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Fiscal Monitor

Managing Public Wealth

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Editor's Note (October 9, 2018)

The online edition of this report has been updated with a corrected version of Figure 1.11.

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 tables of contents.

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PREFACE

The projections included in this issue of the *Fiscal Monitor* are based on the same database used for the October 2018 *World Economic Outlook* and *Global Financial Stability Report* (and are referred to as "IMF staff projections"). In the Methodological and Statistical Appendix, 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 Abdelhak Senhadji, Deputy Director; Catherine Pattillo, Assistant Director; and Carolina Renteria, Division Chief. The main authors of this report are Jason Harris and Alexander Tieman (team leaders), Miguel Alves, Sage de Clerck, Fabien Gonguet, Klaus Hellwig, John Ralyea, Majdeline El Rayess, and Seyed Reza Yousefi. Contributions were received from Maren Brede, Salvatore Dell'Erba, Avril Halstead, Christian Henn, Thordur Jonassen, Yugo Koshima, Raphael Lam, Marialuz Moreno Badia, Ashni Singh, Alberto Soler, Philip Stokoe, and Aleksandra Zdzienicka. Under the guidance of Miguel Alves, these and other staff across the Fiscal Affairs and Statistics Departments, including Laura Doherty, David Gentry, Guohua Huang, Ayoub Mharzi, Jimmy McHugh, Gary Jones, Mariana Sabates Cuadrado, Sandeep Saxena, and Ercument Tulun, collected, compiled, and validated the data. This effort was facilitated by Gabriel Quiros and Rainer Koehler. Discussions at a workshop in March 2018 and bilateral meetings with Sebastian Boitreaud, Willem Buiter, Alberto Carrasquilla, Ian Carruthers, Mehmet Coskun Congoz, Fergus McCormick, Dag Detter, Svetlana Klimenko, Delphine Moretti, Kenneth Rogoff, John Stanford, Robert Townsend, Peter van de Ven, and staff from the New Zealand and United Kingdom Treasury departments further informed the project. Excellent research support was provided by Juliana Gamboa Arbelaez, Young Kim, Rohini Ray, Yuan Xiang, and Nisreen Zaqout. The Methodological and Statistical Appendix was prepared by Yuan Xiang. Lauren Bateman, Meron Haile, and Nadia Malikyar 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 Linda Griffin Kean, Susan Graham, Linda Long, and Vector.

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 Institute for Capacity Development, Monetary and Capital Markets Department, Research Department, Statistics Department, and Strategy, Policy, and Review Department. 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

Public sector balance sheets provide the most comprehensive picture of public wealth. They bring together all the accumulated assets and liabilities that the government controls, including public corporations, natural resources, and pension liabilities. They thus account for the entirety of what the state owns and owes, offering a broader fiscal picture beyond debt and deficits. Most governments do not provide such transparency, thereby avoiding the additional scrutiny it brings. Better balance sheet management enables countries to increase revenues, reduce risks, and improve fiscal policymaking. There is some empirical evidence that financial markets are increasingly paying attention to the entire government balance sheet and that strong balance sheets enhance economic resilience. This issue of the *Fiscal Monitor* presents a new database that shows comprehensive estimates of public sector assets and liabilities for a broad sample of 31 countries, covering 61 percent of the global economy, and provides tools to analyze and manage public wealth.

Estimates of public wealth reveal the full scale of public assets and liabilities. Assets are worth US$101 trillion or 219 percent of GDP in the sample. This includes 120 percent of GDP in public corporation assets. Also included are natural resources that average 110 percent of GDP among the large natural-resource-producing countries. Recognizing these assets does not negate the vulnerabilities associated with the standard measure of general government public debt, comprising 94 percent of GDP for these countries. This is only half of total public sector liabilities of 198 percent of GDP, which also includes 46 percent of GDP in already accrued pension liabilities.

Net worth—the difference between assets and liabilities—is positive on average, although about one-third of the countries in the sample are in negative territory, including most of the G7. But net worth does not account for the state's ability to tax in the future, which is why intertemporal balance sheet analysis—which combines current wealth with future revenue and expenditure—is important. Still, balance sheet strength is not an end in itself, but rather a tool to support the objectives of public policy. Because balance sheet estimates can involve various data quality issues, with challenges in measuring and valuing many assets and liabilities, improving public sector accounting standards is important.

The scars from the global financial crisis are still evident on public wealth a decade later. Even though deficits have shrunk, at least in the advanced economies most affected by the crisis, net financial worth across the 17 sampled countries with time series data remains US$11 trillion (28 percentage points of GDP) lower than it was before the crisis. The balance sheet approach reveals a more nuanced picture than what deficits and debt alone show. It recognizes that public investment creates assets, and accounts for valuation effects, which are particularly large on the asset side. The scars from the crisis reemphasize the importance of governments rebuilding their balance sheets, by reducing debt and investing in high-quality assets.

This report introduces tools that can be used to comprehensively analyze the resilience of public finances. These tools allow governments to examine both sides of the balance sheet to identify imbalances or mismatches and use fiscal stress tests to gauge the resilience of public finances against tail-risk shocks such as the global financial crisis. These tests should ideally be done on the full public sector balance sheet, where data are available. By identifying risks in the balance sheet, governments can act to manage or mitigate those risks early, rather than dealing with the consequences after problems occur.

Once governments understand the size and nature of public assets, they can start managing them more effectively. Potential gains from better asset management are considerable. Revenue gains from nonfinancial public corporations and government financial assets alone could be as high as 3 percent of GDP a year, equivalent to annual corporate tax collections across advanced economies. In addition, considerable gains could be realized from government nonfinancial assets. Practical experience from Australia, New Zealand, the United Kingdom, and Uruguay can guide countries on how to increase the effectiveness and

returns on assets, while reducing risk across both sides of the balance sheet.

While there are considerable challenges in compiling reliable balance sheets, the benefits of basic balance sheet analysis are within reach of many countries, not just advanced economies with high-quality data. Only a handful of countries currently undertake a public sector balance sheet approach. Yet, balance sheet estimates can be developed even in data-constrained environments like The Gambia or complex emerging economies like Indonesia. The estimates should be treated with some caution, as the application of accounting and statistical standards varies widely. Once governments produce these estimates, analyzing, assessing, and projecting the balance sheet forward is relatively simple, relying on easy-to-use frameworks.

This report analyzes balance sheets through a range of case studies, in a first step of an ongoing research agenda. The following are some of the findings:

- Applying the same stress test that the Federal Reserve applies to banks would reduce US public sector net worth by 26 percent of GDP, with balance sheet losses to pension funds and nonfinancial assets responsible for the bulk of the decline.
- New estimates suggest that China's general government net financial worth has deteriorated to about 8 percent of GDP, largely because of subnational borrowing and underperforming public corporations. Off-budget debt and the weak performance of public corporations both entail risks for the future.
- In Indonesia, an increase in public investment financed by a surge in revenue is estimated to boost public wealth. The combination of new infrastructure assets and future revenue from higher output could result in a 6½ percent of GDP increase in public wealth, and potentially even larger gains with strengthened infrastructure investment efficiency.
- Although Norway's fiscal position is very strong, long-term spending pressures significantly reduce its intertemporal net worth relative to its vast asset position. In contrast, Finland's recent and planned reforms mean that future primary balances are positive despite an aging population, adding to intertemporal net worth.
- The Gambia's balance sheet reveals large cross holdings of fragile assets across the public sector that could cause cascading losses and result in unsustainable government financing needs in the event of a natural disaster.
- Balance sheet effects cushioned the impact of the halving of oil prices in 2014 in resource-rich Kazakhstan. This was due in part to persistent positive exchange rate effects on its oil revenue savings that are held in liquid foreign currency assets. These savings also allowed the government to undertake a large stimulus package.

These case studies distill some lessons that apply more broadly. First, both sides of the balance sheet are important. Governments should consider the effect of policies on assets and nondebt liabilities, in addition to debt. This also applies to risk management, where valuation changes can have large wealth effects. Second, considerable fiscal activity occurs outside the general government. Including public corporations in fiscal analysis is necessary to assess and manage fiscal risk more effectively. Third, comparing current levels of public wealth with long-term fiscal projections reveals how well placed governments are to meet building demographic pressures, in the face of rapidly aging societies.

Over and above these insights, balance sheet analysis enriches the policy debate by focusing on the full extent of public wealth. Public assets are a significant resource, and how governments use and report on them matters, not just for financial reasons, but also in terms of improving service delivery and preventing the misuse of resources that often results from a lack of transparency. Recent parliamentary debates in New Zealand, as well as the UK government's response to the fiscal risk report, illustrate this point. They show that publishing balance sheet information can raise the tenor of policy debate, asking how public wealth can be better used to meet society's economic and social goals.

CHAPTER 1

MANAGING PUBLIC WEALTH

Introduction

Public sector balance sheets (PSBSs) provide the most comprehensive view of public wealth, yet they are little understood, poorly measured, and only partly managed. Standard fiscal analysis focuses on flows—revenues, expenditures, and deficits—with assessments of stocks largely limited to gross debt. The focus on debt misses large swaths of government activity and can fall victim to illusory fiscal practices.

Broadening the focus to public wealth sheds light on the assets that governments control, as well as on nondebt liabilities that receive scant attention in standard analysis (Figure 1.1).[1] The systematic assessment of PSBSs increases transparency and accountability by examining the entirety of what a state owns and owes, its evolution over time, how it is being managed, and where the risks lie. Most governments do not provide their citizens such transparency, thereby avoiding the additional scrutiny it brings.

Measures of balance sheet strength add information relative to indicators based solely on debt in explaining macroeconomic outcomes. New empirical analysis finds that financial markets consider governments' asset positions in addition to debt levels in determining borrowing costs, expanding the results in the literature for emerging markets (Hadzi-Vaskov and Ricci 2016; Henao-Arbelaez and Sobrinho 2017) and advanced economies (Gruber and Kamin 2012). Moreover, countries with stronger balance sheets pay lower interest on their debt. Empirical evidence also shows that countries with strong balance sheets experience shallower and shorter recessions compared with those with weaker balance sheets (Box 1.2).

Applying the balance sheet approach to fiscal policy is long overdue (IMF 2015a). During the global financial crises policymakers provided fiscal stimulus and monetary and financial support to cushion the economy. The resulting loss of public wealth since the crisis makes it especially important to take a balance sheet view on public finances today. Population aging in many countries adds to the urgency of taking a long-term view on net worth. And recent experience gathering PSBSs, obtained in part through fiscal transparency evaluations, makes their broader compilation feasible (IMF 2018a).

Taking a balance sheet approach enriches fiscal policy analysis in three key ways:

- First, it reveals the full scale and nature of public assets and nondebt liabilities. Current benign neglect of public assets suggests that there is considerable scope to boost returns (Box 1.1).
- Second, it improves the identification and management of risk. Looking at both sides of the balance sheet reveals mismatches. Taking a long-term view through the intertemporal balance sheet allows a comparison of current wealth against future fiscal pressures. And applying fiscal stress tests gauges the resilience of public finances.
- Third, it can improve fiscal policymaking. The balance sheet approach allows for a more systematic evaluation of the impact of policies on public finances by recognizing their short- and long-term effects on both the asset and liability sides of the ledger.

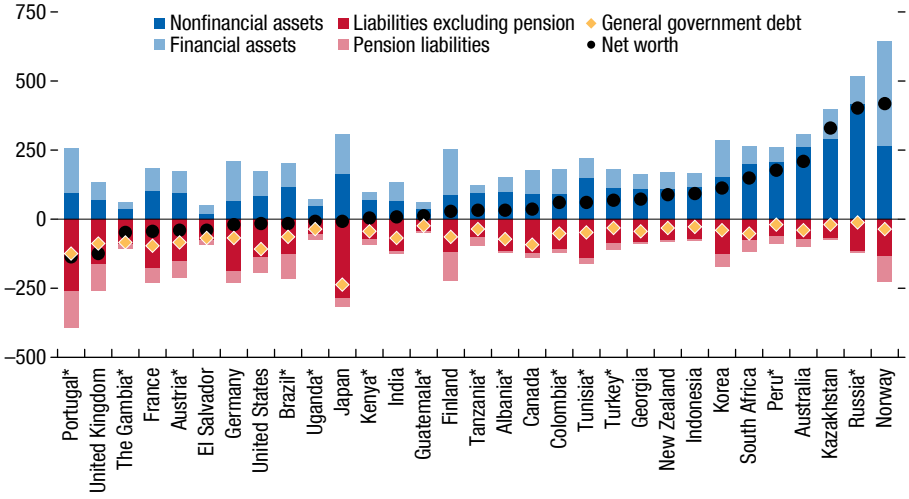
Although the comprehensive approach advocated in this report is new, fiscal policy analysis has often looked beyond deficits and debt. Government balance sheets have been used in fiscal analysis (Buiter 1983; Allen and others 2002; Traa and Carare 2007), although these efforts were hampered by data limitations.[2] Individual asset categories have also been analyzed—natural resources in IMF (2012a), nonfinancial assets in Bova and others (2013), and financial asset returns in Seiferling and Tareq (2015)—and stock-flow adjustments are discussed in Jaramillo, Mulas-Granados, and Kimani (2017). Existing approaches to fiscal and debt sustainability, fiscal space, and fiscal risks use some of these insights. The balance sheet approach brings these elements together to provide a comprehensive assessment of the impact of policies on public finances and facilitate risk management across the entire public sector.

[1]Public wealth refers to public sector net worth. The two terms are used interchangeably throughout this report. See Annex 1.1 for details on the sample.

[2]In fact, the move toward compiling government balance sheets started much earlier, as evidenced by the publication of the central government balance sheet in Weimar Germany (Finanzministerium 1933) and a questionnaire on government balance sheets from the League of Nations (1938).

Figure 1.1. Public Sector Balance Sheets
(Percent of GDP 2016)

Public sector assets and liabilities are large and present insights beyond general government debt.



Source: IMF staff estimates.
Note: *Based on a single year of data, in most cases compiled as part of a Fiscal Transparency Evaluation: Albania, 2013; Austria, 2015; Brazil, 2014; Colombia, 2016; The Gambia, 2016; Guatemala, 2014; Kenya, 2013; Peru, 2013; Portugal, 2012; Russia, 2012; Tanzania, 2014; Tunisia, 2013; Turkey, 2013; Uganda, 2015.

Recognizing assets on the balance sheet does not negate the vulnerabilities associated with high public debt. Many assets are illiquid or not marketable and would not be available to meet rollover or deficit financing needs in the short term. Asset valuations are also more volatile than debt and can be highly correlated with the economic cycle—meaning their values can be at their nadir when financing needs are most pressing. Therefore, the assessments of gross debt, deficits, and financing needs remain important for fiscal policy.

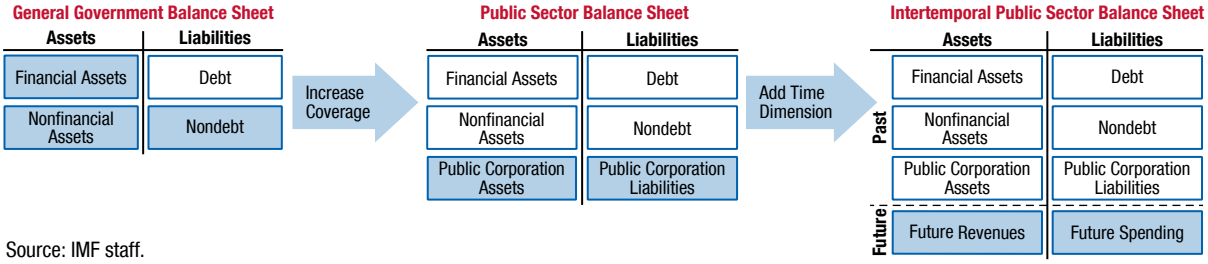
The analysis of PSBSs has several limitations. First, data quality can be an issue, especially when looking at the broader public sector. Second, valuation can be a challenge, particularly for nonfinancial assets that are rarely traded, and with differing approaches taken for different components of the balance sheet across countries. These limitations have been addressed to the extent possible in making international comparisons, although some residual issues remain (see Annex 1.2 for details). Third, the public sector consists of many different entities, with each facing its own constraints and risks, often requiring analysis of specific entities. Fourth, the conclusions depend on the robustness of assumptions—issues that gain prominence when projecting over the very long term in an intertemporal balance sheet, as evidenced by sensitivity analyses. More broadly, while the balance sheet enriches the assessment of public finances, it cannot be interpreted in isolation from other factors, such as institutional quality, access to markets, and the monetary and exchange rate regime.

In addition to presenting balance sheet estimates for a wide range of countries, this report provides a conceptual framework for analyzing them. It uses this framework and the data to address three questions, with case studies throughout the chapter to illustrate specific points:

1. *What do PSBSs look like, and how have they evolved?* The report shows the size and composition of PSBSs across a large range of countries, detailing developments over time. While deficits have been brought under control, net (financial) worth remains significantly below precrisis levels, leaving lower buffers to respond to future risks.
2. *How can the PSBS approach improve risk analysis and promote resilience?* The report applies a range of measures of risk to the PSBS and highlights the critical nature of balance sheet effects when assessing risks. Fiscal stress tests for Finland, The Gambia, and the United States demonstrate that those balance sheet effects on net worth can be larger than the impact of increased fiscal deficits.
3. *How can the PSBS approach strengthen fiscal policy?* Several case studies show how the PSBS approach can be used to evaluate fiscal policies, analyzing the effects of demographics, natural resource exploitation, and public investment.

Figure 1.2. The Balance Sheet Framework

The public sector balance sheet extends coverage to public corporations and includes future revenues and spending.



Source: IMF staff.
Note: Blue boxes denote incremental additions to the framework.

Conceptual Framework

The PSBS brings together all of the accumulated assets and liabilities that the government controls. It extends the scope of fiscal analysis beyond the standard measures of debt to include all assets, whether financial, infrastructure, or natural resources, as well as liabilities that are rarely included in government debt, such as pension obligations to public sector employees. It extends the perimeter of coverage from general government to the entire public sector, bringing in public corporations, including the central bank.

The static balance sheet is then extended through time in two ways (Figure 1.2). First, the evolution of the balance sheet is explained using the integrated stock-flow framework embodied in the *Government Finance Statistics Manual 2014* (IMF 2014). This allows the changes in net worth to be decomposed into fiscal deficits, investments, and valuation changes. Second, the balance sheet is used to determine the long-term intertemporal net worth under current policies, combining discounted future flows of revenues and spending with the static balance sheet.

Composition of the Public Sector Balance Sheet

The PSBS consists of the assets and liabilities of general government and public corporations, including the central bank.[3] Liabilities consist of (1) debt securities and loans, (2) pension obligations owed to public sector employees, and (3) currency and deposits, payables (including those in arrears), and some guarantee schemes. Debt securities and loans are the main stock indicator of standard fiscal analysis, worth 95 percent of GDP at the general government level in the sample of 31 countries with full PSBSs. Existing pension obligations to public servants embody a stream of contractually required payments, yet are rarely reported in standard analysis; they amount to 46 percent of GDP in these countries (Figure 1.3). These refer to pension obligations already owed to public sector employees, and do not include pension obligation to private sector employees.[4] Government assets comprise financial and nonfinancial assets, including natural resources. Financial assets (99 percent of GDP) are often marketable and relatively liquid, with the exception of direct loans and nonlisted equity holdings in public corporations, which may be less reliably valued.[5] Nonfinancial assets include buildings, infrastructure, and land. Many of these assets comprise the public capital stock and play an integral role in delivering economic and social outcomes; they are typically illiquid and nonmarketable, or marketable only over the medium to long term (for example, privatizations). Natural resource reserves can represent the largest asset on the state's balance sheet in commodity producers. Annex 1.2 provides details on definitions, coverage, and compilation methodology.

Including the assets, liabilities, and operations of financial and nonfinancial public corporations in the balance sheet shows the full scale of wealth under the government's control.[6] It also allows for a stronger

[3]Annex 1.2 provides details on these elements, how they are valued, and how these estimates were compiled.

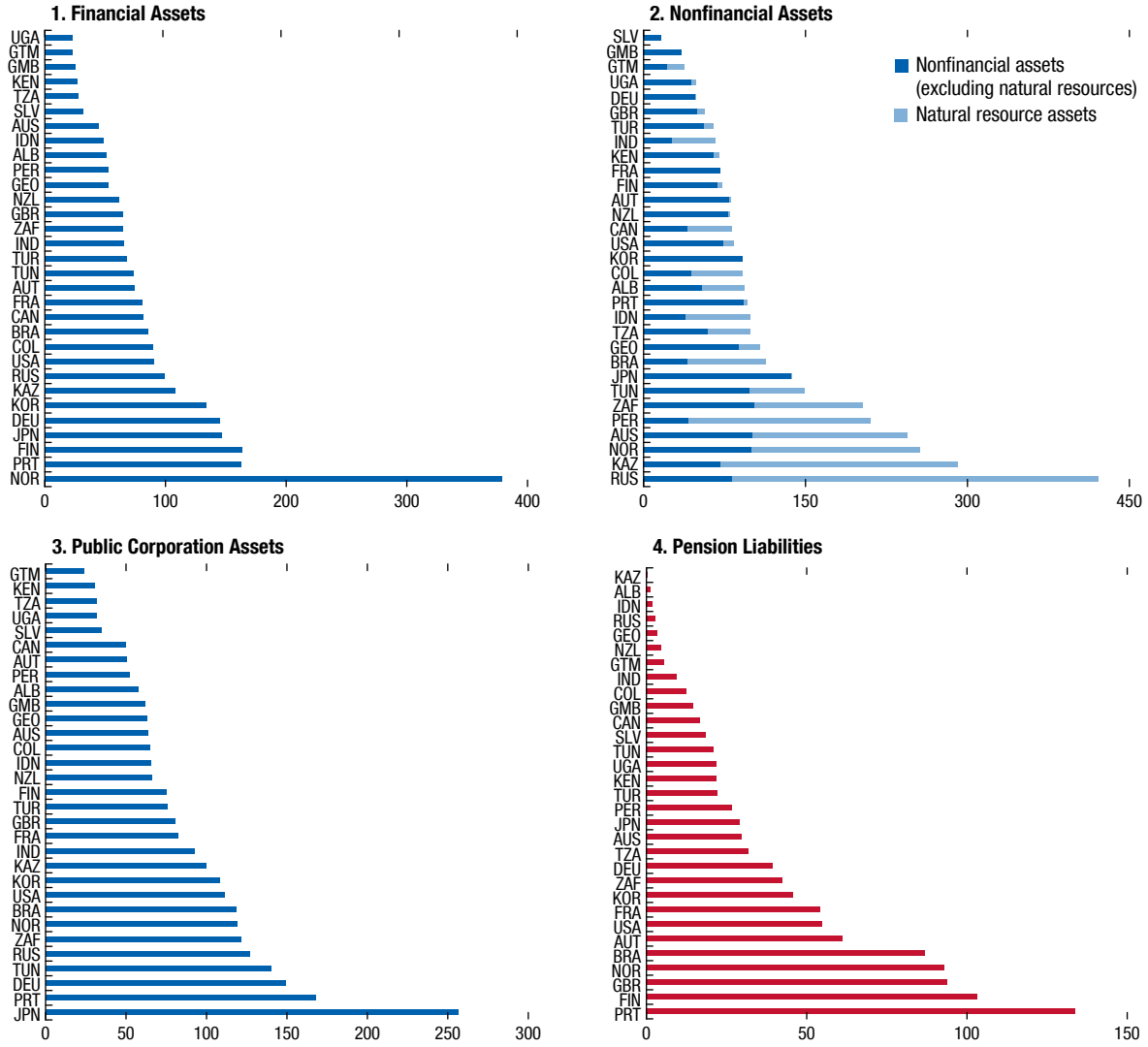
[4]Following the *Government Finance Statistics Manual* (GFSM), pension obligations to private sector employees under pay-as-you-go social security schemes, such as the US Social Security or Japan's National Pension System and Employee Pension Insurance, are not included in the static balance sheet. They are instead incorporated in future expenditure flows in the intertemporal balance sheet.

[5]Some financial assets may be earmarked to specific uses or liabilities, such as deposits associated with grants for specific projects or assets tied to pension obligations. These encumbered assets are therefore unavailable for other financing needs under current institutional arrangements. However, examining these financial assets in a consolidated way may reveal potential benefits from improvements in asset management.

[6]Because of data limitations, for many countries the analysis includes only central government public corporations.

Figure 1.3. Additional Elements of the Public Sector Balance Sheet
(Percent of GDP)

The public sector balance sheet reveals assets and liabilities that are often ignored in a traditional analysis.



Source: IMF staff estimates.
Note: Data labels use International Organization for Standardization (ISO) country codes.

understanding of risk factors across the balance sheet, providing opportunities for better asset and liability management. Including public corporations requires a consolidation of cross holdings of assets and liabilities, which can be a channel through which fiscal risks spread, as demonstrated for The Gambia later in the report. These cross holdings are country-specific, with the largest typically between government and the central bank and other financial public corporations.

Consolidations can be large and have the potential to change the picture. For example, in Japan, while gross outstanding public sector debt securities and loans were worth 283 percent of GDP in 2017, the majority were held by other public sector units, leaving 134 percent of GDP in the hands of private creditors. The same is true in the United States, where the equivalent figures are 164 and 110 percent of GDP.[7] These differences are partly the result of quantitative easing, which has led

[7]This includes Treasury holdings held by federal trust funds, including Old Age and Survivors and Disability trust funds (which are classified inside general government) as well as holdings of public corporations.

to an unprecedented expansion of the asset holdings of many advanced economy central banks. From the perspective of the consolidated public sector, however, quantitative easing did not lead to a significant expansion of public sector asset holdings, since central banks implemented quantitative easing mainly by purchasing claims on other public sector units.

Assessment of Balance Sheets over Time

The PSBS can explain changes in public wealth—a stock variable—in the recent past or projected near future. The fiscal deficit adds to debt and decreases net worth, although this decrease is offset partly by public investment.[8] The operations of public corporations and the net impact of valuation changes on assets and liabilities may either reduce or add to public wealth. Asset valuations are significantly more volatile than liability valuations, so it would be imprudent to react to these changes on a year-to-year basis. However, over the course of decades, ignoring secular trends in valuation misses a large part of the change in public wealth. The importance of the valuation channel for public wealth is illustrated by gains in financial asset values in a sample of European countries, which, since 2000, have added 12 percentage points of GDP to their net worth, offsetting almost a quarter of their cumulative issuance of debt over the same period.[9] Net worth developments can also be decomposed for fiscal projections. This helps avoid the fiscal illusion that arises when governments on face value improve the fiscal position by lowering the immediate debt and deficits but reduce net worth over time. For instance, privatizations increase revenue and lower deficits but also reduce the government's asset holdings. Similarly, cutting back maintenance expenditure reduces the deficit and lowers debt, but also reduces the value of infrastructure assets, which could cost more in the long term.[10]

Balance sheet analysis can also be used to look into the longer term. A striking aspect of public wealth estimates shown in Figure 1.1 is that one-third of countries in the sample have negative net worth. However, the static balance sheet does not recognize the government's largest "asset": its power to raise revenue in the future.[11] Intertemporal net worth combines the static net worth with projections of future revenue and expenditure flows. These projections rely on long-term assumptions, with countries having weaker institutions and less stable revenue streams subject to higher discount rates to account for greater risk. The extent to which intertemporal net worth differs from zero thus provides a sense of how far current policies deviate from the government's intertemporal budget constraint, with negative numbers indicating adjustment needs.

Examination of Balance Sheet Strengths and Risks

Balance sheet strength is not an end in itself, but rather a tool to support the objectives of public policy. The long-term aim of government is not to maximize net worth, but to provide goods and services to its citizens and possibly to create a buffer against uncertainty about the future. Current net worth should be seen in this context. Governments that believe their net worth is too low to ensure their current objectives of public policy may choose to improve their net worth as an operational goal, as Australia has done.

In addition to net (financial) worth, a range of other indicators provide information on the state and resilience of the balance sheet. These include the standard measure of gross debt, as well as measures that explore risk mismatches and the degree of hedging present in the balance sheet. These measures provide a dashboard of indicators to consider when assessing fiscal health.

Fiscal stress tests assess the resilience of public finances to a large macroeconomic shock. They often draw on information from sources outside the balance sheet, such as financial system assessments to inform the size of possible financial sector contingent liabilities, and estimates of sovereign-bank feedback loops or the link between macroeconomic shocks and growth. Stress tests can reveal risks that the standard debt and deficit framework misses. Examples include exposure to entities outside the general government perimeter, valuation changes to government assets, and contingent liabilities emanating from the private sector. Once identified, actions can be taken to mitigate these risks, drawing on the fiscal risk management toolkit (IMF

[8]Public investment refers to net acquisition of nonfinancial assets, which is part of the fiscal deficit (see Annex 1.2). Traditional accounting of the deficit does not take account of the assets built up by such investment.

[9]Weighted average of Austria, Belgium, Denmark, Estonia, Finland, France, Germany, Ireland, Italy, Latvia, Lithuania, the Netherlands, Norway, Poland, Portugal, the Slovak Republic, Slovenia, Spain, Sweden, and the United Kingdom.

[10]Easterly (1999) and Irwin (2012) provide fuller account of these practices. Milesi-Ferretti and Moriyama (2004) distinguish between structural reductions in debt that improve net worth, and nonstructural reductions that reduce debt by decumulating assets.

[11]Governments also carry a "liability" in expectation that they will provide future goods, services, and transfers.

2016a). Stress tests also provide guidance on the size of the buffers necessary to absorb a large shock, so that procyclical policy can be avoided.

Evolution of Public Wealth

Balance sheets expanded rapidly during the financial crisis, on both the asset and liability sides, accompanied by a sharp decline in net worth, as governments allowed countercyclical fiscal policies to operate. Modest declines in public wealth have continued after the global financial crisis, even as fiscal deficits have been reined in. This section explores central and general government balance sheets for a broader set of 69 countries and territories covering 87 percent of global GDP, and developments over time of the PSBSs for 17 countries comprising 54 percent of global GDP.

The State of Balance Sheets[13]

Balance sheet size, composition, and net worth vary considerably across the sample of 69 countries and territories (Figure 1.4, panel 1).[14] Based on general or central government data excluding natural resource assets and pension liabilities, assets average 102 percent of GDP, ranging from 398 percent of GDP in Norway to 21 percent of GDP in India, roughly evenly split between financial and nonfinancial assets.[15] Against these assets stand average liabilities of 70 percent of GDP. As a result, static net worth in the sample varies from –111 percent of GDP in Greece to 348 percent of GDP in Norway, with an average positive net worth of 32 percent of GDP. Net financial worth averages –22 percent of GDP, with Greece and Norway again at the extremes.

Mismatches in the balance sheet and other risks beyond net worth show a similarly heterogeneous picture. For a subsample of (mainly European) countries, the ample data provide insight into balance sheet riskiness, using measures of liquidity and foreign exchange mismatches, risk-weighted assets and liabilities, and comovement between assets and liabilities.

Liquidity. General government liquid assets average 16 percent of GDP across the sample (Figure 1.4, panel 2), ranging from Moldova (5 percent of GDP) to Japan (62 percent of GDP). Combined with short-term liabilities of 14 percent of GDP on average, countries' net liquid positions vary from –30 percent of GDP to 21 percent of GDP, with The Gambia, Italy, and Barbados exhibiting the largest mismatches.

Foreign exchange. Many countries borrow in foreign currency and thus have significant foreign exchange liabilities. Against these liabilities, some have significant foreign exchange assets that need to be taken into account when assessing exchange rate risk.[16] Net foreign exchange exposure can reveal significant mismatches, showing, for instance, that Barbados, The Gambia, Kenya, Tanzania, and Uganda all have significant foreign exchange debt with little compensating foreign exchange assets (Figure 1.4, panel 3). In contrast with foreign exchange debt data, data on foreign exchange assets are scarce, which limits the analysis.

Risk-adjusted assets and liabilities. This indicator provides a guide to the volatility (and hence inherent risk) of both sides of the balance sheet. All categories of assets and liabilities are weighted by their volatility, with total assets and liabilities adjusted down by their aggregate risk weight to provide a risk-adjusted measure (Figure 1.4, panel 4). Financial assets are more volatile than liabilities for almost all countries in the sample. This is primarily because financial assets include inherently volatile components such as equities and other investment, often held in social security funds, whereas many liabilities are government debt securities that are repaid at maturity.[17] Thus, a country like Norway, with high investments in financial markets through its sovereign wealth fund, features a high average risk weight on its assets and hence a relatively large difference between total assets and risk-adjusted assets, while the risk adjustment for liabilities is small. The combination of high exposure to volatile assets and relatively stable liabilities can result in rapid changes in net worth and liquidity.

Natural hedge. Many countries in the sample see significant comovement between the valuation changes of assets and liabilities. In many cases, these comovements dampen the valuation changes of net financial worth, providing a natural hedge in the balance sheet. In some countries, valuation changes in assets and liabilities reinforce each other, amplifying the impact on net financial worth.

[13]This section uses simple averages.

[14]These estimates cover a broader range of countries and territories but are less comprehensive than those presented in Figure 1.1. For seven countries, the data are available only for central government. To make the data comparable across countries, the figure excludes land and natural resource assets and pension liabilities.

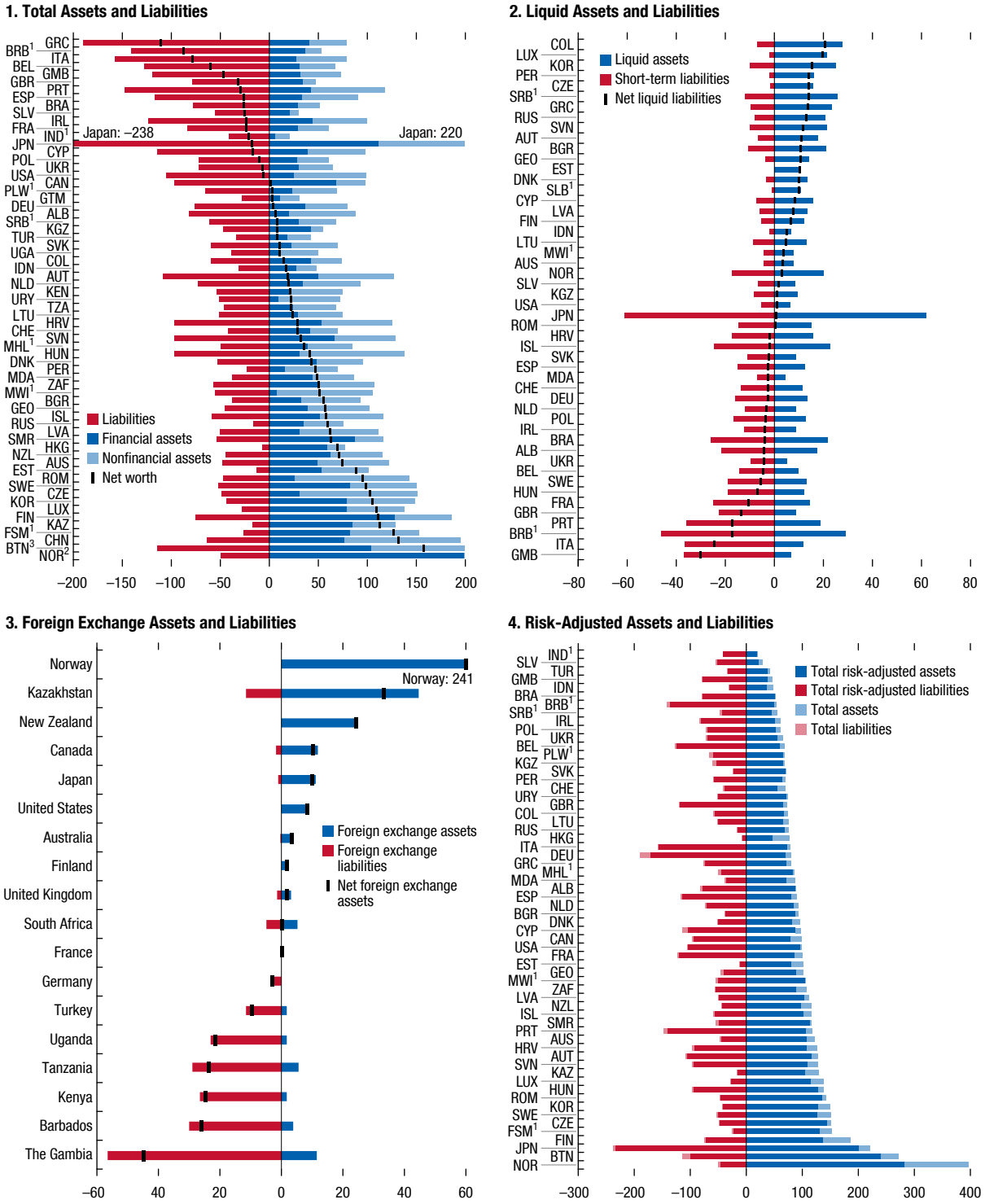
[15]Based on central government data for India, which may partly explain the small number.

[16]Central bank foreign exchange reserves are excluded from this analysis.

[17]For this analysis, debt securities are measured at face value, as they are almost always repaid at maturity. Using market prices for debt securities increases their volatility by 0.6 percent of GDP on average.

Figure 1.4. State of General Government Balance Sheets, 2016
(Percent of GDP)

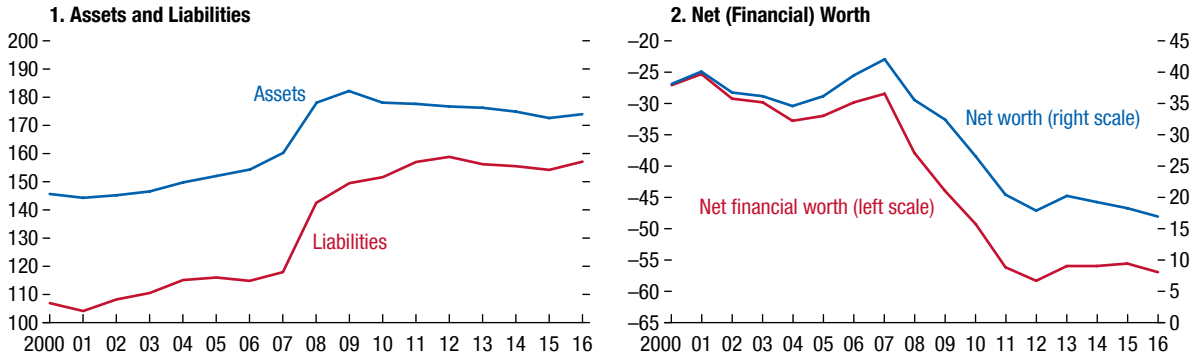
A range of balance sheet measures can be used to assess fiscal health.



Source: IMF staff estimates.
Notes: In all panels, the data exclude land and natural resource assets and pension liabilities. Data labels use International Organization for Standardization (ISO) country codes.
[1]Central government data.
[2]Norway's total assets are 398 percent of GDP, while its net worth is 348 percent of GDP.
[3]Bhutan's total assets are 272 percent of GDP.

Figure 1.5. Public Sector Balance Sheets, 2000–16
(Weighted average of 17 countries, percent of GDP)

Balance sheets expanded during the crisis, while net (financial) worth deteriorated.



Source: IMF staff estimates.
Note: The data exclude land and natural resource assets and pension liabilities.

The Evolution of Balance Sheets over Time

During the global financial crisis policymakers provided fiscal stimulus and monetary and financial support. While these policy actions reduced static public sector net worth, they contained the propagation from bank and financial market failures, thereby supporting prices, economic activity, and employment. By doing so they protected the future tax base, preserving intertemporal public wealth.

Public sector balance sheets expanded during the global financial crisis, while net worth declined sharply. In the 17 countries for which full PSBS time series data have been compiled, liabilities increased by about 39 percentage points of GDP between 2007 and 2016. However, a concomitant expansion of public sector assets occurred, with assets increasing by 22 percentage points of GDP during 2007–09 in the immediate wake of the crisis, partly because of financial sector interventions; in subsequent years, assets retreated slightly to remain 14 percentage points of GDP above precrisis levels. Both sides of the PSBS remain significantly larger than they were precrisis (Figure 1.5, panel 1).

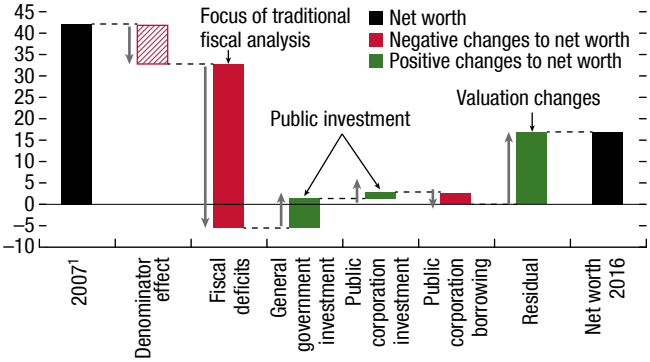
Net worth remains well below precrisis levels, even as fiscal deficits have been reined in. Overall, public sector net financial worth deteriorated by US$11 trillion or 28 percentage points of GDP during the postcrisis decade, with a modest decline continuing even in the later years (Figure 1.5, panel 2). Net worth declined by a similar, although slightly lower, 25 percentage points of GDP, with the difference attributable to public investment. This average marks a wide dispersion, with net worth declining by as much as 49 percentage points of GDP in the United Kingdom, while increasing by 167 percentage points of GDP in Norway, much of this because of strong valuation gains from its equity holdings. While fiscal deficits in the advanced economies most affected by the crisis have largely been brought back to moderate levels (see the April 2018 *Fiscal Monitor*), the deterioration in net worth caused by the crisis still needs to be addressed.

The postcrisis deterioration in public wealth was driven by deficits, but balance sheet effects significantly cushioned the decline. For the 17 countries with public sector time series data, a decomposition of postcrisis developments shows the relative roles of debt accumulation, public investment, operations in the public corporation sector, and valuation changes. Among these countries, net worth fell from 42 percent of GDP in 2007 to 17 percent in 2016 (Figure 1.6). Fiscal deficits were the largest factor, contributing 38 percentage points of GDP to the overall decline. Together with the 9 percentage point of GDP denominator effect, net worth dips into negative territory.[18] However, some of the deficits were used to invest rather than to consume, raising net worth by some 8 percentage points of GDP. While valuations fell during the crisis, reflecting falling asset prices, they rebounded in subsequent years, adding another 16 percentage points of GDP to net worth. Such large balance sheet effects are common across countries, and emphasize the usefulness of a PSBS approach.

[18]This denominator effect displays the impact of moving from 2007 to 2016 GDP in the denominator. The 2007 bar is expressed in percent of 2007 GDP, while all other bars are expressed in 2016 GDP.

Figure 1.6. Decomposition of Changes in Net Worth, 2007–16
(Weighted average of 17 countries, percent of GDP)

Balance sheet effects offset some of the deficits following the crisis.



Source: IMF staff estimates.
[1]Expressed as percent of 2007 GDP.

Further analyzing the effects of the crisis on balance sheets requires a look at individual countries. This point is illustrated by looking at the evolution of the PSBSs of the United Kingdom and Finland below and the general government balance sheet in China (Box 1.3).

The United Kingdom balance sheet expanded massively during the crisis, with balance sheet effects driving most of the movement in net debt—the main fiscal measure used in the United Kingdom.[19] Most of the expansion in the balance sheet was the result of large-scale financial sector rescue operations that resulted in reclassification of the rescued private banks into the public sector and increased (non–central bank) public financial corporation liabilities from 0 in 2007 to 189 percent of GDP in 2008, with similar movements in financial assets (Figure 1.7, panel 1).[20] These balance sheet effects drove most of the movements in net debt during the crisis period, as the government borrowed to inject funds into the banks. In the early crisis years when the major financial sector operations occurred, the contribution to net debt from balance sheet effects was comparable to that from the fiscal deficit (Figure 1.7, panel 2). Even in subsequent years, the balance sheet effects contributed significantly to net debt changes, both positively and negatively.[21]

Finland was also hit hard by the crisis. Yet the channels through which the crisis affected its public wealth differed considerably from the United Kingdom, with valuation changes playing a major role (Figure 1.8). Between 2000 and 2007, static net worth increased steadily from 20 to 59 percent of GDP, as the government reduced debt and experienced large net positive valuation changes, stemming mainly from the equity asset holdings of its partially funded pension schemes. Increasing public pension liabilities partly offset these

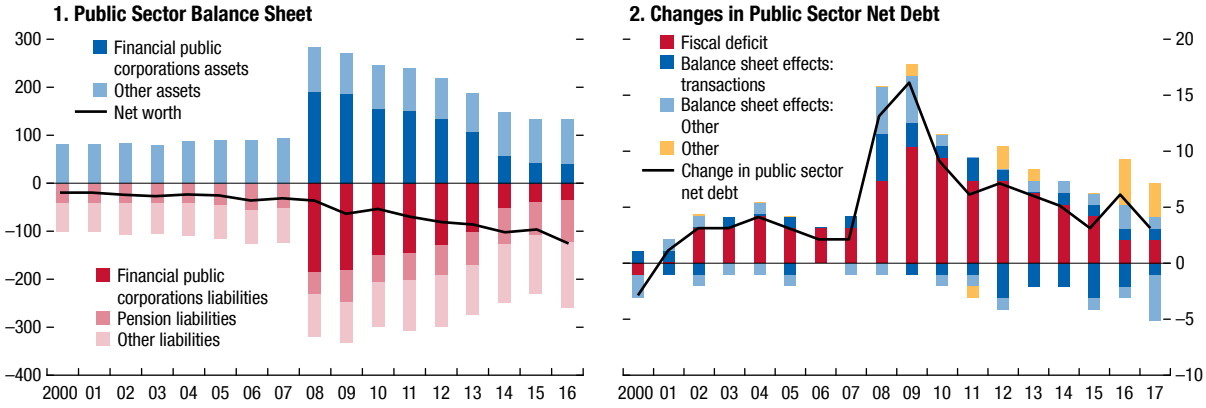
[19]Public sector net debt records the public sector's gross debt minus its holdings of liquid financial assets. Balance sheet measures published by the United Kingdom show the government's equity holdings of public sector banks, rather than the entirety of their balance sheets, as presented here (see IMF 2016b).

[20]Much of the decline in net worth over the period reflects increasing debt and pension liabilities.

[21]These effects mainly comprise gains in other accounts receivable and payable, other reserve revaluations, and net premiums or discounts of gilt issuance.

Figure 1.7. The United Kingdom: Balance Sheet Developments, 2000–16
(Percent of GDP)

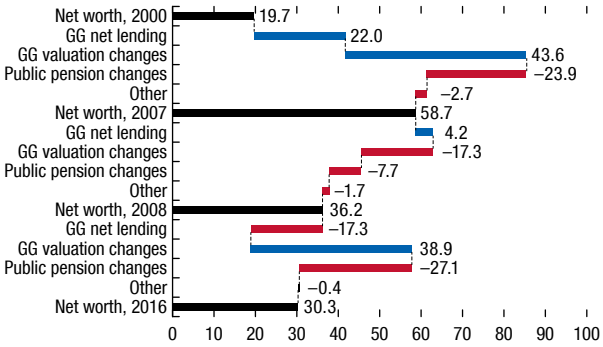
The United Kingdom balance sheet expanded massively during the crisis, with balance sheet effects driving much of the movement in net debt.



Sources: Her Majesty's Treasury 2018a; and IMF staff estimates.

Figure 1.8. Finland: Changes in Net Worth, 2000–16
(Percent of GDP)

Natural hedges in Finland's public sector balance sheet stabilized postcrisis movements in net worth.



Sources: Finnish authorities; and IMF staff estimates.
Note: GG = general government.

positive effects. At the start of the crisis, large negative valuation changes of 17 percentage points of GDP occurred in a single year, mainly because of the decrease in the value of the government's asset holdings. In contrast, the impact of the crisis on debt was felt more slowly, with fiscal deficits decreasing net worth by 17 percentage points of GDP between 2008 and 2016. During this postcrisis period, the recovery of financial markets increased asset valuations once again. This was partly the result of ultra-low interest rates, which, however, increased the discounted value of pension obligations. Overall, these countervailing developments on assets and liabilities provided a natural hedge to the Finnish PSBS, resulting in broadly stable net worth over the postcrisis period (Brede and Henn 2018).

Using the Balance Sheet to Identify Fiscal Risks

The evolution of balance sheets highlights the large and long-lasting implications that the materialization of fiscal risks can have on public wealth (IMF 2012b). Case studies illustrate how to assess those risks using fiscal stress tests, with a focus on three specific components of the PSBS that fall outside traditional fiscal analysis: (1) valuation changes in the general government in Finland, (2) financial public corporations in the United States, and (3) nonfinancial public corporations in The Gambia.

Stress Testing Finland's Balance Sheet

Finland's PSBS features large financial assets, most of them assets of its partially funded pension schemes, against which stand large pension liabilities. A fiscal stress test examines the resilience of Finland's public finances against a large but plausible macroeconomic shock that includes considerable falls in asset prices. The shock's impact on net worth is far greater than the increase in debt. The analysis concludes that the fiscal consolidation currently under way, combined with planned health and social service reforms, will provide sufficient buffers to avoid procyclical consolidation after a shock.

Finland's PSBS is relatively healthy with a net worth of 30 percent of GDP and a positive intertemporal net worth of 114 percent of GDP (Figure 1.9).[22] The latter reflects projected future primary surpluses that result from ongoing fiscal consolidation and implementation of planned health and social service reform (IMF 2017b).[23] However, the size and composition of Finland's balance sheet, which includes pension funds that are heavily invested in equities, leaves the balance sheet exposed to asset price valuation risks. Furthermore, Finland's economy has been subjected to large macroeconomic shocks in the past, and these have permanently lowered real GDP levels (see the October 2018 *World Economic Outlook*).

In light of these sensitivities, a fiscal stress test is applied to determine whether the balance sheet provides sufficient buffers to withstand a large future macroeconomic shock. The stress test applies a macroeconomic shock similar to previous crises, including the Nordic banking and the global financial crisis, although slightly less severe. In this test, real and potential GDP fall by a cumulative 10 percent over two years, remaining permanently lower. At the same time, equity prices and housing prices fall by 40 percent and 15 percent, respectively.[24] The stress test thus targets the exposures in Finland's balance sheet.

In this stress scenario, fiscal deficits increase as revenues decline while expenditures increase owing to the operation of automatic stabilizers. Over the longer term, expenditures remain elevated relative to GDP, as a result of some expenditures (for example, health) that remain constant in nominal terms when

[22]For details on how these data are compiled and consolidated, see Annex 1.2.

[23]To avoid double counting, future pension payments to civil servants that are already recorded as a liability in the static balance sheet are excluded from the primary balances. In line with GFSM 2014, private sector pension liabilities are excluded from the static balance sheet but are included in intertemporal net worth. However, public assets related to these private sector pension obligations are included in the static balance sheet.

[24]See Brede and Henn (2018) for details of the shock and its impact.

Figure 1.9. Finland: Intertemporal Balance Sheet
(Percent of GDP)

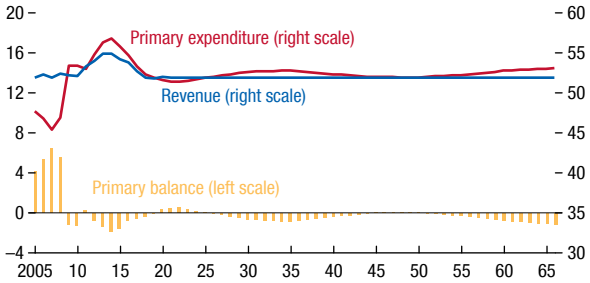
Finland's balance sheet features large financial assets.

1. Public Sector Balance Sheet, 2016

	General Government	Public Corporations	Public Sector
Total assets	208.9	75.2	254.1
of which: Nonfinancial assets	80.2	10.4	90.6
Financial assets	128.7	64.8	163.5
Total liabilities	178.6	75.2	223.8
of which: Debt securities	54.1	13.7	57.2
Net financial worth	–49.9	–10.4	–60.3
Net worth	30.3	0	30.3
Net present value of primary balances			83.3
Intertemporal net worth			113.6

Source: IMF staff estimates.

2. Long-Term Fiscal Projections

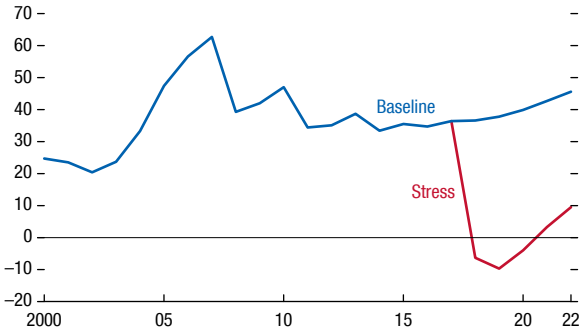


GDP decreases. Debt rises about 20 percentage points above the baseline in the first two years after the shock. The deterioration in net worth is significantly larger, falling by 45 percentage points of GDP by the second year, because of the impact of asset prices and increased pension liabilities (driven mainly by interest rate effects, Figure 1.10). The long-term impact of the stress scenario is even larger, with permanently higher fiscal deficits translating into an 85 percentage points of GDP decrease in intertemporal net worth.

Comparing the impact of the shock to the intertemporal net worth suggests that Finland's public finances have sufficient buffers to withstand a large macroeconomic shock while avoiding costly procyclical fiscal consolidation. A valid question is to what extent nonfinancial assets of the state could be used to fund future primary balances.[25] If they cannot be used, it may be more prudent to focus on net intertemporal financial worth, and then slightly higher buffers would be advisable.

Figure 1.10. Finland: Net Worth
(Percent of GDP)

A fiscal stress event hits net worth more than debt.



Source: Statistics Finland; and IMF staff estimates.

A Fiscal Stress Test for the United States

Like Finland, the United States PSBS features large financial assets, although most of them are held outside the general government in pension funds and government-sponsored enterprises (GSEs) such as Fannie Mae and Freddie Mac. They would not be incorporated in traditional fiscal analysis but are brought out when looking at the PSBS. This case study presents the size of those assets and subjects the PSBS to a macroeconomic stress scenario. Such a shock results in a loss of net worth of about 26 percent of GDP by 2020, far larger than the direct impact of the fiscal deficits alone.

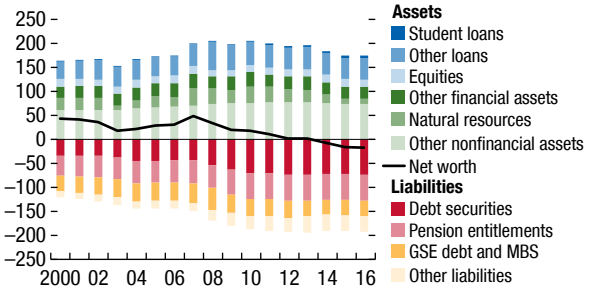
Public sector net worth in the United States has been falling since the early 1980s. The trend was exacerbated by the global financial crisis, during which a range of risks within the balance sheet materialized (Figure 1.11). Overall, net worth deteriorated to –17 percent of GDP in 2016, with net financial worth standing at –101 percent of GDP. With financial assets of 112 percent of GDP, the financial public corporations sector is large relative to the general government.[26] The resilience of public finances in the United States therefore cannot be assessed without

[25]While some public nonfinancial assets could be sold without large repercussions on economic activity and tax revenues (for example, converting a public highway to a private toll highway), some might be difficult or impossible to sell (like in-city roads, sewage infrastructure, and land in remote areas).

[26]In the United States statistics, nonfinancial public corporations are included in general government.

Figure 1.11. United States: Public Sector Balance Sheet
(Percent of GDP)

The United States' balance sheet features large financial public corporations.



2016	General Government	Public Corporations	Public Sector
Total assets	110.3	112.0	175.8
of which: Nonfinancial assets	84.5	0.0	84.5
Financial assets	25.8	112.0	91.3
Total liabilities	127.1	112.0	192.5
of which: Debt securities	98.6	34.0	107.9
Net financial worth	–101.3	0.0	–101.3
Net worth	–16.7	0.0	–16.7

Sources: US Federal Reserve Board of Governors; and IMF staff estimates.
Note: GSE = government-sponsored enterprise; MBS = mortgage-backed securities.

considering the wider public sector that includes these public corporations.

The largest, although not the most volatile, class of financial assets on the PSBS are loans to the private sector. These include 44 percent of GDP in mortgages, mostly held by GSEs.[27] They also include federal holdings of student loans (6 percent of GDP), which account for most of the increase in the public sector's loan portfolio since 2007, and are typically unsecured.

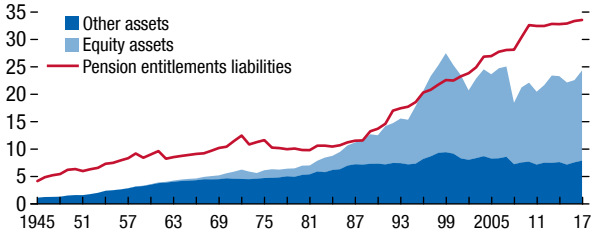
Among financial assets, the portfolio of state and local government pension funds has historically been the largest source of risk, as these funds are exposed to large equity price fluctuations (Figure 1.12). When stock prices decline, the resulting increase in the unfunded portion of pension liabilities is explicitly backed by local governments. Shoag (2013) shows that fluctuations in asset returns have a direct impact on state government spending, with large consequences for local economic activity. Many state and local government pension funds are currently underfunded, with a total shortfall of 8 percent of GDP. In addition, the federal defined benefit pension fund faces a similar shortfall of almost 10 percent of GDP.[28] The aggregate shortfall of state and local pension funds masks substantial heterogeneity in funding status across states, ranging from a surplus of 4.3 percent of state GDP in Wisconsin to a gap of 27 percent of GDP in Illinois (Figure 1.13). In most cases, the funding status has deteriorated considerably since 2007, driven by large negative returns during the global financial crisis.

Applying a fiscal stress test to the United States PSBS identifies and assesses fiscal vulnerabilities associated with these holdings. The scenario is based on the Federal Reserve's severely adverse supervisory scenario.[29] The scenario involves a severe global reces-

[27]GSE-held mortgages are financed through GSE-issued debt and agency-backed securities. With the formal federal takeover of Fannie Mae and Freddie Mac in 2008, these previously implicit government liabilities were made explicit. Cumulative draws by Fannie Mae and Freddie Mac on the treasury between 2008 and 2011 amounted to US$187.5 billion (1.3 percent of 2007 GDP). See Frame and others (2015).

Figure 1.12. United States: State and Local Government Retirement Fund Assets and Liabilities
(Percent of GDP)

Pension funds are underfunded and heavily invested in volatile equities.



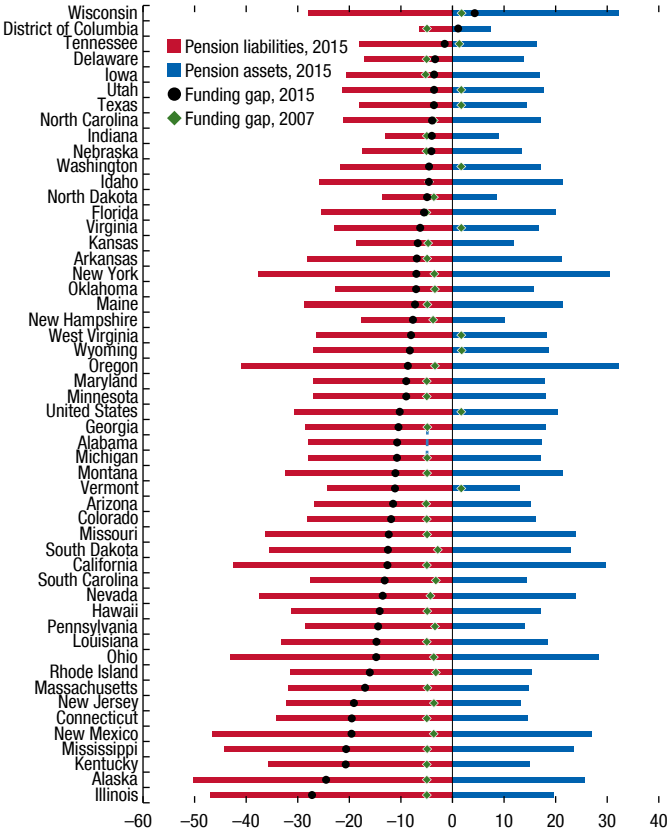
Sources: US Federal Reserve Board of Governors; and IMF staff estimates.

[28]The federal government employee pension fund—formally, the Civil Service Retirement System—has been closed to new entrants since 1983 and holds only treasury securities, so it is less volatile.

[29]See Board of Governors of the Federal Reserve System (2018). The scenario is more severe than the shocks associated with the 2008–09 global financial crisis. The stress test assumes that no countercyclical fiscal policy measures are taken, so the increase in the deficit is smaller than during 2009, when expansionary measures were taken to dampen the effects of the crisis. In the scenario, GDP growth is –6 percent, while the unemployment rate increases to almost 10 percent, real estate prices decline by one-third, and equity prices by almost two-thirds.

Figure 1.13. United States: State and Local Government Retirement Funds
(Percent of GDP)

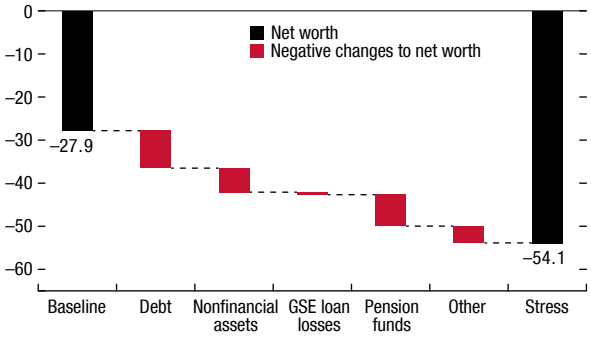
Pensions are underfunded in all but two states.



Source: IMF staff estimates.

Figure 1.14. United States: Effects of a Severe Stress Scenario on Static Net Worth, 2020
(Percent of baseline GDP)

A severe stress scenario decreases the United States' public wealth by about 26 percent of GDP.



Source: IMF staff estimates.
Note: GSE = government-sponsored enterprise.

sion, combined with a steeper yield curve and a rapid drop in equity and real estate prices. The asset price drop particularly affects the large exposure to financial assets, suggesting the stress scenario is well-suited to analyze these potential risks.

This stress scenario leads to an estimated 26 percent of GDP decrease in United States public sector static net worth by 2020 (Figure 1.14; for details, see Gonguet and others, forthcoming). In the scenario, tax revenue falls sharply, which leads to a rapid accumulation of fiscal deficits, increasing debt by a cumulative 9 percent of GDP within three years. But the decline in net worth from balance sheet effects is even larger, at about 17 percent of GDP. These effects include a 6 percent of GDP drop in the value of the government's nonfinancial assets, mainly because of the revaluation of publicly owned structures as a result of lower real estate prices.[30] An additional 7 percent of federally held student loans would not be paid back (0.3 percent of GDP).[31] However, the effects on financial public corporations are larger still. Equity price falls lead to state and local pension liabilities being underfunded by an additional 7 percent of GDP, with substantial differences in how the stress scenario affects individual states because of the risk-taking behavior of their pension funds. The relatively limited losses on the mortgage loan portfolio held by GSEs (0.6 percent of GDP) reflect the fact that the portfolio has shrunk by 11 percent of GDP since the crisis, as well as the cushioning of losses by real estate collateral.[32] The composition of assets has also become less risky as the GSEs have disposed of most of their private asset-backed securities—a large source of losses during the crisis. Only some of these balance sheet losses would require immediate additional debt issuance to finance them, whereas others can remain on the balance sheet for a long time.

[30]Historically, about 20 percent of variations in the national real estate price index are reflected in the valuation of the public sector's structures.

[31]This relatively limited impact on the federal student loan portfolio is consistent with the strong recovery power of the federal government in case of default, the rarity of discharge cases, and rules in place allowing for temporary relief (deferment, forbearance, grace periods, etc.).

[32]The loan loss estimates do not directly compare with the potential treasury drawdowns, which would include the consequences of the shock on other assets, the impact of valuation allowances on deferred tax assets, and the effect of provisioning rules. However, they are of similar magnitude to the Federal Housing Finance Agency (2017) estimates under the severely adverse scenario that estimates a potential incremental treasury draw by Fannie Mae and Freddie Mac of about US$100 billion (0.4 percent of baseline GDP) over two years.

Table 1.1. The Gambia: Public Sector Balance Sheet, 2016
(Percent of GDP)

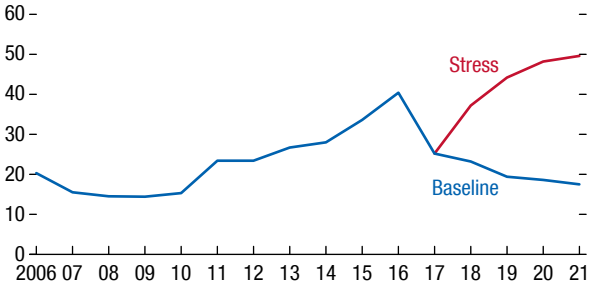
The Gambia's public sector balance sheet features large nonfinancial public corporations.

	Central Government	Public Corporations	Public Sector
Total assets	47.3	61.9	61.0
of which: Nonfinancial assets	13.4	22.4	35.8
Financial assets	33.9	39.4	25.2
Total liabilities	93.5	61.9	107.2
of which: Debt securities	78.4	2.0	61.4
Net financial worth	–59.5	–22.4	–82.0
Net worth	–46.2	0.0	–46.2

Source: IMF staff estimates.

Figure 1.15. The Gambia: Gross Financing Needs
(Percent of GDP)

A natural disaster leads to unsustainable financing needs.



Source: IMF staff estimates.

Assessing Fiscal Risk in The Gambia

While the United States stress test focused on the role of financial public corporations, The Gambia case study looks at nonfinancial public corporations, another important component of the PSBS. It illustrates how macroeconomic stress can propagate through the public corporation sector and eventually to the budget through the realization of contingent liabilities. In addition to the immediate macroeconomic impact, a severe macroeconomic shock would cause cascading problems in public corporations, which would push the financing needs of the government into unsustainable territory.

The Gambia case study underscores that a PSBS can be estimated even in a very constrained data environment. The Gambia's PSBS shows liabilities exceeding assets by a large margin, with net (financial) worth estimated at –46 (–82) percent of GDP (Table 1.1). Most of the financial assets are nonmarketable and so would not be readily available to meet outstanding obligations. The balance sheet is highly exposed to refinancing, interest rate, and exchange rate risks, because of the large amount of short-dated domestic debt (27 percent of debt falls due within one year) and large (concessional) foreign exchange loans. However, unlike Finland and the United States, there is relatively little exposure to valuation risk, as the public sector holds few tradable securities.

The stress test examines the impact of a natural disaster—a combined drought and pandemic. It affects both agriculture and tourism, two mainstays of the economy.[33] The direct macroeconomic impact of the stress scenario on government and public corporation finances is considerable, with the deficit increasing by 8 percent of GDP. Realizations of contingent liabilities from the public corporation sector (largely utilities with precarious finances) would increase the deficit by an additional 10 percent of GDP. This pushes gross financing needs from an already high 25 percent of GDP to 49 percent of GDP (Figure 1.15). With little absorptive capacity in the domestic market, low offsetting assets, and limited availability of additional foreign financing, the only way the government would be able to meet its financing needs would be through central bank financing, as occurred during a previous shock in 2014.

The stress scenario exposes public sector cross holdings as a key shock transmission channel. About 20 percent of GDP in loans is consolidated in public sector accounts. Many of these loans are from one public corporation (often the pension fund) to another (for example, the electricity and telephone companies). If financing needs resulting from the realization of contingent liabilities in the stress scenario are not addressed, they could quickly cause cascading defaults in the public corporation sector. In addition, public corporations owe each other arrears equivalent to 4 percent of GDP (an amount likely to increase during a crisis), further increasing the cascading effects of defaults. By identifying these channels early, the government can plan ahead to identify where in the chain the government and donors can best intervene to avoid losses cascading through public corporations and onto the budget.

[33]See Appleby and others (2018) for details, as well as the interaction of the public sector with the banking sector, illustrating the sovereign-banking feedback loop. While no contingent liabilities arise from the banking system as a result of high loss-absorbing buffers, these are heavily eroded. The stress test uses the June 2017 vintage of data. Since then, the debt position has deteriorated further.

Using the Balance Sheet to Evaluate Fiscal Policies

This section evaluates a range of policies through the prism of the PSBS, focusing on the largest public assets: natural resources, the public capital stock, and future revenue. By converting natural resources into financial assets, Kazakhstan mitigated the impact of the 2014 oil price shock. The Indonesia study shows how a tax-financed infrastructure push can have large positive impacts on the public capital stock and net worth. An intertemporal balance sheet analysis for Finland and Norway finds that policy reforms have strengthened Finland's fiscal position, while the continuation of current policies in Norway would eventually imply a drawdown of its large assets.

Balance Sheet Effects of an Oil Price Shock in Kazakhstan

The balance sheet approach recognizes natural resources as assets. Kazakhstan has converted a portion of its large natural resource assets into a diversified and liquid sovereign wealth fund, the National Fund of the Republic of Kazakhstan (NFRK), which helped cushion the economic impact of macroeconomic and oil price shocks in 2014.

Like many oil exporters, natural resources form the largest asset on Kazakhstan's balance sheet (Table 1.2). In 2016, these assets were estimated to be worth 219 percent of GDP. Once extracted and sold, the balance sheet approach records the conversion of one asset (resources) into another (cash). This aligns the treatment of natural resource assets with other nonfinancial assets; in other words, the sale of oil is treated in the same way as the sale of a building or public land.[34]

The ultimate impact of natural resource extraction on net worth is determined by what the government does with its cash receipts. If they are used to fund ongoing expenditures, such as salaries or transfers, public wealth declines. If, on the other hand, revenues are used to purchase alternative (financial or nonfinancial) assets or reduce liabilities, net worth remains unchanged, although the nature of the asset has changed. Kazakhstan is an example of a resource producer that has taken the latter path, converting part of its significant oil assets into financial assets in the NFRK. The fund was worth 46 percent of GDP at the end of 2016, primarily in the form of foreign currency bonds (about 80 percent) and equities (20 percent).

The conversion of natural resource assets into the NFRK has reduced fiscal risks. It has helped diversify Kazakhstan's assets away from a single, highly volatile resource asset, into a more diversified portfolio of financial assets, which has improved the state's risk-return position. It has also converted illiquid natural resource assets into highly liquid financial assets, which can be drawn on relatively easily in the event of a crisis.

The NFRK has played a key role as a shock absorber, as the Kazakh economy is subject to frequent large economic shocks. The most recent was a 2014 external shock, where a 60 percent fall in oil prices, combined with an external demand shock from Russia and China, led to a sharp depreciation of the national currency and a slowdown in growth. The fiscal balance deteriorated from a surplus of 5 percent of GDP in 2013 to a deficit of 6 percent of GDP in 2015, and public debt increased (due to both the large deficit and the depreciation).

The overall effects on Kazakhstan's PSBS were large. First, higher fiscal deficits (in part caused by lower oil revenue) increased liabilities by a cumulative 31 percentage points of GDP between 2013 and 2016 through higher borrowing and an increased drawdown on existing financial assets. Second, the decline in oil prices lowered the valuation of the country's remaining natural resource assets. Third, natural resource exploitation depleted oil reserves, lowering the value of remaining natural resource assets. Fourth, although increasing the value of foreign debt, the exchange rate depreciation also prompted a significant positive valuation effect (in local currency terms) as a result of the high amount of US-dollar-denominated financial and natural resource assets. These positive currency effects dominated, resulting in an increase in net worth (Figure 1.16). However, the persistence of these effects may differ considerably. Currency valuation effects, for instance, were quite persistent in Kazakhstan, but in general may be short-lived.

Table 1.2. Kazakhstan: Public Sector Balance Sheet, 2016
(Percent of GDP)

Kazakhstan's public sector balance sheet features large natural resources and financial assets.

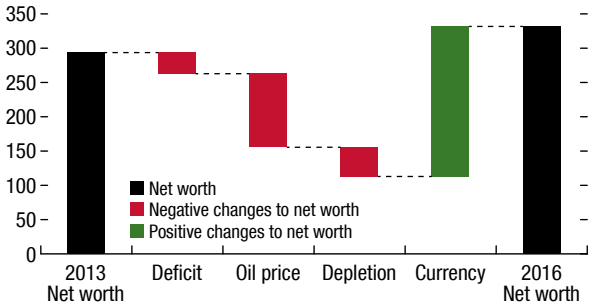
	General Government	Public Corporations	Public Sector
Total assets	348.6	99.9	399.0
of which: Nonfinancial assets	263.4	27.3	290.7
Financial assets	85.2	72.6	108.3
Total liabilities	16.9	99.9	67.2
of which: Debt securities	11.5	8.9	10.5
Net financial worth	68.3	–27.3	41.0
Net worth	331.7	0.0	331.7

Source: IMF staff estimates.

[34]The implications of this statistical treatment of natural resources are explored in detail in Annex Box 1.2.1.

Figure 1.16. Kazakhstan: Evolution of Net Worth
(Percent of 2016 GDP)

The 2014 shock increased net worth as a result of positive currency effects.



Source: IMF staff estimates.

Combined with the large buffers in the sovereign wealth fund, these balance sheet effects provided room for the government to undertake countercyclical fiscal policy. Between 2014 and 2017, the government undertook fiscal stimulus of over 10 percent of GDP, largely financed by increased transfers from the NFRK. In addition, the authorities provided support of about 4 percent of GDP to the financial sector in 2017—a contingent liability that materialized as a result of the macroeconomic shock— funded partly from the NFRK.

Assessing the Long-Term Impact of a Public Investment Surge in Indonesia

The public capital stock is another large asset in a country's PSBS. Public investments in nonfinancial assets have a distinct balance sheet impact that is missed if looking at debt and deficits alone. This is illustrated for Indonesia, where a tax-financed infrastructure investment surge boosts public sector net worth, both immediately and in the longer term.

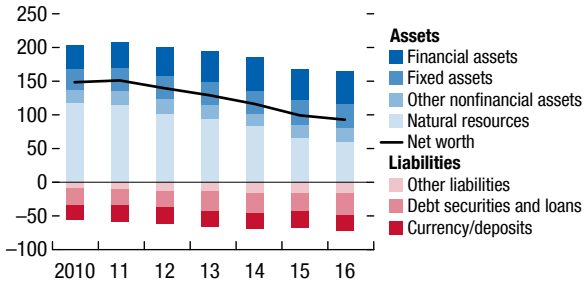
Indonesia's PSBS has positive net worth (Figure 1.17). Public sector assets are large, exceeding 160 percent of GDP in 2016, with natural resources accounting for half of nonfinancial assets. On the liability side, currency and deposit obligations are significant, reflecting a large public banking sector, while pension liabilities are relatively small. Static net worth stood at 93 percent of GDP in 2016, despite a steady decline since 2010 or earlier, owing to falling natural resource wealth.

Indonesia is considering embarking on an aggressive extension and upgrade of its public infrastructure, to be implemented in the next few years (Shin 2018), financed in part by raising its low tax take. Indonesia's fixed public capital stock is low compared with its neighbors', and public investment is insufficient to maintain it. Tax revenues have fallen over the past decade to about 11 percent of GDP in 2017—well below its peers'—as revenue from a shrinking oil and gas sector decreased. In response, the authorities are considering implementing a Medium-Term Revenue Strategy (MTRS)—a comprehensive plan that integrates revenue mobilization and tax policy reform—to raise revenue to finance infrastructure investment (Jin 2018).

The balance sheet approach provides a comprehensive assessment of the investment plan in three ways. First, when the investment occurs, the approach recognizes the creation of an asset. Second, it includes public corporations, which are responsible for about 40 percent of net public investment in Indonesia. Third, by considering the intertemporal aspect, it recognizes the impact on growth and future revenues that can come from an increase in investment (see the October 2014 *Fiscal Monitor*). While the first and third aspects are standard

Figure 1.17. Indonesia: Public Sector Balance Sheet, 2010–16
(Percent of GDP)

Indonesia's public sector balance sheet features large but declining natural resource assets.

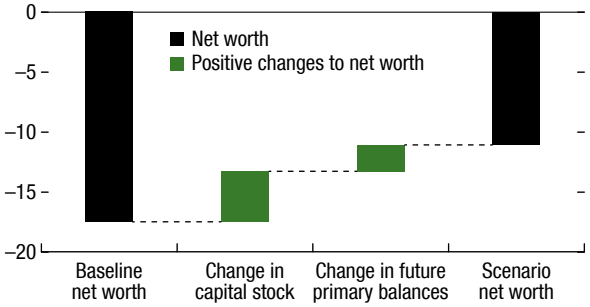


2016	General Government	Public Corporations	Public Sector
Total assets	124.0	65.9	164.7
of which: Nonfinancial assets	95.8	20.9	116.6
Financial assets	28.1	45.0	48.1
Total liabilities	31.4	65.9	72.2
of which: Debt securities	23.0	4.7	22.3
Net financial worth	–3.3	–20.9	–24.1
Net worth	92.5	0.0	92.5
Net present value of primary balances			–90.7
Intertemporal net worth			1.8

Source: IMF staff estimates.

Figure 1.18. Indonesia: Intertemporal Net Worth
(Percent of 2023 baseline GDP)

A tax-financed public investment surge boosts net worth.



Source: IMF staff estimates.

Table 1.3. Norway: Public Sector Balance Sheet, 2016
(Percent of GDP)

Norway's public sector balance sheet features large pension liabilities.

	General Government	Public Corporations	Public Sector
Total assets	563.5	119.6	644.9
of which: Nonfinancial assets	230.6	35.6	266.2
Financial assets	332.9	83.9	378.7
Total liabilities	142.7	119.6	224.1
of which: Debt securities	20.7	10.0	30.7
Net financial worth	190.1	–35.6	154.6
Net worth	420.7	0.0	420.7
Net present value of primary balances			–225.9
Intertemporal net worth			194.8

Source: IMF staff estimates.

in macroeconomic models, they are absent from the budget documentation in most countries.

A tax-financed investment surge could boost Indonesia's intertemporal net worth by some 6½ percent of GDP and raise potential GDP.[35] In the scenario, tax revenue increases by an incremental 1 percentage point of GDP per year for three years, reaching 3 percent of GDP above baseline by 2022, broadly in line with the MTRS. The additional tax proceeds finance additional public investment; however, in line with findings for emerging markets worldwide (IMF 2015b), only two-thirds of the public investment surge is converted to physical capital. After three years, both tax revenue and the stock of public nonfinancial assets remain at their higher levels.[36] The improvement in the public sector's financial position is substantial, with static net worth increasing by more than 4 percent of baseline GDP, as a result of the creation of infrastructure assets. The long-term impacts are even larger. Although the additional taxation depresses GDP, this is offset by the impact of a higher public capital stock, resulting in a permanent 1⅓ percent level increase of both potential and real GDP, increasing revenues and the primary balance.[37] The public sector's intertemporal net worth—which combines the static balance sheet with the net present value of future revenue and expenditure flows—improves by 6½ percent of baseline GDP (Figure 1.18).[38]

Raising investment efficiency would increase the benefits even further and potentially improve intertemporal net worth by as much as 10 percent of baseline GDP—highlighting the benefits of strengthened infrastructure investment efficiency. The economywide impacts could be greater still, as positive spillovers to private wealth, outside of the growth impact, are not captured in the PSBS.

Assessment of Long-Term Fiscal Outcomes in Two Nordic Countries

An application of the intertemporal balance sheet approach to Finland and Norway highlights the public sector's largest assets and liabilities in the form of future revenue and expenditure. Although both countries have strong fiscal positions, a continuation of Norway's current policies would eventually lead it to eat into its natural resource wealth. Norway's large assets, however, provide considerable buffers to smooth the adjustment of current policies, which will happen under the current fiscal rule. Finland's past, ongoing, and planned reforms have already led to a major improvement in intertemporal net worth, illustrating the benefits of modest but sustained reform.

Finland and Norway are Nordic neighbors whose balance sheets feature some key differences. Both countries are wealthy advanced economies with aging populations. Both have manageable levels of debt—Finland at 57 percent of GDP and Norway at 31 percent of

[35]The effect of the tax-financed investment surge on GDP is modeled using the IMF G20Mod model. For details see El Rayess and others (forthcoming). These long-term projections are subject to considerable uncertainty.

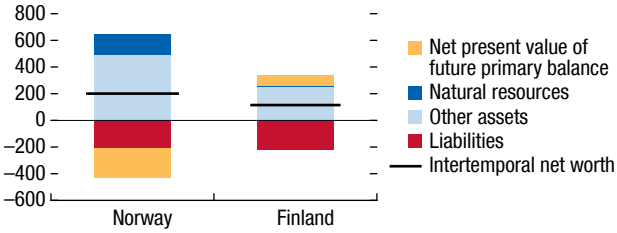
[36]After three years, public investment remains at a level that maintains the higher capital stock in perpetuity. The remaining tax revenue is assumed to be spent on priority current expenditure categories, such as health, pension, and education expenditures.

[37]This scenario allows for monetary policy accommodation, and therefore a constant discount rate. If instead monetary policy were tightened, the impact of the investment surge on intertemporal net worth would be about 5 percent of GDP. Details and further sensitivity analysis can be found in El Rayess and others (forthcoming).

[38]Note that Indonesia's intertemporal net worth is –18 percent in 2023 compared with +1.8 percent of GDP in 2016. The difference is due mainly to a further decline in natural resource wealth.

Figure 1.19. Norway and Finland: Intertemporal Net Worth
(Percent of GDP)

Future flows reduce Norway's net worth but add to Finland's.



Source: IMF staff estimates.

GDP—and relatively high pension liabilities (Figure 1.9 and Table 1.3).[39] The major difference lies in Norway's natural resource wealth, comprising its sovereign wealth fund and remaining subsoil natural resources, which together are worth more than 400 percent of GDP.

Norway's intertemporal net worth is lower than this large asset base would suggest. Current policies imply large primary deficits into the future, which, cumulated over the next 50 years, result in an intertemporal net worth of 195 percent of GDP (Figure 1.19).[40] While this is a robust number by any standard, it is considerably lower than the country's static net worth. To look at this another way, if Norway maintains its current policies, its oil wealth would be at least partly consumed by future aging-related expenditures, going against its fiscal rule. However, continued adherence to the fiscal rule would bring about sufficient policy change to prevent this outcome. Specifically, policy adjustment—further reviewing, for instance, costly disability schemes, and instituting systematic public expenditure reviews—would reduce future primary deficits and improve intertemporal net worth to avoid a depletion of the sovereign wealth fund. Norway's vast wealth implies that any such policy adjustment can be pursued in a very gradual way, smoothing the transition.

In contrast with Norway, Finland's intertemporal net worth exceeds its static net worth, reflecting a series of reforms that include postcrisis fiscal consolidation and pension reform. Finland also plans to further reform its health and social services sectors. Collectively, these reforms permanently reduce demographic-related expenditures, improving intertemporal net worth to 114 percent of GDP—an example of the impact of modest but sustained reform on long-term public wealth.

Balance Sheet Analysis in Practice

Australia, New Zealand, and the United Kingdom manage public wealth using balance sheets. All three countries produce PSBSs that inform high-level policy and day-to-day fiscal management. First, they use the aggregate data to set overall fiscal policy objectives. Second, they improve asset management to maximize the efficiency of use and returns on public assets, something also done in Uruguay. Third, they identify, analyze, and manage fiscal risks emanating from within the balance sheet as well as from external shocks.

Using Balance Sheets to Guide Fiscal Policy

Both Australia and New Zealand focus on strengthening their balance sheets over time, to improve national saving and provide a buffer against external shocks. Their fiscal policy objectives explicitly include improving net (financial) worth in addition to reducing net debt and achieving or maintaining surpluses. To operationalize this, both countries project their balance sheets forward to demonstrate that policies are consistent with fiscal objectives.[41] The balance sheet projections extend between 6 and 10 years and cover all key aggregates: assets, liabilities, and net (financial) worth. The authorities have used these projections to demonstrate the impact of pension reforms, tax changes, and public investment surges.

Both countries also consider the long-term evolution of net (financial) worth. Australia's 40-year projections estimate the effects of demographic change on health and pension expenditure, based on previous, current, and proposed policies (Figure 1.20). New Zealand estimates intertemporal net worth, finding that despite a strong static net worth of 41 percent of GDP, large projected deficits over the coming 40 years result in intertemporal net worth of –57 percent of GDP, making it clear that adjustment is needed (Table 1.4). Both countries use these findings to motivate policy changes.

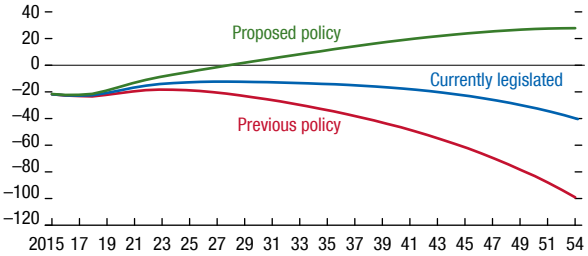
[39]These are the consolidated debt securities and loans of the public sector. General government gross debt is 63 percent and 37 percent in Finland and Norway, respectively.

[40]This analysis is based on Cabezon and Henn (2018) and the long-term projections are subject to considerable uncertainty. In the absence of any adjustment, Norway's non-oil primary fiscal deficit in year 50 would surpass 10 percent of GDP. In an infinite horizon version of the model that takes this large primary deficit into account beyond year 50, intertemporal net worth is –82 percent of GDP.

[41]In Australia, the balance sheets are projected by each level of government independently.

Figure 1.20. Australia: Net Financial Worth Projections
(Percent of GDP)

Australia projects net financial worth under different policy scenarios.



Source: Commonwealth of Australia 2015.

Table 1.4. New Zealand: Intertemporal Balance Sheet
(Percent of GDP)

New Zealand classifies its public assets by their use.

	Assets	Liabilities	Net Worth
Social	57.5	7.1	50.5
Financial	33.2	50.5	–17.3
Commercial	20.1	12.0	8.1
Static balance sheet	**110.8**	**69.5**	**41.3**
Future flows[1]	1,381.9	1,480.0	–98.1
Intertemporal balance sheet	**1,492.7**	**1,549.5**	**–56.8**

Source: New Zealand Treasury 2018.
[1]Net present value of operating cash flow.

Improving Balance Sheet Management

Both New Zealand and the United Kingdom have strengthened their focus on balance sheet management, while Uruguay has introduced a balance sheet approach to debt management. They aim to improve the use of public assets, make sure they are being used to meet high-priority policy needs, and raise financial rates of return (Box 1.1).

The 2018 New Zealand Investment Statement (New Zealand Treasury 2018) provides an assessment of the use of all public assets, regardless of whether the assets are used for commercial or policy objectives. A common criticism of the balance sheet approach is that many public assets are held for policy reasons (such as schools and hospitals), are not marketable, and should not be included in fiscal analysis or be expected to provide a financial return. Thus, undertaking rigorous balance sheet assessments is of little use. However, because the investment statement presents the balance sheet in terms of use, distinguishing between social, financial, and commercial assets (Table 1.4), the government can set performance benchmarks by the use of the asset. Are social assets being used effectively and efficiently for high-priority purposes? Are financial assets securing a high enough return relative to risk? And are commercial assets generating sufficient shareholder returns? To answer these questions, the investment statement assesses each sector, company, or financial holding against a range of criteria. It finds that social assets are aging and unlisted commercial companies are underperforming. In contrast, listed companies and financial investments have benefited from rising equity markets and have performed well.

The United Kingdom authorities are at an early stage in the process of balance sheet management. They recently initiated a balance sheet review, intended to improve balance sheet management and fiscal outcomes by:

- *Improving returns on assets*. This could include, for instance, pooling investment fees on various government financial assets.
- *Improving the compensation to government for bearing risk*. In several cases, the government acts as an insurer of last resort to the private sector. The balance sheet review is an opportunity to assess whether it is adequately compensated for bearing such risk, and to renegotiate contracts in cases where it is not.
- *Reducing the costs of liabilities*. Liabilities take many shapes and sizes, but reducing their costs could entail, for example, reducing building lease costs by better using assets the government already owns.

In the short term, evaluating the United Kingdom's stock of assets along with its stock of liabilities will facilitate their integrated management. This will support fiscal outcomes and release resources to reinvest in the public sector. The review will also assess balance sheet indicators and evaluate interest rate, credit, foreign exchange, and liquidity risks. In the long term, the review can become the foundation for embedding balance sheet management into ongoing decision making.

Government debt managers in Uruguay are realizing costs savings by taking a public sector balance sheet approach to the management of risks and costs. Debt managers follow a well-defined mandate where they try to minimize expected debt servicing costs and the opportunity cost of holding liquid assets—subject to an acceptable level of risk—over the medium to long term. They do this for the entire public sector, including public corporations and the central bank. The approach has uncovered interest rate, currency, and maturity mismatches between assets and liabilities, and flow mismatches related to ongoing operations of public corporations. In

particular, it has identified net foreign currency liability exposure and revealed capital market bottlenecks. In response, the authorities have further developed the domestic debt market and promoted the development of risk management products, which will, over time, improve the debt manager's ability to match characteristics of public sector financial assets and liabilities.

Fiscal Risk Management

All these countries carefully examine risks within their PSBSs. Australia publishes a qualitative assessment of balance sheet risks (Commonwealth of Australia 2018). New Zealand and the United Kingdom have both performed detailed balance sheet risk assessments, including fiscal stress tests, and have taken active steps to address identified risks.

The New Zealand investment statement examines fiscal risks in a comprehensive way. It analyzes aggregate fiscal risks through fiscal stress tests for a range of scenarios. The stress tests examine the direct fiscal costs on spending, as well as valuation effects, discretionary support, and the costs of replacing asset losses from an earthquake (one of three scenarios). In addition, the stress tests evaluate the impact on the discounted value of future revenues. Although the results of stress tests show the fiscal position is robust, they point to opportunities to mitigate risk, and inform the target level of government debt with sufficient buffers. Last, financial risks are assessed against a range of measures, including a value-at-risk analysis, and find that while losses of 2–4 percent of GDP could occur, the balance sheet is generally robust.

The *2017 Fiscal Risk Report* provides a comprehensive scan of risks facing the United Kingdom's public finances, including macroeconomic, spending, revenue, and balance sheet risks (Office for Budget Responsibility 2017a). The report assesses the entire PSBS, and the fiscal stress test finds that interest rate and inflation risk are among the key exposures. First, the increasing share of inflation-linked debt has increased the exposure to inflation. Second, because of the quantitative easing program of the Bank of England, the average maturity of public sector debt has declined, increasing interest rate risk in the Bank's balance sheet as well as the public sector. This is also true for other countries in which central banks have undertaken quantitative easing.[42] The UK government has acted to mitigate these risks, by changing the debt issuance policy away from inflation-linked bonds (Her Majesty's Treasury 2018a). It also revised the financial relationship between the Treasury and the Bank of England, so that capital transfers can be made to the Bank in the event of large valuation losses (Her Majesty's Treasury 2018b).

Conclusion

Analyzing public wealth brings a range of benefits by offering a broader fiscal picture beyond debt and deficits. It provides transparency to markets and accountability to citizens, squarely drawing attention to what the government owns, in addition to what it owes. This matters as governments with stronger balance sheets face lower financing costs and are better placed to weather recessions.

While there are considerable challenges in compiling reliable balance sheets, basic balance sheet estimates can be compiled even in low-capacity countries. Initially, it may require drawing on third-party sources and using assumptions to make informed estimates. Subsequent improvements to accounting and statistical capacity can, over time, provide more reliable valuations and improve consistency. Once governments produce these estimates, basic balance sheet analysis can be done using the framework presented in this report.

Comprehensive balance sheets allow for better informed assessments of fiscal policies and risks, and can raise the tenor of the policy debate. Governments should consider the effect of policies on assets and nondebt liabilities, in addition to their effects on debt. Current levels of public wealth should be compared with long-term fiscal pressures to assess how governments can meet building demographic pressures. Analyzing both sides of the public sector balance sheet is also necessary for effective risk management, where valuation changes, particularly on the asset side, have large impacts on public wealth. Identifying these risks allows governments to take action early, rather than dealing with the consequences after problems occur. Last, balance sheet analysis enriches the policy debate, by increasing transparency and asking how public wealth can be better used to meet society's economic and social goals.

[42]Maturities decline significantly when moving from the general government to the consolidated public sector level, by about 3 years to 11 years in the United Kingdom in 2016 (Office for Budget Responsibility 2017a), about 1½ years to below 3 years in the United States in 2014 (Greenwood and others 2014), and almost 3 years to 6 years in Japan at the end of 2017.

Box 1.1. Potential Revenue Gains from Better Asset Management

Many governments can improve returns on public sector assets. While recognizing that these assets often have operational objectives, there is still considerable room to improve asset management. Given the scale of public assets and the existing poor quality of asset management, Detter and Fölster (2015) argue that a small increase in yield could provide significant increases in fiscal revenues. Governments should at a minimum expect a reasonable rate of return from the large commercial and financial assets they control. Benchmarking the returns that governments receive from their nonfinancial public corporations and financial asset holdings across countries, this box provides estimates of the potential revenue gains if performance is increased to the 75th percentile of sampled countries.

First, the analysis looks at the return on assets among nonfinancial public corporations across a sample of 14 countries from our PSBS database.[1] The country-specific sectorwide return on assets of nonfinancial corporations is defined as the net operating surplus as a share of total assets. For the sample, the average return on assets during 2010–16 was 1.9 percent (median 0.6 percent; see Figure 1.1.1). This compares with the equivalent rate of return of 8 percent for United States private nonfinancial corporations over the same period (Osborne and Retus 2017). Raising the return on asset performance from the 25th to the 75th percentile of the cross-country distribution of returns would bring average yields to 4.3 percent—still well below the comparable private sector rate of return—and increase profits by an average of about 1 percent of GDP.

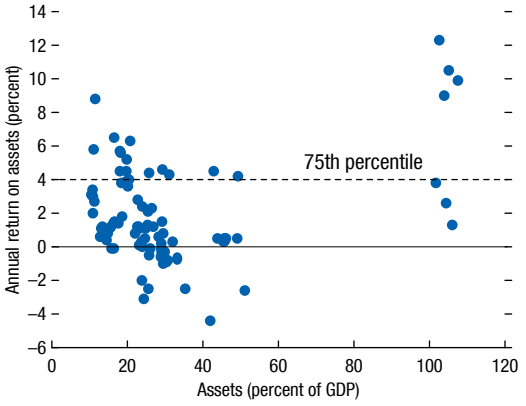
Second, the analysis looks at the returns obtained on general government financial assets in a number of European countries.[2] It constructs a time series of the returns on these assets by subtracting transactions (sales and acquisitions) from the total change in the value of the assets and adding income accruing from these assets.[3] The capital asset pricing model is used to decompose these returns into compensation for risk (β_y) and a measure of performance (α_y), using the country median as the benchmark index. It estimates the following regression:

$$ROA_y = \alpha_y + \beta_y ROA_b,$$

where ROA_y is the return on assets in country y, and ROA_b denotes the cross-country median return on assets.[4] Ranking the countries on their performance measures α suggests that revenue gains from an improvement in asset management performance from the 25th to 75th percentile of the cross-country distribution of this measure would generate a further 2 percent of GDP in returns.

This overall revenue gain from improved management of nonfinancial public corporations and government financial assets of 3 percent of GDP per year is equivalent to corporate income tax revenue in advanced economies. Still, it leaves out the potential gains from better management of government nonfinancial assets. For example, Detter and Fölster (2015) argue that governments' real estate portfolios are heavily underestimated, and that there is considerable scope for both better management and higher returns. However, estimating the potential gains from better management of nonfinancial assets is beyond the scope of this report.

Figure 1.1.1. Nonfinancial Public Corporations Returns



Source: IMF staff estimates.

[1]Australia, Canada, El Salvador, Finland, France, Georgia, Indonesia, Japan, Kazakhstan, Korea, Lithuania, New Zealand, Norway, and the United Kingdom. Across these countries, public corporations are in different industries and for that reason may have different return on asset profiles. Robustness analyses using return on equity—which captures the difference in capital intensity across industries—and risk-adjusted returns yield much the same results.

[2]Austria, Belgium, Denmark, Estonia, Finland, France, Germany, Ireland, Italy, Latvia, Lithuania, the Netherlands, Norway, Poland, Portugal, the Slovak Republic, Slovenia, Spain, Sweden, and the United Kingdom.

[3]The results are robust when looking at valuation changes only, that is, when income from the assets is excluded. They are also robust to excluding the crisis years 2008–09, although the prospective gains in return on assets would be somewhat smaller.

[4]This approach is similar to that used by Samphantharak and Townsend (2009), who apply the capital asset pricing model framework to household balance sheets.

Box 1.2. Balance Sheet Strength and the Macro Economy[1]

Public sector balance sheet strength is a measure of the health of public finances. But are governments with stronger balance sheets better able to engage in countercyclical fiscal policy during recessions? If so, would that allow them to shield the broader macro economy better from the impact of recessions? And lastly, do financial markets take account of assets and balance sheet strength?

To answer these questions, this box estimates the response of real per capita government spending and real per capita GDP in the aftermath of recessions. It uses the local projection method developed in Jordà (2005) and Jordà, Schularick, and Taylor (2016) on a sample of 17 advanced economies. To gauge the differential effect of balance sheet strength, the box divides the sample into countries entering a recession with a strong or weak balance sheet, defined as net financial worth above or below the sample median. It distinguishes balance sheet effects from debt effects by including private and public debt as control variables. The analysis builds on the October 2016 *Fiscal Monitor*, which estimated the impact of private and public debt on the pace of economic recovery after financial crises and regular recessions.

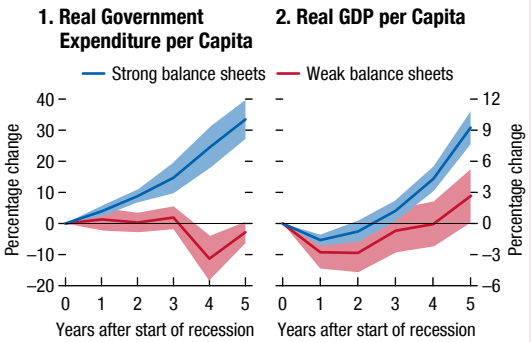
Figure 1.2.1 depicts the conditional cumulative changes in government expenditure and GDP from the start of recessions. It distinguishes countries that entered the recession with a strong initial balance sheet (blue line) from those entering the downturn with a weak balance sheet (red line). The figure suggests that countries entering a slump with a strong balance sheet used the greater flexibility it provided to increase real per capita expenditure to respond to the crisis.[2] There is some indication that, as a result, these countries faced shallower recessions and faster returns to growth. The differences in government spending are statistically significant starting in the second year, whereas the differences in economic growth are significant in years 4 and 5.

Financial markets also seem to recognize public sector assets. To gauge the link between balance sheet strength and financial markets, this box estimates three separate regressions of sovereign bond yields on (1) debt, (2) debt and assets, and (3) net worth. The results suggest that debt, assets, and net worth all matter for yields (Figure 1.2.2). The significant coefficient estimate on assets indicates that balance sheet strength adds information to an analysis solely based on debt numbers.

[1]Details of the analyses in this box can be found in Annexes 1.3 and 1.4.

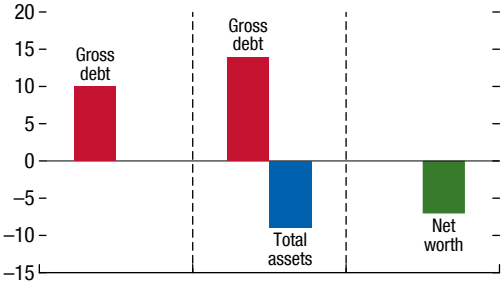
[2]Expenditure also reflects other factors besides countercyclical policy choices, such as changes in interest rates.

Figure 1.2.1. Fiscal Policy and Recovery in the Aftermath of Economic Recessions



Source: IMF staff estimates.
Note: Bands represent 90% confidence intervals.

Figure 1.2.2. Impact of a 10 Percent of GDP Change on Yields
(Basis points)



Source: IMF staff estimates.

Box 1.3. China—Revisiting the General Government's Balance Sheet

Compiling China's general government balance sheet is a challenge. The perimeter of general government should include all public entities that are government-controlled and nonmarket producers. But the numerous public entities and complex layers of government make it difficult to delineate the perimeter precisely. Significant government holdings of state-owned enterprises (SOEs) and financial institutions and the widespread subnational off-budget borrowing further blur the classification. This box updates the estimates in the October 2016 *Fiscal Monitor*, broadens the coverage by extending the time horizon to 2010–17, and covers separately the central and local governments.[1]

- ***Financial assets*** (75 percent of GDP) consist of government deposits in banks, equity holdings of the national social security fund, and public corporations. Official government equity holdings of nonfinancial SOEs at nominal values were about 56 percent of GDP in 2017, but this is subject to uncertainty, as many SOEs are not listed and their profitability has fallen since 2010 (Figure 1.3.1). A more conservative estimate using the net present value of SOEs' expected future net profits puts the valuation at about three-quarters of the headline value. In addition, the government share of equity in financial institutions is estimated at 11 percent of GDP in 2017 (Yang, Zhang, and Tan 2017). Deposits include fiscal budget deposits (5 percent of GDP), and deposits held by government organizations (another 15 percent of GDP net of estimated accounts payable).
- ***Financial liabilities*** (67 percent of GDP) include official government debt (37 percent of GDP). The analysis uses the broader "augmented" concept to include off-budget borrowings, which raise the debt in the balance sheet by an additional 30 percent of GDP (IMF 2018b).

The general government's net financial worth remains positive, at 8 percent of GDP in 2017, although it has deteriorated in recent years.[2] Net financial worth has declined, notably at the subnational levels driven mainly by rising local government debt and underperforming SOEs (Figure 1.3.2). This points to rising vulnerabilities from a balance sheet perspective.

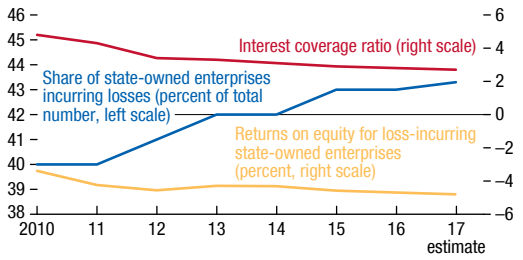
These estimates are subject to caveats. First, subnational governments own land resources and invest in infrastructure, which could provide buffers and generate revenue to service their debt. Firm-level data on local government financing vehicles, however, suggest that liabilities of those loss-making ones have risen (Li and Mano, forthcoming) and that returns on new infrastructure have fallen, in some cases below interest costs (Lam and Moreno-Badia, forthcoming). Second, the government's holdings of SOE equity could be higher than the conservative estimates presented here.

The Chinese authorities are taking steps to compile balance sheets, including accounting reforms and pilot programs for seven provinces and two central ministries. These contribute to the commitment to complete a consolidated accrual-based balance sheet by 2020. At the same time, the authorities have reiterated the ban on off-budget borrowings and committed to raise SOE efficiency. These measures should be complemented with aligning data compilation with the *Government Finance Statistics Manual*, which will help assess the overall impact of fiscal policy and increase international comparability (Mano and Stokoe 2017).

[1]The estimates include the government's equity holdings of financial institutions, the national security fund, and the financial assets of government departments and organizations. For details, see Lam and Moreno-Badia (forthcoming).

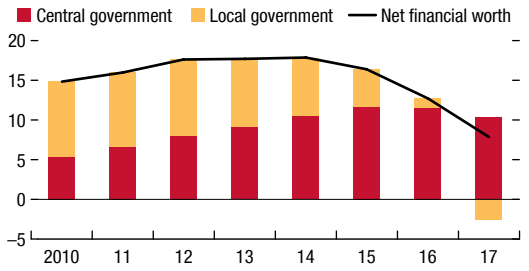
[2]Estimates are lower than those by Li and Zhang (2017) and Yang, Zhang, and Tan (2017) because they include nonfinancial assets and contingent liabilities of the financial sector.

Figure 1.3.1. Weak Financial Performance of State-Owned Enterprises



Sources: China Public Finance Statistics Yearbooks; and IMF staff estimates.

Figure 1.3.2. Government Net Financial Worth
(Percent of GDP)



Sources: China Public Finance Statistics Yearbooks; and IMF staff estimates.

Annex 1.1. Public Sector Balance Sheet Database Coverage

Annex Table 1.1.1. Public Sector, General Government, and Central Government Coverage

Public Sector (31)	General Government (31)	Central Government (7)
Albania*	Belgium	Barbados
Australia	Bhutan	Malawi
Austria*	Bulgaria	Marshall Islands
Brazil*	Hong Kong SAR	Micronesia
Canada	China	Palau
Colombia*	Croatia	Serbia, Republic of
El Salvador	Cyprus	Solomon Islands
Finland	Czech Republic	
France	Denmark	
Gambia*	Estonia	
Georgia	Greece	
Germany	Hungary	
Guatemala*	Iceland	
India*	Ireland	
Indonesia	Italy	
Japan	Kyrgyz Republic	
Kazakhstan	Latvia	
Kenya*	Lithuania	
Korea	Luxembourg	
New Zealand	Moldova	
Norway	Netherlands	
Peru*	Poland	
Portugal*	Romania	
Russia*	San Marino	
South Africa	Slovak Republic	
Tanzania*	Slovenia	
Tunisia*	Spain	
Turkey*	Sweden	
Uganda*	Switzerland	
United Kingdom	Ukraine	
United States	Uruguay	

*Based on a single year of data, in most cases compiled as part of the Fiscal Transparency Evaluation: Albania, 2013; Austria, 2015; Brazil, 2014; Colombia, 2016; The Gambia, 2016; Guatemala, 2014; Kenya, 2013; Peru, 2013; Portugal, 2012; Tanzania, 2014; Tunisia, 2013; Turkey, 2013; Uganda, 2015.

Public sector estimates drawn from the Fiscal Transparency Evaluations cover only a single year. PSBS time series are available for 17 countries.

- Public sector and general government data can also be presented at lower levels of coverage. Thus, central government can be shown for 69 countries and territories, and general government for 62.

Annex 1.2. Public Sector Balance Sheet Methodology

This annex describes the methodology used to construct the database developed in this report. It explains the definitions used in the compilation of the public sector data, the main data sources, and the methodology used. It also describes the main concepts involved in the estimation of the intertemporal balance sheet and details of the balance sheet strength indicators developed in the report. Last, it provides an overview of the countries and variables covered in the database. The PSBS database, together with country-specific documentation on sources and methods is intended to be published in the near future.

Public Sector Balance Sheet

Definitions

The PSBS database is compiled using the conceptual framework of the IMF's *Government Finance Statistics Manual 2014* (GFSM 2014). This section presents that framework's definitions in terms of coverage of institutions, stocks, and flows.

Coverage of Institutions

The public sector consists of all resident institutional units that are deemed to be controlled by the government. This includes all government units, such as departments, agencies, and nonprofit institutions controlled by the government, as well as corporations controlled by a government unit or another public corporation. Control of a corporation is established when the general corporate policy is determined by government. These public corporations comprise government controlled market producers that operate in both the financial and nonfinancial sector of the economy.

The database presents the data for the consolidated public sector as well as for its different subsectors, as follows (see Annex Table 1.2.3 for specifics on country coverage):

- General government, with data for the central government level also available;[43]
- Nonfinancial public corporations; for analytical purposes, natural resource corporations are presented separately from other nonfinancial public corporations; and
- Financial public corporations, split to identify separately the central bank, sovereign wealth funds (where they operate as financial corporations), and other financial public corporations.

Following the GFSM 2014 criteria to delineate market producers from nonmarket producers, some legally incorporated units have been reclassified to the general

[43]Central government data includes social security funds. When these data are not available, they were proxied with, by order of preference, data on central government excluding social security funds, or budgetary central government. The specific choice for each country is available in Annex Table 1.2.3.

Annex Table 1.2.1. Composition of the Public Sector Balance Sheet

Assets	Liabilities
Nonfinancial assets	Special drawing rights
Fixed assets	Currency and deposits[2]
Land	Debt securities
Mineral and energy resources[1]	Loans
Other nonfinancial assets	Equity and investment fund shares[3]
Financial assets	Insurance, pension, and standardized guarantee schemes
Monetary gold and special drawing rights	Pension entitlements
Currency and deposits	Claims of pension funds on pension managers
Debt securities	Other insurance, pension, and standardized guarantee scheme liabilities
Loans	Financial derivatives and employee stock options
Equity and investment fund shares	Other accounts payable
Insurance, pension, and standardized guarantee schemes	
Financial derivatives and employee stock options	
Other accounts receivable	**Net Worth (= Assets – Liabilities)**

[1] This category includes both "mineral and energy resources" or "permits to use natural resources," as relevant for each country.
[2] Includes bank notes and coins issued. These are normally reflected in the balance sheet of the central bank, but in some cases also the central government's, depending on country-specific arrangements for the issuance of currency. In exceptional cases, countries may allow designated commercial banks to also issue currency under the authorization of the central bank, but this is unusual.
[3] In the *Government Finance Statistics Manual 2014* conceptual framework, corporations' liabilities in the form of "equity and investment fund shares" is equal to the value of its shares at current market prices. Where a public corporation is fully owned by the government or the market value of shares cannot be observed because they do not trade in the market, the value of equity and investment fund shares is calculated as a residual (assets minus liabilities other than equity), so that the statistical net worth of such a corporation is zero. Therefore, own funds of public corporations are equal to the value of equity and investment fund shares plus net worth.

government. These criteria are based on the analysis of whether the corporations provide all or most of their output at economically significant prices or not.[44]

Central banks are included within the public sector. They are separately identified, recognizing the fact that their monetary liabilities (currency on issue) are irredeemable, and have no ongoing financing costs. The equity liability of the central bank (equivalent to its individual net worth) is reported on a book value basis—the difference between the value of its assets and nonequity liabilities. An alternative approach would recognize the discounted value of its seigniorage profits (Buiter 1983). Here, this is implicitly incorporated in the intertemporal balance sheet as part of the present value of dividend revenue flows, which boost the government's primary balance. Central bank dividend flows are assumed to remain stable as a share of GDP and are not separately modeled.

Coverage of Stocks

The PSBS database includes all assets (financial and nonfinancial) owned and liabilities owed by the public sector or the relevant subsector at the end of each reporting period. Following the standard approach in macroeconomic statistics, economic ownership rather than legal ownership is used as a reference. Net worth is a balancing item representing the extent to which liabilities are covered by assets.

The composition of the balance sheet that is used in the analysis is summarized in Annex Table 1.2.1, which shows how assets and liabilities are disclosed in the database, broken down by type of asset or financial instrument.[45] For analytical purposes, financial assets and liabilities are further broken down by currency of denomination and residual maturity, where available.

The PSBS data allow the calculation of several indicators, which are useful from an analytical perspective to measure balance sheet strength, namely: net worth, net financial worth, net liquid assets, net foreign exchange assets, risk-weighted assets and liabilities, and the degree of natural hedging (see the "Balance Sheet Strength" section).

The coverage of categories of assets and liabilities in balance sheets that are compiled by statistical authorities vary significantly from country to country. Some categories are often not recognized in the published balance sheets, and the PSBS database has therefore covered these categories by IMF staff estimates where data sources permitted. Most notably, these estimates include: nonfinancial assets—particularly land and mineral and energy resources—and public sector employment-related pension liabilities. The latter refer to pension entitlements of civil servants and public corporation employees under specific employment-related schemes, thus exclud-

[44]Chapter 2 of the GFSM 2014 presents more detailed guidance on institutional unit and sector classification. Details on specific adjustments are captured in the country specific database documentation.

[45]Chapter 7 of the GFSM 2014 presents definitions and valuation methods for each type/instrument of assets and liabilities. The valuation methods that were used in the analysis for specific types of assets and liabilities are summarized below.

ing other social security pension entitlements, which are of a contingent nature.

When these types of assets and liabilities could not be estimated, the relevant main aggregates of the balance sheet items were marked as "not available." To ensure a correct cross-country comparability, alternative main aggregates were calculated, used in some cross-county empirical analysis, and disclosed as memorandum items, as follows:

- Nonfinancial assets, excluding land and mineral and energy resources;
- Total assets, excluding land and mineral and energy resources;
- Liabilities, excluding pension-related liabilities (pension entitlements and claims of pension funds on pension managers);
- Net financial worth, excluding pension liabilities; and
- Net worth, excluding land, mineral and energy resources, and pension liabilities.

Coverage of Flows

The database includes the main flow aggregates, separating transactions and other economic flows. It also includes some more detailed categories of flows, which are directly related to assets and liabilities, such as interest receivable and payable, and rent, as well as those related to the relationship between government and public corporations—such as dividends, subsidies, or capital transfers payable and receivable.

Transactions correspond to interactions between units by mutual agreement or through the operation of the law. They are presented in the PSBS database in an abbreviated statement of operations, with the following main aggregates disclosed:

- Revenue and expense—which are transactions that increase or decrease net worth, respectively; and
- Net acquisition (acquisitions less disposals) of both nonfinancial and financial assets, and net incurrence (incurrence less repayment) of liabilities—which are transactions that change the composition of assets and liabilities but not net worth.

These aggregates allow the calculation of the following balancing items:

- Net operating balance (NOB) is the difference between revenue and expense, with the latter including consumption of fixed capital; and
- Net lending or borrowing (NLB) is the difference between revenue and expenditure; the latter corresponds to the sum of expense and net acquisition of nonfinancial assets.[46] NLB is often also referred to as the "fiscal balance" or the "deficit/surplus."

The PSBS database also includes other economic flows (OEFs) that result from revaluations (changes in prices and exchange rates) and other changes in the volume of assets and liabilities. The latter category can include: the economic recognition or derecognition of produced assets, such as valuables (or public monuments, if these are included in the balance sheet); entry and exit from the asset boundary of natural resources, as a result of changes in prices that make the exploitation of those resources viable or unviable; destruction of assets from large-scale, discrete events, such as earthquakes, volcanic eruptions, floods, or other natural disasters; or the reclassification of units (for example, a government unit that is transformed into a public corporation).

The database allows a full integration of stocks and flows, where source data permit. Therefore, the stock at the end of the reference period corresponds to the sum of the stock at the beginning of the reference period plus transactions and OEFs occurring during the reference period. For the net worth indicator, this accounting identity can be illustrated as follows:

$$NW_1 = NW_0 + \textit{Transactions affecting NW} + \textit{Changes in NW due to OEFs}$$

$$\text{that is, } NW_1 = NW_0 + NOB_1 + OEF_1 \qquad (1)$$

By the definitions for net operating balance and net lending/borrowing, these can be denoted as follows:

$$NOB_1 = Rev_1 - Exp_1 \quad \text{and}$$

$$NLB_1 = Rev_1 - (Exp_1 + Inv_1),$$

in which *Rev* corresponds to revenue, *Exp* corresponds to expense, and *Inv* corresponds to net investment in nonfinancial assets.

This allows us to rearrange equation (1) as follows:

$$NW_1 - NW_0 = NLB_1 + INV_1 + OEF_1.$$

This is the approach followed in the analysis of the evolution of balance sheets in the report, where the change in net worth is explained by the sum of the fiscal balance, investment, and valuation effects.

[46]This corresponds to the "above-the-line" approach for calculating net lending or borrowing. Since double-entry recording is used for recording all flows in the GFSM 2014 conceptual framework, that balancing item can also be calculated from "below-the-line," as the difference between the net acquisition of financial assets and the net incurrence of liabilities.

Data Sources

Data for the central and general government generally replicate data reported by country authorities in the IMF's Government Finance Statistics (GFS) database. Where these data fail to cover all categories of assets and liabilities listed above, they are complemented by other data reported by statistical authorities at the national level or other international organizations, such as Eurostat or the Organisation of Economic Co-operation and Development (OECD). Where data on fixed assets are not readily available, they are sourced from the IMF's capital stock database (IMF 2017a). Any remaining data gaps are addressed, where possible, through IMF staff estimates (see the "Methodology" section).

Data for the central bank generally replicate stock data reported by country authorities in the IMF's Monetary and Financial Statistics database through the standardized report forms. For transactions and other economic flow data, and for those countries that do not submit standardized report forms, data are compiled through the conversion of the central banks' financial statements to the PSBS database template.

Data sources for other public corporations are country-specific and are captured in country-specific database documentation. The preferred data sources are statistical estimates produced by country authorities for the aggregate subsector, often compiled as a component of the sectoral accounts. Where these are not available, IMF staff estimates (either calculated specifically for this report or in fiscal transparency evaluations) are used. In these estimates, aggregate financial statements' data from major state-owned enterprise ownership or annual reports (adjusted for unit reclassifications) are converted to the PSBS database template. When aggregate data are not available, the conversion of individual financial statements for the major state-owned enterprises is used. The latter option considers materiality: a sample of the largest public corporations, representing a significant share of total public corporation assets (covering about 80–90 percent of the total sector) is used and the aggregate result of the financial statements' conversion factored up to account for the nonsample units.[47]

The public sector data are calculated by aggregating the estimates for general government, nonfinancial public corporations, and financial public corporations, and by identifying and consolidating (or eliminating) the most significant cross-holdings of assets and liabilities or intrapublic sector transactions.[48] A nonexhaustive list of the most relevant items identified for consolidation in the public sector includes:

- General government units' deposits at the central bank or other public banks;
- Central bank and other public corporations' holdings of securities issued by government units;
- General government units' equity stakes in public corporations;
- Loans provided by general government units to public corporations;
- Loans provided by public banks to government units or other public corporations;
- Property income such as interest and dividends paid or received on the aforementioned items; and
- Subsidies and other capital transfers provided by government units to public corporations.

Methodology

Valuation of Assets and Liabilities

In accordance with the GFSM 2014 guidelines, assets and liabilities are valued at market value, where possible. This is normally the case for assets and liabilities in the form of debt securities and equity of listed corporations, whose values can be observed in the markets.[49] Other financial assets and liabilities are often reported at nominal value. Nominal value reflects the value of the financial instrument at creation plus any subsequent flows, such as transactions (for example, accrual of interest or repayment of principal) or other economic flows such as exchange rate and valuation changes other than market price changes.[50] It is considered a good proxy for market value in cases where financial instruments are not traded.

Where market values are not available for produced nonfinancial assets (fixed assets, inventories, and valuables), they are usually reported on a written down (or depreciated) replacement cost, that is, the current acquisition price of an equivalent new asset minus

[47]Because of source data limitations, data for public corporations were in most cases limited to those corporations under control of the central government. Data for public corporations under the control of state and local governments were generally not available in aggregate formats.

[48]These eliminations do not change the balancing items of the balance sheet or the statement of operations, but have an influence on the levels of assets and liabilities or revenue and expense reported by the public sector.

[49]Because of the lack of source data, for some countries the PSBS database presents debt securities at valuations other than market, such as nominal or face value (the latter corresponding to the amount to be paid at maturity).

[50]Should market price changes be included, the price will represent a market value.

the accumulated depreciation (consumption of fixed capital), amortization, or depletion.

Public corporations' assets and liabilities are generally reported based on fair value, following accounting standards such as International Financial Reporting Standards.[51] However, the equity of these corporations, both in their balance sheets and as assets of the government, is often reported at its book value, which may be different from the market value. The equity value of public corporations in the PSBS database is set equal to their net asset value. This includes reserves, and is adjusted for provisions and deferred tax assets, which are not recognized in macroeconomic statistics. Because of data limitations, no adjustment is done to reflect the difference between the book and market values of listed shares.

Nonfinancial assets include land under buildings or other structures as well as stewardship land like that where national parks or other heritage sites are located. Because of the underlying difficulties in valuing such stewardship land, or historical heritage buildings, national estimates of nonfinancial assets normally do not include an estimation for these types of assets.[52] In the absence of any alternative data sources for these estimations, the PSBS database does not attempt to value them.

The detailed methodology used to estimate specific categories of assets and liabilities, is as follows:

Fixed Assets. Existing government estimates for fixed assets other than historical/heritage assets are used where available, relying on authorities' application of the perpetual inventory method on detailed asset-level information. With this method, the value of the stock is based on estimates of acquisitions and disposals that have been accumulated (after deduction of the accumulated consumption of fixed capital, amortization, or depletion) and revalued over a long enough period to cover the acquisition of all assets in the category. However, data are often missing or poorly reported, with serious valuation issues (Bova and others 2013).

Where there are gaps, estimates of fixed assets (for example, infrastructure, buildings) are provided based on the IMF's capital stock and investment database (IMF 2017a), which includes estimates for the public capital stock also compiled through the perpetual inventory method, and calculated for the overall level of investment, rather than for detailed asset-level investment.[53]

Mineral and Energy Resources. Country estimates for mineral and energy resources are often based on various estimation techniques. Not many countries disseminate such data. To attain consistency, the PSBS database follows the GFSM 2014 valuation guidelines to estimate these values. Estimates for the stock of mineral and energy resources in the PSBS database correspond to the net present value of the expected pretax cash flows resulting from their commercial exploitation. Sources and methods for these estimates differ by type of commodity, and the choice of estimation method was largely determined by the availability of source data, and attempts to consider country-specific economic conditions in these estimations.[54]

The value of stocks of oil and gas were estimated using the following data sources: (1.1) production over the lifetime of the asset, from the Rystad database (Rystad Energy 2018); (1.2) prices (in US dollars) from *World Economic Outlook* (WEO) forecasts available at the end of the reference year; (1.3) costs of production (in US dollars), from the Rystad database; and (1.4) exchange rates, from WEO forecasts available at the end of the reference year.

Sources 1.1, 1.2, and 1.3 were used to calculate future US dollar cash flows over an 85-year horizon. These US dollar cash flows were converted to domestic currency using the WEO exchange rate forecasts (source 1.4). The net present value of the domestic currency cash flows was calculated using a discount rate equivalent to the average (2000–22) long-term (10-year) government bond yields in WEO plus a risk factor (1 percentage point for advanced economies, 3 percentage points for emerging economies, 6 percentage points for low-income developing countries). When WEO government bonds were not available, the central bank policy rate plus 5 percentage points was used.

The value of stocks of coal, metals, and other minerals were estimated using the following data sources:

[51]Fair value is akin to market value. International Financial Reporting Standard 13 defines it as the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date (an exit price).

[52]As discussed in Bova and others 2013, because of their nature, location, or attached regulations, they may not be sellable and therefore are excluded from the governments' balance sheets, or valued at one unit of local currency, even though they may create revenue (for example, tourism receipts) and generate maintenance costs.

[53]A detailed description of the sources and methods of the capital stock and investment database can be found at https://www.imf.org/external/np/fad/publicinvestment/pdf/csupdate_jan17.pdf.

[54]PSBS database estimates differ from the World Bank's *The Changing Wealth of Nations 2018* because the World Bank uses a discount rate of 4 percent for all countries and constant value data for prices, whereas the PSBS database uses different vintages of commodity-specific prices from WEO reports.

(2.1) estimates (in constant 2014 US$ prices), from the World Bank's *The Changing Wealth of Nations 2018* (Lange, Wodon, and Carey 2018); (2.2) United States Geological Survey data on 2016 reserves and 2014–16 production by commodity and by country (Wilburn, Bleiwas, and Karl 2016), where available; (2.3) prices (in US$) from WEO commodity prices for 2000–16; and (2.4) exchange rates, from the current vintage of WEO exchange rates.

Estimates for 2015 and 2016 are based on the changes in reserves in those years, for those commodities for which reserve data are available (source 2.2). Where these are not available (usually cases where reserves for a particular commodity are relatively small), the assumption was that the value of the stocks is unchanged from 2014 onward. The obtained estimates based on the constant 2014 US$ prices were converted to current US$ prices using the price index obtained through WEO commodity prices (source 2.3), and subsequently converted to domestic currency using WEO exchange rates (source 2.4).

For countries where subsoil assets can be owned by units other than government, the calculated estimates were prorated using alternative (country-specific) indicators on ownership of land under which the mineral and energy resources lie. Where such country-specific adjustments occurred, it is revealed in the database documentation.

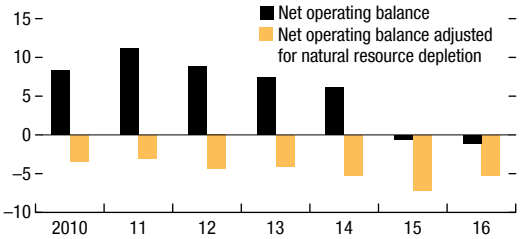
Annex Box 1.2.1. The Statistical Treatment of Natural Resource Assets

In line with Government Finance Statistics (GFS) guidelines, government receipts from natural resources are generally treated as revenue, and therefore as an improvement in net worth, even though the funds come from the sale of a nonrenewable asset. This is despite the GFS recommendation that natural resources be recorded as nonfinancial assets on the government's balance sheet, and even though each extracted barrel of oil or ton of iron ore reduces the remaining stocks of those assets. This treatment differs from the sale of all other nonfinancial assets, whose receipts are not recorded as revenue.

Treating natural resource receipts as revenue overstates government revenues and implies that government is running a better net operating balance than would be the case if those receipts were instead treated as the sale of a nonfinancial asset. The GFS framework allows for the reduction in net worth through an adjustment to other economic flows, but this still overstates the net operating balance. In practice, however, few governments record the value of natural resources on their balance sheet, and so do not record the depletion-related other economic flows.

Government balance sheets including estimates for natural resource assets and accounting for its depletion provide a clearer picture of government net worth and its developments over time. An alternative statistical treatment, as suggested by Traa and Carare (2007) excludes natural resource proceeds from revenues, and instead records those proceeds in the same way as receipts from sales of other nonfinancial assets, such as government buildings or public lands. While this does not impact the fiscal deficit, it reduces revenue and worsens the net operating balance, making clear the extent to which governments are running down public assets. As an example, applying this treatment to Kazakhstan would reduce the net operating balance by an average of 10 percent of GDP from 2010–16 (Figure 1.2.1.1). A similar approach is taken in the World Development Indicators, which adjust net national savings for the depletion of natural resources (Lange, Wodon, and Carey 2018).

Figure 1.2.1.1. Kazakhstan: Net Operating Balance
(Percent of GDP)



Source: IMF staff estimates.

Taken further, advocates of environmental accounting suggest that the current treatment of proceeds from the extraction of natural resources overstates not only government revenues but also economic activity (Obst and Vardon 2014; Coremberg 2015). They argue that the current treatment of sales of natural resources as giving rise to output and value added is incorrect, and that the portion of the sale related to the implicit value—or economic rent of the natural resource—should instead be treated as the sale of a nonproduced asset, rather than value added.

Pension Liabilities. Public sector pension entitlements are the claims that current and past public sector employees hold against their employers—they represent contractual payments that are established as part of the compensation agreement and must be paid, even in the event of future policy changes (representing accrued-to-date entitlements of existing beneficiaries). It is important to note that these employment-related pension liabilities exclude implicit obligations to households under general social security arrangements, as these are potentially subject to policy changes.[55]

The ideal data source for the employment-related pension liabilities are estimates produced by the country authorities, disclosed in the government's financial statements, in statistical estimates of the sectoral accounts balance sheets, or in supplementary tables on pensions (as is the case for most EU members).[56]

When authorities' estimates are not available, an estimate is produced using a model developed by IMF staff to calculate the accrued-to-date pension entitlements of civil servants and other public sector employees. This model uses actuarial projections of pension expenditure of these employment-related pension schemes.[57] The estimate of the accrued benefit assumes that the share of the benefit accrued declines with age: in 2015, from 100 percent for those ages 55 and older to 0 for those ages 25 and younger. The population covered by the pension system is assumed to match the structure of the overall population (projections for population use the 2017 UN World Population Prospects—United Nations 2017). The discount rate is assumed to be 1 percentage point above the rate of GDP growth.[58]

Where the aforementioned estimates are available for only a single year because of data limitations, it is assumed that the entitlements as percentage of GDP remain constant over time.

[55]Expense for social security benefits payable to households are instead picked up in the intertemporal analysis, as they are embodied in future expenditure.

[56]See http://ec.europa.eu/eurostat/web/pensions/other-information for details on these tables.

[57]If no actuarial projections are available, they are built using current year (2015) pension spending of those pension schemes in percent of GDP, and they assume it grows in line with the old age dependency ratio (this is consistent with a naïve projection model under which the benefit ratio and pension eligibility remain constant over time).

[58]This difference of 1 percentage point corresponds to the average observed in the advanced economies over the past 25 years (Escolano 2010; Turner and Spinelli 2012).

Maturity and Currency Breakdowns

Where the national data sources include no breakdowns of financial assets and liabilities by maturity and currency, these breakdowns are estimated by IMF staff as follows:

- Liquid assets include "currency and deposits" and "other accounts receivable," while short-term liabilities are defined as the sum of "currency and deposits," "other accounts payable," and "current debt" (debt securities and loans issued with less than one-year maturity, and long-term debt securities and loans, with a remaining maturity of less than one year).
- The current and noncurrent breakdown of debt securities and loans is obtained through three sources: World Bank's Quarterly Public Sector Debt database, Eurostat, and the Dealogic database on debt securities. Repayments of outstanding IMF loans (where applicable) in the year after the reference period are subtracted from the short-term loans.
- Foreign and domestic currency breakdowns of the debt securities are extracted from the Dealogic database and general government gross debt in foreign currency from the WEO database is used as a proxy of the total liabilities in foreign currency. These data are cross-checked against the outstanding amount of IMF loans (denominated in special drawing rights, SDRs, that is, foreign currency).

Intertemporal Balance Sheet

Intertemporal net worth is defined as follows:

$$A_0 - L_0 + \sum_{t=0}^{T} \frac{R_t - G_t}{(1+r)^t},$$

where A_0 and L_0 are current assets and liabilities, R_t and G_t are future primary government revenues and expenditures at time t, and r is the discount rate. The intertemporal budget constraint states that intertemporal net worth should at least be equal to 0, a condition that should hold in a world where real interest rates are above real growth rates. In the very long term, it should equal 0 exactly, as no utility is derived from positive net worth at the end of time. To avoid double counting, flows associated with current assets and liabilities are excluded from future primary balances—hence, where there are resource assets, future resource revenues are excluded, and similarly the flows associated with accrued pension liabilities are excluded from primary spending. This approach draws on earlier work on intertemporal balance sheets, including Buiter (1983), Blanchard (1990), IMF (2016a), and Traa and Carare (2007).

The intertemporal balance sheet includes the estimates of assets and liabilities of the static balance sheet, combined with the discounted future revenue and primary expenditures flows for the next 50 years, on a no-policy change basis. Estimates of future flows are based on (1) a combination of medium-term fiscal forecasts out to the year 2022, as presented in the IMF WEO, and (2) from 2023 onward, long-term economic and fiscal projections, following the methodology presented in IMF (2016a).[59] The long-term projections are unconstrained (so they do not require that the intertemporal budget constraint is met), and are based on an extension of current policy beyond 2022, with the following assumptions:

- Nominal GDP projections assume inflation, productivity increases and the participation rate follow long-term averages, with changes in working-age population—under the United Nations' medium-fertility scenario—driving any changes. For some countries, long-term average age cohort participation rates are used, which allows for variation in participation rates.
- The fiscal projections follow the approaches developed over recent years (for a survey, see Anderson and Sheppard, 2009; for specifics, see Commonwealth of Australia 2015, Canada Department of Finance 2016, New Zealand Treasury 2016, and Office for Budget Responsibility 2017b). Primary revenues are generally assumed to remain constant as a share of GDP. Primary expenditures are split between age-related pension and health expenditures, which grow in line with demographic trends (see Clements and others 2015); and other primary expenditures, which are held constant as a share of GDP. Interest expenditures are forecast assuming a normalization of interest rates over the medium term.
- The discount rate for long-term fiscal projections is set according to the implicit interest rate on government debt. This is in the mid-range of discount factors used in the balance sheet analysis: riskier natural resource assets are assumed to have a higher discount rate (10-year bond yields plus a risk factor), whereas more certain pension flows are assumed to have a lower discount rate (nominal GDP growth plus 1 percentage point). The 50-year horizon of the projections means that results are sensitive to discount rate assumptions. To isolate the impact of policy changes on flows, variations in fiscal projections because of policy changes or shocks are compared with the baseline using the baseline nominal GDP denominator and discount rates.

[59]In some cases, adjustments are made to align projections with authorities' existing estimates.

Balance Sheet Strength

Balance sheet strength measures can be grouped into three categories: those derived solely from the assets side; those derived solely from the liabilities side; and those derived from both sides of the balance sheet. The specific measures used in the analytical chapter are discussed subsequently.

Size of Balance Sheet

The size of balance sheet is defined as the average of the size of assets and liabilities, in percent of GDP. Balance sheets with larger assets or liabilities are normally exposed to large valuation changes. Valuation changes may expose the economy to macroeconomic risks, depending on the source of vulnerabilities and the nature of valuation changes. For instance, exposure to valuation changes in equity markets and pension liabilities may amplify crisis impacts on public finances (see Brede and Henn 2018).

Solvency: Net (Financial) Worth

Net worth is a measure of solvency. It is calculated as total assets minus total liabilities, expressed in percent of GDP. While providing a snapshot of solvency, it suffers from the various valuation issues that accompany the constituent parts of the balance sheet, particularly stemming from nonfinancial assets. Furthermore, it does not distinguish between assets that can be sold to meet financing needs, and assets that are not marketable.

Net financial worth is calculated as total financial assets less liabilities, expressed in percent of GDP. In general, financial assets and liabilities are more reliably valued and more readily marketable than nonfinancial assets. Given that pension-related liabilities are based on estimates, which could affect cross-country comparability, a measure for net worth excluding pension-related liabilities is also introduced.

Risk-Adjusted Assets and Liabilities

Risk-adjusted assets and liabilities provide a measure of the assets and liabilities corrected for their riskiness or underlying volatility. This measure is based on estimates of the volatility of each asset (liability) class relative to the sum of the volatilities of all asset and liability components.

First, a measure of valuation changes in each of the asset and liability items is constructed.[60] To do so,

[60]For reasons of cross-country comparability, we analyze total assets excluding land and natural resources and total liabilities excluding pension liabilities.

Annex Table 1.2.2. Risk Weights of Assets and Liabilities, by Instrument

	Weight
Financial assets, by instrument	
Monetary gold and SDRs	0.000
Currency and deposits	0.000
Debt securities	0.049
Loans	0.064
Equity and investment fund shares	0.564
Insurance, pension, and standardized guarantee schemes	0.000
Financial derivatives and employee stock options	0.049
Other accounts receivable	0.049
Liabilities, by instrument	
SDRs	0.000
Currency and deposits	0.000
Debt securities	0.000
Loans	0.122
Equity and investment fund shares	0.000
Insurance, pension, and standardized guarantee schemes	0.000
Financial derivatives and employee stock options	0.014
Other accounts payable	0.090
Sum of weights	**1.000**

Source: IMF staff estimates.

Note: Risk weight of each instrument is the standard deviation of valuation changes in that instrument relative to the sum of standard deviations of all asset and liability components. SDRs = special drawing rights.

transactions are deducted from total changes in the value of these items. Next, the relative volatility of valuation changes of individual items is defined as their riskiness, and labeled as the item's risk weight (RW):

$$RW_i = \frac{\sigma_i^2}{\sum_i \sigma_i^2},$$

in which i is the indicator for a specific item of assets or liabilities.[61] These risk weights are calculated on a sample of European countries for which detailed data on transactions and valuation changes of individual general government balance sheet items are available.[62] The resulting risk weights are in Annex Table 1.2.2. Using these risk weights and the size of individual balance sheet items, a comprehensive measure of the riskiness of the asset and liability side of the balance sheet are constructed, which are denoted as $\sum_i RW_i A_i$ and $\sum_i RW_i L_i$. Last, these values are deducted from total assets and liabilities to get risk-adjusted assets (RAA) and liabilities (RAL):

$$RAA = \sum_i A_i - \sum_i RW_i A_i, \text{ and}$$
$$RAL = \sum_i L_i - \sum_i RW_i L_i.$$

Liquidity and Currency Mismatch

The liquidity mismatch is measured using the "net liquid assets" indicator, which is calculated as current assets less current liabilities—that is, assets or liabilities that are maturing within one year—expressed in percent of GDP to reflect the materiality of the mismatch.[63] It is a measure of whether the public sector has sufficient liquid assets to support its short-term financing needs.

Similarly, currency mismatches are assessed using the "net foreign exchange assets" indicator, which shows the net impact of exchange rate fluctuations on the balance sheet. It is calculated as foreign exchange denominated assets less foreign exchange denominated liabilities, expressed in percent of GDP to reflect the materiality of foreign exchange mismatches.[64]

Natural Hedge

The natural hedge is a measure of volatility calculated as the variance of valuation changes in net financial worth (NFW) relative to the variance of valuation changes in financial assets and liabilities. It measures the covariance between the valuation changes in assets and liabilities, both expressed in percent of GDP, normalized by the size of the movements in assets and liabilities. The measure can be decomposed into two parts: how correlated the financial assets and liabilities are; and whether there is a mismatch between the sizes of financial assets and liabilities.

As net financial worth is defined as financial assets net of liabilities, valuation changes in net financial worth (that is, changes resulting from other economic flows) can be represented as follows:

$$OEF_{NFW} = OEF_{FA} - OEF_L,$$

in which OEF_{FA}, OEF_L, and OEF_{NFW} denote other economic flows in financial assets, liabilities, and net financial worth, respectively, all expressed in percent of GDP. Then:

$$\sigma_{NFW}^2 = \sigma_{FA}^2 + \sigma_L^2 - 2Cov_{FA,L}, \quad (1)$$

in which FA denotes financial assets and L denotes liabilities. The equation shows how the volatility of net

[61]Note that we use one index for assets and liabilities to indicate that we look at a balance sheet item's volatility relative to all other balance sheet items, be they assets or liabilities.

[62]Countries included in the analysis include Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Norway, Poland, Portugal, Romania, the Slovak Republic, Slovenia, Spain, Sweden, and the United Kingdom.

[63]A more nuanced definition of liquidity would also account for the ability of the government to sell the assets without an adverse impact on price. Data limitations at present preclude reporting on this basis.

[64]Where available, foreign-exchange-linked assets and liabilities are included.

Annex Table 1.2.3. Time Series Availability in the Public Sector Balance Sheet Database

	Central Government					General Government				Public Sector			
Country	**NFAx**	**FA,Lx**	**LNR**	**PENS**	**Level**	**NFAx**	**FA,Lx**	**LNR**	**PENS**	**NFAx**	**FA,Lx**	**LNR**	**PENS**
Albania	NA	2011–16	2011–16	NA	CGin	2011–16	2011–16	2011–16	2011–16	2013	2013	2013	2013
Australia	NA	2000–16	2000–16	2000–16	CGin	2000–16	2000–16	2000–16	2000–16	2000–16	2000–16	2000–16	2000–16
Austria	NA	2000–16	NA	NA	CGex	2000–16	2000–16	2000–16	2000–16	2015	2015	2015	2015
Barbados	NA	2000–16	2006–16	NA	BCG	NA	NA	NA	NA	NA	NA	NA	NA
Belgium	NA	2000–16	NA	NA	CGex	NA	2000–16	NA	2014–15	NA	NA	NA	NA
Bhutan	NA	2010–14	NA	NA	CGin	NA	2010–14	NA	NA	NA	NA	NA	NA
Brazil	NA	2006–16	2014–16	2010–14	CGin	2014–16	2006–16	2014–16	2010–14	2014	2014	2014	2014
Bulgaria	NA	2000–16	NA	2000–2016	CGex	NA	2000–16	NA	2000–16	NA	NA	NA	NA
Canada	2000–16	2000–16	2000–16	2000–16	CGex	2000–16	2000–16	2000–16	2000–16	2000–16	2000–16	2000–16	2000–16
China	NA	2010–16	NA	NA	CGin	NA	2010–16	NA	NA	NA	NA	NA	NA
Colombia	NA	2008–16	2008–16	NA	CGin	2008–16	2008–16	2008–16	2016	2016	2016	2016	2016
Croatia	NA	2002–16	NA	NA	CGex	NA	2002–16	NA	NA	NA	NA	NA	NA
Cyprus	NA	2000–16	NA	NA	CGex	NA	2000–16	NA	NA	NA	NA	NA	NA
Czech Republic	NA	2000–16	NA	2000–16	CGex	2000–16	2000–16	2000–16	2000–16	NA	NA	NA	NA
Denmark	NA	2000–16	NA	NA	CGex	NA	2000–16	NA	2014–16	NA	NA	NA	NA
El Salvador	2003–16	2006–16	2003–16	2006–16	CGex	2003–16	2006–16	2003–16	2006–16	2003–16	2006–16	2003–16	2006–16
Estonia	NA	2000–16	NA	NA	CGex	NA	2000–16	2000–14	2014–15	NA	NA	NA	NA
Finland	2000–16	2000–16	2000–16	2000–16	CGex	2000–16	2000–16	2000–16	2000–16	2000–16	2000–16	2000–16	2000–16
France	NA	2000–16	NA	NA	CGex	2000–16	2000–16	2000–16	2000–16	2008–16	2008–16	2008–16	2008–16
Gambia, The	2016	2016	2016	2016	BCG	NA	NA	NA	NA	2016	2016	2016	2016
Georgia	NA	2012–16	NA	2012–16	CGin	2012–16	NA	2012–16	2012–16	2012–16	NA	2012–16	2012–16
Germany	NA	2000–16	NA	NA	CGex	2000–16	2000–16	2000–16	2000–16	2001–16	2001–16	2001–16	2001–16
Greece	NA	2000–16	NA	NA	CGex	NA	2000–16	NA	NA	NA	NA	NA	NA
Guatemala	NA	2014	NA	2014	CGin	2014	2014	2014	2014	2014	2014	2014	2014
Hungary	NA	2000–16	NA	NA	CGin	NA	2000–16	NA	NA	NA	NA	NA	NA
Hong Kong SAR	2000–16	2000–16	2000–16	2000–16	CGin	2002–16	2002–16	2002–16	2006–16	NA	NA	NA	NA
Iceland	NA	2000–16	NA	2016	CGin	NA	2000–16	NA	2013–16	NA	NA	NA	NA
India	2003–16	2003–16	2003–16	2003–16	CGin	NA	NA	NA	NA	2004–16	2004–16	2004–16	2004–16
Indonesia	NA	2008–16	2008–16	2010–16	CGin	2008–16	2008–16	2008–16	2010–16	2010–16	2010–16	2010–16	2010–16
Ireland	NA	2000–16	NA	NA	CGin	NA	2000–16	NA	2014–15	NA	NA	NA	NA
Italy	NA	2000–16	NA	2000–16	CGex	NA	2000–16	NA	2000–16	NA	NA	NA	NA
Japan	NA	2000–16	NA	2000–16	CGex	2000–16	2000–16	2000–16	2000–16	2000–16	2000–16	2000–16	2000–16
Kazakhstan	NA	2012–16	NA	2010–16	CGin	2012–16	2012–16	2012–16	2010–16	2012–16	2012–16	2012–16	2012–16
Kenya	NA	2013	NA	2013	BCG	2013	2013	2013	2013	2013	2013	2013	2013
Korea	2012–16	2012–16	NA	2002–16	CGin	2000–16	2002–16	2000–16	2002–16	2002–16	2002–16	2002–16	2002–16
Kyrgyz Republic	NA	2014–16	NA	2014–16	CGin	2014–16	2014–16	2014–16	NA	NA	NA	NA	NA
Latvia	NA	2000–16	NA	NA	CGex	NA	2000–16	NA	2014–15	NA	NA	NA	NA
Lithuania	NA	2000–16	NA	NA	CGex	NA	2000–16	NA	2012–15	NA	NA	NA	NA
Luxembourg	NA	2000–16	NA	NA	CGex	NA	2000–16	NA	NA	NA	NA	NA	NA
Malawi	NA	2009–16	NA	NA	BCG	NA	NA	NA	NA	NA	NA	NA	NA
Marshall Islands	NA	2008–16	NA	NA	BCG	NA	NA	NA	NA	NA	NA	NA	NA
Micronesia	NA	2008–16	NA	NA	BCG	NA	NA	NA	NA	NA	NA	NA	NA
Moldova	NA	2005–16	2006–16	NA	CGin	NA	2005–16	2006–16	NA	NA	NA	NA	NA
Netherlands	NA	2000–16	NA	NA	CGex	2001–15	2000–16	2001–15	2011–12	NA	NA	NA	NA
New Zealand	NA	2006–16	2006–16	2006–16	CGin	2006–16	2006–16	2006–16	2006–16	2006–16	2006–16	2006–16	2006–16
Norway	NA	2000–16	NA	2000–16	CGex	2000–16	2000–16	2000–16	2000–16	2000–16	2000–16	2000–16	2000–16
Palau	NA	2008–16	NA	NA	BCG	NA	NA	NA	NA	NA	NA	NA	NA
Peru	NA	2006–16	NA	NA	CGin	2006–15	2006–16	2000–16	2013	2013	2013	2013	2013
Poland	NA	2000–16	NA	NA	CGex	NA	2000–16	NA	2014–15	NA	NA	NA	NA
Portugal	NA	2000–16	NA	NA	CGex	2000–15	2000–15	2000–16	NA	2012	2012	2012	2012
Romania	NA	2000–16	NA	2000–16	CGex	NA	2000–16	NA	2000–16	NA	NA	NA	NA
Russian Federation	NA	2001–16	2014–16	2012	CGin	2014–16	2001–16	2014–16	2012	2012	2012	2012	2012
San Marino	NA	2002–16	NA	NA	CGin	NA	2002–16	NA	NA	NA	NA	NA	NA
Serbia	NA	2007–12	NA	NA	BCG	NA	NA	NA	NA	NA	NA	NA	NA
Slovak Republic	NA	2000–16	NA	2000–16	CGex	NA	2000–16	NA	2000–16	NA	NA	NA	NA
Slovenia	NA	2004–16	NA	2000–16	CGex	NA	2004–16	NA	2000–16	NA	NA	NA	NA
Solomon Islands	NA	2012–16	NA	NA	BCG	NA	NA	NA	NA	NA	NA	NA	NA
South Africa	NA	2000–16	NA	2000–16	CGex	2000–16	2000–16	2000–16	2000–16	2001–16	2001–16	2000–16	2001–16
Spain	NA	2000–16	NA	2000–16	CGin	NA	2000–16	NA	NA	NA	NA	NA	NA
Sweden	NA	2000–16	NA	2000–16	CGex	NA	2000–16	NA	2000–16	NA	NA	NA	NA
Switzerland	2000–16	2000–16	2000–16	2000–16	CGin	2000–16	2000–16	2000–16	2000–16	NA	NA	NA	NA
Tanzania	2014	2014	2014	2014	CGin	2014	2014	2014	2014	2014	2014	2014	2014
Tunisia	NA	2013	NA	2013	CGex	NA	2013	NA	2013	2013	2013	2013	2013
Turkey	2014–16	2008–16	2014–16	2013	CGin	2014–16	2008–16	2014–16	2013	2013	2013	2013	2013
Uganda	2015	2015	2015	2015	BCG	2015	2015	2015	2015	2015	2015	2015	2015
Ukraine	NA	2008–16	NA	NA	CGin	NA	2008–16	NA	NA	NA	NA	NA	NA
United Kingdom	2000–16	2000–16	2000–16	2000–16	CGin	2000–16	2000–16	2000–16	2000–16	2000–16	2000–16	2000–16	2000–16
United States	2001–16	2001–16	2001–16	2001–16	CGin	2001–16	2001–16	2001–16	2001–16	2001–16	2001–16	2001–16	2001–16
Uruguay	NA	2001-16	NA	2001-16	CGin	NA	2001-16	NA	2001-16	NA	NA	NA	NA

Note: "Level" indicates the institutional coverage of central government data in the database, where CGin = central government, including social security funds; CGex = central government, excluding social security funds; and BCG = budgetary central government. NFAx = nonfinancial assets excluding land and natural resources; FA = financial assets; Lx = liabilities, excluding pension-related liabilities; LNR = land and natural resources; PENS = pension-related liabilities; and NA = not available.

financial worth is dampened by the covariance between financial assets and liabilities.

To come up with a normalized measure of the volatility in net financial worth, the volatility of net financial worth is divided by the standard deviations of financial assets and liabilities, resulting in a unit-less measure—similar to the measure of correlation. The relative volatility of NFW to the volatility of financial assets and liabilities is presented as σ_n:

$$\sigma_n = \frac{\sigma^2_{NFW}}{\sigma_{FA}\sigma_L} \qquad (2)$$

This is the natural hedge measure. It can be rewritten by plugging equation (1) into (2):

$$\sigma_n = \frac{\sigma^2_{NFW}}{\sigma_{FA}\sigma_L} = \frac{\sigma_{FA}}{\sigma_L} + \frac{\sigma_L}{\sigma_{FA}} - 2\frac{Cov_{FA,L}}{\sigma_{FA}\sigma_L}, \quad \text{or}$$

$$\sigma_n = x + \frac{1}{x} - 2\,Cor_{FA,L},$$

in which $x = \frac{\sigma_{FA}}{\sigma_L}$, and $Cor_{FA,L}$ represents the correlation between financial assets and liabilities.

The relative standard deviations (x and $\frac{1}{x}$) are proxies for the contribution of size mismatch between financial assets and liabilities to the variation in net financial worth—if one side of the balance sheet is much bigger than the other side, its variations will dominate the variations in net financial worth. $Cor_{FA,L}$represents how valuation changes in financial assets and liabilities move together.

Fiscal Stress Tests

A fiscal stress test applies a large but plausible macroeconomic shock to the fiscal accounts. It can combine the direct impact on growth and revenue with effects on asset prices and realizations of contingent liabilities to assess the full fiscal impact of the stress event. Following the methodology outlined in IMF (2016a), fiscal stress tests contains three key elements:

- A macro-fiscal shock: identifying an extreme macro scenario (including changes to asset prices), and applying it using a fiscal forecasting model, which allows accounting for nonlinearities and budget rigidities;
- A contingent liability shock, based on an assessment of contingent liabilities that might be realized in the event of a macro crisis and their cost; and
- An assessment of the impact of the macro-fiscal shock and contingent liability realization on the government's comprehensive balance sheet, incorporating the value of future revenues and expenditures to provide a fuller picture on fiscal solvency.

A fiscal stress test can provide three summary outputs, depending on its focus. These can be used in assessing fiscal risks and providing guidance on the channels through which a macroeconomic crisis might impact public finances:

- Public wealth, as assessed against the change in the government's net worth or net financial worth, incorporating future fiscal flows;
- Government liquidity needs, as assessed against gross financing needs; and
- The financing burden, in the form of interest expense against revenue collections.

Annex 1.3. Balance Sheet Strength and Sovereign Bond Yields

This annex describes how the estimates for the impact of balance sheet strength measures on government bond yields in Box 1.2 are derived. It performs the estimation for the full sample of countries as well as for advanced economies and emerging markets separately.[65]

It estimates the following fixed effects panel specification:

$$y_{it} = \beta x_{it} + \gamma z_{it} + c_i + \lambda_t + \epsilon_{it}$$

in which y_{it} is the long-term government bond yield of country i in year t, extracted from the Thomson Reuters Datastream Economics database;[66] and x_{it} a balance sheet variable, the main variable of interest. These indicators include general government gross debt, total assets, financial assets, net worth, and net financial worth, all lagged to minimize the bias originating from reverse causality.[67] All balance sheet indicators are based on general government data from the PSBS database introduced in this *Fiscal Monitor*, except for gross debt, which is extracted from the World Economic Outlook database. All variables are expressed in percent of GDP. The set of variables z_{it} controls for the possible channels

[65]Advanced economies in the sample are Australia, Belgium, Canada, Czech Republic, Cyprus, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Japan, Luxembourg, the Netherlands, New Zealand, Norway, the Slovak Republic, Slovenia, Spain, Sweden, Switzerland, the United Kingdom, and the United States. Emerging markets included in the sample are Croatia, Hungary, India, Indonesia, Kazakhstan, Kyrgyz Republic, Moldova, Poland, and South Africa.

[66]Long-term bond yields used here are as defined by Thomson Reuters Datastream. These are the yields for 10-year bonds for most countries, excluding Belgium and Cyprus (6 years), Kazakhstan (up to 5 years), Kyrgyz Republic and Moldova (2 years), Slovenia (11 years), and the United Kingdom and the United States (20 years).

[67]Assets excluding land and other natural resources, and liabilities excluding pension liabilities, both for reasons of cross-country comparability.

through which macro-fiscal conditions may affect sovereign bond yields. The control variables include the growth rate of real per capita GDP, the US 10-year bond yield, the average inflation rate in country *i*, the short-term interest rate, and the general government primary balance.[68] Last, c_i and λ_t represent country and time fixed effects, respectively. The sample period is 2001–16.

The estimation results show that financial markets seem to account for government assets and net worth when pricing sovereign bonds. Phrased differently, balance sheet indicators beyond gross debt matter for sovereign yields. Specifically, total or financial assets are highly significant variables, both as stand-alone balance sheet variables and in regressions together with gross debt. Similarly, net (financial) worth are highly significant stand-alone explanatory variables for the pricing of sovereign bonds (Annex Table 1.3.1). These results are most clear in the full sample and the sample consisting of advanced economies, while significance is generally lower in the much smaller sample consisting solely of emerging markets. The results are robust to using a different time period, excluding the crisis years.

The magnitude of the impact of net (financial) worth on yields is comparable but somewhat smaller than the impact of gross debt. In the whole sample, a one percent of GDP increase in government net (financial) worth lowers yields by some 0.7 (0.6) bps, compared with a 1 bps increase in yield when gross debt increases by the same amount. The effect of net worth is more pronounced in emerging markets, where a 1 percent of GDP increase in net worth can lower yields by some 2.5 bps, which is consistent with higher and more variable yields in emerging markets. These results are consistent with Hadzi-Vaskov and Ricci (2016) and Gruber and Kamin (2012), in finding that financial markets seem to account for government

[68]Foreign buyers of emerging market sovereign debt in particular may also care about public foreign exchange assets. Ideally these would be included in the set of control variables, but they are not because of data limitations.

Annex Table 1.3.1. Government Balance Sheet and Sovereign Bond Yields

Dependent Variable: Long-Term Government Bond Yields							
Full Sample							
Lagged net worth			–0.007***				
Lagged net financial worth				–0.006**			
Lagged gross debt	0.014***	0.013***			0.010***		
Lagged total asset	–0.009***					–0.009***	
Lagged financial assets		–0.007***					–0.010***
Observations	409	415	445	447	685	448	454
Number of countries	31	31	33	33	33	33	33
Advanced Economies							
Lagged net worth			–0.005***				
Lagged net financial worth				–0.006***			
Lagged gross debt	0.015***	0.014***			0.012***		
Lagged total asset	–0.003**					–0.003**	
Lagged financial assets		–0.004***					–0.007***
Observations	328	334	348	350	579	351	357
Number of countries	24	24	25	25	24	25	25
Emerging Markets							
Lagged net worth			–0.025***				
Lagged net financial worth				–0.013			
Lagged gross debt	0.041**	0.008			0.006		
Lagged total asset	–0.031***					–0.024***	
Lagged financial assets		–0.046*					–0.041**
Observations	81	81	97	97	106	97	97
Number of countries	7	7	8	8	9	8	8

Note: The table represents the fixed effects estimation results investigating the impact of balance sheet indicators on long-term government bond spreads. Total assets exclude land and natural resources, and liabilities exclude pension liabilities for reasons of cross-country comparability. For the same reason, net worth excludes all of the aforementioned items, and net financial worth excludes pension liabilities. Control variables include real per capita GDP growth, US 10-year bond yield, average inflation rate, short-term interest rate, general government primary balance, country and time fixed effects not reported in the table for brevity. The sample period is 2001–16.
*, **, and *** represent statistical significance at 10, 5, and 1 percent, respectively.

assets and net worth when pricing sovereign bonds, and that the effect of fiscal variables of interest (gross/net debt, assets) on bond yields/spreads is larger for emerging market economies than advanced economies. The emerging market regressions should, however, be interpreted with caution given the small sample size.

Annex 1.4. Balance Sheet Strength and the Macro Economy

This annex provides a summary of the econometric specification to study the impact of balance sheet strength on the macro economy (Box 1.2). The analysis is based on the local projection method introduced by Jordà (2005) and Jordà, Schularick, and Taylor (2016) using a sample of 17 advanced economies for which time series data are available. The baseline regression is as follows:

$$\begin{aligned} y_{i,p+h} - y_{i,p} = {} & \theta_S d_{i,p}^S + \theta_W d_{i,p}^W + \beta_h^{S,Pr}\left(d_{i,p}^S x_{i,p}^{Pr}\right) \\ & + \beta_h^{W,Pr}\left(d_{i,p}^W x_{i,p}^{Pr}\right) + \beta_h^{S,Pu}\left(d_{i,p}^S x_{i,p}^{Pu}\right) \\ & + \beta_h^{W,Pu}\left(d_{i,p}^W x_{i,p}^{Pu}\right) + \beta_h^{S,PrPu}\left(d_{i,p}^S x_{i,p}^{Pr} x_{i,p}^{Pu}\right) \\ & + \beta_h^{W,PrPu}\left(d_{i,p}^W x_{i,p}^{Pr} x_{i,p}^{Pu}\right) + \sum_{l=1}^{L} \gamma_{h,l} Y_{i,p-l} \\ & + \alpha_{i,h} + \epsilon_{i,p+h}, \end{aligned}$$

in which the dependent variable $y_{i,p+h} - y_{i,p}$ is the cumulative growth rate (log difference) in real GDP or real government spending, both in per capita terms in country i, h years after the business cycle peak. Peak years are identified as the start of the recession; they are the last year in which real per capita GDP grows, that is, the year followed by a year in which it declines (Bry and Boschan 1971). The dummy variables $d_{i,p}^S$ and $d_{i,p}^W$ denote, respectively, strong and weak balance sheets in the peak year. Strong (weak) balance sheets are defined as those with net financial worth above (below) the sample median. Following the analysis in the October 2016 *Fiscal Monitor*, the variables $x_{i,p}^{Pr}$ and $x_{i,p}^{Pu}$ present the average annual change in the five years before the peak of private debt, and the level of public debt as a percent of GDP at the peak, respectively. $Y_{i,p-l}$ is the set of lagged control variables. Controls include two lags of real per capita GDP growth rates, government expenditures, public debt, and private debt.[69] Last, $\alpha_{i,h}$ are country-year fixed effects, and $\epsilon_{i,p+h}$ denotes the error term. Standard errors are computed using the Driscoll and Kraay (1998) method to correct for heteroskedasticity, cross-sectional dependence, and serial correlation.

The data cover the period 1970–2015 and come from various sources. Data on net financial worth are taken from the World Inequality Database, which provides a long time series for 17 advanced economies.[70,71] Data on public debt and private credit are sourced from the database compiled in the October 2016 *Fiscal Monitor*. Real per capita GDP is extracted from the *World Economic Outlook* and Penn World Table, whereas government spending data are sourced from Mauro and others (2015). In these time series we observe 53 recessions.

The regressions support the view that countries with a strong balance sheet face shorter and shallower recessions (Annex Table 1.4.1). The results on expenditure show a statistically significant difference between the coefficient for countries with a strong and weak balance sheet, with p-values below 5 percent starting from the second year. Results in the GDP regression are also significant, although the p-values for the test of the difference between the coefficients for countries with a strong and weak balance sheet are only below 5 percent in years 4 and 5. This lower significance is likely due to the limited number of observations in the sample. The findings are robust whether or not the $x_{i,p}^{Pr}$ and $x_{i,p}^{Pu}$ variables and their interactions are included, as well as for using net worth instead of net financial worth as indicator of balance sheet strength.

[69]We use a standard set of control variables from Bernardini and Forni (2017). This specification does not account for possible collinearity or nonlinear relations between the control variables and balance sheet strength dummies.

[70]The data are annual and cover the following countries: Australia, Canada, Czech Republic, Denmark, Finland, France, Germany, Greece, Italy, Japan, Republic of Korea, Netherlands, Norway, Spain, Sweden, the United Kingdom, and the United States.

[71]The World Inequality Database is available at https://wid.world/. The database is based on a collaborative effort of various scholars. Some of the series are based on official statistics, while others are estimates based on different data sources available (fiscal data, survey data, and national accounts). Although the public sector database introduced in this *Fiscal Monitor* is more detailed and comprehensive than the World Inequality Database, the local projections model is data intensive and requires long time series. Therefore, the empirical estimations in this annex use data from World Inequality Database, which goes back to 1970 (compared with the PSBS database that covers the period from 2000). The correlations between (changes in) net financial worth in the World Inequality Database and the PSBS database introduced in this *Fiscal Monitor* are positive and significant at the 1 percent level.

Annex Table 1.4.1. Recovery and Fiscal Policy in the Aftermath of Economic Recessions

	Real Government Expenditure per Capita					Real GDP per Capita				
	Year 1	Year 2	Year 3	Year 4	Year 5	Year 1	Year 2	Year 3	Year 4	Year 5
θ_s	3.90***	8.77***	14.69***	24.39***	33.46***	–1.60***	–0.77*	1.23*	4.29***	9.30***
	(1.05)	(1.24)	(3.04)	(4.02)	(3.80)	(0.32)	(0.62)	(0.60)	(0.73)	(0.95)
θ_w	1.31	0.30	1.92	–11.31**	–2.81*	–2.78***	–2.84**	–0.70	–0.06	2.67*
	(2.21)	(1.91)	(2.24)	(4.41)	(1.99)	(0.96)	(1.13)	(1.28)	(1.31)	(1.56)
R^2	0.80	0.84	0.85	0.85	0.91	0.83	0.74	0.76	0.84	0.91
$\theta_s = \theta_w$ (*p*-value)	0.42	0.01	0.01	0.00	0.00	0.34	0.12	0.26	0.03	0.01
Peaks	53	53	52	52	42	53	53	52	52	42

Source: IMF staff estimates.

Note: The table reports the estimations using the local projections model. The first five columns present the coefficients for real per capita GDP, and the second five represent those for real per capita government expenditure as dependent variables (both cumulative changes starting from the peak before economic recessions). The regressions also include fixed effects and control variables that are not reported. Robust standard errors are reported in the second row of each line where *, **, and *** denote *p*-values less than 0.32 (1 standard deviation), 0.05 (2 standard deviations), and 0.01 (3 standard deviations), respectively.

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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 SAR
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

Code	Country name
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

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

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

Contingent liabilities Obligations that are not explicitly recorded on government balance sheets and that arise only in the event of a particular discrete situation, such as a crisis.

Countercyclical fiscal policy Active changes in expenditure and tax policies to smooth the economic cycle (by contrast with the operation of automatic stabilizers); for instance, by cutting taxes or raising expenditures during an economic downturn.

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

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

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

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

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

Fiscal stabilization Contribution of fiscal policy to output stability through its impact on aggregate demand.

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

Gross debt All liabilities that require future payment of interest and/or principal by the debtor to the creditor. This includes debt liabilities in the form of special drawing rights, currency, and deposits; debt securities; loans; insurance, pension, and standardized guarantee programs; and other accounts payable. (See the IMF's 2001 *Government Finance Statistics Manual* and *Public Sector Debt Statistics Manual*.) The term "public debt" is used in the *Fiscal Monitor*, for simplicity, as synonymous with gross debt of the general government, unless specified otherwise. (Strictly speaking, public debt refers to the debt of the public sector as a whole, which includes financial and nonfinancial public enterprises and the central bank.)

Liquid assets Assets that can be readily converted to cash.

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

Net (financial) worth Net worth is a measure of fiscal solvency. It is calculated as assets minus liabilities. Net financial worth is calculated as financial assets minus liabilities.

Nonfinancial public sector General government plus nonfinancial public corporations.

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

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

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

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

Procyclical fiscal policy Fiscal policy is said to be "procyclical" when it amplifies the economic cycle, for instance by raising taxes or cutting expenditures during an economic downturn.

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

Public debt See *gross debt*.

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

Structural fiscal balance Extension of the cyclically adjusted balance that also corrects for other nonrecurrent effects that go beyond the cycle, such as one-off operations and other factors whose cyclical fluctuations do not coincide with the output cycle (for instance, asset and commodity prices and output composition effects).

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 2018–19 and the medium-term scenario for 2020–23. "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 20, 2018.

Data and Conventions

Country-specific data and projections for key fiscal variables are based on the October 2018 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 can 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 close to be widely seen as emerging market economies. Zimbabwe is included in the group. 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 markets 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.

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 many countries, fiscal data follow the IMF's 2001 *Government Finance Statistics Manual* (GFSM 2001). 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 IMF's *Government Finance Statistics Manual*, 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 can sometimes be 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 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 April 2018 *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) (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 from 2003 only. 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 74.0 percent of GDP at the end of 2017.

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

Chile: The cyclically adjusted balance refers 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.

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

India: 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. In 2015, if the conversion of government's remaining preference shares to ordinary shares in one bank were excluded, the fiscal balance would be –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," at 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.

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. Historical fiscal data have been revised to reflect the migration to GFSM 2001, which entailed some classification changes.

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, 0.2 percent of GDP for 2016, 0.0 percent of GDP for 2017, and 0.0 percent of GDP for 2018.

Sweden: Cyclically adjusted balances take into account output and employment gaps.

Switzerland: Data submissions at the cantonal and commune levels 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: Information on the general government balance, primary balance, and cyclically adjusted primary balance differs from that in the authorities' official statistics or country reports, which include net lending and privatization receipts.

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 this is not true 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) are adjusted to exclude unfunded pension liabilities of government employees' defined-benefit pension plans.

Uruguay: Data are for the consolidated public sector, which includes the nonfinancial public sector (as presented in the authorities' budget documentation), local governments, Banco Central del Uruguay, and Banco de Seguros del Estado. In particular, Uruguay is one of the few countries in the sample for which public debt includes the debt of the central bank, which increases recorded public sector gross debt.

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 2018 *World Economic Outlook,* unless noted otherwise. For underlying assumptions other than on fiscal policy, see the October 2018 *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 outturn and budget plans for the federal and provincial governments, on fiscal measures announced by the authorities, and on IMF staff macroeconomic projections.

Australia: Final Budget Outcomes for the Commonwealth, states and territories for 2016, with additional data from the Commonwealth, state, and territory budgets for FY2018/19.

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 2018–21 Stability Programme and other available information on the authorities' fiscal plans, with adjustments for IMF staff assumptions.

Brazil: Fiscal projections for the end of 2018 take into account budget performance through May 2018, and 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 2018 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 2018:Q1.

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

China: Projections assume that the pace of fiscal consolidation is likely to be gradual, reflecting reforms to strengthen social safety nets and the social security system announced as part of the Third Plenum reform agenda.

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

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

Czech Republic: Projections are based on the authorities' budget forecast for 2017 with adjustments for the IMF staff's macroeconomic projections. Projections for 2018 onward are based on the country's Convergence Programme.

Denmark: Estimates for 2017 are aligned with the latest official budget numbers, adjusted where appropriate for the IMF staff's macroeconomic assumptions. For 2018, the projections incorporate key features of the medium-term fiscal plan as embodied in the authorities' 2017 Convergence Program submitted to the EU.

Estonia: Fiscal projections are on an accrual basis and are based on the authorities' 2017 budget.

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

France: Projections for 2018 reflect the 2018 budget law. For 2018–23, they are based on the multiyear budget and the 2018 budget laws and additional measures expected in 2019 budget law adjusted for differences in assumptions on macro and financial variables, and revenue projections. Historical

fiscal data reflect the May 2018 revisions and update of the historical fiscal accounts, debt data, and national accounts.

Germany: The IMF staff's projections for 2018 and beyond are based on the 2018 Stability Program, revised 2018 federal budget, 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 EU support operations.

Greece: Greece's primary balance estimates for 2017 are based on preliminary excessive deficit procedure (EDP) data on an accrual basis (ESA 2010) provided by the National Statistical Service (ELSTAT) as of April 23, 2018. Historical data since 2010 and fiscal projections reflect adjustments in line with the primary balance definition under the enhanced surveillance procedure 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 projections are based on moderate tax policy and administration reforms, fuel subsidy pricing reforms introduced in January 2015, 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 2018.

Israel: Historical data are based on Government Finance Statistics data prepared by the Central Bureau of Statistics. The central government deficit is assumed to remain at the current ceiling level of 2.9 percent of GDP throughout the projection period, rather than declining in line with 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 2018 budget and April 2018 Economic and Financial Document. IMF staff assumes that the automatic value-added tax hikes for next year will be canceled.

Japan: The projections include fiscal measures already announced by the government, including the consumption tax hike in October 2019.

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 government.

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

Malaysia: Fiscal Budget Economic Report October 2017.

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 2018 are broadly in line with the approved budget; projections for 2019 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 adjustments.

Netherlands: Fiscal projections for the period 2017–23 are based on the authorities' Bureau for Economic Policy Analysis budget projections, after differences in macroeconomic assumptions are adjusted for. Historical data were revised following the June 2014 Central Bureau of Statistics release of revised macro data because of the adoption of the European System of National and Regional Accounts (ESA 2010) and the revisions of data sources.

New Zealand: Fiscal projections are based on the fiscal year 2018–19 budget, the 2017 Half-Year Economic and Fiscal Update, and IMF staff estimates.

Norway: Fiscal projections are based on the latest 2018 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, current data, and fiscal space in each year.

Poland: Data are on an ESA 2010 basis beginning in 2010. Data before 2010 are on the basis of ESA 95. Projections are based on the 2016 budget and take into account the effects of the 2014 pension changes.

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: Fiscal projections for 2018 reflect the adopted budget measures as of July 2018 (including the increases in wages and pensions, and changes to labor taxation). Projections for 2019 reflect the full effect of the 2018 budget measures and the impact of the unified wage law. Apart from the impact of the unified wage law, which will be gradually implemented until 2022, no additional policy changes are assumed beyond 2019.

Russia: Projections for 2018–21 are staff estimates based on the authorities' budget. Projections for 2022–23 are based on the new oil-price rule, with adjustments by IMF staff.

Saudi Arabia: Staff baseline projections of total government revenues reflect the impact of announced policies in the 2018 Budget. Oil revenues are based on WEO baseline oil prices and the assumption that Saudi Arabia continues to meet its commitments under the OPEC+ agreement. Expenditure projections take the 2018 budget as a starting point and reflect staff estimates of the effects of the latest changes in policies and economic developments. Expenditures in 2018 include the allowances and other measures announced in the Royal Decree for one year in January 2018.

Singapore: For fiscal year 2018/19, projections are based on budget numbers. For the remainder of the projection period, the IMF staff assumes unchanged policies.

Slovak Republic: Projections for 2015 take into account developments in the first three quarters of the year and the authorities' new projections presented in the budget for 2016. Projections for 2016 consider the authorities' 2016 budget. Projections for 2017 and beyond reflect a no-policy-change scenario.

Spain: For 2018 and beyond, fiscal projections are based on the information specified in the government's Stability Programme 2018, and on IMF staff's macroeconomic projections.

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 2018 Spring Budget. The impact of cyclical developments on the fiscal accounts is calculated using the 2005 Organization for Economic Cooperation's elasticity in order 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 for 2018 are based on the authorities' Medium-Term Plan (MTP) 2018–20, with adjustments for additionally announced fiscal measures and staff's higher inflation forecast. For the medium term, the fiscal projections assume a more gradual fiscal consolidation than envisaged in the MTP.

United Kingdom: Fiscal projections are based on the UK's November 2017 Budget and the March 2018 update, with expenditure projections based on the budgeted nominal values 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.

United States: Fiscal projections are based on the April 2018 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. Finally, 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 SNA 2008, and when translated into GFS this is in accordance with GFSM 2014. Because of data limitations, most series begin with 2001.

Venezuela: Projecting the economic outlook in Venezuela, including assessing past and current economic developments as the basis for projections, is complicated by the lack of discussions with the authorities (the last Article IV consultation took place in 2004), long intervals in receiving data with information gaps, incomplete provision of information, and difficulties in interpreting certain reported economic indicators in line with economic developments. The fiscal accounts include the budgetary central government and Petróleos de Venezuela, S.A. (PDVSA), and the fiscal accounts data for 2016–22 are IMF staff estimates. Revenue includes the IMF staff's estimated foreign exchange profits transferred from the central bank to the government (buying US dollars at the most appreciated rate and selling at more depreciated rates in a multitier exchange rate system) and excludes the IMF staff's estimated revenue from PDVSA's sale of Petrocaribe assets to the central bank.

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. Nonhydrocarbon revenues largely reflect 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 countries 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	Democratic Republic of the Congo	United States	Germany	Korea	Russia
Estonia	China	Republic of Congo		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	Kyrgyz Republic		Saudi Arabia		
Israel	Indonesia	Lao P.D.R.		South Africa		
Italy	Iran	Madagascar		Turkey		
Japan	Kazakhstan	Mali		United Kingdom		
Korea	Kuwait	Moldova		United States		
Latvia	Libya	Mozambique				
Lithuania	Malaysia	Myanmar				
Luxembourg	Mexico	Nepal				
Malta	Morocco	Nicaragua				
Netherlands	Oman	Niger				
New Zealand	Pakistan	Nigeria				
Norway	Peru	Papua New Guinea				
Portugal	Philippines	Rwanda				
Singapore	Poland	Senegal				
Slovak Republic	Qatar	Somalia				
Slovenia	Romania	Sudan				
Spain	Russia	Tajikistan				
Sweden	Saudi Arabia	Tanzania				
Switzerland	South Africa	Timor-Leste				
United Kingdom	Sri Lanka	Uganda				
United States	Thailand	Uzbekistan				
	Turkey	Vietnam				
	Ukraine	Yemen				
	United Arab Emirates	Zambia				
	Uruguay	Zimbabwe				
	Venezuela					

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 and 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	Nominal
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	Nominal
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,SG,LG,SS	C	GG	CG,SG,LG,SS	C	GG	CG,SG,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; NFPC = nonfinancial public corporations; PS = public sector; SG = state governments; SS = social security funds; TG = territorial governments. Accounting standard: A = accrual; C = cash; Mixed = combination of accrual and cash accounting.

[1] In many economies, fiscal data follow the IMF's *Government Finance Statistics Manual 2001*. 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.

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	GG	CG,LG	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	GG	CG,SG,LG,SS, NMPC	Mixed	GG	CG,SG,LG,SS, NMPC	Mixed	GG	CG,SG,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,SG,LG,SS	C	GG	CG,SG,LG,SS	C	GG	CG,SG,LG,SS	Nominal
United Arab Emirates[8]	GG	CG,BCG,SG,SS	C	. . .	. . .	. . .	GG	CG,BCG,SG,SS	Nominal
Uruguay	PS	CG,LG,SS,MPC, NFPC	A	. . .	. . .	. . .	PS	CG,LG,SS,MPC, 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: A = accrual; C = cash; Mixed = combination of accrual and cash accounting.

[1] In many countries, fiscal data follow the IMF's *Government Finance Statistics Manual* 2001. 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	GG	CG	CB	. . .	. . .	. . .	GG	CG	Face
Cambodia	CG	CG,LG	A	CG	CG,LG	A	CG	CG,LG	Face
Cameroon	NFPS	CG,NFPC	C	. . .	. . .	. . .	NFPS	CG,NFPC	Current market
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	CG	CG,SG,LG,NFPC	C	. . .	. . .	. . .	CG	CG,SG,LG,NFPC	Nominal
Ghana	CG	CG	C	. . .	. . .	. . .	CG	CG	Face
Guinea	CG	CG	C	. . .	. . .	. . .	CG	CG	Nominal
Haiti	CG	CG	C	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	A	. . .	. . .	. . .	CG	CG	Current market
Kyrgyz Republic	GG	CG,LG,SS	C	. . .	. . .	. . .	GG	CG,LG,SS	Face
Lao P.D.R.[3]	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[4]	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	CG	CG	C	CG	CG	C	CG	CG	. . .
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[5]	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: BCG = budgetary central government; CG = central government; CPS = combined public sector; EA = extrabudgetary units; FC = financial public corporations; GG = general government; LG = local governments; MPC = monetary public corporations, including central bank; NC = non-cash; 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: A = accrual; C = cash; 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* 2001. 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] Lao P.D.R.'s fiscal spending includes capital spending by local governments financed by loans provided by the central bank.

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

[5] Uzbekistan's listing includes the Fund for Reconstruction and Development.

Table A1. Advanced Economies: General Government Overall Balance, 2009–23
(Percent of GDP)

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Australia	–4.6	–5.1	–4.4	–3.5	–2.8	–2.9	–2.8	–2.6	–1.9	–1.4	–1.1	–0.5	0.0	0.2	0.1
Austria	–5.4	–4.5	–2.6	–2.2	–2.0	–2.7	–1.0	–1.6	–0.7	–0.2	–0.2	0.1	0.0	–0.2	–0.4
Belgium	–5.4	–4.0	–4.1	–4.2	–3.1	–3.1	–2.5	–2.5	–1.0	–1.2	–1.7	–1.5	–1.5	–1.5	–1.5
Canada	–3.9	–4.7	–3.3	–2.5	–1.5	0.2	–0.1	–1.1	–1.1	–1.2	–1.1	–1.0	–1.0	–0.9	–0.9
Cyprus[1]	–5.4	–4.7	–5.7	–5.6	–3.3	–0.2	–0.2	0.4	1.8	2.1	1.6	1.2	1.2	1.1	1.3
Czech Republic	–5.5	–4.2	–2.7	–3.9	–1.2	–1.9	–0.6	0.7	1.6	1.5	1.1	0.8	1.0	1.0	1.0
Denmark	–2.8	–2.7	–2.1	–3.5	–1.2	1.1	–1.5	–0.4	1.1	–0.7	–0.5	–0.4	–0.3	–0.2	–0.1
Estonia	–2.2	0.2	1.2	–0.3	–0.2	0.7	0.1	–0.3	–0.3	–0.5	–0.3	–0.3	–0.1	0.0	0.0
Finland	–2.5	–2.6	–1.0	–2.2	–2.6	–3.2	–2.8	–1.8	–0.6	–0.9	–0.6	–0.4	–0.3	–0.2	–0.3
France	–7.2	–6.9	–5.2	–5.0	–4.1	–3.9	–3.6	–3.6	–2.6	–2.6	–2.8	–2.2	–2.5	–2.6	–2.8
Germany	–3.2	–4.2	–1.0	0.0	–0.1	0.6	0.8	0.9	1.0	1.5	1.5	1.3	0.9	0.8	0.8
Greece	–15.1	–11.2	–10.3	–6.6	–3.6	–4.0	–2.8	0.7	1.1	0.5	0.0	0.2	0.3	0.1	–0.4
Hong Kong SAR	1.5	4.1	3.8	3.1	1.0	3.6	0.6	4.4	5.5	3.6	2.0	1.8	1.6	1.6	1.6
Iceland	–9.5	–9.5	–5.4	–3.6	–1.8	–0.1	–0.8	12.3	1.5	0.9	0.7	0.5	0.4	0.5	0.5
Ireland[1]	–13.8	–32.0	–12.8	–8.1	–6.1	–3.6	–1.9	–0.5	–0.3	–0.2	–0.1	0.2	0.2	0.5	0.7
Israel	–5.7	–3.7	–2.9	–4.8	–4.1	–3.3	–2.1	–2.1	–2.2	–3.2	–3.3	–3.4	–3.4	–3.4	–3.4
Italy	–5.2	–4.2	–3.7	–2.9	–2.9	–3.0	–2.6	–2.5	–2.3	–1.7	–1.7	–1.9	–2.0	–2.1	–2.2
Japan	–10.2	–9.5	–9.4	–8.6	–7.9	–5.6	–3.8	–3.7	–4.3	–3.7	–2.8	–2.1	–2.0	–1.9	–2.0
Korea	0.0	1.5	1.7	1.6	0.6	0.4	0.6	1.7	2.3	2.3	1.5	0.9	0.5	0.2	0.2
Latvia	–7.0	–6.5	–3.2	0.2	–0.6	–1.7	–1.5	–0.4	–0.8	–1.2	–1.0	–0.6	–0.6	–0.5	–0.5
Lithuania	–9.3	–6.9	–8.9	–3.1	–2.6	–0.7	–0.2	0.3	0.5	0.6	0.8	0.8	0.8	0.7	0.6
Luxembourg	–0.7	–0.7	0.5	0.3	1.0	1.3	1.4	1.6	1.5	1.1	0.9	0.8	0.8	0.7	0.6
Malta	–3.2	–2.4	–2.4	–3.5	–2.4	–1.8	–1.1	1.0	3.9	1.7	1.4	1.1	0.8	0.7	0.6
Netherlands	–5.4	–4.9	–4.2	–3.8	–2.3	–2.2	–2.0	0.4	1.1	0.6	0.9	0.9	0.9	0.9	0.9
New Zealand	–1.9	–5.4	–4.9	–2.2	–1.3	–0.5	0.3	1.2	1.4	0.8	1.0	1.3	1.6	2.0	2.0
Norway	10.3	11.0	13.4	13.8	10.8	8.7	6.1	4.0	4.4	5.7	5.7	5.3	5.0	4.7	4.6
Portugal	–9.8	–11.2	–7.4	–5.7	–4.8	–7.1	–4.3	–2.0	–3.0	–0.7	–0.3	–0.2	0.0	0.2	0.2
Singapore	0.0	6.0	8.6	7.8	6.6	5.4	3.6	3.3	5.7	2.3	1.6	1.6	1.7	1.8	1.8
Slovak Republic	–7.8	–7.5	–4.3	–4.3	–2.7	–2.7	–2.7	–2.2	–1.0	–0.7	–0.5	0.0	0.0	0.0	0.0
Slovenia	–5.4	–5.2	–5.5	–3.1	–13.8	–5.8	–3.3	–1.7	–0.8	0.2	–0.1	–0.2	–0.3	–0.4	–0.5
Spain[1]	–11.0	–9.4	–9.6	–10.5	–7.0	–6.0	–5.3	–4.5	–3.1	–2.7	–2.3	–2.4	–2.5	–2.6	–2.7
Sweden	–0.7	0.0	–0.2	–1.0	–1.4	–1.6	0.2	1.2	1.3	1.0	0.8	0.6	0.4	0.3	0.3
Switzerland	0.5	0.4	0.7	0.4	–0.4	–0.2	0.6	0.4	0.4	0.6	0.4	0.4	0.3	0.3	0.3
United Kingdom	–10.1	–9.3	–7.5	–7.6	–5.3	–5.4	–4.2	–2.9	–1.8	–2.0	–1.7	–1.5	–1.3	–0.9	–0.8
United States[2]	–12.7	–10.6	–9.3	–7.6	–4.1	–3.7	–3.2	–3.9	–3.8	–4.7	–5.0	–4.8	–4.9	–4.9	–4.5
Average	–8.6	–7.6	–6.2	–5.4	–3.5	–3.0	–2.5	–2.5	–2.2	–2.5	–2.5	–2.4	–2.4	–2.4	–2.3
Euro Area	–6.3	–6.2	–4.2	–3.7	–3.0	–2.5	–2.0	–1.5	–0.9	–0.6	–0.6	–0.5	–0.7	–0.8	–0.9
G7	–9.7	–8.7	–7.3	–6.3	–4.1	–3.4	–2.8	–3.1	–3.0	–3.2	–3.3	–3.1	–3.2	–3.1	–2.9
G20 Advanced	–9.3	–8.2	–6.9	–5.9	–3.9	–3.2	–2.7	–2.9	–2.7	–3.0	–3.0	–2.8	–2.9	–2.9	–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 economy-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, 2009–23
(Percent of GDP)

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Australia	–4.5	–4.8	–3.9	–2.8	–2.0	–2.0	–1.9	–1.6	–1.0	–0.5	–0.2	0.5	0.9	1.0	1.0
Austria	–3.2	–2.3	–0.4	0.0	0.2	–0.7	0.9	0.1	0.8	1.0	0.9	1.1	1.0	0.7	0.4
Belgium	–2.0	–0.7	–0.9	–1.0	–0.2	–0.2	0.2	0.1	1.1	0.9	0.2	0.3	0.3	0.1	0.1
Canada	–2.8	–3.9	–2.7	–1.8	–1.0	0.5	0.5	–0.4	–0.8	–0.9	–0.6	–0.5	–0.5	–0.3	–0.3
Cyprus[1]	–3.4	–3.2	–4.1	–2.9	0.4	2.8	2.5	2.9	4.3	4.5	4.2	3.7	3.7	3.7	3.6
Czech Republic	–4.5	–3.2	–1.7	–2.8	–0.2	–0.8	0.3	1.5	2.2	2.2	1.7	1.4	1.6	1.6	1.5
Denmark	–2.4	–2.1	–1.4	–3.0	–0.8	1.6	–0.7	0.1	1.3	–0.3	0.0	0.1	0.2	0.3	0.4
Estonia	–2.5	0.0	1.0	–0.4	–0.3	0.6	0.0	–0.4	–0.3	–0.5	–0.4	–0.3	–0.2	–0.1	–0.1
Finland	–2.9	–2.5	–1.0	–2.0	–2.5	–3.0	–2.6	–1.6	–0.3	–0.8	–0.5	–0.4	–0.3	0.0	0.1
France	–4.8	–4.5	–2.6	–2.5	–1.9	–1.9	–1.8	–1.8	–0.9	–0.9	–1.1	–0.5	–0.7	–0.7	–0.8
Germany	–0.8	–2.1	1.1	1.8	1.4	1.8	1.8	1.8	1.8	2.2	2.1	1.9	1.4	1.3	1.3
Greece	–10.1	–5.3	–3.0	–1.5	0.4	0.0	0.7	3.9	4.2	3.5	3.5	3.5	3.5	3.5	3.0
Hong Kong SAR	–0.4	2.3	1.9	1.3	–0.7	3.6	0.6	3.6	4.7	2.2	0.9	0.7	0.5	0.6	0.6
Iceland	–6.5	–6.8	–2.8	–0.4	1.6	3.5	2.9	15.3	4.6	3.3	3.0	2.6	2.2	2.3	2.3
Ireland[1]	–12.4	–29.7	–10.2	–4.8	–2.6	–0.3	0.5	1.6	1.6	1.4	1.5	1.7	1.6	1.8	2.1
Israel	–1.9	0.0	0.6	–1.3	–0.9	–0.2	0.8	0.5	0.6	–0.4	–0.6	–0.6	–0.6	–0.5	–0.5
Italy	–1.0	–0.1	0.8	2.1	1.7	1.4	1.4	1.3	1.3	1.8	1.7	1.6	1.5	1.5	1.6
Japan	–9.3	–8.6	–8.3	–7.5	–7.0	–4.9	–3.2	–2.9	–3.8	–3.3	–2.6	–2.0	–1.9	–1.8	–1.8
Korea	–0.7	0.8	0.9	0.8	–0.2	–0.3	–0.3	0.8	1.2	1.3	0.4	0.1	–0.1	–0.3	–0.2
Latvia	–5.9	–5.1	–1.8	1.7	0.9	–0.2	0.3	0.8	0.3	–0.2	–0.1	0.4	0.4	0.3	0.3
Lithuania	–8.2	–5.2	–7.2	–1.2	–0.9	1.0	1.3	1.6	1.7	1.5	1.5	1.5	1.4	1.3	1.2
Luxembourg	–1.2	–0.9	0.3	0.1	0.8	1.1	1.2	1.4	1.4	1.0	0.7	0.3	0.1	–0.2	–0.5
Malta	0.0	0.7	0.8	–0.5	0.4	1.0	1.3	3.1	5.8	3.6	2.9	2.6	2.2	2.1	2.0
Netherlands	–4.0	–3.6	–2.8	–2.5	–1.0	–0.9	–0.9	1.4	2.0	1.3	1.5	1.5	1.5	1.5	1.5
New Zealand	–1.5	–4.8	–4.1	–1.3	–0.5	0.2	1.0	1.9	2.2	1.7	1.8	2.2	2.4	2.8	2.8
Norway	8.0	8.9	11.3	12.0	8.8	6.4	3.5	1.5	1.9	3.1	3.1	2.7	2.4	2.1	2.0
Portugal	–7.1	–8.5	–3.6	–1.4	–0.6	–2.7	0.0	1.9	0.7	2.6	2.9	2.9	2.9	2.9	2.9
Singapore	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Slovak Republic	–6.7	–6.4	–2.9	–2.8	–1.1	–1.1	–1.3	–0.8	0.1	0.4	0.6	1.0	1.0	0.9	0.9
Slovenia	–4.6	–4.0	–4.2	–1.4	–11.5	–2.8	–0.6	1.0	1.5	2.0	1.6	1.6	1.5	1.4	1.4
Spain[1]	–9.6	–7.8	–7.7	–8.0	–4.0	–3.0	–2.6	–2.0	–0.8	–0.5	–0.2	–0.3	–0.3	–0.3	–0.4
Sweden	–0.4	0.3	0.1	–0.8	–1.2	–1.5	0.1	1.1	1.1	0.8	0.6	0.4	0.3	0.2	0.2
Switzerland	1.0	0.8	1.1	0.8	–0.2	0.0	0.9	0.6	0.6	0.8	0.6	0.5	0.4	0.4	0.4
United Kingdom	–8.7	–6.8	–4.7	–5.3	–4.0	–3.6	–2.8	–1.4	0.0	–0.3	–0.2	0.1	0.3	0.6	0.6
United States[2]	–11.4	–9.1	–7.5	–5.9	–2.5	–2.1	–1.7	–2.3	–2.2	–2.9	–3.0	–2.7	–2.7	–2.6	–2.2
Average	–7.1	–6.1	–4.5	–3.8	–2.1	–1.6	–1.2	–1.2	–1.0	–1.2	–1.2	–1.0	–1.0	–1.0	–0.8
Euro Area	–3.8	–3.7	–1.6	–1.0	–0.5	–0.2	0.0	0.4	0.9	1.0	1.0	1.0	0.9	0.8	0.8
G7	–8.1	–6.9	–5.3	–4.4	–2.5	–1.8	–1.4	–1.6	–1.5	–1.8	–1.8	–1.5	–1.5	–1.4	–1.2
G20 Advanced	–7.8	–6.6	–5.1	–4.2	–2.4	–1.8	–1.4	–1.5	–1.4	–1.6	–1.6	–1.3	–1.3	–1.3	–1.1

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 economy-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. Data for 2014 onward come from the Statistical Service of the Republic of Cyprus (Cystat), which follows different methodology than Eurostat. As a result, numbers from these two separate series are different.

[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, 2009–23

(Percent of potential GDP)

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Australia	–4.5	–4.9	–4.3	–3.3	–2.6	–2.6	–2.4	–2.2	–1.5	–1.2	–1.0	–0.4	0.2	0.3	0.3
Austria	–4.6	–4.1	–3.2	–2.5	–1.5	–1.9	0.0	–0.6	–0.5	–0.6	–0.8	–0.5	–0.4	–0.4	–0.4
Belgium	–4.5	–3.8	–4.3	–4.0	–2.5	–2.6	–2.1	–2.3	–1.0	–1.2	–1.8	–1.6	–1.5	–1.5	–1.5
Canada	–2.5	–4.0	–3.2	–2.3	–1.5	–0.1	0.0	–0.7	–1.1	–1.3	–1.2	–1.1	–1.1	–1.0	–0.9
Cyprus	–6.2	–5.8	–6.6	–5.0	–1.2	1.9	1.8	1.8	2.4	2.1	1.1	0.8	0.7	0.7	1.1
Czech Republic	–5.3	–4.1	–2.9	–3.2	0.2	–0.9	–0.6	0.8	1.3	1.3	0.8	0.7	1.0	1.0	1.0
Denmark	–0.6	–1.7	–1.4	–2.4	–0.1	1.8	–0.9	–0.2	0.8	–1.2	–1.1	–1.0	–0.9	–0.6	–0.4
Estonia	1.8	3.1	2.2	0.1	0.3	0.9	0.4	0.1	–0.6	–1.0	–0.8	–0.6	–0.4	–0.2	–0.1
Finland	–0.3	–1.8	–1.5	–1.7	–1.2	–0.9	0.0	0.0	–0.1	–0.9	–0.8	–0.8	–0.6	–0.5	–0.4
France	–5.9	–6.2	–5.2	–4.7	–3.6	–3.4	–3.1	–3.1	–2.6	–2.7	–2.9	–2.4	–2.6	–2.8	–3.0
Germany	–1.2	–3.6	–1.5	–0.3	0.0	0.5	0.7	0.8	0.6	0.9	0.7	0.6	0.3	0.3	0.4
Greece	–15.4	–9.3	–4.8	1.5	4.4	2.3	2.5	5.3	4.4	3.0	1.7	1.1	0.6	0.2	–0.4
Hong Kong SAR[1]	–0.7	1.1	0.5	0.5	–1.7	2.7	0.0	2.5	3.2	1.5	0.1	0.0	–0.2	–0.1	0.0
Iceland	–9.9	–8.0	–5.1	–3.5	–2.0	–0.1	–1.0	11.0	0.7	0.3	0.3	0.3	0.3	0.4	0.5
Ireland[1]	–9.4	–8.9	–6.5	–5.4	–4.6	–2.8	–1.2	–0.9	–0.9	–0.8	–0.6	–0.2	–0.1	0.3	0.6
Israel	–5.0	–3.7	–3.5	–4.7	–4.3	–3.4	–1.9	–2.1	–2.1	–3.2	–3.3	–3.4	–3.4	–3.4	–3.4
Italy	–3.6	–3.5	–3.4	–1.4	–0.8	–0.8	–0.9	–1.1	–1.5	–1.3	–1.6	–1.8	–2.1	–2.1	–2.2
Japan	–6.7	–7.9	–7.8	–7.4	–7.3	–5.3	–4.2	–4.1	–4.1	–3.6	–2.8	–2.1	–2.0	–1.9	–2.0
Korea	0.5	1.5	1.6	1.7	0.9	0.6	0.8	2.0	2.5	2.4	1.6	1.1	0.6	0.2	0.2
Latvia	–4.7	–4.4	–2.7	0.1	–1.5	–2.0	–1.6	0.0	–1.2	–1.6	–1.4	–0.8	–0.7	–0.5	–0.5
Lithuania	–6.7	–4.1	–7.4	–2.3	–2.2	–0.5	0.0	0.7	0.5	0.4	0.5	0.5	0.6	0.6	0.6
Luxembourg	0.9	–0.5	0.3	1.2	1.5	0.8	1.0	1.4	1.8	1.1	0.8	0.7	0.7	0.6	0.6
Malta	–2.6	–2.5	–1.9	–2.5	–1.3	–1.5	–2.0	0.8	3.6	1.4	1.2	1.0	0.8	0.8	0.7
Netherlands	–4.5	–4.5	–4.2	–2.9	–1.0	–1.1	–1.3	0.8	1.1	0.2	0.3	0.4	0.5	0.5	0.5
New Zealand	–1.5	–4.4	–3.9	–1.2	–0.4	0.0	0.5	1.3	1.4	0.9	1.0	1.3	1.5	1.9	2.0
Norway[1]	–4.8	–4.8	–4.1	–4.5	–4.9	–5.6	–6.6	–7.5	–7.7	–7.5	–7.5	–7.5	–7.5	–7.5	–7.5
Portugal	–9.2	–11.6	–6.9	–3.3	–2.0	–4.7	–2.7	–0.8	–2.5	–0.8	–0.5	–0.4	–0.2	0.0	0.0
Singapore	0.2	6.5	8.6	7.8	6.5	5.4	3.6	3.3	5.6	2.2	1.6	1.6	1.7	1.8	1.9
Slovak Republic	–5.4	–5.8	–3.0	–3.1	–1.7	–2.2	–3.1	–2.6	–1.4	–1.0	–0.7	–0.2	–0.1	–0.1	–0.1
Slovenia	–4.5	–4.8	–4.3	–2.0	–1.4	–2.3	–0.9	–0.3	0.2	–0.1	–0.8	–1.0	–1.1	–1.0	–0.8
Spain[1]	–10.6	–8.5	–7.4	–3.3	–2.3	–1.9	–2.5	–2.9	–2.6	–2.7	–2.8	–2.8	–2.9	–3.0	–3.0
Sweden[1]	1.3	0.4	–0.2	–0.6	–0.7	–0.8	–0.3	0.9	1.1	0.7	0.7	0.5	0.4	0.3	0.3
Switzerland[1]	0.8	0.3	0.7	0.6	–0.2	–0.2	0.8	0.5	0.4	0.2	0.2	0.3	0.3	0.3	0.3
United Kingdom[1]	–8.7	–7.3	–5.9	–6.0	–3.9	–4.6	–4.0	–2.9	–1.8	–2.0	–1.7	–1.5	–1.3	–0.9	–0.8
United States[1, 2]	–7.3	–9.3	–7.9	–6.1	–4.0	–3.4	–3.2	–3.9	–4.0	–5.1	–5.6	–5.5	–5.5	–5.4	–4.8
Average	–5.7	–6.6	–5.5	–4.4	–3.1	–2.6	–2.3	–2.5	–2.4	–2.8	–3.0	–2.8	–2.9	–2.8	–2.6
Euro Area	–4.8	–5.1	–3.9	–2.7	–1.4	–1.3	–1.1	–0.9	–0.9	–0.9	–1.0	–0.9	–1.1	–1.1	–1.2
G7	–6.1	–7.4	–6.3	–5.2	–3.7	–3.0	–2.7	–3.1	–3.1	–3.5	–3.7	–3.5	–3.6	–3.5	–3.2
G20 Advanced	–5.8	–7.1	–6.0	–4.9	–3.5	–2.9	–2.6	–2.9	–2.8	–3.2	–3.4	–3.2	–3.3	–3.2	–2.9

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] Data for these economies 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, 2009–23

(Percent of potential GDP)

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Australia	–4.4	–4.6	–3.7	–2.6	–1.8	–1.7	–1.4	–1.2	–0.6	–0.2	0.0	0.6	1.0	1.2	1.1
Austria	–2.4	–1.9	–1.0	–0.3	0.6	0.1	1.8	1.1	0.9	0.6	0.3	0.6	0.6	0.4	0.4
Belgium	–1.1	–0.6	–1.1	–0.8	0.4	0.3	0.5	0.3	1.2	0.8	0.1	0.3	0.2	0.1	0.1
Canada	–1.5	–3.2	–2.6	–1.6	–1.0	0.1	0.6	–0.1	–0.8	–0.9	–0.8	–0.6	–0.5	–0.4	–0.3
Cyprus[1]	–4.4	–4.5	–5.2	–2.7	1.8	4.3	4.0	3.8	4.5	4.1	3.4	3.0	2.9	2.9	3.1
Czech Republic	–4.4	–3.1	–1.9	–2.0	1.2	0.1	0.3	1.6	1.9	1.9	1.4	1.3	1.6	1.6	1.5
Denmark	–0.2	–1.1	–0.8	–1.9	0.3	2.2	–0.2	0.3	0.9	–0.8	–0.6	–0.5	–0.4	–0.1	0.1
Estonia	1.5	3.0	2.0	0.0	0.2	0.8	0.3	0.0	–0.6	–1.0	–0.8	–0.6	–0.4	–0.2	–0.1
Finland	–0.7	–1.8	–1.5	–1.5	–1.1	–0.7	0.1	0.1	0.1	–0.8	–0.7	–0.8	–0.6	–0.3	–0.1
France	–3.6	–3.8	–2.6	–2.2	–1.4	–1.4	–1.3	–1.4	–0.9	–1.0	–1.2	–0.7	–0.9	–0.8	–0.9
Germany	1.1	–1.4	0.5	1.6	1.6	1.7	1.8	1.7	1.4	1.5	1.3	1.2	0.8	0.8	0.9
Greece	–10.3	–3.7	1.7	5.9	7.8	5.8	5.6	8.2	7.4	5.8	5.1	4.3	3.9	3.6	3.0
Hong Kong SAR[2]	–2.5	–0.8	–1.4	–1.3	–3.4	2.7	0.0	1.7	2.4	0.1	–1.0	–1.0	–1.3	–1.2	–1.0
Iceland	–6.9	–5.0	–2.1	0.2	1.8	3.5	2.7	14.3	4.0	3.0	2.8	2.6	2.3	2.4	2.3
Ireland[2]	–8.0	–6.7	–4.0	–2.3	–1.2	0.5	1.1	1.3	1.0	0.9	1.0	1.3	1.3	1.6	2.0
Israel	–1.3	0.0	0.1	–1.2	–1.0	–0.3	1.1	0.6	0.6	–0.4	–0.6	–0.6	–0.6	–0.6	–0.5
Italy	0.5	0.6	1.0	3.4	3.7	3.4	2.9	2.5	2.1	2.1	1.8	1.6	1.5	1.5	1.5
Japan	–5.8	–6.9	–6.8	–6.3	–6.4	–4.6	–3.6	–3.4	–3.7	–3.3	–2.6	–2.0	–1.9	–1.8	–1.8
Korea	–0.2	0.8	0.9	1.0	0.0	–0.1	–0.1	1.0	1.4	1.4	0.6	0.2	0.0	–0.2	–0.1
Latvia	–3.6	–3.1	–1.3	1.7	–0.1	–0.5	0.2	1.3	–0.1	–0.7	–0.5	0.2	0.3	0.3	0.3
Lithuania	–5.6	–2.6	–5.7	–0.4	–0.5	1.1	1.5	2.0	1.7	1.3	1.3	1.2	1.2	1.2	1.2
Luxembourg	0.4	–0.8	0.1	1.0	1.3	0.6	0.8	1.2	1.6	1.0	0.5	0.2	0.0	–0.2	–0.5
Malta	0.6	0.6	1.2	0.4	1.5	1.2	0.4	2.9	5.4	3.2	2.7	2.6	2.2	2.2	2.1
Netherlands	–3.2	–3.2	–2.8	–1.6	0.3	0.2	–0.2	1.8	2.0	0.9	1.0	1.1	1.2	1.2	1.2
New Zealand	–1.1	–3.8	–3.1	–0.3	0.4	0.7	1.2	1.9	2.3	1.9	1.9	2.1	2.4	2.7	2.8
Norway[2]	–7.7	–7.3	–6.6	–6.7	–7.2	–8.4	–9.7	–10.5	–10.7	–10.5	–10.5	–10.5	–10.5	–10.5	–10.5
Portugal	–6.6	–8.9	–3.1	0.8	2.0	–0.5	1.5	3.0	1.2	2.6	2.7	2.7	2.7	2.8	2.8
Singapore	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Slovak Republic	–4.4	–4.7	–1.7	–1.6	0.0	–0.6	–1.6	–1.2	–0.2	0.1	0.4	0.8	0.9	0.8	0.9
Slovenia	–3.7	–3.6	–3.0	–0.4	0.7	0.5	1.8	2.3	2.5	1.8	0.9	0.8	0.8	0.9	1.1
Spain[2]	–9.2	–6.9	–5.5	–0.9	0.4	0.9	0.0	–0.5	–0.3	–0.5	–0.7	–0.7	–0.8	–0.7	–0.7
Sweden[2]	1.6	0.7	0.2	–0.4	–0.6	–0.7	–0.4	0.8	1.0	0.5	0.5	0.3	0.2	0.2	0.2
Switzerland[2]	1.3	0.8	1.1	1.0	0.0	0.0	1.0	0.7	0.6	0.4	0.4	0.4	0.4	0.4	0.4
United Kingdom[2]	–7.4	–4.9	–3.2	–3.8	–2.6	–2.9	–2.5	–1.3	0.0	–0.3	–0.2	0.1	0.3	0.5	0.6
United States[2]	–6.0	–7.8	–6.1	–4.4	–2.5	–1.9	–1.7	–2.3	–2.3	–3.3	–3.7	–3.3	–3.3	–3.1	–2.5
Average	–4.3	–5.1	–3.9	–2.8	–1.7	–1.2	–1.1	–1.2	–1.1	–1.5	–1.7	–1.5	–1.4	–1.3	–1.1
Euro Area	–2.4	–2.6	–1.3	0.0	1.0	1.0	0.9	1.0	0.9	0.8	0.6	0.6	0.5	0.5	0.5
G7	–4.5	–5.7	–4.4	–3.4	–2.1	–1.5	–1.3	–1.6	–1.6	–2.0	–2.2	–1.9	–1.9	–1.8	–1.4
G20 Advanced	–4.4	–5.5	–4.2	–3.2	–2.0	–1.5	–1.3	–1.5	–1.4	–1.8	–2.0	–1.7	–1.7	–1.6	–1.3

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

[1] The data for 2014 onward come from the Statistical Service of the Republic of Cyprus (Cystat), which follows different methodology than Eurostat. As a result, numbers from these two separate series are different.

[2] The data for these economies include adjustments beyond the output cycle. 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, 2009–23
(Percent of GDP)

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Australia	33.3	32.0	31.9	33.2	33.7	34.0	34.6	34.9	35.0	35.4	35.9	35.8	35.6	35.5	35.5
Austria	48.8	48.4	48.3	49.0	49.7	49.6	49.9	49.0	48.3	48.2	48.1	48.0	47.9	48.0	48.0
Belgium	48.8	49.3	50.3	51.6	52.7	52.2	51.4	50.8	51.3	51.0	50.1	50.1	50.1	50.1	50.1
Canada	39.6	38.4	38.4	38.5	38.6	38.6	39.8	39.6	39.2	39.2	39.2	39.3	39.2	39.3	39.3
Cyprus	36.5	37.3	36.7	36.4	37.7	39.8	39.0	38.6	39.7	39.3	39.1	38.5	38.2	38.2	38.1
Czech Republic	38.7	39.3	40.3	40.5	41.4	40.3	41.1	40.2	40.5	41.6	41.8	41.8	41.8	41.8	41.8
Denmark	53.7	54.0	54.4	54.5	54.6	56.4	53.3	53.2	53.0	51.5	51.3	51.0	50.8	50.6	50.4
Estonia	43.9	40.7	38.6	39.0	38.3	39.1	40.3	40.3	39.9	40.2	40.4	40.5	40.5	40.6	40.3
Finland	52.2	52.1	53.3	54.0	54.9	54.9	54.4	54.1	53.1	51.7	51.6	51.6	51.5	51.5	51.5
France	50.0	50.0	51.1	52.1	53.1	53.3	53.2	53.0	53.8	53.4	52.2	51.6	51.1	50.8	50.8
Germany	44.3	43.0	43.8	44.3	44.5	44.5	44.5	44.8	45.0	45.1	45.1	45.0	44.6	44.5	44.4
Greece	38.9	41.3	43.8	46.2	48.0	46.2	48.1	50.2	49.0	48.7	47.1	46.3	45.7	45.0	45.0
Hong Kong SAR	18.8	20.7	22.4	21.4	21.0	20.8	18.6	22.6	22.8	22.2	20.7	20.7	20.9	20.9	20.9
Iceland	37.9	38.3	38.8	40.2	40.6	43.7	40.7	56.7	42.4	41.6	41.5	41.4	41.1	40.8	40.7
Ireland	33.2	33.0	33.7	34.0	34.2	33.8	27.0	26.9	25.9	25.7	25.5	25.1	24.9	24.7	24.5
Israel	35.9	37.1	37.0	36.1	36.5	36.9	37.0	36.7	38.1	36.8	36.6	36.5	36.5	36.5	36.5
Italy	45.9	45.7	45.7	47.9	48.1	47.9	47.7	46.9	46.6	46.5	46.6	46.5	46.4	46.4	46.4
Japan	29.3	29.0	30.0	30.8	31.6	33.3	34.2	34.1	33.2	33.2	33.3	33.9	34.0	34.0	33.9
Korea	21.3	21.0	21.6	22.1	21.5	21.2	21.5	22.4	23.0	23.3	23.3	23.4	23.3	23.3	23.1
Latvia	35.8	36.5	35.6	37.4	36.7	36.1	36.2	36.4	35.8	36.6	36.0	36.4	35.8	35.6	35.2
Lithuania	34.3	34.3	32.6	32.1	32.1	33.4	34.1	33.7	33.2	34.5	34.8	35.1	34.6	34.4	34.1
Luxembourg	44.5	43.5	42.9	44.4	44.3	43.1	42.9	43.7	44.4	43.8	43.7	43.2	43.0	42.9	42.7
Malta	38.6	38.7	38.8	39.2	39.5	39.5	39.0	38.1	40.3	39.8	39.3	39.2	38.7	38.8	37.6
Netherlands	41.4	41.8	41.4	41.9	42.6	42.5	41.6	42.6	43.5	43.6	44.2	44.2	44.2	44.2	44.2
New Zealand	38.5	37.6	37.3	37.5	37.3	37.2	37.7	37.6	37.3	37.4	37.6	37.6	37.5	37.5	37.6
Norway	55.7	55.3	56.5	56.1	54.1	53.8	54.1	54.0	53.6	52.9	52.3	52.6	52.8	53.0	53.3
Portugal	40.4	40.6	42.6	42.9	45.1	44.6	43.8	43.0	42.9	43.2	43.3	43.3	43.2	43.2	43.2
Singapore	17.4	21.1	23.1	22.2	21.4	21.2	21.4	21.0	23.4	20.7	21.1	21.3	21.5	21.7	21.9
Slovak Republic	36.3	34.7	36.5	36.3	38.7	39.3	42.5	39.3	39.4	38.4	38.1	38.6	38.0	37.6	37.5
Slovenia	39.8	40.8	40.6	41.6	40.6	41.2	40.5	39.2	38.8	39.1	38.9	38.9	39.1	39.1	39.3
Spain	34.8	36.2	36.2	37.6	38.6	38.9	38.5	37.7	37.9	37.9	37.6	37.4	37.2	37.0	36.8
Sweden	50.9	49.7	49.0	49.2	49.5	48.5	48.8	49.9	49.4	48.8	48.2	48.4	47.5	47.5	47.5
Switzerland	32.7	32.4	32.7	32.6	32.7	32.4	33.5	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3
United Kingdom	34.0	35.2	35.7	35.7	36.1	35.2	35.4	35.9	36.6	36.6	36.7	36.5	36.3	36.3	36.4
United States	28.4	29.0	29.3	29.3	31.4	31.3	31.5	31.1	30.9	31.0	31.2	31.7	31.7	32.0	32.3
Average	35.0	34.9	35.5	35.6	36.8	36.8	36.4	36.3	36.3	36.3	36.2	36.4	36.4	36.5	36.6
Euro Area	44.4	44.3	44.9	46.0	46.6	46.6	46.1	45.9	46.1	45.9	45.6	45.4	45.1	44.9	44.9
G7	34.2	34.2	34.8	34.9	36.3	36.4	36.2	35.9	35.8	36.0	35.9	36.2	36.2	36.3	36.5
G20 Advanced	33.8	33.7	34.2	34.4	35.7	35.8	35.6	35.4	35.3	35.4	35.4	35.7	35.6	35.8	35.9

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, 2009–23
(Percent of GDP)

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Australia	37.9	37.1	36.4	36.6	36.6	36.9	37.4	37.4	36.9	36.9	37.0	36.2	35.5	35.3	35.3
Austria	54.1	52.8	50.9	51.2	51.6	52.3	51.0	50.6	49.0	48.4	48.2	47.9	47.9	48.2	48.4
Belgium	54.2	53.3	54.5	55.9	55.8	55.3	53.8	53.3	52.4	52.2	51.7	51.6	51.5	51.5	51.5
Canada	43.5	43.2	41.7	41.0	40.1	38.5	39.9	40.7	40.3	40.4	40.3	40.3	40.2	40.2	40.2
Cyprus	41.9	42.0	42.3	41.9	41.0	40.0	39.2	38.2	37.9	37.2	37.6	37.3	37.0	37.0	36.8
Czech Republic	44.2	43.5	43.0	44.5	42.6	42.2	41.7	39.5	38.9	40.1	40.7	41.0	40.8	40.8	40.8
Denmark	56.5	56.7	56.4	58.0	55.8	55.2	54.8	53.6	51.9	52.2	51.8	51.4	51.1	50.8	50.5
Estonia	46.1	40.5	37.4	39.3	38.5	38.4	40.2	40.6	40.2	40.6	40.7	40.7	40.6	40.6	40.3
Finland	54.8	54.8	54.4	56.2	57.5	58.1	57.1	55.9	53.7	52.6	52.2	52.0	51.7	51.7	51.7
France	57.2	56.9	56.3	57.1	57.2	57.2	56.8	56.6	56.4	56.0	55.0	53.8	53.6	53.4	53.6
Germany	47.6	47.3	44.7	44.3	44.7	44.0	43.7	43.9	43.9	43.6	43.6	43.6	43.7	43.6	43.6
Greece	54.1	52.5	54.1	52.8	51.6	50.2	50.9	49.5	48.0	48.1	47.1	46.1	45.5	44.9	45.4
Hong Kong SAR	17.3	16.6	18.6	18.3	20.0	17.3	18.0	18.3	17.3	18.6	18.7	18.9	19.3	19.3	19.3
Iceland	47.4	47.8	44.2	43.8	42.4	43.8	41.5	44.3	41.0	40.7	40.8	40.9	40.7	40.3	40.2
Ireland	47.0	65.0	46.5	42.0	40.4	37.5	28.9	27.4	26.3	25.9	25.6	24.8	24.6	24.2	23.9
Israel	41.6	40.7	40.0	40.9	40.6	40.2	39.1	38.8	40.2	40.0	39.9	39.9	39.9	39.9	39.9
Italy	51.2	49.9	49.4	50.8	51.1	50.9	50.3	49.3	48.9	48.2	48.3	48.3	48.4	48.5	48.6
Japan	39.5	38.5	39.4	39.4	39.5	38.9	38.0	37.8	37.5	36.9	36.0	36.1	36.0	35.9	36.0
Korea	21.3	19.5	19.9	20.6	20.9	20.8	20.9	20.7	20.7	21.1	21.9	22.5	22.8	23.1	23.0
Latvia	42.8	43.0	38.8	37.2	37.3	37.8	37.8	36.8	36.7	37.8	37.1	37.0	36.3	36.1	35.7
Lithuania	43.6	41.2	41.5	35.2	34.7	34.0	34.3	33.5	32.6	33.8	34.0	34.3	33.8	33.7	33.5
Luxembourg	45.1	44.1	42.4	44.1	43.3	41.8	41.5	42.1	42.9	42.7	42.8	42.4	42.2	42.2	42.1
Malta	41.9	41.1	41.2	42.7	42.0	41.3	40.1	37.1	36.4	38.0	37.9	38.1	38.0	38.1	37.0
Netherlands	46.8	46.7	45.6	45.7	44.9	44.8	43.6	42.3	42.4	43.1	43.3	43.3	43.3	43.3	43.3
New Zealand	40.4	43.0	42.2	39.6	38.5	37.7	37.3	36.4	35.9	36.6	36.6	36.3	35.9	35.5	35.6
Norway	45.4	44.3	43.1	42.3	43.3	45.1	48.0	50.0	49.2	47.2	46.6	47.3	47.8	48.3	48.7
Portugal	50.2	51.8	50.0	48.5	49.9	51.7	48.1	44.9	45.9	43.9	43.6	43.5	43.3	43.0	43.0
Singapore	17.3	15.0	14.5	14.4	14.8	15.8	17.8	17.7	17.7	18.5	19.5	19.6	19.8	19.9	20.1
Slovak Republic	44.1	42.1	40.8	40.6	41.4	42.0	45.2	41.5	40.4	39.1	38.6	38.6	38.0	37.6	37.6
Slovenia	45.3	46.0	46.1	44.7	54.4	47.0	43.8	40.9	39.6	38.9	39.1	39.1	39.4	39.6	39.8
Spain	45.8	45.6	45.8	48.1	45.6	44.8	43.8	42.2	41.0	40.6	40.0	39.8	39.7	39.6	39.5
Sweden	51.6	49.7	49.2	50.2	50.9	50.1	48.7	48.7	48.1	47.8	47.4	47.8	47.1	47.2	47.2
Switzerland	32.2	32.0	31.9	32.2	33.1	32.7	32.9	32.9	33.0	32.7	32.9	33.0	33.0	33.0	33.0
United Kingdom	44.1	44.5	43.2	43.3	41.4	40.5	39.7	38.9	38.4	38.5	38.4	38.0	37.6	37.2	37.2
United States[1]	41.1	39.6	38.6	37.0	35.5	35.0	34.6	35.0	34.8	35.7	36.1	36.4	36.6	36.9	36.8
Average	43.6	42.5	41.7	41.0	40.4	39.8	38.9	38.8	38.5	38.8	38.8	38.8	38.8	38.9	38.9
Euro Area	50.6	50.5	49.1	49.7	49.7	49.1	48.2	47.4	47.0	46.5	46.2	45.9	45.8	45.7	45.8
G7	43.9	42.8	42.1	41.2	40.5	39.8	39.0	39.0	38.8	39.2	39.2	39.3	39.3	39.5	39.4
G20 Advanced	43.1	41.9	41.1	40.3	39.6	39.0	38.3	38.3	38.1	38.4	38.4	38.5	38.5	38.7	38.6

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 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 A7. Advanced Economies: General Government Gross Debt, 2009–23
(Percent of GDP)

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Australia[1]	16.8	20.5	24.2	27.8	30.7	34.1	37.8	40.6	40.8	40.5	40.6	39.2	37.5	36.2	34.8
Austria	79.6	82.4	82.2	81.7	81.0	83.8	84.3	83.6	78.5	74.2	71.3	68.1	65.5	63.5	61.7
Belgium	99.5	99.7	102.6	104.3	105.5	107.0	106.1	106.0	103.4	101.2	99.9	98.3	96.8	95.3	93.8
Canada[1]	79.3	81.1	81.5	84.8	85.8	85.0	90.5	91.1	89.7	87.3	84.7	82.5	80.5	78.5	76.6
Cyprus	52.8	55.8	65.2	79.2	102.1	107.5	107.5	106.6	97.5	112.3	105.1	97.8	92.8	84.7	78.2
Czech Republic	33.6	37.4	39.8	44.5	44.9	42.2	40.0	36.8	34.7	33.2	31.9	31.1	28.8	26.6	24.6
Denmark	40.2	42.6	46.1	44.9	44.0	44.3	39.9	37.9	35.3	34.7	34.0	33.1	32.2	31.2	30.1
Estonia	7.0	6.6	6.1	9.7	10.2	10.7	10.0	9.4	9.0	8.8	8.6	8.4	8.0	7.6	7.3
Finland	41.7	47.1	48.5	53.9	56.5	60.2	63.5	62.9	61.3	60.5	60.3	59.6	59.1	57.5	56.0
France	83.0	85.3	87.8	90.6	93.4	94.9	95.6	96.6	96.8	96.7	96.5	95.6	94.9	94.3	93.9
Germany	72.6	80.9	78.6	79.8	77.5	74.6	70.9	67.9	63.9	59.8	56.0	52.6	49.7	47.1	44.6
Greece	126.7	146.2	180.6	159.6	177.9	180.2	178.8	183.5	181.8	188.1	176.9	169.3	162.7	155.1	151.1
Hong Kong SAR[1]	0.7	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
Iceland	80.9	85.4	92.0	89.4	81.8	79.7	66.0	51.7	40.0	37.0	33.8	31.4	28.9	25.6	23.6
Ireland	61.5	86.0	110.9	119.9	119.8	104.3	76.9	73.6	68.6	66.6	64.2	60.6	59.1	56.2	53.2
Israel	74.6	70.7	68.8	68.4	67.1	66.1	64.0	62.3	60.9	61.5	61.5	61.3	61.1	61.0	60.8
Italy	112.5	115.4	116.5	123.4	129.0	131.8	131.5	132.0	131.8	130.3	128.7	127.6	126.7	125.8	125.1
Japan	201.0	207.9	222.1	229.0	232.5	236.1	231.3	235.6	237.6	238.2	236.6	235.8	235.6	235.6	235.4
Korea	31.4	30.8	31.5	32.2	35.4	37.3	39.5	39.9	39.5	40.4	40.4	41.1	42.1	43.3	44.4
Latvia	32.5	40.3	37.5	36.7	35.8	38.5	34.9	37.4	36.3	35.0	34.2	33.1	32.0	31.0	30.0
Lithuania	29.0	36.2	37.2	39.8	38.8	40.5	42.6	40.1	39.7	37.0	34.3	31.8	29.5	27.5	25.7
Luxembourg	15.7	19.8	18.7	21.7	23.7	22.7	22.0	20.8	23.0	22.8	22.4	21.6	21.0	20.4	20.0
Malta	67.6	67.5	70.1	67.7	68.4	63.7	58.6	56.3	50.7	45.1	41.7	38.4	35.9	33.6	31.5
Netherlands	55.8	58.6	60.8	65.5	67.0	67.1	64.0	61.3	56.5	53.1	49.9	47.2	44.7	42.3	40.0
New Zealand	24.3	29.7	34.7	35.7	34.6	34.2	34.3	33.5	31.7	30.4	29.4	28.4	27.8	26.4	23.2
Norway	41.9	42.3	28.8	30.2	30.4	28.2	33.0	36.4	36.5	36.4	36.4	36.4	36.4	36.4	36.4
Portugal	83.6	90.5	111.4	126.2	129.0	130.6	128.8	129.9	125.7	120.8	117.2	115.1	109.6	105.8	102.8
Singapore	99.7	97.0	100.7	105.1	101.5	96.6	100.5	106.8	111.1	112.9	114.3	115.0	115.8	116.3	116.7
Slovak Republic	36.3	41.2	43.7	52.2	54.7	53.5	52.3	51.8	50.9	49.2	46.7	45.0	43.1	41.5	40.5
Slovenia	34.5	38.2	46.4	53.8	70.4	80.3	82.6	78.6	73.6	69.7	67.5	65.5	63.9	62.5	61.4
Spain	52.7	60.1	69.5	85.7	95.5	100.4	99.4	99.0	98.4	97.2	95.8	94.7	93.8	93.0	92.6
Sweden	40.3	38.6	37.8	38.1	40.7	45.5	44.2	42.3	40.8	37.9	34.5	32.4	29.8	28.6	27.3
Switzerland	44.1	42.6	42.9	43.7	42.9	43.0	43.0	41.8	41.8	40.2	38.6	37.3	36.1	34.9	33.7
United Kingdom	63.7	75.2	80.8	84.1	85.2	87.0	87.9	87.9	87.5	87.4	87.2	86.5	85.9	85.1	84.0
United States[1]	86.9	95.5	99.9	103.3	104.9	104.6	104.8	106.8	105.2	106.1	107.8	110.0	112.4	114.9	117.0
Average	91.7	98.3	102.4	106.6	105.2	104.6	104.2	106.7	104.5	103.8	103.6	103.3	103.3	103.4	103.4
Euro Area	79.2	84.5	86.6	89.6	91.5	91.7	89.8	88.8	86.6	84.4	82.0	79.8	77.9	76.1	74.5
G7	103.5	111.7	116.8	120.9	118.6	117.4	116.2	119.4	117.4	116.9	117.0	117.2	117.7	118.3	118.7
G20 Advanced	99.0	106.0	110.4	114.2	112.3	111.4	110.8	113.9	111.7	111.3	111.4	111.5	111.9	112.4	112.8

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

Table A8. Advanced Economies: General Government Net Debt, 2009–23
(Percent of GDP)

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Australia[1]	–0.5	4.0	8.1	11.3	13.2	15.5	17.9	19.0	18.7	19.0	19.2	18.6	17.5	16.3	15.2
Austria	56.7	60.5	60.3	60.5	60.4	59.2	58.2	57.6	56.0	51.0	48.9	46.5	44.7	43.4	42.3
Belgium[2]	88.3	88.4	90.8	91.6	92.5	93.6	92.9	92.1	89.6	87.8	86.9	85.8	84.7	83.5	82.3
Canada[1]	24.4	26.8	27.1	28.3	29.3	28.0	27.7	28.5	27.7	27.7	27.2	26.9	26.4	25.8	25.3
Cyprus	44.4	48.6	53.0	67.5	78.6	89.5	91.3	88.2	81.5	. . .	. . .	. . .	. . .	. . .	. . .
Czech Republic	20.7	26.4	26.8	28.3	29.1	29.4	28.1	24.8	23.4	. . .	. . .	. . .	. . .	. . .	. . .
Denmark	11.5	15.0	15.1	18.5	18.3	18.2	16.5	17.0	15.2	15.4	15.3	15.2	15.0	14.6	14.1
Estonia	–9.7	–8.5	–6.8	–4.9	–4.4	–3.9	–2.2	–2.7	–2.1	0.0	0.3	0.6	0.7	0.7	0.7
Finland[3]	–3.7	1.4	3.4	9.6	13.2	14.6	20.8	62.9	61.3	59.8	58.5	57.0	55.5	54.0	52.6
France	69.7	73.6	76.4	80.0	83.0	85.5	86.4	87.5	87.5	87.4	87.2	86.3	85.6	85.0	84.6
Germany	59.4	60.9	59.2	58.4	57.6	54.1	51.1	48.2	44.9	41.5	38.3	35.6	33.3	31.3	29.4
Greece	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Hong Kong SAR	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Iceland[4]	64.7	63.6	59.7	61.6	60.0	54.0	47.8	39.6	34.2	30.3	27.6	25.5	23.8	22.2	20.6
Ireland[5]	36.5	66.1	79.0	86.9	89.8	85.8	65.9	64.4	59.2	56.9	55.1	53.4	51.6	48.9	46.2
Israel	66.4	64.3	63.2	63.1	62.2	62.1	60.2	58.7	58.0	58.7	58.8	58.7	58.7	58.6	58.6
Italy	102.8	104.7	106.8	111.6	116.7	118.8	119.5	119.5	119.5	118.3	117.0	116.2	115.5	114.9	114.4
Japan	122.7	131.1	142.4	146.7	146.4	148.5	147.6	152.8	154.9	155.7	154.8	154.2	154.0	153.9	153.8
Korea	30.0	29.2	29.9	–2.0	1.9	3.5	6.4	11.8	11.4	12.2	12.3	13.0	14.0	15.2	16.2
Latvia	15.3	22.4	25.8	24.7	26.1	27.1	29.2	28.0	28.4	27.7	27.3	26.5	25.8	25.1	24.4
Lithuania	20.8	26.3	33.1	33.4	34.2	32.7	35.0	32.7	32.9	30.5	28.2	26.0	24.0	22.2	20.6
Luxembourg	–20.3	–13.4	–10.9	–10.4	–8.8	–10.8	–12.1	–11.9	–11.4	–9.9	–8.8	–8.0	–7.1	–6.3	–5.5
Malta	57.3	57.2	58.1	57.9	59.0	54.1	50.1	43.7	38.5	. . .	. . .	. . .	. . .	. . .	. . .
Netherlands	41.1	45.0	47.6	51.3	52.9	54.0	52.1	50.0	46.0	43.3	40.6	38.5	36.4	34.5	32.6
New Zealand	1.1	4.7	8.8	10.8	11.0	10.4	9.8	9.1	8.6	10.1	11.2	10.9	10.3	8.1	5.0
Norway[6]	–43.8	–47.4	–48.3	–49.9	–61.2	–76.1	–86.9	–85.2	–98.2	–89.4	–91.6	–93.9	–96.5	–99.6	–102.7
Portugal	76.0	82.1	96.1	104.8	108.2	112.8	113.9	113.1	110.8	107.6	104.6	101.7	98.9	95.9	93.1
Singapore	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Slovak Republic	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Slovenia	21.0	26.6	32.2	36.7	45.5	46.5	50.4	52.3	51.6	. . .	. . .	. . .	. . .	. . .	. . .
Spain	36.3	45.8	56.3	71.5	80.8	85.2	85.4	86.2	85.0	84.3	83.4	82.7	82.3	81.9	81.8
Sweden	13.5	13.6	11.9	11.5	11.7	11.5	11.3	8.9	6.1	4.8	2.7	1.9	0.4	0.1	–0.2
Switzerland	25.6	24.2	24.4	23.9	22.9	23.1	23.3	22.8	22.1	20.5	18.9	17.6	16.4	15.2	14.0
United Kingdom	57.0	68.1	72.5	75.5	76.8	78.8	79.3	78.8	77.9	78.0	77.7	77.1	76.4	75.6	74.5
United States[1]	62.7	70.0	76.5	80.3	80.8	80.4	80.1	81.2	78.8	77.7	77.9	79.0	80.4	82.1	83.7
Average	64.1	69.5	73.9	76.5	75.6	75.4	75.5	77.5	75.1	74.4	73.8	73.5	73.4	73.4	73.4
Euro Area	61.9	65.9	68.4	72.1	74.6	74.8	73.8	73.7	71.8	69.5	67.7	65.9	64.4	63.1	61.8
G7	73.5	79.9	85.4	88.6	87.3	86.6	85.9	87.9	85.8	84.8	84.2	84.1	84.2	84.6	84.9
G20 Advanced	70.1	75.6	80.5	82.5	81.4	81.0	80.7	82.8	80.6	79.7	79.2	79.0	79.2	79.4	79.7

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.

[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, and the 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 include only 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 the *Government Finance Statistics Manual* and the Maastricht definition.

Table A9. Emerging Market and Middle-Income Economies: General Government Overall Balance, 2009–23
(Percent of GDP)

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Algeria	–5.8	0.0	–0.1	–4.4	–0.4	–7.3	–15.3	–13.0	–6.5	–6.1	–5.0	–3.7	–2.2	–0.6	–0.1
Angola	–7.9	3.4	8.1	4.1	–0.3	–5.7	–2.9	–4.5	–6.1	–0.8	–0.2	–0.5	–0.9	–1.4	–1.8
Argentina	–2.6	–1.4	–2.7	–3.0	–3.3	–4.3	–6.0	–6.6	–6.7	–5.4	–2.6	–0.8	–0.4	0.0	0.5
Azerbaijan	5.9	13.8	10.9	3.7	1.6	2.7	–4.8	–1.2	–1.7	4.8	6.5	6.9	6.1	4.1	3.1
Belarus	–7.2	–4.2	–2.8	0.4	–1.0	0.1	–3.0	–1.7	–0.3	–2.4	–4.3	–2.3	–1.7	–1.6	–1.6
Brazil	–3.2	–2.7	–2.5	–2.5	–3.0	–5.4	–10.3	–9.0	–7.8	–8.6	–8.0	–7.8	–7.5	–7.0	–6.7
Chile	–4.2	–0.4	1.4	0.7	–0.5	–1.5	–2.1	–2.7	–2.6	–1.6	–1.9	–1.7	–1.2	–0.9	–0.7
China	–1.7	–0.4	–0.1	–0.3	–0.8	–0.9	–2.8	–3.7	–3.9	–4.1	–4.4	–4.3	–4.2	–4.1	–4.0
Colombia	–2.8	–3.3	–2.0	0.1	–0.9	–1.9	–3.5	–2.9	–3.0	–2.7	–2.1	–1.3	–1.1	–1.0	–0.9
Croatia	–6.0	–6.2	–7.8	–5.3	–5.3	–5.3	–3.3	–0.8	0.8	0.1	0.2	0.5	0.7	0.9	1.0
Dominican Republic	–3.0	–2.7	–3.1	–6.6	–3.5	–2.9	–0.2	–2.8	–3.2	–3.0	–3.2	–3.3	–3.4	–3.7	–3.7
Ecuador	–3.6	–1.4	–0.1	–0.9	–4.6	–5.2	–6.1	–8.2	–4.5	–2.7	–2.3	–1.9	–1.7	–2.0	–2.3
Egypt[1]	–6.2	–7.4	–9.6	–10.0	–12.9	–11.3	–10.9	–12.5	–10.4	–9.3	–7.9	–6.5	–4.7	–4.1	–4.1
Hungary	–4.6	–4.5	–5.4	–2.4	–2.6	–2.6	–1.9	–1.7	–2.0	–2.4	–2.0	–1.9	–1.8	–1.8	–1.7
India	–9.5	–8.6	–8.3	–7.5	–7.0	–7.1	–7.2	–7.2	–7.2	–6.6	–6.5	–6.3	–6.2	–6.0	–5.9
Indonesia	–1.6	–1.2	–0.7	–1.6	–2.2	–2.1	–2.6	–2.5	–2.3	–2.2	–1.8	–1.7	–1.7	–1.7	–1.8
Iran	0.8	2.6	0.6	–0.3	–0.9	–1.1	–1.8	–2.3	–1.8	–3.1	–4.1	–5.2	–4.7	–4.3	–4.2
Kazakhstan	–1.3	1.5	5.8	4.4	4.9	2.5	–6.3	–5.3	–6.4	1.4	1.4	1.5	1.1	1.2	1.1
Kuwait	27.5	26.0	33.3	32.4	34.1	22.4	5.6	0.6	6.6	11.7	12.1	10.0	7.9	6.6	5.4
Libya	–6.5	12.5	–17.2	28.6	–5.1	–73.8	–131.0	–113.3	–43.0	–25.1	–26.9	–30.4	–33.4	–37.0	–40.4
Malaysia	–6.5	–4.5	–3.6	–3.8	–4.1	–2.7	–2.6	–2.6	–2.9	–2.7	–2.6	–2.5	–2.4	–2.2	–2.1
Mexico	–4.1	–4.0	–3.3	–3.7	–3.7	–4.5	–4.0	–2.8	–1.1	–2.5	–2.5	–2.5	–2.5	–2.5	–2.5
Morocco	–1.8	–4.3	–6.6	–7.2	–5.1	–4.8	–4.2	–4.5	–3.6	–3.2	–3.0	–2.7	–2.5	–2.5	–2.4
Oman	–0.3	5.6	9.4	4.6	4.7	–1.1	–15.9	–21.2	–12.9	–2.0	0.8	0.4	–0.7	–2.7	–3.9
Pakistan	–5.0	–6.0	–6.7	–8.6	–8.4	–4.9	–5.3	–4.4	–5.7	–6.5	–6.9	–6.8	–6.8	–6.7	–6.7
Peru	–1.4	0.1	2.0	2.1	0.7	–0.2	–2.1	–2.3	–2.9	–2.7	–2.4	–1.6	–0.9	–0.9	–1.0
Philippines	–2.7	–2.4	–0.3	–0.3	0.2	0.9	0.6	–0.4	–0.4	–1.0	–1.4	–1.4	–1.5	–1.6	–1.8
Poland	–7.3	–7.3	–4.8	–3.7	–4.1	–3.6	–2.6	–2.3	–1.7	–1.5	–1.5	–1.4	–1.3	–1.4	–1.4
Qatar	14.9	6.7	7.5	11.2	22.7	15.3	5.4	–4.7	–1.6	3.6	10.5	11.5	10.4	9.6	9.4
Romania	–6.9	–6.3	–4.2	–2.5	–2.5	–1.7	–1.5	–2.4	–2.8	–3.6	–3.5	–3.5	–3.4	–3.1	–3.1
Russia	–5.9	–3.2	1.4	0.4	–1.2	–1.1	–3.4	–3.6	–1.5	1.6	1.8	1.3	0.8	0.4	0.0
Saudi Arabia	–5.4	4.4	11.6	11.9	5.6	–3.5	–15.8	–17.2	–9.3	–4.6	–1.7	–1.3	–1.7	–2.2	–2.8
South Africa	–5.2	–5.0	–4.1	–4.4	–4.3	–4.3	–4.8	–4.1	–4.6	–4.6	–4.5	–4.5	–4.5	–4.5	–4.5
Sri Lanka	–8.6	–7.0	–6.2	–5.6	–5.2	–6.2	–7.0	–5.4	–5.5	–4.6	–3.6	–3.5	–3.5	–3.5	–3.5
Thailand	–2.2	–1.3	0.0	–0.9	0.5	–0.8	0.1	0.6	–0.9	–0.6	–0.5	–0.9	–1.0	–1.2	–1.3
Turkey	–5.9	–3.4	–0.7	–1.8	–1.5	–1.4	–1.3	–2.3	–2.3	–4.0	–5.1	–5.8	–5.8	–6.0	–5.5
Ukraine	–6.0	–5.8	–2.8	–4.3	–4.8	–4.5	–1.2	–2.2	–2.2	–2.5	–2.6	–2.3	–2.2	–2.1	–2.0
United Arab Emirates	–6.1	0.6	5.3	9.0	8.4	1.9	–3.4	–2.0	–1.6	0.6	1.3	1.2	1.4	1.5	1.6
Uruguay[2]	–1.6	–1.1	–0.9	–2.7	–2.3	–3.5	–3.6	–3.8	–3.5	–3.3	–2.8	–2.8	–2.8	–2.8	–2.8
Venezuela	–8.7	–9.2	–10.6	–14.6	–14.1	–16.5	–17.6	–17.8	–31.8	–30.5	–30.0	–31.1	–30.9	–31.2	–31.7
Average	–3.6	–2.2	–1.0	–1.0	–1.5	–2.4	–4.4	–4.8	–4.4	–3.9	–3.8	–3.7	–3.7	–3.7	–3.6
Asia	–3.3	–2.2	–1.6	–1.6	–1.8	–1.9	–3.3	–4.0	–4.2	–4.2	–4.4	–4.3	–4.2	–4.2	–4.1
Europe	–5.8	–3.7	–0.2	–0.7	–1.5	–1.4	–2.7	–2.9	–2.0	–0.6	–0.6	–1.0	–1.3	–1.6	–1.6
Latin America	–3.7	–3.1	–2.8	–3.1	–3.2	–4.8	–7.3	–6.6	–6.2	–5.8	–5.1	–4.8	–4.5	–4.2	–3.9
MENAP	–1.3	2.4	4.3	5.7	4.0	–1.4	–8.4	–9.4	–5.6	–3.1	–1.7	–1.7	–1.8	–1.9	–2.3
G20 Emerging	–3.8	–2.3	–1.1	–1.2	–1.8	–2.5	–4.4	–4.9	–4.5	–4.3	–4.2	–4.2	–4.1	–4.1	–4.0

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

[2] Data are for the consolidated public sector, which includes the nonfinancial public sector (as presented in the authorities' budget documentation), local governments, Banco Central del Uruguay, and Banco de Seguros del Estado. In particular, Uruguay is one of the few countries in the sample for which public debt includes the debt of the central bank, which increases recorded public sector gross debt.

Table A10. Emerging Market and Middle-Income Economies: General Government Primary Balance, 2009–23
(Percent of GDP)

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Algeria	–6.3	–0.5	–1.3	–5.3	–0.5	–7.4	–15.8	–13.1	–6.2	–6.4	–5.2	–3.9	–2.3	–0.7	–0.2
Angola	–6.0	4.6	9.0	5.0	0.4	–4.7	–1.1	–1.7	–2.9	3.0	4.4	4.2	3.3	2.8	2.4
Argentina	–1.3	–0.6	–1.6	–1.7	–2.6	–3.5	–4.4	–4.7	–4.2	–2.7	0.0	1.1	1.3	1.4	1.5
Azerbaijan	6.0	13.8	10.9	3.8	1.7	2.9	–4.4	–0.8	–1.1	5.4	7.2	7.5	6.5	4.4	3.4
Belarus	–6.5	–3.5	–1.7	1.7	0.0	1.1	–1.3	0.3	1.6	0.0	–1.4	0.9	1.4	1.4	1.4
Brazil	1.9	2.3	2.9	1.9	1.7	0.0	–2.0	–2.5	–1.7	–2.4	–1.8	–1.1	–0.6	0.0	0.5
Chile	–4.4	–0.3	1.5	0.8	–0.4	–1.3	–1.9	–2.4	–2.3	–1.2	–1.5	–1.2	–0.7	–0.4	–0.2
China	–1.3	0.1	0.4	0.2	–0.3	–0.4	–2.2	–2.9	–3.0	–3.1	–3.3	–3.2	–3.0	–2.9	–2.7
Colombia	–1.1	–1.6	–0.1	1.6	1.2	0.2	–0.8	0.2	–0.2	0.0	0.6	1.4	1.5	1.5	1.4
Croatia	–4.1	–4.1	–5.1	–2.3	–2.2	–2.3	–0.1	2.1	3.4	2.5	2.6	2.6	2.7	2.8	2.7
Dominican Republic	–1.2	–0.9	–1.0	–4.2	–1.2	–0.5	2.4	0.1	–0.2	0.3	0.4	0.5	0.5	0.5	0.5
Ecuador	–3.0	–0.8	0.5	–0.2	–3.5	–4.2	–4.7	–6.7	–2.4	–0.2	0.3	1.0	1.5	1.2	1.0
Egypt[1]	–3.2	–3.2	–4.8	–4.9	–5.9	–4.2	–4.1	–4.3	–2.5	–0.7	1.3	1.7	1.8	1.8	1.8
Hungary	–0.6	–0.7	–1.7	1.8	1.6	1.2	1.5	1.5	0.8	0.1	0.2	0.3	0.4	0.3	0.4
India	–5.0	–4.4	–4.0	–3.2	–2.4	–2.6	–2.7	–2.5	–2.3	–1.7	–1.6	–1.6	–1.6	–1.5	–1.5
Indonesia	–0.1	0.0	0.5	–0.4	–1.0	–0.9	–1.2	–1.0	–0.8	–0.6	–0.2	–0.2	–0.2	–0.2	–0.2
Iran	0.8	2.6	0.7	–0.2	–0.8	–1.1	–1.7	–2.2	–1.7	–2.7	–1.9	–2.5	–1.7	–1.2	–0.9
Kazakhstan	–1.4	1.8	5.7	3.8	4.4	2.0	–5.9	–4.7	–6.4	1.7	1.5	1.6	1.1	1.2	1.1
Kuwait	18.1	16.9	26.5	25.4	25.8	12.7	–7.5	–13.8	–9.4	–1.0	0.0	–2.1	–4.0	–4.9	–5.7
Libya	–6.5	12.5	–17.2	28.6	–5.1	–73.8	–131.0	–113.3	–43.0	–25.1	–26.9	–30.4	–33.4	–37.0	–40.4
Malaysia	–5.0	–2.9	–2.0	–2.0	–2.2	–0.8	–0.9	–0.8	–1.1	–0.8	–0.5	–0.3	–0.2	0.0	0.2
Mexico	–0.5	–0.9	–0.4	–0.6	–0.7	–1.5	–1.0	0.6	3.0	1.3	1.1	1.0	1.0	1.0	1.0
Morocco	0.6	–2.0	–4.4	–4.7	–2.5	–2.1	–1.4	–1.8	–1.0	–0.8	–0.6	–0.5	–0.4	–0.5	–0.4
Oman	–1.3	4.7	8.9	3.3	2.6	–2.1	–16.1	–21.6	–12.3	–1.4	1.5	0.9	0.0	–2.0	–2.8
Pakistan	–0.2	–1.7	–2.9	–4.2	–3.9	–0.3	–0.5	–0.1	–1.4	–2.1	–2.0	–2.0	–2.0	–2.1	–2.1
Peru	–0.3	1.2	3.0	3.0	1.7	0.7	–1.2	–1.3	–1.9	–1.5	–1.1	–0.3	0.5	0.4	0.4
Philippines	0.6	0.7	2.3	2.3	2.7	3.1	2.7	1.5	1.3	0.9	0.6	0.7	0.6	0.5	0.4
Poland	–4.8	–4.9	–2.3	–1.1	–1.6	–1.7	–0.9	–0.6	–0.1	0.0	0.1	0.2	0.3	0.2	0.1
Qatar	16.0	7.9	9.0	12.7	24.0	16.4	6.9	–3.2	–0.3	5.2	12.1	13.0	11.8	11.0	10.6
Romania	–5.9	–5.1	–2.8	–0.7	–0.8	–0.2	–0.2	–1.1	–1.7	–2.3	–2.2	–2.2	–2.0	–1.8	–1.7
Russia	–6.2	–3.1	1.7	0.7	–0.8	–0.7	–3.1	–3.2	–1.0	2.2	2.4	1.9	1.3	1.0	0.6
Saudi Arabia	–5.5	4.7	11.6	11.7	5.2	–4.2	–17.9	–20.2	–11.1	–5.6	–2.7	–2.4	–2.7	–3.1	–3.5
South Africa	–2.9	–2.6	–1.5	–1.7	–1.4	–1.3	–1.6	–0.7	–1.0	–0.8	–0.4	–0.4	–0.3	–0.2	–0.1
Sri Lanka	–3.0	–1.5	–1.3	–0.9	–0.6	–2.0	–2.2	–0.2	0.0	1.0	2.0	2.1	2.1	2.1	2.0
Thailand	–1.5	–0.7	0.8	–0.1	1.3	–0.1	0.7	1.0	–0.4	0.0	0.0	–0.4	–0.5	–0.6	–0.6
Turkey	–1.5	0.1	1.8	0.7	0.8	0.5	0.6	–1.0	–0.9	–2.1	–2.2	–2.0	–1.7	–1.6	–1.6
Ukraine	–4.9	–4.1	–0.8	–2.4	–2.3	–1.2	3.0	1.9	1.6	1.4	1.4	1.6	1.5	1.6	1.6
United Arab Emirates	–5.9	0.9	5.5	9.3	8.8	2.2	–3.2	–1.9	–1.5	0.8	1.6	1.5	1.7	1.8	1.9
Uruguay[2]	1.1	1.9	1.9	–0.2	0.4	–0.6	0.0	–0.5	–0.2	–0.2	0.1	0.1	0.4	0.6	0.5
Venezuela	–7.2	–7.4	–8.5	–11.3	–10.6	–12.6	–15.9	–16.8	–31.5	–29.8	–29.2	–30.3	–30.1	–30.3	–30.8
Average	–1.9	–0.4	0.8	0.6	0.1	–0.8	–2.7	–3.1	–2.5	–2.0	–1.8	–1.7	–1.6	–1.5	–1.5
Asia	–1.9	–0.8	–0.3	–0.4	–0.6	–0.6	–2.0	–2.5	–2.6	–2.5	–2.7	–2.5	–2.4	–2.3	–2.2
Europe	–4.3	–2.3	1.0	0.5	–0.3	–0.3	–1.5	–1.7	–0.9	0.6	0.8	0.6	0.4	0.2	0.1
Latin America	–0.2	0.3	0.8	0.1	–0.1	–1.3	–2.8	–2.7	–2.1	–1.6	–1.1	–0.5	–0.2	0.1	0.4
MENAP	–1.0	2.9	4.8	6.2	4.6	–0.8	–7.9	–9.1	–5.3	–2.6	–0.7	–0.7	–0.8	–1.0	–1.2
G20 Emerging	–1.9	–0.4	0.8	0.4	–0.2	–0.8	–2.6	–3.1	–2.4	–2.2	–2.1	–2.0	–1.9	–1.9	–1.8

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 prior to the recent revision; therefore, data in the tables are not comparable to the authorities' numbers.

[2] Data are for the consolidated public sector, which includes the nonfinancial public sector (as presented in the authorities' budget documentation), local governments, Banco Central del Uruguay, and Banco de Seguros del Estado. In particular, Uruguay is one of the few countries in the sample for which public debt includes the debt of the central bank, which increases recorded public sector gross debt.

Table A11. Emerging Market and Middle-Income Economies: General Government Cyclically Adjusted Balance, 2009–23
(Percent of potential GDP)

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Algeria	–12.6	–4.5	0.2	–3.0	1.6	–9.8	–19.0	–16.6	–11.3	–9.2	–6.7	–5.3	–3.0	0.0	2.0
Angola	–3.8	3.0	4.1	0.6	–1.3	–4.5	1.1	–1.2	–3.7	–0.8	–1.0	–1.2	–1.1	–1.3	–1.5
Argentina	–0.5	–1.4	–3.8	–3.1	–3.8	–3.6	–6.5	–5.8	–6.5	–3.5	0.4	1.9	1.9	1.9	2.0
Azerbaijan	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Belarus	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Brazil	–2.7	–3.7	–4.0	–3.8	–4.4	–6.8	–10.1	–7.4	–6.4	–7.2	–7.1	–7.3	–7.2	–7.0	–6.6
Chile[1]	–4.3	–2.5	–1.1	–0.4	–0.6	–0.6	0.5	–1.1	–2.0	–1.8	–1.6	–1.4	–1.2	–1.0	–0.8
China	–1.8	–0.4	–0.1	–0.1	–0.5	–0.5	–2.5	–3.6	–4.0	–4.2	–4.5	–4.4	–4.3	–4.2	–4.0
Colombia	–2.3	–2.7	–2.1	0.1	–1.1	–2.3	–3.8	–3.0	–2.8	–2.5	–1.9	–1.1	–1.0	–0.9	–0.9
Croatia	–5.4	–5.1	–6.8	–3.5	–3.2	–3.2	–2.0	–0.3	0.7	0.0	0.0	0.4	0.7	0.9	1.0
Dominican Republic	–2.4	–3.2	–3.1	–6.2	–3.1	–2.9	–0.3	–3.0	–3.2	–3.0	–3.3	–3.3	–3.4	–3.7	–3.7
Ecuador	–2.6	–1.1	–0.5	–1.7	–5.8	–6.4	–6.9	–7.8	–3.9	–2.7	–2.3	–1.6	–1.0	–1.2	–1.5
Egypt[2]	–7.1	–8.6	–9.6	–10.0	–13.0	–11.4	–15.3	–17.1	–18.5	–20.1	–19.4	–18.0	–14.3	–13.3	–14.5
Hungary	–3.3	–3.1	–4.3	0.1	–0.3	–1.4	–1.2	–0.9	–1.8	–2.8	–2.7	–2.6	–2.3	–2.1	–1.8
India	–9.2	–9.0	–8.6	–7.5	–6.8	–7.0	–7.3	–7.3	–6.7	–6.6	–6.5	–6.4	–6.2	–6.0	–5.9
Indonesia	–1.8	–1.5	–1.0	–1.9	–2.5	–2.3	–2.7	–2.5	–2.3	–2.1	–1.7	–1.7	–1.7	–1.7	–1.7
Iran	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Kazakhstan	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Kuwait	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Libya	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Malaysia	–5.5	–4.2	–2.9	–3.8	–3.5	–2.4	–3.0	–2.9	–3.1	–2.7	–2.5	–2.5	–2.4	–2.2	–2.1
Mexico	–3.2	–3.7	–3.3	–3.9	–3.6	–4.5	–4.3	–4.1	–2.6	–2.5	–2.5	–2.5	–2.5	–2.5	–2.5
Morocco	–1.9	–4.3	–6.9	–7.7	–5.9	–6.3	–4.6	–4.8	–4.2	–3.7	–3.2	–2.8	–2.9	–3.2	–3.4
Oman	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Pakistan	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Peru[1]	–0.6	–0.1	1.2	1.3	0.1	–0.1	–1.6	–1.9	–2.2	–2.4	–2.1	–1.6	–0.9	–0.9	–1.0
Philippines	–1.8	–2.5	0.0	–0.3	0.1	0.6	0.6	–0.4	–0.4	–1.1	–1.5	–1.4	–1.5	–1.6	–1.8
Poland	–6.6	–7.0	–5.3	–3.5	–3.1	–3.2	–2.4	–2.1	–2.0	–2.1	–1.9	–1.6	–1.5	–1.5	–1.5
Qatar	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Romania	–8.3	–5.8	–3.3	–1.1	–1.4	–0.7	–0.6	–2.0	–3.4	–4.2	–4.0	–4.0	–3.6	–3.2	–3.0
Russia	–5.0	–2.8	1.4	0.2	–1.3	0.1	–3.0	–3.4	–1.1	1.6	1.7	1.1	0.6	0.2	–0.1
Saudi Arabia	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
South Africa	–3.6	–3.8	–3.7	–4.2	–4.2	–4.1	–4.1	–3.8	–3.9	–3.9	–3.9	–3.9	–4.0	–4.1	–4.1
Sri Lanka	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Thailand	–1.4	–1.4	0.0	–0.7	0.3	–0.4	0.6	0.8	–0.9	–0.8	–0.8	–1.2	–1.3	–1.4	–1.5
Turkey	–3.3	–2.1	–1.1	–1.7	–1.9	–1.5	–1.5	–2.0	–2.9	–4.6	–5.0	–5.8	–5.8	–5.9	–5.4
Ukraine	–2.1	–2.7	–3.2	–4.5	–4.6	–3.2	1.8	–1.1	–1.5	–2.3	–2.5	–2.3	–2.2	–2.2	–2.1
United Arab Emirates	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Uruguay[3]	–1.9	–2.1	–2.1	–3.6	–3.3	–4.4	–3.6	–3.6	–3.2	–2.8	–2.5	–2.7	–2.8	–2.8	–2.8
Venezuela	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Average	–3.5	–2.8	–2.0	–1.9	–2.2	–2.4	–3.8	–4.2	–4.1	–4.0	–4.0	–4.0	–3.9	–3.8	–3.7
Asia	–3.2	–2.2	–1.6	–1.4	–1.5	–1.5	–3.0	–3.8	–4.2	–4.2	–4.5	–4.4	–4.3	–4.2	–4.1
Europe	–4.9	–3.4	–0.7	–1.0	–1.8	–1.0	–2.1	–2.5	–1.8	–1.0	–0.9	–1.4	–1.7	–1.9	–1.9
Latin America	–2.6	–3.2	–3.3	–3.1	–3.5	–4.9	–6.5	–5.4	–4.7	–4.5	–4.0	–3.8	–3.7	–3.6	–3.4
MENAP	–7.2	–6.6	–6.4	–7.7	–7.8	–10.0	–14.1	–14.2	–11.8	–10.9	–9.5	–8.3	–6.2	–4.8	–4.4
G20 Emerging	–3.3	–2.6	–1.8	–1.8	–2.1	–2.3	–3.9	–4.3	–4.2	–4.1	–4.2	–4.2	–4.2	–4.1	–4.0

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

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

[3] Data are for the consolidated public sector, which includes the nonfinancial public sector (as presented in the authorities' budget documentation), local governments, Banco Central del Uruguay, and Banco de Seguros del Estado. In particular, Uruguay is one of the few countries in the sample for which public debt includes the debt of the central bank, which increases recorded public sector gross debt.

Table A12. Emerging Market and Middle-Income Economies: General Government Cyclically Adjusted Primary Balance, 2009–23
(Percent of potential GDP)

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Algeria	–13.2	–5.2	–1.8	–4.4	1.5	–10.0	–19.7	–16.7	–10.9	–9.6	–6.9	–5.4	–3.1	–0.1	1.8
Angola	–2.2	4.1	5.1	1.6	–0.5	–3.5	2.5	1.1	–0.9	3.1	3.9	3.7	3.2	2.9	2.6
Argentina	0.8	–0.6	–2.6	–1.8	–3.2	–2.9	–4.9	–4.0	–4.0	–0.9	2.7	3.6	3.5	3.2	2.9
Azerbaijan	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Belarus	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Brazil	2.4	1.5	1.7	0.8	0.5	–1.2	–1.7	–1.2	–0.6	–1.3	–1.1	–0.6	–0.3	0.1	0.5
Chile[1]	–4.5	–2.4	–1.0	–0.3	–0.5	–0.4	0.7	–0.8	–1.6	–1.4	–1.2	–0.9	–0.7	–0.5	–0.3
China	–1.4	0.0	0.4	0.4	0.0	0.1	–1.9	–2.8	–3.1	–3.1	–3.4	–3.2	–3.1	–2.9	–2.8
Colombia	–0.7	–1.1	–0.2	1.6	1.0	–0.2	–1.2	0.1	0.1	0.2	0.8	1.5	1.5	1.5	1.4
Croatia	–3.5	–3.0	–4.1	–0.6	–0.3	–0.4	1.0	2.5	3.3	2.4	2.4	2.5	2.7	2.8	2.7
Dominican Republic	–0.6	–1.4	–1.1	–3.9	–0.9	–0.5	2.3	–0.1	–0.2	0.3	0.3	0.4	0.5	0.5	0.5
Ecuador	–2.0	–0.5	0.1	–0.9	–4.7	–5.3	–5.5	–6.2	–1.8	–0.3	0.2	1.2	2.1	1.9	1.7
Egypt[2]	–4.0	–4.1	–4.7	–4.9	–6.1	–4.4	–6.3	–5.7	–4.9	–2.0	2.7	3.8	4.4	4.8	5.0
Hungary	0.6	0.6	–0.7	4.1	3.7	2.3	2.1	2.1	0.9	–0.3	–0.5	–0.3	–0.1	0.0	0.2
India	–4.7	–4.7	–4.2	–3.1	–2.3	–2.5	–2.8	–2.6	–1.8	–1.7	–1.6	–1.6	–1.6	–1.5	–1.5
Indonesia	–0.2	–0.1	0.2	–0.7	–1.3	–1.1	–1.3	–1.0	–0.7	–0.5	–0.1	–0.1	–0.2	–0.2	–0.2
Iran	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Kazakhstan	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Kuwait	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Libya	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Malaysia	–4.0	–2.7	–1.3	–2.0	–1.7	–0.5	–1.3	–1.0	–1.3	–0.7	–0.4	–0.3	–0.1	0.0	0.2
Mexico	0.2	–0.6	–0.4	–0.8	–0.6	–1.5	–1.2	–0.8	1.5	1.3	1.1	1.1	1.0	1.0	1.0
Morocco	0.4	–2.0	–4.7	–5.2	–3.3	–3.6	–1.9	–2.2	–1.7	–1.3	–0.9	–0.6	–0.8	–1.2	–1.3
Oman	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Pakistan	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Peru[1]	0.5	1.0	2.2	2.3	1.1	0.8	–0.6	–0.9	–1.2	–1.3	–0.9	–0.2	0.5	0.4	0.4
Philippines	1.5	0.5	2.6	2.3	2.6	2.9	2.7	1.4	1.3	0.9	0.6	0.7	0.6	0.5	0.4
Poland	–4.2	–4.6	–2.7	–0.9	–0.6	–1.3	–0.7	–0.4	–0.4	–0.5	–0.3	0.0	0.1	0.0	0.0
Qatar	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Romania	–7.3	–4.5	–1.9	0.6	0.2	0.8	0.6	–0.7	–2.2	–2.9	–2.7	–2.6	–2.3	–1.9	–1.6
Russia	–5.3	–2.7	1.7	0.5	–1.0	0.5	–2.7	–2.9	–0.6	2.2	2.3	1.7	1.1	0.7	0.5
Saudi Arabia	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
South Africa	–1.3	–1.3	–1.2	–1.5	–1.3	–1.1	–0.9	–0.4	–0.4	–0.1	0.1	0.2	0.3	0.2	0.3
Sri Lanka	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Thailand	–0.7	–0.8	0.9	0.2	1.1	0.3	1.1	1.2	–0.3	–0.2	–0.2	–0.7	–0.7	–0.8	–0.8
Turkey	0.7	1.2	1.5	0.8	0.4	0.4	0.4	–0.6	–1.5	–2.7	–2.0	–2.0	–1.7	–1.6	–1.5
Ukraine	–1.1	–1.1	–1.2	–2.6	–2.2	0.0	5.7	2.9	2.2	1.7	1.6	1.7	1.6	1.6	1.7
United Arab Emirates	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Uruguay[3]	0.9	0.9	0.8	–1.0	–0.5	–1.4	–0.1	–0.3	0.0	0.2	0.4	0.2	0.4	0.6	0.5
Venezuela	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Average	–1.6	–0.9	0.0	–0.2	–0.4	–0.6	–1.8	–2.2	–1.9	–1.8	–1.8	–1.7	–1.6	–1.5	–1.4
Asia	–1.9	–0.9	–0.3	–0.2	–0.4	–0.3	–1.8	–2.4	–2.5	–2.6	–2.7	–2.6	–2.5	–2.4	–2.3
Europe	–3.4	–2.0	0.6	0.4	–0.5	0.3	–0.9	–1.3	–0.7	0.3	0.5	0.2	0.1	–0.1	–0.1
Latin America	0.9	0.3	0.5	0.1	–0.3	–1.3	–1.8	–1.4	–0.6	–0.4	0.1	0.4	0.6	0.8	0.9
MENAP	–5.3	–3.9	–3.9	–4.8	–3.5	–5.7	–9.0	–8.0	–6.1	–4.8	–2.1	–1.2	–0.2	0.9	1.6
G20 Emerging	–1.3	–0.6	0.1	–0.1	–0.5	–0.5	–1.9	–2.4	–2.1	–2.0	–2.0	–2.0	–1.9	–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: 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 prior to the recent revision; therefore, data in the tables are not comparable to the authorities' numbers.

[3] Data are for the consolidated public sector, which includes the nonfinancial public sector (as presented in the authorities' budget documentation), local governments, Banco Central del Uruguay, and Banco de Seguros del Estado. In particular, Uruguay is one of the few countries in the sample for which public debt includes the debt of the central bank, which increases recorded public sector gross debt.

Table A13. Emerging Market and Middle-Income Economies: General Government Revenue, 2009–23
(Percent of GDP)

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Algeria	36.8	37.2	40.0	39.1	35.8	33.3	30.5	28.6	33.3	32.9	29.8	28.6	27.7	27.3	26.8
Angola	37.1	42.8	45.5	41.3	36.7	30.7	24.1	17.5	16.9	18.7	19.5	19.7	19.0	18.4	17.8
Argentina	31.9	31.9	32.2	33.8	34.3	34.6	35.4	35.1	34.8	35.5	36.5	36.9	36.7	36.7	36.7
Azerbaijan	40.4	45.8	44.6	40.3	39.4	39.1	33.9	34.3	34.9	40.3	42.0	42.7	42.3	40.6	40.2
Belarus	44.5	40.1	37.5	39.3	39.8	38.9	38.8	39.0	38.9	39.5	38.3	37.4	37.1	36.8	36.5
Brazil	34.0	36.1	35.1	34.7	34.5	32.5	28.1	30.5	30.1	29.2	29.0	28.5	28.7	28.6	28.6
Chile	20.6	23.0	24.2	23.8	22.6	22.3	22.8	22.7	22.8	23.5	23.3	23.3	23.2	23.1	23.0
China	23.8	24.6	26.9	27.8	27.7	28.1	28.5	28.2	28.4	28.7	28.8	28.7	28.4	28.2	28.1
Colombia	26.9	26.2	26.8	28.3	28.0	27.5	26.2	25.1	25.5	25.7	26.2	27.2	27.4	26.9	26.5
Croatia	41.5	41.1	40.9	41.7	42.7	42.6	44.4	46.1	46.7	46.7	46.4	46.3	46.3	46.2	46.3
Dominican Republic	13.2	13.1	12.9	13.6	14.2	14.6	17.4	14.6	14.9	15.0	15.0	15.1	15.0	15.0	15.0
Ecuador	29.4	33.3	39.3	39.3	39.2	38.4	33.6	30.3	32.0	35.5	35.1	35.7	35.9	35.2	34.6
Egypt[1]	26.3	23.9	20.9	20.8	21.7	24.4	22.0	20.3	21.8	20.6	20.6	19.9	19.9	19.8	19.9
Hungary	45.8	44.8	44.0	46.1	46.7	46.8	48.2	44.9	44.5	45.5	45.2	44.6	43.5	43.1	42.8
India	18.5	18.8	19.3	19.8	19.6	19.1	19.9	20.3	20.5	20.8	20.9	20.9	21.0	21.0	21.0
Indonesia	15.4	15.6	17.0	17.2	16.9	16.5	14.9	14.3	14.0	14.6	14.6	14.5	14.5	14.6	14.7
Iran	20.7	21.0	18.9	13.9	13.5	14.3	16.1	17.3	17.5	14.1	15.4	14.5	15.4	15.9	15.7
Kazakhstan	22.1	23.9	27.0	26.3	24.8	23.7	16.6	16.1	18.8	20.2	20.4	20.8	20.5	20.7	20.7
Kuwait	69.7	70.7	72.3	71.2	72.3	66.6	60.0	53.4	58.1	57.5	57.8	56.3	54.4	52.3	50.3
Libya	65.6	70.4	42.4	74.2	83.0	69.3	51.2	31.7	51.8	51.9	43.5	38.3	33.6	30.2	26.8
Malaysia	24.8	22.5	23.9	25.0	24.1	23.7	22.5	20.7	19.6	19.6	19.4	19.4	19.3	19.3	19.3
Mexico	23.7	23.7	24.4	24.5	24.1	23.4	23.5	24.6	24.8	22.2	21.7	22.1	22.1	22.2	22.2
Morocco	28.7	26.8	27.2	28.0	27.8	28.0	26.5	26.0	26.2	26.3	26.1	26.2	26.4	26.5	26.6
Oman	37.9	40.5	48.7	48.7	49.5	46.3	34.9	29.7	31.7	38.4	40.0	39.0	37.8	35.7	34.6
Pakistan	14.2	14.3	12.6	13.0	13.5	15.2	14.5	15.5	15.6	15.4	15.6	15.6	15.7	15.6	15.7
Peru	20.0	21.1	21.8	22.4	22.3	22.4	20.2	18.8	18.3	19.2	19.6	20.0	20.2	20.2	20.1
Philippines	17.4	16.8	17.6	18.6	18.8	19.0	19.4	19.1	19.6	19.8	20.1	20.3	20.3	20.5	20.6
Poland	37.8	38.5	39.1	39.1	38.5	38.6	38.9	38.8	39.6	40.3	40.4	40.1	39.9	39.6	39.4
Qatar	47.7	37.4	36.0	42.2	51.0	48.7	47.7	35.4	30.6	33.2	37.3	37.5	36.2	34.5	33.8
Romania	29.7	31.8	32.3	32.4	31.5	32.1	32.8	28.8	27.9	28.4	29.4	29.4	29.5	29.6	29.3
Russia	32.6	32.2	34.6	34.4	33.4	33.8	31.8	32.7	33.3	35.5	35.5	34.9	34.3	34.1	33.8
Saudi Arabia	31.7	37.4	44.4	45.2	41.2	36.7	25.0	21.5	24.1	31.1	32.0	32.6	32.0	31.2	30.5
South Africa	26.5	26.4	26.8	26.9	27.3	27.6	28.1	28.6	28.3	29.0	29.5	29.7	29.7	29.8	29.9
Sri Lanka	13.1	13.0	13.6	12.2	12.0	11.6	13.3	14.2	13.8	14.5	15.9	16.0	16.1	16.2	16.1
Thailand	19.5	20.7	21.1	21.3	22.2	21.4	22.3	22.0	21.1	20.9	21.1	21.1	21.1	21.1	21.1
Turkey	32.5	32.8	32.7	32.6	32.8	31.9	32.2	32.8	31.2	30.3	29.9	30.2	30.6	30.6	30.6
Ukraine	40.8	43.4	42.9	44.7	43.3	40.3	41.9	38.3	39.3	40.5	40.7	40.2	39.8	39.6	39.8
United Arab Emirates	28.9	32.8	36.5	38.1	38.7	35.0	29.0	28.9	28.8	29.7	30.4	29.9	29.2	28.8	28.2
Uruguay[2]	28.1	29.4	28.3	27.8	29.5	28.8	28.8	29.3	29.8	29.8	30.2	29.9	30.3	30.5	30.4
Venezuela	24.6	21.0	27.6	25.1	25.9	30.1	18.9	17.1	9.0	10.4	9.0	7.9	8.1	7.9	7.8
Average	26.9	27.6	28.9	29.4	29.1	28.5	27.1	26.8	27.0	27.5	27.5	27.4	27.2	27.0	26.8
Asia	21.9	22.4	24.3	25.3	25.3	25.5	26.0	25.7	25.7	26.2	26.2	26.1	25.9	25.8	25.7
Europe	34.1	34.2	35.3	35.1	34.4	34.3	33.3	33.6	33.7	34.9	35.0	34.7	34.3	34.1	34.0
Latin America	28.9	30.1	30.5	30.3	30.1	29.2	26.6	27.4	27.3	26.5	26.2	26.3	26.5	26.4	26.4
MENAP	31.1	32.6	33.8	36.3	35.5	32.6	26.6	24.1	25.6	27.8	28.8	28.3	27.8	27.2	26.5
G20 Emerging	26.1	27.0	28.6	29.0	28.6	28.1	27.2	27.2	27.3	27.7	27.6	27.5	27.3	27.1	27.0

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

[2] Data are for the consolidated public sector, which includes the nonfinancial public sector (as presented in the authorities' budget documentation), local governments, Banco Central del Uruguay, and Banco de Seguros del Estado.

Table A14. Emerging Market and Middle-Income Economies: General Government Expenditure, 2009–23
(Percent of GDP)

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Algeria	42.6	37.3	40.1	43.5	36.2	40.6	45.8	41.6	39.7	39.0	34.8	32.3	29.9	27.9	27.0
Angola	45.0	39.4	37.4	37.2	37.0	36.5	27.1	22.0	23.0	19.5	19.7	20.2	19.8	19.8	19.7
Argentina	34.5	33.4	34.9	36.8	37.6	38.9	41.4	41.7	41.5	40.9	39.1	37.7	37.1	36.7	36.2
Azerbaijan	34.5	32.0	33.7	36.6	37.8	36.4	38.7	35.4	36.6	35.5	35.5	35.8	36.2	36.6	37.0
Belarus	51.7	44.3	40.3	38.9	40.8	38.8	41.8	40.7	39.2	41.9	42.6	39.7	38.8	38.4	38.1
Brazil	37.1	38.8	37.6	37.2	37.4	37.8	38.4	39.5	37.9	37.8	37.0	36.3	36.2	35.7	35.3
Chile	24.9	23.3	22.8	23.1	23.1	23.7	24.9	25.3	25.4	25.1	25.2	24.9	24.5	24.1	23.8
China	25.5	25.0	27.0	28.1	28.5	29.0	31.3	31.9	32.3	32.8	33.2	33.0	32.6	32.4	32.1
Colombia	29.7	29.5	28.8	28.2	28.9	29.4	29.7	28.0	28.5	28.4	28.3	28.5	28.4	27.8	27.4
Croatia	47.5	47.3	48.7	47.0	48.0	48.0	47.8	46.9	45.9	46.6	46.2	45.8	45.6	45.4	45.3
Dominican Republic	16.2	15.8	15.9	20.1	17.7	17.5	17.6	17.4	18.1	18.1	18.3	18.3	18.5	18.7	18.7
Ecuador	33.0	34.7	39.5	40.3	43.7	43.6	39.7	38.6	36.6	38.2	37.4	37.6	37.5	37.2	36.9
Egypt[1]	32.5	31.4	30.5	30.8	34.6	35.7	33.0	32.7	32.2	29.9	28.5	26.4	24.6	23.9	24.0
Hungary	50.3	49.2	49.4	48.5	49.3	49.4	50.1	46.5	46.5	47.9	47.3	46.6	45.3	44.9	44.4
India	28.1	27.4	27.6	27.4	26.6	26.2	27.1	27.5	27.7	27.5	27.4	27.3	27.1	27.0	26.9
Indonesia	17.0	16.9	17.7	18.8	19.1	18.6	17.5	16.8	16.4	16.9	16.4	16.2	16.2	16.3	16.4
Iran	19.9	18.4	18.3	14.3	14.4	15.4	17.9	19.5	19.3	17.2	19.5	19.7	20.1	20.2	19.9
Kazakhstan	23.5	22.5	21.2	21.9	19.8	21.3	22.9	21.5	25.2	18.8	18.9	19.3	19.4	19.5	19.7
Kuwait	42.2	44.7	39.1	38.8	38.1	44.3	54.4	52.8	51.5	45.9	45.7	46.3	46.5	45.7	44.9
Libya	72.1	57.9	59.7	45.7	88.1	143.1	182.2	145.1	94.8	77.0	70.4	68.7	67.0	67.1	67.2
Malaysia	31.3	27.0	27.5	28.8	28.2	26.3	25.1	23.3	22.5	22.3	22.1	21.9	21.7	21.5	21.4
Mexico	27.8	27.7	27.7	28.2	27.8	28.0	27.5	27.4	25.9	24.7	24.2	24.6	24.6	24.7	24.7
Morocco	30.4	31.1	33.8	35.2	32.9	32.9	30.7	30.5	29.8	29.5	29.1	28.9	28.8	29.0	29.0
Oman	38.2	34.8	39.3	44.1	44.9	47.4	50.9	50.8	44.6	40.4	39.2	38.6	38.5	38.4	38.5
Pakistan	19.3	20.3	19.3	21.7	21.8	20.1	19.8	19.9	21.3	21.8	22.5	22.4	22.4	22.3	22.3
Peru	21.4	21.0	19.8	20.3	21.6	22.6	22.4	21.0	21.2	21.8	22.0	21.6	21.1	21.1	21.1
Philippines	20.1	19.2	17.9	18.9	18.7	18.1	18.8	19.5	19.9	20.9	21.5	21.7	21.8	22.1	22.3
Poland	45.0	45.8	43.9	42.9	42.6	42.3	41.6	41.1	41.2	41.8	41.9	41.5	41.2	41.0	40.8
Qatar	32.9	30.6	28.5	31.0	28.3	33.4	42.3	40.1	32.2	29.6	26.7	25.9	25.7	24.8	24.5
Romania	36.6	38.2	36.5	34.9	34.0	33.8	34.2	31.2	30.8	31.9	32.8	32.9	32.9	32.7	32.3
Russia	38.5	35.4	33.2	34.0	34.6	34.9	35.1	36.4	34.8	33.8	33.7	33.5	33.5	33.7	33.8
Saudi Arabia	37.1	33.0	32.8	33.2	35.5	40.2	40.8	38.7	33.4	35.7	33.6	33.9	33.8	33.4	33.2
South Africa	31.7	31.4	30.9	31.4	31.6	31.9	32.9	32.7	32.9	33.6	34.0	34.2	34.3	34.3	34.4
Sri Lanka	21.7	20.0	19.9	17.8	17.2	17.9	20.4	19.6	19.3	19.1	19.5	19.5	19.6	19.7	19.6
Thailand	21.7	22.0	21.1	22.2	21.6	22.2	22.2	21.4	22.0	21.6	21.6	22.0	22.1	22.3	22.4
Turkey	38.3	36.2	33.4	34.4	34.2	33.3	33.4	35.1	33.4	34.4	35.0	36.0	36.4	36.6	36.1
Ukraine	46.8	49.2	45.7	49.0	48.1	44.8	43.0	40.6	41.5	43.0	43.3	42.5	42.1	41.7	41.8
United Arab Emirates	35.0	32.2	31.2	29.1	30.3	33.1	32.4	30.9	30.4	29.2	29.2	28.7	27.9	27.3	26.6
Uruguay[2]	29.7	30.5	29.2	30.5	31.8	32.3	32.3	33.2	33.3	33.1	33.0	32.8	33.1	33.3	33.2
Venezuela	33.3	30.2	38.2	39.7	40.0	46.6	36.4	34.8	40.9	40.9	38.9	39.0	39.0	39.0	39.5
Average	30.5	29.7	29.9	30.4	30.5	30.9	31.6	31.6	31.4	31.4	31.3	31.1	30.8	30.7	30.4
Asia	25.2	24.6	26.0	26.9	27.1	27.4	29.3	29.6	29.9	30.4	30.6	30.4	30.1	30.0	29.7
Europe	39.9	37.9	35.5	35.8	35.9	35.7	36.0	36.5	35.6	35.5	35.6	35.6	35.6	35.7	35.6
Latin America	32.6	33.1	33.3	33.3	33.4	34.0	33.9	34.0	33.4	32.3	31.4	31.1	30.9	30.6	30.4
MENAP	32.4	30.2	29.5	30.6	31.5	34.1	35.0	33.5	31.2	30.9	30.6	30.1	29.6	29.1	28.8
G20 Emerging	29.9	29.3	29.7	30.2	30.4	30.7	31.7	32.1	31.8	31.9	31.9	31.7	31.4	31.2	31.0

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

[2] Data are for the consolidated public sector, which includes the nonfinancial public sector (as presented in the authorities' budget documentation), local governments, Banco Central del Uruguay, and Banco de Seguros del Estado.

Table A15. Emerging Market and Middle-Income Economies: General Government Gross Debt, 2009–23
(Percent of GDP)

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Algeria	9.8	10.5	9.3	9.3	7.6	7.7	8.7	20.4	27.5	32.9	38.8	40.8	41.5	39.0	35.7
Angola	56.3	37.2	29.6	26.7	33.1	39.8	57.1	75.3	65.0	80.5	71.8	69.1	67.4	64.9	62.9
Argentina	53.8	42.0	37.5	38.9	41.7	43.6	55.1	55.0	57.6	62.7	58.2	57.2	56.7	52.2	52.0
Azerbaijan	12.4	12.5	11.2	13.8	12.6	14.4	35.0	50.7	54.1	48.4	46.0	43.2	39.3	35.7	32.2
Belarus	32.5	36.8	58.2	36.9	36.9	38.8	53.0	53.5	53.4	55.9	56.4	58.2	57.2	57.5	57.6
Brazil[1]	65.0	63.1	61.2	62.2	60.2	62.3	72.6	78.4	84.0	88.4	90.5	92.9	95.3	97.1	98.3
Chile	5.8	8.6	11.1	11.9	12.7	15.0	17.3	21.0	23.6	24.8	26.0	26.7	26.9	26.7	26.2
China	34.3	33.7	33.6	34.3	37.0	39.9	41.1	44.2	47.0	50.1	53.9	57.1	60.0	62.7	65.1
Colombia	35.4	36.6	35.8	34.0	37.6	43.3	50.4	49.8	49.4	48.7	47.8	46.4	44.8	43.2	41.4
Croatia	48.9	58.1	65.0	70.6	81.6	85.7	85.3	82.3	77.8	74.2	70.8	67.6	64.3	60.2	57.0
Dominican Republic	22.6	23.7	25.9	30.0	33.9	33.3	32.7	34.6	37.2	36.5	37.4	38.3	39.4	40.7	42.1
Ecuador[2]	18.5	17.6	16.8	17.5	20.0	27.1	33.8	43.2	45.4	48.4	50.2	51.2	51.7	52.3	53.1
Egypt[3]	69.5	69.6	72.8	73.8	84.0	85.1	88.5	96.8	103.0	92.5	87.1	84.1	81.5	78.4	74.6
Hungary	77.5	80.2	80.5	78.4	77.1	76.6	76.7	76.0	73.6	71.3	69.1	67.4	65.8	64.3	62.9
India	72.5	67.5	69.6	69.1	68.5	67.8	70.0	69.5	71.2	69.6	68.1	66.5	65.2	64.0	62.9
Indonesia	26.5	24.5	23.1	23.0	24.8	24.7	27.5	28.3	28.8	29.8	29.7	29.2	29.1	29.0	28.7
Iran	10.1	11.7	8.9	12.1	10.7	11.8	38.4	47.5	39.5	44.2	39.3	37.2	36.2	35.8	35.7
Kazakhstan	10.2	10.7	10.2	12.1	12.6	14.5	21.9	19.7	20.8	17.8	16.8	16.2	15.8	15.4	15.0
Kuwait	6.7	6.2	4.6	3.6	3.1	3.4	4.7	9.9	20.6	18.8	25.4	30.3	34.6	38.4	41.2
Libya	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Malaysia	51.1	51.9	52.6	54.6	56.4	56.2	57.9	56.2	54.1	55.1	54.3	52.9	51.5	49.9	48.1
Mexico	43.7	42.0	42.9	42.7	45.9	48.9	52.8	56.8	54.3	53.8	53.7	53.7	53.7	53.7	53.6
Morocco	46.1	49.0	52.5	56.5	61.7	63.3	63.7	64.9	65.1	64.4	63.8	62.8	61.5	60.3	59.4
Oman	6.7	5.8	5.2	4.9	5.0	4.9	15.5	32.5	46.9	48.7	45.1	43.8	42.7	43.4	45.1
Pakistan	58.5	60.6	58.9	63.2	63.9	63.5	63.3	67.6	67.0	72.5	73.2	73.6	74.4	75.2	76.0
Peru	28.4	25.4	23.0	21.2	20.0	20.7	24.0	24.5	25.4	26.4	27.4	27.3	26.7	26.1	25.6
Philippines	52.1	49.7	47.5	47.9	45.7	42.1	41.5	39.0	39.9	39.8	39.2	38.6	38.0	37.4	36.8
Poland	49.4	53.1	54.1	53.7	55.7	50.3	51.1	54.2	50.6	50.0	48.5	47.2	46.0	44.9	43.9
Qatar	32.4	29.1	33.5	32.1	30.9	24.9	35.5	46.7	53.8	53.4	48.7	44.8	41.9	39.1	36.1
Romania	22.6	30.8	34.1	37.7	39.0	40.5	39.4	38.8	36.8	37.2	38.8	39.8	40.7	41.3	41.8
Russia	9.9	10.9	11.2	11.9	13.1	16.0	16.3	16.1	15.5	15.3	15.4	15.9	16.6	17.6	19.0
Saudi Arabia	14.0	8.4	5.4	3.0	2.1	1.6	5.8	13.1	17.2	19.4	20.4	21.2	22.5	22.8	22.9
South Africa	30.1	34.7	38.2	41.0	44.1	47.0	49.3	51.6	53.0	55.7	57.3	58.8	60.0	61.1	62.2
Sri Lanka	75.2	71.6	71.1	69.6	71.8	72.2	78.5	79.6	79.1	78.0	75.9	73.5	71.3	69.2	67.1
Thailand	42.4	39.8	39.1	41.9	42.2	43.3	42.5	41.8	41.9	41.9	41.3	41.2	41.3	41.4	41.3
Turkey	43.9	40.1	36.5	32.7	31.4	28.8	27.6	28.3	28.3	32.3	33.6	34.5	36.1	38.2	39.1
Ukraine	34.1	40.6	36.9	37.5	40.5	70.3	79.3	81.2	71.0	70.5	68.8	64.4	60.4	56.4	53.0
United Arab Emirates	24.1	21.9	17.4	17.0	15.8	15.5	18.7	20.2	19.7	17.8	17.6	17.5	17.4	17.2	17.1
Uruguay[4]	63.1	59.4	58.1	58.0	60.2	61.4	64.6	61.6	65.7	68.1	67.3	67.6	67.5	67.9	68.1
Venezuela	27.6	36.5	50.6	58.1	72.3	63.5	31.9	31.3	38.9	159.0	162.4	161.7	162.2	163.9	165.0
Average	39.1	38.3	37.4	37.4	38.7	40.7	44.0	46.9	48.7	50.7	52.2	53.7	55.1	56.4	57.4
Asia	41.8	40.4	39.8	39.8	41.5	43.6	44.9	47.2	49.6	51.7	54.2	56.2	58.2	59.9	61.4
Europe	28.3	28.4	27.0	25.7	26.6	28.7	31.2	32.2	30.5	31.5	31.3	31.6	32.0	32.6	33.1
Latin America	49.7	48.6	48.5	48.6	49.2	51.4	55.4	59.1	62.5	66.9	67.1	67.7	68.3	68.4	68.5
MENAP	25.6	24.0	21.6	22.8	23.5	23.6	33.3	40.7	40.2	40.4	40.2	40.6	40.9	40.7	40.5
G20 Emerging	40.5	39.0	38.0	37.5	38.7	41.1	44.1	46.9	49.2	51.2	53.3	55.3	57.2	59.0	60.5

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] 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 prior to the recent revision; therefore, data in the tables are not comparable to the authorities' numbers.

[4] Data are for the consolidated public sector, which includes the nonfinancial public sector (as presented in the authorities' budget documentation), local governments, Banco Central del Uruguay, and Banco de Seguros del Estado. In particular, Uruguay is one of the few countries in the sample for which public debt includes the debt of the central bank, which increases recorded public sector gross debt.

Table A16. Emerging Market and Middle-Income Economies: General Government Net Debt, 2009–23
(Percent of GDP)

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Algeria	–39.6	–33.7	–31.1	–29.0	–29.5	–21.8	–7.6	13.3	21.8	28.3	34.0	35.9	36.3	33.7	30.5
Angola	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Argentina	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Azerbaijan	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Belarus	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Brazil	40.4	38.0	34.5	32.2	30.5	32.6	35.6	46.2	51.6	56.5	59.9	63.4	66.7	69.5	71.6
Chile	–10.5	–7.0	–8.6	–6.8	–5.6	–4.3	–3.4	0.9	4.4	5.8	7.8	9.3	10.3	10.7	10.9
China	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Colombia	26.3	28.5	27.2	24.8	26.9	32.9	41.9	38.7	38.7	39.1	38.8	37.8	36.7	35.5	34.2
Croatia	37.8	45.8	54.1	59.1	66.5	70.9	72.3	70.5	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Dominican Republic	15.8	16.6	18.7	24.0	26.2	25.8	25.0	26.2	28.1	27.2	27.9	28.8	29.8	31.1	32.5
Ecuador	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Egypt[1]	55.9	57.1	61.3	63.5	73.7	77.1	78.8	88.2	93.8	81.2	77.6	76.0	74.5	72.2	72.0
Hungary	71.8	74.7	74.0	71.7	70.8	70.1	72.8	72.2	70.1	68.0	66.0	64.5	63.0	61.7	60.5
India	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Indonesia	21.3	19.7	17.8	18.6	20.6	20.4	22.5	23.8	24.7	26.0	26.3	26.1	26.2	26.3	26.3
Iran	2.5	1.9	–2.5	1.3	–5.6	–5.6	21.7	34.5	28.8	38.5	35.3	36.0	35.4	35.1	35.0
Kazakhstan	–11.0	–10.2	–12.7	–15.9	–17.6	–19.2	–30.9	–23.8	–16.4	–15.7	–15.9	–16.3	–16.4	–16.3	–16.1
Kuwait	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Libya	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Malaysia	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Mexico	36.0	36.0	37.2	37.2	40.0	42.6	46.5	48.7	46.0	45.5	45.4	45.5	45.4	45.4	45.3
Morocco	45.5	48.5	52.1	56.0	61.2	62.8	63.1	64.4	64.8	64.0	63.5	62.4	61.1	59.9	59.0
Oman	–32.0	–30.1	–29.7	–29.1	–43.9	–44.1	–43.1	–28.5	–10.8	–1.5	–2.8	–3.9	–3.6	–1.2	2.3
Pakistan	54.5	56.5	55.8	59.2	60.1	58.0	58.2	61.3	61.4	67.6	68.9	69.8	71.1	72.3	73.4
Peru	12.2	10.2	6.1	2.8	1.5	2.7	5.3	6.9	8.7	10.8	12.6	13.4	13.6	13.7	13.8
Philippines	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Poland	42.8	47.3	48.3	47.9	50.9	44.5	46.4	48.0	44.6	45.3	43.7	42.5	41.3	40.2	39.2
Qatar	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Romania	15.4	22.9	27.3	28.9	29.6	29.7	29.7	27.6	28.3	28.8	30.6	31.7	32.7	33.4	34.0
Russia	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Saudi Arabia	–39.3	–37.7	–37.7	–47.7	–50.9	–47.1	–35.9	–17.1	–7.7	–0.6	1.1	2.4	4.0	6.1	8.7
South Africa	25.4	28.5	31.3	34.8	38.2	40.8	44.1	45.2	46.8	50.9	53.1	54.9	56.4	57.8	59.0
Sri Lanka	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Thailand	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Turkey	37.4	34.9	31.1	27.5	25.9	23.8	23.0	23.4	22.3	29.4	30.5	31.9	33.8	36.2	37.3
Ukraine	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
United Arab Emirates	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Uruguay[2]	30.7	31.1	28.8	25.9	24.2	22.9	25.8	29.9	31.7	34.1	34.6	35.5	35.7	36.4	36.7
Venezuela	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Average	26.0	25.9	23.9	22.4	22.6	23.9	28.3	34.3	35.4	37.9	38.9	39.9	40.8	41.6	42.3
Asia	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Europe	35.8	36.7	34.9	32.0	31.6	29.6	28.9	31.3	29.4	32.8	33.0	33.0	33.3	33.8	33.8
Latin America	33.8	33.0	31.0	29.2	29.3	31.9	35.1	40.7	43.0	44.7	46.4	48.1	49.6	50.8	51.7
MENAP	1.1	0.9	–1.2	–3.2	–4.0	–0.7	14.6	28.2	28.9	32.6	33.1	34.7	35.7	36.4	37.8
G20 Emerging	28.1	27.1	24.7	21.8	21.7	23.2	26.2	32.1	35.0	38.2	39.8	41.2	42.7	44.2	45.3

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 prior to the recent revision; therefore, data in the tables are not comparable to the authorities' numbers.

[2] Data are for the consolidated public sector, which includes the nonfinancial public sector (as presented in the authorities' budget documentation), local governments, Banco Central del Uruguay, and Banco de Seguros del Estado. In particular, Uruguay is one of the few countries in the sample for which public debt includes the debt of the central bank, which increases recorded public sector gross debt.

Table A17. Low-Income Developing Countries: General Government Overall Balance, 2009–23
(Percent of GDP)

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Bangladesh	–3.2	–2.7	–3.6	–3.0	–3.4	–3.1	–4.0	–3.4	–3.3	–4.3	–4.5	–4.3	–4.3	–4.4	–4.3
Benin	–3.1	–0.4	–1.3	–0.3	–1.9	–2.3	–7.6	–5.9	–5.8	–4.7	–2.4	–1.1	–0.6	0.3	0.8
Burkina Faso	–4.7	–4.6	–2.3	–3.1	–4.0	–2.0	–2.4	–3.5	–7.8	–5.0	–3.0	–3.0	–3.0	–3.0	–3.0
Cambodia	–4.8	–3.8	–4.7	–4.5	–2.6	–1.6	–1.3	–1.4	–1.9	–3.9	–4.7	–4.8	–4.6	–4.5	–4.4
Cameroon	0.0	–1.0	–2.4	–1.4	–3.7	–4.2	–4.4	–6.1	–4.9	–2.6	–2.1	–1.6	–1.5	–1.4	–1.5
Chad	–9.2	–4.2	2.4	0.5	–2.1	–4.2	–4.4	–2.0	–0.2	1.3	0.5	1.6	1.5	2.5	2.5
Congo, Democratic Republic of the	1.0	–0.9	–0.9	2.0	2.0	0.1	–0.2	–1.0	–1.5	–0.6	–1.6	–2.1	–2.0	–2.1	–2.4
Congo, Republic of	4.9	16.6	17.0	9.4	–3.6	–13.6	–24.8	–20.4	–7.6	9.0	10.5	9.8	5.2	5.6	4.1
Côte d'Ivoire	–1.4	–1.8	–4.0	–3.1	–2.2	–2.2	–2.8	–3.9	–4.2	–3.8	–3.0	–3.0	–2.9	–2.9	–2.9
Ethiopia	–0.9	–1.3	–1.6	–1.2	–1.9	–2.6	–1.9	–2.3	–3.3	–3.7	–3.5	–3.1	–2.8	–2.5	–2.7
Ghana	–7.2	–10.1	–7.4	–11.3	–12.0	–10.9	–5.4	–8.9	–5.1	–6.0	–3.9	–4.0	–4.2	–4.3	–3.9
Guinea	–4.9	–9.6	–0.9	–2.5	–3.9	–3.2	–6.9	–0.1	–2.1	–2.2	–2.2	–1.5	–1.5	–1.5	–1.5
Haiti	–3.5	–2.7	–2.5	–4.8	–7.2	–6.4	–2.5	–0.1	–0.5	–2.7	–2.3	–1.8	–1.9	–1.4	–1.1
Honduras	–4.9	–3.4	–2.9	–3.5	–5.7	–2.9	–0.8	–0.4	–0.4	–0.1	–0.2	–0.4	–0.7	–0.9	–0.9
Kenya	–4.3	–4.4	–4.1	–5.0	–5.7	–7.4	–8.1	–8.3	–7.9	–6.6	–5.8	–5.2	–5.0	–4.9	–4.7
Kyrgyz Republic	0.4	–5.9	–4.7	–5.9	–3.7	–2.7	–2.3	–5.9	–4.4	–4.7	–5.2	–3.6	–4.4	–4.4	–4.4
Lao P.D.R.	–3.6	–2.9	–1.6	–0.5	–5.0	–4.1	–2.4	–4.7	–5.7	–4.5	–4.2	–4.3	–4.7	–5.0	–5.0
Madagascar	–2.5	–0.9	–2.4	–2.6	–4.0	–2.3	–3.3	–1.3	–2.4	–2.3	–4.3	–5.4	–5.2	–4.7	–4.1
Mali	–3.7	–2.6	–3.4	–1.0	–2.4	–2.9	–1.8	–3.9	–2.9	–3.3	–3.0	–3.0	–3.0	–3.0	–3.0
Moldova	–5.4	–2.2	–2.1	–2.0	–1.6	–1.6	–2.0	–1.8	–0.8	–3.7	–4.4	–4.0	–3.5	–3.4	–3.4
Mozambique	–4.9	–3.8	–4.8	–3.9	–2.7	–10.7	–7.2	–6.3	–4.4	–7.1	–7.6	–8.4	–7.9	–6.5	–6.0
Myanmar	–4.4	–5.5	–3.5	0.9	–1.3	–0.9	–4.4	–2.5	–2.7	–2.9	–3.5	–4.0	–4.1	–4.0	–4.3
Nepal	–2.6	–0.8	–0.8	–1.3	1.8	1.5	0.7	1.4	–3.3	–5.5	–4.6	–4.5	–4.5	–4.4	–4.4
Nicaragua	–1.2	0.1	0.2	–0.1	–0.7	–1.2	–1.4	–1.6	–1.6	–3.6	–3.7	–4.1	–3.9	–4.1	–3.4
Niger	–5.3	–2.4	–1.5	–1.1	–2.6	–8.0	–9.1	–6.1	–5.0	–5.9	–4.5	–3.8	–2.9	–2.8	–2.9
Nigeria	–5.4	–4.2	0.4	0.2	–2.3	–2.1	–3.5	–3.9	–5.3	–5.1	–4.5	–4.3	–4.3	–4.1	–4.0
Papua New Guinea	–5.5	3.1	2.2	–1.2	–6.9	–6.3	–4.8	–5.2	–2.8	–2.1	–2.3	–1.9	–1.5	–1.2	–1.2
Rwanda	0.3	–0.7	–0.9	–2.5	–1.3	–4.0	–2.8	–2.3	–2.5	–2.0	–2.1	–1.5	–0.9	–0.8	–0.6
Senegal	–3.6	–3.9	–4.9	–4.1	–4.3	–3.9	–3.7	–3.3	–3.0	–3.5	–3.0	–3.0	–3.0	–3.0	–3.0
Somalia	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Sudan	–3.8	0.1	–0.2	–4.1	–4.2	–3.6	–3.9	–3.6	–3.8	–4.1	–4.8	–5.1	–5.3	–5.5	–5.1
Tajikistan	–5.2	–3.0	–2.1	0.6	–0.8	0.0	–1.9	–9.8	–6.8	–7.7	–6.8	–6.6	–6.6	–6.2	–6.5
Tanzania	–4.5	–4.8	–3.6	–4.1	–3.9	–3.0	–3.3	–2.2	–1.4	–2.9	–4.1	–3.6	–2.8	–2.1	–1.8
Timor-Leste	–3.9	–4.4	–4.7	–6.7	–3.5	–13.4	–17.0	–35.1	–19.5	–17.1	–27.8	–19.1	–15.8	–16.4	–14.9
Uganda	–2.1	–5.7	–2.7	–3.0	–4.0	–4.7	–4.6	–4.9	–3.8	–4.7	–5.9	–5.6	–2.1	–1.9	0.6
Uzbekistan	2.3	3.3	7.4	8.1	2.6	3.0	0.3	0.4	–1.7	–1.6	–2.8	–2.5	–2.5	–2.6	–2.7
Vietnam	–6.0	–2.8	–1.1	–6.9	–7.4	–6.3	–5.5	–4.8	–4.5	–4.6	–4.7	–4.7	–4.7	–4.7	–4.7
Yemen	–10.2	–4.1	–4.5	–6.3	–6.9	–4.1	–8.7	–8.9	–4.7	–10.7	–4.5	–1.4	–1.1	–1.3	–0.9
Zambia	–2.1	–2.4	–1.8	–2.8	–6.2	–5.7	–9.3	–5.8	–7.8	–9.8	–10.9	–11.4	–10.4	–10.6	–9.7
Zimbabwe	–2.0	0.7	–0.5	0.0	–1.7	–1.4	–1.0	–8.4	–12.7	–10.8	–9.1	–6.9	–5.5	–5.7	–4.6
Average	–4.1	–2.9	–1.2	–1.9	–3.5	–3.3	–4.0	–4.0	–4.2	–4.4	–4.2	–4.0	–3.9	–3.8	–3.7
Oil Producers	–4.8	–3.2	0.2	–0.3	–2.9	–2.8	–4.3	–4.8	–5.2	–4.8	–4.0	–3.6	–3.7	–3.5	–3.5
Asia	–4.5	–2.8	–2.3	–3.7	–4.6	–4.0	–4.4	–3.8	–3.8	–4.3	–4.6	–4.4	–4.4	–4.5	–4.4
Latin America	–3.5	–2.3	–2.0	–2.8	–4.6	–3.2	–1.3	–0.7	–0.8	–1.6	–1.6	–1.7	–1.9	–2.0	–1.6
Sub-Saharan Africa	–4.0	–3.6	–1.0	–1.3	–3.2	–3.4	–4.1	–4.5	–4.9	–4.6	–4.2	–3.9	–3.8	–3.6	–3.4
Others	–3.4	–0.3	0.7	–0.3	–2.3	–1.3	–3.4	–3.4	–3.3	–4.9	–4.1	–3.2	–3.1	–3.2	–3.0

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 D.

Table A18. Low-Income Developing Countries: General Government Primary Balance, 2009–23
(Percent of GDP)

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Bangladesh	–1.0	–0.8	–1.9	–1.1	–1.4	–1.0	–1.9	–1.5	–1.6	–2.6	–2.7	–2.4	–2.4	–2.5	–2.4
Benin	–2.6	0.1	–0.9	0.3	–1.4	–1.9	–6.9	–4.7	–3.8	–2.4	0.1	1.2	1.6	2.2	2.6
Burkina Faso	–4.3	–4.1	–1.7	–2.4	–3.4	–1.2	–1.7	–2.5	–6.8	–3.8	–1.8	–1.7	–1.6	–1.6	–1.6
Cambodia	–4.6	–3.6	–4.4	–4.2	–2.3	–1.3	–1.0	–1.0	–1.5	–3.5	–4.3	–4.4	–4.2	–4.1	–4.0
Cameroon	0.2	–0.7	–2.0	–1.1	–3.3	–3.8	–4.0	–5.3	–4.0	–1.8	–1.2	–0.7	–0.6	–0.5	–0.7
Chad	–8.8	–3.6	3.0	0.9	–1.5	–3.6	–2.7	0.1	1.4	2.8	1.8	2.9	2.6	3.4	3.3
Congo, Democratic Republic of the	1.3	–0.7	–0.3	2.5	2.4	0.4	0.0	–0.7	–1.1	–0.2	–1.2	–1.6	–1.5	–1.4	–1.8
Congo, Republic of	6.3	17.5	17.1	9.4	–3.4	–13.4	–23.9	–17.8	–5.4	11.1	12.2	11.5	6.9	7.2	5.6
Côte d'Ivoire	0.1	–0.3	–2.2	–1.4	–0.9	–0.9	–1.3	–2.2	–2.6	–2.0	–1.6	–1.0	–0.9	–0.9	–1.0
Ethiopia	–0.6	–0.9	–1.2	–0.9	–1.6	–2.2	–1.5	–1.9	–2.9	–3.2	–2.9	–2.5	–2.1	–1.8	–1.4
Ghana	–4.4	–6.9	–4.8	–7.8	–7.3	–4.7	1.3	–2.0	1.5	0.6	2.6	2.5	2.1	1.8	1.4
Guinea	–3.5	–8.3	0.5	–1.2	–3.0	–2.2	–6.1	0.9	–1.2	–1.1	–1.2	–0.6	–0.5	–0.6	–0.5
Haiti	–2.9	–2.2	–2.1	–4.4	–6.7	–5.9	–2.2	0.3	–0.2	–2.2	–1.8	–1.3	–1.3	–0.8	–0.5
Honduras	–5.8	–4.1	–3.2	–3.6	–5.6	–2.6	0.0	0.2	0.2	0.6	0.6	0.5	0.1	–0.1	0.0
Kenya	–2.7	–2.5	–2.2	–2.9	–3.3	–4.8	–5.3	–5.2	–4.7	–3.0	–2.2	–1.8	–1.7	–1.8	–1.8
Kyrgyz Republic	1.2	–5.1	–3.7	–4.9	–2.9	–1.9	–1.4	–4.8	–3.3	–3.6	–4.1	–2.2	–2.8	–2.5	–2.1
Lao P.D.R.	–3.3	–2.5	–1.1	0.2	–4.0	–3.3	–1.5	–3.5	–4.4	–3.0	–2.6	–2.7	–3.0	–3.3	–3.4
Madagascar	–1.8	–0.1	–1.5	–1.9	–3.3	–1.7	–2.5	–0.4	–1.6	–1.3	–3.5	–4.5	–4.2	–3.7	–3.1
Mali	–3.4	–2.2	–2.8	–0.4	–1.9	–2.3	–1.2	–3.3	–2.0	–2.4	–2.0	–2.0	–2.0	–2.0	–2.0
Moldova	–4.3	–1.6	–1.4	–1.3	–1.1	–1.1	–1.2	–0.6	0.3	–2.8	–3.5	–3.0	–2.5	–2.5	–2.5
Mozambique	–4.4	–3.1	–3.9	–2.9	–1.9	–9.6	–5.9	–3.3	–0.9	–2.9	–3.5	–4.1	–4.3	–4.0	–4.2
Myanmar	–3.6	–4.6	–2.5	2.3	–0.1	0.3	–3.3	–1.2	–1.6	–1.4	–2.0	–2.3	–2.4	–2.3	–2.5
Nepal	–1.8	0.0	0.0	–0.5	2.6	2.1	1.1	1.7	–2.9	–5.0	–3.9	–3.6	–3.6	–3.4	–3.2
Nicaragua	–0.8	0.4	0.6	0.5	–0.4	–0.9	–0.9	–0.9	–0.7	–2.5	–2.6	–2.9	–2.7	–2.7	–1.9
Niger	–5.1	–2.2	–1.1	–0.8	–2.3	–7.7	–8.4	–5.2	–4.0	–4.6	–3.1	–2.5	–1.6	–1.6	–1.8
Nigeria	–4.7	–3.6	1.2	1.2	–1.3	–1.2	–2.3	–2.7	–3.9	–3.5	–3.2	–2.9	–3.0	–2.6	–2.5
Papua New Guinea	–4.0	4.0	3.2	–0.2	–5.8	–4.7	–3.0	–3.1	–0.4	0.3	0.0	0.3	0.7	0.8	0.8
Rwanda	0.6	–0.2	–0.5	–2.1	–0.4	–3.2	–1.9	–1.3	–1.5	–0.9	–1.1	–0.5	0.0	0.1	0.2
Senegal	–3.0	–3.2	–3.7	–3.0	–3.1	–2.6	–2.2	–1.6	–1.0	–1.6	–0.9	–0.9	–1.0	–1.0	–1.1
Somalia	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Sudan	–2.9	1.1	0.8	–2.9	–3.7	–2.8	–3.2	–3.1	–3.3	–3.7	–4.4	–4.8	–5.1	–5.3	–4.9
Tajikistan	–4.7	–2.5	–1.6	1.1	0.1	0.4	–1.5	–8.3	–5.5	–5.6	–5.4	–4.9	–4.7	–4.1	–4.1
Tanzania	–3.8	–4.1	–2.8	–3.1	–2.7	–1.6	–1.8	–0.6	0.2	–1.3	–2.3	–1.7	–0.9	–0.1	0.2
Timor-Leste	–3.9	–4.4	–4.7	–6.7	–3.5	–13.4	–17.0	–35.1	–19.5	–17.0	–27.6	–18.8	–15.3	–15.9	–14.3
Uganda	–1.1	–4.8	–1.7	–1.7	–2.7	–3.2	–2.9	–2.4	–1.4	–2.2	–3.6	–3.1	0.5	0.6	2.9
Uzbekistan	2.3	3.3	7.5	8.1	2.7	3.0	0.3	0.5	–1.7	–1.5	–2.7	–2.3	–2.3	–2.4	–2.4
Vietnam	–4.9	–1.6	–0.1	–5.6	–5.9	–4.6	–3.5	–2.9	–2.5	–2.6	–2.8	–2.7	–2.7	–2.6	–2.6
Yemen	–7.7	–1.7	–0.2	–0.9	–1.5	1.5	–2.6	–3.6	–4.5	–4.5	–1.1	0.9	0.1	–0.2	0.2
Zambia	–0.7	–1.0	–0.8	–1.5	–4.7	–3.5	–6.5	–2.4	–3.7	–5.5	–5.0	–4.8	–3.4	–3.3	–1.9
Zimbabwe	0.3	1.8	–0.2	0.3	–0.9	–0.5	0.0	–7.7	–11.6	–9.6	–7.3	–5.2	–3.7	–4.2	–3.1
Average	–3.1	–2.0	–0.1	–0.7	–2.2	–2.0	–2.5	–2.4	–2.7	–2.6	–2.5	–2.2	–2.1	–2.1	–1.9
Oil Producers	–4.0	–2.4	1.2	0.9	–1.6	–1.5	–2.8	–3.2	–3.8	–2.9	–2.5	–2.2	–2.3	–2.1	–2.0
Asia	–3.1	–1.6	–1.1	–2.4	–3.1	–2.4	–2.6	–2.1	–2.1	–2.6	–2.8	–2.6	–2.6	–2.6	–2.6
Latin America	–3.7	–2.4	–1.9	–2.6	–4.3	–2.8	–0.7	–0.1	–0.1	–0.9	–0.8	–0.8	–1.0	–1.0	–0.7
Sub-Saharan Africa	–3.2	–2.7	0.0	–0.2	–2.0	–2.1	–2.6	–2.8	–3.1	–2.6	–2.3	–2.0	–1.9	–1.7	–1.5
Others	–2.4	0.7	2.1	1.3	–0.8	0.3	–1.7	–2.0	–2.9	–3.2	–3.0	–2.2	–2.4	–2.5	–2.3

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, 2009–23
(Percent of GDP)

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Bangladesh	9.5	10.0	10.4	11.2	11.2	10.9	9.8	10.1	10.2	10.9	10.7	10.7	10.6	10.6	10.6
Benin	20.2	18.9	18.8	19.2	18.5	17.2	17.3	15.3	18.6	19.0	18.8	19.4	19.3	19.6	19.8
Burkina Faso	19.5	19.8	20.7	22.4	24.4	21.6	20.7	21.0	21.7	23.4	23.4	23.5	23.8	23.9	24.0
Cambodia	15.6	17.1	15.9	17.2	18.7	20.1	19.6	20.8	21.4	20.4	20.5	20.6	20.7	20.9	21.0
Cameroon	15.7	15.0	16.3	16.3	16.3	16.6	16.5	14.8	15.0	15.4	15.6	15.7	15.7	16.0	16.0
Chad	14.9	20.2	24.8	24.4	20.7	17.8	14.0	12.6	14.9	16.4	15.5	16.2	15.7	16.2	16.3
Congo, Democratic Republic of the	13.7	15.6	13.7	16.5	14.6	18.6	16.8	11.8	10.4	11.1	12.3	12.5	12.8	13.0	13.2
Congo, Republic of	30.3	41.2	46.4	49.1	50.6	48.1	32.6	34.1	28.5	35.2	35.3	35.7	34.1	35.2	35.8
Côte d'Ivoire	18.5	18.1	14.2	19.2	19.7	18.9	20.0	19.4	19.2	19.3	19.2	19.4	19.5	19.5	19.7
Ethiopia	16.2	17.2	16.6	15.5	15.8	14.9	15.4	15.9	14.9	13.9	13.6	13.6	13.6	13.7	14.5
Ghana	16.4	16.7	19.1	18.5	16.7	18.4	19.6	17.2	17.5	17.6	17.8	17.6	17.4	17.2	17.0
Guinea	11.4	10.8	15.1	17.5	14.8	17.0	14.8	15.8	15.4	15.8	16.6	17.4	17.6	17.7	17.8
Haiti	16.8	19.9	22.0	23.8	21.0	18.9	19.4	18.6	17.7	18.3	17.6	17.7	18.1	18.7	18.5
Honduras	23.5	23.1	23.0	22.9	23.8	24.7	25.2	27.1	26.6	25.8	25.7	25.6	25.5	25.4	25.4
Kenya	18.8	19.8	19.5	19.1	19.7	19.8	19.1	18.7	18.3	18.8	19.1	18.7	18.5	18.4	18.5
Kyrgyz Republic	32.9	31.2	32.7	34.7	34.4	35.4	35.6	33.4	34.2	33.8	32.6	32.0	31.8	31.7	31.3
Lao P.D.R.	15.0	20.1	20.0	21.4	21.1	20.8	21.1	16.2	16.8	17.4	17.9	17.9	17.5	17.2	17.3
Madagascar	11.5	13.2	11.7	10.8	10.9	12.4	11.8	14.7	14.7	15.7	15.3	14.4	14.8	15.0	15.3
Mali	19.1	17.7	17.1	14.6	17.4	17.1	19.1	18.3	20.0	20.3	20.0	20.3	20.5	20.8	21.2
Moldova	33.2	32.7	31.2	32.4	31.3	32.3	30.4	29.0	30.2	29.5	28.6	28.5	28.2	28.1	28.0
Mozambique	24.0	26.1	27.3	27.0	31.4	31.8	28.1	26.2	28.5	25.7	25.4	24.6	24.3	24.1	23.9
Myanmar	9.3	9.1	9.8	19.0	20.1	22.0	18.7	18.8	18.0	17.3	18.1	17.8	17.3	17.3	17.5
Nepal	16.8	18.0	17.8	18.0	19.6	20.4	20.8	23.3	24.3	25.5	26.6	26.5	26.4	26.4	26.5
Nicaragua	21.3	22.5	23.5	23.9	23.5	23.3	24.2	25.3	25.3	23.7	23.8	24.0	24.1	24.3	24.9
Niger	18.6	18.2	17.9	21.4	24.6	23.0	23.5	20.5	21.4	22.6	24.0	24.6	24.3	24.5	24.3
Nigeria	10.1	12.4	17.7	14.3	11.0	10.5	7.6	5.6	6.2	8.5	8.4	8.4	8.2	8.3	8.5
Papua New Guinea	19.2	21.5	21.9	21.2	20.7	20.9	19.3	17.7	18.1	19.4	17.3	17.7	18.0	18.3	18.3
Rwanda	23.8	24.6	25.3	23.2	25.5	24.2	24.6	23.5	22.9	23.4	22.0	22.1	22.2	22.2	22.1
Senegal	17.3	17.6	18.2	18.6	17.7	19.2	19.3	20.7	19.4	19.4	19.5	19.7	19.7	19.7	19.7
Somalia	. . .	. . .	. . .	. . .	1.7	2.2	2.1	2.5	3.5	3.5	3.7	3.8	4.0	4.2	4.4
Sudan	15.0	17.5	15.9	9.1	9.6	8.8	8.3	7.0	7.2	8.4	6.8	5.7	5.0	4.5	4.3
Tajikistan	23.4	23.2	24.9	25.1	26.9	28.4	29.9	29.9	29.7	28.6	28.5	28.6	28.6	28.5	28.4
Tanzania	15.7	15.5	15.6	15.7	15.5	14.9	14.5	15.5	15.9	15.9	16.0	16.2	16.4	16.7	17.1
Timor-Leste	23.8	22.4	19.8	15.8	20.2	26.3	33.2	36.8	30.6	29.3	24.3	22.5	20.8	20.4	27.8
Uganda	13.2	13.2	14.5	13.6	12.7	13.5	14.8	15.0	15.0	16.2	16.1	16.0	17.0	17.2	19.0
Uzbekistan	36.5	37.0	39.7	41.0	35.6	35.0	33.9	31.3	29.8	30.7	27.0	27.3	27.2	27.1	27.0
Vietnam	25.6	27.3	25.9	22.6	23.1	22.2	23.8	23.7	23.6	23.3	23.0	23.0	22.9	22.9	22.9
Yemen	25.0	26.1	25.3	29.9	23.9	23.6	10.7	7.6	3.5	7.8	10.9	14.1	14.3	14.3	14.4
Zambia	15.7	15.6	17.7	18.7	17.6	18.9	18.8	18.2	17.6	17.8	16.5	16.9	17.0	17.0	17.3
Zimbabwe	11.7	21.8	24.2	24.9	24.6	23.8	24.3	21.7	21.9	25.2	25.2	25.0	25.0	20.5	20.7
Average	15.9	17.2	19.0	18.3	16.9	16.6	15.3	14.9	15.1	16.0	15.8	15.7	15.5	15.5	15.5
Oil Producers	12.8	14.8	18.9	16.6	13.7	13.2	9.7	8.2	8.6	11.0	10.8	11.0	10.6	10.6	10.7
Asia	16.4	17.3	17.2	17.9	18.2	18.1	17.5	17.4	17.3	17.5	17.4	17.3	17.1	17.2	17.2
Latin America	21.4	22.2	22.9	23.4	23.1	23.1	23.7	24.9	24.5	23.6	23.5	23.5	23.5	23.7	23.8
Sub-Saharan Africa	13.8	15.2	18.3	16.6	14.9	14.6	12.9	12.2	12.9	14.2	14.0	14.0	13.8	13.7	13.8
Others	24.4	25.5	26.1	27.2	23.6	23.1	19.4	18.4	17.0	19.2	18.4	18.9	19.0	19.0	19.1

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 D.

Table A20. Low-Income Developing Countries: General Government Expenditure, 2009–23
(Percent of GDP)

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Bangladesh	12.7	12.7	14.0	14.2	14.6	14.0	13.8	13.4	13.6	15.2	15.2	15.0	14.9	15.0	14.9
Benin	23.2	19.2	20.1	19.5	20.4	19.4	24.9	21.3	24.4	23.7	21.3	20.5	19.8	19.4	19.0
Burkina Faso	24.2	24.4	23.0	25.5	28.4	23.5	23.1	24.5	29.4	28.4	26.5	26.6	26.8	27.0	27.1
Cambodia	20.4	20.9	20.6	21.7	21.4	21.7	20.9	22.2	23.2	24.3	25.2	25.4	25.4	25.4	25.4
Cameroon	15.7	16.0	18.6	17.8	20.0	20.8	20.9	20.9	19.8	18.0	17.8	17.3	17.3	17.4	17.4
Chad	24.1	24.4	22.4	23.9	22.8	22.0	18.3	14.5	15.2	15.1	15.0	14.6	14.2	13.7	13.7
Congo, Democratic Republic of the	12.6	16.5	14.6	14.5	12.7	18.5	17.0	12.7	11.9	11.7	13.9	14.6	14.8	15.0	15.6
Congo, Republic of	25.3	24.6	29.5	39.7	54.3	61.7	57.4	54.5	36.1	26.2	24.8	26.0	28.9	29.6	31.6
Côte d'Ivoire	19.9	20.0	18.2	22.3	21.9	21.0	22.8	23.3	23.4	23.0	22.2	22.4	22.4	22.4	22.6
Ethiopia	17.1	18.5	18.2	16.6	17.8	17.5	17.3	18.2	18.2	17.7	17.1	16.7	16.3	16.2	17.2
Ghana	23.6	26.8	26.6	29.8	28.7	29.4	25.0	26.1	22.6	23.6	21.7	21.6	21.6	21.5	20.9
Guinea	16.2	20.5	16.0	20.0	18.6	20.2	21.7	16.0	17.5	18.0	18.8	18.9	19.1	19.3	19.4
Haiti	20.3	22.7	24.5	28.6	28.1	25.3	21.9	18.7	18.2	21.0	19.9	19.5	19.9	20.1	19.6
Honduras	28.4	26.5	25.9	26.4	29.6	27.6	26.0	27.5	27.0	25.9	25.9	26.0	26.2	26.4	26.3
Kenya	23.1	24.2	23.6	24.2	25.4	27.2	27.2	27.0	26.2	25.4	24.8	23.9	23.5	23.4	23.2
Kyrgyz Republic	32.5	37.1	37.4	40.6	38.1	38.2	38.0	39.3	38.7	38.5	37.8	35.6	36.2	36.1	35.7
Lao P.D.R.	18.6	23.0	21.6	21.9	26.1	24.9	23.5	21.0	22.5	21.9	22.1	22.2	22.2	22.2	22.3
Madagascar	14.1	14.0	14.1	13.4	14.9	14.7	15.1	16.0	17.1	18.0	19.6	19.8	20.0	19.8	19.5
Mali	22.8	20.3	20.6	15.5	19.7	20.0	20.9	22.3	22.9	23.6	23.0	23.2	23.5	23.8	24.2
Moldova	38.7	34.9	33.3	34.3	32.9	33.9	32.4	30.7	31.0	33.2	33.0	32.5	31.7	31.5	31.5
Mozambique	28.9	29.9	32.2	30.8	34.1	42.5	35.2	32.5	33.0	32.8	33.0	33.0	32.2	30.6	29.9
Myanmar	13.7	14.6	13.4	18.1	21.4	22.9	23.2	21.3	20.8	20.2	21.6	21.8	21.4	21.3	21.7
Nepal	19.4	18.8	18.6	19.3	17.8	18.8	20.1	21.9	27.5	31.0	31.2	31.0	30.9	30.7	30.8
Nicaragua	22.5	22.4	23.3	24.0	24.2	24.5	25.6	26.9	26.9	27.3	27.5	28.0	28.0	28.4	28.2
Niger	23.9	20.6	19.4	22.5	27.2	31.1	32.5	26.6	26.5	28.5	28.5	28.4	27.2	27.3	27.2
Nigeria	15.5	16.6	17.4	14.1	13.4	12.7	11.1	9.5	11.5	13.7	12.9	12.7	12.6	12.4	12.5
Papua New Guinea	24.7	18.4	19.7	22.4	27.6	27.2	24.1	22.9	20.9	21.5	19.7	19.6	19.4	19.4	19.4
Rwanda	23.5	25.3	26.2	25.7	26.8	28.3	27.4	25.8	25.4	25.4	24.1	23.6	23.1	23.0	22.8
Senegal	20.9	21.6	23.1	22.8	22.0	23.1	23.0	24.0	22.3	22.9	22.4	22.7	22.7	22.8	22.8
Somalia	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Sudan	18.8	17.4	16.1	13.2	13.8	12.4	12.2	10.6	11.0	12.5	11.6	10.8	10.3	10.1	9.4
Tajikistan	28.6	26.1	27.0	24.6	27.7	28.4	31.8	39.7	36.5	36.3	35.3	35.2	35.2	34.7	34.9
Tanzania	20.2	20.2	19.1	19.8	19.4	17.9	17.8	17.7	17.3	18.8	20.1	19.9	19.3	18.9	18.9
Timor-Leste	27.7	26.7	24.5	22.5	23.7	39.7	50.2	71.8	50.0	46.4	52.2	41.6	36.5	36.8	42.8
Uganda	15.3	18.8	17.2	16.6	16.7	18.2	19.4	19.9	18.8	20.9	22.0	21.6	19.0	19.2	18.3
Uzbekistan	34.2	33.7	32.3	32.8	33.0	32.0	33.6	30.8	31.5	32.2	29.8	29.8	29.7	29.7	29.7
Vietnam	31.6	30.0	27.0	29.5	30.5	28.5	29.2	28.5	28.1	27.9	27.8	27.7	27.6	27.6	27.6
Yemen	35.2	30.2	29.8	36.2	30.8	27.8	19.4	16.5	8.2	18.5	15.4	15.5	15.3	15.6	15.3
Zambia	17.8	18.1	19.5	21.5	23.8	24.6	28.1	24.0	25.3	27.6	27.4	28.2	27.4	27.6	27.0
Zimbabwe	13.7	21.2	24.7	24.8	26.2	25.2	25.3	30.2	34.6	36.0	34.3	31.9	30.4	26.2	25.3
Average	20.0	20.2	20.2	20.2	20.5	20.0	19.4	19.0	19.4	20.4	20.1	19.8	19.5	19.4	19.3
Oil Producers	17.6	18.0	18.7	16.9	16.6	15.9	14.0	13.0	13.8	15.8	14.8	14.6	14.3	14.2	14.2
Asia	20.9	20.1	19.5	21.6	22.8	22.1	21.9	21.2	21.1	21.8	21.9	21.7	21.6	21.6	21.6
Latin America	24.9	24.5	24.9	26.2	27.7	26.2	25.0	25.6	25.3	25.3	25.1	25.2	25.4	25.7	25.5
Sub-Saharan Africa	17.8	18.8	19.2	17.9	18.0	17.9	17.0	16.7	17.7	18.7	18.2	17.9	17.5	17.3	17.2
Others	27.8	25.8	25.4	27.5	26.7	25.1	23.4	22.4	20.9	25.0	23.3	22.9	22.9	23.0	23.0

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 D.

Table A21. Low-Income Developing Countries: General Government Gross Debt, 2009–23
(Percent of GDP)

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Bangladesh	39.5	35.5	36.6	36.2	35.8	35.3	33.7	33.3	33.1	33.4	33.8	34.0	34.3	34.8	35.1
Benin	25.6	28.7	29.9	26.7	25.3	30.5	42.4	49.7	54.6	56.8	55.0	51.2	47.6	44.4	40.7
Burkina Faso	29.1	31.2	28.1	28.2	28.8	30.4	35.8	38.3	38.1	41.2	41.3	41.5	41.1	40.8	40.9
Cambodia	28.5	28.7	29.7	31.5	31.6	31.8	30.9	29.1	30.4	31.7	33.8	35.9	37.7	39.4	40.8
Cameroon	12.0	14.7	15.7	15.4	18.2	21.5	32.0	32.5	36.9	36.9	36.6	35.9	35.1	34.2	33.4
Chad	31.6	30.1	30.6	28.8	30.5	41.5	43.8	52.4	52.5	49.2	45.4	40.8	36.9	33.1	30.2
Congo, Democratic Republic of the	93.2	31.9	26.3	23.2	19.1	16.8	16.8	19.3	18.1	16.2	15.0	14.4	11.9	11.0	8.9
Congo, Republic of	97.3	54.0	42.9	45.7	50.0	60.3	112.1	128.7	130.8	100.7	89.9	90.2	94.7	91.0	85.6
Côte d'Ivoire	64.2	63.0	69.2	45.0	43.4	44.8	47.3	47.0	47.0	48.8	47.3	46.5	45.6	44.8	44.2
Ethiopia	37.8	40.5	45.3	37.7	42.9	46.8	54.0	53.2	54.2	59.5	59.9	58.4	56.8	55.3	48.5
Ghana	36.1	46.3	42.6	47.9	57.2	70.2	72.2	73.4	71.8	71.2	67.1	64.9	63.6	62.6	60.7
Guinea	61.3	68.8	58.1	27.2	34.0	35.1	41.9	41.8	37.9	40.4	43.1	42.6	40.6	39.1	37.9
Haiti	27.8	17.3	11.8	16.3	21.5	26.3	30.2	33.9	31.1	33.3	35.2	35.1	34.7	34.3	34.4
Honduras	24.3	23.6	25.2	29.8	37.7	37.5	37.4	38.5	39.5	39.7	40.0	39.1	39.0	38.9	38.0
Kenya	41.1	44.4	43.0	43.9	44.0	48.6	51.4	53.2	54.2	56.1	55.4	53.0	49.9	48.7	47.6
Kyrgyz Republic	58.1	59.7	49.4	49.0	46.2	52.3	64.9	55.9	56.0	55.0	56.6	56.9	57.8	58.5	60.5
Lao P.D.R.	55.2	55.1	50.8	55.2	54.3	58.6	58.1	58.4	63.6	66.7	67.9	68.2	68.7	69.2	69.7
Madagascar	33.7	31.7	32.2	33.0	33.9	34.7	35.5	38.4	36.0	35.1	36.4	38.8	41.1	43.0	44.3
Mali	21.9	25.3	24.0	25.4	26.4	27.4	30.7	36.0	35.4	36.9	37.1	37.8	38.5	39.1	39.4
Moldova	27.7	26.0	24.7	26.4	25.2	30.7	38.2	35.8	31.5	32.5	34.7	36.4	37.0	38.3	39.1
Mozambique	41.9	43.3	38.0	40.1	53.1	62.4	88.1	121.6	102.1	112.9	118.7	124.8	129.0	130.7	122.1
Myanmar	55.1	49.6	46.1	40.7	33.2	29.9	34.5	35.7	33.6	33.2	34.2	34.1	34.5	34.7	35.3
Nepal	38.5	34.0	31.7	34.3	32.2	28.2	25.6	27.9	26.4	29.7	35.4	38.6	41.7	44.4	44.9
Nicaragua	29.3	30.3	28.8	27.9	28.8	28.7	29.2	31.2	33.3	37.5	39.5	40.4	40.7	40.9	40.3
Niger	27.7	24.3	27.8	26.9	26.3	32.0	41.0	45.2	45.3	46.3	48.4	48.1	47.6	46.3	45.6
Nigeria	8.6	9.6	12.1	12.7	12.9	13.1	16.0	19.6	21.8	24.8	26.8	28.1	29.1	29.9	30.4
Papua New Guinea	21.7	17.3	16.3	19.1	24.9	27.1	31.4	36.9	36.9	35.7	35.5	35.2	34.7	33.9	33.2
Rwanda	19.5	20.0	19.9	20.0	26.7	29.1	33.4	37.3	40.5	42.6	43.4	42.3	41.2	40.6	39.1
Senegal	26.9	28.3	32.7	34.2	36.8	42.4	44.5	47.8	48.3	50.4	47.5	46.5	45.5	44.6	43.9
Somalia	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Sudan	70.9	67.4	69.5	97.0	93.1	83.2	82.3	99.5	121.6	167.5	165.1	164.0	165.9	164.6	169.3
Tajikistan	36.9	36.8	35.9	32.4	29.2	27.5	34.3	42.0	50.4	52.7	54.0	56.3	58.4	60.4	62.6
Tanzania	24.4	27.3	27.8	29.2	30.9	33.8	37.2	38.0	37.0	37.4	38.6	38.8	38.0	36.7	35.2
Timor-Leste	0.0	0.0	0.0	0.0	0.1	0.5	1.5	3.1	3.8	. . .	. . .	. . .	. . .	. . .	. . .
Uganda	19.2	22.4	23.4	24.6	27.7	30.8	33.5	37.4	40.0	42.9	44.7	45.3	44.2	41.6	37.9
Uzbekistan	10.9	10.0	10.3	11.2	12.0	11.7	9.2	10.5	24.3	19.3	21.8	22.4	23.1	23.7	24.4
Vietnam	45.2	48.1	44.7	48.4	52.0	55.0	57.4	59.9	58.5	57.8	57.4	57.1	57.3	57.6	58.1
Yemen	49.8	42.4	45.7	47.3	48.2	48.7	55.2	68.1	74.5	62.5	48.8	40.3	36.9	33.7	30.7
Zambia	20.5	18.9	20.8	25.4	27.1	36.1	62.3	60.7	63.1	70.9	77.6	82.0	86.9	91.1	92.8
Zimbabwe	71.7	59.3	48.3	45.3	48.3	49.6	51.9	69.9	82.3	81.9	79.6	76.9	74.2	71.2	67.1
Average	32.1	30.3	30.3	30.6	31.5	32.6	36.7	40.6	42.8	44.1	44.2	43.9	43.6	43.3	42.6
Oil Producers	17.3	16.0	17.9	17.2	17.9	18.5	22.9	27.6	30.3	31.7	32.0	32.1	32.3	32.4	32.3
Asia	42.3	40.9	39.3	40.1	40.7	41.4	42.4	43.4	42.6	42.9	43.4	43.6	44.0	44.5	44.9
Latin America	26.5	24.1	23.3	26.4	31.5	32.5	33.5	35.4	36.0	37.8	38.9	38.6	38.6	38.5	38.0
Sub-Saharan Africa	24.6	22.8	23.6	23.1	24.5	26.2	31.6	36.6	39.2	41.7	42.0	41.8	41.3	40.8	39.6
Others	47.3	44.5	44.2	49.1	47.6	45.7	47.7	53.5	67.7	71.1	65.8	62.5	61.3	59.5	58.5

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 D.

Table A22. Low-Income Developing Countries: General Government Net Debt, 2009–23
(Percent of GDP)

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Bangladesh	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Benin	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Burkina Faso	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Cambodia	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Cameroon	8.1	10.5	12.6	13.1	15.9	19.9	27.8	30.9	33.6	33.8	34.3	33.4	32.9	32.4	32.1
Chad	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Congo, Democratic Republic of the	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Congo, Republic of	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Côte d'Ivoire	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Ethiopia	29.2	32.4	40.0	32.5	37.3	42.2	49.2	50.9	52.2	57.6	57.2	55.9	54.6	53.2	47.0
Ghana	32.6	43.0	38.8	45.8	53.2	63.4	66.7	66.8	65.3	64.4	61.2	59.5	58.8	58.2	56.7
Guinea	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Haiti	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Honduras	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Kenya	36.9	40.2	39.1	40.1	40.1	44.4	46.3	47.9	48.9	51.6	52.5	51.2	48.1	46.9	45.8
Kyrgyz Republic	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Lao P.D.R.	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Madagascar	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Mali	12.4	16.9	17.1	21.2	20.5	20.0	24.7	29.7	29.9	33.4	33.1	33.4	33.7	34.1	34.2
Moldova	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Mozambique	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Myanmar	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Nepal	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Nicaragua	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Niger	23.2	20.2	24.1	21.9	20.6	25.6	35.7	40.6	39.6	41.2	43.7	43.7	43.5	42.5	42.0
Nigeria	4.1	6.3	7.2	5.8	6.1	9.3	11.5	15.2	17.5	21.6	24.0	25.6	26.8	27.6	28.4
Papua New Guinea	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Rwanda	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Senegal	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Somalia	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Sudan	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Tajikistan	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Tanzania	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Timor-Leste	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Uganda	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Uzbekistan	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Vietnam	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Yemen	43.6	38.3	42.3	45.3	46.7	47.8	54.3	67.1	73.6	61.9	48.4	39.9	36.6	33.5	30.4
Zambia	16.5	15.9	16.4	20.1	25.2	31.8	56.1	51.3	56.3	65.3	73.9	80.9	86.0	90.2	92.1
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.

Table A23. Advanced Economies: Structural Fiscal Indicators

(Percent of GDP, except where otherwise indicated)

	Pension Spending Change, 2015–30[1]	Net Present Value of Pension Spending Change, 2015–50[1,2]	Health Care Spending Change, 2015–30	Net Present Value of Health Care Spending Change, 2015–50[2]	Gross Financing Need, 2018[3]	Average Term to Maturity, 2018 (years)[4]	Debt-to-Average Maturity, 2018	Projected Interest Rate–Growth Differential, 2018–23 (percent)	Precrisis Overall Balance, 2000–07	Projected Overall Balance, 2018–23	Nonresident Holding of General Government Debt, 2017 (percent of total)[5]
Australia	0.8	25.3	1.6	59.6	3.0	7.4	5.5	–1.2	1.1	–0.4	44.3
Austria	0.6	17.1	1.5	59.0	6.1	8.3	8.9	–1.7	–2.2	–0.2	80.9
Belgium	0.5	17.9	2.0	76.8	17.4	9.4	10.8	–1.0	–0.5	–1.5	63.6
Canada	1.1	29.0	1.2	46.8	9.8	5.4	16.1	–0.1	1.1	–1.0	25.9
Cyprus	0.7	21.0	. . .	. . .	7.4	4.9	22.8	–2.7	–2.3	1.4	88.3
Czech Republic	0.1	20.1	0.7	25.1	5.9	5.0	22.8	–1.8	–3.8	1.1	50.4
Denmark	–1.2	–44.4	1.3	46.0	4.7	7.8	4.4	0.1	2.5	–0.4	37.9
Estonia	–0.8	–21.9	0.4	21.1	. . .	. . .	. . .	–5.3	1.4	–0.2	76.0
Finland	1.3	25.5	1.6	50.8	7.3	6.2	9.8	–1.7	4.0	–0.5	80.7
France	0.4	–2.0	0.8	30.6	10.1	7.4	13.1	–1.2	–2.7	–2.6	61.1
Germany	1.4	39.7	1.0	47.8	3.5	5.8	10.3	–2.2	–2.4	1.1	53.9
Hong Kong SAR	1.8	55.1	. . .	. . .	. . .	. . .	. . .	–0.2	0.0	2.0	. . .
Iceland	0.3	7.5	2.6	94.0	2.2	13.4	2.8	1.7	1.1	0.6	24.1
Ireland	1.0	43.3	1.0	38.3	7.0	10.6	6.3	–2.2	1.5	0.2	70.3
Israel	0.6	26.1	0.4	15.4	. . .	5.9	10.4	0.4	–4.4	–3.3	13.8
Italy[6]	1.7	47.2	1.0	40.8	22.2	6.9	19.0	0.5	–3.1	–1.9	37.0
Japan	–1.2	–31.7	2.2	72.0	40.8	7.7	31.1	–1.1	–6.0	–2.4	10.5
Korea	2.0	75.4	2.1	84.3	0.4	6.4	6.3	–1.1	2.0	0.9	13.1
Latvia	–1.0	–35.9	0.9	32.8	. . .	7.8	4.5	–2.8	–1.3	–0.7	87.8
Lithuania	0.2	1.0	0.7	27.5	6.1	6.3	5.9	–2.1	–1.8	0.7	92.0
Luxembourg	1.3	53.5	1.7	74.1	. . .	6.9	3.3	–3.5	2.4	0.8	48.9
Malta	–1.0	–13.2	. . .	. . .	3.0	9.0	5.0	–2.2	–4.9	1.1	11.9
Netherlands	0.3	14.2	2.8	94.6	6.7	6.9	7.7	–1.8	–0.6	0.8	48.0
New Zealand	1.6	53.8	2.0	66.4	0.6	6.8	4.5	0.6	3.1	1.4	58.9
Norway	0.7	22.3	1.9	78.2	. . .	5.0	7.3	–2.6	13.2	5.1	49.1
Portugal	0.9	24.6	2.0	74.3	13.2	6.2	19.4	–0.5	–4.5	–0.1	61.8
Singapore[7]	0.8	27.8	. . .	. . .	2.7	3.7	30.4	0.0	5.6	1.8	. . .
Slovak Republic	–0.8	–16.1	0.6	26.5	8.2	7.5	6.6	–3.1	–5.0	–0.2	67.3
Slovenia	1.1	51.5	1.0	42.9	5.0	8.5	8.2	–1.9	–1.0	–0.2	72.6
Spain	0.4	27.4	1.7	60.0	17.2	7.0	13.9	–1.1	0.4	–2.5	52.4
Sweden	–0.9	–33.5	0.6	25.0	3.2	4.7	8.1	–2.9	1.2	0.6	38.0
Switzerland	0.4	15.8	3.1	116.1	1.4	10.4	3.9	–1.5	–0.3	0.4	11.8
United Kingdom	0.2	8.3	1.9	65.0	8.7	14.9	5.9	–0.4	–1.9	–1.4	37.0
United States	1.5	31.4	3.6	122.3	23.3	5.8	18.3	–1.3	–2.6	–4.8	31.9
Average	0.9	21.6	2.4	84.7	18.2	6.9	16.1	–1.2	–2.1	–2.4	36.5
G7	1.0	20.9	2.6	90.0	21.1	6.9	17.9	–1.1	–2.9	–3.2	34.1
G20 Advanced	1.0	23.2	2.5	88.7	19.8	6.9	17.1	–1.1	–2.6	–2.9	33.8

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

Note: All economy averages are weighted by nominal GDP converted to US dollars at average market exchange rates in the years indicated and 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 economy-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 economy.

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

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

[5] Nonresident holding of general government debt data are for the fourth quarter of 2017 or latest available from the Joint External Debt Hub (JEDH), Quarterly External Debt Statistics, which include marketable and nonmarketable debt. For some economies, 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 2017 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 issued to develop the bond market.

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

(Percent of GDP, except where otherwise indicated)

	Pension Spending Change, 2015–30[1]	Net Present Value of Pension Spending Change, 2015–50[1,2]	Health Care Spending Change, 2015–30	Net Present Value of Health Care Spending Change, 2015–50[2]	Gross Financing Need, 2018[3]	Average Term to Maturity, 2018 (years)[4]	Debt–to–Average Maturity, 2018	Projected Interest Rate–Growth Differential, 2018–23 (percent)	Precrisis Overall Balance, 2000–07	Projected Overall Balance, 2018–23	Nonresident Holding of General Government Debt, 2017 (percent of total)[5]
Algeria	3.0	122.4	1.0	44.4	. . .	. . .	. . .	–6.5	7.4	–3.0	3.6
Angola	0.4	16.2	0.2	7.7	. . .	. . .	. . .	–7.6	2.5	–0.9	. . .
Argentina	0.8	40.7	0.9	37.1	14.6	9.7	6.5	–11.6	–0.2	–1.4	38.9
Azerbaijan	5.1	148.9	0.3	11.7	. . .	. . .	. . .	–3.7	6.3	5.3	. . .
Belarus	3.8	114.7	0.7	27.6	. . .	2.9	19.6	–2.1	–7.2	–2.3	59.3
Brazil[6]	5.1	203.8	1.1	44.2	14.8	6.6	13.4	1.7	–3.6	–7.6	8.7
Chile	–0.8	–22.8	1.3	53.3	2.7	9.6	2.6	–2.0	2.4	–1.4	30.3
China	2.0	70.7	0.8	31.9	. . .	. . .	. . .	–5.6	–1.8	–4.2	. . .
Colombia	–0.6	–37.8	1.2	48.4	4.8	10.1	4.8	0.2	–1.9	–1.5	30.9
Croatia	–0.6	–38.9	1.2	45.5	11.6	4.6	16.3	–0.6	–4.3	0.6	40.2
Dominican Republic	0.3	15.1	0.7	26.9	9.8	8.3	4.4	1.3	–2.0	–3.4	66.5
Ecuador	0.8	33.4	1.0	39.9	9.7	5.8	8.3	3.7	1.2	–2.2	64.8
Egypt	2.3	51.1	0.2	8.7	35.2	2.9	32.4	–6.3	–4.6	–6.1	15.9
Hungary	–1.1	–21.8	1.0	40.1	18.4	3.7	19.2	–2.2	–6.4	–1.9	43.7
India	0.0	–5.7	0.2	9.0	10.5	9.5	7.3	–3.6	–8.6	–6.3	5.9
Indonesia	0.2	9.2	0.3	10.3	4.2	8.5	3.5	–3.1	–0.7	–1.8	60.7
Iran	2.0	109.9	1.0	43.0	. . .	. . .	. . .	–11.6	3.1	–4.3	. . .
Kazakhstan	1.7	47.5	0.4	14.9	. . .	6.7	2.6	–3.0	4.7	1.3	36.4
Kuwait	7.4	330.1	0.7	31.2	. . .	6.5	2.9	–4.5	29.0	8.9	. . .
Malaysia	2.1	82.4	0.5	19.5	10.7	6.5	8.5	–2.0	–3.8	–2.4	29.5
Mexico	0.6	18.6	0.7	31.1	9.3	9.1	5.9	0.5	–2.0	–2.5	30.6
Morocco	1.8	61.4	0.5	22.6	10.4	6.3	10.3	–1.9	–3.3	–2.7	23.1
Oman	0.6	27.8	0.8	36.6	. . .	8.3	5.9	–0.3	10.0	–1.4	. . .
Pakistan	0.1	5.3	0.1	4.9	37.8	1.8	41.0	–1.6	–2.9	–6.7	. . .
Peru	0.3	15.3	0.7	30.8	6.5	7.6	3.5	–0.8	–0.4	–1.6	31.0
Philippines	0.2	7.8	0.2	8.8	4.1	9.3	4.3	–4.1	–2.4	–1.5	24.8
Poland	–0.2	–7.5	1.0	40.0	7.1	4.9	10.1	–2.1	–4.1	–1.4	55.1
Qatar	0.9	38.7	0.6	27.5	. . .	5.9	9.1	–2.8	8.9	9.2	. . .
Romania	–1.2	–16.2	0.9	33.6	8.4	5.3	7.0	–2.9	–2.5	–3.4	51.9
Russia	3.4	96.6	0.6	24.2	. . .	7.3	2.1	0.3	4.2	1.0	22.7
Saudi Arabia	2.4	92.9	1.0	38.9	. . .	10.2	1.9	–0.8	6.9	–2.4	. . .
South Africa	0.3	13.2	0.7	26.8	12.4	12.8	4.4	0.7	–0.6	–4.5	39.7
Sri Lanka	1.2	43.2	0.4	14.8	19.6	5.7	13.6	–1.3	–6.9	–3.7	45.5
Thailand	3.8	125.7	0.7	28.7	5.3	6.9	6.1	–2.5	–0.4	–0.9	13.4
Turkey[7]	–0.1	15.5	0.8	33.6	6.5	6.2	5.2	–2.1	–5.8	–5.4	38.8
Ukraine	1.0	99.8	0.5	21.0	7.3	5.8	12.2	–4.6	–2.3	–2.3	48.8
United Arab Emirates	0.6	29.6	0.7	28.2	. . .	. . .	. . .	–3.8	9.1	1.2	. . .
Uruguay[8]	–0.4	–3.9	1.2	47.7	12.6	11.8	5.8	–4.3	–2.1	–2.9	40.5
Venezuela	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	0.1	–30.9	. . .
Average	1.7	61.4	0.7	28.9	11.1	7.0	8.2	–3.9	–1.1	–3.7	26.3
G20 Emerging	1.9	65.8	0.7	28.9	10.5	7.2	7.4	–3.8	–1.9	–4.1	23.3

Sources: Bloomberg 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 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 L.P.

[5] Nonresident holding of general government debt data are the fourth quarter of 2017 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 2017 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).

[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 consolidated public sector, which includes the nonfinancial public sector (as presented in the authorities' budget documentation), local governments, Banco Central del Uruguay, and Banco de Seguros del Estado. In particular, Uruguay is one of the few countries in the sample for which public debt includes the debt of the central bank, which increases recorded public sector gross debt.

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

(Percent of GDP, except where otherwise indicated)

	Pension Spending Change, 2015–30[1]	Net Present Value of Pension Spending Change, 2015–50[1,2]	Health Care Spending Change, 2015–30	Net Present Value of Health Care Spending Change, 2015–50[2]	Average Term to Maturity, 2018 (years)[3]	Debt-to-Average Maturity, 2018	Projected Interest Rate–Growth Differential, 2018–23 (percent)	Precrisis Overall Balance, 2000–07	Projected Overall Balance, 2018–23	Nonresident Holding of General Government Debt, 2017 (percent of total)[4]
Bangladesh	0.3	13.1	0.1	3.5	4.8	6.9	–6.2	–2.8	–4.4	39.8
Benin	0.1	3.4	0.2	9.7	3.5	16.3	–3.7	–2.3	–1.3	. . .
Burkina Faso	0.0	3.2	0.4	17.6	2.3	17.9	–4.0	–1.8	–3.4	65.7
Cambodia	0.1	3.0	0.3	10.8	. . .	. . .	–8.0	–3.2	–4.5	. . .
Cameroon	0.0	0.6	0.1	6.0	6.4	5.7	–3.3	5.3	–1.7	. . .
Chad	0.0	–0.1	0.2	7.9	. . .	. . .	–4.2	–2.4	1.7	. . .
Congo, Democratic Republic of the	0.0	0.2	0.3	11.2	. . .	. . .	–7.4	–0.7	–1.8	. . .
Congo, Republic of	0.1	6.0	0.3	10.8	. . .	. . .	0.8	4.8	7.4	. . .
Côte d'Ivoire	0.0	2.4	. . .	. . .	. . .	. . .	–4.0	–1.0	–3.1	. . .
Ethiopia	0.0	0.9	0.2	9.3	. . .	. . .	–13.8	–4.8	–3.0	. . .
Ghana	0.1	3.5	0.5	19.0	3.8	18.6	–2.9	–4.6	–4.4	. . .
Guinea	0.0	0.3	0.3	10.7	. . .	. . .	–9.9	–2.5	–1.7	. . .
Haiti	. . .	. . .	0.2	6.5	. . .	. . .	–8.5	–1.9	–1.7	. . .
Honduras	0.3	8.8	0.7	26.5	3.4	11.6	–1.3	–2.0	–0.3	. . .
Kenya	0.2	9.6	0.3	11.7	4.5	12.5	–3.9	–1.4	–5.9	. . .
Kyrgyz Republic	5.2	148.3	0.6	23.6	. . .	. . .	–5.0	–4.8	–4.5	96.1
Lao P.D.R.	0.1	2.6	0.3	10.2	. . .	. . .	–6.5	–3.6	–4.6	. . .
Madagascar	0.3	12.3	0.4	17.3	. . .	. . .	–7.9	–3.4	–4.3	77.1
Mali	–0.2	–2.6	0.2	9.0	2.4	15.4	–4.1	1.3	–3.0	. . .
Moldova	3.7	115.3	0.9	34.4	8.3	3.9	–5.5	–0.3	–3.5	57.2
Mozambique	–0.1	0.1	0.4	17.3	3.3	33.8	–6.7	–3.3	–9.7	. . .
Myanmar	0.3	11.7	. . .	. . .	. . .	. . .	–4.8	–4.1	–3.8	. . .
Nepal	0.1	4.9	0.3	10.9	. . .	. . .	–7.1	–1.0	–3.6	. . .
Nicaragua	1.0	47.6	0.9	36.3	1.3	28.6	–4.7	–1.3	–4.4	85.4
Niger	0.0	–0.4	0.3	13.2	. . .	. . .	–5.0	2.6	–3.8	. . .
Nigeria	0.0	0.2	0.1	4.3	4.6	5.4	–6.0	2.3	–4.3	. . .
Papua New Guinea	0.0	0.7	0.5	18.1	. . .	. . .	0.2	1.8	–1.7	31.0
Rwanda	0.1	2.7	0.8	32.0	. . .	. . .	–9.0	–0.5	–1.3	. . .
Senegal	0.0	4.6	0.3	10.2	1.5	33.0	–3.9	–0.9	–3.1	. . .
Somalia	. . .	. . .	. . .	. . .	. . .	. . .	0.0	. . .	. . .	. . .
Sudan	0.0	1.2	0.3	12.6	. . .	. . .	–34.4	–0.9	–5.2	. . .
Tajikistan	0.5	17.1	0.3	13.6	. . .	. . .	–6.2	–2.8	–3.9	. . .
Tanzania	0.0	4.0	0.4	16.9	3.6	10.5	–5.3	–1.8	–2.8	. . .
Timor-Leste	. . .	. . .	. . .	. . .	. . .	. . .	–9.8	–2.3	–29.9	. . .
Uganda	0.0	1.0	0.3	12.6	3.3	13.0	–4.6	–1.0	–3.3	67.2
Uzbekistan	4.0	132.9	0.6	23.0	. . .	. . .	–15.5	–3.0	–2.4	. . .
Vietnam	2.5	93.6	0.5	18.5	6.2	9.4	–6.3	–1.7	–4.7	. . .
Yemen	0.0	1.3	0.1	6.0	. . .	. . .	–13.9	–0.7	–3.3	. . .
Zambia	1.8	58.6	0.4	15.4	4.8	14.8	–3.3	–0.4	–10.4	. . .
Zimbabwe	. . .	. . .	. . .	. . .	. . .	. . .	–7.4	. . .	–7.1	. . .
Average	0.6	22.6	0.3	10.6	1.1	2.9	–6.7	–0.2	–4.1	0.0

Sources: Bloomberg 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 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 2017 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 2017 gross general government debt.

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IMF EXECUTIVE BOARD DISCUSSION OF THE OUTLOOK, OCTOBER 2018

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 September 20, 2018.*

Executive Directors broadly shared the assessment of global economic prospects and risks. They observed that the global expansion, while remaining strong, has lost some momentum and growth may have plateaued in some major economies. Prospects increasingly diverge among countries, reflecting differences in policy stances and the combined impact of tighter financial conditions, rising trade barriers, higher oil prices, and increased geopolitical tensions. Beyond 2019, growth in most advanced economies is expected to be held back by slow labor force growth and weak labor productivity. In emerging market and developing economies, growth is projected to remain relatively robust, although income convergence toward advanced economy levels would likely be less favorable for countries undergoing substantial fiscal adjustment, economic transformation, or conflicts.

Directors generally agreed that near-term risks to the global outlook have recently shifted to the downside and some have partially materialized. Trade barriers have risen, with adverse consequences for investment and growth. Financial conditions in most emerging market and developing countries have tightened since mid-April. Capital flows to some of these countries have declined, reflecting weak fundamentals, higher political risks, and/or U.S. monetary policy normalization. While financial conditions in advanced economies remain broadly accommodative, an inflation surprise could lead to an abrupt tightening of monetary policy and to an intensification of market pressures across a broader range of countries. In addition, most Directors saw as key risks a further escalation of trade tensions, a rise in political and policy uncertainties, and growing inequality. Meanwhile, high debt levels limit the room for maneuver in many countries.

Most Directors considered that the recent intensification of trade tensions and the potential for further escalation pose a substantial risk to global growth and welfare. They noted that unilateral trade actions and retaliatory measures could disrupt global supply chains, weaken investor confidence, and undermine broader multilateral cooperation at a time when it is urgently needed to address shared challenges. They therefore urged all countries to adopt a cooperative approach to promote growth in goods and services trade, reduce trade costs, resolve disagreements without raising tariff and nontariff barriers, and modernize the rules-based multilateral trading system. The possibility of an outcome in which trade issues could be resolved in a positive way was also pointed out. Directors noted that persistent large external imbalances continue to call for sustained efforts, mindful of countries' cyclical positions, to increase domestic growth potential in surplus countries and to raise supply or rein in demand in deficit countries.

Given a narrowing window of opportunity, Directors underscored the urgency of policy measures to sustain the expansion, strengthen resilience, and raise medium-term growth prospects. They encouraged countries to rebuild fiscal buffers where needed, and implement growth-friendly measures calibrated to avoid procyclicality and the risk of sharp drags on activity. Directors agreed that, where inflation is below target, continued monetary accommodation remains appropriate. Where inflation is close to or above target, monetary support should be withdrawn in a gradual, data-dependent, and well-communicated manner. Directors emphasized the critical role of structural reforms in boosting potential output, ensuring that gains are widely shared, and improving safety nets—including to protect those vulnerable to structural change.

Most Directors shared the assessment that near-term risks to financial stability have increased while medium-term risks remain elevated. They highlighted, in particular, the buildup of financial vulnerabilities over the past few years of very accommodative financial conditions, including high and rising public and corporate debt,

and stretched asset valuations in some major markets. Addressing these vulnerabilities remains an important priority for many countries. For some countries, priorities include cleaning up bank balance sheets, improving corporate governance, and addressing risks from the sovereign-bank nexus, although a number of Directors felt that regulatory issues pertaining to sovereign exposures would best be left to the remit of the Basel Committee on Banking Supervision, which is the standard-setting body on the matter for a number of member countries. Directors also stressed the importance of completing and fully implementing the regulatory reform agenda, and of avoiding a rollback of reforms that have contributed to a more resilient financial system ten years after the global financial crisis.

Directors agreed that financial regulators and supervisors should remain vigilant about potential threats to financial stability and stand ready to act. They called for special attention to liquidity conditions and new risks, including those related to cybersecurity, financial technology, and other institutions or activities outside the perimeter of prudential regulation. These require policymakers to further develop policy tools, including macroprudential policies, and deploy them proactively as needed, as well as enhance coordination across borders.

Directors stressed that, as monetary policy normalization proceeds in advanced economies, emerging market and developing economies need to prepare for an environment of tighter financial conditions and higher volatility. Countries need to tackle their vulnerabilities and enhance resilience with an appropriate mix of fiscal, monetary, exchange rate, and prudential policies. In certain circumstances, capital flow management measures may be appropriate but not as a substitute for macroeconomic adjustment. Directors observed that markets have so far differentiated among emerging market and developing economies based on their fundamentals and idiosyncratic factors. In this context, they underlined the importance of maintaining credible policy and institutional frameworks, strengthening governance, and improving human and physical capital. Directors noted that the current environment highlights the need for the Fund to offer granular, tailored policy advice and stand ready to provide financial support to its members as needed.

Directors underscored that priorities for low-income developing countries include building resilience, lifting potential growth, improving inclusiveness, and making progress toward the 2030 Sustainable Development Goals, while commodity exporters should also prioritize economic diversification. Stronger efforts are needed to create room for development expenditure, through broadening the tax base, improving revenue administration, and prioritizing spending on health, education, and infrastructure, while cutting wasteful subsidies. Directors also called for urgent action to contain debt vulnerabilities, which are rising in many countries. They stressed that both debtors and creditors share a responsibility for ensuring sustainable financing practices and enhancing debt transparency.

Directors agreed that public sector balance sheet analysis provides a useful tool to analyze public finances. By revealing the full scale of public assets in addition to debt and nondebt liabilities, it helps governments identify risks and manage both assets and liabilities, potentially reducing borrowing costs and raising returns on assets. Directors noted that the long-term intertemporal analysis is particularly relevant in aging societies. They also saw the benefits of the added transparency in enriching the policy debate. At the same time, Directors acknowledged that the balance sheet approach still has limitations, notably data quality and differences in accounting practices hindering cross-country comparisons, and thus it should be used with caveats to complement traditional fiscal analysis.

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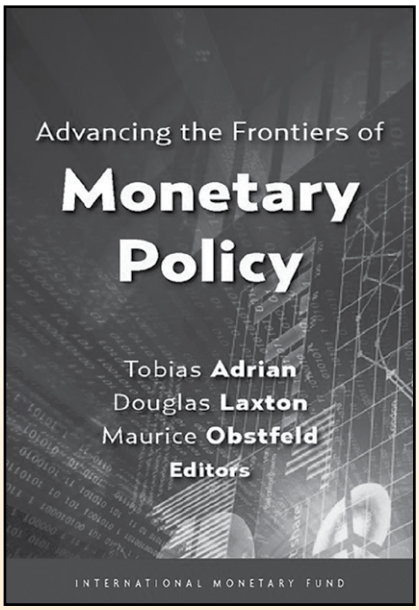

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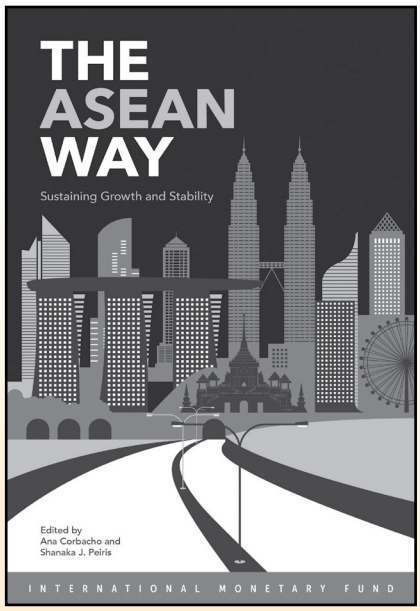

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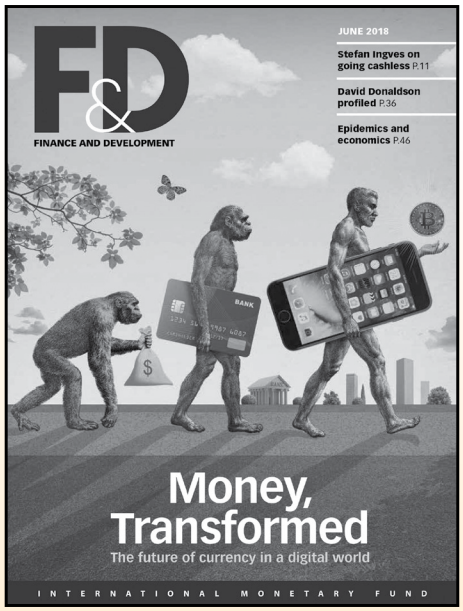

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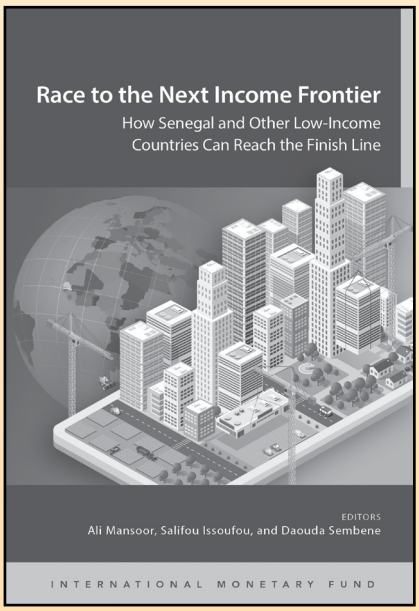

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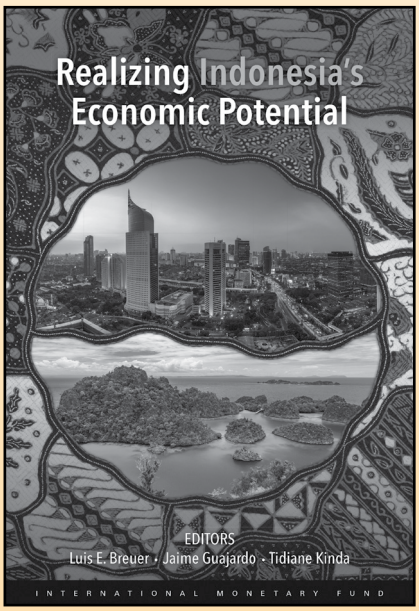

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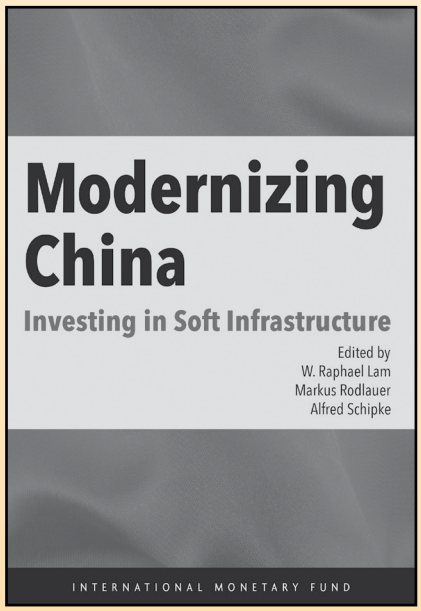

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