tajikistan	35.0	42.2	46.3	46.6	43.5	51.8	42.1	32.1	30.9	30.8	30.2	29.4	28.8	29.1	29.6
Tanzania	39.5	39.8	40.7	42.0	40.4	41.3	43.4	44.9	46.3	46.1	44.4	43.0	41.5	40.2	39.7
Uganda	28.0	31.3	33.6	34.9	37.6	46.3	50.4	49.9	49.9	49.7	48.6	46.8	44.9	42.9	40.3
Uzbekistan	10.0	8.2	19.4	19.4	28.3	37.1	35.3	33.9	36.3	36.0	35.0	33.9	32.8	32.1	31.7
Yemen	57.7	76.5	83.8	86.9	91.5	87.0	75.9	65.8	81.1	81.4	75.6	67.0	57.0	52.2	48.5
Zambia	61.9	58.0	63.4	75.2	94.4	140.0	111.0	99.5	115.2	...	...	...	...	...	...
Zimbabwe	48.0	49.9	71.9	50.8	82.3	84.5	58.6	100.6	90.2	98.5	86.8	80.4	73.9	69.8	70.6

Source: IMF staff estimates and projections. Projections are based on staff assessments of current policies (see "Fiscal Policy Assumptions" in text).

Note: For country-specific details, see "Data and Conventions" in text and Table D.

¹ Ghana is in the process of restructuring its debt. Government debt projections are based on a pre-debt restructuring scenario.

² Debt includes overdrafts from the Central Bank of Nigeria and liabilities of the Asset Management Corporation of Nigeria.

³ From 2017 onward, Senegal data include the whole of the public sector, whereas before 2017, only central government debt stock was taken into account.

Table A22. Low-Income Developing Countries: General Government Net Debt, 2015–29
(Percent of GDP)

	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
Average
Oil Producers
Asia
Latin America
Sub-Saharan Africa
Others
Afghanistan
Bangladesh
Benin
Burkina Faso
Cambodia
Cameroon	27.6	30.5	33.3	35.9	39.5	43.0	45.4	43.7	40.0	36.8	33.6	31.1	29.2	27.5	26.4
Chad
Congo, Democratic Republic of the
Congo, Republic of
Côte d'Ivoire
Ethiopia
Ghana ¹
Guinea
Haiti
Honduras
Kenya	39.7	47.5	48.1	50.8	54.1	63.0	64.2	65.4	70.7	70.7	68.3	65.7	63.7	61.9	60.3
Kyrgyz Republic
Lao P.D.R.
Madagascar
Malawi
Mali	23.1	30.0	31.1	34.1	36.2	40.0	43.4	48.8	50.1	51.8	52.4	52.3	52.4	52.5	52.7
Moldova
Mozambique
Myanmar
Nepal
Nicaragua
Niger	25.9	29.5	32.3	34.1	35.9	41.0	45.1	45.6	48.6	46.8	45.9	45.3	45.0	44.7	44.4
Nigeria ²	15.9	19.0	19.9	23.5	25.5	34.1	35.3	39.2	46.0	46.2	46.6	46.3	46.3	46.8	46.6
Papua New Guinea
Rwanda
Senegal
Sudan
Tajikistan
Tanzania
Uganda
Uzbekistan
Yemen	56.9	74.5	81.4	83.2	87.7	83.3	73.6	64.1	79.3	79.8	74.2	66.0	56.1	51.4	47.8
Zambia
Zimbabwe

Source: IMF staff estimates and projections. Projections are based on staff assessments of current policies (see "Fiscal Policy Assumptions" in text).

Note: For country-specific details, see "Data and Conventions" in text and Table D.

¹ Ghana is in the process of restructuring its debt. Government debt projections are based on a pre-debt restructuring scenario.

² Debt includes overdrafts from the Central Bank of Nigeria and liabilities of the Asset Management Corporation of Nigeria. The overdrafts and government deposits at the Central Bank of Nigeria almost cancel each other out, and the Asset Management Corporation of Nigeria debt is roughly halved.

Table A23. Advanced Economies: Structural Fiscal Indicators
(Percent of GDP, except when indicated otherwise)

	Pension Spending Change, 2023–30 ^{1,9}	Net Present Value of Pension Spending Change, 2023–50 ^{2,9}	Health Care Spending Change, 2023–30 ^{3a,3b}	Net Present Value of Health Care Spending Change, 2023–50 ²	Gross Financing Need, 2024 ⁴	Average Term to Maturity, 2024 (years) ⁵	Debt to Average Maturity, 2024 ⁶	Projected Interest Rate–Growth Differential, 2024–29 (percent)	Pre-Pandemic Overall Balance, 2012–19	Projected Overall Balance, 2024–29	Nonresident Holding of General Government Debt, 2023 (percent of total) ⁷	Net Financial Worth of General Government, 2021 (percent of GDP) ⁸
Average	0.6	18.3	1.8	76.7	25.6	7.2	16.7	-1.1	-3.1	-3.9	27.4	
G7	0.5	15.2	2.0	85.1	30.6	7.0	19.0	-1.0	-4.0	-5.0	27.0	
G20 Advanced	0.6	18.6	2.0	83.5	28.7	7.1	18.0	-1.0	-3.6	-4.5	26.0	
Andorra	2.0	81.2	1.0	49.6	...	7.0	5.2	...	2.2	2.6	...	...
Australia	-0.1	-3.2	1.0	42.7	5.3	6.6	7.5	-1.0	-2.7	-0.9	29.9	-40.6
Austria	0.9	19.8	0.8	39.6	8.8	12.1	6.2	-1.3	-1.2	-2.1	55.4	-55.3
Belgium	1.1	37.5	1.4	63.7	16.1	10.1	10.3	-1.1	-2.4	-5.1	48.5	-90.3
Canada	0.6	12.9	0.9	37.6	13.5	6.0	17.8	-0.9	-0.5	-0.7	19.7	-36.8
Croatia	0.3	-1.6	0.9	41.0	...	5.5	11.6	-2.4	-2.2	-1.2	34.7	-320.3
Cyprus	0.5	13.9	...	...	8.1	8.0	9.7	-2.8	-1.4	1.7	55.5	-51.8
Czech Republic	0.3	25.0	0.5	22.1	6.5	2.7	16.3	-0.3	-0.6	-1.6	...	-13.1
Denmark	-0.5	-17.4	0.6	25.5	1.7	8.9	3.4	0.4	0.2	0.3	24.0	-18.3
Estonia	-0.4	-16.6	0.4	18.7	...	7.2	2.9	-2.5	-0.5	-2.9	86.3	14.3
Finland	0.3	-4.7	0.9	33.6	14.7	7.5	10.3	-1.6	-1.8	-2.9	43.9	-30.6
France	0.4	-0.1	0.8	36.1	15.6	8.2	13.5	-1.0	-3.6	-4.4	45.3	-146.1
Germany	0.8	24.5	0.6	35.3	16.0	6.8	9.5	-1.5	0.9	-0.9	40.8	-69.7
Hong Kong SAR	1.1	44.9	...	...	...	...	...	-1.1	2.5	-0.7	...	...
Iceland	1.0	43.2	0.9	41.0	7.6	12.2	5.3	0.4	1.1	-1.7	9.6	-35.1
Ireland	0.8	32.6	0.3	17.5	0.0	10.3	4.2	-2.6	-2.6	0.9	53.0	-39.4
Israel	0.2	11.5	0.2	11.9	...	7.1	8.7	-1.0	-2.8	-5.1	18.9	...
Italy	1.4	30.5	0.5	24.8	23.0	7.0	19.5	0.3	-2.5	-3.3	25.4	-220.2
Japan	-0.3	15.2	1.0	37.3	43.4	8.4	30.1	-2.2	-4.7	-3.8	12.1	-160.5
Korea	1.0	47.7	1.6	75.2	4.3	10.6	5.2	-2.4	1.3	0.1	...	-11.7
Latvia	-0.2	-10.0	0.7	30.7	...	7.0	6.2	-3.0	-0.8	-1.8	...	-20.2
Lithuania	0.5	16.1	0.7	34.2	6.7	8.4	4.2	-1.0	-0.6	-1.5	64.7	-16.9
Luxembourg	1.5	58.4	0.6	31.8	...	8.0	3.2	-2.8	1.6	-1.5	47.7	51.8
Malta	-0.6	-5.1	...	...	9.6	7.5	6.9	-2.7	-0.1	-3.4	21.8	-37.9
The Netherlands	1.0	32.8	1.2	51.4	6.3	8.8	5.4	-1.4	-0.8	-2.7	36.3	-32.8
New Zealand	0.9	22.7	1.1	51.7	8.0	7.1	6.4	0.6	-0.3	-1.6	28.0	...
Norway	1.0	32.2	1.1	46.8	...	4.6	9.1	-2.4	7.8	12.2	54.1	274.1
Portugal	1.1	18.4	0.7	33.7	1.9	7.8	12.8	-1.3	-3.5	0.2	44.3	-103.4
Singapore ¹⁰	0.7	28.5	...	...	9.2	3.2	50.6	...	4.6	3.4	...	...
Slovak Republic	0.9	44.2	0.5	21.3	9.5	8.5	6.8	-2.7	-2.3	-5.8	44.5	-50.2
Slovenia	0.8	59.4	0.6	31.2	5.8	9.4	7.3	-2.5	-3.4	-2.5	50.1	-32.6
Spain	-0.3	3.2	0.9	44.8	12.7	7.9	13.6	-0.9	-5.4	-3.1	38.3	-99.8
Sweden	-0.3	-11.0	0.4	18.5	2.7	5.5	5.5	-2.3	-0.1	0.1	11.0	26.6
Switzerland	0.4	12.3	1.1	52.5	1.9	10.5	3.6	-1.7	0.5	0.3	7.8	20.3
United Kingdom	0.2	9.6	1.1	49.6	10.6	14.0	7.2	-0.4	-4.2	-3.7	24.1	-141.7
United States	0.6	15.1	2.8	117.7	37.3	5.8	21.1	-0.9	-5.1	-6.5	26.2	-118.6

Sources: Bloomberg Finance L.P.; Joint External Debt Hub, Quarterly External Debt Statistics; national authorities; and IMF staff estimates and projections.

Note: All economy averages are weighted by nominal GDP converted to US dollars at average market exchange rates in the years indicated and on the basis of data availability. G7 = Group of Seven; G20 = Group of Twenty.

¹ Pension projections rely on authorities' estimates when these are available. When authorities' estimates are not available, IMF staff projections use the method described in Clements, Eich, and Gupta, *Equitable and Sustainable Pensions: Challenges and Experience* (IMF 2014). These pension spending projections may be different from the previous edition of the *Fiscal Monitor* because of new baseline pension numbers, new authorities' projections, or updated demographic data from the UN World Population Prospects.

² For net present value calculations, a discount rate of 1 percent a year in excess of GDP growth is used for each economy.

^{3a} IMF staff projections for health care spending are driven by demographics and other factors. The difference between the growth of health care spending and real GDP growth that is not explained by demographics ("excess cost growth") is assumed to start at the economy-specific historical average and converge to the advanced economy historical average by 2050 (0.6 percent).

^{3b} These health expenditure projections have been updated to include new available underlying health and economic data, as well as technical adjustments to the excess cost growth calculation and the age-expenditure profiles. The projections exclude health expenditure growth during the COVID-19 pandemic in the underlying trend expenditure growth estimate.

⁴ "Gross financing need" is defined as the projected overall deficit and maturing government securities with the average term to maturity to quantify the average annual debt repayment obligation.

⁵ For most economies, the average-term-to-maturity data refer to central government securities and are determined by calculating the maturity across government securities, with their respective amounts serving as weights; the source is Bloomberg Finance L.P.

⁶ The debt-to-average-maturity data are calculated by dividing government securities with the average term to maturity to quantify the average annual debt repayment obligation.

⁷ Nonresident holding of general government debt data are for the third quarter of 2023 or latest available from the Joint External Debt Hub, Quarterly External Debt Statistics, which include marketable and nonmarketable debt. For some economies, tradable instruments in the Joint External Debt Hub are reported at market value. External debt in US dollars is converted to local currency and then taken as a percentage of the 2023 gross general government debt.

⁸ Net financial worth of general government data are for 2021 or latest available from the Public Sector Balance Sheet (PSBS) Database.

⁹ In the case of all EU members, including Slovakia, pension spending projections reflect the estimates published in the latest available Aging Report. Reforms and changes in methodology or assumptions between Aging Report vintage are not incorporated into the *Fiscal Monitor* annexes.

¹⁰ Singapore's general government debt is covered by financial assets and is mainly issued to deepen the domestic market, meet the Central Provident Fund's investment needs, provide individuals with a long-term savings option, and facilitate the transfer of official reserves not needed by the central bank to the government.

Table A24. Emerging Market and Middle-Income Economies: Structural Fiscal Indicators
(Percent of GDP, except when indicated otherwise)

	Pension Spending Change, 2023–30 ¹	Net Present Value of Pension Spending Change, 2023–50 ²	Health Care Spending Change, 2023–30 ^{3a,b}	Net Present Value of Health Care Spending Change, 2023–50 ²	Gross Financing Need, 2024 ⁴	Average Term to Maturity, 2024 (years) ⁵	Debt to Average Maturity, 2024	Projected Interest Rate–Growth Differential, 2024–29 (percent)	Pre-Pandemic Overall Balance, 2012–19	Projected Overall Balance, 2024–29	Nonresident Holding of General Government Debt, 2023 (percent of total) ⁶	Net Financial Worth of General Government, 2021 (percent of GDP) ⁷
Average G20 Emerging	1.2	67.4	0.5	22.9	11.3	7.3	10.7	-2.9	-3.1	-5.4	11.7	...
Algeria	2.7	70.4	0.5	22.4	11.4	7.6	10.5	-2.9	-3.5	-6.3	7.7	...
Angola	135.3	135.3	0.4	22.4	14.3	6.6	7.0	-3.7	-7.5	-7.2	0.8	...
Argentina	0.7	2.2	0.1	7.6	...	6.8	12.4	-4.0	...	2.2	...	...
Belarus	0.3	44.8	0.8	39.8	5.2	7.8	19.9	...	-5.0	...	15.5	...
Brazil ⁸	2.3	87.7	0.7	31.9	...	...	...	-3.1	-0.3	-1.8	53.1	...
Bulgaria	0.0	32.4	0.7	36.5	16.4	5.5	15.5	2.5	-5.9	-5.2	10.0	-148.5
China	0.0	4.3	0.7	32.6	...	7.2	3.1	-1.9	-0.9	-2.8	43.0	-5.1
Colombia	0.9	41.8	0.9	43.9	3.3	9.7	4.1	-1.8	-1.6	-0.5	32.4	...
Dominican Republic	1.6	90.5	0.4	22.3	...	6.6	12.7	-3.7	-2.7	-7.7	2.7	...
Ecuador	1.8	87.4	1.1	53.7	5.3	10.5	5.0	1.6	-2.4	-2.7	39.0	-51.8
Egypt	0.0	2.3	0.5	23.5	4.2	8.1	7.5	-2.6	-3.2	-2.5	92.9	...
India	0.6	33.9	0.8	40.6	...	10.9	5.0	...	-6.0	...	72.1	...
Indonesia	1.1	55.6	0.2	10.2	33.7	3.1	31.2	-5.0	-10.1	-6.3	...	...
Iran	-0.2	20.6	0.8	35.0	15.9	5.0	14.7	-1.0	-2.3	-3.4	31.5	-55.9
Kazakhstan	0.6	32.2	0.2	8.5	15.4	11.5	7.2	-3.3	-7.0	-4.5	4.5	...
Kuwait	0.1	6.5	0.3	13.8	5.2	7.8	5.1	-1.7	-2.1	-2.5	34.4	-12.9
Lebanon	1.0	83.7	0.5	23.8	...	...	...	-13.8	-1.7	-3.6	...	...
Malaysia	1.1	30.4	0.2	11.7	...	5.8	4.0	-2.4	-0.1	-2.2	20.9	49.5
Mexico	7.6	614.7	1.0	50.0	17.8	1.0	3.1	-0.2	23.9	27.3	...	...
Morocco	...	...	...	...	...	...	...	...	-8.8	...	...	...
Oman	1.2	63.1	0.3	16.9	3.5	9.0	7.5	-1.8	-2.7	-3.4	21.5	...
Pakistan	0.7	43.1	0.5	23.9	14.3	8.1	6.5	2.2	-2.9	-3.3	21.7	-72.0
Peru	1.1	51.1	0.3	15.1	16.0	5.6	12.5	-1.7	-4.4	-3.4	24.5	...
Philippines	0.2	16.2	0.4	24.6	0.9	6.9	5.3	4.7	-6.2	3.6	...	...
Poland	0.1	6.0	0.1	4.1	23.7	2.8	27.4	-4.3	-5.9	-5.8	32.0	...
Qatar	...	...	0.6	28.7	4.2	13.2	2.4	-0.5	-1.0	-1.0	41.1	-22.2
Romania	0.1	6.9	0.2	11.0	10.8	6.0	9.5	-3.9	-0.4	-2.8	27.2	...
Russian Federation	-0.2	-8.7	0.7	31.7	9.7	4.8	10.6	-2.4	-2.4	-4.5	24.5	-37.3
Saudi Arabia	0.3	23.9	0.3	16.1	8.6	8.7	4.5	-1.7	5.9	4.4	8.6	...
South Africa	1.4	54.6	...	...	13.5	7.1	7.1	-2.5	-2.6	-6.1	44.1	-31.4
Sri Lanka	1.9	67.0	0.7	34.6	2.8	7.5	2.6	-1.4	-0.7	-0.6	8.1	16.8
Thailand	2.6	157.1	0.7	37.8	2.4	10.1	2.6	-0.2	-4.2	-2.3	29.8	...
Turkiye ⁹	0.3	12.1	0.6	30.2	16.4	11.0	6.7	2.0	-4.1	-5.8	25.2	1.4
Ukraine	...	...	...	...	...	...	...	...	-5.7	...	35.4	...
United Arab Emirates	2.9	105.2	0.6	26.7	10.6	8.1	7.7	-2.3	0.0	-3.4	8.6	...
Uruguay ¹⁰	0.6	45.8	...	...	...	5.3	...	...	...	...	...	...
Venezuela	0.4	42.7	0.4	22.8	...	7.5	11.1	-6.3	-3.0	-5.7	58.3	-32.1
Vietnam	0.6	39.6	0.9	45.0	6.2	2.8	11.0	-2.7	1.9	3.7	...	...
	1.3	59.7	0.2	10.7	...	11.8	5.1	...	-12.5	-2.3	44.7	-52.2
						9.9	3.4	-5.8	-3.5	-2.5	...	...

Sources: Joint External Debt Hub, Quarterly External Debt Statistics; national authorities; and IMF staff estimates and projections.

Note: All country averages are weighted by nominal GDP converted to US dollars at average market exchange rates in the years indicated and on the basis of data availability. G20 = Group of Twenty.

¹Pension projections rely on authorities' estimates when these are available. When authorities' estimates are not available, IMF staff projections use the method described in Clements, Eich, and Gupta, *Equitable and Sustainable Pensions: Challenges and Experience* (IMF 2014). These pension spending projections may be different from the previous edition of the *Fiscal Monitor* because of new baseline pension numbers, new authorities' projections, or updated demographic data from the UN World Population Prospects.

²For net present value calculations, a discount rate of 1 percent a year in excess of GDP growth is used for each economy.

^{3a}IMF staff projections for health care spending are driven by demographics and other factors. The difference between the growth of health care spending and real GDP growth that is not explained by demographics ("excess cost growth") is assumed to be the income group historical average (1.2 percent).

^{3b}These health expenditure projections have been updated to include new available underlying health and economic data, as well as technical adjustments to the excess cost growth calculation and the age-expenditure profiles. The projections exclude health expenditure growth during the COVID-19 pandemic in the underlying trend expenditure growth estimate.

⁴"Gross financing need" is defined as the projected overall balance and maturing government debt in 2024. Data are from IMF staff projections.

⁵Average-term-to-maturity data refer to government securities; the source is Bloomberg Finance L.P.

⁶Nonresident holding of general government debt data are for the third quarter of 2023 or latest available from the Joint External Debt Hub, Quarterly External Debt Statistics, which include marketable and nonmarketable debt. For some countries, tradable instruments in the Joint External Debt Hub are reported at market value. External debt in US dollars is converted to local currency and then taken as a percentage of 2022 gross general government debt.

⁷Net financial worth of general government data are for 2021 or latest available from the Public Sector Balance Sheet (PSBS) Database.

⁸Note that the pension spending projections reported in the first and second column do not include savings from the pension reform approved in October 2019.

⁹The average-term-to-maturity data for Türkiye is in accordance with the published data for central government debt securities as of February 2024.

¹⁰Data are for the nonfinancial public sector, which includes central government, local government, social security funds, nonfinancial public corporations, and Banco de Seguros del Estado. The coverage of fiscal data was changed from the consolidated public sector to the nonfinancial public sector with the October 2019 submission. With this narrower coverage, the central bank balances are not included in the fiscal data. Historical data were also revised accordingly.

Table A25. Low-Income Developing Countries: Structural Fiscal Indicators
(Percent of GDP, except when indicated otherwise)

	Pension Spending Change, 2023–30 ¹	Net Present Value of Pension Spending Change, 2023–50 ²	Health Care Spending Change, 2023–30 ^{3a,b}	Net Present Value of Health Care Spending Change, 2023–50 ²	Average Term to Maturity, 2024 (years) ⁴	Debt to Average Maturity, 2024	Projected Interest Rate-Growth Differential, 2024–29 (percent)	Pre-Pandemic Overall Balance, 2012–19	Projected Overall Balance, 2024–29	Nonresident Holding of General Government Debt, 2023 (percent of total) ⁵	Net Financial Worth of General Government, 2021 (percent of GDP) ⁶
Average	0.4	20.6	0.1	7.1	7.0	11.0	-7.7	-3.3	-3.2	49.7	...
Afghanistan	...	...	...	...	...	...	...	-0.4	...	...	...
Bangladesh	0.2	12.0	0.0	2.3	4.4	9.0	...	-3.5	-4.9	36.1	...
Benin	0.0	1.3	0.0	1.5	8.3	6.6	-4.7	-2.6	-3.0	...	...
Burkina Faso	0.0	2.4	0.3	14.0	3.0	20.8	-2.6	-3.5	-3.9	41.2	...
Cambodia	0.4	13.1	0.2	10.8	...	...	-7.4	-0.7	-1.6	98.6	...
Cameroon	0.0	3.4	0.0	2.4	3.5	11.9	-3.9	-3.7	-0.8	64.7	...
Chad	0.0	0.7	0.1	4.2	...	...	-2.2	-1.0	-1.3	...	...
Congo, Democratic Republic of the	...	...	0.1	3.0	...	...	-7.6	0.7	-1.0	...	...
Congo, Republic of	0.2	8.6	0.2	9.4	...	...	-2.7	-4.3	4.2	...	...
Côte d'Ivoire	0.1	7.0	0.1	5.1	...	...	-3.8	-2.4	-3.1	...	...
Ethiopia	0.0	1.8	0.1	5.0	...	...	-16.0	-2.3	-2.3	...	...
Ghana ⁷	0.2	7.6	0.2	11.5	6.5	13.2	-6.7	-6.8	-3.7	...	...
Guinea	0.0	0.1	0.1	3.5	...	...	-9.9	0.8	-2.6	...	...
Haiti	...	...	0.0	2.2	...	...	-9.4	0.0	0.0	...	...
Honduras	0.3	19.7	0.4	19.4	3.3	13.4	-2.8	-1.7	-1.4	...	...
Kenya	0.2	13.0	0.2	10.6	8.1	9.1	-2.9	-6.5	-3.4	47.2	...
Kyrgyz Republic	3.5	105.0	0.3	14.8	...	...	-5.7	-3.2	-2.3	71.0	...
Lao P.D.R.	0.1	6.6	0.1	4.0	...	...	-7.7	-4.2	-2.0	...	...
Madagascar	0.2	10.5	0.1	4.0	...	...	-8.2	-2.1	-3.9	49.0	...
Malawi	-0.1	1.3	0.1	7.1	3.1	25.8	-3.6	-3.9	-4.7	43.0	...
Mali	-0.1	0.2	0.1	6.2	2.7	19.5	-3.1	-2.7	-3.3	...	...
Moldova	3.3	75.8	0.5	25.0	...	...	-4.9	-1.4	-3.3	55.4	-9.5
Mozambique	0.0	4.4	0.3	13.5	2.9	32.1	-9.0	-4.1	0.7	...	...
Myanmar	0.2	9.1	...	...	...	...	-3.6	-2.8	-5.4	...	...
Nepal	0.1	9.5	0.2	10.3	...	...	-6.7	-1.3	-3.5	...	...
Nicaragua	0.6	37.1	0.7	36.5	0.9	43.7	-4.3	-1.3	1.5	91.1	...
Niger	0.0	0.6	0.2	9.6	...	...	-5.8	-3.8	-3.2	...	...
Nigeria	0.0	0.8	0.1	2.9	9.5	4.9	-5.6	-3.5	-4.1	...	...
Papua New Guinea	0.1	4.3	0.1	6.6	...	...	-2.5	-4.1	-1.2	46.2	...
Rwanda	0.0	1.2	0.3	15.3	6.8	9.1	-8.0	-2.8	-3.3	77.2	...
Senegal	0.0	...	0.1	5.6	7.2	11.1	-4.8	-3.7	-3.2	...	...
Sudan	0.0	1.0	0.1	3.8	...	...	-27.3	-6.3	-1.5	...	...
Tajikistan	0.4	12.4	0.2	10.0	...	...	-7.7	-1.8	-2.5	82.7	...
Tanzania	0.0	4.2	0.1	4.4	11.0	4.2	-5.1	-2.6	-2.7	...	...
Uganda	0.1	3.6	0.1	5.5	...	...	-4.1	-3.2	-3.3	56.0	-30.5
Uzbekistan	2.1	77.5	0.3	15.2	...	...	-11.0	1.6	-2.8	64.9	...
Yemen	0.1	9.3	0.1	2.5	...	...	-14.9	-6.7	-3.0	...	...
Zambia	0.2	10.1	0.3	15.3	3.9	29.2	-4.7	-6.8	-5.0	47.9	...
Zimbabwe	-0.3	-0.9	0.1	4.7	3.2	28.6	-83.1	-3.4	-9.8	...	...

Sources: Joint External Debt Hub, Quarterly External Debt Statistics; national authorities; and IMF staff estimates and projections.

Note: All country averages are weighted by nominal GDP converted to US dollars at average market exchange rates in the years indicated and on the basis of data availability.

¹ Pension projections rely on authorities' estimates when these are available. When authorities' estimates are not available, IMF staff projections use the method described in Clements, Eich, and Gupta, *Equitable and Sustainable Pensions: Challenges and Experience* (IMF 2014). These pension spending projections may be different from the previous edition of the *Fiscal Monitor* because of new baseline pension numbers, new authorities' projections, or updated demographic data from the UN World Population Prospects.

² For net present value calculations, a discount rate of 1 percent a year in excess of GDP growth is used for each economy.

^{3a} IMF staff projections for health care spending are driven by demographics and other factors. The difference between the growth of health care spending and real GDP growth that is not explained by demographics ("excess cost growth") is assumed to be the income group historical average (1.2 percent).

^{3b} These health expenditure projections have been updated to include new available underlying health and economic data as well as technical adjustments to the excess cost growth calculation and the age-expenditure profiles. The projections exclude health expenditure growth during the COVID-19 pandemic in the underlying trend expenditure growth estimate.

⁴ The average-term-to-maturity data refer to government securities and may not take all the external official debt into account; the source is Bloomberg Finance L.P.

⁵ Nonresident holding of general government debt data are for the third quarter of 2023 or latest available from the Joint External Debt Hub, Quarterly External Debt Statistics, which include marketable and nonmarketable debt. For some countries, tractable instruments in the Joint External Debt Hub are reported at market value. External debt in US dollars is converted to local currency, then taken as a percentage of 2022 gross general government debt.

⁶ Net financial worth of general government data are for 2021 or latest available from the Public Sector Balance Sheet (PSBS) Database.

⁷ Ghana is in the process of restructuring its debt. Government debt and interest rate projections are based on a pre-debt restructuring scenario.

SELECTED TOPICS

Fiscal Monitor Archives

Fiscal Policy in the Great Election Year	April 2024
Climate Crossroads: Fiscal Policies in a Warming World	October 2023
On the Path to Policy Normalization	April 2023
Helping People Bounce Back	October 2022
Fiscal Policy from Pandemic to War	April 2022
Strengthening the Credibility of Public Finances	October 2021
A Fair Shot	April 2021
Policies for the Recovery	October 2020
Policies to Support People During the COVID-19 Pandemic	April 2020
How to Mitigate Climate Change	October 2019
Curbing Corruption	April 2019
Managing Public Wealth	October 2018
Capitalizing on Good Times	April 2018
Tackling Inequality	October 2017
Achieving More with Less	April 2017
Debt: Use It Wisely	October 2016
Acting Now, Acting Together	April 2016
The Commodities Roller Coaster: A Fiscal Framework for Uncertain Times	October 2015
Now Is the Time: Fiscal Policies for Sustainable Growth	April 2015
Back to Work: How Fiscal Policy Can Help	October 2014
Public Expenditure Reform: Making Difficult Choices	April 2014
Taxing Times	October 2013
Fiscal Adjustment in an Uncertain World	April 2013
Taking Stock: A Progress Report on Fiscal Adjustment	October 2012
Balancing Fiscal Policy Risks	April 2012
Addressing Fiscal Challenges to Reduce Economic Risks	September 2011
Shifting Gears	April 2011
Fiscal Exit: From Strategy to Implementation	November 2010
Navigating the Fiscal Challenges Ahead	May 2010

I. Adjustment

Fiscal Policy in the Great Election Year	April 2024, Chapter 1
Inflation and Disinflation: What Role for Fiscal Policy?	April 2023, Chapter 2
Capitalizing on Good Times	April 2018
Defining and Measuring Fiscal Space	April 2017, Annex 1.1
China: What Do We Know about the General Government's Balance Sheet?	October 2016, Box 1.1
Brazil: Private Debt and the Strength of the Public Sector Balance Sheet	October 2016, Box 1.3
Fiscal Consolidations with Progressive Measures	April 2014, Box 2.4
Constructing an Index of the Difficulty of Fiscal Adjustment	October 2013, Box 1
Medium-Term Fiscal Adjustment in an Uncertain World	April 2013, Chapter 2
The Appropriate Pace of Short-Term Fiscal Adjustment	April 2013, Box 2

Fiscal Adjustment in the United States: Making Sense of the Numbers	April 2013, Box 5
Taking Stock: A Progress Report on Fiscal Adjustment	October 2012, Chapter 2
Distributional Consequences of Alternative Fiscal Consolidation Measures: Reading from the Data	October 2012, Appendix 1
Easy Does It: The Appropriate Pace of Fiscal Consolidation	April 2012, Chapter 3
Experience with Large Fiscal Adjustment Plans in Ireland and Portugal	April 2012, Box A2.1
Fiscal Multipliers in Expansions and Contractions	April 2012, Appendix 1
Early Lessons from Experiences with Large Fiscal Adjustment Plans	April 2012, Appendix 2
Fiscal Adjustment Plans and Medium-Term Fiscal Outlook	November 2010, Chapter 3
To Tighten or Not to Tighten: This Is the Question	November 2010, Box 1.2
Fiscal Adjustment and Income Distribution in Advanced and Emerging Economies	November 2010, Appendix 3
The Fiscal Policy Outlook: Adjustment Needs and Plans	May 2010, Chapter 3
Adjustment Measures and Institutions	May 2010, Chapter 4
Fiscal Adjustment Requirements: Gross and Net Debt Targets	May 2010, Appendix 2

II. Climate Change

Fiscal Support for Green Innovation	April 2024, Box 2.2
Addressing Barriers to the Diffusion of Green Technology	April 2024, Box 2.3
Climate Crossroads: Fiscal Policies in a Warming World	October 2023, Chapter 1
GDP Impact of Climate Mitigation Policies	October 2023, Box 1.1
How to Mitigate Climate Change	October 2019, Chapter 1

III. Commodities and Energy

The Energy Transition of Fossil Fuel-Exporting Countries	October 2023, Box 1.2
How Have Firms Responded to Recent Energy Price Shocks?	October 2023, Box 1.3
On the Path to Policy Normalization	April 2023, Chapter 1
Helping People Bounce Back	October 2022, Chapter 1
Externalities from Energy Pricing Subsidies	October 2022, Online Annex 1.5
Governance in the Extractive Industries	April 2019, Box 2.1
Bolivia: Inequality Decline during a Commodity Boom	October 2017, Box 1.3
The Fiscal Impact of Lower Oil Prices	April 2015, Chapter 1
Reforming Energy Subsidies	April 2015, Box 1.2
Reforming Energy Subsidies	April 2013, Appendix 1
Fiscal Developments in Oil-Producing Economies	September 2011, Box 3
Fuel and Food Price Shocks and Fiscal Performance in Low-Income Countries	September 2011, Box 8
Pass-Through and Fiscal Impact of Rising Fuel Prices	April 2011, Box 1.2
Reforming Petroleum Subsidies	May 2010, Appendix 5

IV. Country Cases

Fiscal Policy in the Great Election Year	April 2024, Chapter 1
US Fiscal Policy Uncertainty and Bond Spreads	April 2024, Box 1.1
Reform of the European Union Economic Governance Framework	April 2024, Box 1.3
Industrial Policies for Innovation: Lessons from Historical Cases	April 2024, Box 2.1
Inflation and Disinflation: What Role for Fiscal Policy?	April 2023, Chapter 2
Income Stabilization before and during the COVID-19 Pandemic across EU Countries: A Microsimulation Approach	October 2022, Online Annex 1.2

Brazil's Emergency Cash Transfer Program	October 2022, Online Annex 1.3
Social Protection and Poverty During the Pandemic	April 2022, Box 1.1
Analysis of Poverty, Social Safety Nets, and Informality	April 2022, Online Annex 1.2
Global Spillovers from the Fiscal Packages in the European Union and the United States	October 2021, Online Annex 1.1
Long-Term Distributional Impact of the American Families Plan	October 2021, Box 1.1; Online Annex 1.2
Fiscal Developments in Countries Participating in the Debt Suspension Initiative	October 2021, Box 1.2
Persistent Consequences of Wealth Inequality for the Next Generation's Income: The Case of Norway	April 2021, Box 2.1
A Wave of Protests: Economic Reforms and Social Unrest	April 2020, Box 1.2
Fiscal Measures in Selected Economies in Response to the COVID-19 Pandemic	April 2020, Special Feature Online Annex 1.1
The Macroeconomic Effects of Public Investment: A Model-Based Analysis	April 2020, Online Annex 2.1
China: State-Owned Enterprises Remain Key Players	April 2020, Online Annex 3.1
Brazil: A Complex and, at Times, Turbulent Relationship between SOEs and the Government	April 2020, Online Annex 3.2
Ghana: Risks in SOEs Can Spill Over to Other Sectors and the Budget	April 2020, Online Annex 3.5
How to Get the Most Out of SOEs: The Nordic Example	April 2020, Online Annex 3.7
China: How Can Fiscal Policy Support Economic Activity and Rebalancing?	April 2019, Box 1.2
The Distributional Effects of Income Tax Cuts in the United States	April 2018, Box 1.2
International Tax Policy Implications from US Corporate Tax Reform	April 2018, Box 1.3
General Government Debt and Fiscal Risks in China	April 2018, Box 1.4
Digital Government	April 2018, Chapter 2
Digitalization Advances in Revenue Administration in South Africa and Estonia	April 2018, Box 2.1
The Digitalization of Public Finances: Country Case Studies	April 2018, Annex 2.1
Bolivia: Inequality Decline during a Commodity Boom	October 2017, Box 1.3
Adopting a Universal Basic Income to Support Subsidy Reform in India	October 2017, Box 1.6
Model Simulations	October 2017, Annex 1.3
Making Growth More Inclusive in China	April 2017, Box 1.3
Colombia: Labor Tax Reform and the Shift from Informal to Formal Employment	April 2017, Box 2.2
Mozambique: Differential Tax Treatment across Firms	April 2017, Box 2.3
Innovation in Brazil, Russia, India, China, and South Africa (BRICS)	October 2016, Box 2.4
Lowflation and Debt in the Euro Area	October 2014, Box 1.1
Fiscal Challenges in the Pacific Island Countries	April 2014, Box 1.3
Fiscal Reforms to Unlock Economic Potential in the Arab Countries in Transition	October 2013, Box 2
Fiscal Adjustment in the United States: Making Sense of the Numbers	April 2013, Box 5
Lessons from Sweden	October 2012, Box 2
The "Two-Pack": Further Reforms to Fiscal Governance in the Euro Area	October 2012, Box 6
Ireland: The Impact of Crisis and Fiscal Policies on Inequality	October 2012, Box 8
The "Fiscal Compact": Reforming EU Fiscal Governance	April 2012, Box 5
Experience with Large Fiscal Adjustment Plans in Ireland and Portugal	April 2012, Box A2.1
Subnational Government Response to the Financial Crisis in the United States and Canada	April 2012, Box A3.1
The Dog That Didn't Bark (So Far): Low Interest Rates in the United States and Japan	September 2011, Chapter 3
United States: Government-Sponsored Enterprises and Contingent Liabilities	September 2011, Box 1
Fiscal Aspects of EU Economic Governance Reforms	April 2011, Box 4.1
The U.S. National Commission Report	April 2011, Box A5.1
The European Union: Reforming Fiscal Governance	November 2010, Box 3.2
Increasing Social Expenditures and Household Consumption in China	May 2010, Box 4
Health Care Reforms in the United States	May 2010, Box 5

V. Crises and Shocks

Fiscal Policy in the Great Election Year	April 2024, Chapter 1
How Have Firms Responded to Recent Energy Price Shocks?	October 2023, Box 1.3
On the Path to Policy Normalization	April 2023, Chapter 1
Inflation and Disinflation: What Role for Fiscal Policy?	April 2023, Chapter 2
Helping People Bounce Back	October 2022, Chapter 1
Countercyclical of Fiscal Policies	October 2022, Annex 1.1
Designing Government Support to Firms during a Crisis	October 2022, Box 1.2
Fiscal Policy from Pandemic to War	April 2022, Chapter 1
Evaluating How Well Scenarios in Debt Sustainability Analyses Capture Key Fiscal Risks	October 2021, Box 2.1
Financing Constraints and the Strategy for Investment	October 2020, Online Annex 2.1
Assessing the Impact of the COVID-19 Crisis on Monthly Investment Budgets	October 2020, Online Annex 2.2
Database of Country Fiscal Measures in Response to the COVID-19 Pandemic	October 2020, Online Only
An Unprecedented Fiscal Response: A Closer Look	October 2020, Box 1.2
Policies to Support People During the COVID-19 Pandemic	April 2020, Chapter 1
Fiscal Measures in Selected Economies in Response to the COVID-19 Pandemic	April 2020, Online Annex 1.1
Fiscal Implications of Potential Stress in Global Financial Markets	April 2019, Box 1.1
Learning from the Crisis? Taxation and Financial Stability	October 2013, Box 3
Ireland: The Impact of Crisis and Fiscal Policies on Inequality	October 2012, Box 8
The Impact of the Global Financial Crisis on Subnational Government Finances	April 2012, Appendix 3
The Evolution of Seigniorage during the Crisis	April 2012, Box 4
Subnational Government Response to the Financial Crisis in the United States and Canada	April 2012, Box A3.1
The Legacy of the Crisis: How Long Will It Take to Lower Public Debt?	September 2011, Chapter 5
The G-20 Economies: Crisis-Related Discretionary Fiscal Stimulus	November 2010, Box 1.1
Update on Crisis-Related Discretionary Fiscal Stimulus in G-20 Economies	May 2010, Appendix 1
The Impact of the Crisis on Subnational Governments	May 2010, Appendix 4

VI. Emerging Markets

Fiscal Policy in the Great Election Year	April 2024, Chapter 1
Expanding Frontiers: Fiscal Policies for Innovation and Technology Diffusion	April 2024, Chapter 2
Accelerating Technology Diffusion Across Countries	April 2024, Online Annex 2.6
Accelerating Diffusion of Innovation across Firms – The Role of Government Policies	April 2024, Online Annex 2.7
The Energy Transition of Fossil Fuel-Exporting Countries	October 2023, Box 1.2
Inflation and Disinflation: What Role for Fiscal Policy?	April 2023, Chapter 2
Brazil Emergency Cash Transfer Program	October 2022, Online Annex 1.3
General Government Debt and Fiscal Risks in China	April 2018, Box 1.4
Digitalization Advances in Revenue Administration in South Africa and Estonia	April 2018, Box 2.1
The Digitalization of Public Finances: Country Case Studies	April 2018, Annex 2.1
Innovation in Brazil, Russia, India, China, and South Africa (BRICS)	October 2016, Box 2.4
Nonresident Holdings of Emerging Market Economy Debt	April 2014, Box 1.2
Potential Sources of Contingent Liabilities in Emerging Market Economies	April 2013, Box 4
Fiscal Fundamentals and Global Spillovers in Emerging Economies	April 2012, Box 2
Too Good to Be True? Fiscal Developments in Emerging Economies	September 2011, Chapter 4
Determinants of Domestic Bond Yields in Emerging Economies	September 2011, Box 4

VII. Employment

Income Stabilization before and during the COVID-19 Pandemic across EU Countries: A Microsimulation Approach	October 2022, Online Annex 1.2
The Direct Labor Impact of Public Investment	October 2020, Online Annex 2.4
Colombia: Labor Tax Reform and the Shift from Informal to Formal Employment	April 2017, Box 2.2
Can Fiscal Policies Do More for Jobs?	October 2014, Chapter 2
Methodology for Estimating the Impact of Fiscal Consolidation on Employment	October 2014, Appendix 1
Do Old Workers Crowd Out the Youth?	October 2014, Box 2.2
Fiscal Policies to Address Weak Employment	October 2012, Appendix 2

VIII. Financial Sector

Designing Government Support to Firms during a Crisis	October 2022, Box 1.2
State-Owned Banks	April 2020, Box 3.2
The Fiscal Implications of International Bond Issuance by Low-Income Developing Countries	October 2014, Box 1.2
Nonresident Holdings of Emerging Market Economy Debt	April 2014, Box 1.2
A One-Off Capital Levy?	October 2013, Box 6
Bond Yields and Stability of the Investor Base	April 2013, Box 3
Long-Run and Short-Run Determinants of Sovereign Bond Yields in Advanced Economies	October 2012, Box 3
Financial Sector Support	October 2012, Box 4
Reassuring Markets about Fiscal Sustainability in the Euro Area	September 2011, Chapter 2
Determinants of Domestic Bond Yields in Emerging Economies	September 2011, Box 4
Financial Sector Support and Recovery to Date	September 2011, Box 7
Financial Sector Support and Recovery to Date	April 2011, Box 1.1
Sovereign Financing and Government Debt Markets	November 2010, Chapter 2
Market Concerns about Economies and Default Risks	November 2010, Box 2.1
Advanced Economies: Financial Market Spillovers among Sovereigns	November 2010, Box 2.2
Are Sovereign Spreads Linked to Fundamentals?	November 2010, Appendix 2
Measures to Finance the Cost of Financial Sector Support	May 2010, Box 3

IX. Fiscal Outlook

Fiscal Policy in the Great Election Year	April 2024, Chapter 1
Climate Crossroads: Fiscal Policies in a Warming World	October 2023, Chapter 1
On the Path to Policy Normalization	April 2023, Chapter 1
Helping People Bounce Back	October 2022, Chapter 1
Policy in an Uncertain Recovery	October 2021, Chapter 1
Policies to Support People during the COVID-19 Pandemic	April 2020, Chapter 1
Fiscal Policy for a Changing Global Economy	April 2019, Chapter 1
Saving for a Rainy Day	April 2018, Chapter 1
Recent Fiscal Developments and Outlook	April 2017, Chapter 1
Navigating a Risky World	October 2016, Chapter 1
Recent Fiscal Developments and Outlook	April 2015, Chapter 1
Recent Fiscal Developments and Outlook	October 2014, Chapter 1
Recent Fiscal Developments and Outlook	April 2014, Chapter 1
Recent Fiscal Developments and the Short-Term Outlook	October 2013, Chapter 1
Recent Fiscal Developments and the Short-Term Outlook	April 2013, Chapter 1
The Fiscal Outlook	October 2012, Chapter 1

Moving Forward	October 2012, Chapter 3
Continued Fiscal Tightening Is in Store for 2012, Particularly among Advanced Economies	April 2012, Chapter 1
Conclusion and Risk Assessment	April 2012, Chapter 7
Addressing Fiscal Challenges to Reduce Economic Risks: Introduction	September 2011, Chapter 1
Too Good to Be True? Fiscal Developments in Emerging Economies	September 2011, Chapter 4
Addressing Fiscal Challenges to Reduce Economic Risks: Conclusion	September 2011, Chapter 7
Risk to the Baseline	September 2011, Box 2
Fiscal Developments in Oil-Producing Economies	September 2011, Box 3
The Fiscal Indicators Index	September 2011, Box 5
Shocks to the Baseline Fiscal Outlook	April 2011, Chapter 3
Fiscal Developments and Near-Term Outlook	November 2010, Chapter 1
Fiscal Adjustment Plans and Medium-Term Fiscal Outlook	November 2010, Chapter 3
Assessing Fiscal Risks	November 2010, Chapter 4
The Near- and Medium-Term Fiscal Outlook	May 2010, Chapter 1

X. Fiscal Politics

Fiscal Policy in the Great Election Year	April 2024, Chapter 1
--	-----------------------

XI. Fiscal Policy Uncertainty

US Fiscal Policy Uncertainty and Bond Spreads	April 2024, Box 1.1
---	---------------------

XII. Government Debt

Fiscal Policy in the Great Election Year	April 2024, Chapter 1
Climate Crossroads: Fiscal Policies in a Warming World	October 2023, Chapter 1
On the Path to Policy Normalization	April 2023, Chapter 1
Inflation and Disinflation: What Role for Fiscal Policy?	April 2023, Chapter 2
Strengthening the Credibility of Public Finances	October 2021, Chapter 2
Capitalizing on Good Times	April 2018
Private Debt and Its Discontents	April 2018, Box 1.1
General Government Debt and Fiscal Risks in China	April 2018, Box 1.4
Can Countries Sustain Higher Levels of Public Debt?	April 2017, Box 1.4
Do Fiscal Rules Lower Sovereign Borrowing Costs in Countries with Weak Track Records of Fiscal Performance?	April 2017, Box 1.5
Debt: Use It Wisely	October 2016, Chapter 1
Debt Data Set	October 2016, Annex 1.1
Private and Public Debt and the Pace of the Recovery	October 2016, Annex 1.2
Interlinkages between Public and Private Debt: Selected Summary of the Literature	October 2016, Annex 1.3
Policies during Deleveraging Episodes	October 2016, Annex 1.5
How Much Do Financial Markets Value Government Balance Sheets?	October 2016, Box 1.5
Skeletons in the Closet? Shedding Light on Contingent Liabilities	April 2016, Box 1.3
Lowflation and Debt in the Euro Area	October 2014, Box 1.1
Moment of Truth: Unfunded Pension Liabilities and Public Debt Statistics	April 2014, Box 1.1
Public Debt Dynamics and Fiscal Adjustment in Low-Income Countries in Sub-Saharan Africa	April 2013, Box 6
Debt Ratios Are Still on the Rise, but Peaks Are within Sight	April 2012, Chapter 2
High Gross Debt Levels May Overstate Challenges in the Short Run . . .	April 2012, Chapter 4
. . . But Long-Run Debt-Related Challenges Remain Large	April 2012, Chapter 5
The Legacy of the Crisis: How Long Will It Take to Lower Public Debt?	September 2011, Chapter 5
Factors Underlying the Debt Increase Precrisis versus End-2015	September 2011, Box 6

The Importance of Monitoring Both Gross and Net Debt	September 2011, Appendix 3
Stock-Flow Adjustments and Their Determinants	September 2011, Appendix 4
Fiscal Deficits and Debts: Development and Outlook	April 2011, Chapter 1
Sovereign Financing and Government Debt Markets	April 2011, Chapter 2
Debt Dynamics and the Interest Rate–Growth Differential	April 2011, Box 3.1
Sovereign Financing and Government Debt Markets	November 2010, Chapter 2
Are Sovereign Spreads Linked to Fundamentals?	November 2010, Appendix 2
Risks to Medium-Term Public Debt Trajectories; Methodological and Statistical Appendix	November 2010, Appendix 4
Implications of Fiscal Developments for Government Debt Markets	May 2010, Chapter 2
Debt Dynamics in G-20 Economies: An Update	May 2010, Box 1
Gross versus Net Debt	May 2010, Box 2
Fiscal Adjustment Requirements: Gross and Net Debt Targets	May 2010, Appendix 2
Government Debt and Growth	May 2010, Appendix 3

XIII. Growth

Expanding Frontiers: Fiscal Policies for Innovation and Technology Diffusion	April 2024, Chapter 2
<i>IDEAS</i> to Respond to Weaker Growth	April 2020, Chapter 2
Factors Underlying Low Growth and Low Interest Rates	April 2020, Box 2.1
Fiscal Policy for a Changing Global Economy	April 2019, Chapter 1
China: How Can Fiscal Policy Support Economic Activity and Rebalancing?	April 2019, Box 1.2
Tackling Inequality	October 2017, Chapter 1
A Greater Role for Fiscal Policy	April 2017, Chapter 1
Upgrading the Tax System to Boost Productivity	April 2017, Chapter 2
Making Growth More Inclusive in China	April 2017, Box 1.3
Taxation and Growth: Details Matter	October 2013, Box 4
Debt Dynamics and the Interest Rate–Growth Differential	April 2011, Box 3.1
Interest Rate–Growth Differential	November 2010, Appendix 1
Government Debt and Growth	May 2010, Appendix 3

XIV. Inflation

Fiscal Policy in the Great Election Year	April 2024, Chapter 1
On the Path to Policy Normalization	April 2023, Chapter 1
Inflation and Disinflation: What Role for Fiscal Policy?	April 2023, Chapter 2
Fiscal Policy from Pandemic to War	April 2022, Chapter 1
Inflation and Fiscal Nexus: Empirical Findings	April 2022, Online Annex 1.3

XV. Innovation, Entrepreneurship, Research, Development, and Investment

Expanding Frontiers: Fiscal Policies for Innovation and Technology Diffusion	April 2024, Chapter 2
Climate Crossroads: Fiscal Policies in a Warming World	October 2023, Chapter 1
Building a Resilient Future	October 2022, Box 1.1
Public Investment for the Recovery	October 2020, Chapter 2
Maintaining Quality When Scaling Up Public Investment	October 2020, Online Annex 2.3
How Green Is the Fiscal Response to the COVID-19 Crisis?	October 2020, Box 1.2
Estimating Public Investment Needs for Climate Change Adaptation	October 2020, Box 2.1
The Macroeconomic Effects of Public Investment: A Model-Based Analysis	April 2020, Online Annex 2.1
Digital Government	April 2018, Chapter 2
The Role of Patents for Innovation	October 2016, Box 2.1

Fiscal Policy and Green Innovation	October 2016, Box 2.2
Does Preferential Tax Treatment of Income from Intellectual Property Promote Innovation?	October 2016, Box 2.3
Innovation in Brazil, Russia, India, China, and South Africa (BRICS)	October 2016, Box 2.4
Programs for Young Innovators and Start-Ups	October 2016, Box 2.5
Fiscal Policy, Research and Development, and Total Factor Productivity Growth	October 2016, Annex 2.1
Corrective Fiscal Incentives for Research and Development	October 2016, Annex 2.2
Taxation and Entrepreneurship	October 2016, Annex 2.4
Fiscal Policies for Innovation and Growth	April 2016, Chapter 2

XVI. Interest Rates

Fiscal Policy in the Great Election Year	April 2024, Chapter 1
Inflation and Disinflation: What Role for Fiscal Policy?	April 2023, Chapter 2
Inflation and Fiscal Nexus: Empirical Findings	April 2022, Online Annex 1.3
The Weakened Relation between Sovereign Spreads and Debt	October 2021, Online Annex 2.2
Fiscal Credibility Indicators Using Private Forecasts	October 2021, Online Annex 2.4
The Dog That Didn't Bark (So Far): Low Interest Rates in the United States and Japan	September 2011, Chapter 3
Debt Dynamics and the Interest Rate–Growth Differential	April 2011, Box 3.1
Interest Rate–Growth Differential	November 2010, Appendix 1

XVII. Low-Income Countries

Fiscal Policy in the Great Election Year	April 2024, Chapter 1
Building Tax Capacity in Low-Income and Emerging Market Economies	April 2024, Box 1.2
Expanding Frontiers: Fiscal Policies for Innovation and Technology Diffusion	April 2024, Chapter 2
Improving Tax Capacity in Emerging Market and Developing Economies	April 2023, Box 1.1
The Long-Run Payoff of Tax Administration Reforms	April 2023, Online Annex 1.1
Inflation and Disinflation: What Role for Fiscal Policy?	April 2023, Chapter 2
Fiscal Developments in Countries Participating in the Debt Suspension Initiative	October 2021, Box 1.2
Digital Government	April 2018, Chapter 2
Digitalization and Property Taxation in Developing Economies	April 2018, Box 2.2
Digitalizing Government Payments in Developing Economies	April 2018, Box 2.3
The Digitalization of Public Finances: Country Case Studies	April 2018, Annex 2.1
The Fiscal Implications of Slowing Global Trade for Emerging Market and Developing Economies	April 2016, Box 1.1
The Fiscal Implications of International Bond Issuance by Low-Income Developing Countries	October 2014, Box 1.2
Confronting Trade-Offs: Accommodating Spending Pressures in Low-Income Countries	September 2011, Chapter 6
Global Fuel and Food Price Shocks and Fiscal Performance in Low-Income Countries	September 2011, Box 8

XVIII. Policy and Reform

Fiscal Policy in the Great Election Year	April 2024, Chapter 1
Expanding Frontiers: Fiscal Policies for Innovation and Technology Diffusion	April 2024, Chapter 2
Climate Crossroads: Fiscal Policies in a Warming World	October 2023, Chapter 1
Inflation and Disinflation: What Role for Fiscal Policy?	April 2023, Chapter 2
Helping People Bounce Back	October 2022, Chapter 1
Coordinating Taxes across Borders	April 2022, Chapter 2
The Need for Timely and Accurate Beneficial-Ownership Information	April 2022, Box 2.1
Estimating the Revenue Impact of Pillar 1 and 2	April 2022, Online Annex 2.1
Emissions Equivalence of Other Mitigation Approaches to Carbon Pricing	April 2022, Online Annex 2.5

Fiscal Policies to Address the COVID-19 Pandemic	October 2020, Chapter 1
<i>IDEAS</i> to Respond to Weaker Growth	April 2020, Chapter 2
Capitalizing on Good Times	April 2018
Tackling Inequality	October 2017, Chapter 1
Upgrading the Tax System to Boost Productivity	April 2017, Chapter 2
What Are the Budgetary Costs and Gains of Structural Reforms?	April 2017, Box 1.2
Do Fiscal Rules Lower Sovereign Borrowing Costs in Countries with Weak Track Records of Fiscal Performance?	April 2017, Box 1.5
Debt: Use It Wisely	October 2016, Chapter 1
Policies during Deleveraging Episodes	October 2016, Annex 1.5
Benefits of Targeted Fiscal Interventions at Times of Private Deleveraging	October 2016, Box 1.4
An Active, Supportive Role for Fiscal Policy	April 2015, Chapter 1
Can Fiscal Policy Stabilize Output?	April 2015, Chapter 2
Public Expenditure Reform: Making Difficult Choices	April 2014, Chapter 2
Expenditure Rules: Effective Tools for Sound Fiscal Policy	April 2014, Appendix 1
The Future of the State: Testing the Wagner and Baumol Hypotheses	April 2014, Box 2.1
Fiscal Reforms to Unlock Economic Potential in the Arab Countries in Transition	October 2013, Box 2
Tricks of the Trade	October 2013, Box 5
How Can Fiscal Councils Strengthen Fiscal Performance?	April 2013, Box 1
Commonly Used Definitions of the Fiscal Balance	October 2012, Box 1
The “Two-Pack”: Further Reforms to Fiscal Governance in the Euro Area	October 2012, Box 6
Anchoring Medium-Term Fiscal Credibility: The Second Generation of Fiscal Rules	April 2012, Chapter 6
Measuring Fiscal Space: A Critical Review of Existing Methodologies	April 2012, Box 1
The “Fiscal Compact”: Reforming EU Fiscal Governance	April 2012, Box 5
Assessing the Cyclicity of Subnational Government Policies	April 2012, Box A3.2
“Fiscal Devaluation”: What Is It—and Does It Work?	September 2011, Appendix 1
Fiscal Aspects of EU Economic Governance Reforms	April 2011, Box 4.1
Fiscal Transparency under Pressure	April 2011, Appendix 2
The European Union: Reforming Fiscal Governance	November 2010, Box 3.2
Fiscal Rules—Recent Developments	May 2010, Box 7
XIX. Poverty and Inequality	
Inflation and Disinflation: What Role for Fiscal Policy?	April 2023, Chapter 2
Fiscal Policy from Pandemic to War	April 2022, Chapter 1
Social Protection and Poverty During the Pandemic	April 2022, Box 1.1
Poverty Projections using Growth Forecasts	April 2022, Online Annex 1.1
Analysis of Poverty, Social Safety Nets, and Informality	April 2022, Online Annex 1.2
Long-Term Distributional Impact of the American Families Plan	October 2021, Box 1; Online Annex 1.2
Persistent Consequences of Wealth Inequality for the Next Generation’s Income: The Case of Norway	April 2021, Box 2.1
Public Preferences for Progressive Taxation in the Post–COVID-19 World	April 2021, Box 2.2
How Will the COVID-19 Pandemic Affect Poverty and Inequality?	October 2020, Online Annex 1.1
Tackling Inequality	October 2017, Chapter 1
Global Inequality Today and in 2035	October 2017, Box 1.1
Equally Distributed Equivalent Level of Income as a Measure of Social Welfare	October 2017, Box 1.2
Bolivia: Inequality Decline during a Commodity Boom	October 2017, Box 1.3
Inequality Dimensions: Wealth, Opportunities, and Gender	October 2017, Annex 1.2

XX. Private Debt

Private Debt and Public Sector Risk	October 2020, Box 1.1
Private Debt and Its Discontents	April 2018, Box 1.1
Debt: Use It Wisely	October 2016, Chapter 1
Debt Data Set	October 2016, Annex 1.1
Private and Public Debt and the Pace of Recovery	October 2016, Annex 1.2
Interlinkages between Public and Private Debt: Selected Summary of the Literature	October 2016, Annex 1.3
Private Deleveraging and the Role of Fiscal Policy	October 2016, Annex 1.4
Policies during Deleveraging Episodes	October 2016, Annex 1.5
Benefits of Targeted Fiscal Intervention during Times of Private Deleveraging	October 2016, Box 1.4

XXI. Privatization and Public Enterprises

Experience with Privatization	April 2020, Box 3.1
General Government Nonfinancial Assets: What Do We Know?	October 2012, Box 7
Government Shares in Publicly Listed Companies	April 2012, Box 3
United States: Government-Sponsored Enterprises and Contingent Liabilities	September 2011, Box 1
Adjusting Public Capital Stock for Investment Inefficiency	September 2011, Box 9
Insights for Privatization Plans from Previous Large Episodes	September 2011, Appendix 2

XXII. Revenue

Building Tax Capacity in Low-Income and Emerging Market Economies	April 2024, Box 1.2
Improving Tax Capacity in Emerging Market and Developing Economies	April 2023, Box 1.1
The Long-Run Payoff of Tax Administration Reforms	April 2023, Online Annex 1.1
Inflation and Disinflation: What Role for Fiscal Policy?	April 2023, Chapter 2
Coordinating Taxes across Borders	April 2022, Chapter 2
Estimating the Revenue Impact of Pillar 1 and 2	April 2022, Online Annex 2.1
Corporate Tax Rate Strategic Reaction	April 2022, Online Annex 2.2
Survey of International Coordination and Tax Administration	April 2022, Online Annex 2.3
Revenue Implications of Cross-Border Remote Work	April 2022, Online Annex 2.4
Emissions Equivalence of Other Mitigation Approaches to Carbon Pricing	April 2022, Online Annex 2.5
Digital Government	April 2018, Chapter 2
Digitalization Advances in Revenue Administration in South Africa and Estonia	April 2018, Box 2.1
Digitalization and Property Taxation in Developing Economies	April 2018, Box 2.2
Small Business Taxation and the P2P Economy	April 2018, Box 2.5
The Digitalization of Public Finances: Country Case Studies	April 2018, Annex 2.1
Estimating the Impact of Digitalization on Tax Evasion from Cross-Border Fraud	April 2018, Annex 2.2
Estimating the Distribution of Tax Revenue Collection from Offshore Income and Wealth Following Improved Cross-Country Information Exchange	April 2018, Annex 2.3
Upgrading the Tax System to Boost Productivity	April 2017, Chapter 2
Past, Present, and Future Patterns in Revenues	April 2015, Box 1.1
Assessing Potential Revenue: Two Approaches	October 2013, Appendix 2
Increasing Revenue from Real Property Taxes	October 2013, Appendix 3
Past Episodes of Sustained Fiscal Revenue Increases	May 2010, Box 6

XXIII. Social Expenditures

Fiscal Policy in the Great Election Year	April 2024, Chapter 1
Brazil's Emergency Cash Transfer Program	October 2022, Online Annex 1.3

Fiscal Policy from Pandemic to War	April 2022, Chapter 1
Measures in Response to High Energy and Food Prices	April 2022, Box 1.2
Smart Strategies to Contain the COVID-19 Pandemic	October 2020, Online Annex 1.2
From Lockdown to Recovery: Spending Measures to Support Livelihoods during the COVID-19 Crisis	October 2020, Online Annex 1.3
Understanding the Implications of Different Types of Fiscal Measures for Public Finances	April 2020, Box 1.1
<i>IDEAS</i> to Respond to Weaker Growth	April 2020, Chapter 2
State-Owned Enterprises: The Other Government	April 2020, Chapter 3
Digital Government	April 2018, Chapter 2
Tackling Inequality	October 2017, Chapter 1
The Fiscal Response to the Refugee Influx in Europe	April 2016, Box 1.2
The Pressure of Age-Related Spending on Public Debt in Advanced Economies	April 2015, Box 1.3
Targeted Employer Social Security Contribution Cuts: Lessons from Experiences in Advanced Economies	October 2014, Box 2.1
Public Expenditure Reform: Making Difficult Choices	April 2014, Chapter 2
Moment of Truth: Unfunded Pension Liabilities and Public Debt Statistics	April 2014, Box 1.1
Structural Measures and Social Dialogue	April 2014, Box 2.2
Health System Inefficiencies	April 2014, Box 2.3
Recent Developments in Public Health Spending and Outlook for the Future	October 2013, Appendix 1
Confronting Trade-Offs: Accommodating Spending Pressures in Low-Income Countries	September 2011, Chapter 6
Potential Reform Strategies to Contain the Growth of Public Health Spending	April 2011, Box A1.1
The US National Commission Report	April 2011, Box A5.1
Tackling the Challenge of Health Care Reform in Advanced Economies	April 2011, Appendix 1
Selected Spending and Tax Issues	November 2010, Chapter 5
Advanced Economies: The Outlook for Public Health Spending	November 2010, Box 3.1
Increasing Social Expenditures and Household Consumption in China	May 2010, Box 4
Health Care Reforms in the United States	May 2010, Box 5

XXIV. Stabilization

Inflation and Disinflation: What Role for Fiscal Policy?	April 2023, Chapter 2
Income Stabilization before and during the COVID-19 Pandemic across EU Countries: A Microsimulation Approach	October 2022, Online Annex 1.2
Designing Fiscal Tools to Build Resilience: A DSGE-Based Analysis	October 2022, Online Annex 1.4
Policy Options to Support the Economic Recovery	October 2020, Online Annex 1.5
<i>IDEAS</i> to Respond to Weaker Growth	April 2020, Chapter 2
Can Fiscal Policy Stabilize Output?	April 2015, Chapter 2
Fiscal Stabilization under Alternative Estimates of the Output Gap	April 2015, Box 2.1
Boosting the Effectiveness of Automatic Stabilizers	April 2015, Box 2.2

XXV. Stimulus

Determining the Size of Fiscal Stimulus for Sustained Recovery	October 2020, Online Annex 1.4
Public Investment Fiscal Multiplier and Macroeconomic Uncertainty	October 2020, Online Annex 2.5
The G-20 Economies: Crisis-Related Discretionary Fiscal Stimulus	November 2010, Box 1.1
Update on Crisis-Related Discretionary Fiscal Stimulus in G-20 Economies	May 2010, Appendix 1

XXVI. Subsidies

Fiscal Policy in the Great Election Year	April 2024, Chapter 1
Expanding Frontiers: Fiscal Policies for Innovation and Technology Diffusion	April 2024, Chapter 2
Climate Crossroads: Fiscal Policies in a Warming World	October 2023, Chapter 1
Externalities from Energy Pricing Subsidies	October 2022, Online Annex 1.5
Fiscal Policy from Pandemic to War	April 2022, Chapter 1
Measures in Response to High Energy and Food Prices	April 2022, Box 1.2
Digital Government	April 2018, Chapter 2
The Digitalization of Public Finances: Country Case Studies	April 2018, Annex 2.1
Adopting a Universal Basic Income to Support Subsidy Reform in India	October 2017, Box 1.6
Reforming Energy Subsidies	April 2015, Box 1.2
Reforming Petroleum Subsidies	April 2010, Appendix 5

XXVII. Sustainability and Risk Management

Climate Crossroads: Fiscal Policies in a Warming World	October 2023, Chapter 1
Toward Green Public Finance Management	April 2022, Box 1.3
Media Coverage of Suspension of Fiscal Rules	October 2021, Box 2.2
Assessing Unexpected Increases in Debt	October 2021, Online Annex 2.3
Investing in Resilience	October 2020, Online Annex 2.6
Estimating the Adaptation Costs of Investing in the Resilience of Physical Assets	October 2020, Online Annex 2.7
State-Owned Enterprises: The Other Government	April 2020, Chapter 3
Can Countries Sustain Higher Levels of Public Debt?	April 2017, Box 1.4
Developing a Fiscal Risk Management Framework	April 2016, Box 1.4
Reassuring Markets about Fiscal Sustainability in the Euro Area	September 2011, Chapter 2
Assessing and Mitigating Fiscal Sustainability Risks	April 2011, Chapter 4
Assessing Fiscal Sustainability Risks: Deriving a Fiscal Sustainability Risk Map	April 2011, Appendix 3

XXVIII. Taxation

Building Tax Capacity in Low-Income and Emerging Market Economies	April 2024, Box 1.2
Expanding Frontiers: Fiscal Policies for Innovation and Technology Diffusion	April 2024, Chapter 2
Improving Tax Capacity in Emerging Market and Developing Economies	April 2023, Box 1.1
The Long-Run Payoff of Tax Administration Reforms	April 2023, Online Annex 1.1
Coordinating Taxes across Borders	April 2022, Chapter 2
Estimating the Revenue Impact of Pillar 1 and 2	April 2022, Online Annex 2.1
Corporate Tax Rate Strategic Reaction	April 2022, Online Annex 2.2
Survey of International Coordination and Tax Administration	April 2022, Online Annex 2.3
Revenue Implications of Cross-Border Remote Work	April 2022, Online Annex 2.4
Emissions Equivalence of Other Mitigation Approaches to Carbon Pricing	April 2022, Online Annex 2.5
Persistent Consequences of Wealth Inequality for the Next Generation's Income: The Case of Norway	April 2021, Box 2.1
Public Preferences for Progressive Taxation in the Post-COVID-19 World	April 2021, Box 2.2
Tax Policy and Automatic Stabilizers	April 2020, Box 2.2
Curbing Corruption	April 2019, Chapter 2
Avoiding International Tax Wars	April 2019, Box 1.3
Digital Government	April 2018, Chapter 2

The Distributional Effects of Income Tax Cuts in the United States	April 2018, Box 1.2
International Tax Policy Implications from US Corporate Tax Reform	April 2018, Box 1.3
Digitalization Advances in Revenue Administration in South Africa and Estonia	April 2018, Box 2.1
Digitalization and Property Taxation in Developing Economies	April 2018, Box 2.2
Small Business Taxation and the P2P Economy	April 2018, Box 2.5
The Digitalization of Public Finances: Country Case Studies	April 2018, Annex 2.1
Estimating the Impact of Digitalization on Tax Evasion from Cross-Border Fraud	April 2018, Annex 2.2
Estimating the Distribution of Tax Revenue Collection from Offshore Income and Wealth Following Improved Cross-Country Information Exchange	April 2018, Annex 2.3
Tackling Inequality	October 2017, Chapter 1
Measuring Tax Progressivity	October 2017, Box 1.4
Taxing Wealth and Wealth Transfers	October 2017, Box 1.5
Upgrading the Tax System to Boost Productivity	April 2017, Chapter 2
The Destination-Based Cash Flow Tax: A Primer	April 2017, Box 1.1
What Is the Effective Marginal Tax Rate?	April 2017, Box 2.1
Colombia: Labor Tax Reform and the Shift from Informal to Formal Employment	April 2017, Box 2.2
Mozambique: Differential Tax Treatment across Firms	April 2017, Box 2.3
Taxation and Foreign Direct Investment	October 2016, Annex 2.3
Taxation and Entrepreneurship	October 2016, Annex 2.4
Taxing Our Way out of—or into?—Trouble	October 2013, Chapter 2
Learning from the Crisis? Taxation and Financial Stability	October 2013, Box 3
Taxation and Growth: Details Matter	October 2013, Box 4
A One-Off Capital Levy?	October 2013, Box 6
Increasing Revenue from Real Property Taxes	October 2013, Appendix 3
Do Pensioners Get Special Treatment on Taxes?	October 2012, Box 5
Containing Tax Expenditures	April 2011, Appendix 5
Selected Spending and Tax Issues	November 2010, Chapter 5

IMF EXECUTIVE BOARD DISCUSSION OF THE OUTLOOK, APRIL 2024

The following remarks were made by the Chair at the conclusion of the Executive Board's discussion of the Fiscal Monitor, Global Financial Stability Report, and World Economic Outlook on April 3, 2024.

Executive Directors broadly agreed with staff's assessment of the global economic outlook, risks, and policy priorities. They welcomed the continued global economic resilience and containment of financial sector risks throughout the last two years, despite significant central bank interest rate hikes aimed at restoring price stability. Directors broadly concurred that the global economy may be approaching a soft landing but recognized that future growth is expected to be low by historical standards, reflecting still-high borrowing costs, a withdrawal of fiscal support, weak productivity growth, and continued geopolitical tensions. Most Directors also agreed that increasing geoeconomic fragmentation will weigh on medium-term growth, while a few Directors highlighted that trade diversification will bring benefits. Directors regretted that, for many emerging market and developing economies, the subdued prospects for global growth imply a slower convergence toward higher living standards.

Directors broadly considered that risks to the outlook are now more balanced, while emphasizing that important downside risks remain. In particular, they noted that supply disruptions and new price spikes stemming from geopolitical tensions could raise interest rate expectations and prompt a resurgence in volatility and sharp downturns in asset prices. Directors also emphasized that more persistent-than-expected inflation could trigger capital flow movements, a sharp tightening of global financial conditions, exchange rate volatility, and may put external and financial sectors under pressure. They recognized the risk that the cooling effects of past monetary policy tightening could be yet to come. Directors noted growing stresses in the commercial real estate sector and residential housing markets in some countries. At the same time, they recognized upside risks to the outlook from several sources, including a faster-than-expected decline

in inflation as well as growth and productivity gains from enhanced structural reforms.

Directors called on central banks to ensure that inflation returns to target smoothly, by avoiding easing policy prematurely. They emphasized that the pace of monetary policy normalization should remain data dependent, be tailored to country circumstances, and clearly communicated. Where inflation and inflation expectations are approaching target, Directors agreed that central banks should gradually move to a more neutral policy stance to avoid inflation target undershoots.

Noting elevated fiscal deficits and debt levels in many countries as well as rising debt service costs, Directors called for a gradual medium-term fiscal consolidation to ensure debt sustainability and rebuild room for budgetary maneuver, priority investments, and targeted social spending to protect the most vulnerable. The fiscal adjustment would also support the disinflation process. Directors emphasized that the pace of consolidation should depend on each country's conditions and be embedded in a credible medium-term fiscal framework. They noted that historical data indicate that spending pressures could rise as a result of the record number of elections this year. In addition, Directors recognized that many economies face important medium-term spending pressures stemming from aging population, climate change, and development needs. Most Directors agreed that countries should boost long-term growth by implementing well-designed, cost-effective fiscal policies that promote innovation and facilitate technology diffusion. At the same time, Directors emphasized that these policies should avoid protectionist measures.

Directors reiterated that continued accumulation of public and private debt in many economies constitute medium-term financial vulnerabilities. They stressed

that regulatory authorities should use supervisory tools, including stress tests, to ensure that banks and nonbank financial institutions are resilient to credit risk and strains in commercial and residential real estate. Given potential new risks associated with rapid growth in private credit, Directors saw merit in considering a more proactive regulatory and supervisory approach, including enhancing reporting requirements. Noting that cyber incidents are a rising financial stability concern, they recommended better cyber-related governance arrangements and legislations. Directors emphasized the need for a full and timely implementation of Basel III.

Directors agreed that targeted and carefully sequenced structural reforms are needed to raise medium-term growth prospects. They recommended

reforms aimed at reducing the misallocation of capital and labor, increasing female labor participation, enhancing education, strengthening governance, reducing excessive business regulation and restrictions on trade, and harnessing the potential of artificial intelligence. Directors also called for reforms to facilitate the green transition and build climate resilience, while managing energy security risks. Many Directors expressed support for regular coverage of climate issues in the Fund's flagship reports.

Directors emphasized that reinvigorating multilateral cooperation is crucial to limit the costs and risks of climate change, speed the green transition, safeguard the open and rule-based international trading system, facilitate debt restructuring processes, and strengthen the resilience of the international monetary system.

INTERNATIONAL MONETARY FUND

WORLD ECONOMIC OUTLOOK



INTERNATIONAL MONETARY FUND

GLOBAL FINANCIAL STABILITY REPORT

REGIONAL ECONOMIC OUTLOOKS

ASIA AND PACIFIC

EUROPE

MIDDLE EAST AND
CENTRAL ASIA

SUB-SAHARAN AFRICA

WESTERN HEMISPHERE

Timely. Topical. Free.



PUBLICATIONS

Global economics at your fingertips

IMF.org/pubs | bookstore.IMF.org | eLibrary.IMF.org

IN THIS ISSUE:

CHAPTER 1

Fiscal Policy in the Great Election Year

CHAPTER 2

Expanding Frontiers:
Fiscal Policies for Innovation
and Technology Diffusion



PUBLICATIONS

FISCAL MONITOR

APRIL 2024

ISBN: 979-8-40025-563-2



9 798400 255632