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How to Mitigate Climate Change

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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 ¼ 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 the 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 (see below). All substantive changes are listed in the online table of contents.

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PREFACE

The projections included in this issue of the *Fiscal Monitor* are drawn from the same database used for the October 2019 *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 medium-term 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 medium-term 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.

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 Paolo Mauro, Deputy Director; and Catherine Pattillo, Assistant Director. The main authors of this issue are Ian Parry (team leader), Thomas Baunsgaard, William Gbohoui, Raphael Lam, Victor Mylonas, Mehdi Raissi, Alpa Shah, and Baoping Shang. The chapter also benefited from contributions by Eduardo Godinez, Josh Linn (Resources for the Future), Akito Matsumoto, William Oman, Andrea Pescatori, and Dinar Prihardini. Excellent research contributions were provided by Juliana Arbelaez. The Methodological and Statistical Appendix was prepared by Yuan Xiang. Joni Mayfield and Meron Haile provided excellent coordination and editorial support. Rumit Pancholi from the Communications Department led the editorial team and managed the report's production, with editorial assistance from Sherrie Brown, Susan Graham, Lucy Morales, James Unwin, and Vector Talent Resources.

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. The *Fiscal Monitor* also benefited from comments by William Cline (Peterson Institute), Jim Cust (World Bank), Stephane Hallegatte (World Bank), Joanna Lewis (Georgetown University), Gokul Iyer (Pacific Northwest National Laboratory), Donald Marron (Urban Institute), Adele Morris (Brookings), Helen Mountford (World Resources Institute), Grzegorz Peszko (World Bank), William Pizer (Duke University), Adrien Vogt-Schilb (Inter-American Development Bank), and Emma Zinsmeister (US Environmental Protection Agency). Both projections and policy considerations are those of the IMF staff and should not be attributed to Executive Directors or to their national authorities.

EXECUTIVE SUMMARY

Global warming is threatening our planet and living standards around the world, and the window of opportunity for containing climate change to manageable levels is closing rapidly. Carbon dioxide (CO_2) emissions are a key driver of this alarming trend. Fiscal policy has an important role to play. This issue of the *Fiscal Monitor* argues that policymakers need to act urgently to mitigate climate change and thus reduce its damaging and deadly effects, including rising sea levels and coastal flooding, more frequent extreme weather events, and disruption to our food supply—key issues affecting all people globally.

Action to date has been inadequate. The 2015 Paris Agreement goes in the right direction, but the commitments countries have made fall well short of those needed to limit global warming to the level considered safe by scientists—2°C, at most, above preindustrial temperatures. Furthermore, it remains uncertain whether countries are reducing emissions as agreed. The longer that policy action is delayed, the more emissions will accumulate in the atmosphere and the greater the cost of stabilizing global temperatures—let alone of failing to do so. A better future is possible. The technological and policy means are available to switch from coal and other polluting fossil fuels to cleaner energy while maintaining robust economic growth and creating jobs. For the needed transformation to take place, a key challenge is to distribute its costs and benefits in a manner that can muster enough political support—both domestically and internationally.

Fiscal Policies to Mitigate Climate Change

This *Fiscal Monitor* argues that, of the various mitigation strategies to reduce fossil fuel CO_2 emissions, carbon taxes—levied on the supply of fossil fuels (for example, from oil refineries, coal mines, processing plants) in proportion to their carbon content—are the most powerful and efficient, because they allow firms and households to find the lowest-cost ways of reducing energy use and shifting toward cleaner alternatives. The burden of the tax in proportion to household consumption is moderately larger for lower-income households than for higher-income households in some countries (for example, China and the United States), but roughly equal or slightly smaller in others (Canada, India).

This chapter analyzes the carbon prices countries must impose to implement their mitigation strategies and the tradeoffs with other mitigation instruments. Limiting global warming to 2°C or less requires policy measures on an ambitious scale, such as an immediate global carbon tax that will rise rapidly to $75 a ton of CO_2 in 2030. Under such a scenario, over 10 years electricity prices would rise, on average, by 45 percent cumulatively and gasoline prices by 15 percent, for households, compared with the baseline (no policy action). The revenue from such a tax (1.5 percent of GDP in 2030, on average, for the Group of Twenty [G20] countries) could be redistributed, for example, to assist low-income households, support disproportionately affected workers or communities (for example, coal-mining areas), cut other taxes, fund investment in clean energy infrastructure or United Nations Sustainable Development Goals, reduce fiscal deficits, or pay an equal dividend to the whole population. This *Fiscal Monitor* compares such uses of the revenues in terms of economic efficiency and impact on income distribution. For example, carbon pricing combined with an equal dividend to the whole population rather than an income tax cut redistributes income to favor lower-income groups but forgoes gains in economic efficiency. An intermediate approach compensating, say, the poorest 40 percent of households, as well as vulnerable workers and communities, leaves three quarters of the revenues for other goals such as productive investments or cuts in income taxes.

The shift from fossil fuels will not only transform an economy but also profoundly change the lives of households, businesses, and communities. Importantly, the shift would generate additional and immediate domestic environmental benefits, such as lower mortality from air pollution (725,000 fewer premature deaths in 2030 for a $75 a ton tax for G20 countries alone). Businesses that deploy new technologies would earn profits and create jobs, which in the renewables sector already reached 11 million globally in 2017.

If carbon taxation is not feasible, emission trading systems (auctioning or allocating emission permits that are then traded) would be equally effective if applied to as wide a range of economic activities. If neither of these mitigation strategies is available on the necessary scale, "feebates" (systems of fees and rebates on products or activities with above or below-average emission intensity) or regulations (for example, standards for emission rates and energy efficiency) could generate two thirds of the CO_2 reduction opportunities of carbon taxation. Feebates and regulations prompt people and firms to switch to greener energy but do not discourage activities that use energy. To deliver the full scale of necessary emission reduction, feebates or regulations would need to be used more aggressively, causing greater disruption to existing production processes. The economic costs of mitigating climate change through less-than-optimal tools would still be lower than the devastating effects of global warming.

International Cooperation for a Shared Future

Some advanced and emerging market economies already use carbon taxes and emission trading systems, but insufficiently. Indeed, the average price on global emissions is currently $2 a ton, a tiny fraction of what is needed for the 2°C target. An early start to reinforce the Paris process could be made through a carbon price floor arrangement among countries with the largest emissions. This would provide a transparent target based on a common measure and reassurance against losses in international competitiveness from higher energy costs. If the top three emitters (China, United States, India) participated, such an agreement would already cover more than half of global emissions. Low-income and emerging market economies could be provided with a lower floor or international transfers. The arrangement could accommodate different policy approaches (for example, national level emission trading systems, feebates, or regulatory approaches) with agreement on verification procedures.

Meeting temperature stabilization goals does not mean that overall global energy investment must increase much further, but it does imply an urgent need to shift energy supply investment toward low-carbon sources. This is because the infrastructure built today will determine emission levels for decades. Additional policies are needed, such as incentives for research and development, temporary fiscal incentives to promote demand for low-emission technologies until they yield sufficient economies of scale, and green bond markets to facilitate access to private capital. Businesses that are considering longer term investments, such as for power generation, must be certain about future tax and regulatory policies, so policymakers should lock in mitigation policies for as long as possible, including making commitments to the global community.

Different policy tools have pros and cons, but the climate crisis is urgent and existential, calling on key stakeholders to deploy all appropriate policy measures. Finance ministers can confront this crisis by undertaking carbon taxation or similar policies, making climate change mitigation more acceptable through complementary tax or expenditure measures, ensuring adequate budgeting for clean technology investment, and coordinating strategies internationally.

CHAPTER 1

HOW TO MITIGATE CLIMATE CHANGE

Introduction

Without substantial mitigation of greenhouse gas emissions, global temperatures are projected to rise by around 4°C above preindustrial levels by 2100 (they have already increased by 1°C since 1900).[1] Global warming causes major damage to the global economy and the natural world and engenders risks of catastrophic and irreversible outcomes such as rising sea levels, extreme weather events (already more frequent) leading to loss of life, and the possibility of much higher warming scenarios.[2] Carbon dioxide (CO_2) emissions from fossil fuel combustion account for a dominant (63 percent) and growing share of global greenhouse gas emissions and are the most immediately practical to control (Figure 1.1, panel 1).[3] Policy action is thus urgently needed to curtail emissions. The longer that action is delayed, the greater the accumulation in the atmosphere, and the more abrupt and costly will be the necessary action to stabilize global temperatures.

The transition toward cleaner energy sources and reduced energy consumption requires overcoming externalities both at home and internationally. (Externalities occur when individuals affect others through their actions but do not pay a price for doing so.) Domestically, firms and households are not charged for the greenhouse gases they release through the combustion of fossil fuels and other sources. Likewise, greenhouse gases released by individual countries affect the global climate, and no country can solve the problem alone. Domestic policies are thus needed to give people and businesses greater incentives (through pricing or other means) to reduce emissions, without derailing economic growth. And international cooperation is key to ensure that all countries do their part. Supporting the case for such cooperation, curbing fossil fuel use is also desirable on domestic grounds, for example, to reduce deaths from local air pollution saving millions of lives: as this *Fiscal Monitor* shows, for many countries, including large emerging market economies, the gains from fewer premature deaths caused by air pollution outweigh the costs of mitigation policies.

The shift from fossil fuels will not only transform economic production processes, it will also profoundly change the lives of many people and communities. Firms and their employees in energy-dependent sectors (such as aluminum, glass, chemicals, plastics, petroleum refining, pulp and paper, and steel), as well as people living in areas poorly served by public transportation, are vulnerable to higher energy prices. Some coal-mining communities and regions are especially at risk because of a lack of other jobs and sources of fiscal revenues. Industries, workers, and communities whose livelihoods depend on fossil fuels may thus oppose reforms to mitigate climate change. Policymakers should design appropriate assistance and measures to build a better future for groups especially affected by drastic changes associated with mitigation policies.

Beyond finding ways of cooperating in the common interest and building domestic political consensus, mitigating climate change requires greater attention to the future. National governments, subject to short-term political cycles, may lack incentives to act, because the benefits of temperature stabilization extend beyond their horizon. Taking a long-term view is also challenging for voters who live paycheck to paycheck, and the gains from policies that limit global warming may seem imperceptible, at least in the near term. Businesses considering longer-term investments, such as for power generation, need certainty about future tax and regulatory policies. Stabilizing global temperature calls for an urgent shift of energy supply investments toward low-carbon sources, because the infrastructure built today will determine emission

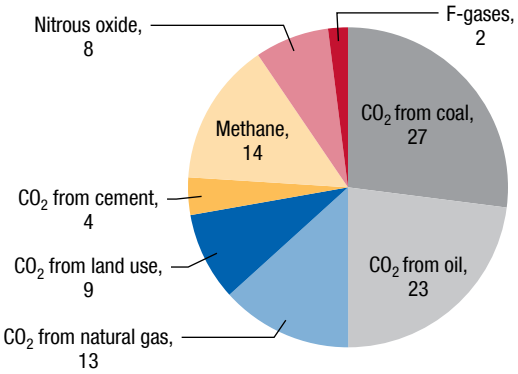
[1]For temperature projections, see Stocker and others (2013), who predict warming of 3.4°C to 5.6°C by 2100 in a scenario of high future emissions growth; and Nordhaus (2018).

[2]See, for example, IPCC (2018), Murray (2019), NAS (2018), Nordhaus (2018), and WEF (2019). Kahn and others (2019) show that all regions (cold or hot, advanced or developing) would experience a major decline in GDP per capita by 2100 in the absence of mitigation policies. The poor would be disproportionately hurt (Hallegatte and others 2017; IMF 2017; World Bank 2012). Rising sea levels, storm surges, droughts, and lower water availability would cause hundreds of millions of people to migrate both within countries and across borders (IOM 2009; IPCC 2014; World Bank 2018).

[3]See Online Annex 1.1 as well as IMF (2019c) for CO_2 emission projections for 135 countries.

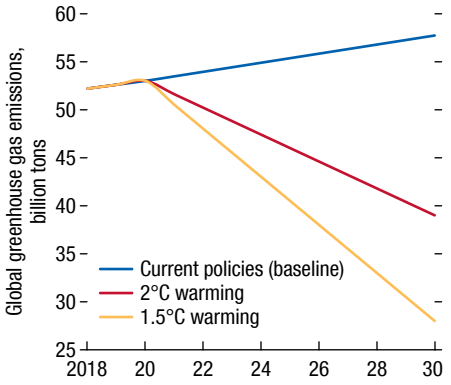
Figure 1.1. The Global Mitigation Challenge

1. Global Greenhouse Gas Emissions Share, 2016 (Percent)



Sources: Le Quéré and others 2018; and Tollefson 2018.

2. Emission Pathways and Warming Goals, 2018–30



Source: CAT 2018 (based on scientific studies of the relationship between emissions, atmospheric greenhouse gas concentrations, and temperature summarized in IPCC 2018).

Note: In panel 1, the oil category includes international aviation and maritime emissions. Methane emissions are from extractive industries, landfills, and agriculture; nitrous oxide is from agriculture and industrial processes; and fluorinated (F-) gases are used in refrigerants and aerosols. "Land use" refers to net CO_2 emissions from forestry and agricultural practices. CO_2 = carbon dioxide.

levels for several decades (Box 1.1). Policymakers thus need to consider ways of locking-in mitigation policies for as long as possible, including commitments to the global community.

The long-term goal of the 2015 Paris Agreement is to limit projected global warming to 2°C, with an aspirational target of 1.5°C, the level deemed safe by the Intergovernmental Panel on Climate Change (IPCC 2018). Meeting even the 2°C goal requires starting to reduce greenhouse gases immediately, bringing them to a third below baseline levels by 2030 (Figure 1.1, panel 2). As a first step, 190 parties submitted climate strategies (Nationally Determined Contributions) containing mitigation targets for the Paris Agreement. (Online Annex 1.2 provides more details on mitigation aspects of the agreement.) Many developing economies pledged more aggressive action contingent on external financial and technical support, and it is essential that advanced economies honor their commitments under the Paris Agreement to mobilize, from 2020 onward, $100 billion a year from public and private sources for climate projects (both mitigation and adaptation) in developing economies.[4] However, even if current mitigation commitments are fully implemented—many countries are not on track to achieve these targets, and the United States intends to withdraw from the Paris Agreement in 2020—these commitments are consistent with warming of 3°C (UNEP 2018): emission reductions by 2030 would be one-third of those required for 2°C. Implementation of existing commitments is therefore a first-step priority, but mechanisms to boost action at the global level are urgently needed.[5]

The key role of fiscal policies in climate change mitigation is increasingly recognized, and this *Fiscal Monitor* suggests how to design, and enhance the acceptability of, such policies and scale them up at the domestic and global levels.[6] Specifically, this chapter:

- Provides a conceptual and quantitative framework for understanding the environmental, fiscal, and economic impacts of carbon taxation and the trade-offs between carbon taxes and alternative mitigation instruments. The chapter argues that

[4]Quantifying financial flows is difficult, however, not least because they may partially substitute for other forms of official development assistance. For further details on the Paris Agreement, see Stern (2018) and UNFCCC (2016, 2018).

[5]The next opportunity for parties to make their mitigation pledges more ambitious is in 2020 when they must submit revised Nationally Determined Contributions (Online Annex 1.2).

[6]Growing interest in sharing experiences and promoting collective action in fiscal policies is reflected, for example, in the Finance Ministers Coalition for Climate Action, launched in April 2019 (www.worldbank.org/en/news/press-release/2019/04/13/coalition-of-finance-ministers-for-climate-action). Beyond mitigation, fiscal policies for adaptation and resilience building in countries vulnerable to climate impacts are also needed: these are discussed in IMF (2019b, 2019c).

fiscal policies are a key tool to mitigate climate change and that a higher price tag on carbon emissions is the most powerful and efficient way to do so; it gives people and businesses an incentive to find ways to conserve energy and switch to greener sources (see "Policies to Reduce Fossil Fuel CO_2 Emissions").
- Discusses how to facilitate international agreement on more ambitious targets, by proposing a carbon price floor arrangement among large emitters (see "How to Increase Ambition in Global Mitigation Targets").
- Discusses strategies for enhancing the domestic acceptability of mitigation policy and estimates how accompanying fiscal measures can alleviate the overall burden of mitigation policy on key groups (see "Making Mitigation Policy Acceptable in Domestic Politics").
- Recommends support (for example, technological and financial) for the policies necessary to mobilize investment in clean energy (see "Supporting Policies for Clean Technology Investment"; and Chapter 6 of the October 2019 *Global Financial Stability Report*).

Policies to Reduce Fossil Fuel CO_2 Emissions

Carbon taxes—charges on the carbon content of fossil fuels—and similar arrangements to increase the price of carbon, are the single most powerful and efficient tool to reduce domestic fossil fuel CO_2 emissions (Akerlof and others 2019; CAE and GCEE 2019; Farid and others 2016; Parry, de Mooij, and Keen 2012; Parry, Morris, and Williams 2015). (For greenhouse gases stemming from sources other than domestic use of fossil fuels, see Box 1.2.) Raising the price of coal and other fossil fuels is desirable not only to mitigate climate change but also to reduce local problems such as air pollution.[7] Carbon pricing can: provide across-the-board incentives to reduce energy use and shift toward cleaner fuels; mobilize a valuable source of new revenue; and be straightforward administratively if it builds on fuel tax systems. Many countries and subnational governments have implemented carbon pricing initiatives (Table 1.1). Even so, the global average carbon price is $2 a ton (based on World Bank 2019a), a tiny fraction of the estimated $75 a ton price in 2030 consistent with a 2°C target (discussed later in this section). Without consensus to raise the carbon price to the necessary

[7]In most countries, the price of fossil fuels is lower than desirable (and thus subsidized) owing to various factors: fuel and electricity prices in some countries are provided at prices below cost recovery; prices should be higher to reduce global warming and local problems such as air pollution as well as traffic congestion and accidents; and the consumption of fossil fuels is sometimes not taxed as much as are other goods. The combined value of underpricing from all these sources for all countries globally has been estimated at $5.2 trillion for 2017, with coal and oil accounting for 85 percent of the subsidy (Coady and others 2019). The quantitative analysis in this *Fiscal Monitor* considers the need for higher carbon pricing only from the perspective of global warming.

Table 1.1. Selected Carbon Pricing Arrangements, 2019

Country or Region	Year Introduced	2019 Price ($/Ton CO_2)	Coverage of GHGs, 2018	
			Million Tons	Percent
Carbon Taxes				
Chile	2017	5	47	39
Colombia	2017	5	42	40
Denmark	1992	26	22	40
Finland	1990	65	25	38
France	2014	50	176	37
Ireland	2010	22	31	48
Japan	2012	3	999	68
Mexico	2014	1–3	307	47
Norway	1991	59	40	63
Portugal	2015	14	21	29
South Africa	2019	10	360	10
Sweden	1991	127	26	40
Switzerland	2008	96	18	35
Emissions Trading Systems				
California, United States	2012	16	378	85
China	2020	na	3,232	
European Union	2005	25	2,132	45
Korea	2015	22	453	68
New Zealand	2008	17	40	52
Regional Greenhouse Gas Initiative[1]	2009	5	94	21
Carbon Price Floors				
Canada	2016	15	na	70
United Kingdom	2013	24	136	24

Sources: Stavins 2019; World Bank 2019a; and IMF staff calculations.

Note: CO_2 = carbon dioxide; GHG = greenhouse gas; na = not available.

[1] The Regional Greenhouse Gas Initiative is a market-based program in 10 states in the eastern part of the United States.

level, other less-effective instruments should complement carbon pricing to reduce domestic fossil fuel CO_2 emissions.[8]

Which Mitigation Policies Work Best?

Policymakers can use various fiscal tools, as well as regulatory policies, to encourage firms and households to reduce CO_2 emissions. The most effective and efficient policies make it costlier to emit greenhouse gases and allow businesses and individuals to choose how to conserve energy or switch to greener sources through a range of opportunities. These opportunities include reducing the emission intensity of power generation (for example, switching from high-carbon-intensive coal to intermediate-carbon-intensive natural gas or coal with carbon capture and storage,[9] and from these fuels to carbon-free renewables or, with appropriate safeguards, nuclear); curbing electricity demand (for example, through adoption of energy-efficient appliances, air conditioners, and machinery and less use of products using electricity); limiting demand for transportation fuels (for example, through better fuel economy of gasoline and diesel vehicles, increased use of electric and alternative-fuel vehicles, and less driving); and less direct fuel use in homes and industry (mainly for heating).

A carbon tax—a tax on the supply of fossil fuels (for example, from oil refineries, coal mines, and processing plants) in proportion to their carbon content—leads people and firms to use all such avenues to reduce emissions, conserve energy, or switch to greener power sources because it is passed forward into higher prices for carbon-based fuels and electricity. People and firms will identify which changes in behavior reduce emissions—for example, purchasing a more efficient refrigerator versus an electric car—at the lowest cost. Carbon tax paths can be set in line with mitigation objectives based on projections of fuel consumption and estimates of how consumption responds to higher prices. Online Annex 1.3 explains how the emission reductions and economic costs of the tax relate to its impact on fuel and electricity markets.

Alternative mitigation instruments, whose features are summarized in Table 1.2, include the following:

- Emission trading systems in which firms must hold an allowance for each ton of their emissions, and the government sets a cap on total allowances or emissions; market trading of allowances establishes the emissions price. If the system comprehensively covers emissions, and the government charges for the initial allowances (for example, by issuing them through an auction), emissions and revenues are in principle the same as under an equivalent carbon tax. In practice, the coverage of emission trading systems has usually been limited to power generators and large industrial firms.[10]
- "Feebates," which impose a sliding scale of fees on products and activities with above-average emission rates (per unit of energy or miles driven) and provide rebates (subsidies) on a sliding scale for products or activities with below-average emission rates. Under a feebate, for example, power generators would pay a fee (or receive a rebate) in proportion to their output times the difference between their emission rate per kilowatt-hour (averaged across their plants) and the industry average emission rate. The structure of fees and rebates would usually be set to make the system revenue-neutral (self-financing). Online Annexes 1.4 and 1.5 explain how feebates can be implemented in practice (thus far they have been applied to vehicles in several countries) and how they differ from carbon taxes.
- Regulations—for example, standards for the emission rates of vehicles and power generators, or for the energy efficiency of electricity-using products, or minimum requirements for the use of renewables in power generation.

[8]Proposals for decarbonizing the economy far more rapidly than currently envisioned are being debated in the United States under the banner of a "Green New Deal." Other countries are considering, or have already enacted (for example, France, Norway, Sweden, and the United Kingdom), zero net emissions targets for the middle of the century—a valuable roadmap that should inform, but not detract from, the need for immediate action. Regulations, such as banning new coal plants and sales of gasoline or diesel vehicles, are often more prominent than pricing in such approaches. Even under such approaches, however, carbon pricing could play a role—for example, in promoting retirement of existing (emissions-intensive) capital and allowing firms to pay out-of-compliance fees if regulatory requirements are costlier than anticipated.

[9]Carbon capture and storage is the process of separation, cleaning, and compression of carbon from fuel combustion and industrial processes and its permanent storage underground (IEA 2013).

[10]Although carbon taxes sometimes include exemptions, their overall coverage of emissions is often greater than that of emission trading systems. See Goulder and Parry (2008), Hepburn (2006), and Stavins (2019) for a general discussion of similarities and differences between carbon taxes and emission trading systems.

Table 1.2. Features of Alternative Mitigation Approaches

Alternative Mitigation Approaches	Potential for Exploiting Mitigation Opportunities	Use of Price/ Market Mechanism	Efficiency across Mitigation Responses Induced by Policy	Energy Price Impacts and Acceptability	Price Predictability	Revenue Generation	Administrative Burden
Carbon Tax	Full, if applied comprehensively (in practice, may contain exemptions)	Yes	People and firms choose most efficient way of reducing emissions	Higher energy prices can be challenging politically	Yes (if trajectory is clearly specified)	Yes (though exemptions may limit revenue base)	Small (if building on existing fuel or royalty tax systems)
Emissions Trading Systems	Full, if applied comprehensively (in practice, often limited to powerful/ large industries)	Yes	People and firms choose most efficient way of reducing emissions	Higher energy prices can be challenging politically	No (unless it includes price floors or similar mechanisms)	Maybe (if allowances are auctioned, but revenue base may be limited)	New capacity needed to monitor CO_2/trading markets
Feebates	Similar to regulations	Yes	People and firms choose most efficient approach within only one activity	Avoiding significant energy price increases may enhance acceptability	Yes (if trajectory is clearly specified)	No (recommended design is revenue neutral)	New capacity needed (for example, to apply fees/ rebates to power generators)
Regulations	Can exploit some key opportunities but not all (for example, reductions in vehicle use)	No	No automatic mechanism	Avoiding significant energy price increases may enhance acceptability	No (implicit prices vary with technology costs, energy prices, and so forth)	No	New capacity needed (for example, to monitor and enforce emission rate standards for power generators)

Source: IMF staff.
Note: CO_2 = carbon dioxide.

These mitigation policies work in different ways and may be compared as follows:

- *Range of emission mitigation mechanisms and impact on end-user energy prices:* Carbon taxes and emission trading systems lead people and firms both to shift to greener energy and to cut back on the use of energy-consuming products or capital. Feebates and regulations, however, do not discourage activities that use energy. Fossil-fuel energy producers pass the cost of a carbon tax (or of tradable emission permits) to end users through higher prices for, say, electricity or gasoline.[11] In contrast, a feebate consisting of an extra fee on vehicles with lower-than-average fuel efficiency and a rebate on more efficient vehicles would lead consumers to purchase more efficient vehicles, but it would not reduce vehicle miles driven. Likewise, although a feebate would lead power-generating firms to shift to lower emission technologies, there would be little impact on energy consumption (Online Annex 1.3). Thus, to deliver the entire emissions cut by switching to greener energy while continuing to use approximately the same amount of energy, feebates or regulations would need to be used more aggressively. The ensuing greater disruption to choices of energy source would imply larger economic costs than those incurred through carbon pricing,

[11]The cost of the carbon tax is largely passed forward because domestic fuel supply curves tend to be elastic relative to demand curves, not least because most countries are price takers in international fuel markets.

which allows people to identify and exploit all available avenues to reduce emissions in the most efficient way (Online Annex 1.3).[12]

- *Use of the price mechanism:* In addition to carbon taxes and emission trading systems, feebates also rely on the market system, though within a narrower set of activities. For example, under a feebate that charges power-generating firms a fee (or gives them a rebate) for each kilowatt-hour that emits more (or less) than the industry average, firms will use the most efficient technology.[13] In contrast, regulations might not leave sufficient flexibility for households and firms to find least-cost options. Moreover, regulations must keep up with rapidly changing technology. Excessive reliance on a regulatory approach could also motivate firms to collude with officials to alter or evade the regulations.[14]
- *Likely political opposition:* In the absence of accompanying measures, carbon pricing may face stiffer opposition from energy-using industries and the public at large, compared with arrangements, such as feebates and regulations, which have a much smaller impact on energy prices. (All approaches may face resistance from carbon-intensive energy-producing firms, workers, and regions.) If a comprehensive and equitable strategy to make carbon pricing more acceptable is not politically feasible, a less efficient strategy would be less ambitious carbon taxes or emission trading systems complemented by, or even substituted with, more forceful use of feebates or regulations.
- *Predictability of prices and fostering investment in green energy:* To mobilize investment (for example, in renewable energy plants) with high upfront costs and long-range payoffs, a transparent pricing plan for the years ahead is necessary (as well as supporting policies—see "Supporting Policies for Clean Technology Investment"). With carbon taxes and feebates, such a plan is possible. With emission trading systems, prices vary with energy market conditions (although volatility can be contained, for example, by combining emission trading systems with price floors—as in California, where allowances are auctioned to the market with a minimum price—see, for example, Flachsland and others 2018). Regulations may offer the weakest investment incentives because they do not reward investment that exceeds the standard (for example, Fischer, Parry, and Pizer 2003; and Jaffe and Stavins 1995).
- *Ability to raise revenues:* From the standpoint of mobilizing general revenues, a carbon tax with no exemptions will have the broadest tax base. In principle, governments could collect the same amount of revenues by charging for emission trading permits. In practice, however, revenue available for general use under emission trading systems could be diminished by (1) the narrower base for emissions pricing; (2) the possibility that the government would allocate some permits for free—for example, initial allocations to incumbent firms; and (3) potential earmarking of revenues from allowance auctions.[15] Regulations do not raise revenues, and feebates are generally revenue neutral (Online Annex 1.3). The revenues collected through a carbon tax (or, to a lesser extent, the sale of emission trading permits) could be redeployed through cuts in other taxes or additional investment or assistance to improve economic efficiency and enhance political acceptability of mitigation measures. The overall benefits of carbon pricing are greater the more productively and efficiently these revenues are used (for example, cutting taxes that discourage work effort and investment and promote informality and other tax-sheltering behavior, or funding socially productive investments for United Nations Sustainable Development Goals, such as education, health, and infrastructure).
- *Ease of administration:* Carbon taxes can be integrated into existing fossil fuel taxes or possibly into fiscal regimes for extractive industries.[16] For

[12]Firms and households would cut back on emissions as soon as a carbon tax is introduced, but increasing the tax gradually allows them time to adapt and be less opposed to change. Emission trading systems likewise have an immediate impact, which often leads governments to give some free permits to incumbents to ease their adjustment. Whereas a feebate for power generation could be applied quickly, in many areas—such as for vehicles—feebates would realistically be applied to new products and equipment only, so it would take years for their effect to fully permeate existing fleets and capital stocks.

[13]To maintain efficiency across feebate programs (for example, power generation versus vehicle choice), fees and rebates would need to be set in a way that harmonizes the incremental cost of emission reductions across sectors (Online Annex 1.4).

[14]The flexibility of regulations can be enhanced by combining them with pricing mechanisms by, for example, allowing firms that exceed a standard to sell credits to firms that fall short of the standard.

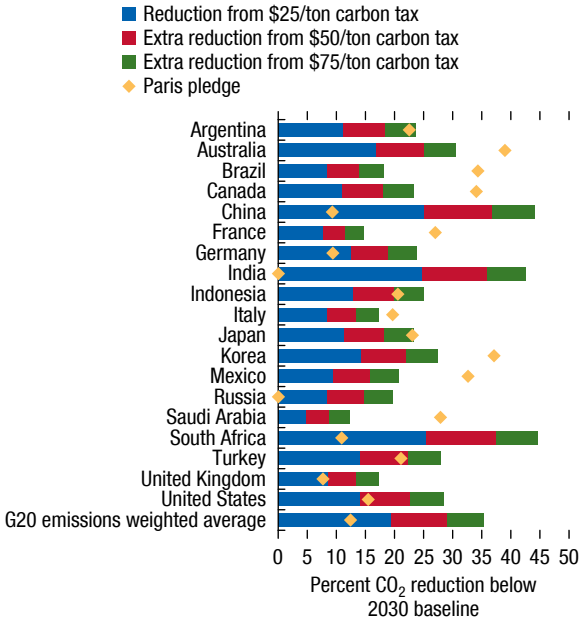
[15]Globally, 63 percent of emission trading system revenues have been used for environmental spending, 16 percent for general funds, and 21 percent for development—the corresponding percentages for carbon tax revenues are 23, 59, and 4, respectively, while a further 10 percent has been used for tax cuts and 4 percent for transfers (World Bank 2019b).

[16]For a discussion of administrative modalities, see Calder (2015) and Metcalf and Weisbach (2009).

emission trading systems, new government capacity is needed to monitor trading markets and firms' emissions: in some countries, this could be impractical given capacity constraints and limited trading. Feebates could be integrated into existing vehicle tax systems in many countries (Online Annex 1.4), but new institutions may be needed to apply them more extensively (for example, to appliance distributors and power generators). Many countries already have some energy efficiency regulations and building codes (IEA 2018), though the administrative workload and complexity would rise to apply them more extensively. Although the coverage of feebates and regulations could be expanded, it would be administratively challenging to apply them to the full range of energy-consuming products or types of equipment.

On balance, carbon pricing approaches seem to be the most promising, although mitigation through other approaches is better than inaction. The efficiency costs of different mitigation policies, and the burden of these policies across income groups, are discussed later in this section and in "Making Mitigation Policy Acceptable in Domestic Politics," respectively.

Figure 1.2. Reduction in Fossil Fuel CO_2 from Carbon Taxes in 2030, Selected Countries



Source: IMF staff calculations.
Note: Paris pledges indicate the percent reduction in CO_2 emissions below the baseline (that is, no mitigation) levels in 2030 if countries' mitigation pledges submitted for the Paris Agreement are met. Bars indicate the percent reduction in CO_2 emissions below baseline levels under carbon taxes with alternative tax levels. CO_2 = carbon dioxide; G20 = Group of Twenty.

Quantitative Analysis: Cross-Country Assessments of Carbon Pricing and Other Mitigation Approaches

To analyze how fiscal policy tools can help deliver mitigation commitments, emissions projections under baseline scenarios (with no new mitigation measures) are compared with those under current pledges and with carbon tax scenarios. CO_2 emission reductions below baseline levels in 2030 that will meet countries' Paris mitigation pledges range widely, from essentially zero to 40 percent (Figure 1.2).[17] As noted, current pledges globally are consistent with warming of 3°C.

To illustrate the extra effort needed by each country to attain current, or more ambitious, mitigation targets by using only carbon taxes, and to trace the implications for firms and household budgets, three scenarios are considered, with tax rates of $25, $50, and $75 a ton of CO_2 in 2030.[18] The $75 tax is estimated by the IMF staff to lead to the amount of emissions scientists (see Figure 1.1, panel 2) estimate will lead to 2°C warming (if applied globally and combined with investment policies—see "Supporting Policies for Clean Technology Investment"—as well as measures for nonfossil CO_2 emissions).[19] The less ambitious scenarios, $25 a ton and $50 a ton, are also analyzed given the lower prices consistent with many countries' mitigation pledges and the possibility that less ambitious carbon tax pricing may be combined with other instruments.[20]

[17]See IMF (2019c) for details on how these reductions were calculated.

[18]These tax amounts are in addition to any preexisting energy taxes addressing fiscal or domestic environmental considerations. All monetary figures throughout the chapter are in constant 2017 US dollars.

[19]Stern and Stiglitz (2017) estimated global carbon prices consistent with 2°C at $50–$100 a ton in 2030.

[20]Projecting the impact of carbon taxation on emissions requires assumptions about how much people and firms would cut back on energy use and switch energy sources. Since carbon taxation has generally been low in the past, such assumptions are more uncertain the higher the level of tax. It is especially difficult to predict how rapidly low-emission technologies would be deployed in response to higher carbon prices. These uncertainties should be kept in mind.

Considering the estimated cut in emissions from uniform carbon prices of $25, $50, and $75 a ton for the Group of Twenty (G20) countries individually and as a group (Figure 1.2), three results stand out:

- First, uniform carbon prices of $25, $50, and $75 a ton reduce CO_2 emissions by 19, 29, and 35 percent, respectively, for the G20 group (with countries weighted by their future emission shares).
- Second, whereas a $25 a ton price would be more than enough for some countries (for example, China, India, and Russia) to meet their Paris Agreement pledges, in other cases (for example, Australia and Canada) even the $75 a ton carbon tax falls short. This dispersion reflects cross-country differences in the stringency of mitigation pledges, as well as in the price responsiveness of emissions—for example, emissions are more responsive to pricing in coal-reliant countries such as China, India, and South Africa than in other countries.
- Third, the large cross-country differences in carbon prices consistent with individual country pledges underscore the case for greater international price coordination.

Under carbon taxation on a scale needed to mitigate climate change, the price of essential items in household budgets, such as electricity and gasoline, would rise considerably but such increases have been experienced in the past. With a $75 a ton carbon tax, coal prices would typically rise by more than 200 percent above baseline levels in 2030, because coal has a high carbon content and its baseline price per unit of energy is currently low (Table 1.3). This is indeed the purpose of a carbon tax: promoting a switch from carbon-rich fuels by making them costlier. But coal is largely an intermediate product rather than one consumed by households. The price of natural gas, which is used not only for power generation but also directly by households (mostly for heating and cooking) would also rise significantly, by 70 percent on average; the proportionate impact would be larger in North and South America, where baseline prices are much lower, compared with prices in Europe and Asia. The proportional increase in retail electricity prices would vary across countries depending on the emission intensity of generation: less than 30 percent in Canada and in several European countries, where the use of coal has already declined compared with a few decades ago and ranging between 70 and 90 percent in Australia and several large emerging market economies, which reflects how heavily they rely on coal-fired generation. Gasoline prices would rise by 5–15 percent in most countries. For retail electricity and gasoline, price changes of this size are well within the bounds of price fluctuations experienced during the past few decades.[21] As shown in Table 1.3, the impact on prices is lower under less ambitious scenarios. For the remainder of the chapter, most of the analysis will use the $50 a ton tax scenario as an illustration.

Carbon taxes (on domestic fuel consumption) can mobilize significant new revenues, ranging widely across countries (between ½ and 3 percent of GDP for the G20 countries for the $50 a ton tax in 2030—see Figure 1.3), depending on factors such as reliance on coal, efficiency in using energy, and importance of energy between sectors in the economy.

Analyzing the merits of different mitigation policies requires estimating their costs on economic efficiency. (For the purpose of this discussion, the term "economic efficiency costs" excludes the global climate and domestic environmental impacts of mitigation policies.) Economists (and many governments around the world) measure such costs by how much worse off people are as a result of the policy action, excluding the benefits it brings (Online Annex 1.3). In the case of mitigation policies, the costs occur because the policies cause (1) a shift to cleaner but costlier technologies and equipment than people or firms would otherwise prefer; and (2) a decline in overall economic activity because of higher energy prices.[22] The estimated economic efficiency costs of mitigation responses induced by carbon taxes are first compared with the domestic environmental benefits and then with the costs of other mitigation instruments.

The economic efficiency costs of a $50 a ton carbon tax[23] are equivalent to less than 0.5 percent of GDP in 17 countries (Figure 1.4). For most G20 countries, these costs are lower than the domestic environmental benefits

[21]For example, real electricity prices in the United States declined 30 percent between 1993 and 2003; real gasoline prices increased 75 percent between 2003 and 2006 (calculated from Haver Analytics and IMF, International Financial Statistics).

[22]This aggravates distortions in labor and capital markets created by broader taxes on the returns to work effort and investment (Online Annex 1.3).

[23]Measured by the shift to cleaner but costlier technologies and equipment. Costs from the decline in overall economic activity are calculated for the United States in "Making Mitigation Policy Acceptable in Domestic Politics."

Table 1.3. Impact of Carbon Taxes on Energy Prices, 2030

	Coal		Natural Gas		Electricity		Gasoline	
Country	Baseline Price ($/GJ)	Price Increase (%)	Baseline Price ($/GJ)	Price Increase (%)	Baseline Price ($/kWh)	Price Increase (%)	Baseline Price ($/liter)	Price Increase (%)
$75/Ton Carbon Tax								
Argentina	3.0	297	3.0	133	0.10	48	1.4	13
Australia	3.0	263	9.6	44	0.11	75	1.3	15
Brazil	3.0	224	3.0	131	0.12	7	1.4	13
Canada	3.0	251	3.0	128	0.10	11	1.1	17
China	3.0	238	9.6	41	0.09	64	1.2	13
France	5.0	123	8.3	49	0.12	2	1.8	9
Germany	5.2	132	8.4	52	0.12	18	1.8	8
India	3.0	230	9.6	25	0.09	83	1.3	13
Indonesia	3.0	239	9.6	36	0.12	63	0.6	32
Italy	5.3	134	8.3	50	0.14	18	2.0	9
Japan	3.0	230	9.6	48	0.13	42	1.4	11
Korea	3.0	220	9.6	47	0.16	42	1.5	6
Mexico	3.0	226	3.0	132	0.10	74	1.0	18
Russia	3.0	169	7.0	54	0.14	25	0.9	12
Saudi Arabia	3.0	234	7.0	56	0.22	40	0.6	28
South Africa	3.0	205	7.0	23	0.08	89	1.2	16
Turkey	3.0	232	7.0	59	0.09	40	1.5	9
United Kingdom	6.1	157	8.3	51	0.13	16	1.7	8
United States	3.0	254	3.0	135	0.08	53	0.8	20
Simple average	3.5	214	7.0	68	0.12	43	1.3	14
$50/Ton Carbon Tax								
Simple average	3.5	142	7.0	45	0.1	32	1.3	9
$25/Ton Carbon Tax								
Simple average	3.5	71	7.0	23	0.1	19	1.3	5

Source: IMF staff calculations.

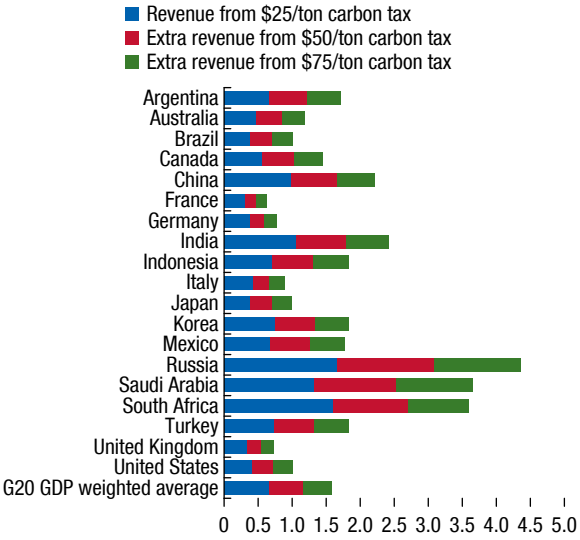
Note: Baseline prices are retail prices estimated in Coady and others (2019) and include preexisting energy taxes. Baseline prices for coal and natural gas are based on regional reference prices. Baseline prices for electricity and gasoline are from cross-country databases. Impacts of carbon taxes on electricity prices depend on the emission intensity of power generation. Carbon tax prices are per ton. GJ = gigajoule; kWh = kilowatt-hour.

stemming from the same measure—fewer deaths from air pollution as well as reductions in traffic congestion and accidents—before even counting climate benefits. The domestic environmental benefits are especially large for countries with especially severe air pollution, such as China, India, and Russia (Figure 1.4). In fact, for G20 countries together, a $50 carbon tax would prevent 600,000 premature air pollution deaths in 2030 (the bulk of them in the largest emerging economies—60 percent in China alone); a $75 tax would prevent 725,000 premature deaths. Despite uncertainty in measuring the size of the domestic environmental benefits, carbon pricing benefits many countries because it reinforces efforts to address the aforementioned domestic environmental problems.[24]

The economic efficiency costs of carbon taxes are considerably lower than those of other mitigation

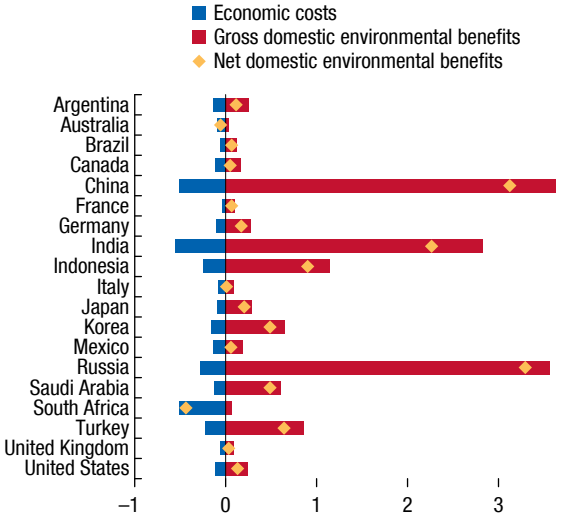
[24]The estimates in Figure 1.4 make some allowance (for example, through declining air pollution emission rates) for future initiatives to address domestic environmental problems. See Coady and others (2019), Parry and others (2014), and Parry, Veung, and Heine (2015) for further discussion. Another potential co-benefit of carbon mitigation, not counted in Figure 1.4, is reduced dependence on volatile energy markets.

Figure 1.3. Revenue from Comprehensive Carbon Taxation in 2030, Selected Countries
(Percent of GDP)



Source: IMF staff calculations.
Note: G20 = Group of Twenty.

Figure 1.4. Unilateral Costs and Domestic Net Benefits of a $50/Ton Carbon Tax in 2030, Selected Countries
(Percent of GDP)



Source: IMF staff calculations.

instruments, such as (1) feebates or regulations promoting reductions in the emission intensity of power generation and vehicles, as well as the main opportunities for improving energy efficiency across the household, industrial, and electricity-consuming sectors; and (2) an emission trading system applied to power generation and large industry combined with feebates and regulations for the household and transportation sectors (Table 1.4).

For the second and third columns in Table 1.4, the policies are scaled to provide the same incentive for reducing CO_2 by an extra ton as under a $50 a ton carbon tax (for the emission sources each policy affects). In this case, the feebate/regulation and hybrid packages achieve emission reductions of 50–70 percent and 65–80 percent, respectively, of those under the carbon tax. For the two columns on the right, the policies are scaled to achieve the same economywide emission reduction as under a $50 a ton carbon tax. In this case, the costs of mitigation responses are 50–100 percent and 20–40 percent larger, respectively, for the feebate/regulation and hybrid packages. The mitigation cost is lower for the carbon tax because the emission reduction can be achieved by switching to cleaner technologies for a wider range of products and activities, as well as by consuming less energy. In contrast, under the feebate package, for example, the burden of adjustment is not spread as widely, and it becomes more and more difficult to attain emission savings through a narrower range of actions.

How to Increase Ambition in Global Mitigation Targets

The success of the Paris Agreement in meeting its long-term temperature goals will hinge critically on substantially scaling up mitigation efforts above what is currently pledged. This section discusses how an international carbon price floor could muster consensus among key countries on greater mitigation ambition.[25]

Promoting an International Carbon Price Floor

Any mechanism to induce scaling up of global mitigation needs to address three obstacles:

- First, a country may be reluctant to be the only one to scale up ambition, not only because the

[25]Global mitigation policies will cause large declines in revenues for fossil-fuel-rich countries—estimated in Online Annex 1.10. A complementary, more tentative proposal is thus put forward in that annex, calling for further analysis of how fossil-fuel-rich countries can share in the revenues from carbon taxation by increasing royalty payments, so as to encourage these countries to support an international carbon price floor.

Table 1.4. Comparing Other Mitigation Policies with Carbon Taxes, 2030

Country	CO_2 Reduction from Other Policies as a Fraction of CO_2 Reduction under $50/Ton Carbon Tax (for Same Carbon Price)		Mitigation Cost of Other Policies Relative to Cost of $50/Ton Carbon Tax (for Same CO_2 Reduction)	
	Feebate/Regulatory Combination	ETS/Feebate/Regulatory Hybrid	Feebate/Regulatory Combination	ETS/Feebate/ Regulatory Hybrid
Argentina	0.51	0.66	1.94	1.51
Australia	0.67	0.90	1.50	1.11
Brazil	0.59	0.67	1.70	1.49
Canada	0.57	0.62	1.74	1.60
China	0.70	0.88	1.44	1.13
France	0.45	0.50	2.23	1.99
Germany	0.64	0.73	1.56	1.36
India	0.69	0.93	1.44	1.07
Indonesia	0.62	0.85	1.61	1.18
Italy	0.56	0.66	1.79	1.52
Japan	0.59	0.80	1.69	1.24
Korea	0.66	0.82	1.52	1.22
Mexico	0.51	0.76	1.98	1.32
Russia	0.53	0.65	1.87	1.54
Saudi Arabia	0.36	0.70	2.78	1.42
South Africa	0.64	0.84	1.56	1.19
Turkey	0.63	0.78	1.59	1.28
United Kingdom	0.57	0.63	1.75	1.60
United States	0.64	0.81	1.55	1.24
Simple average	0.59	0.75	1.75	1.37

Source: IMF staff calculations.

Note: Feebate and regulatory policies promote reductions in emission rates in power generation and transportation and two-thirds of other opportunities for higher energy efficiency. CO_2 = carbon dioxide; ETS = emission trading system.

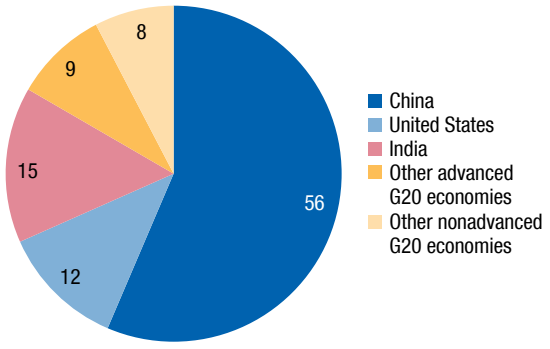
benefits accrue mostly to other countries but also because it may be concerned that higher energy costs would harm its firms' international competitiveness.

- Second, current mitigation pledges are not expressed using a common measure for all countries, thus hindering international comparisons.[26]
- Third, most future low-cost mitigation opportunities are in large, rapidly growing emerging market economies, especially those that rely heavily on coal. For example, with a globally uniform $50 a ton carbon price in 2030, China and India would

[26]Current pledges vary (for example, IMF 2019c, Appendix I) in terms of (1) target variables (for example, emissions, emission intensity, clean energy shares); (2) nominal stringency (for example, percent emission reductions); and (3) baseline years against which targets apply (for example, historical versus projected baseline emissions).

Figure 1.5. Country Shares of G20 CO_2 Reductions below Baseline under a Uniform $50/Ton Carbon Price in 2030, Selected Countries

(Percent)



Source: IMF staff calculations.

Note: CO_2 = carbon dioxide; G20 = Group of Twenty.

account for an estimated 56 and 15 percent, respectively, of CO_2 reductions (compared with baseline levels) from G20 countries, the United States for 12 percent, and all other G20 countries combined for 18 percent (Figure 1.5). However, advanced economies may have greater responsibilities for mitigation.[27] Indeed, on a per capita basis, projected baseline emissions in India in 2030 are only one-seventh of those for the United States (Online Annex 1.1).

An international carbon price floor for high-emitting countries (given the concentration of emissions in those countries), as a complement to the Paris process, might address these obstacles:

- An internationally coordinated approach would provide reassurance against losses in competitiveness and address free-rider issues—in fact, country participants may support robust floor prices as this reduces the emissions of other participants, thereby conferring collective benefits for all (for example, Cramton and others 2017; Weitzman 2016).
- A common emission price requirement improves the transparency of countries' actions.
- A common price floor (ideally a global price floor) is most efficient because emissions are cut where it is cheapest to do so on a global scale.[28] If the floor is lower for countries where it is cheaper to reduce emissions than for countries where cutting emissions is more expensive, many opportunities to cut emissions at the lowest cost could be missed.
- Despite the efficiency case for a uniform price, an option to ensure equity would be for advanced economies to be subject to a higher floor price. An alternative (or complementary) option would be for advanced economies to provide enhanced financial or technological support to emerging market economies in exchange for their commitment to more ambitious targets. The latter mechanism would be more efficient, because the emerging market economies have more opportunities to reduce emissions at low cost, although agreeing on international transfers might be more challenging.

Although an international floor price approach would require meeting operational challenges, such as monitoring and ensuring sustained participation (Box 1.3), it presents several advantages:

- It retains flexibility for countries to exceed the floor if they need to do so to meet their Paris mitigation pledges or other policy targets.
- It may encourage nonparticipants, and participants for which the minimum price is not binding, to raise carbon prices (for example, Kanbur and others 1995).
- It can be designed to accommodate strategies based on emission trading systems and feebates and regulations. Although the price floor is most naturally met through carbon taxes, emission trading systems could be accommodated (for example, by setting the emission cap such that the expected emission price is at least equal to the required price, or by including a mechanism that withdraws allowances from the system if prices would otherwise fall below the floor). Feebate and regulatory approaches could also be accommodated if the floor price were converted to an emission target for each country (that is, what emissions would be with the price floor).

Precedents for cooperation over price floors suggest that this approach is feasible. For example, under federal requirements introduced in Canada in 2016, provinces and territories are required to phase in a minimum carbon price, rising to Can$50 (US$38) a ton by 2022 using a carbon tax or an emission trading system.[29] More broadly, some progress has been made in combating excessive competition for internationally mobile tax bases through tax floor arrangements, for example, for excises on gasoline, cigarettes, and alcohol in the European Union.

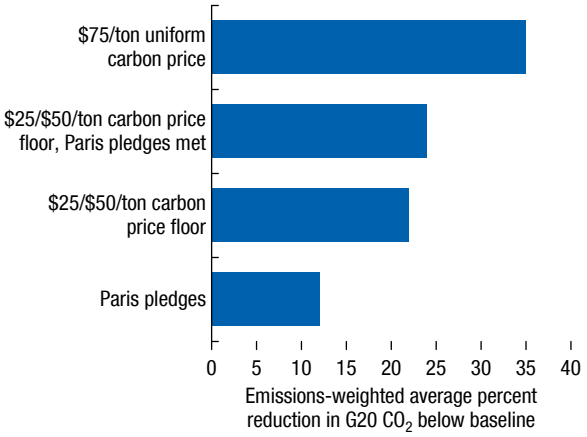
Under a price floor arrangement in which advanced and nonadvanced G20 member countries were, for illustration, subject to minimum prices of $50 and $25 a ton, respectively, on their domestic CO_2 emissions in 2030, combined G20 CO_2 emission reductions would be 24 percent below baseline levels (if either the floor prices or current mitigation commitments, whichever are more stringent, were met), doubling emission reductions over and above those implied by meeting

[27]Under the principle of "common but differentiated responsibilities," countries have varying responsibility for their contributions toward global greenhouse gas mitigation in recognition of their economic status and respective capabilities (UN 1992, Article 3.1).

[28]Following similar logic, CAE and GCEE (2019) recently made the case for a common price floor in Europe.

[29]The federal government will step in, where needed, to ensure regional governments meet the requirement (Government of Canada 2018a, 2018b; Parry and Mylonas 2018). The system is currently under legal challenges from some provincial governments.

Figure 1.6. CO_2 Reduction for G20 Countries under Alternative Ambition Scenarios, 2030



Source: IMF staff calculations.
Note: Carbon prices are per ton. For some emerging market economies (advanced economies), the $25 ($50) floor is not enough to meet the Paris pledges. In the second scenario from the top, countries meet the price floor or the Paris pledge, whichever is more stringent; in the third scenario from the top, all countries meet their respective price floor, but some may not meet their Paris pledges. CO_2 = carbon dioxide; G20 = Group of Twenty.

current pledges (Figure 1.6). Under that scenario, however, mitigation would still fall a third short of consistency with the 2°C target, so other measures, or higher price floors—an estimated $75 a ton across all G20 country emissions—would still be needed.

Making Mitigation Policy Acceptable in Domestic Politics

At a domestic level, implementing mitigation policy will likely require a comprehensive strategy that confronts the political challenges to enact and keep a high and broad-based carbon tax or similar measures. This section discusses common obstacles to reform and general strategies for overcoming them; the distributional burden of carbon pricing across household and industry groups in selected countries; options for use of carbon pricing revenue, considering their impact on income distribution; and measures to assist vulnerable groups.

Obstacles and Potential Solutions

Voters and particular groups often oppose carbon pricing because it increases their costs for energy and their cost of living. They may also oppose carbon pricing because of the misperception that these taxes impose a very disproportionate burden on low-income households; will not be effective in reducing emissions; and are a backdoor way to increase the size of government (Carattini, Carvalho, and Fankhauser 2017). Energy-intensive firms, especially those in trade-exposed sectors (that cannot easily pass on higher energy costs in product prices), labor groups, and regions that depend on energy production are often the most forceful opponents of carbon taxation.

Past attempts to introduce carbon pricing and energy pricing reform more generally point to the importance of four elements in successful strategies:[30]

- Increasing carbon prices in the near term and locking in subsequent price hikes through legislation to provide clarity and certainty (thereby allowing time for firms and households to adjust through, for example, energy efficiency investments);
- Extensive consultations with stakeholders to garner support and a public communication campaign that provides the facts underlying the case for reform and addressing possible misperceptions;
- Transparent, equitable, and productive use of revenues; and
- An upfront package of targeted assistance for vulnerable households, firms, workers, and disproportionately affected communities.

For example, Sweden successfully implemented a tax on carbon emissions starting at $28 a ton in 1991 and progressively rising to $127 a ton in 2019. The tax was introduced as part of a broader reform including the reduction of taxes on energy, labor, and capital. Higher social transfers and reductions in the basic rate of income taxes helped to offset burdens for low- and middle-income households, while competitiveness concerns were addressed through a lower initial rate for industries (progressively phased out by 2018). Businesses and other stakeholders were involved in the decision-making process through public consultations. In France, on the other hand, the rapid ramping up of a similar carbon tax was suspended in 2018 at $50 a ton, following a public backlash against the perceived unfairness of the tax, which was introduced at the same time as broader tax reductions seen as benefiting

[30]For more detail on suggested reform strategies see Clements and others (2013) and Coady, Parry, and Shang (2018).

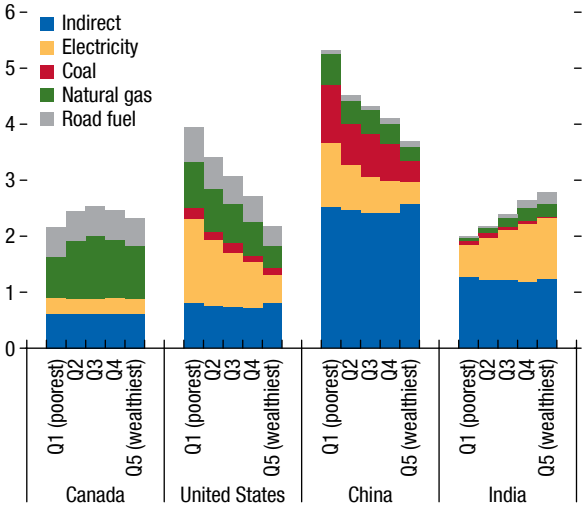
the wealthy. Online Annex 1.7 summarizes additional experiences with carbon taxation.

Beyond these general elements, overcoming the political challenge may require building a broad enough coalition in favor of reform; for example, by using a portion of the revenues to finance policies that will mobilize support from environmental groups, green industrial interests, and households. Where this is not feasible, avoiding higher energy prices in favor of feebate and regulatory policies may be more practical, even if less effective.[31]

The Distribution of Income across Households and Businesses

Before considering the use of revenues from carbon pricing, carbon taxes would undoubtedly add to the cost of living for all households, and the burden as a share of total household consumption would range from moderately regressive to moderately progressive in selected countries. (A 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.) If no accompanying measures were taken, carbon taxes would be moderately regressive in China and the United States, distribution-neutral in Canada, and moderately progressive in India for a $50 a ton carbon tax in 2030 (Figure 1.7). The reason is that in China and the United States, the poor spend a greater share of their budget for electricity, but the opposite applies in India.[32] In most countries, one-third to one-half of the burden of increased energy prices on households comes indirectly through higher general prices for consumer products, and these burdens are approximately proportional to total consumption across households (distributed evenly across consumption quintiles). The absolute burden on the bottom consumption quintile ranges from 2.2 percent of household consumption in Canada to 5.3 percent in China. Moreover, in all four countries, 90 percent of the total burden is borne by the top four consumption quintiles. Underpricing energy associated with carbon emissions is therefore an inefficient way to help low-income households, because most of the benefits accrue to wealthier groups.

Figure 1.7. Burden of Carbon Taxation on Households, by Income Quintile, $50/Ton Carbon Tax in 2030, Selected Countries
(Percent of total household consumption)



Source: IMF staff calculations.
Note: See Online Annex 1.7 for methodology and data sources. "Indirect" refers to the increased price of consumer goods from higher energy costs. Burdens are estimated prior to the use of carbon tax revenue; a full pass-through of taxes to consumer prices is assumed. Q = quintile.

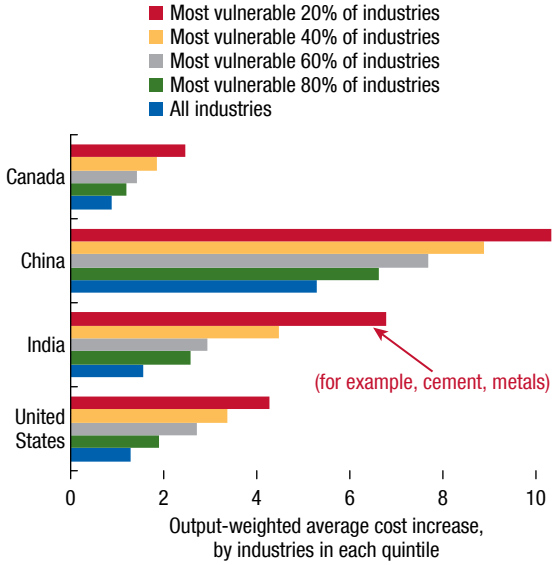
Although, over the longer term, efficient allocation of an economy's scarce resources implies that firms unable to compete when energy is efficiently priced (including to address emissions) should be allowed to go out of business, impacts of higher energy prices on firms, especially those in energy-intensive trade-exposed sectors, is a political concern with carbon pricing.[33] Carbon taxes have uneven impacts across countries and economic sectors (Figure 1.8). The average impact on industry costs of a $50 a ton tax in 2030 ranges between 0.9 percent in Canada and 5.3 percent in China. However, the most energy-intensive industries can be affected significantly: cost increases for the 20 percent most vulnerable industries are 10.3 percent in China and 6.8 percent in India.

[31]This would be more likely, for example, if political opposition to higher energy prices is especially severe, raising energy prices is at odds with promoting energy access, energy prices are already high compared with neighboring countries, or emissions respond modestly to prices (which is the case, for example, if they come mostly from the transportation sector).

[32]In India, the burden of carbon pricing would be somewhat larger for urban households than for rural households because of lower availability of, and less spending on, electricity in rural areas.

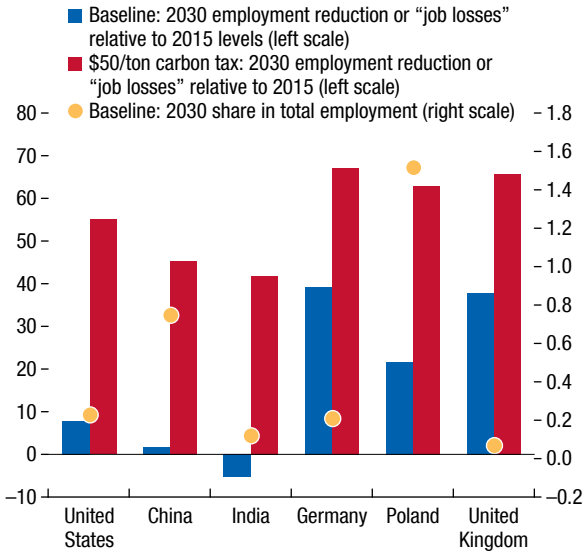
[33]A related concern is that if domestic firms reduce emissions, firms abroad could increase emissions as they gain competitive advantage. However, estimates suggest when emissions are cut by 100 units at home, they increase abroad by no more than 5–20 units (Böhringer, Carbone, and Rutherford 2012; Burniaux, Chateau, and Duval 2013).

Figure 1.8. Burden of a $50/Ton Carbon Tax on Industries in 2030, Selected Countries
(Percent)



Source: IMF staff calculations (see Online Annex 1.8).
Note: The figure shows production cost increases from higher energy prices as a result of the carbon tax (assuming no pass-through of higher costs to producer prices).

Figure 1.9. Impact of a $50/Ton Carbon Tax on Employment in the Coal Sector in 2030, Selected Countries
(Percent)



Source: IMF staff calculations.
Note: "Employment" includes coal mining and related activities—primarily coal transport and processing. The baseline assumes no new mitigation measures.

Carbon mitigation might also have large impacts on certain groups of workers and regions. Coal-related employment is projected to decline in many countries under baseline policies. A $50 a ton carbon tax in 2030 would substantially accelerate this process; for example, increasing estimated job losses in this sector relative to 2015 levels from 8 to 55 percent in the United States (from small changes) and up to 42–45 percent in China and India (Figure 1.9). These job losses would amount to 0.3–0.9 percent of economywide employment in China and Poland and less than 0.15 percent in other countries; employment would increase in other sectors, such as renewables, but—in the absence of specific policies—the new jobs would likely become available in other regions.[34]

Typically, coal- (or fossil-fuel-) related jobs are highly geographically concentrated, accounting for a disproportionately large share of local employment in a few regions in a country (Online Annex 1.6). Winding down production in these regions would lastingly reduce output and employment prospects for local communities. In addition, extractive activities may cause scarred local landscapes and impaired waterways, and bankrupt extraction firms may be unable to meet their obligations to clean up the abandoned mines, reducing prospects for attracting new industries (Morris 2016).

Options for Use of Carbon Tax Revenue

For carbon pricing reforms to be economically and politically viable, and for the burden of adjustment to be distributed in a fair manner, policymakers need to consider how to best allocate the revenues considering both economic efficiency and implications for income distribution. Key considerations will usually include fiscal needs for environmental or general spending or deficit reduction, the existing income distribution, and the effectiveness of transfer programs, as well as the design, efficiency, and progressivity of the broader tax system.

[34]In 2017, global employment in the renewables sector was 11 million (Roberts 2019). Although jobs in renewables require more specialized skills in general, those jobs have lower educational requirements and better pay than the national averages (for example, fewer than 20 percent of workers in clean energy production and energy-efficient occupations have college degrees—Muro and others 2019).

For example, universal transfer payments (that is, equal dividends to all households regardless of income) might help with political acceptability but would forgo potentially sizable efficiency benefits from productive revenue use. Environmental investments (low-carbon infrastructure, energy networks, R&D) may also be favored by voters as part of a package; however, these investments would need to be balanced against competing investment priorities and scrutinized to ensure high quality, as with other important investments (for example, basic education and health). As regards to options for lowering other taxes, cutting personal and corporate income taxes likely provides significant efficiency gains for the economy (through better incentives for work effort, investment, and lowering incentives for tax-sheltering behavior), although benefits tend to be skewed toward better-off households (for example, poor households may not pay income taxes). Reducing payroll or consumption taxes can also promote some of these efficiency gains and would benefit households roughly in proportion to their income. See Table 1.5 for a summary of options.

Figure 1.10 illustrates some of the efficiency trade-offs for the United States in 2030 for a $50 carbon tax, with all revenues returned to everyone in the population as an equal dividend, the same tax with three-quarters of revenues used for income tax cuts and one-quarter for assistance to lower-income groups, and

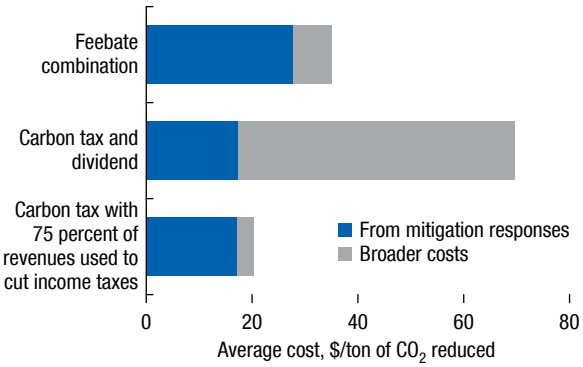
Table 1.5. Options for Use of Carbon Tax Revenues

	Metric		
Instrument	**Impacts on Income Distribution**	**Impact on Economic Efficiency**	**Administrative Burden**
General Revenue Uses			
Environmental investment	May disproportionately benefit low-income households (for example, if their vulnerability to natural disasters is reduced)	May be less efficient than broader uses of revenue	Modest
General investments	May disproportionately benefit low-income households (for example, if basic education, health, and infrastructure are provided)	Potentially significant	Modest
Universal transfers	Highly progressive (disproportionately benefits the poor relative to higher-income)	Forgoes efficiency benefits[1]	New capacity needed (but should be manageable)
Payroll tax	Benefits are largely proportional across working households	Improves incentives for formal work effort	Minimal
Personal income tax	Typically, benefits are skewed to higher-income groups	Improves incentives for formal work effort, and saving reduces tax sheltering	Minimal
Consumption tax	Largely proportional to household consumption	Some improvement in incentives for formal work effort	Minimal
Corporate income tax	Benefits skewed to higher-income groups	Improves incentives for investment	Minimal
Deficit reduction	Benefits accrue to future generations	Significant (lowers future tax burdens and macro-financial risk)	Minimal
Targeted Assistance			
Means-tested cash, in-kind transfers	Effective at helping low-income groups if social safety nets are comprehensive	Efficiency impacts unclear but likely modest[1]	Low, if builds on existing capacity, otherwise significant
Assistance for household energy bills	Provides partial relief for all households (for example, does not help with indirect pricing burden)	Modest reduction in environmental effectiveness	Low, if builds on existing capacity, otherwise significant

Source: IMF staff calculations.

[1] Transfers to low-income households could lead to a small increase in human capital investment.

Figure 1.10. Efficiency Costs of Alternative Carbon Mitigation Instruments for the United States ($50/Ton Carbon Tax), 2030



Source: See Online Annex 1.3, updating Parry and Williams (2010).
Note: All policies reduce economywide carbon dioxide emissions 22 percent below baseline levels. Cost estimates exclude global climate and domestic environmental benefits from carbon mitigation.

a feebate package achieving the same economy-wide emission reduction as the carbon tax. Accounting for the broader costs of higher energy prices on economic activity and the economic efficiency benefits from use of carbon tax revenues—in addition to the costs of mitigation responses (discussed in Policies to Reduce Fossil Fuel CO_2 Emissions)—on balance, the carbon tax is the least costly approach overall, with costs of $20 a ton of CO_2 reduced, if three-quarters of the revenues are deployed to cut existing income taxes, which have their own efficiency costs.

The carbon tax with revenues funding equal dividends for the entire population has much larger efficiency costs—estimated at $70 a ton of CO_2 emission reduction, twice as high as under the feebate (which has limited impacts on energy prices) and 3½ times as high as a carbon tax with three-quarters of revenues used to lower income taxes. The size of the gap in economic efficiency costs between using carbon tax revenues for equal dividends versus income tax cuts depends on country circumstances and might be larger, for example, in countries where tax systems lead to greater avoidance or evasion behavior, such as informal sector activities (see Online Annex 1.3 for details on the methodology).

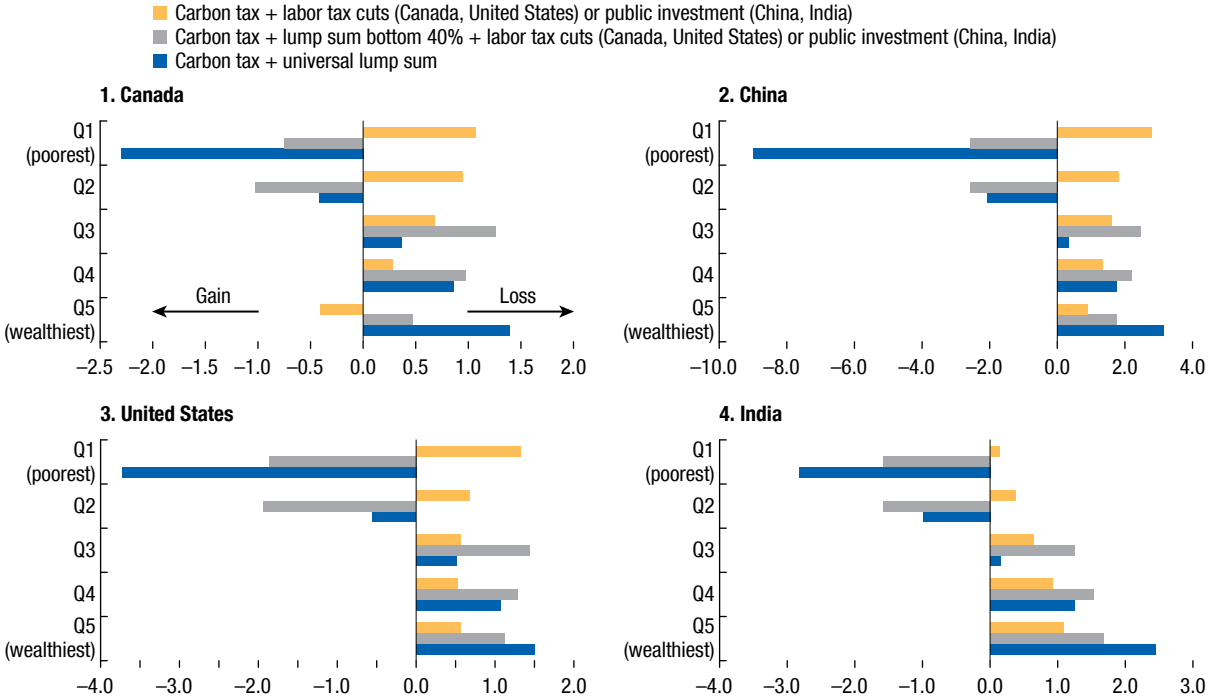
When analyzing distributional effects, it is important to consider the impact on all income groups because carbon pricing affects all households. Indeed, opposition to reform often comes from groups of people who are closer to the median of the income distribution—members of the middle class. Still, reform packages will usually need to include assistance to lower-income households as well as assistance and compensation to workers and communities experiencing widespread job losses. In some cases, support to groups of disproportionately affected firms may be appropriate, although in this area measures are often inefficient.

Imposing carbon taxes with revenue returned in equal dividends to everyone is a highly progressive policy, with the bottom two consumption quintiles better off on net and the top two quintiles worse off for all countries in Figure 1.11. Alternatively, using the revenues to enhance economic efficiency—reducing labor taxes in Canada and the United States and funding public investment in China and India—is a regressive policy on net, aside from in India, though net burdens on each household group are reduced considerably (compared with Figure 1.7) as a result of the revenue use. An intermediate approach, in which the bottom two quintiles are compensated for higher energy prices through equal dividends, and the remaining revenue—60–70 percent of the total—is used for public investment (China and India) or reductions in labor taxes (Canada and the United States) is also highly progressive and can still generate large gains in economic efficiency.[35]

A political consideration in favor of combining carbon taxation with equal dividends is that such an approach creates a large constituency in favor of enacting and keeping the plan (because about 40 percent of the population gains, and those gains rise if the carbon price increases over time) and the public may feel that the government does not have the option to "waste" the carbon tax revenues. Policymakers will have to consider the weight of the arguments against the backdrop of their country's particular economic and political circumstances. From a practical standpoint, however, to give investors, firms and households certainty and predictability, it would seem appropriate to lock-in a gradual increase in carbon taxation—over a decade or more, if possible—ideally backed by an international commitment. An equal dividend could be provided on

[35]All households face a small burden under a package of indirect pricing policies such as feebates, but the burdens are less than 1 percent of consumption for all groups in Canada, India, and the United States.

Figure 1.11. Burden of a $50/Ton Carbon Tax in 2030 under Alternative Revenue Uses, Selected Countries
(Percent of total consumption)



Source: IMF staff calculations.
Note: Positive numbers denote a loss; negative numbers denote a gain. Q = quintile.

distributional grounds and to enhance political acceptability. In subsequent years, further reforms to other taxes would likely take place and, as always, would be informed by the new economic and distributional pattern resulting from the carbon tax and dividend approach as well as by many other developments in the meantime.

Targeted Assistance

Assistance to lower-income households. Several options are available to alleviate the impact of carbon pricing on the poor (Table 1.5). In principle, targeted assistance (for example, cash or food vouchers following means testing) is an efficient way to help lower-income households. However, if administrative capacity is not up to the task, targeting can be inaccurate—leading some poor households to be excluded or nonpoor households to be included. Providing relief for household energy bills through a lifeline (discounted price for basic energy needs of poor households) can also help, although it would not offset the significant indirect burden from generally higher consumer prices. Expanded eligibility for support that provides incentives to find and retain a job (for example, the Earned Income Tax Credit in the United States) also helps people remain in the labor force and maintain basic job skills. Compared with targeted assistance, universal transfers would close coverage gaps and perhaps build broader support for reform, but they would be much costlier for the public finances.[36]

Support for displaced workers and coal-mining regions. In view of the major economic transformation experienced by workers and communities whose livelihoods depend on fossil fuels, assistance will be appropriate to help them transition to a better future and to enhance the political viability of carbon pricing. While the exact design would depend on country circumstances, measures for displaced workers could center around extended unemployment benefits, training and reemployment services, and financial assistance related to job search, relocation, and health care. Potentially useful features include outreach to increase awareness and take-up of the program, tailoring of job training to the needs of coal-related sector workers, and wage

[36]For further discussion of universal transfers versus targeted assistance, see IMF (2019a).

insurance or tax credits, especially for older workers. For the success of the program, beyond good design, the scale of support needs to be sufficiently generous. Even so, the estimated cost of programs providing comprehensive benefits is less than 2 percent of carbon tax revenues for China, India, the United Kingdom, and the United States under a $50 a ton carbon tax. (Online Annex 1.6). Support to affected regions needs to go beyond assistance to displaced workers, because mine closures often take a toll on communities with limited alternative employment opportunities, and declining home values make it difficult for people to move. Assistance for reclaiming abandoned mining and drilling sites and temporary budget support for local governments could help to create jobs and to bridge the transition for adversely affected communities.[37] Additional investments or other geographically targeted policies (such as subsidies or grants to individuals or firms in the affected regions) may also be warranted to help the regions engage in economically viable and sustainable opportunities (World Bank 2018).[38]

Assistance to firms. Absent agreement on an international carbon price floor—the best way to preserve international competitiveness—policymakers could consider several options to cushion the blow to domestic firms from higher energy prices, especially for energy-intensive, trade exposed firms (Table 1.6). However, these options are for the most part inefficient and their design may need careful attention. A general cut in corporate income taxes would reach all firms, not just energy-intensive, trade-exposed firms. Border carbon adjustments, levying charges on the unpriced carbon emissions embodied in imports (and perhaps remitting domestic carbon taxes on exports) might be judged compatible with World Trade Organization (WTO) rules if they are viewed as meeting environmental (rather than protectionist) objectives.[39] They would, however, require significant administrative capacity (for example, to assess the carbon embodied in products imported from various countries) and might work against the spirit of the Paris Agreement if they penalize countries implementing their mitigation pledges through non-pricing means. Providing rebates to trade-exposed firms in proportion to their output preserves their incentive to reduce emissions per unit of output, but this also requires additional administrative capacity.

Supporting Policies for Clean Technology Investment

Even with robust carbon pricing, investment in low-carbon technologies—essential for the transition to the cleaner energy systems necessary for lower emissions—may be insufficient because of various technology-related market failures and impediments, including the following:[40]

- Knowledge spillovers from research and development (R&D) and technology diffusion that may prevent firms from capturing the full social benefits of developing and using new technologies;[41]
- Scale economies that may deter firms from investing in a clean technology until they are confident about the size of the market;
- Network externalities where additional infrastructure needed for one investor (for example, to connect a remote renewables site to the power grid) could potentially benefit other firms;
- Market distortions that might impede low-carbon investment (for example, regulated energy pricing or incomplete property rights that hinder land acquisition for renewable plants); and
- Financial market imperfections reflecting limited financial instruments for low-carbon investments and the shorter-term horizons of investors.

[37]For example, China established a restructuring fund in 2015 (0.15 percent of GDP), mainly for training and job search assistance, to facilitate the shutdown of coal mines and other overcapacity for sectors.

[38]Germany, for example, is planning to allocate €40 billion over the next 20 years to coal-mining regions to support activities such as developing infrastructure; expanding public transportation; and promoting R&D, science, and innovation. Reclaiming mining sites and protecting retiree benefits of coal-related sectors are estimated at a one-time cost 0.03 percent of GDP in the United States (Morris 2016).

[39]For more discussion on compatibility issues, see Flannery and others (2018) and Trachtman (2017).

[40]For further discussion of nonpricing measures to complement carbon pricing and the underlying rationale, see Stern and Stiglitz (2017) and Stiglitz (2019). These studies emphasize the importance of strategic choices in investment in public transportation infrastructure and urban planning, as well as the governance of the energy system; they also point, for example, to the success of regulations in promoting the development of cheap LED by banning incandescent light bulbs and the reduction in lead-based pollution by banning lead in gasoline.

[41]These spillovers are common to emerging technologies across all sectors of the economy and to some extent may be addressed by intellectual property protection, but the deterrent may be especially severe for long-lived, low-carbon technologies whose future returns are uncertain because of changing mitigation policies. See, for example, Acemoglu and others (2012); de Serres, Murtin, and Nicoletti (2010); Fischer and Preonas (2010); and Newell (2015).

Table 1.6. Instruments for Offsetting Burdens on Trade-Exposed Firms

Instrument	Rebates for Direct/ Indirect Emissions	Output-Based Rebate	Border Carbon Adjustments	General Corporate Tax Cut	International Carbon Price Floor
Addresses Competitiveness of Trade-Exposed Industries	Yes	Yes	Yes	Poorly targeted at exposed industries	Yes
Preserves Mitigation Incentives for Trade-Exposed Industries	Removes all incentives	Maintains incentive for reducing emission intensity	Maintains all incentives	Maintains all incentives	Maintains all incentives
Revenue Loss from Instrument	Moderate	Moderate	Increases revenue	High cost	Not applicable
Added Administrative Burden	Small	Need to identify industries and monitor their output	Need to identify imported products and measure their embodied carbon	Not applicable	Monitoring by international organization required
Compatible with World Trade Organization Rules	Yes, if carefully designed	Yes, if carefully designed	Yes, if carefully designed	Yes	Yes, if carefully designed
Compatible with Paris Agreement	Yes	Yes	May penalize countries using indirect pricing	Yes	Yes

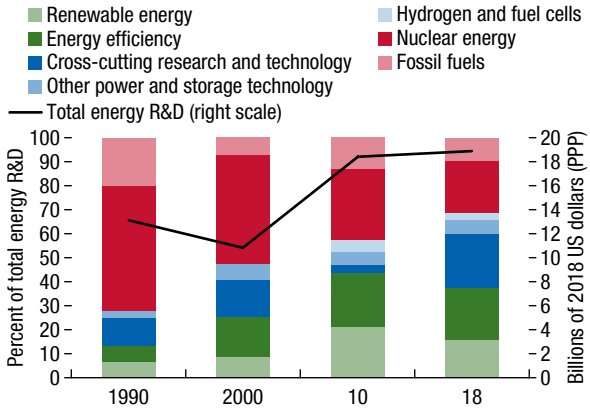
Source: IMF staff.

Approaches for addressing these market impediments include public R&D support (IMF 2016), targeted fiscal incentives (for example, capital grants, tax credits, per-unit subsidies, feed-in tariffs), and regulations (for example, on renewable generation shares) to deal with knowledge spillovers and provide more certainty over the demand for clean technologies; public infrastructure investment (for example, on charging stations for electric vehicles) to tackle network externalities; price liberalization and land reforms to reduce market distortions; and financial sector policies. Over the past three decades, public R&D spending in the energy sector in advanced economies has increasingly shifted from fossil fuels and nuclear to cross-cutting research and technologies, renewables, and energy efficiency from 25 percent of total energy R&D spending in 1990 to 61 percent in 2018 (Figure 1.12).

Supporting policies should be part of a comprehensive strategy to promote supply-side investment in low-carbon technologies and demand-side energy-efficiency measures—including carbon pricing (Ang, Röttgers, and Burli 2017); fiscal incentives that are appropriately scaled, targeted, and designed; and direct public infrastructure investment. In this regard,

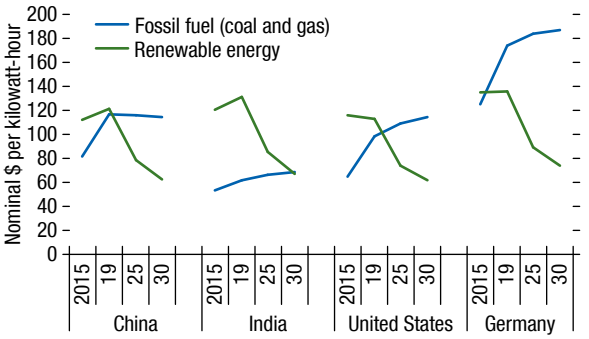
- Governments should increase R&D support now and then gradually reduce support over time when technologies are widely deployed and used by firms and households (Acemoglu and others 2012, 2016). For example, some have called for a gradual

Figure 1.12. Composition of Global Public Energy Research and Development Expenditure, 1990–2018



Sources: IEA 2018; and IMF staff estimates.
Note: The public energy R&D spending covers 30 OECD member countries in the IEA. IEA = International Energy Agency; OECD = Organisation for Economic Co-operation and Development; PPP = purchasing power parity; R&D = research, development, and demonstration.

Figure 1.13. Electricity Cost, by Energy Source of Production, Selected Countries, 2015–30



Source: Bloomberg New Energy Finance.

doubling of public spending on energy R&D in advanced economies ($10 billion in 2018),[42] focused on needed technologies currently furthest from the market that have strong social benefits (for example, carbon capture and storage, smart grids, infrastructure for electric vehicles, and batteries to store intermittent renewable power). Subsidies that promote widespread deployment and use of new technologies by firms and households should also be temporary—for example, as the electricity generated from renewables approaches cost parity with fossil-fuel-generated power (Figure 1.13), subsidies could be shifted from R&D to deployment and then progressively phased out (as in the phasing out of subsidies for solar power in China; see Online Annex 1.9).

- Production-based fiscal incentives, such as fixed subsidies per kilowatt-hour of renewable energy, are more flexible than (1) investment-based incentives (see Online Annex 1.9 on India); (2) regulations that force in the adoption of new technologies regardless of their future costs; and (3) (commonly used) feed-in tariffs guaranteeing minimum prices per kilowatt-hour that do not permit supply responses to changing market conditions (Löschel and Schlenker 2017). Many countries, including Germany, Mexico, South Africa, and the United Kingdom, have moved away from predefined feed-in tariffs and have adopted tendering processes to reduce costs. Moreover, some regulations might deter low-carbon investment from new entrants because they impose disproportionately higher costs on them relative to incumbent firms—such as the 2015 rule in Canada that requires investment in carbon capture and storage in new coal plants while allowing a long adjustment period for existing firms (OECD 2017). Moreover, studies find that policies that support upstream development and manufacturing of clean technologies can be more cost effective than policies to support downstream consumption, because upstream providers face less competition (Fischer 2016; Requate 2005). And provisions in corporate income tax codes, such as the amount and duration of loss carryovers, should be appropriately calibrated to account for the upfront costs of renewable investments (OECD 2017).
- The current dominance of carbon-based systems may perpetuate incentives for R&D in fossil fuel technology. Escaping the carbon lock-in can be facilitated by public funding of R&D in renewables, as well as by public infrastructure investment to tackle network externalities (for example, funding of smart electricity grids to accommodate an intermittent supply of renewables) and removing market distortions for low-carbon private investment.
- Policies in the financial sector can help mobilize financing for climate change mitigation. Recent proposals have focused on fostering the financing of green projects and companies through (1) the establishment of standards, prototype green bond contracts, and benchmark indices of securities that meet environmental norms; (2) amendment of prudential regulations and collateral eligibility criteria; and (3) shifts in the portfolio choices of central banks and institutional investors (Online Annex 1.12).

Policy inconsistencies and redundancies should be avoided. For example, many countries currently subsidize renewables and fossil fuels at the same time.[43] Incentives for energy efficiency and renewables have

[42]For example, Dechezleprêtre and Popp (2017), IEA (2019), and Newell (2015).

[43]Globally, subsidies for fossil fuels (measured by underpricing for supply costs) were estimated at $270 billion in 2016 compared with $150 billion for renewables (Coady and others 2019; IEA 2016). In addition, other forms of subsidies are important, albeit more difficult to quantify. For example, despite coal's adverse impact on greenhouse gas emissions and local air pollution, a recent study indicates that government support to the production and consumption of coal through investment by state-owned enterprises and financing by the public sector (including state-owned banks) is sizable among G20 countries (Gençsü and others 2019).

no impact on emissions when imposed on top of an emission trading system with a binding emissions cap; similarly, tax incentives for electric vehicles may have no effect on average vehicle emission rates in the presence of binding fuel economy standards (Krupnick and others 2010). Fossil fuel generators are sometimes awarded long-term purchase agreements that insulate them from the improving competitiveness of renewables. Uncertainty about renewable investment policies could also impede investment. For example, the US tax preferences related to fossil fuels are permanent features of the tax code, while most of the incentives for R&D, and investment in renewables and energy efficiency are temporary and will continue to be available only if extended. Providing more predictability on R&D tax credit policies could bolster incentives for innovation. And policy inconsistencies sometimes arise at different levels of government. Thus, greater coordination would be appropriate across ministries, levels of government, and other public sector agents.[44]

The shift of investment composition toward renewables also creates new job opportunities. Global employment in the renewables sector reached about 11 million in 2017 (IEA and IRENA 2017; Roberts 2019), the bulk of which was in solar energy. More than 40 percent of worldwide jobs created in the renewables sector since 2012 have been in China. Employment in the renewables sector is projected to grow to 24 million by 2030 under a 2°C scenario (IEA and IRENA 2017; IRENA 2018).

Conclusions

Climate change is threatening the planet and the global economy, calling for urgent policy action to secure a better future. Promoting the transition to low-carbon growth is a challenge faced by all countries and there is much to be done in designing the right incentives at the domestic and international levels and in navigating the practical obstacles to putting them in place. This *Fiscal Monitor* emphasizes the critical role of fiscal policies in climate change mitigation with an emphasis on improving their social and political acceptability (for example, through judicious use of revenues) and effectiveness (for example, through international carbon price floors and supporting technology policies).

Carbon taxation or other systems that use price signals provide the most powerful and efficient incentives for households and firms to reduce CO_2 emissions. If these instruments are not feasible on the scale that is needed, alternative instruments such as feebates and regulations could be used. These instruments would have to be implemented more aggressively to achieve the same emission reductions, implying little increase in energy prices, but greater inefficiency and disruption. Still, the cost of achieving emissions reductions through these approaches would be lower than the costs to people and the planet from climate change. Finance ministers can play a key role by undertaking carbon taxation or similar pricing, adjusting broader tax and expenditure policy as part of a comprehensive strategy, ensuring adequate budgeting for investment in R&D and support for cleaner technologies, and coordinating strategies internationally. Actions in high-emitting countries are especially urgent, not just for their own sake but also for their potentially catalyzing impact in other countries. These actions also bring domestic benefits such as lower mortality from air pollution. Finance ministers in all countries are central to designing and implementing policies to meet emissions reductions in the most efficient, equitable, and socially and politically acceptable way.

[44]OECD (2015). For example, federal production tax credits for renewables in the United States may have no impact in states where generators are already subject to binding requirements on renewable generation shares.

Box 1.1. Investment Needs for Clean Energy Transitions

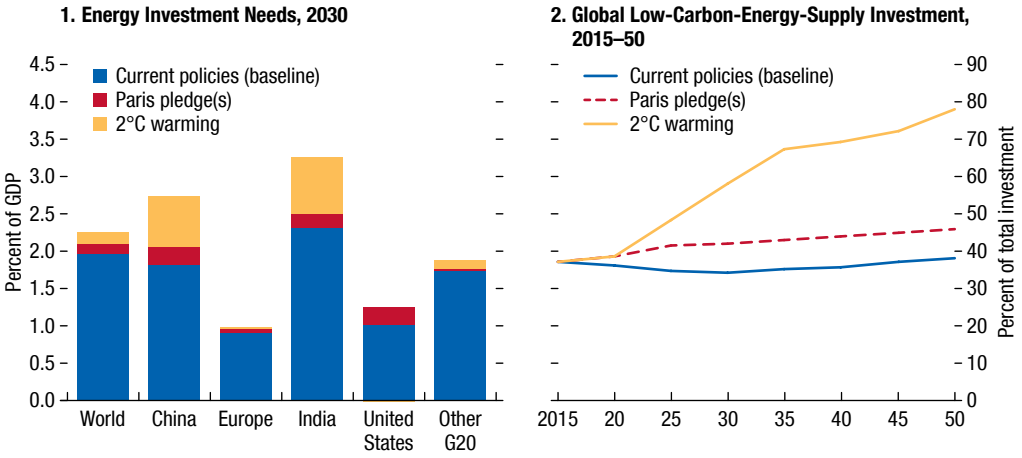
Model estimates suggest that reducing emissions to a level consistent with a 2°C temperature target would require increasing the projected global energy investment in 2030 (encompassing both public and private) from 2.0 percent of GDP to 2.3 percent of GDP, with most of the increase concentrated in China and India (Figure 1.1.1, panel 1).[1]

The more important challenge for all countries, however, is to overhaul the composition of new investment, with the share of low-carbon energy supply (renewables, nuclear, improved transmission and distribution networks, carbon capture and storage in power generation) rising from 40 percent in 2020 to 70 percent in 2035 and 80 percent in 2050 (Figure 1.1.1, panel 2). Energy infrastructure—for example, power plants and power grids—has an expected lifetime of 30–60 years. Choices made today will thus determine emissions for decades. This is especially important for rapidly growing emerging market economies, where new infrastructure will be built or expanded in the coming decades. Sizable extra investment in energy efficiency is also needed for buildings (for example, design, heating, cooling, appliances), transportation (for example, electric cars), and industry (Online Annex 1.9). These demand-side investments can speed up the reduction in carbon emissions because of their shorter life cycles compared with energy infrastructure (IEA 2018). Online Annex 1.9 elaborates on investment needs for individual Group of Twenty (G20) countries. Shifting investment to a low-carbon supply would help ensure that more carbon remains in the ground.

Incremental investment needs would be even greater if they also covered transportation and other infrastructure (water, sanitation, and telecommunications) that are essential to deliver the Sustainable Development Goals (SDGs), including SDG7 on clean energy access, and enhance the adaptive capacity to climate change (IPCC 2018; OECD 2017; SEI 2018).

[1]These numbers represent multi-model averages and are subject to large uncertainty. The faster the transition to low-carbon technologies, the higher the risk of stranded assets and investment costs.

Figure 1.1.1. The Investment Challenge



Source: IMF staff calculations based on McCollum and others (2018).
Note: Paris pledges are those made by each country as part of the Paris Agreement in 2015. Two degrees Celsius is the more ambitious scenario of keeping global warming below 2°C. G20 = Group of Twenty.

Box 1.2. Fiscal Instruments to Reduce Broader Sources of Greenhouse Gases

Fiscal instruments could promote many greenhouse gas mitigation opportunities beyond those for reducing domestic fossil fuel carbon dioxide (CO_2) emissions. Potential applications include the following (for general discussions, see Calder 2015, IMF 2019c, and Metcalf and Weisbach 2009):

- *CO_2 emissions from fuel use in the international aviation and maritime sectors:* The UN agencies overseeing these industries are responsible for developing and implementing strategies to mitigate their emissions. A tax on the carbon content of fuels, administered by these agencies, could form the centerpiece of these efforts while also raising sizable revenue—for example, for climate finance (for example, Keen, Parry, and Strand 2013).
- *Net CO_2 emissions from the forestry sector:* These could be reduced through slowing deforestation and planting new trees to increase the amount of carbon stored in forests. In countries where property rights are reasonably well established at the forestry and agricultural border, a national-level feebate program could be introduced. It would tax landowners who store less carbon on their property relative to storage in a baseline year and give rebates to landowners who increase carbon storage (Parry 2019).
- *Methane leakage during the extraction, processing, and transport of oil, natural gas, and coal:* Technologies for monitoring these emissions are evolving, but in the meantime fuel extraction could be taxed in proportion to a default leakage rate, with rebates for firms that demonstrate a leakage rate below the default rate.
- *Fluorinated (F-) gases:* These highly potent greenhouse gases are used primarily in refrigerants, foams, aerosols, and fire extinguishers. Some countries (for example, Denmark, Norway, Poland, Slovenia, and Spain) have introduced taxes on these gases with rates of about $5–$40 a ton of CO_2 equivalent emissions (for example, Brack 2015).
- *CO_2 emissions released during the production of clinker* (from limestone): Clinker is used to manufacture cement. Taxes could be levied on clinker production in proportion to a default emission rate (van Ruijven and others 2016).
- *Agricultural greenhouse gases, which include methane emissions from cows, nitrous oxide emissions from soil and fertilizer practices, and CO_2 emissions from forest clearance for agriculture:* Taxes could be imposed per head of cattle, on fertilizer inputs, and on profits for farming involving deforestation (for example, where ill-defined property rights preclude the direct pricing of forestry emissions) (Batini forthcoming). Administration, however, might be limited to large-scale operations.

There are precedents for successful international cooperation over reducing these types of gases. The 1987 Montreal Protocol set up a framework that essentially eliminated, by the mid-1990s, production of chlorofluorocarbons (CFCs) and other substances that had been depleting the ozone layer, thereby elevating risks of cancer from ultraviolet light (Hammitt 2010). F-gases were largely developed in response to the phaseout of CFCs. Unlike other greenhouse gases in the Paris Agreement, however, F-gases are subject to other international negotiations—under the 2016 Kigali Agreement, all countries are required to largely phase out these chemicals over the next 25 years (Mulye 2017).

Box 1.3. Operationalizing International Carbon Price Floors

Turning an international carbon price floor into reality would require agreement among participants, preparatory work, and independent monitoring in several areas, such as the following.

Ensuring that carbon prices are measured using a consistent approach across countries: Some countries may provide favorable rates to selected (perhaps politically sensitive) emission sources, or they may partially offset carbon taxation by reducing preexisting energy taxes. To ensure cross-country comparability of effort, the arrangement might thus focus on countries' "effective" carbon prices. These can be calculated by (1) expressing existing fuel taxes on a carbon dioxide (CO_2)-equivalent basis (that is, dividing them by the fuel's CO_2 emission factor); and (2) weighting CO_2-equivalent fuel taxes, and any direct carbon pricing, by their relative effectiveness at reducing CO_2 emissions compared with a comprehensive carbon price and then aggregating across these tax and pricing systems. First-pass estimates of effective carbon prices for 135 countries are provided in IMF (2019c).

Recognizing past efforts: There is little efficiency basis for equating effective carbon prices across countries since these vary, for example, according to fiscal needs and the share of economy-wide emissions from fuels subject to excise. Instead, the arrangement could focus on a required uniform *increase* in countries' effective carbon prices relative to prices in an earlier year—for example, before the recent proliferation of carbon pricing programs to avoid penalizing those who have already acted.

Ensuring sustained participation—carrots? Besides granting them a lower price floor, participation in the agreement among emerging market economies might be encouraged through side payments, technology transfers, or credit trading opportunities. The Paris Agreement (UNFCCC 2016, Article 6.2) recognizes internationally transferred mitigation outcomes across national governments. Countries needing prices lower than the floor price to meet their mitigation pledges could benefit from setting the floor price and selling internationally transferred mitigation outcomes at this price to other countries (for which the floor price would be insufficient to meet their pledge).

Ensuring sustained participation—sticks? Some authors have suggested that nonparticipants could be coerced into joining the agreement through trade sanctions (for example, Nordhaus 2015) or border carbon adjustments (levying charges on the unpriced carbon emissions embodied in imports from nonparticipant countries to match the domestic carbon tax). Ideally these penalties should account for progress on meeting mitigation commitments (through pricing and other measures) in nonparticipating countries. This approach would likely impose a considerable administrative burden.

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COUNTRY ABBREVIATIONS

Code	Country name
AFG	Afghanistan
AGO	Angola
ALB	Albania
ARE	United Arab Emirates
ARG	Argentina
ARM	Armenia
ATG	Antigua and Barbuda
AUS	Australia
AUT	Austria
AZE	Azerbaijan
BDI	Burundi
BEL	Belgium
BEN	Benin
BFA	Burkina Faso
BGD	Bangladesh
BGR	Bulgaria
BHR	Bahrain
BHS	Bahamas, The
BIH	Bosnia and Herzegovina
BLR	Belarus
BLZ	Belize
BOL	Bolivia
BRA	Brazil
BRB	Barbados
BRN	Brunei Darussalam
BTN	Bhutan
BWA	Botswana
CAF	Central African Republic
CAN	Canada
CHE	Switzerland
CHL	Chile
CHN	China
CIV	Côte d'Ivoire
CMR	Cameroon
COD	Congo, Democratic Republic of the
COG	Congo, Republic of
COL	Colombia
COM	Comoros
CPV	Cabo Verde
CRI	Costa Rica
CYP	Cyprus
CZE	Czech Republic
DEU	Germany
DJI	Djibouti
DMA	Dominica
DNK	Denmark

Code	Country name
DOM	Dominican Republic
DZA	Algeria
ECU	Ecuador
EGY	Egypt
ERI	Eritrea
ESP	Spain
EST	Estonia
ETH	Ethiopia
FIN	Finland
FJI	Fiji
FRA	France
FSM	Micronesia, Federated States of
GAB	Gabon
GBR	United Kingdom
GEO	Georgia
GHA	Ghana
GIN	Guinea
GMB	Gambia, The
GNB	Guinea-Bissau
GNQ	Equatorial Guinea
GRC	Greece
GRD	Grenada
GTM	Guatemala
GUY	Guyana
HKG	Hong Kong Special Administrative Region
HND	Honduras
HRV	Croatia
HTI	Haiti
HUN	Hungary
IDN	Indonesia
IND	India
IRL	Ireland
IRN	Iran
IRQ	Iraq
ISL	Iceland
ISR	Israel
ITA	Italy
JAM	Jamaica
JOR	Jordan
JPN	Japan
KAZ	Kazakhstan
KEN	Kenya
KGZ	Kyrgyz Republic
KHM	Cambodia
KIR	Kiribati
KNA	St. Kitts and Nevis

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

GLOSSARY

Air pollution deaths Premature mortality caused by human exposure to fine particulates caused by burning coal and petroleum products.

Border carbon adjustment Levy charged on the unpriced carbon emissions embodied in imports (perhaps with remittances for domestic carbon taxes on exports).

Broader economic costs The costs of economywide reductions in employment and investment caused by higher energy prices which in turn exacerbate the economic costs of taxes on labor and capital income.

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 dioxide (CO_2) The main greenhouse gas, produced from burning fossil fuels, manufacturing cement, and forest practices. CO_2 has an average atmospheric residence time of 100 years.

Carbon price floor arrangement A proposal to complement the Paris Agreement with an agreement among large emitting countries to impose a minimum price on carbon emissions. The arrangement could be designed flexibly to accommodate carbon taxes, emission trading systems, or other mitigation approaches and perhaps with weaker requirements to entice participation by emerging market economies.

Carbon tax A tax imposed on CO_2 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.

Distribution-neutral policy A policy that imposes approximately the same burden as a proportion of consumption (or some other measure of household well-being) on all different income groups.

Economic efficiency cost Losses in consumer and producer surplus (net of any gains/losses to the government) from a policy change, leaving aside environmental effects. For carbon taxes, it reflects the value of the reduction in fuel consumption below levels that consumers would prefer without the carbon tax.

Emissions trading system A market-based policy to reduce emissions (sometimes referred to as cap-and-trade). Covered sources are required to hold allowances for each ton of their emissions or (in an upstream program) the embodied emissions content in fuels. The total quantity of allowances is fixed, and market trading of allowances establishes a market price for emissions. Auctioning the allowances provides a valuable source of government revenue.

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 does not consider.

Feebate This policy would impose a sliding scale of fees on firms with emission rates (for example, CO_2 per kilowatt-hour) above a 'pivot point' level and corresponding subsidies for firms with emission rates below the pivot point. Alternatively, the feebate might be applied to energy consumption rates (for example, gasoline per mile driven) rather than emission rates. Feebates can exploit many (but not all) of the mitigation opportunities promoted by carbon taxes but without a large increase in energy prices.

Greenhouse gas A gas in the atmosphere that is transparent to incoming solar radiation but traps and absorbs heat radiated from the earth. CO_2 is easily the most predominant greenhouse gas.

Green bonds A bond specifically earmarked to be used for climate and environmental projects.

Nationally Determined Contribution (NDC) Climate strategies, including mitigation commitments, submitted by 190 parties for the Paris Agreement. Countries are required to report progress on implementing NDCs every two years and (from 2020 onwards) to submit revised NDCs (which are expected to contain progressively more stringent mitigation pledges) every five years.

Network externality Occurs when additional infrastructure needed for one investor (for example, to connect a remote renewables site to the power grid) could potentially benefit other firms.

Output-based rebate In the context of a carbon price, this is a payment per unit of output to compensate firms (particularly trade-exposed firms) whose production costs rise significantly in response to higher energy prices.

Paris agreement An international accord (ratified in 2016) on climate mitigation, adaptation, and finance. The Agreement's central objective is to contain global average temperature increases to 1.5–2°C above preindustrial levels.

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

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.

Revenue recycling Use of (carbon) tax revenues to, for example, lower other taxes on households and firms or fund public investments.

Scale economies Cost advantages that enterprises obtain due to their scale of operation, with cost per unit of output decreasing with increasing scale.

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.

METHODOLOGICAL AND STATISTICAL APPENDIX

This appendix comprises four sections. "Data and Conventions" provides a general description of the data and conventions used to calculate economy group composites. "Fiscal Policy Assumptions" summarizes the country-specific assumptions underlying the estimates and projections for 2019–20 and the medium-term scenario for 2021–24. "Definition and Coverage of Fiscal Data" summarizes the classification of countries in the various groups presented in the *Fiscal Monitor* and provides details on 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 based on the information available through September 30, 2019.

Data and Conventions

Country-specific data and projections for key fiscal variables are based on the October 2019 World Economic Outlook database, unless indicated otherwise, and compiled by the IMF staff. Historical data and projections are based on information gathered by IMF country desk officers in the context of their missions and through their ongoing analysis of the evolving situation in each country; they are updated on a continual basis 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*.

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

The country classification in the *Fiscal Monitor* divides the world into three major groups: 35 advanced economies, 40 emerging market and middle-income economies, and 40 low-income developing countries. The seven largest advanced economies as measured by GDP (Canada, France, Germany, Italy, Japan, United Kingdom, United States) constitute the subgroup of major advanced economies, often referred to as the Group of Seven (G7). 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 the membership has increased over time. Data for most European Union member countries have been revised following the adoption of the new European System of National and Regional Accounts (ESA 2010). The low-income developing countries are countries that have per capita income levels below a certain threshold (currently set at $2,700 in 2016 as measured by the World Bank's Atlas method), structural features consistent with limited development and structural transformation, and external financial linkages insufficiently open to be widely seen as 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 refer to the general government for advanced economies, while for emerging market and developing economies, data often refer to the central government or budgetary central government only (for specific details, see Tables B–D). All fiscal data refer to calendar years, except in the cases of Bangladesh, Egypt, Ethiopia, Haiti, Hong Kong Special Administrative Region, India, the Islamic Republic of Iran, the Lao People's Democratic Republic, Myanmar, Nepal, Pakistan, Singapore, and Thailand, for which they refer to the fiscal year. For economies whose fiscal years end on or before June 30, data are recorded in the previous calendar year. For economies whose fiscal years end 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 20 (G20) member aggregate refers to the 19 country members and does not include the European Union.

In the majority of advanced economies, and some large emerging market and middle-income economies, fiscal data follow the IMF's 2014 *Government Finance Statistics Manual* (GFSM 2014) or are produced using national accounts methodology following the System of National Accounts 2008 (SNA 2008) or ESA 2010, both of which are 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 that are based on the 1986 GFSM. The 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.

The fiscal gross and net debt data reported in the *Fiscal Monitor* are drawn from official data sources and IMF staff estimates. While attempts are made to align gross and net debt data with the definitions in the GFSM, as a result of data limitations or specific country circumstances, these data can sometimes 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 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 whose statistical data are maintained on a separate and independent basis.

Argentina: Total expenditure and the overall balance account are for cash interest only. The primary balance excludes profit transfers from the Central Bank of Argentina. Interest expenditure is net of interest income from the social security administration. For GDP and consumer price index data, see the "Country Notes" section in the Statistical Appendix of the October 2017 *World Economic Outlook*.

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

Bangladesh: Data are on a fiscal year basis.

Brazil: General government data refer to the nonfinancial public sector—which includes the federal, state, and local governments, as well as public enterprises (excluding Petrobras and Eletrobras)—and are consolidated with those for the sovereign wealth fund. Revenue and expenditures of federal public enterprises are added in full to the respective aggregates. Transfers and withdrawals from the sovereign wealth fund do not affect the primary balance. Disaggregated data on gross interest payments and interest receipts are available only from 2003 onward. Before 2003, total revenue of the general government excludes interest receipts; total expenditure of the general government includes net interest payments. 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 general government and central bank debt. The national definition of nonfinancial public sector gross debt excludes government securities held by the central bank, except the stock of Treasury securities used for monetary policy purposes by the central bank (those pledged as security reverse repurchase agreement operations). According to this national definition, gross debt amounted to 77.2 percent of GDP at the end of 2018.

Canada: For cross-country 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, United States) are adjusted to exclude unfunded pension liabilities of government employees' defined-benefit pension plans.

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

China: Public debt data include central government debt as reported by the Ministry of Finance, explicit local government debt, and shares—less than 19 percent, according to the National Audit Office estimate—of contingent liabilities the government may incur. IMF staff estimates exclude central government debt issued for the China Railway Corporation. Relative to the authorities' definition, consolidated general government net borrowing includes (1) transfers to and from stabilization funds, (2) state-administered state-owned enterprise funds and social security contributions and expenses, and (3) 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 for the Dominican Republic have the following coverage: public debt, debt service, and cyclically adjusted/structural balances are for the consolidated public sector (which includes central government, rest of the nonfinancial public sector, and the central bank); and 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.

Greece: General government gross debt includes short-term debt and loans of state-owned enterprises.

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-country comparability, gross and net debt levels reported by national statistical agencies for countries that have adopted the 2008 SNA (Australia, Canada, Hong Kong Special Administrative Region, United States) are adjusted to exclude 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.

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

Ireland: General government balances between 2009 and 2012 reflect the impact of banking sector support. Fiscal balance estimates excluding these measures are −11.4 percent of GDP for 2009, −10.9 percent of GDP for 2010, −8.6 percent of GDP for 2011, and −7.9 percent of GDP for 2012. For 2015, if the conversion of the government's remaining preference shares to ordinary shares in one bank is excluded, 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.

Lao People's Democratic Republic: Data are on a fiscal year basis.

Latvia: The fiscal deficit includes bank restructuring costs and thus is higher than the deficit in official statistics.

Mexico: General government refers to the central government, social security, 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 in percent 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 −0.1 percent of GDP for 2010, 0.3 percent of GDP for 2011, 3.7 percent of GDP for 2012, 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 take into account output and employment gaps.

Switzerland: Data submissions at the canton and commune level are received with a long and variable lag and are 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.

Turkey: The fiscal projections assume a more negative primary and overall balance than envisaged in the authorities' New Economic Program 2019–21, based partly on recent weak growth and fiscal outturns and partly on definitional differences: the basis for the projections in the *World Economic Outlook* and *Fiscal Monitor* is the IMF-defined fiscal balance, which excludes some revenue and expenditure items that are included in the authorities' headline balance.

United States: Cyclically adjusted balances exclude financial sector support estimated at 2.4 percent of potential GDP for 2009, 0.3 percent of potential GDP for 2010, 0.2 percent of potential GDP for 2011, 0.1 percent of potential GDP for 2012, and 0.0 percent of potential GDP for 2013. For cross-country 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 expenditure under the 2008 SNA adopted by the United States, but not for countries that have not yet adopted the 2008 SNA. Data for the United States may thus differ from data published by the US Bureau of Economic Analysis (BEA). In addition, gross and net debt levels reported by the BEA and national statistical agencies for other economies that have adopted the 2008 SNA (Australia, Canada, Hong Kong Special Administrative Region, United States) are adjusted to exclude unfunded pension liabilities of government employees' defined-benefit pension plans.

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

Venezuela: Fiscal accounts for 2010–23 correspond to the budgetary central government and Petróleos de Venezuela S.A. (PDVSA). Fiscal accounts before 2010 correspond to the budgetary central government, public enterprises (including PDVSA), Instituto Venezolano de los Seguros Sociales (IVSS—social security), and Fondo de Garantía de Depósitos y Protección Bancaria (FOGADE—deposit insurance).

Fiscal Policy Assumptions

Historical data and projections of key fiscal aggregates are in line with those of the October 2019 *World Economic Outlook*, unless noted otherwise. For underlying assumptions other than on fiscal policy, see the October 2019 *World Economic Outlook*.

Short-term fiscal policy assumptions are based on officially announced budgets, adjusted for differences between the national authorities and the IMF staff regarding macroeconomic assumptions and projected fiscal outturns. Medium-term fiscal projections incorporate policy measures that are judged likely to be implemented. When the 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.

Argentina: Fiscal projections are based on the available information regarding budget outturns and budget plans for the federal and provincial governments, fiscal measures announced by the authorities, and IMF staff macroeconomic projections.

Australia: Fiscal projections are based on data from the Australian Bureau of Statistics, the fiscal year (FY) 2019/20 budgets of the Commonwealth and States; and IMF staff estimates and projections.

Austria: Fiscal projections are based on data from Statistics Austria, the authorities' projections, and IMF staff estimates and projections.

Belgium: Projections are based on the 2019–22 Stability Programme and other available information on the authorities' fiscal plans, with adjustments for IMF staff assumptions.

Brazil: Fiscal projections for 2019 take into account the deficit target approved in the budget law.

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

Canada: Projections use the baseline forecasts in the 2019 federal budget and latest provincial budgets as available. The IMF staff makes some adjustments to this forecast, including for differences in macroeconomic projections. The IMF staff forecast also incorporates the most recent data releases from Statistics Canada's Canadian System of National Economic Accounts, including federal, provincial, and territorial budgetary outturns through the first quarter of 2019.

Chile: Projections are based on the authorities' budget projections, adjusted to reflect the IMF staff's projections for GDP and copper prices.

China: Fiscal expansion is expected for 2019, resulting from a series of tax reforms and expenditure measures in response to the economic slowdown.

Colombia: Projections are based on the authorities' policies and projections reflected in the Medium-Term Fiscal Framework 2019, adjusted to reflect the IMF staff's macroeconomic assumptions.

Croatia: Projections are based on the macroeconomic framework and the authorities' medium-term fiscal guidelines.

Cyprus: Projections are based on the authorities' budget plans and the IMF staff's macroeconomic assumptions.

Czech Republic: Projections are based on the authorities' budget forecast for 2018–19, with adjustments for the IMF staff's macroeconomic projections. Projections for 2019 onward are based on the country's Convergence Programme and Fiscal Outlook.

Denmark: Estimates for 2018 are aligned with the latest official budget numbers, adjusted where appropriate for the IMF staff's macroeconomic assumptions. For 2019, the projections incorporate key features of the medium-term fiscal plan as embodied in the authorities' 2019 Convergence Program submitted to the European Union.

Estonia: Fiscal projections are on a cash basis and are based on the authorities' 2018 budget, adjusted for newly available information and for the staff's macroeconomic scenario.

Finland: Projections are based on the authorities' announced policies, adjusted for the IMF staff's macroeconomic scenario.

France: Projections for 2019 onward are based on the measures of the 2018 budget law, the multiyear law for 2018–22, and the 2019 budget law, adjusted for differences in assumptions on macroeconomic and financial variables; and revenue projections. Historical fiscal data reflect the May 2019 revisions and update of the historical fiscal accounts, debt data, and national accounts.

Germany: The IMF staff's estimates for 2019 and projections for 2019 and beyond are based on the 2019 Stability Program and data updates from the national statistical agency, adjusted for the differences in the IMF staff's macroeconomic framework and assumptions concerning revenue elasticities. The estimate of gross debt includes portfolios of impaired assets and noncore business transferred to institutions that are winding up, as well as other financial sector and European Union support operations.

Greece: Greece's general government primary balance estimate for 2018 is based on the April 2019 excessive deficit procedure release by Eurostat. Historical 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 on expenditure.

Hungary: Fiscal projections include IMF staff projections of the macroeconomic framework and of the impact of recent legislative measures, as well as fiscal policy plans announced in the 2018 budget.

India: Historical data are based on budgetary execution data. Projections are based on available information on the authorities' fiscal plans, with adjustments for IMF staff 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 divestment and license auction proceeds, net versus gross recording of revenues in certain minor categories, and some public-sector lending.

Indonesia: IMF staff projections are based on moderate tax policy and administration reforms, and a gradual increase in social and capital spending over the medium term in line with fiscal space.

Ireland: Fiscal projections are based on the country's Budget 2019.

Israel: Historical data are based on Government Finance Statistics data prepared by the Central Bureau of Statistics. The medium-term fiscal projections are not in line with the medium-term fiscal targets, consistent with long experience of revisions to those targets.

Italy: The IMF staff's estimates and projections are informed by the fiscal plans included in the government's 2019 budget and the April 2019 Economic and Financial Document. The IMF staff assumes that the automatic value-added tax hikes for future years will be canceled.

Japan: The projections reflect the consumption tax rate increase in October 2019, the mitigating measures included in the FY2019 budget and tax reform, and other fiscal measures already announced by the government.

Kazakhstan: Fiscal projections are based on the budget code and IMF staff projections.

Korea: The medium-term forecast incorporates the medium-term path for public spending announced by the government.

Libya: Against the backdrop of a civil war and weak capacity, the reliability of Libya's data, especially medium-term projections, is low.

Malaysia: Fiscal projections are based on budget numbers, discussions with the authorities, and IMF staff estimates.

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

Mexico: Fiscal projections for 2019 are broadly in line with the approved budget; projections for 2020 onward assume compliance with rules established in the 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 based on budget numbers, discussions with the authorities, and IMF staff estimates.

Netherlands: Fiscal projections for 2019–24 are based on the authorities' Bureau for Economic Policy Analysis budget projections, after adjustment for differences in macroeconomic assumptions. Historical data were revised following the June 2014 Central Bureau of Statistics release of revised macroeconomic data because of the adoption of the European System of National and Regional Accounts (ESA 2010) and the revision of data sources.

New Zealand: Fiscal projections are based on the FY2019/20 budget and IMF staff estimates.

Nigeria: Fiscal projections assume unchanged policies and differ from the authorities' active policy scenario.

Norway: Fiscal projections are based on the latest 2019 revised budget.

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

Poland: Data are on ESA 1995 for 2004 and previous years. Data are on ESA 2010 beginning with 2005 (accrual basis). Projections are based on the 2019 budget and take into account any subsequent legislated fiscal measures. Announced but not legislated fiscal measures are not reflected in the projections.

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

Romania: Projections for 2019 reflect the full effect of the budget measures adopted in 2018 (including the increases in wages and pension, and changes to labor taxation), further implementation of the unified wage law, and the legislated increase in pensions. Apart from the impact of the unified wage law—which is set to be implemented gradually until 2022—and the indexation of public pensions, no additional policy changes are assumed beyond 2019.

Russia: Projections for 2019–24 are IMF staff estimates and are based on the new oil price rule, with adjustments by the IMF staff.

Saudi Arabia: The IMF staff baseline projections of total government revenues, except exported oil revenues, are based on the IMF staff's understanding of government policies as announced in the 2019 budget and the Fiscal Balance Program 2019 Update. Exported oil revenues are based on IMF *World Economic Outlook* baseline oil prices and the assumption that Saudi Arabia will overperform the OPEC+ agreement. Expenditure projections take the 2019 budget and the Fiscal Balance Program 2019 Update as a starting point; and reflect IMF staff estimates of the latest changes in policies and economic developments.

Singapore: For FY2019/20, projections are based on budget numbers. For the remainder of the projection period, the IMF staff assumes unchanged policies.

Slovak Republic: The current year projections take into consideration both the budget and developments to date. Next year and beyond reflect a no-policy-change scenario.

Spain: For 2019, projections assume expenditures under the 2018 budget extension scenario, and already legislated measures, including pension and public wage increases, and the IMF staff's projection of revenues. For 2020 and beyond, fiscal projections are IMF staff projections, which assume an unchanged structural primary balance.

Sri Lanka: Projections are based on the authorities' medium-term fiscal framework and the revenue measures proposed.

Sweden: Fiscal projections take into account the authorities' projections based on the 2019 spring budget. The impact of cyclical developments on the fiscal accounts is calculated using the 2014 Organization for Economic Co-operation and Development's elasticity (Price, Dang, and Guillemette 2014) to take into account output and employment gaps.

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.

Thailand: For the projection period, the IMF staff assumes an implementation rate of 50 percent for the planned infrastructure investment programs.

Turkey: The fiscal projections assume a more negative primary and overall balance than envisaged in the authorities' New Economic Program 2019–21, based partly on the recent weak growth and fiscal outturns and partly on definitional differences. The basis for the projections in the *World Economic Outlook* and the *Fiscal Monitor* 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 UK's Spring Statement 2019, with expenditure projections based on the budgeted nominal values, but adjusted to account for the Spending Round 2019, and with revenue projections adjusted for differences between IMF staff forecasts of macroeconomic variables (such as GDP growth and inflation) and the forecasts of these variables assumed in the authorities' fiscal projections. IMF staff data exclude public sector banks and the effect of transferring assets from the Royal Mail Pension Plan to the public sector in April 2012. Real government consumption and investment are part of the real GDP path, which, according to the IMF staff, may or may not be the same as projected by the UK Office for Budget Responsibility. Fiscal year GDP is different from current year GDP. The fiscal accounts are presented in terms of fiscal year. Projections do not take into account revisions to the accounting (including on student loans) implemented on September 24, 2019.

United States: Fiscal projections are based on the August 2019 Congressional Budget Office baseline adjusted for the IMF staff's policy and macroeconomic assumptions. Projections incorporate the effects of tax reform (Tax Cuts and Jobs Act, signed into law at the end of 2017), as well as the Bipartisan Budget Act of 2018 passed in February 2018, and the Bipartisan Budget Act of 2019 passed in July 2019. Fiscal projections are adjusted to reflect the IMF staff's forecasts for key macroeconomic and financial variables and different accounting treatment of financial sector support and of defined-benefit pension plans and are converted to a general government basis. Data are compiled using the SNA 2008, and when translated into government financial statistics this is in accordance with the GFSM 2014. Because of data limitations, most series begin in 2001.

Venezuela: Projecting the economic outlook in Venezuela, including assessing past and current economic developments as the basis for the projections, is complicated by the lack of discussions with the authorities (the last Article IV consultation took place in 2004), incomplete understanding of the reported data, and difficulties in interpreting certain reported economic indicators given economic developments. The fiscal accounts include the budgetary central government; social security; FOGADE (insurance deposit institution); and a sample of public enterprises including Petróleos de Venezuela, S.A. (PDVSA), and data for 2018–24 are IMF staff estimates. The effects of hyperinflation and the lack of reported data mean that the IMF staff's projected macroeconomic indicators should be interpreted with caution. For example, nominal GDP is estimated assuming that the GDP deflator rises in line with the IMF staff's projection of average inflation. Public external debt in relation to GDP is projected using the IMF staff's estimate of the average exchange rate for the year. Considerable uncertainty surrounds these projections.

Vietnam: Fiscal data for 2015–17 are the authorities' estimate. From 2018 onward, fiscal data are based on IMF staff projections.

Yemen: Hydrocarbon revenue projections are based on *World Economic Outlook* assumptions for oil and gas prices (the authorities use $55 a barrel) and authorities' projections of production of oil and gas. Non-hydrocarbon revenues largely reflect the authorities' projections, as do most of the expenditure categories, with the exception of fuel subsidies, which are projected based on the *World Economic Outlook* price consistent with revenues. Monetary projections are based on key macroeconomic assumptions about the growth rate of broad money, credit to the private sector, and deposit growth.

Definition and Coverage of Fiscal Data

Table A. Economy Groupings

The following groupings of economies are used in the *Fiscal Monitor*.

Advanced Economies	Emerging Market and Middle-Income Economies	Low-Income Developing Countries	G7	G20[1]	Advanced G20[1]	Emerging G20
Australia	Algeria	Bangladesh	Canada	Argentina	Australia	Argentina
Austria	Angola	Benin	France	Australia	Canada	Brazil
Belgium	Argentina	Burkina Faso	Germany	Brazil	France	China
Canada	Azerbaijan	Cambodia	Italy	Canada	Germany	India
Cyprus	Belarus	Cameroon	Japan	China	Italy	Indonesia
Czech Republic	Brazil	Chad	United Kingdom	France	Japan	Mexico
Denmark	Chile	Congo, Democratic Republic of the	United States	Germany	Korea	Russia
Estonia	China	Congo, Republic of		India	United Kingdom	Saudi Arabia
Finland	Colombia	Côte d'Ivoire		Indonesia	United States	South Africa
France	Croatia	Ethiopia		Italy		Turkey
Germany	Dominican Republic	Ghana		Japan		
Greece	Ecuador	Guinea		Korea		
Hong Kong SAR	Egypt	Haiti		Mexico		
Iceland	Hungary	Honduras		Russia		
Ireland	India	Kenya		Saudi Arabia		
Israel	Indonesia	Kyrgyz Republic		South Africa		
Italy	Iran	Lao P.D.R.		Turkey		
Japan	Kazakhstan	Madagascar		United Kingdom		
Korea	Kuwait	Mali		United States		
Latvia	Libya	Moldova				
Lithuania	Malaysia	Mozambique				
Luxembourg	Mexico	Myanmar				
Malta	Morocco	Nepal				
Netherlands	Oman	Nicaragua				
New Zealand	Pakistan	Niger				
Norway	Peru	Nigeria				
Portugal	Philippines	Papua New Guinea				
Singapore	Poland	Rwanda				
Slovak Republic	Qatar	Senegal				
Slovenia	Romania	Somalia				
Spain	Russia	Sudan				
Sweden	Saudi Arabia	Tajikistan				
Switzerland	South Africa	Tanzania				
United Kingdom	Sri Lanka	Timor-Leste				
United States	Thailand	Uganda				
	Turkey	Uzbekistan				
	Ukraine	Vietnam				
	United Arab Emirates	Yemen				
	Uruguay	Zambia				
	Venezuela	Zimbabwe				

Note: Emerging market and developing economies include emerging market and middle-income economies as well as low-income developing countries.
[1]Does not include European Union aggregate.

Table A. ***(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	China	Azerbaijan	Argentina	Algeria	Angola
Belgium	India	Belarus	Brazil	Egypt	South Africa
Cyprus	Indonesia	Croatia	Chile	Iran	
Estonia	Malaysia	Hungary	Colombia	Kuwait	
Finland	Philippines	Kazakhstan	Dominican Republic	Libya	
France	Sri Lanka	Poland	Ecuador	Morocco	
Germany	Thailand	Romania	Mexico	Oman	
Greece		Russia	Peru	Pakistan	
Ireland		Turkey	Uruguay	Qatar	
Italy		Ukraine	Venezuela	Saudi Arabia	
Latvia				United Arab Emirates	
Lithuania					
Luxembourg					
Malta					
Netherlands					
Portugal					
Slovak Republic					
Slovenia					
Spain					

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	Kyrgyz Republic	Cameroon	Algeria
Cambodia	Honduras	Burkina Faso	Moldova	Republic of Congo	Angola
Lao P.D.R.	Nicaragua	Cameroon	Somalia	Côte d'Ivoire	Azerbaijan
Myanmar		Chad	Sudan	Nigeria	Bahrain
Nepal		Democratic Republic of the Congo	Tajikistan	Papua New Guinea	Brunei Darussalam
Papua New Guinea		Republic of Congo	Uzbekistan	Timor-Leste	Cameroon
Timor-Leste		Côte d'Ivoire	Yemen	Yemen	Canada
Vietnam		Ethiopia			Colombia
		Ghana			Republic of Congo
		Guinea			Côte d'Ivoire
		Kenya			Ecuador
		Madagascar			Equatorial Guinea
		Mali			Gabon
		Mozambique			Indonesia
		Niger			Iran
		Nigeria			Iraq
		Rwanda			Kazakhstan
		Senegal			Kuwait
		Tanzania			Libya
		Uganda			Mexico
		Zambia			Nigeria
		Zimbabwe			Norway
					Oman
					Papua New Guinea
					Qatar
					Russia
					Saudi Arabia
					Syria
					Timor-Leste
					Trinidad and Tobago
					United Arab Emirates
					Venezuela
					Yemen

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	
Australia	GG	CG,SG,LG,TG	A	GG	CG,SG,LG,TG	A	GG	CG,SG,LG,TG	Nominal
Austria	GG	CG,SG,LG,SS	A	GG	CG,SG,LG,SS	A	GG	CG,SG,LG,SS	Face
Belgium	GG	CG,SG,LG,SS	A	GG	CG,SG,LG,SS	A	GG	CG,SG,LG,SS	Face
Canada	GG	CG,SG,LG,SS	A	GG	CG,SG,LG,SS	A	GG	CG,SG,LG,SS	Face
Cyprus	GG	CG,LG,SS	A	GG	CG,LG,SS	A	GG	CG,LG,SS	Face
Czech Republic	GG	CG,LG,SS	A	GG	CG,LG,SS	A	GG	CG,LG,SS	Nominal
Denmark	GG	CG,LG,SS	A	GG	CG,LG,SS	A	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	A	GG	CG,LG,SS	Face
France	GG	CG,LG,SS	A	GG	CG,LG,SS	A	GG	CG,LG,SS	Face
Germany	GG	CG,SG,LG,SS	A	GG	CG,SG,LG,SS	A	GG	CG,SG,LG,SS	Face
Greece	GG	CG,LG,SS	A	GG	CG,LG,SS	A	GG	CG,LG,SS	Nominal
Hong Kong SAR	GG	CG	C	GG	CG	C	GG	CG	Face
Iceland	GG	CG,LG,SS	A	GG	CG,LG,SS	A	GG	CG,LG,SS	Face
Ireland	GG	CG,LG,SS	A	GG	CG,LG,SS	A	GG	CG,LG,SS	Nominal
Israel	GG	CG,LG,SS	Mixed	GG	CG,LG,SS	Mixed	GG	CG,LG,SS	Nominal
Italy	GG	CG,LG,SS	A	GG	CG,LG,SS	A	GG	CG,LG,SS	Face
Japan	GG	CG,LG,SS	A	GG	CG,LG,SS	A	GG	CG,LG,SS	Current market
Korea	CG	CG,SS	C	CG	CG,SS	C	CG	CG,SS	Nominal
Latvia	GG	CG,LG,SS	C	GG	CG,LG,SS	C	GG	CG,LG,SS	Nominal
Lithuania	GG	CG,LG,SS	A	GG	CG,LG,SS	A	GG	CG,LG,SS	Nominal
Luxembourg	GG	CG,LG,SS	A	GG	CG,LG,SS	A	GG	CG,LG,SS	Face
Malta	GG	CG,SS	A	GG	CG,SS	A	GG	CG,SS	Nominal
Netherlands	GG	CG,LG,SS	A	GG	CG,LG,SS	A	GG	CG,LG,SS	Nominal
New Zealand	CG	CG	A	CG	CG	A	CG	CG	Current market
Norway	GG	CG,LG,SS	A	GG	CG,LG,SS	A	GG	CG,LG,SS	Current market
Portugal	GG	CG,LG,SS	A	GG	CG,LG,SS	A	GG	CG,LG,SS	Nominal
Singapore	GG	CG	C	GG	CG	C	GG	CG	Nominal
Slovak Republic	GG	CG,LG,SS	A	GG	CG,LG,SS	A	GG	CG,LG,SS	Face
Slovenia	GG	CG,LG,SS	C	GG	CG,LG,SS	C	GG	CG,LG,SS	Face
Spain	GG	CG,SG,LG,SS	A	GG	CG,SG,LG,SS	A	GG	CG,SG,LG,SS	Nominal
Sweden	GG	CG,LG,SS	A	GG	CG,LG,SS	A	GG	CG,LG,SS	Nominal
Switzerland	GG	CG,SG,LG,SS	A	GG	CG,SG,LG,SS	A	GG	CG,SG,LG,SS	Nominal
United Kingdom	GG	CG,LG	A	GG	CG,LG	A	GG	CG,LG	Nominal
United States	GG	CG,SG,LG	A	GG	CG,SG,LG	A	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 standard: C = cash; A = accrual; Mixed = combination of accrual and cash accounting.

[1] In 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 = debt securities 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 = 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 = debt securities 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		
	Coverage		Accounting Practice	Coverage		Accounting Practice	Coverage		Valuation of Debt[2]
	Aggregate	Subsectors		Aggregate	Subsectors		Aggregate	Subsectors	
Algeria	CG	CG	C	. . .	. . .	. . .	CG	CG	Nominal
Angola	GG	CG,LG	Mixed	. . .	. . .	. . .	GG	CG,LG	Nominal
Argentina	GG	CG,SG,SS	C	CG	CG	C	CG	CG	Nominal
Azerbaijan	CG	CG	C	. . .	. . .	. . .	CG	CG	Face
Belarus[3]	GG	CG,LG,SS	C	. . .	. . .	. . .	GG	CG,LG,SS	Nominal
Brazil[4]	NFPS	CG,SG,LG,SS,MPC,NFPC	C	NFPS	CG,SG,LG,SS,MPC,NFPC	C	NFPS	CG,SG,LG,SS,MPC,NFPC	Nominal
Chile	GG	CG,LG	A	CG	CG	A	GG	CG,LG	Face
China	GG	CG,LG	C	GG	CG,LG	C	GG	CG,LG	Face
Colombia[5]	GG	CG,SG,LG,SS	Mixed	GG	CG,SG,LG,SS	Mixed	GG	CG,SG,LG,SS	Face
Croatia	GG	CG,LG	A	GG	CG,LG	A	GG	CG,LG	Nominal
Dominican Republic	CG	CG,LG,SS,NMPC	Mixed	PS	CG,LG,SS,NMPC	Mixed	PS	CG,LG,SS,NMPC	Face
Ecuador	NFPS	CG,SG,LG,SS,NFPC	C	NFPS	CG,SG,LG,SS,NFPC	C	NFPS	CG,SG,LG,SS,NFPC	Face
Egypt	GG	CG,LG,SS	C	GG	CG,LG,SS	C	GG	CG,LG,SS	Nominal
Hungary	GG	CG,LG,SS,NMPC	A	GG	CG,LG,SS,NMPC	A	GG	CG,LG,SS,NMPC	Face
India	GG	CG,SG	C	GG	CG,SG	C	GG	CG,SG	Nominal
Indonesia	GG	CG,LG	C	GG	CG,LG	C	GG	CG,LG	Face
Iran	CG	CG	C	. . .	. . .	. . .	CG	CG	Nominal
Kazakhstan	GG	CG,LG	A	. . .	. . .	. . .	GG	CG,LG	Nominal
Kuwait	CG	CG	Mixed	. . .	. . .	. . .	CG	CG	Nominal
Libya	GG	CG,SG,LG	C	. . .	. . .	. . .	GG	CG,SG,LG	Face
Malaysia	GG	CG,SG,LG	C	GG	CG,SG,LG	C	GG	CG,SG,LG	Nominal
Mexico	PS	CG,SS,NMPC,NFPC	C	PS	CG,SS,NMPC,NFPC	C	PS	CG,SS,NMPC,NFPC	Face
Morocco	CG	CG	A	. . .	. . .	. . .	CG	CG	Face
Oman	CG	CG	C	. . .	. . .	. . .	CG	CG	Nominal
Pakistan	GG	CG,SG,LG	C	. . .	. . .	. . .	GG	CG,SG,LG	Nominal
Peru	GG	CG,SG,LG,SS	C	GG	CG,SG,LG,SS	C	GG	CG,SG,LG,SS	Face
Philippines	GG	CG,LG,SS	C	GG	CG,LG,SS	C	GG	CG,LG,SS	Nominal
Poland	GG	CG,LG,SS	A	GG	CG,LG,SS	A	GG	CG,LG,SS	Face
Qatar	CG	CG	C	. . .	. . .	. . .	CG	CG	Nominal
Romania	GG	CG,LG,SS	C	GG	CG,LG,SS	C	GG	CG,LG,SS	Face
Russia	GG	CG,SG,SS	Mixed	GG	CG,SG,SS	Mixed	GG	CG,SG,SS	Current market
Saudi Arabia	CG	CG	C	. . .	. . .	. . .	CG	CG	Nominal
South Africa[6]	GG	CG,SG,SS	C	GG	CG,SG,SS	C	GG	CG,SG,SS	Nominal
Sri Lanka	CG	CG	C	. . .	. . .	. . .	CG	CG	Nominal
Thailand[7]	PS	CG,BCG,LG,SS	A	PS	CG,BCG,LG,SS	A	PS	CG,BCG,LG,SS	Nominal
Turkey	GG	CG,LG,SS	A	GG	CG,LG,SS	A	GG	CG,LG,SS	Nominal
Ukraine	GG	CG,LG,SS	C	GG	CG,LG,SS	C	GG	CG,LG,SS	Nominal
United Arab Emirates[8]	GG	CG,BCG,SG,SS	C	. . .	. . .	. . .	GG	CG,BCG,SG,SS	Nominal
Uruguay	NFPS	CG,LG,SS,NMPC,NFPC	A	. . .	. . .	. . .	NFPS	CG,LG,SS,NMPC,NFPC	Face
Venezuela[9]	GG	BCG,NFPC	C	GG	BCG,NFPC	C	GG	BCG,NFPC	Nominal

Note: Coverage: BCG = budgetary central government; CG = central government; GG = general government; LG = local governments; MPC = monetary public corporations, including central bank; NFPC = nonfinancial public corporations; NFPS = nonfinancial public sector; NMPC = nonmonetary financial public corporations; PS = public sector; SG = state governments; SS = social security funds. Accounting standard: C = cash; A = accrual; 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 = debt securities 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 = 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 = debt securities 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] Gross debt refers to general government public debt, including publicly guaranteed debt.

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

[6] Coverage for South Africa is a proxy for general government. It includes the national and provincial governments and certain public entities, while local governments are only partly covered, through the transfers to them.

[7] Data for Thailand do not include the debt of specialized financial institutions (SFIs/NMPC) without government guarantee.

[8] Gross debt covers banking system claims only.

[9] The fiscal accounts for 2010–22 correspond to the budgetary central government and Petróleos de Venezuela S.A. (PDVSA), whereas the fiscal accounts for years before 2010 correspond to the budgetary central government, public enterprises (including PDVSA), Instituto Venezolano de los Seguros Sociales (IVSS—social security), and Fondo de Garantía de Depósitos y Protección Bancaria (FOGADE—deposit insurance).

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	
Bangladesh	CG	CG	C	CG	CG	C	CG	CG	Nominal
Benin	CG	CG	C	. . .	. . .	. . .	CG	CG	Nominal
Burkina Faso	CG	CG	CB	. . .	. . .	. . .	CG	CG	Face
Cambodia	CG	CG,LG	A	CG	CG,LG	A	CG	CG,LG	Face
Cameroon	CG	CG	C	. . .	. . .	. . .	CG	CG	Nominal
Chad	NFPS	CG,NFPC	C	. . .	. . .	. . .	NFPS	CG,NFPC	Face
Democratic Republic of the Congo	GG	CG,LG	A	. . .	. . .	. . .	GG	CG,LG	Nominal
Republic of Congo	CG	CG	A	. . .	. . .	. . .	CG	CG	Nominal
Côte d'Ivoire	CG	CG	A	. . .	. . .	. . .	CG	CG	Nominal
Ethiopia	GG	CG,SG,LG,NFPC	C	. . .	. . .	. . .	NFPS	CG,SG,LG,NFPC	Nominal
Ghana	CG	CG	C	. . .	. . .	. . .	CG	CG	Face
Guinea	CG	CG	C	. . .	. . .	. . .	CG	CG	Nominal
Haiti[3]	CG	CG	C	. . .	. . .	. . .	CG	CG	Nominal
Honduras	GG	CG,LG,SS	Mixed	GG	CG,LG,SS	Mixed	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	C	CG	CG	. . .
Madagascar	CG	CG,LG	C	. . .	. . .	. . .	CG	CG,LG	Nominal
Mali	CG	CG	Mixed	. . .	. . .	. . .	CG	CG	Nominal
Moldova	GG	CG,LG,SS	C	GG	CG,LG,SS	C	GG	CG,LG,SS	Nominal
Mozambique	CG	CG,SG	Mixed	CG	CG,SG	Mixed	CG	CG,SG	Nominal
Myanmar[5]	NFPS	CG,NFPC	C	. . .	. . .	. . .	NFPS	CG,NFPC	Face
Nepal	CG	CG	C	CG	CG	C	CG	CG	Face
Nicaragua	GG	CG,LG,SS	C	GG	CG,LG,SS	C	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	. . .	. . .	. . .	GG	CG,LG	Nominal
Senegal	CG	CG	C	CG	CG	C	CG	CG	Nominal
Somalia	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
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
Timor-Leste	CG	CG	C	CG	CG	C	CG	CG	. . .
Uganda	CG	CG	C	. . .	. . .	. . .	CG	CG	Nominal
Uzbekistan[6]	GG	CG,SG,LG,SS	C	. . .	. . .	. . .	GG	CG,SG,LG,SS	Nominal
Vietnam	GG	CG,SG,LG	C	GG	CG,SG,LG	C	GG	CG,SG,LG	Nominal
Yemen	GG	CG,LG	C	. . .	. . .	. . .	GG	CG,LG	Nominal
Zambia	CG	CG	C	. . .	. . .	. . .	CG	CG	Current market
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: C = cash; A = accrual; CB = commitments basis accounting; 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 = debt securities 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 = 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 = debt securities 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 the 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, 2010–24

(Percent of GDP)

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Australia	–5.1	–4.5	–3.5	–2.8	–2.9	–2.8	–2.5	–1.7	–0.8	–0.7	–0.7	–0.3	0.1	0.2	0.2
Austria	–4.5	–2.6	–2.2	–2.0	–2.7	–1.0	–1.6	–0.7	0.1	0.1	–0.2	–0.1	0.2	0.4	0.5
Belgium	–4.0	–4.2	–4.2	–3.1	–3.1	–2.4	–2.4	–0.8	–0.7	–1.3	–1.3	–1.4	–1.5	–1.5	–1.5
Canada	–4.7	–3.3	–2.5	–1.5	0.2	–0.1	–0.4	–0.3	–0.4	–0.7	–0.7	–0.6	–0.6	–0.5	–0.4
Cyprus[1]	–4.7	–5.7	–5.6	–5.1	–0.2	–0.3	0.3	1.8	–4.8	3.6	2.6	2.8	2.7	2.9	3.5
Czech Republic	–4.2	–2.7	–3.9	–1.2	–2.1	–0.6	0.7	1.6	0.9	0.2	–0.1	–0.2	–0.4	–0.4	–0.4
Denmark	–2.7	–2.1	–3.5	–1.2	1.1	–1.3	–0.1	1.4	0.5	0.2	0.0	–0.1	–0.2	–0.1	0.1
Estonia	0.2	1.1	–0.3	–0.2	0.7	0.1	–0.3	–0.4	–0.5	–0.2	–0.1	–0.1	–0.1	–0.2	–0.2
Finland	–2.6	–1.0	–2.2	–2.6	–3.2	–2.8	–1.7	–0.8	–0.7	–0.7	–1.0	–1.1	–1.0	–0.8	–0.7
France	–6.9	–5.2	–5.0	–4.1	–3.9	–3.6	–3.5	–2.8	–2.5	–3.3	–2.4	–2.4	–2.5	–2.5	–2.6
Germany	–4.4	–0.9	0.0	0.0	0.6	0.9	1.2	1.2	1.9	1.1	1.0	0.7	0.8	1.0	1.0
Greece	–11.2	–10.3	–6.6	–3.6	–4.1	–2.8	0.6	1.1	1.0	–0.3	–1.0	–1.1	–1.2	–1.4	–1.6
Hong Kong SAR	4.1	3.8	3.1	1.0	3.6	0.6	4.4	5.5	2.3	0.6	1.5	1.4	1.3	1.2	1.2
Iceland	–9.5	–5.4	–3.6	–1.8	–0.1	–0.8	12.4	0.5	1.1	–0.7	0.1	0.1	0.3	0.3	0.3
Ireland[1]	–32.0	–12.8	–8.1	–6.1	–3.6	–1.9	–0.7	–0.3	0.0	0.0	0.2	0.3	0.5	0.7	0.7
Israel	–3.7	–3.0	–4.4	–4.1	–2.4	–1.0	–1.4	–1.0	–3.3	–3.7	–3.8	–3.8	–3.8	–3.8	–3.9
Italy	–4.2	–3.7	–2.9	–2.9	–3.0	–2.6	–2.5	–2.4	–2.1	–2.0	–2.5	–2.6	–2.6	–2.6	–2.6
Japan	–9.5	–9.4	–8.6	–7.9	–5.6	–3.8	–3.7	–3.2	–3.2	–3.0	–2.2	–1.9	–1.8	–1.8	–2.0
Korea	1.5	1.6	1.5	0.6	0.4	0.5	1.6	2.2	2.6	0.7	–0.8	–1.3	–1.3	–1.4	–1.4
Latvia	–6.5	–3.2	0.2	–0.6	–1.7	–1.5	–0.4	–0.8	–0.7	–0.8	–0.5	–1.3	–1.3	–0.4	–0.3
Lithuania	–6.9	–8.9	–3.1	–2.6	–0.7	–0.2	0.3	0.5	0.7	0.5	0.4	0.2	0.2	0.1	0.1
Luxembourg	–0.7	0.5	0.3	1.0	1.3	1.4	1.9	1.4	2.4	0.9	1.1	1.1	1.3	1.3	1.3
Malta	–2.4	–2.4	–3.5	–2.4	–1.7	–1.1	0.9	3.4	2.0	0.5	0.8	0.8	0.8	0.8	0.6
Netherlands	–5.2	–4.4	–3.9	–2.9	–2.2	–2.0	0.0	1.3	1.5	1.2	0.3	0.3	0.4	0.4	0.5
New Zealand	–5.5	–5.0	–2.3	–1.4	–0.5	0.2	0.9	1.1	0.8	0.1	0.0	0.5	1.1	1.4	1.4
Norway	11.0	13.4	13.9	10.8	8.8	6.1	4.0	4.9	7.3	7.6	7.8	7.8	7.8	8.2	8.6
Portugal	–11.2	–7.4	–5.7	–4.8	–7.1	–4.3	–2.0	–2.9	–0.4	–0.2	0.1	0.8	0.6	0.7	1.0
Singapore	5.7	8.0	7.3	6.0	4.6	2.9	3.7	5.4	3.6	4.3	3.8	3.6	3.4	3.3	3.2
Slovak Republic	–7.5	–4.3	–4.3	–2.7	–2.7	–2.6	–2.2	–0.8	–0.7	–0.8	–0.9	–0.9	–1.3	–1.7	–1.7
Slovenia	–5.2	–5.5	–3.1	–13.7	–5.8	–3.3	–1.6	–0.7	1.1	0.3	0.1	0.2	0.3	0.3	0.3
Spain[1]	–9.4	–9.6	–10.5	–7.0	–6.0	–5.3	–4.5	–3.1	–2.5	–2.2	–1.9	–1.9	–1.9	–1.9	–1.9
Sweden	0.0	–0.2	–1.0	–1.4	–1.5	0.2	1.1	1.5	0.9	0.4	0.3	0.3	0.3	0.3	0.3
Switzerland	0.4	0.7	0.4	–0.4	–0.2	0.6	0.4	1.2	1.3	1.0	0.4	0.4	0.4	0.4	0.4
United Kingdom	–9.3	–7.5	–7.5	–5.3	–5.3	–4.2	–2.9	–1.8	–1.4	–1.4	–1.5	–1.5	–1.2	–1.1	–1.0
United States[2]	–11.0	–9.7	–8.0	–4.6	–4.0	–3.6	–4.3	–4.5	–5.7	–5.6	–5.5	–5.5	–5.6	–5.3	–5.1
Average	–7.7	–6.3	–5.5	–3.7	–3.1	–2.6	–2.6	–2.3	–2.7	–2.9	–2.8	–2.8	–2.8	–2.7	–2.6
Euro Area	–6.2	–4.2	–3.7	–3.1	–2.5	–2.0	–1.6	–1.0	–0.5	–0.9	–0.9	–0.9	–0.9	–0.9	–0.8
G7	–8.9	–7.5	–6.5	–4.3	–3.6	–3.0	–3.2	–3.1	–3.6	–3.8	–3.6	–3.6	–3.6	–3.4	–3.3
G20 Advanced	–8.4	–7.0	–6.1	–4.1	–3.4	–2.9	–3.0	–2.9	–3.3	–3.5	–3.4	–3.4	–3.4	–3.2	–3.1

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

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

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

[2] For 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.

Table A2. Advanced Economies: General Government Primary Balance, 2010–24

(Percent of GDP)

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Australia	–4.9	–4.1	–2.9	–2.1	–2.1	–1.9	–1.6	–0.8	0.0	0.2	0.2	0.6	0.8	0.9	0.9
Austria	–2.3	–0.4	0.0	0.2	–0.7	0.9	0.1	0.8	1.4	1.2	0.9	0.9	1.1	1.3	1.3
Belgium	–0.7	–1.0	–1.0	–0.2	–0.2	0.3	0.1	1.3	1.3	0.5	0.3	0.0	–0.2	–0.4	–0.5
Canada	–3.9	–2.7	–1.8	–1.0	0.5	0.6	0.2	0.0	–0.1	–0.5	–0.5	–0.3	–0.2	–0.1	0.1
Cyprus[1]	–3.2	–4.1	–2.9	–1.9	2.8	2.5	2.8	4.2	–2.4	5.9	4.7	4.6	4.5	4.4	4.9
Czech Republic	–3.2	–1.7	–2.8	–0.2	–1.0	0.3	1.5	2.2	1.5	0.8	0.4	0.2	0.0	0.0	0.0
Denmark	–2.1	–1.4	–3.0	–0.8	1.6	–0.6	0.4	1.6	0.4	0.0	–0.4	–0.4	–0.5	–0.4	–0.1
Estonia	0.0	1.0	–0.4	–0.2	0.6	0.0	–0.4	–0.4	–0.5	–0.2	–0.2	–0.1	–0.1	–0.2	–0.3
Finland	–2.5	–1.0	–2.0	–2.5	–3.0	–2.6	–1.5	–0.6	–0.6	–0.5	–1.0	–1.1	–0.9	–0.8	–0.8
France	–4.6	–2.7	–2.5	–1.9	–1.8	–1.8	–1.8	–1.1	–0.9	–1.8	–1.0	–1.1	–1.3	–1.4	–1.4
Germany	–2.2	1.1	1.9	1.5	1.8	2.0	2.1	2.1	2.6	1.8	1.5	1.1	1.1	1.2	1.2
Greece	–5.3	–3.0	–1.5	0.4	–0.2	0.7	3.7	4.2	4.3	3.3	2.6	2.5	2.5	2.3	2.0
Hong Kong SAR	2.3	1.9	1.3	–0.7	3.6	0.6	3.6	4.7	1.0	–1.0	0.0	–0.2	–0.6	–0.1	–0.1
Iceland	–6.8	–2.8	–0.4	1.6	3.5	2.8	15.5	3.6	3.6	1.3	2.0	1.9	2.0	1.8	1.7
Ireland[1]	–29.7	–10.2	–4.8	–2.6	–0.3	0.4	1.5	1.6	1.6	1.5	1.4	1.4	1.5	1.7	1.6
Israel	0.0	0.6	–1.2	–0.9	–0.3	0.8	0.5	1.0	–1.3	–1.7	–1.7	–1.7	–1.7	–1.7	–1.7
Italy	–0.1	0.8	2.1	1.7	1.4	1.3	1.2	1.2	1.4	1.4	0.7	0.5	0.4	0.2	0.2
Japan	–8.6	–8.3	–7.5	–7.0	–4.9	–3.2	–3.0	–2.7	–2.9	–2.9	–2.2	–2.0	–1.9	–1.9	–2.0
Korea	0.8	0.9	0.8	–0.2	–0.3	–0.3	0.8	1.2	1.5	0.0	–1.4	–1.7	–1.6	–1.4	–1.3
Latvia	–5.1	–1.8	1.7	0.9	–0.2	0.3	0.8	0.3	0.2	0.0	0.4	–0.3	–0.5	0.4	0.5
Lithuania	–5.2	–7.9	–1.8	–1.4	0.5	0.8	1.1	1.0	0.6	0.3	0.1	–0.2	–0.3	–0.4	–0.4
Luxembourg	–0.9	0.3	0.1	0.8	1.1	1.2	1.7	1.3	2.3	0.7	1.0	0.9	0.7	0.6	0.5
Malta	0.7	0.8	–0.5	0.4	1.0	1.3	3.0	5.2	3.6	1.9	2.1	2.1	1.9	1.9	1.8
Netherlands	–3.9	–3.0	–2.5	–1.6	–0.8	–0.8	1.1	2.2	2.4	1.9	0.9	0.7	0.8	0.8	0.8
New Zealand	–4.9	–4.2	–1.4	–0.6	0.1	0.9	1.5	1.8	1.4	0.8	0.6	1.2	1.8	2.1	2.1
Norway	8.9	11.4	12.0	8.8	6.4	3.5	1.5	2.5	4.8	5.1	5.4	5.3	5.4	5.7	6.1
Portugal	–8.5	–3.6	–1.4	–0.6	–2.7	0.0	1.9	0.7	2.8	2.9	3.2	3.6	3.0	3.1	3.0
Singapore	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Slovak Republic	–6.4	–2.9	–2.8	–1.1	–1.1	–1.1	–0.9	0.4	0.4	0.3	0.1	0.1	–0.4	–0.7	–0.7
Slovenia	–4.0	–4.2	–1.4	–11.5	–2.8	–0.6	1.1	1.5	3.0	2.1	1.8	1.8	2.0	2.0	2.0
Spain[1]	–7.8	–7.7	–8.0	–4.0	–3.0	–2.6	–1.9	–0.7	–0.2	0.0	0.2	0.2	0.1	0.1	0.0
Sweden	0.3	0.1	–0.8	–1.2	–1.4	0.2	1.1	1.4	0.9	0.3	0.2	0.1	0.1	0.1	0.1
Switzerland	0.8	1.1	0.8	–0.2	0.0	0.9	0.6	1.4	1.5	1.2	0.5	0.5	0.5	0.5	0.5
United Kingdom	–6.8	–4.7	–5.2	–4.0	–3.5	–2.7	–1.3	–0.1	0.1	0.0	–0.1	0.0	0.0	0.1	0.0
United States[2]	–9.0	–7.4	–5.8	–2.6	–2.1	–1.7	–2.3	–2.5	–3.5	–3.6	–3.6	–3.4	–3.5	–3.2	–2.9
Average	–6.1	–4.5	–3.7	–2.1	–1.5	–1.2	–1.2	–0.9	–1.3	–1.6	–1.6	–1.6	–1.6	–1.4	–1.3
Euro Area	–3.8	–1.6	–1.0	–0.6	–0.2	0.0	0.4	0.8	1.1	0.7	0.6	0.4	0.3	0.3	0.3
G7	–6.9	–5.3	–4.4	–2.5	–1.8	–1.4	–1.6	–1.5	–2.0	–2.2	–2.1	–2.1	–2.1	–2.0	–1.8
G20 Advanced	–6.6	–5.0	–4.1	–2.4	–1.8	–1.3	–1.5	–1.3	–1.8	–2.1	–2.0	–2.0	–2.0	–1.8	–1.7

Source: IMF staff estimates and projections. Projections are based on staff assessment 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.

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

[2] For 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.

Table A3. Advanced Economies: General Government Cyclically Adjusted Balance, 2010–24

(Percent of potential GDP)

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Australia	–5.0	–4.3	–3.3	–2.6	–2.6	–2.4	–2.2	–1.5	–0.6	–0.4	–0.4	0.0	0.2	0.2	0.2
Austria	–4.1	–3.2	–2.5	–1.5	–1.8	0.0	–0.9	–0.6	–0.4	–0.4	–0.6	–0.5	–0.1	0.2	0.4
Belgium	–3.8	–4.3	–3.9	–2.4	–2.5	–2.0	–2.2	–0.8	–0.8	–1.3	–1.3	–1.4	–1.5	–1.5	–1.5
Canada	–3.9	–3.2	–2.2	–1.2	0.3	0.6	0.4	–0.1	–0.2	–0.5	–0.8	–0.8	–0.7	–0.6	–0.4
Cyprus	–5.0	–5.7	–4.4	–2.3	1.8	1.7	1.4	1.8	2.5	2.6	1.8	1.9	1.8	2.0	2.5
Czech Republic	–4.1	–3.0	–3.1	0.4	–1.0	–0.6	0.8	1.2	0.6	0.2	–0.1	–0.2	–0.4	–0.4	–0.4
Denmark	–1.6	–1.3	–2.2	0.1	2.0	–1.0	–0.4	0.6	–0.1	–0.5	–0.8	–0.9	–0.9	–0.6	–0.3
Estonia	2.9	1.9	0.2	0.5	1.2	0.7	0.3	–0.6	–1.2	–0.9	–0.6	–0.4	–0.3	–0.2	–0.2
Finland	–1.8	–1.5	–1.7	–1.2	–0.9	–0.2	–0.3	–0.7	–0.6	–0.7	–1.1	–1.3	–1.1	–1.0	–0.9
France	–5.9	–5.0	–4.5	–3.4	–3.2	–3.0	–2.9	–2.7	–2.7	–3.4	–2.5	–2.4	–2.5	–2.5	–2.6
Germany	–3.8	–1.6	–0.1	0.5	0.8	1.1	1.1	0.8	1.3	0.9	1.0	0.7	0.7	1.0	1.0
Greece	–8.9	–4.4	1.9	4.8	2.8	2.9	5.5	4.7	3.8	1.7	0.1	–0.7	–1.1	–1.4	–1.7
Hong Kong SAR[1]	0.7	–1.6	–1.1	–4.3	–1.2	–3.4	–1.3	–2.4	–4.5	–4.6	–2.6	–2.7	–3.0	–3.0	–3.1
Iceland	–7.4	–4.4	–2.7	–1.8	0.5	–0.5	11.8	0.1	0.6	–0.6	0.2	0.2	0.4	0.3	0.3
Ireland[1]	–8.9	–6.5	–5.4	–4.6	–3.1	–1.3	–1.3	–0.5	–0.5	–0.4	–0.2	0.1	0.3	0.6	0.7
Israel	–3.6	–3.5	–4.3	–4.2	–2.7	–0.8	–1.3	–1.0	–3.4	–3.8	–3.8	–3.8	–3.8	–3.9	–3.9
Italy	–3.5	–3.4	–1.4	–0.8	–0.9	–0.8	–1.2	–1.7	–1.7	–1.5	–2.1	–2.3	–2.4	–2.5	–2.6
Japan	–8.0	–8.0	–7.6	–7.5	–5.5	–4.3	–4.1	–3.4	–3.1	–2.9	–2.1	–1.9	–1.7	–1.7	–2.0
Korea	1.4	1.6	1.7	0.9	0.6	0.8	1.9	2.4	2.8	1.1	–0.3	–0.9	–1.0	–1.2	–1.4
Latvia	–4.4	–2.7	0.1	–1.4	–1.7	–1.5	–0.4	–1.2	–1.3	–1.0	–0.6	–1.3	–1.4	–0.4	–0.3
Lithuania	–4.2	–7.4	–2.3	–2.1	–0.4	0.1	0.8	0.5	0.5	0.2	0.2	0.1	0.1	0.0	0.1
Luxembourg	–0.5	0.3	1.2	1.4	1.2	0.9	1.5	1.5	2.4	0.9	1.0	0.9	1.2	1.2	1.2
Malta	–2.5	–1.9	–2.5	–1.1	–1.3	–2.1	0.6	3.2	1.6	0.2	0.7	0.8	0.8	0.8	0.7
Netherlands	–4.8	–4.4	–2.7	–1.1	–0.5	–0.8	0.8	1.3	0.9	0.5	0.0	0.1	0.3	0.4	0.4
New Zealand	–4.4	–3.8	–1.2	–0.4	0.1	0.4	0.8	0.9	0.5	0.0	–0.1	0.4	1.1	1.4	1.4
Norway[1]	–4.7	–4.0	–4.5	–4.8	–5.7	–6.6	–7.6	–7.7	–7.1	–7.6	–7.7	–7.8	–7.8	–7.9	–7.9
Portugal	–10.3	–5.5	–1.9	–0.6	–3.3	–1.6	–0.2	–2.5	–0.5	–0.4	–0.1	0.6	0.4	0.6	0.8
Singapore	1.2	2.5	2.3	1.4	0.9	–0.7	1.2	1.9	0.5	1.0	0.5	0.3	0.0	–0.1	–0.2
Slovak Republic	–6.2	–3.1	–3.1	–1.6	–2.1	–2.9	–2.8	–1.3	–1.3	–1.1	–1.1	–1.0	–1.4	–1.7	–1.7
Slovenia	–4.8	–4.4	–2.1	–1.5	–2.3	–0.9	–0.2	0.1	0.4	–0.1	–0.2	0.0	0.1	0.1	0.2
Spain[1]	–8.5	–7.4	–3.3	–2.3	–1.9	–2.4	–2.8	–2.5	–2.3	–2.3	–2.3	–2.3	–2.2	–2.1	–2.0
Sweden[1]	–0.1	–0.9	–1.1	–1.2	–1.3	–0.9	0.4	0.7	0.0	–0.1	0.0	0.0	0.0	0.0	–0.1
Switzerland[1]	0.4	0.7	0.6	–0.2	–0.3	0.7	0.4	1.2	1.1	1.0	0.4	0.4	0.4	0.4	0.4
United Kingdom[1]	–7.2	–5.9	–6.0	–4.0	–4.7	–4.1	–2.9	–2.0	–1.5	–1.3	–1.4	–1.5	–1.2	–1.1	–1.1
United States[1,2]	–9.6	–8.2	–6.4	–4.5	–3.8	–3.6	–4.4	–4.8	–6.0	–6.3	–6.3	–6.2	–6.3	–6.0	–5.7
Average	–6.8	–5.7	–4.5	–3.3	–2.7	–2.5	–2.6	–2.6	–3.0	–3.4	–3.3	–3.3	–3.3	–3.1	–3.0
Euro Area	–5.1	–3.9	–2.5	–1.3	–1.1	–0.9	–0.8	–0.8	–0.7	–1.0	–0.9	–1.0	–0.9	–0.8	–0.8
G7	–7.6	–6.5	–5.3	–3.9	–3.2	–2.9	–3.2	–3.3	–3.8	–4.1	–4.0	–4.0	–3.9	–3.8	–3.6
G20 Advanced	–7.3	–6.2	–5.0	–3.7	–3.0	–2.7	–3.0	–3.0	–3.5	–3.8	–3.7	–3.7	–3.7	–3.5	–3.4

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

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

[1] Data for these countries include adjustments beyond the output cycle.

[2] For 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.

Table A4. Advanced Economies: General Government Cyclically Adjusted Primary Balance, 2010–24

(Percent of potential GDP)

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Australia	–4.7	–3.9	–2.7	–1.8	–1.7	–1.5	–1.3	–0.6	0.3	0.5	0.5	0.8	1.0	1.0	0.9
Austria	–1.9	–1.0	–0.3	0.6	0.2	1.8	0.8	0.8	0.9	0.7	0.4	0.5	0.8	1.1	1.2
Belgium	–0.6	–1.1	–0.7	0.5	0.4	0.6	0.3	1.4	1.2	0.5	0.2	0.0	–0.2	–0.4	–0.5
Canada	–3.1	–2.6	–1.5	–0.7	0.6	1.3	1.1	0.2	0.1	–0.3	–0.5	–0.4	–0.4	–0.2	0.0
Cyprus	–3.9	–4.5	–2.4	0.0	3.9	3.7	3.2	3.6	4.3	4.3	3.3	3.3	3.2	3.1	3.6
Czech Republic	–3.1	–1.9	–2.0	1.4	0.1	0.3	1.6	1.8	1.2	0.7	0.4	0.2	0.0	0.0	0.0
Denmark	–1.0	–0.7	–1.7	0.5	2.5	–0.2	0.1	0.8	–0.2	–0.7	–1.2	–1.2	–1.2	–0.9	–0.5
Estonia	2.7	1.7	0.1	0.4	1.1	0.6	0.2	–0.7	–1.2	–0.9	–0.7	–0.5	–0.3	–0.2	–0.3
Finland	–1.8	–1.5	–1.5	–1.1	–0.7	–0.1	–0.1	–0.5	–0.5	–0.5	–1.0	–1.2	–1.1	–0.9	–0.9
France	–3.7	–2.5	–2.1	–1.3	–1.2	–1.2	–1.2	–1.1	–1.1	–2.0	–1.0	–1.1	–1.3	–1.4	–1.4
Germany	–1.7	0.5	1.7	1.9	2.0	2.2	2.1	1.6	2.0	1.5	1.5	1.1	1.1	1.2	1.2
Greece	–3.3	2.0	6.2	8.2	6.2	6.0	8.3	7.6	7.0	5.1	3.6	2.8	2.6	2.3	2.0
Hong Kong SAR[1]	–1.1	–3.5	–2.9	–6.0	–1.2	–3.4	–2.1	–3.2	–5.9	–6.2	–4.1	–4.3	–4.9	–4.2	–4.3
Iceland	–4.8	–1.8	0.4	1.5	4.0	3.1	14.8	3.2	3.1	1.4	2.1	2.0	2.0	1.8	1.7
Ireland[1]	–6.7	–4.0	–2.3	–1.2	0.3	1.1	0.9	1.4	1.1	1.1	1.1	1.2	1.3	1.6	1.6
Israel	0.0	0.2	–1.2	–1.1	–0.5	1.0	0.6	1.0	–1.4	–1.8	–1.8	–1.7	–1.7	–1.8	–1.8
Italy	0.6	1.0	3.4	3.7	3.3	3.0	2.5	1.9	1.8	1.9	1.1	0.7	0.5	0.3	0.3
Japan	–7.1	–6.9	–6.5	–6.6	–4.7	–3.7	–3.4	–2.9	–2.8	–2.8	–2.1	–2.0	–1.8	–1.9	–2.0
Korea	0.7	0.9	1.0	0.1	–0.1	0.0	1.0	1.4	1.7	0.3	–0.9	–1.3	–1.3	–1.2	–1.3
Latvia	–3.1	–1.3	1.6	0.0	–0.2	0.3	0.8	–0.1	–0.3	–0.2	0.3	–0.4	–0.6	0.4	0.5
Lithuania	–2.6	–6.4	–0.9	–0.9	0.7	1.1	1.6	1.0	0.5	0.1	–0.2	–0.4	–0.4	–0.4	–0.4
Luxembourg	–0.8	0.1	1.0	1.2	0.9	0.7	1.3	1.4	2.3	0.7	0.9	0.8	0.6	0.5	0.5
Malta	0.6	1.2	0.5	1.7	1.4	0.3	2.7	5.0	3.1	1.7	2.0	2.1	2.0	2.0	1.9
Netherlands	–3.4	–2.9	–1.4	0.2	0.8	0.4	1.9	2.3	1.8	1.2	0.5	0.6	0.7	0.7	0.7
New Zealand	–3.7	–3.0	–0.4	0.4	0.8	1.1	1.5	1.5	1.1	0.7	0.6	1.1	1.7	2.0	2.0
Norway[1]	–7.2	–6.5	–6.7	–7.1	–8.4	–9.7	–10.6	–10.6	–9.9	–10.5	–10.6	–10.7	–10.7	–10.7	–10.8
Portugal	–7.6	–1.8	2.1	3.2	0.8	2.5	3.6	1.1	2.8	2.8	3.0	3.5	2.9	2.9	2.9
Singapore	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Slovak Republic	–5.1	–1.8	–1.6	0.0	–0.5	–1.4	–1.4	–0.1	–0.2	0.0	–0.1	0.0	–0.4	–0.8	–0.7
Slovenia	–3.6	–3.1	–0.5	0.6	0.5	1.7	2.4	2.3	2.3	1.7	1.5	1.6	1.7	1.8	2.0
Spain[1]	–6.9	–5.5	–0.9	0.4	0.9	0.2	–0.3	–0.2	0.0	–0.2	–0.2	–0.2	–0.2	–0.2	–0.1
Sweden[1]	0.2	–0.5	–1.0	–1.0	–1.2	–0.8	0.4	0.6	0.0	–0.2	–0.1	–0.2	–0.2	–0.2	–0.3
Switzerland[1]	0.8	1.1	1.0	0.0	0.0	0.9	0.6	1.4	1.2	1.1	0.5	0.5	0.5	0.5	0.5
United Kingdom[1]	–4.9	–3.2	–3.7	–2.7	–2.9	–2.6	–1.4	–0.2	0.0	0.1	–0.1	0.0	0.0	0.0	0.0
United States[1]	–7.7	–6.0	–4.3	–2.5	–1.9	–1.8	–2.4	–2.7	–3.8	–4.3	–4.3	–4.2	–4.1	–3.8	–3.5
Average	–5.1	–3.9	–2.8	–1.7	–1.2	–1.0	–1.2	–1.2	–1.6	–2.0	–2.1	–2.0	–2.0	–1.9	–1.7
Euro Area	–2.7	–1.3	0.1	1.1	1.1	1.2	1.1	0.9	1.0	0.6	0.6	0.4	0.3	0.3	0.3
G7	–5.7	–4.4	–3.3	–2.1	–1.4	–1.3	–1.5	–1.6	–2.2	–2.6	–2.5	–2.5	–2.4	–2.3	–2.1
G20 Advanced	–5.5	–4.2	–3.1	–2.0	–1.4	–1.2	–1.4	–1.5	–1.9	–2.4	–2.4	–2.3	–2.3	–2.1	–2.0

Source: IMF staff estimates and projections. Projections are based on staff assessment 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 B.

[1] For 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.

Table A5. Advanced Economies: General Government Revenue, 2010–24

(Percent of GDP)

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Australia	31.9	31.8	33.1	33.7	33.9	34.5	34.8	35.0	35.8	36.0	36.2	36.0	35.6	35.3	35.4
Austria	48.4	48.3	49.0	49.7	49.6	50.0	48.6	48.3	48.6	48.0	48.1	48.1	48.2	48.3	48.4
Belgium	49.3	50.3	51.6	52.7	52.2	51.3	50.7	51.3	51.7	50.8	50.7	50.7	50.7	50.7	50.7
Canada	38.3	38.3	38.4	38.5	38.5	40.0	40.1	39.9	40.3	40.0	40.1	40.1	40.1	40.2	40.2
Cyprus	37.3	36.7	36.4	36.7	39.8	39.0	38.0	38.9	39.7	41.9	44.3	44.6	44.3	44.3	44.8
Czech Republic	39.3	40.3	40.5	41.4	40.3	41.1	40.2	40.5	41.5	41.6	41.3	41.2	41.0	40.9	40.7
Denmark	54.0	54.4	54.5	54.6	56.4	53.2	52.6	52.6	51.8	51.6	51.2	50.9	50.7	50.7	50.8
Estonia	40.3	38.2	38.8	38.1	38.3	39.5	39.1	38.6	38.5	39.6	40.1	39.8	39.8	39.5	39.4
Finland	52.1	53.3	54.0	54.9	54.9	54.3	54.2	53.4	52.8	52.5	52.2	52.0	52.0	52.0	52.1
France	50.0	51.1	52.1	53.1	53.3	53.2	53.0	53.6	53.5	52.4	52.1	51.7	51.5	51.4	51.4
Germany	43.8	44.4	44.9	45.0	44.9	45.0	45.5	45.7	46.4	46.3	46.2	45.9	45.9	45.9	45.9
Greece	41.3	43.8	46.2	48.0	46.1	47.8	49.5	48.4	47.7	47.7	46.5	45.8	45.3	44.9	44.1
Hong Kong SAR	20.7	22.4	21.4	21.0	20.8	18.6	22.6	22.8	20.7	20.2	20.2	20.3	20.2	20.4	20.4
Iceland	38.3	38.8	40.2	40.6	43.7	40.6	56.9	43.9	42.6	40.3	42.0	41.8	41.6	41.2	40.9
Ireland	33.0	33.8	34.0	34.3	33.9	27.0	27.1	25.8	25.3	25.3	24.9	24.8	24.3	24.3	24.2
Israel	36.8	36.8	36.0	36.3	36.5	36.7	36.5	37.8	36.2	35.9	35.9	35.9	35.9	35.9	35.9
Italy	45.7	45.7	47.9	48.1	47.9	47.7	46.5	46.5	46.4	46.8	46.6	46.6	46.6	46.5	46.6
Japan	29.0	30.0	30.8	31.6	33.3	34.2	34.3	34.2	33.9	34.0	34.6	34.7	34.6	34.6	34.6
Korea	20.1	20.7	21.2	20.5	20.2	20.3	21.1	21.8	23.0	22.9	22.6	22.7	22.8	22.8	22.8
Latvia	36.5	35.6	37.4	36.7	36.1	36.2	36.2	35.6	36.9	35.7	35.7	34.2	33.4	33.6	33.7
Lithuania	34.3	32.6	32.1	32.1	33.4	34.1	33.6	32.8	33.9	35.0	35.1	35.1	35.1	35.1	35.1
Luxembourg	43.5	42.9	44.4	44.3	43.3	43.3	43.7	44.4	45.5	44.5	44.9	44.9	45.1	45.1	45.1
Malta	38.7	38.9	39.2	39.5	39.3	38.5	37.4	39.2	38.8	38.4	37.8	37.7	37.4	37.1	37.0
Netherlands	41.8	41.5	42.0	42.8	42.8	41.8	42.8	43.7	43.5	44.0	43.6	43.4	43.4	43.3	43.3
New Zealand	37.6	37.3	37.5	37.2	37.2	37.6	37.5	37.3	37.5	37.3	37.1	37.2	37.2	37.3	37.3
Norway	55.3	56.6	56.2	54.1	53.9	54.2	54.3	54.3	55.3	55.7	55.5	55.8	56.1	56.6	56.9
Portugal	40.7	42.7	42.9	45.0	44.6	43.8	42.8	42.4	43.0	43.2	43.3	43.8	43.4	43.4	43.4
Singapore	15.9	17.6	17.2	16.9	17.2	17.3	18.9	19.2	18.2	18.6	18.6	18.6	18.7	18.9	19.1
Slovak Republic	34.7	36.5	36.3	38.7	39.3	42.5	39.2	39.4	39.9	39.6	39.5	39.2	39.1	40.0	38.1
Slovenia	40.7	40.4	41.4	40.4	41.2	40.4	39.2	39.1	40.6	40.0	39.8	39.8	40.0	40.0	40.0
Spain	36.2	36.2	37.6	38.6	38.9	38.5	37.7	37.9	38.9	39.1	39.2	39.1	39.1	39.0	38.9
Sweden	49.0	48.2	48.7	49.1	48.0	48.3	49.5	49.4	49.3	48.8	48.6	48.3	48.4	48.4	48.4
Switzerland	32.4	32.7	32.6	32.7	32.4	33.5	33.3	34.1	33.7	33.6	32.8	32.8	32.8	32.8	32.8
United Kingdom	35.2	35.7	35.7	36.1	35.2	35.5	36.0	36.6	36.9	37.0	37.0	36.9	37.0	37.1	37.1
United States	28.9	29.2	29.2	31.4	31.4	31.6	31.2	30.8	29.5	30.6	30.9	31.0	31.2	31.4	31.7
Average	34.8	35.4	35.5	36.8	36.8	36.4	36.3	36.3	35.9	36.1	36.2	36.2	36.2	36.3	36.4
Euro Area	44.5	45.1	46.2	46.8	46.7	46.3	46.1	46.2	46.5	46.3	46.0	45.8	45.7	45.7	45.6
G7	34.2	34.8	34.9	36.4	36.5	36.3	36.1	36.0	35.4	35.7	35.9	35.9	36.0	36.1	36.3
G20 Advanced	33.6	34.2	34.3	35.7	35.8	35.6	35.4	35.4	34.9	35.2	35.4	35.4	35.5	35.6	35.7

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

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

Table A6. Advanced Economies: General Government Expenditure, 2010–24

(Percent of GDP)

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Australia	37.0	36.3	36.6	36.5	36.8	37.3	37.3	36.7	36.7	36.7	37.0	36.3	35.6	35.2	35.2
Austria	52.8	50.9	51.2	51.6	52.3	51.0	50.2	49.0	48.5	47.9	48.3	48.2	48.0	47.8	47.8
Belgium	53.3	54.5	55.9	55.8	55.3	53.7	53.1	52.1	52.4	52.1	52.0	52.1	52.2	52.1	52.1
Canada	43.1	41.6	40.9	40.0	38.4	40.0	40.6	40.3	40.7	40.7	40.8	40.7	40.7	40.7	40.6
Cyprus	42.0	42.3	41.9	41.9	40.0	39.3	37.7	37.1	44.5	38.3	41.7	41.8	41.6	41.4	41.2
Czech Republic	43.5	43.0	44.5	42.6	42.4	41.7	39.5	38.9	40.6	41.4	41.4	41.4	41.4	41.3	41.2
Denmark	56.7	56.4	58.0	55.8	55.2	54.5	52.7	51.2	51.3	51.5	51.1	51.1	50.9	50.8	50.7
Estonia	40.1	37.1	39.1	38.2	37.6	39.4	39.4	39.0	39.0	39.8	40.2	39.9	39.9	39.6	39.7
Finland	54.8	54.4	56.2	57.5	58.1	57.0	55.9	54.2	53.5	53.2	53.2	53.1	53.0	52.8	52.8
France	56.9	56.3	57.1	57.2	57.2	56.8	56.6	56.4	56.0	55.7	54.5	54.2	54.0	54.0	53.9
Germany	48.1	45.2	44.9	44.9	44.3	44.0	44.3	44.4	44.6	45.2	45.2	45.1	45.1	45.0	44.9
Greece	52.5	54.1	52.8	51.6	50.2	50.6	48.9	47.3	46.7	48.0	47.5	46.9	46.4	46.3	45.7
Hong Kong SAR	16.6	18.6	18.3	20.0	17.3	18.0	18.2	17.3	18.3	19.6	18.7	18.9	18.9	19.2	19.2
Iceland	47.8	44.2	43.8	42.4	43.8	41.4	44.5	43.3	41.5	40.9	41.9	41.7	41.2	40.9	40.6
Ireland	65.1	46.6	42.1	40.4	37.6	28.9	27.8	26.1	25.3	25.3	24.7	24.5	23.8	23.6	23.5
Israel	40.4	39.7	40.4	40.3	39.0	37.8	37.9	38.8	39.4	39.6	39.6	39.6	39.7	39.7	39.7
Italy	49.9	49.4	50.8	51.1	50.9	50.3	49.0	48.9	48.6	48.8	49.2	49.2	49.2	49.1	49.2
Japan	38.5	39.4	39.4	39.5	38.9	38.0	37.9	37.4	37.1	37.0	36.8	36.6	36.4	36.4	36.5
Korea	18.6	19.1	19.7	19.9	19.8	19.7	19.5	19.6	20.4	22.1	23.4	24.0	24.1	24.2	24.2
Latvia	43.0	38.8	37.2	37.3	37.8	37.8	36.6	36.4	37.6	36.5	36.2	35.4	34.7	34.0	34.0
Lithuania	41.2	41.5	35.2	34.7	34.0	34.3	33.3	32.3	33.2	34.5	34.7	34.9	35.0	35.0	35.0
Luxembourg	44.1	42.4	44.1	43.3	42.0	41.9	41.9	43.0	43.1	43.6	43.8	43.9	43.8	43.8	43.9
Malta	41.1	41.3	42.7	41.9	41.1	39.5	36.5	35.8	36.8	37.9	37.0	36.9	36.6	36.4	36.4
Netherlands	47.0	46.0	45.9	45.7	44.9	43.8	42.8	42.4	42.1	42.8	43.2	43.1	43.0	42.9	42.9
New Zealand	43.0	42.3	39.7	38.6	37.7	37.4	36.7	36.2	36.7	37.2	37.2	36.7	36.1	35.9	35.9
Norway	44.3	43.2	42.3	43.3	45.1	48.1	50.3	49.4	48.0	48.1	47.7	48.1	48.3	48.4	48.3
Portugal	51.9	50.0	48.6	49.9	51.7	48.1	44.8	45.4	43.5	43.4	43.2	43.0	42.8	42.7	42.4
Singapore	10.2	9.7	9.8	10.9	12.6	14.4	15.2	13.8	14.6	14.3	14.8	15.0	15.4	15.6	15.9
Slovak Republic	42.1	40.8	40.6	41.4	42.0	45.1	41.5	40.2	40.6	40.4	40.4	40.1	40.4	41.7	39.8
Slovenia	45.9	45.9	44.5	54.1	46.9	43.8	40.9	39.8	39.5	39.8	39.7	39.6	39.7	39.7	39.7
Spain	45.6	45.8	48.1	45.6	44.8	43.7	42.2	41.0	41.3	41.3	41.0	40.9	40.9	40.9	40.8
Sweden	49.1	48.4	49.6	50.4	49.6	48.2	48.4	48.0	48.4	48.4	48.3	48.0	48.1	48.1	48.1
Switzerland	32.0	31.9	32.2	33.1	32.7	32.9	32.9	32.9	32.4	32.5	32.4	32.4	32.4	32.4	32.4
United Kingdom	44.5	43.2	43.3	41.4	40.5	39.7	38.9	38.4	38.3	38.4	38.5	38.4	38.2	38.2	38.2
United States[1]	39.9	38.9	37.2	36.0	35.5	35.2	35.5	35.2	35.1	36.2	36.4	36.5	36.7	36.7	36.8
Average	42.6	41.7	41.0	40.5	39.9	39.0	38.9	38.6	38.6	39.0	39.1	39.0	39.1	39.0	39.0
Euro Area	50.7	49.3	49.9	49.9	49.2	48.3	47.7	47.2	47.0	47.1	46.9	46.8	46.6	46.5	46.5
G7	43.0	42.2	41.4	40.7	40.1	39.3	39.3	39.1	39.0	39.5	39.5	39.5	39.6	39.5	39.6
G20 Advanced	42.0	41.2	40.4	39.8	39.2	38.5	38.5	38.2	38.2	38.7	38.8	38.8	38.8	38.8	38.8

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

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

[1] For 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 economies 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.

Table A7. Advanced Economies: General Government Gross Debt, 2010–24

(Percent of GDP)

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Australia[1]	20.4	24.1	27.5	30.5	34.0	37.7	40.5	41.1	41.4	41.8	42.3	41.3	39.6	37.9	36.6
Austria	82.4	82.2	81.7	81.0	83.8	84.4	82.9	78.5	73.8	70.7	67.7	65.1	62.2	59.2	56.3
Belgium	99.7	102.6	104.3	105.5	107.5	106.3	106.1	103.4	102.0	101.0	99.8	98.8	97.7	96.5	95.1
Canada[1]	81.3	81.9	85.5	86.2	85.7	91.3	91.8	90.1	89.9	87.5	85.0	82.4	79.8	77.1	74.6
Cyprus	55.8	65.2	79.2	102.1	108.0	108.0	105.5	95.8	102.5	96.1	89.4	85.0	76.7	72.1	63.9
Czech Republic	37.4	39.8	44.5	44.9	42.2	40.0	36.8	34.7	32.6	31.6	30.5	29.7	29.1	28.3	27.5
Denmark	42.6	46.1	44.9	44.0	44.3	39.8	37.2	35.5	34.3	33.0	31.8	33.8	35.8	37.5	38.2
Estonia	6.6	6.1	9.8	10.2	10.4	9.8	9.2	9.2	8.3	8.2	7.9	7.6	7.3	7.1	7.0
Finland	47.1	48.5	53.9	56.5	60.2	63.4	63.0	61.3	59.3	58.9	59.1	59.9	60.5	61.0	59.7
France	85.3	87.8	90.6	93.4	94.9	95.6	98.0	98.4	98.4	99.3	99.2	99.0	98.7	98.2	97.8
Germany	82.3	79.7	81.1	78.6	75.6	72.0	69.1	65.2	61.7	58.6	55.7	53.1	50.7	48.1	45.6
Greece	146.2	180.6	159.6	177.9	180.2	177.8	181.1	179.3	184.9	176.6	171.4	167.1	161.7	157.2	154.1
Hong Kong SAR[1]	0.6	0.6	0.5	0.5	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0
Iceland	85.4	92.0	89.4	81.8	78.8	65.0	51.2	43.1	37.6	33.6	31.5	29.6	27.7	25.4	24.2
Ireland	86.0	111.1	120.0	120.0	104.5	76.8	74.0	67.8	63.7	60.9	57.7	56.2	53.3	50.4	47.3
Israel	70.7	68.7	68.5	67.1	65.9	63.9	62.1	60.4	60.8	61.9	62.8	63.5	64.1	64.7	65.4
Italy	115.4	116.5	123.4	129.0	131.8	131.6	131.4	131.4	132.2	133.2	133.7	133.9	134.0	134.0	134.0
Japan	207.9	222.1	229.0	232.5	236.1	231.6	236.3	235.0	237.1	237.7	237.6	238.4	238.1	237.7	237.6
Korea	29.5	30.2	30.8	33.7	35.5	37.3	37.6	37.7	37.9	40.1	43.4	46.4	49.0	51.3	53.3
Latvia	46.9	43.3	41.9	39.4	40.9	36.8	40.3	40.0	35.9	36.3	34.9	35.0	34.2	32.7	31.6
Lithuania	36.2	37.2	39.8	38.8	40.5	42.6	39.9	39.4	34.2	31.8	29.9	28.3	26.9	25.6	24.4
Luxembourg	19.8	18.7	21.7	23.7	22.7	22.2	20.7	23.0	21.4	21.3	21.1	21.0	20.7	20.4	20.1
Malta	67.5	70.2	67.7	68.4	63.3	57.8	55.5	50.3	45.2	42.3	39.1	35.7	32.2	30.1	28.3
Netherlands	59.4	61.8	66.4	67.8	68.0	64.6	61.9	56.9	52.4	49.2	47.3	45.5	43.6	41.7	39.8
New Zealand	29.7	34.7	35.7	34.6	34.2	34.4	33.5	31.6	29.8	29.6	30.2	30.6	31.9	31.4	28.5
Norway	42.3	28.9	30.0	30.4	28.4	32.9	36.4	36.9	40.0	40.0	40.0	40.0	40.0	40.0	40.0
Portugal	90.7	111.4	126.3	128.9	130.6	128.8	129.2	123.9	120.1	117.6	114.8	109.3	105.0	103.2	99.3
Singapore	98.7	103.1	106.7	98.2	97.8	102.3	106.9	109.5	113.6	114.1	114.6	115.1	115.5	116.0	116.5
Slovak Republic	41.2	43.7	52.2	54.7	53.5	52.2	51.8	50.9	48.9	48.4	47.8	47.2	46.7	46.3	45.9
Slovenia	38.2	46.4	53.5	70.0	80.3	82.6	78.7	74.1	70.4	67.1	64.5	62.2	60.0	58.0	56.1
Spain	60.1	69.5	85.7	95.5	100.4	99.3	99.0	98.1	97.1	96.4	95.2	94.0	92.8	91.7	90.5
Sweden	38.1	37.2	37.7	40.4	45.0	43.7	42.1	40.4	38.5	36.9	35.4	33.8	32.3	30.9	29.5
Switzerland	42.6	42.9	43.7	42.9	43.0	43.0	41.8	42.6	40.5	38.6	37.3	36.0	34.7	33.4	32.1
United Kingdom	75.2	80.8	84.1	85.2	87.0	87.9	87.9	87.1	86.8	85.6	84.8	84.6	84.3	83.9	83.3
United States[1]	95.4	99.7	103.2	104.8	104.4	104.7	106.8	106.0	104.3	106.2	108.0	110.0	112.3	114.2	115.8
Average	98.2	102.4	106.5	105.0	104.5	104.1	106.7	104.5	103.0	104.1	104.8	105.1	105.4	105.6	105.5
Euro Area	84.9	87.0	90.0	91.9	92.1	90.2	89.5	87.3	85.4	83.9	82.3	80.8	79.3	77.7	76.1
G7	111.8	116.9	121.0	118.7	117.5	116.3	119.7	117.7	116.1	117.3	118.2	118.8	119.5	120.1	120.5
G20 Advanced	105.9	110.3	114.1	112.2	111.2	110.6	113.8	111.8	110.4	111.9	113.0	113.7	114.3	114.8	115.1

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

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

[1] For cross-economy comparability, gross debt levels reported by national statistical agencies for countries 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, 2010–24

(Percent of GDP)

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Australia[1]	3.9	8.0	11.1	13.0	15.4	17.8	18.8	18.8	20.2	21.3	21.5	20.7	19.4	18.2	17.0
Austria	60.5	60.3	60.5	60.4	59.1	58.3	57.1	55.9	50.5	48.2	46.0	44.0	41.8	39.6	37.3
Belgium[2]	88.4	90.8	91.6	92.5	93.9	93.0	92.2	89.6	88.4	87.7	86.9	86.1	85.4	84.5	83.5
Canada[1]	27.1	27.6	29.0	29.8	28.6	28.5	28.8	27.6	26.8	26.4	25.7	24.8	24.0	23.1	22.1
Cyprus	48.1	52.5	67.1	78.1	89.5	91.3	86.9	79.5	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Czech Republic	25.5	26.8	28.3	29.1	29.4	28.3	25.1	21.7	19.9	. . .	. . .	. . .	. . .	. . .	. . .
Denmark	15.0	15.1	18.5	18.3	18.1	16.2	16.5	14.6	13.8	13.2	12.7	12.4	12.0	11.7	11.1
Estonia	–8.3	–6.7	–4.7	–4.3	–3.9	–2.2	–2.6	–1.6	–1.4	0.3	0.4	0.5	0.5	0.7	0.9
Finland[3]	3.2	5.1	9.5	12.9	17.3	18.7	21.5	22.1	24.2	24.1	24.3	24.7	24.8	24.8	24.8
France	73.6	76.4	80.0	83.0	85.5	86.4	89.2	89.5	89.5	90.4	90.4	90.1	89.8	89.4	88.9
Germany	62.1	60.3	59.5	58.6	55.0	52.1	49.3	45.6	42.7	40.1	37.8	35.8	34.0	31.9	29.9
Greece	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Hong Kong SAR	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Iceland[4]	64.3	59.9	62.0	60.5	53.6	47.4	39.7	35.6	30.1	28.9	27.7	26.6	25.2	23.9	22.6
Ireland[5]	66.9	79.9	87.6	90.6	86.6	66.2	65.6	59.7	55.1	53.0	51.4	49.7	47.0	44.3	41.4
Israel	64.2	63.2	63.1	62.1	61.7	59.9	58.4	56.8	57.3	58.6	59.7	60.5	61.3	62.0	62.8
Italy	104.7	106.6	111.4	116.5	118.7	119.4	119.0	119.2	120.2	121.3	122.0	122.4	122.7	123.0	123.2
Japan	131.1	142.4	146.7	146.4	148.5	147.8	152.6	151.1	153.2	153.8	153.7	154.4	154.1	153.8	153.6
Korea	28.0	28.7	–1.9	1.8	3.3	6.0	11.1	11.2	11.4	13.6	16.9	19.9	22.5	24.8	26.8
Latvia	29.0	31.6	29.9	29.7	29.6	31.1	31.0	31.5	27.6	28.5	27.4	27.9	27.4	26.2	25.5
Lithuania	26.3	33.1	33.4	34.2	32.7	34.6	32.3	32.4	27.6	25.6	24.0	22.6	21.5	20.5	19.5
Luxembourg	–13.5	–11.5	–10.7	–9.0	–10.8	–12.2	–11.8	–11.5	–10.9	–9.6	–8.4	–7.3	–6.4	–5.5	–4.6
Malta	57.2	58.2	57.9	59.0	53.8	49.4	43.0	37.9	33.9	. . .	. . .	. . .	. . .	. . .	. . .
Netherlands	45.9	48.6	52.1	53.7	54.9	52.8	51.0	46.1	42.5	42.0	40.2	38.3	36.3	34.3	32.2
New Zealand	4.7	8.8	10.8	11.0	10.4	9.8	9.1	8.0	8.0	8.2	8.1	7.9	7.8	6.6	3.8
Norway[6]	–47.4	–48.4	–50.1	–61.4	–76.0	–87.2	–85.9	–81.0	–71.5	–86.4	–90.5	–95.7	–100.8	–105.9	–111.1
Portugal	82.2	103.0	115.7	118.3	120.5	121.5	120.0	116.5	114.1	112.1	108.4	105.3	101.5	97.6	93.9
Singapore	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Slovak Republic	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Slovenia	26.7	32.2	36.5	45.2	46.5	50.4	52.4	52.0	46.0	. . .	. . .	. . .	. . .	. . .	. . .
Spain	45.8	56.3	71.5	80.8	85.2	85.3	86.1	84.7	83.1	82.8	82.1	81.2	80.5	79.8	79.0
Sweden	13.4	11.7	11.4	11.6	11.4	11.1	8.8	6.1	5.6	5.1	4.6	4.1	3.7	3.4	3.0
Switzerland	24.2	24.4	23.9	22.9	23.1	23.3	22.7	21.5	20.8	18.9	17.6	16.3	15.0	13.7	12.4
United Kingdom	68.1	72.5	75.5	76.8	78.8	79.3	78.8	77.5	77.5	76.1	75.4	75.2	74.9	74.4	73.9
United States[1]	70.0	76.6	80.4	80.8	80.4	80.3	81.6	81.6	80.0	80.9	83.9	86.0	89.8	92.3	94.4
Average	69.6	74.0	76.6	75.7	75.4	75.5	77.4	75.8	74.8	75.8	77.0	77.6	78.7	79.2	79.6
Euro Area	66.3	69.0	72.6	75.1	75.4	74.2	73.8	71.8	70.0	68.9	67.6	66.5	65.3	64.0	62.7
G7	80.0	85.5	88.7	87.4	86.8	86.2	88.3	87.0	85.9	86.4	87.8	88.7	90.4	91.3	92.1
G20 Advanced	75.7	80.6	82.5	81.4	80.9	80.8	83.0	81.5	80.6	81.5	83.1	84.0	85.5	86.4	87.1

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

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

[1] For cross-economy comparability, 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.

[2] Belgium'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.

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

[4] Net debt for Iceland is defined as gross debt less currency and deposits.

[5] Net debt for Ireland is defined as gross general debt less debt instrument assets, namely, currency and deposits (F2), debt securities (F3), and loans (F4). It was previously defined as general government debt less currency and deposits.

[6] Norway's net debt series has been revised because of a change in the net debt calculation by excluding the equity and shares from financial assets and including accounts receivable in the financial assets, following *Government Finance Statistics* and the Maastricht definition.

Table A9. Emerging Market and Middle-Income Economies: General Government Overall Balance, 2010–24

(Percent of GDP)

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Algeria	0.0	–0.1	–4.4	–0.4	–7.3	–15.3	–13.1	–6.6	–4.8	–8.1	–5.8	–5.4	–3.3	–1.6	–0.3
Angola	3.4	8.1	4.1	–0.3	–5.7	–2.9	–4.5	–6.3	2.2	0.8	0.1	0.3	0.4	0.5	0.4
Argentina	–1.4	–2.7	–3.0	–3.3	–4.3	–6.0	–6.7	–6.7	–5.2	–4.0	–2.7	–3.1	–3.0	–2.7	–2.9
Azerbaijan	13.8	10.9	3.7	1.6	2.7	–4.8	–1.1	–1.4	5.6	5.3	3.2	2.6	2.0	1.5	1.4
Belarus	–4.2	–2.8	0.4	–1.0	0.1	–3.0	–1.7	–0.3	2.4	–1.3	–4.2	–1.9	–2.3	–2.7	–3.3
Brazil	–3.8	–2.5	–2.5	–3.0	–6.0	–10.3	–9.0	–7.9	–7.2	–7.5	–6.9	–6.6	–6.4	–6.1	–5.7
Chile	–0.4	1.4	0.7	–0.5	–1.5	–2.1	–2.7	–2.6	–1.5	–2.2	–2.1	–1.5	–1.0	–0.7	–0.5
China	–0.4	–0.1	–0.3	–0.8	–0.9	–2.8	–3.7	–3.9	–4.8	–6.1	–6.3	–6.2	–6.2	–6.2	–6.1
Colombia	–3.3	–2.0	0.1	–1.1	–1.9	–3.5	–2.4	–2.6	–2.7	–1.7	–0.9	–0.5	–0.5	–0.8	–0.6
Croatia	–6.3	–7.9	–5.3	–5.3	–5.1	–3.2	–1.0	0.8	0.2	0.0	–0.2	0.0	0.1	0.2	0.3
Dominican Republic	–2.7	–3.1	–6.6	–3.5	–2.7	0.0	–3.1	–3.3	–2.3	–3.1	–2.7	–2.6	–2.7	–2.7	–2.7
Ecuador	–1.4	–0.1	–0.9	–4.6	–5.2	–6.1	–8.2	–4.5	–1.2	0.0	2.6	2.7	2.5	2.9	2.8
Egypt[1]	–7.4	–9.6	–10.0	–12.9	–11.3	–10.9	–12.5	–10.4	–9.4	–7.6	–7.0	–4.8	–3.8	–3.3	–3.3
Hungary	–4.5	–5.4	–2.4	–2.6	–2.6	–1.9	–1.6	–2.2	–2.2	–1.8	–1.6	–1.5	–1.5	–1.5	–1.5
India	–8.6	–8.3	–7.5	–7.0	–7.1	–7.2	–7.1	–7.0	–6.4	–7.5	–7.2	–7.0	–6.9	–6.9	–6.8
Indonesia	–1.2	–0.7	–1.6	–2.2	–2.1	–2.6	–2.5	–2.5	–1.8	–1.9	–1.8	–1.8	–1.8	–1.8	–1.8
Iran	2.6	0.6	–0.3	–0.9	–1.1	–1.8	–2.3	–1.8	–2.5	–4.4	–5.0	–5.6	–6.1	–6.7	–7.2
Kazakhstan	1.5	5.8	4.4	4.9	2.5	–6.3	–4.5	–4.4	2.7	0.4	0.0	0.0	0.0	0.1	0.0
Kuwait	26.0	33.3	32.4	34.1	22.4	5.6	0.3	6.3	8.7	6.7	3.8	2.7	1.7	1.0	0.7
Libya	12.5	–17.2	28.6	–5.1	–73.8	–131.0	–113.3	–43.0	–23.6	–28.9	–32.3	–33.9	–36.3	–32.8	–29.8
Malaysia[2]	–4.3	–3.6	–3.1	–3.5	–2.6	–2.5	–2.6	–2.4	–3.6	–3.0	–2.6	–2.6	–2.6	–2.6	–2.6
Mexico	–4.0	–3.3	–3.7	–3.7	–4.5	–4.0	–2.8	–1.1	–2.2	–2.8	–2.6	–2.2	–2.3	–2.3	–2.4
Morocco	–4.3	–6.6	–7.2	–5.1	–4.8	–4.2	–4.5	–3.5	–3.7	–3.7	–3.3	–3.0	–3.0	–3.0	–3.0
Oman	5.6	9.4	4.6	4.7	–1.1	–15.9	–21.3	–14.0	–7.9	–6.7	–8.4	–6.5	–7.5	–8.6	–8.9
Pakistan	–6.0	–6.7	–8.6	–8.4	–4.9	–5.3	–4.4	–5.8	–6.4	–8.8	–7.4	–5.4	–3.9	–2.8	–2.6
Peru	0.1	2.0	2.1	0.7	–0.2	–2.1	–2.3	–2.9	–2.0	–1.5	–1.4	–0.9	–0.9	–0.9	–0.9
Philippines	–2.4	–0.3	–0.3	0.2	0.9	0.6	–0.4	–0.4	–1.5	–1.1	–1.7	–1.8	–2.0	–2.0	–2.1
Poland	–7.3	–4.8	–3.7	–4.1	–3.7	–2.7	–2.2	–1.5	–0.4	–1.5	–2.5	–2.5	–2.5	–2.6	–2.6
Qatar	6.8	7.3	10.5	21.6	14.3	4.5	–5.4	–2.9	5.3	7.0	6.9	5.5	5.5	5.1	5.3
Romania	–6.4	–4.3	–2.5	–2.5	–1.7	–1.4	–2.4	–2.8	–2.8	–3.7	–3.5	–3.6	–3.7	–3.6	–3.3
Russia	–3.2	1.4	0.4	–1.2	–1.1	–3.4	–3.7	–1.5	2.9	1.0	0.1	–0.3	–0.6	–0.7	–0.8
Saudi Arabia	4.4	11.6	11.9	5.6	–3.5	–15.8	–17.2	–9.2	–5.9	–6.1	–6.6	–8.5	–7.6	–7.1	–6.2
South Africa	–5.0	–4.1	–4.4	–4.3	–4.3	–4.8	–4.1	–4.4	–4.4	–6.2	–6.7	–6.4	–6.4	–6.5	–6.6
Sri Lanka	–7.0	–6.2	–5.6	–5.2	–6.2	–7.0	–5.3	–5.5	–5.3	–5.7	–5.4	–4.4	–3.8	–3.7	–3.7
Thailand	–1.3	0.0	–0.9	0.5	–0.8	0.1	0.6	–0.9	–0.3	–0.2	–0.2	–0.7	–0.9	–1.1	–1.1
Turkey	–3.4	–0.7	–1.8	–1.5	–1.4	–1.3	–2.4	–2.2	–3.1	–4.6	–4.7	–5.1	–5.1	–5.1	–5.1
Ukraine	–5.8	–2.8	–4.3	–4.8	–4.5	–1.2	–2.2	–2.2	–2.2	–2.3	–2.3	–2.2	–2.0	–2.0	–2.0
United Arab Emirates	0.6	5.3	9.0	8.4	1.9	–3.4	–2.0	–1.4	1.2	–1.6	–2.8	–3.0	–2.6	–2.4	–2.0
Uruguay[3]	–0.4	–0.4	–2.4	–1.9	–2.8	–2.2	–3.1	–2.7	–2.0	–2.8	–2.7	–3.1	–3.1	–3.2	–3.2
Venezuela	–4.7	–8.2	–10.4	–11.3	–15.6	–10.7	–10.8	–16.6	–30.6	. . .	. . .	. . .	. . .	. . .	. . .
Average	–2.2	–0.9	–0.9	–1.5	–2.5	–4.4	–4.8	–4.2	–3.9	–4.9	–5.0	–5.0	–5.0	–4.9	–4.9
Asia	–2.2	–1.6	–1.6	–1.8	–1.9	–3.3	–3.9	–4.1	–4.7	–5.8	–5.9	–5.8	–5.8	–5.8	–5.7
Europe	–3.7	–0.2	–0.7	–1.5	–1.4	–2.7	–2.9	–1.8	0.5	–1.0	–1.7	–2.0	–2.1	–2.2	–2.2
Latin America	–3.3	–2.6	–2.8	–3.1	–5.1	–6.8	–6.2	–5.4	–5.0	–4.9	–4.3	–4.0	–3.9	–3.7	–3.6
MENAP	2.4	4.3	5.6	3.9	–1.5	–8.5	–9.5	–5.7	–3.5	–4.5	–4.8	–5.0	–4.5	–4.2	–3.9
G20 Emerging	–2.5	–1.1	–1.2	–1.8	–2.6	–4.4	–4.9	–4.4	–4.4	–5.5	–5.6	–5.6	–5.6	–5.5	–5.5

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

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

[1] Based on nominal GDP series before the recent revision; therefore, data in the tables are not comparable to the authorities' numbers.

[2] The General Government overall balance in 2019 includes a one-off refund of tax arrears in 2019 of 2.4 percent of GDP.

[3] Data are for the nonfinancial public sector (NFPS), which includes central government, local government, social security funds, nonfinancial public corporation, and Banco de Seguros del Estado. The coverage of the fiscal data was changed from consolidated public sector to NFPS with the October 2019 submission. With this narrower coverage the central bank balances are not included in fiscal data. Historical data are 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 and projections for 2018–22 are affected by these transfers.

Table A10. Emerging Market and Middle-Income Economies: General Government Primary Balance, 2010–24

(Percent of GDP)

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Algeria	–0.5	–1.3	–5.3	–0.5	–7.4	–15.8	–13.1	–6.3	–4.9	–8.3	–5.8	–5.1	–2.7	–0.5	1.3
Angola	4.6	9.0	5.0	0.4	–4.7	–1.1	–1.7	–3.0	6.7	5.9	6.2	6.1	5.8	5.3	4.8
Argentina	–0.5	–1.6	–1.7	–2.6	–3.5	–4.4	–4.8	–4.2	–2.2	–0.6	1.1	0.5	0.7	1.1	1.2
Azerbaijan	13.8	10.9	3.8	1.7	2.9	–4.4	–0.7	–0.8	6.3	6.0	4.0	3.4	2.6	2.1	1.8
Belarus	–3.5	–1.7	1.7	0.0	1.1	–1.3	0.3	1.6	4.3	1.1	–2.2	0.5	0.2	–0.1	–0.5
Brazil	1.2	2.9	1.9	1.7	–0.6	–1.9	–2.5	–1.8	–1.7	–1.9	–1.4	–0.6	0.0	0.5	1.1
Chile	–0.3	1.5	0.8	–0.4	–1.3	–1.9	–2.4	–2.3	–1.1	–1.8	–1.6	–1.0	–0.4	–0.1	0.1
China	0.1	0.4	0.2	–0.3	–0.4	–2.2	–2.9	–3.0	–3.8	–5.0	–5.1	–4.9	–4.8	–4.7	–4.6
Colombia	–1.6	–0.1	1.6	1.0	0.0	–0.8	0.8	0.4	0.1	1.0	1.8	2.1	1.8	1.4	1.5
Croatia	–4.2	–5.4	–2.5	–2.5	–2.2	0.0	1.8	3.2	2.3	1.9	1.5	1.6	1.7	1.8	1.8
Dominican Republic	–0.9	–1.0	–4.2	–1.2	–0.4	2.3	–0.6	–0.7	0.3	–0.3	–0.2	0.0	0.0	0.0	0.1
Ecuador	–0.8	0.5	–0.2	–3.5	–4.2	–4.7	–6.7	–2.3	1.3	2.6	5.5	5.4	5.0	5.1	5.1
Egypt[1]	–3.2	–4.8	–4.9	–5.9	–4.2	–4.1	–4.3	–2.5	–0.4	1.5	1.7	2.2	2.1	2.1	2.2
Hungary	–0.7	–1.7	1.8	1.6	1.2	1.5	1.5	0.5	0.2	0.2	0.3	0.2	0.2	0.3	0.2
India	–4.4	–4.0	–3.2	–2.4	–2.6	–2.7	–2.5	–2.3	–1.6	–2.5	–2.4	–2.4	–2.3	–2.3	–2.3
Indonesia	0.0	0.5	–0.4	–1.0	–0.9	–1.2	–1.0	–0.9	0.0	–0.2	–0.2	–0.2	–0.3	–0.3	–0.3
Iran	2.6	0.7	–0.2	–0.8	–1.1	–1.7	–2.2	–1.7	–2.1	–3.9	–4.1	–4.1	–4.1	–4.2	–4.3
Kazakhstan	1.8	5.7	3.8	4.4	2.0	–5.9	–4.3	–5.4	1.9	0.4	0.0	0.0	0.1	0.2	0.2
Kuwait[2]	16.9	26.5	25.4	25.8	12.7	–7.5	–14.2	–9.4	–3.3	–6.1	–9.6	–11.1	–11.4	–11.2	–10.8
Libya	12.5	–17.2	28.6	–5.1	–73.8	–131.0	–113.3	–43.0	–23.6	–28.9	–32.3	–33.9	–36.3	–32.8	–29.8
Malaysia	–2.9	–2.0	–2.1	–2.1	–0.9	–0.9	–0.8	–0.6	–2.0	–1.0	–0.7	–0.6	–0.6	–0.6	–0.5
Mexico	–1.2	–0.7	–0.9	–0.9	–1.7	–1.2	0.4	2.6	1.6	0.9	0.9	1.2	1.1	1.1	1.0
Morocco	–2.0	–4.4	–4.7	–2.5	–2.1	–1.4	–1.8	–0.9	–1.3	–1.2	–0.9	–0.8	–0.9	–1.0	–1.0
Oman	4.7	8.9	3.3	2.6	–2.1	–16.1	–21.8	–13.4	–6.9	–5.4	–6.7	–4.7	–5.5	–6.0	–6.0
Pakistan	–1.7	–2.9	–4.2	–3.9	–0.3	–0.5	–0.1	–1.5	–2.1	–3.4	–0.5	1.0	2.1	2.7	2.7
Peru	1.2	3.0	3.0	1.7	0.7	–1.2	–1.3	–1.9	–0.8	–0.3	–0.1	0.4	0.4	0.4	0.3
Philippines	0.7	2.3	2.3	2.7	3.1	2.7	1.5	1.3	0.2	0.7	0.3	0.2	0.1	0.0	–0.1
Poland	–4.9	–2.3	–1.1	–1.6	–1.7	–0.9	–0.5	0.0	1.1	–0.1	–1.1	–1.1	–1.1	–1.2	–1.2
Qatar	8.0	8.8	12.0	22.8	15.5	6.0	–3.9	–1.6	6.7	8.6	8.5	7.0	6.8	6.4	6.4
Romania	–5.1	–2.8	–0.7	–0.8	–0.2	–0.1	–1.1	–1.7	–1.5	–2.3	–2.1	–2.1	–2.2	–2.1	–1.8
Russia	–3.1	1.7	0.7	–0.8	–0.7	–3.1	–3.2	–1.0	3.4	1.4	0.7	0.3	0.1	–0.1	–0.1
Saudi Arabia	4.7	11.6	11.7	5.2	–4.2	–17.9	–20.2	–11.1	–6.5	–6.0	–6.2	–7.8	–6.6	–6.0	–5.0
South Africa	–2.6	–1.5	–1.7	–1.4	–1.3	–1.6	–0.7	–0.9	–0.7	–2.2	–2.6	–2.0	–1.7	–1.5	–1.4
Sri Lanka	–1.5	–1.3	–0.9	–0.6	–2.0	–2.2	–0.2	0.0	0.6	0.2	0.7	1.5	2.0	2.0	2.0
Thailand	–0.7	0.8	–0.1	1.3	–0.1	0.7	1.0	–0.4	0.3	0.4	0.3	–0.2	–0.3	–0.4	–0.4
Turkey	0.1	1.8	0.7	0.8	0.5	0.6	–1.0	–0.9	–1.6	–2.8	–2.5	–2.5	–2.5	–2.4	–2.3
Ukraine	–4.1	–0.8	–2.4	–2.3	–1.2	3.0	1.9	1.6	1.1	1.4	1.7	1.9	2.0	1.9	1.9
United Arab Emirates	0.9	5.5	9.3	8.8	2.2	–3.2	–1.9	–1.3	1.4	–1.3	–2.5	–2.7	–2.3	–2.1	–1.7
Uruguay[3]	2.0	2.0	–0.1	0.5	–0.5	0.1	–0.5	–0.1	0.6	–0.1	–0.2	–0.5	–0.4	–0.5	–0.5
Venezuela	–3.2	–6.1	–6.9	–8.1	–11.9	–9.0	–10.8	–16.6	–30.6	. . .	. . .	. . .	. . .	. . .	. . .
Average	–0.5	0.8	0.6	0.1	–0.8	–2.6	–3.0	–2.4	–2.1	–2.9	–3.0	–2.9	–2.8	–2.7	–2.6
Asia	–0.8	–0.3	–0.4	–0.6	–0.6	–2.0	–2.5	–2.5	–3.0	–4.0	–4.1	–3.9	–3.9	–3.8	–3.7
Europe	–2.3	1.0	0.5	–0.3	–0.3	–1.5	–1.7	–0.8	1.5	0.1	–0.4	–0.5	–0.7	–0.7	–0.7
Latin America	0.0	0.9	0.3	0.0	–1.6	–2.4	–2.4	–1.4	–1.2	–1.0	–0.4	0.0	0.3	0.6	0.8
MENAP	2.9	4.8	6.1	4.5	–0.9	–8.0	–9.1	–5.4	–2.7	–3.3	–3.2	–3.5	–3.0	–2.6	–2.2
G20 Emerging	–0.6	0.8	0.4	–0.2	–0.9	–2.6	–3.1	–2.4	–2.4	–3.4	–3.5	–3.4	–3.3	–3.2	–3.1

Source: IMF staff estimates and projections. Projections are based on staff assessment 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. MENAP = Middle East, North Africa, and Pakistan.

[1] Based on nominal GDP series before the recent revision; therefore, data in the tables are not comparable to the authorities' numbers.

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

[3] Data are for the nonfinancial public sector (NFPS), which includes central government, local government, social security funds, nonfinancial public corporation, and Banco de Seguros del Estado. The coverage of the fiscal data was changed from consolidated public sector to NFPS with the October 2019 submission. With this narrower coverage the central bank balances are not included in fiscal data. Historical data are 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 and projections for 2018–22 are affected by these transfers.

Table A11. Emerging Market and Middle-Income Economies: General Government Cyclically Adjusted Balance, 2010–24

(Percent of potential GDP)

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Algeria	–5.1	–0.4	–3.2	2.0	–9.1	–18.1	–15.1	–9.9	–9.6	–19.2	–12.3	–10.9	–8.3	–3.4	2.4
Angola	4.0	4.8	0.8	–1.5	–5.1	0.6	–1.8	–4.1	2.1	0.3	–0.5	–0.1	0.3	0.7	0.7
Argentina	–1.4	–3.8	–3.0	–3.8	–3.6	–6.2	–5.9	–6.9	–4.3	–1.8	0.0	–0.5	–0.6	–0.9	–1.7
Azerbaijan	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Belarus	–4.1	–3.6	–0.2	–1.5	–0.8	–2.4	–0.1	0.3	2.2	–1.8	–4.5	–2.0	–2.3	–2.8	–3.2
Brazil	–4.8	–4.0	–3.8	–4.4	–7.5	–10.1	–7.5	–6.5	–6.0	–6.3	–6.0	–6.0	–6.2	–6.2	–5.8
Chile[1]	–1.9	–1.0	–0.4	–0.5	–0.5	0.5	–1.0	–2.0	–1.5	–1.6	–1.4	–1.2	–1.0	–0.8	–0.6
China	–0.4	–0.1	–0.1	–0.5	–0.5	–2.5	–3.6	–3.9	–4.8	–6.1	–6.2	–6.1	–6.2	–6.2	–6.1
Colombia	–2.7	–2.2	0.0	–1.3	–2.3	–3.8	–2.4	–2.1	–2.0	–0.6	0.0	0.2	–0.1	–0.6	–0.6
Croatia	–5.2	–6.8	–3.5	–3.2	–3.0	–1.9	–0.5	0.7	0.0	–0.2	–0.3	–0.2	0.0	0.1	0.1
Dominican Republic	–3.2	–3.1	–6.3	–3.1	–4.9	–4.7	–4.2	–4.2	–3.8	–4.0	–4.4	–4.2	–4.1	–4.0	–4.2
Ecuador	–0.7	0.1	–1.6	–5.8	–6.4	–6.9	–7.7	–3.9	–1.8	0.0	3.1	3.6	3.2	3.3	3.0
Egypt[2]	–8.6	–9.6	–9.9	–13.2	–11.6	–11.6	–12.2	–10.8	–9.6	–7.7	–7.1	–5.0	–4.0	–3.6	–3.6
Hungary	–3.2	–4.3	0.1	–0.2	–1.3	–1.1	–0.8	–2.0	–2.8	–2.6	–2.4	–2.2	–2.1	–1.9	–1.8
India	–9.0	–8.6	–7.5	–6.8	–6.9	–7.2	–7.3	–6.8	–6.6	–7.4	–7.0	–7.0	–6.9	–6.9	–6.8
Indonesia	–1.5	–1.0	–1.9	–2.5	–2.3	–2.7	–2.5	–2.4	–1.7	–1.9	–1.8	–1.8	–1.8	–1.8	–1.8
Iran	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Kazakhstan	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Kuwait	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Libya	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Malaysia	–4.7	–3.6	–3.6	–3.5	–2.7	–2.8	–2.7	–2.6	–4.5	–2.6	–2.6	–2.5	–2.6	–2.6	–2.6
Mexico	–3.7	–3.3	–3.9	–3.6	–4.5	–4.2	–4.1	–2.5	–2.2	–2.6	–2.4	–2.0	–2.2	–2.3	–2.4
Morocco	–4.3	–6.9	–7.7	–5.9	–6.3	–4.6	–4.8	–4.2	–4.0	–4.0	–3.5	–3.5	–3.7	–4.1	–4.4
Oman	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Pakistan	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Peru[1]	–0.1	1.2	1.3	0.1	–0.1	–1.6	–1.9	–2.1	–1.7	–1.0	–1.1	–0.7	–0.8	–0.9	–1.0
Philippines	–2.5	0.0	–0.3	0.1	0.6	0.6	–0.4	–0.4	–1.6	–1.6	–1.6	–1.7	–1.8	–2.0	–2.0
Poland	–7.0	–5.3	–3.5	–3.5	–3.2	–2.4	–2.2	–1.8	–1.5	–2.0	–2.8	–2.6	–2.6	–2.7	–2.8
Qatar	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Romania	–5.7	–3.2	–1.2	–1.4	–0.7	–0.5	–2.0	–3.4	–3.5	–4.5	–4.2	–4.1	–4.0	–3.7	–3.3
Russia	–2.4	1.5	0.1	–1.6	–0.1	–3.1	–3.2	–1.0	2.9	1.0	0.2	–0.3	–0.6	–0.7	–0.7
Saudi Arabia	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
South Africa	–3.7	–3.7	–4.2	–4.2	–4.1	–4.2	–3.8	–3.8	–3.8	–4.8	–4.9	–5.1	–5.5	–5.7	–5.7
Sri Lanka	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Thailand	–1.4	0.0	–0.7	0.3	–0.4	0.5	0.9	–0.7	–0.2	–0.1	0.1	–0.4	–0.6	–0.9	–0.9
Turkey	–2.1	–1.1	–1.7	–2.0	–1.6	–1.5	–2.0	–2.9	–3.6	–4.2	–5.0	–5.5	–5.6	–5.7	–5.6
Ukraine	–2.7	–3.2	–4.5	–4.6	–3.3	1.8	–0.9	–1.9	–2.5	–2.7	–2.5	–2.3	–2.0	–2.0	–2.0
United Arab Emirates	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Uruguay[3]	–2.0	–2.0	–3.6	–3.3	–4.3	–3.6	–3.7	–3.4	–2.8	–3.1	–3.0	–3.3	–3.3	–3.4	–3.5
Venezuela	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Average	–2.9	–2.0	–1.9	–2.2	–2.5	–3.8	–4.1	–4.0	–4.0	–4.9	–4.9	–4.9	–5.0	–5.0	–4.9
Asia	–2.3	–1.6	–1.4	–1.5	–1.5	–3.0	–3.9	–4.1	–4.7	–5.7	–5.7	–5.7	–5.8	–5.8	–5.7
Europe	–3.2	–0.7	–1.0	–2.0	–1.1	–2.2	–2.4	–1.7	–0.1	–1.3	–2.0	–2.3	–2.4	–2.5	–2.5
Latin America	–3.7	–3.3	–3.1	–3.5	–5.3	–6.5	–5.4	–4.8	–3.9	–3.7	–3.2	–3.1	–3.2	–3.3	–3.3
MENAP	–6.7	–6.6	–7.8	–7.7	–9.9	–11.8	–11.5	–9.0	–8.3	–9.8	–7.6	–6.0	–4.9	–3.6	–2.6
G20 Emerging	–2.7	–1.8	–1.8	–2.2	–2.4	–3.9	–4.3	–4.2	–4.3	–5.3	–5.3	–5.3	–5.4	–5.5	–5.4

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

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

[1] Data for these countries include adjustments beyond the output cycle.

[2] Based on nominal GDP series before the recent revision; therefore, data in the tables are not comparable to the authorities' numbers.

[3] Data are for the nonfinancial public sector (NFPS), which includes central government, local government, social security funds, nonfinancial public corporation, and Banco de Seguros del Estado. The coverage of the fiscal data was changed from consolidated public sector to NFPS with the October 2019 submission. With this narrower coverage the central bank balances are not included in fiscal data. Historical data are 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 and projections for 2018–22 are affected by these transfers.

Table A12. Emerging Market and Middle-Income Economies: General Government Cyclically Adjusted Primary Balance, 2010–24

(Percent of potential GDP)

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Algeria	–5.8	–2.3	–4.6	1.9	–9.3	–18.8	–15.2	–9.5	–9.8	–19.5	–12.2	–10.6	–7.5	–2.0	4.3
Angola	5.1	5.8	1.8	–0.7	–4.1	2.0	0.6	–1.2	6.7	5.6	5.8	5.9	5.7	5.4	5.0
Argentina	–0.5	–2.6	–1.7	–3.1	–2.8	–4.7	–4.1	–4.4	–1.4	1.3	3.5	2.9	2.8	2.8	2.3
Azerbaijan	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Belarus	–3.5	–2.5	1.2	–0.5	0.2	–0.7	1.8	2.3	4.2	0.6	–2.5	0.4	0.2	–0.1	–0.4
Brazil	0.3	1.7	0.8	0.5	–1.9	–1.8	–1.2	–0.6	–0.6	–0.8	–0.6	–0.2	0.1	0.5	1.0
Chile[1]	–1.9	–0.9	–0.3	–0.4	–0.4	0.7	–0.7	–1.6	–1.1	–1.2	–0.9	–0.7	–0.4	–0.2	0.0
China	0.0	0.4	0.4	0.0	0.1	–1.9	–2.8	–3.0	–3.8	–5.0	–5.0	–4.8	–4.8	–4.7	–4.6
Colombia	–1.0	–0.3	1.5	0.8	–0.3	–1.0	0.8	0.9	0.7	2.1	2.6	2.7	2.2	1.6	1.5
Croatia	–3.2	–4.4	–0.8	–0.6	–0.2	1.1	2.3	3.1	2.1	1.7	1.4	1.5	1.6	1.7	1.6
Dominican Republic	–1.4	–1.1	–3.9	–0.9	–2.6	–2.4	–1.6	–1.7	–1.2	–1.2	–1.9	–1.7	–1.4	–1.4	–1.3
Ecuador	–0.2	0.7	–0.8	–4.7	–5.3	–5.4	–6.1	–1.8	0.7	2.6	5.9	6.2	5.7	5.6	5.3
Egypt[2]	–4.1	–4.7	–4.9	–6.1	–4.5	–4.8	–4.1	–2.9	–0.6	1.4	1.6	1.9	1.9	1.8	1.9
Hungary	0.6	–0.7	4.1	3.8	2.4	2.2	2.2	0.7	–0.3	–0.6	–0.5	–0.5	–0.4	–0.2	0.0
India	–4.7	–4.2	–3.1	–2.3	–2.4	–2.7	–2.7	–2.0	–1.8	–2.4	–2.3	–2.3	–2.3	–2.3	–2.3
Indonesia	–0.1	0.2	–0.7	–1.3	–1.1	–1.3	–1.0	–0.8	0.0	–0.2	–0.1	–0.2	–0.2	–0.3	–0.3
Iran	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Kazakhstan	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Kuwait	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Libya	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Malaysia	–3.3	–2.0	–2.5	–2.1	–0.9	–1.2	–0.9	–0.8	–2.9	–0.6	–0.7	–0.6	–0.6	–0.6	–0.5
Mexico	–1.0	–0.7	–1.1	–0.9	–1.7	–1.4	–0.9	1.1	1.6	1.1	1.1	1.4	1.2	1.1	1.0
Morocco	–2.0	–4.7	–5.2	–3.3	–3.6	–1.9	–2.2	–1.7	–1.6	–1.5	–1.1	–1.2	–1.6	–1.9	–2.3
Oman	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Pakistan	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Peru[1]	1.0	2.2	2.3	1.1	0.8	–0.6	–0.9	–1.1	–0.6	0.2	0.3	0.6	0.5	0.3	0.2
Philippines	0.5	2.6	2.3	2.6	2.9	2.7	1.4	1.3	0.1	0.2	0.4	0.3	0.2	0.0	0.0
Poland	–4.6	–2.7	–0.9	–1.0	–1.2	–0.7	–0.5	–0.2	0.0	–0.6	–1.4	–1.2	–1.2	–1.3	–1.4
Qatar	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Romania	–4.4	–1.8	0.5	0.2	0.8	0.7	–0.7	–2.2	–2.1	–3.0	–2.8	–2.6	–2.5	–2.2	–1.8
Russia	–2.3	1.8	0.4	–1.2	0.3	–2.9	–2.8	–0.5	3.4	1.5	0.8	0.3	0.0	–0.1	–0.1
Saudi Arabia	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
South Africa	–1.3	–1.2	–1.5	–1.2	–1.1	–0.9	–0.5	–0.3	–0.1	–0.8	–0.8	–0.8	–0.8	–0.7	–0.6
Sri Lanka	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Thailand	–0.8	0.9	0.2	1.1	0.3	1.1	1.3	–0.1	0.4	0.5	0.6	0.1	0.0	–0.1	–0.2
Turkey	1.2	1.5	0.8	0.4	0.4	0.3	–0.7	–1.6	–2.1	–2.5	–2.9	–2.9	–2.9	–2.9	–2.9
Ukraine	–1.2	–1.2	–2.6	–2.2	0.0	5.8	3.1	1.8	0.8	1.0	1.5	1.8	2.0	1.9	1.9
United Arab Emirates	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Uruguay[3]	0.4	0.4	–1.3	–0.9	–1.9	–1.3	–1.0	–0.9	–0.2	–0.5	–0.5	–0.7	–0.6	–0.7	–0.8
Venezuela	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Average	–1.0	–0.1	–0.2	–0.5	–0.7	–1.8	–2.2	–1.9	–2.0	–2.7	–2.7	–2.6	–2.7	–2.6	–2.6
Asia	–1.0	–0.4	–0.3	–0.4	–0.3	–1.8	–2.5	–2.5	–3.1	–4.0	–4.0	–3.9	–3.9	–3.8	–3.7
Europe	–1.8	0.6	0.3	–0.6	0.2	–0.9	–1.2	–0.6	1.1	–0.1	–0.7	–0.8	–0.9	–1.0	–1.0
Latin America	–0.3	0.4	0.0	–0.4	–1.7	–2.0	–1.5	–0.7	–0.1	0.2	0.6	0.9	0.9	1.0	1.1
MENAP	–4.1	–4.1	–4.9	–3.5	–5.6	–7.5	–6.3	–4.5	–3.3	–4.5	–2.2	–1.6	–0.9	0.3	1.5
G20 Emerging	–0.8	0.1	–0.1	–0.5	–0.6	–2.0	–2.4	–2.1	–2.2	–3.1	–3.2	–3.1	–3.1	–3.1	–3.0

Source: IMF staff estimates and projections. Projections are based on staff assessment 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. MENAP = Middle East, North Africa, and Pakistan.

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

[2] Based on nominal GDP series before the recent revision; therefore, data in the tables are not comparable to the authorities' numbers.

[3] Data are for the nonfinancial public sector (NFPS), which includes central government, local government, social security funds, nonfinancial public corporation, and Banco de Seguros del Estado. The coverage of the fiscal data was changed from consolidated public sector to NFPS with the October 2019 submission. With this narrower coverage the central bank balances are not included in fiscal data. Historical data are 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 and projections for 2018–22 are affected by these transfers.

Table A13. Emerging Market and Middle-Income Economies: General Government Revenue, 2010–24

(Percent of GDP)

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Algeria	37.2	40.0	39.1	35.8	33.3	30.5	28.6	32.6	33.3	30.6	28.5	27.3	26.8	26.0	27.2
Angola	42.8	45.5	41.3	36.7	30.7	24.1	17.5	17.5	21.9	20.0	20.9	21.0	20.8	20.4	19.9
Argentina	32.0	32.2	33.8	34.3	34.6	35.4	34.9	34.5	33.7	33.6	34.2	33.9	34.3	35.0	35.3
Azerbaijan	45.8	44.6	40.3	39.4	39.1	33.9	34.3	34.2	38.8	40.0	37.7	37.1	35.9	34.8	33.8
Belarus	40.1	37.5	39.3	39.8	38.9	38.8	39.0	38.7	39.9	37.8	36.4	36.1	35.9	35.7	35.5
Brazil	36.1	35.1	34.7	34.5	32.5	28.2	30.7	30.6	31.3	30.8	30.7	30.6	30.6	30.7	30.7
Chile	23.0	24.2	23.8	22.6	22.3	22.8	22.6	22.8	23.9	23.2	23.2	23.3	23.2	23.1	23.0
China	24.6	26.9	27.8	27.7	28.1	28.5	28.2	28.3	29.3	28.9	29.1	28.8	28.5	28.3	28.0
Colombia	26.2	26.8	28.3	27.8	27.5	26.0	25.3	25.5	25.4	26.8	26.6	26.4	26.2	25.9	25.6
Croatia	41.7	40.6	42.5	42.4	42.9	45.2	46.3	46.1	46.6	46.6	45.9	46.0	46.0	46.0	45.9
Dominican Republic	13.1	12.9	13.6	14.2	14.2	16.6	13.9	14.0	14.2	14.3	14.3	14.3	14.3	14.3	14.3
Ecuador	33.3	39.3	39.3	39.2	38.4	33.6	30.3	32.0	35.9	34.9	37.1	35.3	34.7	34.7	34.8
Egypt[1]	23.9	20.9	20.8	21.7	24.4	22.0	20.3	21.8	20.7	20.5	20.4	20.5	20.4	20.3	20.3
Hungary	44.8	44.1	46.1	46.7	46.9	48.2	45.1	44.7	44.2	44.6	43.9	43.0	42.6	42.3	42.3
India	18.8	19.3	19.8	19.6	19.1	19.9	20.2	19.8	19.8	19.6	19.7	19.7	19.7	19.7	19.7
Indonesia	15.6	17.0	17.2	16.9	16.5	14.9	14.3	14.1	14.9	14.4	14.4	14.5	14.5	14.5	14.5
Iran	21.0	18.9	13.9	13.5	14.3	16.1	17.3	17.5	15.8	13.0	12.6	12.6	12.6	12.5	12.4
Kazakhstan	23.9	27.0	26.3	24.8	23.7	16.6	17.0	20.3	22.2	21.0	21.1	21.1	21.1	21.2	21.2
Kuwait	70.7	72.3	71.2	72.3	66.6	60.0	54.1	58.2	58.1	60.2	58.5	58.4	57.5	56.2	55.0
Libya	70.4	42.4	74.2	83.0	69.3	51.2	31.7	51.8	63.3	85.6	78.7	76.1	75.5	74.2	71.3
Malaysia	22.3	23.5	25.4	24.3	23.3	22.2	20.1	19.2	19.1	20.0	18.0	17.9	17.8	17.8	17.8
Mexico	23.7	24.4	24.5	24.1	23.4	23.5	24.6	24.7	23.5	22.9	22.3	22.5	22.6	22.6	22.7
Morocco	26.8	27.2	28.0	27.8	28.0	26.5	26.0	26.6	26.0	26.2	26.3	26.4	26.6	26.7	26.9
Oman	40.5	48.7	48.7	49.5	46.3	34.9	29.9	31.8	37.4	36.5	35.1	36.6	35.7	34.6	33.9
Pakistan	14.3	12.6	13.0	13.5	15.2	14.5	15.5	15.5	15.2	12.8	16.3	17.9	19.0	19.6	19.6
Peru	21.1	21.8	22.4	22.3	22.4	20.3	18.8	18.3	19.4	20.0	20.2	20.5	20.5	20.5	20.5
Philippines	16.8	17.6	18.6	18.8	19.0	19.4	19.1	19.6	20.2	20.3	20.6	20.8	21.0	21.4	21.7
Poland	38.5	39.1	39.1	38.5	38.7	39.0	38.9	39.7	41.2	41.3	40.4	40.0	39.9	39.9	39.9
Qatar	37.4	35.8	41.5	49.9	47.7	46.8	34.8	30.5	34.9	37.1	36.4	34.9	33.7	33.0	32.3
Romania	31.9	32.5	32.5	31.5	32.1	32.8	28.9	28.0	29.4	29.8	30.5	30.7	30.8	30.6	30.3
Russia	32.3	34.7	34.4	33.5	33.9	31.9	32.8	33.3	35.5	34.9	34.2	34.1	33.7	33.6	33.5
Saudi Arabia	37.4	44.4	45.2	41.2	36.7	25.0	21.5	24.1	30.7	32.9	31.0	29.2	29.5	29.8	30.4
South Africa	26.4	26.8	26.9	27.3	27.6	28.2	28.6	28.3	29.0	29.1	29.1	29.2	29.2	29.3	29.3
Sri Lanka	13.0	13.6	12.2	12.0	11.6	13.3	14.1	13.7	13.4	12.9	14.0	14.8	15.5	15.6	15.7
Thailand	20.7	21.1	21.3	22.2	21.4	22.3	21.9	21.0	21.4	21.4	21.4	21.5	21.5	21.5	21.5
Turkey	32.7	32.7	32.6	32.7	31.8	32.1	32.7	31.4	31.5	30.2	30.5	30.5	30.5	30.5	30.6
Ukraine	43.4	42.9	44.7	43.3	40.3	41.9	38.3	39.3	39.6	39.0	37.7	37.4	37.2	36.9	36.7
United Arab Emirates	32.8	36.5	38.1	38.7	35.0	29.0	28.9	29.2	31.3	29.4	28.4	27.5	27.0	26.4	26.1
Uruguay[2]	29.5	28.4	27.8	29.6	28.9	28.9	29.4	29.7	31.2	30.8	30.6	30.3	30.4	30.2	30.3
Venezuela	26.4	31.1	29.8	28.4	34.6	19.7	14.3	20.0	4.2	. . .	. . .	. . .	. . .	. . .	. . .
Average	27.6	28.9	29.4	29.1	28.5	27.2	26.8	27.0	27.9	27.5	27.4	27.2	27.0	26.9	26.7
Asia	22.4	24.3	25.3	25.3	25.5	26.0	25.6	25.5	26.4	26.1	26.2	26.0	25.8	25.6	25.4
Europe	34.2	35.3	35.2	34.4	34.3	33.3	33.7	33.8	35.4	34.9	34.4	34.2	33.9	33.8	33.7
Latin America	30.4	30.7	30.5	30.2	29.3	26.7	27.2	27.9	27.4	27.0	26.9	26.9	27.0	27.1	27.1
MENAP	32.6	33.8	36.2	35.4	32.6	26.5	24.1	25.6	28.2	28.0	27.2	26.6	26.5	26.3	26.1
G20 Emerging	27.0	28.6	29.0	28.6	28.1	27.3	27.2	27.2	28.1	27.6	27.6	27.3	27.2	27.0	26.8

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

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

[1] Based on nominal GDP series before the recent revision; therefore, data in the tables are not comparable to the authorities' numbers.

[2] Data are for the nonfinancial public sector (NFPS), which includes central government, local government, social security funds, nonfinancial public corporation, and Banco de Seguros del Estado. The coverage of the fiscal data was changed from consolidated public sector to NFPS with the October 2019 submission. With this narrower coverage the central bank balances are not included in fiscal data. Historical data are 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 and projections for 2018–22 are affected by these transfers.

Table A14. Emerging Market and Middle-Income Economies: General Government Expenditure, 2010–24

(Percent of GDP)

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Algeria	37.3	40.1	43.5	36.2	40.6	45.8	41.7	39.2	38.1	38.7	34.3	32.7	30.1	27.5	27.5
Angola	39.4	37.4	37.2	37.0	36.5	27.1	22.0	23.8	19.7	19.2	20.8	20.7	20.4	19.9	19.5
Argentina	33.4	34.9	36.8	37.6	38.9	41.4	41.5	41.2	38.9	37.6	36.9	37.0	37.3	37.7	38.3
Azerbaijan	32.0	33.7	36.6	37.8	36.4	38.7	35.4	35.6	33.1	34.7	34.4	34.4	34.0	33.3	32.5
Belarus	44.3	40.3	38.9	40.8	38.8	41.8	40.7	39.0	37.5	39.1	40.6	38.0	38.2	38.5	38.8
Brazil	39.9	37.6	37.2	37.4	38.5	38.5	39.7	38.5	38.5	38.3	37.7	37.1	37.0	36.8	36.4
Chile	23.3	22.8	23.1	23.1	23.8	24.9	25.3	25.4	25.4	25.4	25.3	24.8	24.2	23.8	23.5
China	25.0	27.0	28.1	28.5	29.0	31.3	31.9	32.2	34.1	34.9	35.5	35.0	34.8	34.4	34.1
Colombia	29.5	28.8	28.2	28.9	29.4	29.5	27.7	28.1	28.1	28.5	27.4	26.9	26.7	26.7	26.2
Croatia	48.0	48.5	47.8	47.6	48.1	48.3	47.3	45.3	46.4	46.6	46.1	46.0	45.9	45.7	45.6
Dominican Republic	15.8	15.9	20.1	17.7	17.0	16.7	17.0	17.2	16.5	17.4	17.1	16.9	17.0	17.0	17.1
Ecuador	34.7	39.5	40.3	43.7	43.6	39.7	38.6	36.5	37.1	34.9	34.5	32.6	32.2	31.9	32.0
Egypt[1]	31.4	30.5	30.8	34.6	35.7	33.0	32.7	32.2	30.1	28.1	27.4	25.3	24.1	23.7	23.6
Hungary	49.3	49.5	48.5	49.4	49.5	50.1	46.8	46.9	46.5	46.4	45.5	44.5	44.1	43.9	43.8
India	27.4	27.6	27.4	26.6	26.2	27.1	27.3	26.8	26.2	27.1	26.9	26.7	26.6	26.6	26.5
Indonesia	16.9	17.7	18.8	19.1	18.6	17.5	16.8	16.6	16.6	16.3	16.2	16.3	16.3	16.3	16.3
Iran	18.4	18.3	14.3	14.4	15.4	17.9	19.5	19.3	18.2	17.3	17.7	18.2	18.7	19.1	19.6
Kazakhstan	22.5	21.2	21.9	19.8	21.3	22.9	21.5	24.7	19.5	20.6	21.1	21.1	21.1	21.1	21.2
Kuwait	44.7	39.1	38.8	38.1	44.3	54.4	53.8	51.9	49.4	53.5	54.7	55.8	55.8	55.2	54.3
Libya	57.9	59.7	45.7	88.1	143.1	182.2	145.1	94.8	86.9	114.5	111.0	110.0	111.7	107.0	101.1
Malaysia	26.6	27.1	28.5	27.8	26.0	24.7	22.7	21.6	22.7	23.0	20.5	20.4	20.5	20.4	20.3
Mexico	27.7	27.7	28.2	27.8	28.0	27.5	27.4	25.7	25.7	25.7	24.9	24.7	24.9	24.9	25.1
Morocco	31.1	33.8	35.2	32.9	32.9	30.7	30.5	30.0	29.8	29.9	29.6	29.4	29.6	29.7	29.9
Oman	34.8	39.3	44.1	44.9	47.4	50.9	51.2	45.8	45.4	43.2	43.4	43.1	43.2	43.2	42.8
Pakistan	20.3	19.3	21.7	21.8	20.1	19.8	19.9	21.3	21.6	21.6	23.6	23.3	22.9	22.4	22.1
Peru	21.0	19.7	20.3	21.6	22.6	22.4	21.1	21.2	21.4	21.5	21.6	21.4	21.4	21.4	21.4
Philippines	19.2	17.9	18.9	18.7	18.1	18.8	19.5	20.0	21.8	21.4	22.3	22.6	23.0	23.4	23.8
Poland	45.8	43.9	42.9	42.6	42.4	41.7	41.1	41.2	41.5	42.8	43.0	42.5	42.4	42.5	42.5
Qatar	30.6	28.5	31.0	28.3	33.4	42.3	40.1	33.5	29.6	30.1	29.6	29.4	28.2	27.8	27.0
Romania	38.3	36.7	35.0	34.0	33.8	34.2	31.3	30.8	32.2	33.5	34.0	34.3	34.5	34.3	33.6
Russia	35.5	33.2	34.1	34.6	34.9	35.3	36.4	34.7	32.6	33.9	34.1	34.4	34.3	34.3	34.3
Saudi Arabia	33.0	32.8	33.2	35.5	40.2	40.8	38.7	33.3	36.6	39.0	37.6	37.7	37.1	36.9	36.6
South Africa	31.4	30.9	31.4	31.6	31.9	32.9	32.7	32.6	33.4	35.3	35.9	35.6	35.6	35.7	35.8
Sri Lanka	20.0	19.9	17.8	17.2	17.9	20.4	19.5	19.2	18.6	18.6	19.3	19.2	19.2	19.3	19.4
Thailand	22.0	21.1	22.3	21.6	22.2	22.2	21.4	22.0	21.6	21.6	21.6	22.2	22.4	22.6	22.6
Turkey	36.1	33.4	34.4	34.2	33.2	33.4	35.1	33.6	34.6	34.8	35.2	35.6	35.6	35.7	35.7
Ukraine	49.2	45.7	49.0	48.1	44.8	43.0	40.6	41.5	41.7	41.3	40.0	39.6	39.2	38.9	38.7
United Arab Emirates	32.2	31.2	29.1	30.3	33.1	32.4	30.9	30.6	30.1	31.0	31.2	30.5	29.5	28.8	28.2
Uruguay[2]	29.9	28.7	30.2	31.4	31.7	31.1	32.5	32.4	33.2	33.6	33.3	33.4	33.5	33.5	33.4
Venezuela	31.1	39.4	40.3	39.7	50.1	30.3	25.2	36.6	34.7	. . .	. . .	. . .	. . .	. . .	. . .
Average	29.9	29.9	30.4	30.5	30.9	31.5	31.5	31.2	31.8	32.4	32.5	32.2	32.0	31.8	31.6
Asia	24.5	26.0	26.9	27.1	27.4	29.3	29.6	29.6	31.1	31.8	32.1	31.8	31.6	31.4	31.2
Europe	37.9	35.5	35.9	35.9	35.8	36.0	36.6	35.6	34.9	35.9	36.1	36.1	36.1	36.0	35.9
Latin America	33.7	33.3	33.4	33.4	34.4	33.5	33.4	33.3	32.4	31.9	31.3	30.9	30.8	30.8	30.7
MENAP	30.2	29.5	30.6	31.5	34.1	35.0	33.6	31.3	31.7	32.4	32.0	31.6	31.0	30.5	30.1
G20 Emerging	29.5	29.7	30.2	30.4	30.7	31.7	32.1	31.6	32.5	33.1	33.2	32.9	32.7	32.5	32.3

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

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

[1] Based on nominal GDP series before the recent revision; therefore, data in the tables are not comparable to the authorities' numbers.

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

Table A15. Emerging Market and Middle-Income Economies: General Government Gross Debt, 2010–24

(Percent of GDP)

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Algeria	10.5	9.3	9.3	7.6	7.7	8.7	20.5	27.3	38.3	46.1	49.2	52.5	54.7	55.6	58.5
Angola	37.2	29.6	26.7	33.1	39.8	57.1	75.7	69.3	89.0	95.0	89.9	84.2	78.7	72.9	68.3
Argentina	43.5	38.9	40.4	43.5	44.7	52.6	53.1	57.1	86.1	93.3	80.8	76.4	74.0	70.5	68.0
Azerbaijan	5.0	5.0	5.8	6.2	8.5	18.0	20.6	22.5	18.8	19.7	18.6	16.9	15.3	13.7	10.0
Belarus	36.8	58.2	36.9	36.9	38.8	53.0	53.5	53.2	47.8	46.2	52.7	52.1	52.5	54.6	57.2
Brazil[1]	63.1	61.2	62.2	60.2	62.3	72.6	78.3	84.1	87.9	91.6	93.9	94.5	95.3	95.0	94.9
Chile	8.6	11.1	11.9	12.7	15.0	17.3	21.0	23.5	25.6	27.5	29.2	30.0	29.9	29.6	29.1
China	33.7	33.6	34.3	37.0	39.9	41.1	44.2	46.8	50.6	55.6	60.9	65.4	69.5	73.2	76.6
Colombia	36.6	35.8	34.0	37.6	43.3	50.4	49.8	49.5	52.2	51.0	49.0	46.7	44.6	42.8	41.0
Croatia	57.3	63.9	69.5	80.4	84.0	83.7	80.5	77.8	74.6	71.1	68.3	65.5	63.8	60.8	58.0
Dominican Republic	37.3	39.1	42.3	46.7	44.9	44.7	46.6	48.9	50.5	52.4	52.7	53.0	53.2	53.4	53.9
Ecuador[2]	17.7	16.8	17.5	20.0	27.1	33.8	43.2	44.6	45.8	49.1	48.3	46.6	42.3	38.0	33.9
Egypt[3]	69.6	72.8	73.8	84.0	85.1	88.5	96.8	103.2	92.7	84.9	83.8	80.7	78.7	74.6	71.7
Hungary	80.2	80.5	78.4	77.1	76.6	76.7	76.0	73.4	70.8	67.5	65.1	62.9	61.1	59.5	58.1
India	66.0	68.3	67.7	67.4	66.8	68.8	67.7	67.8	68.1	69.0	68.5	67.7	66.9	66.2	65.6
Indonesia	24.5	23.1	23.0	24.8	24.7	27.0	28.0	29.4	30.1	30.3	30.0	29.9	29.8	29.7	29.6
Iran	11.7	8.9	12.1	10.7	11.8	38.4	47.5	39.5	32.2	30.7	28.8	28.1	28.2	29.2	30.3
Kazakhstan	10.7	10.2	12.1	12.6	14.5	21.9	19.7	20.3	21.0	20.8	21.1	21.3	22.2	22.7	23.5
Kuwait	6.2	4.6	3.6	3.1	3.4	4.7	10.0	20.7	14.7	15.2	17.4	25.0	30.4	34.3	38.3
Libya	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Malaysia	51.2	51.9	53.8	55.7	55.4	57.0	55.8	54.4	55.6	56.3	56.5	56.0	55.5	54.9	54.3
Mexico	42.0	42.9	42.7	45.9	48.9	52.8	56.8	54.1	53.6	53.8	54.6	54.7	54.9	54.9	55.1
Morocco	49.0	52.5	56.5	61.7	63.3	63.7	64.9	65.1	65.0	65.3	64.5	63.2	62.0	60.9	60.0
Oman	5.8	5.2	4.9	5.0	4.9	15.5	32.7	46.4	53.4	59.9	63.9	65.0	68.5	72.9	76.9
Pakistan	60.6	58.9	63.2	63.9	63.5	63.3	67.6	67.0	71.7	76.7	78.6	76.1	72.5	69.0	65.4
Peru	25.3	23.0	21.2	20.0	20.6	24.1	24.5	25.4	26.1	26.9	27.2	26.6	26.1	25.6	25.1
Philippines	49.7	47.5	47.9	45.7	42.1	41.5	39.0	39.9	38.9	39.3	39.3	38.8	38.3	37.8	37.4
Poland	53.1	54.1	53.7	55.7	50.4	51.3	54.2	50.6	48.9	47.8	47.3	47.1	47.1	47.1	47.4
Qatar	29.1	33.5	32.1	30.9	24.9	35.5	46.7	49.8	48.6	53.2	48.0	43.1	39.5	35.5	31.4
Romania	30.9	34.2	37.8	39.0	40.5	39.4	38.9	36.9	36.7	37.4	38.6	39.8	41.1	42.2	43.1
Russia	10.9	11.2	11.9	13.1	16.1	16.4	16.1	15.5	14.6	16.5	17.7	18.3	19.0	19.8	20.9
Saudi Arabia	8.4	5.4	3.0	2.1	1.6	5.8	13.1	17.2	19.0	23.2	28.4	33.6	36.5	37.9	41.5
South Africa	34.7	38.2	41.0	44.1	47.0	49.3	51.5	53.0	56.7	59.9	64.2	67.9	71.1	74.1	77.0
Sri Lanka	71.6	71.1	69.6	71.8	72.2	78.5	79.0	77.4	83.3	83.0	82.7	80.7	78.1	75.5	72.8
Thailand	39.8	39.1	41.9	42.2	43.3	42.6	41.8	41.9	42.1	42.4	43.0	43.8	44.3	44.6	45.0
Turkey	40.1	36.5	32.7	31.4	28.8	27.6	28.3	28.2	30.2	30.1	30.8	31.7	32.9	34.2	35.2
Ukraine	40.6	36.9	37.5	40.5	70.3	79.5	81.2	71.6	60.2	57.0	54.3	51.8	49.3	46.6	44.7
United Arab Emirates	21.9	17.4	17.0	15.8	15.5	18.7	20.2	20.0	19.1	20.1	20.3	20.3	20.2	20.0	19.7
Uruguay[4]	44.3	44.7	54.1	54.3	55.5	62.9	61.4	60.7	63.5	64.1	64.1	64.0	65.2	66.1	66.5
Venezuela	25.0	31.7	30.1	33.3	25.2	11.1	5.1	23.1	182.4	. . .	. . .	. . .	. . .	. . .	. . .
Average	38.0	37.1	37.0	38.3	40.4	43.6	46.5	48.3	50.8	53.8	56.4	58.6	60.6	62.3	63.9
Asia	40.1	39.6	39.6	41.3	43.4	44.7	46.9	49.1	51.9	55.6	59.5	62.6	65.5	68.0	70.3
Europe	28.3	27.0	25.7	26.5	28.6	31.0	31.9	30.2	29.9	30.4	31.2	31.6	32.1	32.6	33.2
Latin America	48.0	47.5	47.2	47.9	50.1	53.9	57.4	62.4	69.8	71.7	71.3	70.9	70.6	69.8	69.1
MENAP	24.0	21.6	22.8	23.5	23.6	33.3	40.7	40.0	38.7	41.1	42.7	43.8	44.4	44.1	44.6
G20 Emerging	38.9	37.9	37.4	38.6	41.0	43.9	46.6	48.8	51.5	55.0	58.3	61.1	63.6	65.9	68.0

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

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

[1] 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.

[2] In late 2016, the authorities changed the definition of debt to a consolidated basis which in 2016 was 11.5 percent of GDP lower than the previous aggregate definition. Both the historic and projection numbers are now presented on a consolidated basis.

[3] Based on nominal GDP series before the recent revision; therefore, data in the tables are not comparable to the authorities' numbers.

[4] Data are for the nonfinancial public sector (NFPS), which includes central government, local government, social security funds, nonfinancial public corporation, and Banco de Seguros del Estado. The coverage of the fiscal data was changed from consolidated public sector to NFPS with the October 2019 submission. With this narrower coverage the central bank balances are not included in fiscal data, and capitalization bonds issued in the past by the government to the central bank are now part of the NFPS debt. Historical data are also revised accordingly. Debt estimates prior to 2012 are preliminary.

Table A16. Emerging Market and Middle-Income Economies: General Government Net Debt, 2010–24

(Percent of GDP)

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Algeria	–33.7	–31.1	–29.0	–29.5	–21.8	–7.6	13.3	21.6	26.5	37.3	40.7	44.2	46.8	48.2	51.0
Angola	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Argentina	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Azerbaijan	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Belarus	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Brazil	38.0	34.5	32.2	30.5	32.6	35.6	46.2	51.6	54.2	58.1	61.0	62.2	63.6	63.9	64.6
Chile	–7.0	–8.6	–6.8	–5.6	–4.4	–3.4	0.9	4.4	5.7	8.5	10.8	12.4	13.1	13.6	13.8
China	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Colombia	28.5	27.2	24.8	26.9	32.9	42.1	38.6	39.0	41.5	41.4	40.2	38.5	37.1	35.8	34.1
Croatia	44.9	52.9	57.9	65.1	69.1	70.5	68.5	65.9	62.7	. . .	. . .	. . .	. . .	. . .	. . .
Dominican Republic	30.2	31.9	36.3	39.0	37.6	37.2	38.5	40.3	41.4	43.4	43.7	44.0	44.2	44.4	44.9
Ecuador	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Egypt[1]	57.1	61.3	63.5	73.7	77.1	78.8	88.2	93.9	81.3	75.4	75.7	73.5	72.4	72.0	69.4
Hungary	72.5	72.4	70.7	70.9	70.4	71.4	68.9	66.3	63.7	60.4	58.0	55.8	54.0	52.4	51.0
India	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Indonesia	19.7	17.8	18.6	20.6	20.4	22.0	23.5	25.3	26.3	26.8	26.8	27.0	27.1	27.2	27.2
Iran	1.9	–2.5	1.3	–5.6	–5.6	21.7	34.5	28.8	25.5	27.3	27.3	26.7	27.0	28.1	29.3
Kazakhstan	–10.2	–12.7	–15.9	–17.6	–19.1	–30.8	–23.8	–16.2	–16.4	–15.3	–14.3	–13.2	–12.2	–11.1	–10.2
Kuwait	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Libya	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Malaysia	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Mexico	36.0	37.2	37.2	40.0	42.6	46.5	48.7	45.8	44.9	45.6	46.3	46.4	46.6	46.7	46.8
Morocco	48.5	52.1	56.0	61.2	62.8	63.1	64.4	64.7	64.7	65.0	64.3	62.9	61.7	60.7	59.7
Oman	–19.6	–16.8	–15.6	–28.8	–27.6	–22.8	–1.0	13.4	32.2	39.0	44.9	47.9	53.7	60.1	66.2
Pakistan	56.5	55.8	59.2	60.1	58.0	58.2	61.3	61.5	66.8	72.5	75.2	73.2	70.0	66.8	63.5
Peru	10.2	6.1	2.8	1.5	2.7	5.3	7.0	8.7	10.2	11.2	12.1	12.3	12.4	12.6	12.8
Philippines	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Poland	47.3	48.3	47.9	50.9	44.6	46.5	47.9	44.6	42.3	43.0	42.5	42.3	42.3	42.3	42.6
Qatar	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Romania	22.9	27.4	29.0	29.6	29.7	29.7	27.7	28.3	28.3	29.1	30.4	31.7	33.1	34.4	35.4
Russia	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Saudi Arabia	–36.9	–37.0	–47.1	–50.9	–47.1	–35.9	–17.1	–7.7	–0.1	6.8	13.7	21.9	28.7	34.7	39.4
South Africa	28.5	31.3	34.8	37.9	40.7	43.6	45.4	47.8	51.0	55.3	60.3	64.2	67.5	70.6	73.7
Sri Lanka	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Thailand	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Turkey	34.9	31.1	27.5	25.9	23.8	23.0	23.4	22.3	24.1	24.4	24.9	25.8	27.1	28.5	29.5
Ukraine	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
United Arab Emirates	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Uruguay[2]	33.0	32.0	41.5	43.2	45.2	49.7	49.7	49.5	52.4	53.0	53.2	53.2	54.4	55.5	56.0
Venezuela	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Average	26.1	24.1	22.7	22.8	24.2	28.6	34.6	36.0	36.8	38.9	40.4	41.4	42.3	42.9	43.4
Asia	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Europe	36.5	34.8	32.0	31.6	29.6	28.8	31.0	30.1	30.8	30.3	30.2	30.5	31.0	31.5	32.0
Latin America	33.2	31.2	29.6	29.7	32.3	35.7	41.1	43.4	44.1	46.4	47.9	48.4	49.0	49.1	49.3
MENAP	1.5	–0.6	–2.5	–3.4	–0.1	15.3	29.2	29.7	31.1	35.7	39.5	42.3	44.7	46.9	48.2
G20 Emerging	27.2	24.8	21.9	21.7	23.2	26.1	32.1	35.2	36.5	39.0	41.1	42.7	44.2	45.3	46.2

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

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

[1] Based on nominal GDP series before the recent revision; therefore, data in the tables are not comparable to the authorities' numbers.

[2] Data are for the nonfinancial public sector (NFPS), which includes central government, local government, social security funds, nonfinancial public corporation, and Banco de Seguros del Estado. The coverage of the fiscal data was changed from consolidated public sector to NFPS with the October 2019 submission. With this narrower coverage the central bank balances are not included in fiscal data, and capitalization bonds issued in the past by the government to the central bank are now part of the NFPS debt. Historical data are also revised accordingly. Debt estimates prior to 2012 are preliminary.

Table A17. Low-Income Developing Countries: General Government Overall Balance, 2010–24

(Percent of GDP)

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Bangladesh	–2.7	–3.6	–3.0	–3.4	–3.1	–4.0	–3.4	–3.3	–4.6	–4.8	–4.8	–4.8	–4.6	–4.5	–4.5
Benin	–0.3	–1.0	–0.2	–1.4	–1.7	–5.6	–4.3	–4.2	–3.0	–2.3	–1.8	–1.7	–1.6	–1.6	–1.4
Burkina Faso	–4.6	–2.3	–3.1	–4.0	–2.0	–2.4	–3.6	–7.9	–5.0	–3.0	–3.0	–3.0	–3.0	–3.0	–3.0
Cambodia	–3.8	–4.7	–4.5	–2.6	–1.6	–0.6	–0.3	–0.8	–0.8	–1.3	–1.7	–2.0	–2.4	–2.8	–2.8
Cameroon	–1.0	–2.4	–1.4	–3.7	–4.2	–4.4	–6.1	–4.9	–2.5	–2.3	–2.1	–1.9	–1.9	–1.9	–1.9
Chad	–4.2	2.4	0.5	–2.1	–4.2	–4.4	–1.9	–0.2	1.9	0.3	1.8	1.9	2.5	3.3	2.7
Congo, Democratic Republic of the	–1.0	–1.0	1.8	1.9	0.0	–0.4	–0.5	1.4	0.4	–0.1	0.1	0.4	0.4	0.4	0.4
Congo, Republic of	16.6	17.0	9.4	–3.6	–13.6	–24.8	–20.4	–7.4	6.6	8.6	8.4	8.0	8.2	7.6	7.4
Côte d'Ivoire	–1.8	–4.0	–3.1	–2.2	–2.2	–2.8	–4.0	–4.5	–4.0	–3.0	–3.0	–3.0	–3.0	–3.0	–3.0
Ethiopia	–1.3	–1.6	–1.2	–1.9	–2.6	–1.9	–2.3	–3.3	–3.0	–2.8	–3.0	–3.0	–3.0	–3.0	–3.0
Ghana	–7.5	–5.5	–8.4	–9.1	–8.0	–4.1	–6.9	–4.1	–7.0	–7.1	–6.1	–4.9	–4.5	–4.4	–4.6
Guinea	–9.6	–0.9	–2.5	–3.9	–3.2	–6.9	–0.1	–2.1	–1.1	–2.6	–2.0	–2.1	–2.2	–2.1	–2.1
Haiti	–2.7	–2.5	–4.7	–7.0	–6.3	–2.5	0.0	0.2	–2.0	–2.6	–2.7	–2.4	–2.2	–2.0	–1.8
Honduras	–3.4	–2.9	–3.5	–5.7	–2.9	–0.8	–0.4	–0.4	0.2	–0.1	–0.1	–0.6	–0.5	–0.7	–1.0
Kenya	–4.4	–4.1	–5.0	–5.7	–7.4	–8.1	–8.5	–7.9	–7.4	–7.4	–6.6	–6.1	–6.1	–6.1	–5.5
Kyrgyz Republic	–5.9	–4.7	–5.9	–3.7	–3.4	–2.7	–6.4	–4.6	–1.3	–2.7	–3.0	–3.0	–3.0	–3.0	–3.0
Lao P.D.R.	–1.5	–1.4	–2.3	–4.0	–3.1	–5.6	–5.1	–5.5	–4.4	–4.3	–4.1	–3.9	–3.8	–3.7	–3.8
Madagascar	–0.9	–2.4	–2.6	–4.0	–2.3	–3.3	–1.3	–2.4	–1.5	–2.3	–4.5	–5.1	–5.6	–5.5	–5.4
Mali	–2.6	–3.4	–1.0	–2.4	–2.9	–1.8	–3.9	–2.9	–4.7	–3.0	–3.0	–3.0	–3.0	–3.0	–3.0
Moldova	–2.2	–2.0	–1.9	–1.6	–1.6	–1.9	–1.8	–0.8	–1.1	–3.0	–3.0	–2.9	–2.2	–2.2	–2.1
Mozambique	–3.8	–4.8	–3.9	–2.7	–10.7	–7.2	–6.0	–3.1	–5.2	–6.5	–4.8	–3.7	–2.6	–1.8	0.1
Myanmar	–4.8	–4.4	–2.7	–1.7	–1.3	–2.8	–3.5	–2.6	–2.6	–3.5	–4.0	–4.2	–4.2	–4.0	–3.9
Nepal	–0.8	–0.8	–1.3	1.8	1.5	0.7	1.4	–3.1	–6.7	–4.3	–4.3	–3.8	–3.7	–3.6	–3.5
Nicaragua	–0.1	–0.1	–0.1	–0.7	–1.3	–1.7	–1.7	–1.6	–3.1	–3.1	–3.6	–0.9	–0.9	–1.0	–1.1
Niger	–2.4	–1.5	–1.1	–2.6	–8.0	–9.0	–6.1	–5.7	–4.1	–4.2	–3.0	–2.7	–2.4	–2.3	–2.0
Nigeria	–4.2	0.4	0.2	–2.3	–2.1	–3.5	–4.0	–5.4	–4.5	–5.0	–4.7	–4.6	–4.6	–4.6	–4.5
Papua New Guinea	3.1	2.2	–1.2	–6.9	–6.3	–4.6	–4.7	–2.5	–3.9	–4.9	–4.2	–3.7	–3.5	–3.5	–3.2
Rwanda	–0.7	–0.9	–2.5	–1.3	–4.0	–2.8	–2.3	–2.5	–2.6	–3.7	–4.1	–4.2	–3.1	–2.9	–3.4
Senegal	–3.9	–4.9	–4.1	–4.3	–3.9	–3.7	–3.3	–2.5	–3.6	–3.0	–3.0	–3.0	–3.0	–3.0	–3.0
Somalia	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Sudan	0.1	–2.3	–7.4	–5.8	–4.7	–3.8	–4.4	–6.5	–7.7	–5.4	–11.1	–12.4	–13.6	–14.7	–15.8
Tajikistan	–3.0	–2.1	0.6	–0.9	–0.1	–2.0	–9.0	–6.0	–2.8	–4.0	–3.0	–3.0	–3.0	–3.0	–3.0
Tanzania	–4.7	–3.5	–4.1	–3.8	–2.9	–3.2	–2.1	–1.2	–1.9	–2.9	–3.5	–3.7	–3.9	–3.8	–3.5
Timor-Leste	–4.4	–4.7	–6.7	–3.6	–13.4	–17.1	–35.3	–20.9	–15.2	–24.3	–31.4	–25.0	–26.6	–21.7	–21.2
Uganda	–5.7	–2.7	–3.0	–4.0	–4.7	–4.7	–4.8	–3.8	–4.2	–6.6	–8.6	–4.7	–4.1	–1.1	–1.6
Uzbekistan	2.7	6.1	6.6	3.0	2.7	1.1	1.6	1.8	2.2	0.6	0.4	0.3	0.1	0.1	0.1
Vietnam	–2.8	–1.1	–6.9	–7.4	–6.3	–6.4	–3.9	–4.7	–4.4	–4.4	–4.3	–4.0	–3.7	–3.5	–3.5
Yemen	–4.1	–4.5	–6.3	–6.9	–4.1	–10.0	–9.3	–5.3	–6.3	–6.9	–7.2	–4.2	–2.0	0.0	2.1
Zambia	–2.4	–1.8	–2.8	–6.2	–5.8	–9.5	–6.1	–7.7	–8.3	–4.8	–5.1	–3.4	–3.1	–2.9	–2.6
Zimbabwe	0.6	–2.2	0.8	–0.6	–0.4	–1.4	–6.2	–8.1	–4.5	–2.7	–1.2	–0.4	–0.1	0.1	0.0
Average	–2.8	–1.3	–2.1	–3.4	–3.3	–4.0	–3.8	–4.1	–4.0	–4.2	–4.2	–3.9	–3.8	–3.7	–3.6
Oil Producers	–3.2	0.2	–0.3	–2.9	–2.8	–4.3	–4.8	–5.3	–4.2	–4.6	–4.4	–4.1	–4.1	–4.1	–4.0
Asia	–2.6	–2.4	–4.3	–4.6	–4.1	–4.6	–3.5	–3.8	–4.3	–4.5	–4.5	–4.3	–4.2	–4.0	–4.0
Latin America	–2.3	–2.0	–2.8	–4.6	–3.2	–1.4	–0.7	–0.6	–1.2	–1.4	–1.5	–1.0	–0.9	–1.0	–1.2
Sub-Saharan Africa	–3.5	–1.0	–1.2	–3.1	–3.3	–4.0	–4.4	–4.6	–4.1	–4.3	–4.1	–3.8	–3.8	–3.7	–3.6
Others	–0.3	–0.2	–1.3	–2.3	–1.5	–2.8	–2.7	–2.7	–2.6	–2.9	–3.9	–3.5	–3.3	–3.0	–2.7

Source: IMF staff estimates and projections. Projections are based on staff assessment 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, 2010–24

(Percent of GDP)

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Bangladesh	–0.8	–1.9	–1.1	–1.4	–1.0	–1.9	–1.5	–1.6	–2.8	–3.1	–3.0	–2.9	–2.6	–2.4	–2.4
Benin	0.1	–0.7	0.2	–1.0	–1.4	–5.0	–3.4	–2.8	–1.4	–0.4	0.0	0.2	0.3	0.3	0.3
Burkina Faso	–4.1	–1.7	–2.4	–3.4	–1.2	–1.7	–2.6	–6.9	–3.8	–1.7	–1.7	–1.6	–1.6	–1.5	–1.5
Cambodia	–3.6	–4.4	–4.2	–2.3	–1.3	–0.3	0.1	–0.5	–0.5	–1.0	–1.3	–1.7	–2.0	–2.4	–2.4
Cameroon	–0.7	–2.0	–1.1	–3.3	–3.8	–4.0	–5.3	–4.0	–1.6	–1.4	–1.1	–1.0	–0.9	–1.0	–1.1
Chad	–3.6	3.0	0.9	–1.5	–3.6	–2.7	0.1	1.3	3.0	1.4	2.9	2.8	3.4	4.1	3.4
Congo, Democratic Republic of the	–0.7	–0.3	2.3	2.4	0.3	–0.1	–0.2	1.6	0.7	0.4	0.6	0.9	1.0	1.0	1.0
Congo, Republic of	17.5	17.1	9.4	–3.4	–13.4	–23.9	–17.8	–5.3	8.8	10.3	9.8	9.3	9.4	8.5	8.1
Côte d'Ivoire	–0.3	–2.2	–1.4	–0.9	–0.9	–1.3	–2.3	–2.8	–2.1	–1.0	–0.9	–1.1	–1.0	–1.1	–0.9
Ethiopia	–0.9	–1.2	–0.9	–1.6	–2.2	–1.5	–1.9	–2.8	–2.5	–2.3	–2.5	–2.5	–2.4	–2.3	–2.2
Ghana	–5.2	–3.5	–5.8	–5.5	–3.4	1.0	–1.5	1.2	–1.4	–1.4	0.4	1.3	1.4	0.8	0.4
Guinea	–8.3	0.5	–1.2	–3.0	–2.2	–6.1	0.9	–1.2	–0.3	–1.8	–1.3	–1.2	–1.2	–1.1	–1.0
Haiti	–2.2	–2.1	–4.4	–6.7	–5.9	–2.3	0.3	0.5	–1.7	–2.1	–2.3	–2.0	–1.8	–1.6	–1.4
Honduras	–4.1	–3.2	–3.6	–5.6	–2.6	0.0	0.2	0.2	0.8	0.9	0.8	0.4	0.7	0.5	0.1
Kenya	–2.5	–2.2	–2.9	–3.3	–4.8	–5.3	–5.3	–4.5	–3.7	–3.6	–2.9	–2.4	–2.4	–2.5	–2.2
Kyrgyz Republic	–5.1	–3.7	–4.9	–2.9	–2.6	–1.8	–5.3	–3.5	0.0	–1.2	–1.6	–1.6	–1.5	–1.4	–1.3
Lao P.D.R.	–1.0	–0.9	–1.7	–3.2	–2.4	–4.8	–4.2	–4.6	–3.3	–2.4	–2.5	–2.4	–2.3	–2.2	–2.2
Madagascar	–0.1	–1.5	–1.9	–3.3	–1.7	–2.5	–0.4	–1.6	–0.6	–1.3	–3.6	–4.3	–4.7	–4.7	–4.5
Mali	–2.2	–2.8	–0.4	–1.9	–2.3	–1.2	–3.3	–2.0	–3.8	–2.0	–2.0	–1.9	–1.9	–1.8	–1.8
Moldova	–1.5	–1.4	–1.3	–1.1	–1.1	–1.2	–0.6	0.3	–0.3	–2.1	–2.1	–2.0	–1.3	–1.2	–1.1
Mozambique	–3.1	–3.9	–2.9	–1.9	–9.6	–5.9	–3.3	0.0	–1.6	–2.5	–1.0	–0.5	0.0	0.7	2.0
Myanmar	–3.5	–3.1	–1.3	–0.4	–0.1	–1.6	–2.3	–1.3	–0.9	–1.8	–2.2	–2.4	–2.2	–2.0	–1.9
Nepal	0.0	0.0	–0.5	2.6	2.1	1.1	1.7	–2.8	–6.2	–3.6	–3.5	–3.0	–2.9	–2.7	–2.6
Nicaragua	0.1	0.4	0.5	–0.4	–0.9	–1.2	–1.1	–0.7	–2.0	–2.0	–2.4	0.2	0.3	0.1	0.0
Niger	–2.2	–1.1	–0.8	–2.3	–7.7	–8.4	–5.1	–4.7	–2.8	–2.8	–1.6	–1.3	–1.2	–1.1	–0.9
Nigeria	–3.6	1.2	1.2	–1.3	–1.2	–2.4	–2.7	–4.0	–2.8	–3.4	–3.3	–3.0	–2.9	–2.7	–2.5
Papua New Guinea	4.0	3.2	–0.2	–5.8	–4.6	–2.9	–2.8	–0.4	–1.5	–2.3	–1.5	–1.2	–1.0	–1.1	–0.9
Rwanda	–0.2	–0.5	–2.0	–0.4	–3.2	–1.9	–1.3	–1.5	–1.4	–2.4	–2.7	–2.8	–1.6	–1.7	–2.3
Senegal	–3.2	–3.7	–3.0	–3.1	–2.6	–2.2	–1.6	–1.1	–1.6	–1.0	–0.6	–1.0	–1.1	–1.0	–1.4
Somalia	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Sudan	1.1	–1.3	–6.2	–5.3	–3.9	–3.1	–3.9	–6.0	–7.4	–4.5	–10.5	–11.9	–13.2	–14.4	–15.6
Tajikistan	–2.5	–1.6	1.1	0.1	0.4	–1.5	–8.3	–5.5	–1.7	–2.9	–1.9	–1.7	–1.7	–1.5	–1.4
Tanzania	–4.0	–2.8	–3.1	–2.6	–1.6	–1.7	–0.6	0.4	–0.2	–1.0	–1.4	–1.4	–1.5	–1.3	–1.1
Timor-Leste	–4.4	–4.7	–6.7	–3.6	–13.4	–17.1	–35.3	–20.8	–15.1	–24.1	–31.0	–24.4	–25.9	–21.0	–20.5
Uganda	–4.8	–1.7	–1.7	–2.7	–3.2	–2.9	–2.4	–1.4	–2.0	–4.2	–6.1	–2.4	–1.9	1.0	0.6
Uzbekistan	2.7	6.1	6.5	2.8	2.5	1.0	1.4	1.6	1.8	0.5	0.3	0.2	0.0	0.0	0.0
Vietnam	–1.6	–0.1	–5.6	–5.9	–4.6	–4.5	–1.9	–2.7	–2.4	–2.3	–2.1	–2.0	–1.8	–1.5	–1.4
Yemen	–1.7	–0.2	–0.9	–1.5	1.5	–3.0	–3.4	–5.1	–6.2	–5.9	–6.1	–2.9	–0.9	0.9	3.2
Zambia	–1.0	–0.8	–1.5	–4.7	–3.6	–6.7	–2.7	–3.7	–3.6	0.2	0.1	1.9	2.4	2.9	3.2
Zimbabwe	1.6	–1.9	1.0	0.0	0.3	–0.5	–5.6	–7.3	–3.6	–1.6	1.1	2.0	2.5	2.7	2.7
Average	–1.9	–0.2	–0.9	–2.2	–2.0	–2.5	–2.2	–2.5	–2.3	–2.4	–2.4	–2.1	–2.0	–1.8	–1.7
Oil Producers	–2.4	1.2	0.9	–1.6	–1.5	–2.8	–3.2	–3.9	–2.6	–3.0	–2.9	–2.6	–2.4	–2.2	–2.0
Asia	–1.3	–1.2	–2.9	–3.1	–2.4	–2.8	–1.8	–2.1	–2.5	–2.7	–2.6	–2.5	–2.3	–2.1	–2.0
Latin America	–2.5	–2.0	–2.6	–4.3	–2.8	–0.8	–0.2	0.0	–0.5	–0.5	–0.6	–0.1	0.1	0.0	–0.2
Sub-Saharan Africa	–2.7	0.0	–0.2	–1.9	–2.1	–2.6	–2.7	–2.9	–2.1	–2.3	–2.1	–1.8	–1.7	–1.6	–1.5
Others	0.6	1.1	0.2	–0.9	0.0	–1.3	–1.6	–2.4	–2.5	–2.3	–3.4	–3.0	–2.8	–2.6	–2.4

Source: IMF staff estimates and projections. Projections are based on staff assessment 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, 2010–24

(Percent of GDP)

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Bangladesh	10.0	10.4	11.2	11.2	10.9	9.8	10.1	10.2	9.7	9.9	10.2	10.2	10.2	10.2	10.1
Benin	13.8	13.7	14.0	13.5	12.6	12.6	11.1	13.6	13.6	14.4	14.4	14.4	14.4	14.4	14.4
Burkina Faso	19.8	20.7	22.4	24.4	21.6	20.7	21.9	22.1	22.2	24.4	23.1	23.4	23.8	24.0	24.2
Cambodia	17.1	15.9	17.2	18.7	20.1	19.6	20.8	21.6	23.8	23.6	23.0	22.6	22.3	21.9	21.9
Cameroon	15.0	16.3	16.3	16.3	16.6	16.5	14.8	15.0	16.1	15.9	15.7	15.9	16.0	16.0	15.9
Chad	20.2	24.8	24.4	20.7	17.8	14.0	12.4	14.6	15.3	15.6	16.4	16.4	16.7	17.6	17.0
Congo, Democratic Republic of the	14.9	13.0	15.5	14.6	18.5	16.8	14.0	11.7	11.6	10.8	10.9	11.5	11.9	12.2	12.6
Congo, Republic of	41.2	46.4	49.1	50.6	48.1	32.6	34.1	27.9	29.2	31.5	32.0	32.7	34.2	34.7	35.1
Côte d'Ivoire	18.1	14.2	19.2	19.7	18.9	20.0	20.0	20.4	19.9	20.3	20.3	20.3	20.3	20.4	20.3
Ethiopia	17.2	16.6	15.5	15.8	14.9	15.4	15.9	15.0	13.1	12.6	11.4	10.9	10.9	11.0	11.0
Ghana	12.5	14.1	13.7	12.6	13.4	14.9	13.4	13.9	14.5	15.8	15.4	15.4	15.4	15.4	15.3
Guinea	10.8	15.1	17.5	14.8	17.0	14.8	16.0	15.3	14.6	15.8	15.5	16.0	16.2	16.4	16.3
Haiti	19.9	22.0	23.8	20.9	18.9	19.2	18.7	17.7	17.3	14.7	15.1	15.0	15.0	15.0	15.0
Honduras	23.1	23.0	22.9	23.8	24.7	25.2	27.0	26.5	26.7	26.8	27.2	27.3	27.3	27.4	27.4
Kenya	19.8	19.5	19.1	19.7	19.8	19.1	19.2	18.3	18.1	17.9	18.1	18.2	18.2	18.2	18.3
Kyrgyz Republic	31.2	32.7	34.7	34.4	35.6	35.6	33.5	33.7	32.8	33.3	32.5	32.6	32.5	32.3	32.0
Lao P.D.R.	20.9	18.8	22.4	20.2	21.9	20.2	16.0	16.1	15.5	15.8	15.9	16.0	16.1	16.3	16.3
Madagascar	13.2	11.7	10.8	10.9	12.4	11.9	14.6	14.8	14.8	16.4	15.0	14.8	14.4	14.6	14.6
Mali	17.7	17.1	14.6	17.4	17.1	19.1	18.3	20.0	15.5	22.1	19.8	19.8	20.3	20.5	20.6
Moldova	31.9	30.5	31.7	30.9	31.8	30.0	28.6	29.8	30.5	30.7	30.5	30.0	29.8	29.9	29.9
Mozambique	26.1	27.3	27.0	31.4	31.8	28.1	26.2	28.3	26.0	30.5	29.9	28.8	28.0	28.2	27.0
Myanmar	8.9	9.5	15.5	20.8	22.5	21.4	19.6	18.3	17.7	17.2	17.2	17.2	17.5	17.9	18.2
Nepal	18.0	17.8	18.0	19.6	20.4	20.8	23.3	24.1	25.3	26.2	26.2	26.4	26.5	26.6	26.8
Nicaragua	22.5	23.5	23.9	23.5	23.3	23.9	25.1	25.4	24.2	24.3	24.0	24.4	25.1	25.5	25.8
Niger	18.2	17.9	21.4	24.6	23.0	23.3	20.3	21.2	25.0	25.7	26.0	25.4	26.2	26.1	26.2
Nigeria	12.4	17.7	14.3	11.0	10.5	7.6	5.5	6.6	8.5	7.7	7.4	7.3	7.4	7.6	7.7
Papua New Guinea	21.5	21.9	21.2	20.7	20.8	18.3	16.1	16.2	18.5	16.2	16.5	16.4	16.6	16.6	16.6
Rwanda	24.3	24.7	22.9	25.5	24.2	24.6	23.5	22.9	24.1	23.1	22.2	21.6	22.0	22.2	22.1
Senegal	17.6	18.2	18.6	17.7	19.2	19.3	20.7	19.5	18.6	20.2	20.7	21.6	22.1	22.9	23.3
Somalia	. . .	. . .	. . .	2.8	3.7	3.5	4.1	6.0	5.7	6.9	7.2	7.4	7.7	8.0	8.3
Sudan	17.5	15.9	9.1	9.6	8.8	8.4	7.1	7.2	7.5	12.4	5.7	4.7	4.1	3.7	3.4
Tajikistan	23.2	24.9	25.1	26.9	28.4	29.9	29.9	29.7	29.1	27.8	28.1	28.1	28.1	28.1	28.1
Tanzania	15.3	15.4	15.4	15.0	14.4	14.0	14.8	15.4	14.6	14.0	14.2	14.5	14.7	15.0	15.2
Timor-Leste	22.4	19.8	15.8	20.2	26.3	33.4	37.0	34.3	33.7	29.0	25.9	26.2	27.1	24.8	23.5
Uganda	13.2	14.5	13.5	12.7	13.4	15.2	14.8	15.1	16.0	17.1	17.2	18.2	18.0	20.5	21.0
Uzbekistan	30.4	31.5	32.5	29.1	28.3	25.6	25.4	24.7	27.9	25.4	25.4	25.6	25.8	25.9	26.1
Vietnam	27.3	25.9	22.6	23.1	22.2	23.8	24.0	24.5	24.5	23.4	23.3	23.1	23.1	23.2	23.1
Yemen	26.1	25.3	29.9	23.9	23.6	12.3	8.4	3.8	5.8	8.5	8.2	11.4	13.5	14.8	18.7
Zambia	15.6	17.7	18.7	17.6	18.9	18.8	18.2	17.5	19.1	19.4	19.7	19.8	19.8	19.7	19.7
Zimbabwe	18.7	21.1	21.2	20.3	20.0	19.1	17.1	14.4	13.1	14.8	16.8	19.5	20.8	20.8	20.8
Average	16.9	18.6	17.7	16.6	16.3	15.1	14.7	15.1	15.5	15.3	15.1	15.1	15.1	15.2	15.3
Oil Producers	14.8	18.9	16.6	13.7	13.2	9.8	8.2	9.0	10.8	10.1	9.8	9.7	9.8	9.9	10.0
Asia	17.5	17.3	17.4	18.3	18.2	17.8	17.5	17.6	17.5	17.0	17.1	17.0	17.0	17.0	17.0
Latin America	22.2	22.9	23.4	23.1	23.1	23.6	24.9	24.5	24.0	23.8	24.1	24.2	24.4	24.5	24.7
Sub-Saharan Africa	14.9	17.8	16.2	14.5	14.3	12.6	12.0	12.7	13.4	13.3	12.9	12.9	12.9	13.1	13.1
Others	24.1	24.2	24.9	22.3	21.7	18.1	17.7	16.8	18.6	19.9	19.2	19.9	20.3	20.8	21.7

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

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

Table A20. Low-Income Developing Countries: General Government Expenditure, 2010–24

(Percent of GDP)

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Bangladesh	12.7	14.0	14.2	14.6	14.0	13.8	13.4	13.6	14.3	14.8	15.0	14.9	14.8	14.7	14.6
Benin	14.1	14.7	14.2	14.9	14.2	18.2	15.4	17.8	16.6	16.6	16.2	16.1	16.0	16.0	15.9
Burkina Faso	24.4	23.0	25.5	28.4	23.5	23.1	25.5	30.0	27.2	27.4	26.1	26.4	26.9	27.1	27.3
Cambodia	20.9	20.6	21.7	21.4	21.7	20.3	21.1	22.4	24.6	25.0	24.7	24.7	24.6	24.7	24.6
Cameroon	16.0	18.6	17.8	20.0	20.8	20.9	20.9	19.8	18.5	18.2	17.8	17.8	17.9	17.8	17.9
Chad	24.4	22.4	23.9	22.8	22.0	18.3	14.4	14.9	13.3	15.3	14.6	14.5	14.1	14.3	14.3
Congo, Democratic Republic of the	15.9	14.0	13.7	12.7	18.5	17.2	14.5	10.4	11.2	10.9	10.8	11.1	11.5	11.8	12.2
Congo, Republic of	24.6	29.5	39.7	54.3	61.7	57.4	54.5	35.2	22.6	22.9	23.7	24.7	25.9	27.0	27.7
Côte d'Ivoire	20.0	18.2	22.3	21.9	21.0	22.8	24.0	24.9	23.8	23.3	23.3	23.3	23.3	23.4	23.3
Ethiopia	18.5	18.2	16.6	17.8	17.5	17.3	18.2	18.2	16.1	15.4	14.4	13.9	13.9	13.9	14.0
Ghana	20.0	19.6	22.1	21.7	21.4	18.9	20.3	18.0	21.5	22.9	21.5	20.4	19.8	19.7	19.8
Guinea	20.5	16.0	20.0	18.6	20.2	21.7	16.1	17.4	15.7	18.4	17.5	18.1	18.4	18.5	18.4
Haiti	22.6	24.5	28.6	28.0	25.2	21.7	18.7	17.5	19.3	17.2	17.8	17.4	17.2	16.9	16.8
Honduras	26.5	25.9	26.4	29.6	27.6	26.0	27.4	26.9	26.5	26.9	27.3	27.9	27.8	28.0	28.4
Kenya	24.2	23.6	24.2	25.4	27.2	27.2	27.7	26.1	25.5	25.3	24.8	24.3	24.3	24.3	23.8
Kyrgyz Republic	37.1	37.4	40.6	38.1	39.0	38.3	39.9	38.3	34.1	36.0	35.5	35.6	35.5	35.3	35.0
Lao P.D.R.	22.4	20.2	24.7	24.2	25.0	25.8	21.1	21.6	19.9	20.1	20.0	19.9	19.9	20.0	20.1
Madagascar	14.0	14.1	13.4	14.9	14.7	15.2	15.8	17.2	16.3	18.7	19.5	19.9	20.0	20.1	20.0
Mali	20.3	20.6	15.5	19.8	20.0	20.9	22.3	22.9	20.2	25.1	22.8	22.8	23.3	23.5	23.6
Moldova	34.1	32.6	33.7	32.4	33.4	31.9	30.3	30.6	31.6	33.7	33.5	32.9	32.0	32.1	32.0
Mozambique	29.9	32.2	30.8	34.1	42.5	35.2	32.2	31.4	31.2	37.0	34.7	32.6	30.6	30.0	26.9
Myanmar	13.6	13.9	18.1	22.6	23.8	24.2	23.0	20.9	20.4	20.6	21.2	21.4	21.7	21.9	22.1
Nepal	18.8	18.6	19.3	17.8	18.8	20.1	21.9	27.2	31.9	30.6	30.6	30.3	30.2	30.2	30.4
Nicaragua	22.6	23.5	24.1	24.2	24.6	25.6	26.8	26.9	27.3	27.4	27.5	25.3	26.0	26.5	27.0
Niger	20.6	19.4	22.5	27.2	31.1	32.4	26.3	26.8	29.2	29.8	29.0	28.1	28.6	28.4	28.2
Nigeria	16.6	17.4	14.1	13.4	12.6	11.1	9.5	12.0	13.0	12.7	12.1	11.8	12.0	12.2	12.2
Papua New Guinea	18.4	19.7	22.4	27.6	27.1	22.9	20.9	18.7	22.4	21.1	20.7	20.1	20.1	20.2	19.7
Rwanda	25.0	25.6	25.3	26.8	28.3	27.4	25.8	25.4	26.7	26.7	26.3	25.8	25.1	25.1	25.6
Senegal	21.6	23.1	22.8	22.0	23.1	23.0	24.0	22.0	22.2	23.2	23.7	24.6	25.1	25.9	26.3
Somalia	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Sudan	17.4	18.2	16.5	15.3	13.5	12.2	11.5	13.7	15.1	17.8	16.9	17.1	17.8	18.4	19.2
Tajikistan	26.1	27.0	24.5	27.8	28.5	31.9	38.9	35.6	31.9	31.8	31.1	31.1	31.1	31.1	31.1
Tanzania	20.0	18.9	19.5	18.8	17.3	17.2	16.9	16.6	16.5	16.9	17.6	18.1	18.6	18.8	18.8
Timor-Leste	26.7	24.5	22.5	23.8	39.7	50.4	72.3	55.1	48.9	53.3	57.3	51.1	53.7	46.5	44.7
Uganda	18.8	17.2	16.5	16.7	18.1	19.8	19.7	18.9	20.1	23.7	25.8	22.9	22.1	21.6	22.6
Uzbekistan	27.7	25.4	25.9	26.1	25.6	24.5	23.8	22.9	25.6	24.8	25.0	25.4	25.6	25.8	26.1
Vietnam	30.0	27.0	29.5	30.5	28.5	30.2	27.8	29.2	28.8	27.8	27.6	27.1	26.9	26.7	26.6
Yemen	30.2	29.8	36.2	30.8	27.8	22.3	17.7	9.1	12.1	15.4	15.3	15.7	15.4	14.8	16.6
Zambia	18.1	19.5	21.5	23.8	24.7	28.3	24.3	25.2	27.4	24.2	24.8	23.3	22.9	22.6	22.4
Zimbabwe	18.1	23.2	20.4	20.9	20.4	20.5	23.4	22.5	17.5	17.5	18.1	19.9	20.9	20.8	20.9
Average	19.8	19.9	19.8	20.1	19.7	19.1	18.6	19.2	19.5	19.5	19.3	19.0	19.0	19.0	18.9
Oil Producers	18.0	18.7	16.9	16.6	15.9	14.1	13.0	14.3	15.0	14.7	14.1	13.9	13.9	14.0	14.0
Asia	20.2	19.7	21.7	22.9	22.2	22.4	21.0	21.3	21.8	21.5	21.6	21.3	21.2	21.0	21.0
Latin America	24.6	24.9	26.2	27.7	26.2	25.0	25.6	25.2	25.2	25.2	25.6	25.2	25.3	25.5	25.8
Sub-Saharan Africa	18.4	18.8	17.5	17.6	17.5	16.6	16.4	17.4	17.5	17.5	17.0	16.7	16.7	16.8	16.7
Others	24.5	24.3	26.2	24.9	23.5	21.2	20.6	19.8	21.7	23.2	23.4	23.8	24.0	24.2	24.8

Source: IMF staff estimates and projections. Projections are based on staff assessment 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, 2010–24

(Percent of GDP)

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Bangladesh	35.5	36.6	36.2	35.8	35.3	33.7	33.3	32.6	34.0	34.6	35.3	35.9	36.4	36.6	36.9
Benin	21.0	21.9	19.5	18.5	22.3	30.9	35.9	39.6	41.0	40.9	39.7	38.1	36.7	35.4	34.1
Burkina Faso	31.2	27.6	28.4	29.1	29.9	35.6	39.2	38.4	42.9	42.9	42.6	42.3	42.0	41.7	41.5
Cambodia	28.7	29.7	31.5	31.7	31.9	31.2	29.1	30.0	28.6	29.6	30.1	30.6	31.3	32.6	33.7
Cameroon	14.7	15.7	15.4	18.2	21.5	32.0	32.8	37.6	39.1	40.5	40.5	40.2	39.6	38.8	38.1
Chad	30.1	30.6	28.8	30.5	41.5	43.9	51.5	49.8	48.3	44.7	40.2	36.2	32.1	29.0	26.6
Congo, Democratic Republic of the	30.6	25.0	21.8	19.1	16.8	17.0	21.7	19.1	15.3	13.5	11.6	9.9	8.3	6.8	5.7
Congo, Republic of	46.3	36.2	39.0	43.3	53.6	102.9	118.6	117.5	87.8	78.5	73.3	69.3	64.3	57.8	55.4
Côte d'Ivoire	63.0	69.2	45.0	43.4	44.8	47.3	48.4	49.8	53.2	52.7	51.5	51.0	51.1	51.5	53.1
Ethiopia	39.6	45.3	42.2	47.5	47.6	54.5	55.8	58.6	61.0	59.1	54.4	52.2	50.6	50.3	50.3
Ghana	34.6	31.4	35.6	43.2	51.2	54.8	57.1	57.3	59.3	63.8	63.5	62.5	61.1	58.5	57.3
Guinea	68.8	58.1	27.2	34.0	35.1	41.9	42.5	40.6	38.2	45.4	44.8	43.3	42.1	41.1	40.1
Haiti	17.2	11.8	16.1	21.5	26.3	30.3	33.7	31.0	33.3	36.5	36.5	36.7	36.6	36.5	36.4
Honduras	23.6	25.2	29.8	37.7	37.5	37.4	38.4	39.2	40.2	41.5	40.8	40.6	39.3	38.7	38.1
Kenya	44.4	43.0	43.9	44.0	48.6	51.4	54.5	55.2	60.1	61.6	61.3	61.7	61.8	62.5	62.1
Kyrgyz Republic	59.7	50.1	50.5	47.1	53.6	67.1	59.1	58.8	56.0	56.3	55.7	55.5	54.7	54.6	54.6
Lao P.D.R.	49.3	43.0	46.1	49.5	53.5	53.1	54.2	55.8	57.2	58.0	56.2	55.5	54.7	53.9	53.3
Madagascar	37.0	35.0	35.5	42.5	34.7	35.7	47.1	46.0	45.7	46.5	47.5	49.3	51.3	53.3	55.2
Mali	25.3	24.0	25.4	26.4	26.9	30.7	36.0	36.0	37.3	37.6	38.2	38.9	39.4	39.5	39.8
Moldova	25.5	24.2	25.9	24.9	30.3	37.8	35.6	31.8	29.7	29.5	31.5	32.3	32.6	32.9	33.2
Mozambique	43.3	38.0	40.1	53.1	67.2	94.2	129.9	100.5	99.8	108.8	106.8	107.2	108.2	101.7	90.3
Myanmar	50.2	47.7	46.5	43.4	37.6	37.1	39.8	35.2	38.2	38.7	38.7	38.9	39.0	39.1	39.1
Nepal	34.0	31.7	34.3	32.2	28.2	25.6	27.9	26.1	30.2	32.6	34.9	36.2	37.5	38.7	39.7
Nicaragua	30.3	28.8	27.9	28.8	28.7	28.9	30.9	33.9	37.2	39.0	40.2	41.2	41.8	42.4	42.9
Niger	20.6	20.1	24.6	26.0	29.0	39.9	44.6	54.4	53.8	55.8	54.3	52.5	48.3	46.5	44.3
Nigeria[1]	9.6	17.6	17.7	18.6	17.5	20.3	23.4	25.3	27.3	29.8	31.4	32.6	33.9	35.1	36.0
Papua New Guinea	17.3	16.3	19.1	24.9	26.9	29.9	33.7	33.1	35.5	41.4	44.0	45.6	46.4	46.9	47.2
Rwanda	19.0	16.3	18.6	20.8	26.6	29.7	32.9	36.5	40.7	49.1	50.6	52.2	52.2	51.2	51.5
Senegal	28.3	32.7	34.2	36.8	42.4	44.5	47.5	61.2	61.6	63.3	63.1	63.4	62.2	58.5	57.4
Somalia	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Sudan	74.6	78.1	117.7	105.8	84.4	92.2	128.4	159.2	212.1	207.0	212.8	214.9	210.0	210.0	212.4
Tajikistan	36.6	35.3	32.3	29.1	27.7	34.7	42.1	50.4	47.9	45.4	45.0	44.9	45.1	45.7	45.6
Tanzania	27.0	27.4	28.7	30.0	32.6	35.9	36.4	36.6	37.3	37.7	38.2	38.8	39.5	40.0	40.0
Timor-Leste	0.0	0.0	0.0	0.1	0.5	1.5	3.1	4.3	6.1	. . .	. . .	. . .	. . .	. . .	. . .
Uganda	22.4	23.4	24.5	27.8	30.7	34.3	37.1	39.7	41.4	43.6	47.0	48.7	48.7	46.9	43.7
Uzbekistan	7.0	7.0	7.4	6.6	6.4	7.1	8.6	20.2	20.6	23.3	24.8	24.8	24.7	24.8	25.0
Vietnam	48.1	45.6	48.1	51.7	54.7	57.1	59.7	58.2	55.6	54.3	53.3	52.5	51.6	50.5	49.4
Yemen	42.4	45.7	47.3	48.2	48.7	65.5	79.6	84.3	64.8	56.3	56.8	43.5	36.1	30.5	22.5
Zambia	18.9	20.8	25.4	27.1	36.1	62.3	60.7	61.8	78.1	91.6	95.5	98.0	97.6	96.7	95.1
Zimbabwe	49.6	41.4	37.2	38.6	40.3	41.8	54.2	52.9	37.1	17.7	15.1	15.4	15.3	14.9	14.5
Average	29.7	31.5	32.2	33.2	33.4	37.6	42.0	44.0	44.8	45.0	45.1	44.9	44.5	44.2	43.8
Oil Producers	15.8	21.9	20.9	22.1	21.8	26.3	30.3	32.7	33.6	34.9	35.6	35.9	36.4	37.0	37.5
Asia	40.5	39.6	40.6	41.9	42.2	42.4	43.6	42.2	42.3	42.7	42.7	42.8	42.7	42.5	42.2
Latin America	24.1	23.3	26.3	31.5	32.5	33.4	35.2	36.1	37.9	39.9	39.8	40.0	39.4	39.2	38.9
Sub-Saharan Africa	22.1	25.5	25.1	26.9	27.9	33.1	37.9	40.3	42.0	43.2	43.2	43.3	43.3	43.3	43.1
Others	44.7	44.6	51.4	47.0	41.9	48.7	59.2	76.3	80.8	71.4	73.3	68.8	64.2	61.3	58.7

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

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

[1] Debt includes overdrafts from the Central Bank of Nigeria and liabilities of the Asset Management Corporation of Nigeria.

Table A22. Low-Income Developing Countries: General Government Net Debt, 2010–24

(Percent of GDP)

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Bangladesh	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Benin	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Burkina Faso	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Cambodia	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Cameroon	10.5	12.6	13.1	15.9	19.9	27.8	31.2	34.2	36.6	37.8	37.5	37.3	37.2	36.9	36.4
Chad	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Congo, Democratic Republic of the	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Congo, Republic of	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Côte d'Ivoire	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Ethiopia	32.4	40.0	37.0	41.9	43.0	49.6	51.8	54.6	57.4	56.1	51.9	50.2	48.8	48.8	49.0
Ghana	32.2	28.6	34.0	40.2	46.3	50.7	52.0	52.0	54.8	60.4	60.4	59.8	58.7	56.4	55.4
Guinea	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Haiti	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Honduras	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Kenya	40.2	39.1	40.1	40.1	44.4	46.3	49.1	49.4	54.4	57.3	58.0	58.4	58.4	59.1	59.5
Kyrgyz Republic	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Lao P.D.R.	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Madagascar	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Mali	17.3	17.5	21.3	20.2	19.7	23.1	30.0	30.9	33.9	33.6	33.8	34.0	34.2	34.1	33.9
Moldova	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Mozambique	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Myanmar	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Nepal	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Nicaragua	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Niger	16.5	16.4	19.6	20.4	22.6	34.6	40.1	48.7	49.8	52.0	50.7	49.2	45.3	43.6	41.5
Nigeria[1]	6.3	12.6	10.8	11.7	13.8	15.9	19.0	20.9	23.1	26.0	28.0	29.6	31.2	32.6	33.8
Papua New Guinea	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Rwanda	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Senegal	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Somalia	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Sudan	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Tajikistan	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Tanzania	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Timor-Leste	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Uganda	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Uzbekistan	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Vietnam	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Yemen	38.3	42.3	45.3	46.7	47.8	64.5	78.5	83.3	64.1	55.7	56.4	43.2	35.8	30.2	22.3
Zambia	15.9	16.4	20.1	25.2	31.8	56.1	51.3	55.9	67.0	77.7	82.4	85.5	86.2	86.3	85.5
Zimbabwe	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Average	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Oil Producers	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Asia	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Latin America	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Sub-Saharan Africa	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Others	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .

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

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

[1] The overdrafts and government deposits at the Central Bank of Nigeria almost cancel out, and Asset Management Corporation of Nigeria debt is roughly halved. See footnote 1 in Table A21.

Table A23. Advanced Economies: Structural Fiscal Indicators

(Percent of GDP, except where otherwise indicated)

	Pension Spending Change, 2018–30[1]	Net Present Value of Pension Spending Change, 2018–50[1,2]	Health Care Spending Change, 2018–30	Net Present Value of Health Care Spending Change, 2018–50[2]	Gross Financing Need, 2019[3]	Average Term to Maturity, 2019 (years)[4]	Debt to Average Maturity, 2019	Projected Interest Rate–Growth Differential, 2019–24 (percent)	Precrisis Overall Balance, 2000–07	Projected Overall Balance, 2019–24	Nonresident Holding of General Government Debt, 2018 (percent of total)[5]
Australia	0.8	22.6	1.3	44.5	2.3	7.7	5.4	–1.0	1.1	–0.2	40.5
Austria	0.6	16.7	0.9	37.7	7.6	9.9	7.2	–1.4	–2.2	0.2	72.9
Belgium	0.5	18.9	1.7	66.3	17.1	9.7	10.4	–0.9	–0.5	–1.4	57.1
Canada	1.0	18.4	1.0	34.3	9.6	5.5	15.9	–0.3	1.1	–0.6	22.3
Cyprus	0.7	22.6	. . .	. . .	8.7	6.6	14.6	–2.4	–2.3	3.0	73.5
Czech Republic	0.1	21.2	0.6	20.8	4.1	5.4	5.8	–2.4	–3.8	–0.2	39.1
Denmark	–1.1	–32.6	1.3	40.1	3.8	8.1	4.1	–0.7	2.5	0.0	30.0
Estonia	–0.8	–19.3	0.3	14.4	. . .	. . .	. . .	–5.0	1.4	–0.2	67.7
Finland	1.2	14.1	1.3	39.1	6.4	6.5	9.1	–1.9	4.0	–0.9	67.1
France	0.4	–0.3	1.2	41.8	13.5	7.5	13.2	–1.4	–2.7	–2.6	52.8
Germany	1.3	35.2	0.7	32.0	3.6	5.9	9.9	–2.1	–2.5	0.9	49.3
Hong Kong SAR	1.7	50.5	. . .	. . .	. . .	. . .	. . .	2.3	0.0	1.2	. . .
Iceland	1.5	46.0	1.5	54.5	2.8	14.1	2.4	2.7	1.1	0.1	22.0
Ireland	0.7	27.7	0.6	23.6	7.2	10.0	6.1	–2.7	1.5	0.4	63.2
Israel	0.5	15.9	0.3	12.1	. . .	6.1	10.2	–1.1	–3.8	–3.8	14.6
Italy[6]	1.7	51.2	0.6	26.3	23.0	6.7	19.9	0.7	–3.1	–2.5	29.4
Japan	–1.5	–18.3	2.1	63.9	39.6	8.0	29.7	–0.8	–6.0	–2.1	11.7
Korea	1.9	72.3	2.2	82.1	1.2	7.4	5.5	–0.3	1.9	–0.9	12.9
Latvia	–0.9	–22.4	0.5	18.0	. . .	8.4	4.3	–2.6	–1.3	–0.8	78.6
Lithuania	0.2	0.7	0.9	30.9	2.8	6.5	4.9	–2.9	–1.8	0.2	83.7
Luxembourg	1.2	46.4	0.9	35.3	. . .	5.5	3.9	–3.4	2.4	1.1	44.4
Malta	–0.8	–10.1	. . .	. . .	5.1	8.6	4.9	–2.3	–4.9	0.7	14.0
Netherlands	0.4	17.8	1.9	65.1	4.9	7.2	6.8	–2.1	–0.8	0.5	43.7
New Zealand	1.5	44.4	1.5	50.8	4.4	6.9	4.3	–0.4	3.1	0.8	58.2
Norway	0.8	19.1	2.2	73.8	. . .	4.6	8.7	–2.0	13.2	8.0	47.3
Portugal	0.8	19.7	1.2	43.0	14.0	6.2	18.9	–0.6	–4.5	0.5	54.3
Singapore[7]	1.2	35.8	. . .	. . .	1.0	3.9	28.9	. . .	2.8	3.6	. . .
Slovak Republic	–0.8	–12.4	0.5	20.0	3.7	8.6	5.6	–2.5	–5.0	–1.2	60.8
Slovenia	1.1	55.0	0.8	31.9	5.9	8.9	7.5	–1.9	–1.0	0.3	62.3
Spain	0.3	26.1	1.2	46.9	16.6	7.4	13.1	–0.9	0.4	–1.9	49.5
Sweden	–0.7	–22.9	0.6	21.2	3.8	4.6	8.0	–2.6	1.2	0.3	32.3
Switzerland	0.3	13.8	2.1	74.1	0.6	10.9	3.5	–1.2	–0.3	0.5	10.8
United Kingdom	0.3	11.2	1.4	49.7	9.6	15.0	5.7	–0.8	–1.9	–1.3	33.5
United States	1.2	29.4	5.3	171.3	26.1	5.7	18.6	–1.3	–3.1	–5.4	30.7
Average	0.7	22.4	3.1	100.6	19.4	7.0	15.9	–1.2	–2.2	–2.8	33.6
G7	0.8	21.0	3.5	113.7	22.8	6.9	17.9	–1.2	–3.1	–3.6	31.6
G20 Advanced	0.8	23.0	3.4	110.3	21.3	6.9	17.0	–1.1	–2.8	–3.4	31.3

Sources: Bloomberg Finance L.P.; 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 based on data availability.

[1] Pension projections rely on authorities' estimates when these are available. For the European Union countries, pension projections are based on *The 2018 Ageing Report* of the European Commission. When authorities' estimates are not available, staff projections use the methodology described in Clements, Eich, and Gupta, *Equitable and Sustainable Pensions: Challenges and Experience* (IMF 2014). Staff projections for health care spending are driven by demographic 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 country specific historic average and converge to the advanced economy historic average by 2050 (0.8 percent).

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

[3] Gross financing need is defined as the projected overall deficit and maturing government debt in 2018. Data are from Bloomberg Finance L.P. and IMF staff projections.

[4] For most countries, average term to maturity data refer to central government securities; the source is Bloomberg Finance L.P.

[5] Nonresident holding of general government debt data are for the fourth quarter of 2018 or latest available from the Joint External Debt Hub (JEDH), Quarterly External Debt Statistics, which include marketable and nonmarketable debt. For some countries, tradable instruments in the JEDH are reported at market value. External debt in US dollars is converted to local currency, then taken as a percentage of 2018 gross general government debt.

[6] Italy's pension projections do not reflect the new demographic assumptions. Taking more prudent assumptions for the employment rate, productivity growth, and demographics, staff calculations show that the change in pension spending over 2015–30 would be about 3 percent of GDP; see Italy 2017 Article IV Staff Report, Box 4.

[7] Singapore's general government debt is covered by financial assets and is issued to deepen the domestic market, meet the Central Provident Fund's investment needs, and provide individuals a long-term savings option.

Table A24. Emerging Market and Middle-Income Economies: Structural Fiscal Indicators

(Percent of GDP, except where otherwise indicated)

	Pension Spending Change, 2018–30[1]	Net Present Value of Pension Spending Change, 2018–50[1,2]	Health Care Spending Change, 2018–30	Net Present Value of Health Care Spending Change, 2018–50[2]	Gross Financing Need, 2019[3]	Average Term to Maturity, 2019 (years)[4]	Debt to Average Maturity, 2019	Projected Interest Rate–Growth Differential, 2019–24 (percent)	Precrisis Overall Balance, 2000–07	Projected Overall Balance, 2019–24	Nonresident Holding of General Government Debt, 2018 (percent of total)[5]
Algeria	2.8	103.1	0.6	26.6	. . .	. . .	. . .	–2.6	7.4	–4.1	2.3
Angola	0.1	5.7	0.1	3.8	. . .	. . .	. . .	–4.6	2.5	0.4	. . .
Argentina	0.8	39.7	0.3	11.3	16.0	10.5	8.9	–20.5	0.0	–3.1	38.8
Azerbaijan	4.0	116.6	0.2	6.7	. . .	. . .	. . .	0.6	6.3	2.7	. . .
Belarus	5.5	142.7	0.5	17.6	. . .	5.0	9.3	0.1	–7.2	–2.6	61.0
Brazil[6]	4.7	172.7	0.8	28.6	15.1	6.2	14.7	1.9	–3.6	–6.6	10.7
Chile	–0.7	–12.3	0.9	33.3	2.5	10.5	2.6	–2.1	2.4	–1.3	30.2
China	2.5	93.4	0.7	24.5	. . .	. . .	. . .	–5.2	–1.8	–6.2	. . .
Colombia	–0.4	–18.9	1.0	37.9	4.9	8.5	6.0	–0.4	–1.9	–0.8	29.3
Croatia	–0.5	–33.3	0.8	30.3	9.6	4.4	16.2	–1.2	–4.3	0.1	34.5
Dominican Republic	0.2	8.1	0.4	14.5	7.2	8.6	6.1	–3.3	–2.0	–2.7	49.9
Ecuador	0.8	31.1	0.6	24.5	7.3	5.7	8.6	3.3	1.2	2.2	68.4
Egypt	0.6	21.3	0.2	7.6	36.6	3.0	28.4	–4.5	–4.6	–5.0	20.8
Hungary	–1.0	–4.7	0.7	24.4	15.5	3.4	19.7	–2.8	–6.4	–1.6	36.7
India	0.7	27.3	0.2	8.4	10.2	9.3	7.4	–3.1	–8.6	–7.1	5.7
Indonesia	0.3	10.6	0.2	6.2	4.3	8.4	3.6	–2.5	–0.7	–1.8	59.5
Iran	1.8	99.2	. . .	. . .	. . .	. . .	. . .	–15.7	3.1	–5.8	. . .
Kazakhstan	2.1	53.5	0.2	8.7	. . .	6.9	3.0	–3.2	4.7	0.1	31.8
Kuwait	8.2	406.8	0.5	17.5	. . .	3.6	4.3	2.1	29.0	2.8	. . .
Malaysia	2.1	78.1	0.4	13.2	10.0	7.1	7.9	–2.0	–3.8	–2.7	21.7
Mexico	0.6	17.7	0.5	17.7	10.3	8.4	6.4	2.3	–2.0	–2.4	30.1
Morocco	1.7	54.6	0.4	13.6	9.2	5.9	11.1	–1.7	–3.3	–3.2	20.2
Oman	0.6	28.3	0.4	18.6	. . .	9.5	6.3	2.4	10.0	–7.8	. . .
Pakistan	0.1	5.2	0.1	2.6	45.6	1.1	72.2	–2.8	–2.9	–5.2	29.1
Peru	0.3	14.5	0.6	21.0	3.5	12.4	2.2	–0.3	–0.4	–1.1	27.2
Philippines	0.3	9.4	0.2	5.8	7.0	8.1	4.8	–3.3	–2.4	–1.8	25.9
Poland	–0.2	–3.8	0.7	24.5	7.2	4.8	10.0	–2.5	–4.1	–2.4	45.4
Qatar	1.1	52.1	0.5	20.4	. . .	8.1	6.6	0.0	9.0	5.9	. . .
Romania	–1.0	–5.7	0.6	22.2	7.8	5.8	6.4	–2.5	–2.6	–3.6	45.3
Russia	3.2	82.1	0.5	17.1	–0.3	7.0	2.4	0.8	4.2	–0.2	18.2
Saudi Arabia	1.9	83.9	0.5	21.8	. . .	8.2	2.8	1.7	6.9	–7.0	. . .
South Africa	0.2	10.1	0.5	18.6	14.9	13.1	4.6	0.8	–0.6	–6.5	31.8
Sri Lanka	1.1	36.1	0.3	9.4	18.0	5.3	17.0	–1.0	–6.9	–4.5	43.2
Thailand	3.8	116.7	0.5	18.7	5.6	6.8	6.2	–2.0	–0.4	–0.7	14.7
Turkey[7]	0.3	28.4	0.7	25.8	8.0	6.3	4.8	–2.6	–5.8	–5.0	40.6
Ukraine	0.5	31.0	0.5	16.8	9.5	9.0	6.3	–2.0	–2.4	–2.1	50.9
United Arab Emirates	0.9	43.2	0.4	16.9	. . .	. . .	. . .	–0.9	9.1	–2.4	. . .
Uruguay[8]	–0.3	1.4	0.8	30.5	18.2	11.2	5.7	–4.6	–1.8	–3.0	43.9
Venezuela	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	0.1	. . .	. . .
Average	1.9	72.2	0.6	20.5	10.4	6.9	9.2	–3.6	–1.1	–4.9	16.1
G20 Emerging	2.1	78.7	0.6	20.9	9.4	7.0	8.2	–3.5	–1.8	–5.5	13.0

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 based on data availability.

[1] Pension projections rely on authorities' estimates when these are available. For the European Union countries, pension projections are based on *The 2018 Ageing Report* of the European Commission. When authorities' estimates are not available, staff projections use the methodology described in Clements, Eich, and Gupta, *Equitable and Sustainable Pensions: Challenges and Experience* (IMF 2014). Staff projections for health care spending are driven by demographic 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 at the advanced economy historic average by 2050 (0.8 percent).

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

[3] Gross financing need is defined as the projected overall balance and maturing government debt in 2018. Data are from IMF staff projections.

[4] Average term to maturity data refer to government securities; the source is Bloomberg Finance L.P.

[5] Nonresident holding of general government debt data are the fourth quarter of 2018 or latest available from the Joint External Debt Hub (JEDH), Quarterly External Debt Statistics, which include marketable and nonmarketable debt. For some countries, tradable instruments in the JEDH are reported at market value. External debt in US dollars is converted to local currency, then taken as a percentage of 2018 gross general government debt.

[6] IMF staff projects an increase in pension spending in Brazil equivalent to 5.9 percent of GDP by 2030. For more detail, refer to *Fiscal Challenges of an Aging Population in Brazil* (IMF 2016). Note that these projections do not include savings that would result if the pension reform currently under debate is approved.

[7] Average Term to Maturity indicator for Turkey is in accordance with the published data for Central Government debt securities as of January 2018.

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

Table A25. Low-Income Developing Countries: Structural Fiscal Indicators

(Percent of GDP, except where otherwise indicated)

	Pension Spending Change, 2018–30[1]	Net Present Value of Pension Spending Change, 2018–50[1,2]	Health Care Spending Change, 2018–30	Net Present Value of Health Care Spending Change, 2018–50[2]	Average Term to Maturity, 2019 (years)[3]	Debt to Average Maturity, 2019	Projected Interest Rate–Growth Differential, 2019–24 (percent)	Precrisis Overall Balance, 2000–07	Projected Overall Balance, 2019–24	Nonresident Holding of General Government Debt, 2018 (percent of total)[4]
Bangladesh	0.3	12.9	0.1	3.4	5.4	6.4	–6.3	–2.8	–4.7	40.5
Benin	0.1	3.8	0.2	6.9	2.6	15.6	–2.9	–1.7	–1.7	. . .
Burkina Faso	0.0	3.5	0.2	8.2	1.6	26.5	–4.1	–1.8	–3.0	55.0
Cambodia	0.1	2.5	0.1	5.1	. . .	. . .	–7.7	–3.2	–2.2	100.3
Cameroon	0.0	0.9	0.1	3.0	6.0	6.7	–3.5	5.3	–2.0	59.9
Chad	0.0	–0.1	0.1	3.5	. . .	. . .	–4.3	–2.4	2.1	. . .
Congo, Democratic Republic of the	. . .	. . .	. . .	. . .	. . .	. . .	–3.0	–0.6	0.3	. . .
Congo, Republic of	0.2	10.0	0.1	4.9	. . .	. . .	1.3	4.8	8.0	. . .
Côte d'Ivoire	0.0	1.9	0.1	3.6	. . .	. . .	–4.0	–1.0	–3.0	. . .
Ethiopia	0.0	0.9	0.1	3.7	. . .	. . .	–14.1	–4.8	–3.0	. . .
Ghana	0.2	7.0	0.2	8.5	5.5	11.6	–3.1	–3.3	–5.2	. . .
Guinea	0.0	0.0	0.2	9.1	. . .	. . .	–10.2	–2.5	–2.2	. . .
Haiti	. . .	. . .	0.1	3.3	. . .	. . .	–10.6	–2.4	–2.3	. . .
Honduras	0.2	6.1	0.5	19.0	3.5	11.8	–0.4	–2.0	–0.5	. . .
Kenya	0.3	13.2	0.2	5.6	5.9	10.4	–4.9	–1.4	–6.3	48.0
Kyrgyz Republic	4.2	113.8	0.2	8.8	. . .	. . .	–4.8	–4.8	–3.0	84.3
Lao P.D.R.	. . .	. . .	. . .	. . .	. . .	. . .	–6.2	–2.6	–3.9	. . .
Madagascar	0.3	11.3	0.1	4.9	. . .	. . .	–8.0	–3.4	–4.7	54.1
Mali	–0.2	–1.9	0.1	2.7	2.2	17.2	–3.6	1.3	–3.0	. . .
Moldova	3.1	85.6	0.7	23.4	6.0	4.9	–5.3	–0.3	–2.6	50.8
Mozambique	–0.1	–1.6	0.3	12.1	2.2	49.4	–8.2	–3.3	–3.2	. . .
Myanmar	0.3	10.9	. . .	. . .	. . .	. . .	–6.4	–3.8	–4.0	. . .
Nepal	0.1	4.3	0.1	4.8	. . .	. . .	–8.2	–1.0	–3.9	. . .
Nicaragua	0.9	43.9	0.6	21.0	1.5	26.9	–1.3	1.4	–1.8	85.3
Niger	0.0	–1.6	0.1	4.1	. . .	. . .	–5.4	2.6	–2.8	. . .
Nigeria	0.0	0.2	0.1	2.0	5.1	5.8	–4.9	2.3	–4.7	. . .
Papua New Guinea	0.0	0.6	0.3	11.6	. . .	. . .	0.5	1.8	–3.8	41.8
Rwanda	0.1	2.5	0.2	8.6	. . .	. . .	–8.9	–0.5	–3.6	84.4
Senegal	0.0	3.5	0.1	5.6	12.3	5.2	–5.6	–0.9	–3.0	. . .
Somalia	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Sudan	0.0	1.2	0.2	5.9	. . .	. . .	–38.9	–0.9	–12.2	. . .
Tajikistan	0.5	15.8	0.2	6.1	. . .	. . .	–7.0	–2.8	–3.1	76.6
Tanzania	0.2	10.7	0.1	4.1	4.6	8.1	–4.3	–1.8	–3.5	. . .
Timor-Leste	. . .	. . .	. . .	. . .	. . .	. . .	–2.3	–2.3	–25.0	. . .
Uganda	0.1	3.4	0.1	3.6	3.5	12.5	–6.1	–1.0	–4.4	69.0
Uzbekistan	3.7	116.9	0.3	11.5	. . .	. . .	–15.1	–2.4	0.3	. . .
Vietnam	2.3	82.3	0.3	9.8	6.9	7.9	–5.4	–1.7	–3.9	. . .
Yemen	0.0	1.7	0.1	4.8	. . .	. . .	–11.2	–0.7	–3.0	. . .
Zambia	0.1	5.3	0.2	7.2	4.8	19.2	–3.6	–0.4	–3.7	. . .
Zimbabwe	. . .	. . .	. . .	. . .	. . .	. . .	–2.3	. . .	–0.7	. . .
Average	0.6	20.8	0.1	5.1	1.2	2.6	–6.3	–0.2	–3.8	17.6

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 based on data availability.

[1] Pension projections rely on authorities' estimates when these are available. For the European Union countries, pension projections are based on *The 2018 Ageing Report* of the European Commission. When authorities' estimates are not available, staff projections use the methodology described in Clements, Eich, and Gupta, *Equitable and Sustainable Pensions: Challenges and Experience* (IMF 2014). Staff projections for health care spending are driven by demographic 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 at the advanced economy historic average by 2050 (0.8 percent).

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

[3] Average term to maturity data refer to government securities; the source is Bloomberg Finance L.P.

[4] Nonresident holding of general government debt data are the fourth quarter of 2018 or latest available from the Joint External Debt Hub (JEDH), Quarterly External Debt Statistics, which include marketable and nonmarketable debt. For some countries, tradable instruments in the JEDH are reported at market value. External debt in US dollars is converted to local currency, then taken as a percentage of 2018 gross general government debt.

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IMF EXECUTIVE BOARD DISCUSSION OF THE OUTLOOK, OCTOBER 2019

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 October 3, 2019.*

Executive Directors broadly shared the assessment of global economic prospects and risks. They observed that global growth in 2019 is expected to slow to its lowest level since the global financial crisis, reflecting a broad-based weakening of industrial output and business confidence amid rising trade tensions. While growth is expected to pick up modestly in 2020, the outlook is precariously hinged on a turnaround in a small number of countries that are currently underperforming or under stress. Meanwhile, overall growth in low-income developing countries continues to be relatively resilient, although prospects for convergence toward advanced economy income levels remain challenging.

Directors noted with concern that the global economy faces increased downside risks. Most notable in the near term are intensifying trade, technology, and geopolitical tensions with associated increases in policy uncertainty. Directors also pointed to the risk of an abrupt tightening of financial conditions that could be triggered by a range of events. They noted that downside risks remain elevated in the medium term, reflecting increased trade barriers, a further accumulation of financial vulnerabilities, and the consequences of unmitigated climate change.

Given these risks, Directors stressed the need to enhance multilateral cooperation, with most considering it a priority to de-escalate trade tensions, roll back the recent tariff increases, and resolve trade disagreements cooperatively. Directors also urged policymakers to limit greenhouse gas emissions and reduce global imbalances. Closer multilateral cooperation on international taxation and global financial regulatory reforms would help address vulnerabilities and broaden the gains from economic integration.

Directors underscored the urgency of deploying policies proactively to secure growth and enhance resilience. They supported the more accommodative monetary policy stance in many economies while emphasizing the continued importance of remaining data-dependent and clearly communicating policy decisions. Directors noted that the very low interest rates have expanded fiscal resources in many countries. They broadly agreed that, where fiscal space exists and debt is sustainable, high-quality fiscal policy should be used to support aggregate demand where needed. Ensuring debt sustainability requires rebuilding buffers in countries with relatively weaker fiscal positions, although the pace could be calibrated as market conditions permit to avoid prolonged economic weakness and disinflationary dynamics. If downside risks materialize, policymakers should stand ready to implement a contingent, and possibly coordinated, response.

Directors emphasized the importance of growth-enhancing structural reforms in all economies. The priority is to raise medium-term growth, improve inclusiveness, and strengthen resilience. Structural policies can help ease adjustment to shocks and boost output over the medium term, narrow within-country income differences, and encourage faster convergence across countries. Many countries should continue to strengthen institutions, governance, and policy frameworks to bolster resilience and growth prospects.

Directors noted that the prolonged low interest rate environment in advanced economies has encouraged risk-taking, including among institutional investors, and led to a continued build-up in financial vulnerabilities. These include rising risks in non-bank financial institutions, mounting corporate debt burdens, and a growing reliance on external borrowing by emerging and frontier market economies. Directors highlighted the urgent need to safeguard financial stability through stronger and broader macroprudential policies, and address corporate vulnerabilities with stricter supervision and oversight. They also supported the call for

strengthened oversight and disclosures of institutional investors and prudent sovereign debt management practices and frameworks, as well as a closer monitoring of U.S. dollar funding fragility. Directors reiterated their call for the full implementation of the global regulatory reform agenda.

Directors noted that emerging market and developing economies need to implement an appropriate mix of fiscal, monetary, exchange rate, and macroprudential policies. Ensuring financial resilience is a priority in emerging and frontier markets that are vulnerable to abrupt reversals of capital flows.

Directors urged low-income developing economies to adopt policies aimed at lifting potential growth, improving inclusiveness, and combating challenges that hinder progress toward the 2030 Sustainable Development Goals. Priorities include strengthening monetary and macroprudential policy frameworks and tackling debt vulnerabilities. Directors emphasized the need for fiscal policy to be in line with debt sustainability and progress toward development goals, importantly through building tax capacity while protecting the vulnerable. Complementarity between domestic revenues, official assistance, and private financing is essential for success, while investing in disaster readiness and climate-smart infrastructure will also be important. Countries need to improve education quality, narrow infrastructure gaps, enhance financial inclusion, and boost private investment. Commodity exporters should continue diversifying their economies.

Directors broadly welcomed the focus of the *Fiscal Monitor* on climate change. Most Directors concurred that carbon taxation, or similar pricing approaches such as emissions trading systems, is an effective tool for reducing emissions. Depending on country circumstances and preferences, other approaches, such as feebates and regulations, are also worth considering. Directors noted that, for climate change mitigation policies to be widely acceptable, they should be part of a comprehensive strategy that includes productive and equitable use of revenues, a social safety net for vulnerable groups, and supportive measures for clean technology investment. While many Directors noted that an international carbon price floor could help scale up mitigation efforts, further work and greater collaboration at the global level would be necessary to reach a broad-based agreement on a fair burden-sharing basis. Many Directors took the opportunity to welcome the Fund's work on analyzing mitigation policy options and integrating such analysis into its surveillance activity, leveraging the expertise within its mandate. Most Directors welcomed the attention paid to sustainable finance that embraces environmental, social, and governance considerations in investment decisions, and emphasized the importance of continued cooperation with other international organizations.

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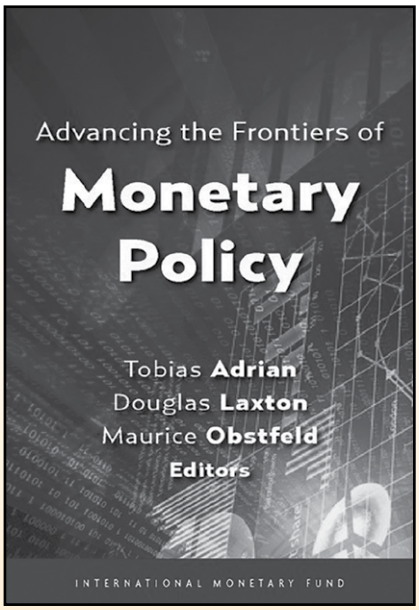

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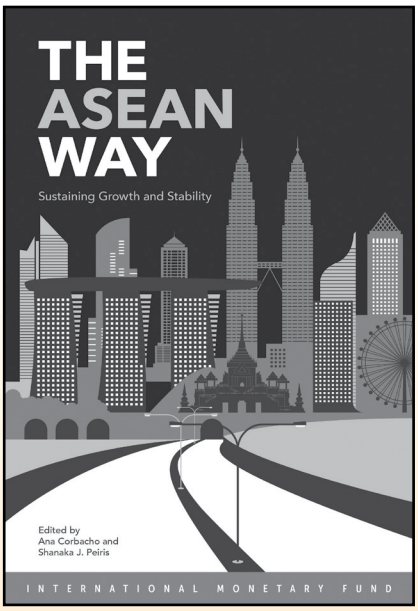

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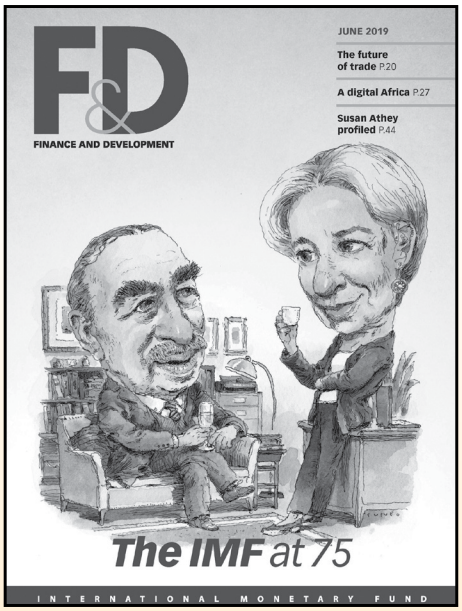

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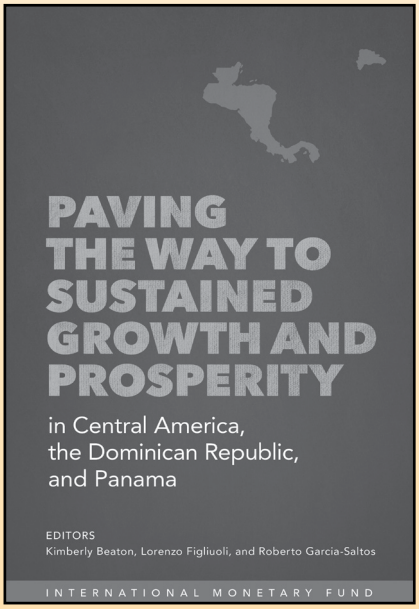

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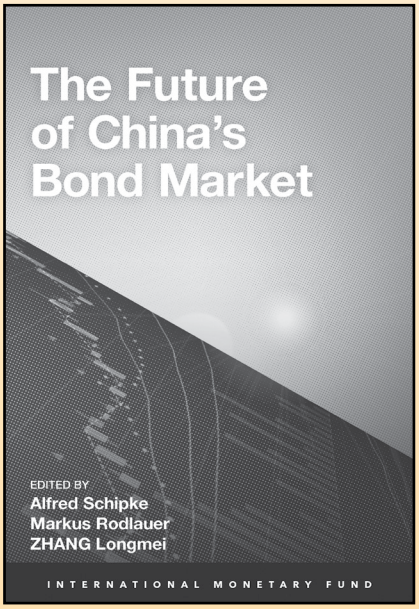

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