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Tackling Inequality

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ASSUMPTIONS AND CONVENTIONS

The following symbols have been used throughout this publication:

. . . to indicate that data are not available

— to indicate that the figure is zero or less than half the final digit shown, or that the item does not exist

– between years or months (for example, 2008–09 or January–June) to indicate the years or months covered, including the beginning and ending years or months

/ between years (for example, 2008/09) to indicate a fiscal or financial year

"Billion" means a thousand million; "trillion" means a thousand billion.

"Basis points" refers to hundredths of 1 percentage point (for example, 25 basis points are equivalent to ¼ of 1 percentage point).

"n.a." means "not applicable."

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

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

Further Information and Data

This version of the *Fiscal Monitor* is available in full through the IMF eLibrary (www.elibrary.imf.org) and the IMF website (www.imf.org).

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, but it cannot be guaranteed. When errors are discovered, there is a concerted effort to correct them as appropriate and feasible. Corrections and revisions made after publication are incorporated into the electronic editions available from the IMF eLibrary (www.elibrary.imf.org) and on the IMF website (www.imf.org). All substantive changes are listed in detail 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 2017 *World Economic Outlook* and *Global Financial Stability Report* (and are referred to as "IMF staff projections"). Fiscal projections refer to the general government unless otherwise indicated. Short-term projections are based on officially announced budgets, adjusted for differences between the national authorities and the IMF staff regarding macroeconomic assumptions. The medium-term fiscal projections incorporate policy measures that are judged by the IMF staff as likely to be implemented. For countries supported by an IMF arrangement, the medium-term projections are those under the arrangement. In cases in which the IMF staff has insufficient information to assess the authorities' budget intentions and prospects for policy implementation, an unchanged cyclically adjusted primary balance is assumed, unless indicated otherwise. Details on the composition of the groups, as well as country-specific assumptions, can be found in the Methodological and Statistical Appendix.

The *Fiscal Monitor* is prepared by the IMF Fiscal Affairs Department under the general guidance of Vitor Gaspar, Director of the Department. The project was directed by Abdelhak Senhadji, Deputy Director; Catherine Pattillo, Assistant Director; and David Coady, Division Chief. The main authors of this issue are Mercedes Garcia-Escribano (team leader), Brooks Evans, Xiangming Fang, Maura Francese, Claudia Gerber, Emine Hanedar, João Jalles, Hui Jin, Emmanouil Kitsios, Alexander Klemm, Li Liu, Sandra Lizarazo Ruiz, Victor Mylonas, Adrian Peralta Alva, Delphine Prady, Baoping Shang, and Sébastien E. J. Walker. The chapter also benefited from contributions by Tomas Hellebrandt, Lisa Kolovich, Paolo Mauro, Monique Newiak, Tigran Poghosyan, and Philippe Wingender. Excellent research assistance was provided by Kyungla Chae, Mark Albertson, Devin D'Angelo, Saida Khamidova, Young Kim, and Candice Liu. The Methodological and Statistical Appendix was prepared by Young Kim. Nadia Malikyar and Erin Yiu provided excellent coordination and editorial support. Michael Harrup from the Communications Department led the editorial team and managed the report's production, with production assistance from Houda Berrada and editorial assistance from Sherrie Brown, Susan Graham, Nancy Morrison, and Vector Talent Resources.

The analysis benefited from comments and suggestions by staff members in other IMF departments, as well as by Executive Directors following their discussion of the report on September 21, 2017. The *Fiscal Monitor* also benefited from comments by Martin Ravallion (Georgetown University), Andrea Guedes, Gabriela Inchauste, Igor Kheyfets, Aart Kraay, Christoph Kurowski, and Christoph Lakner (all World Bank). 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

Rising inequality and slow economic growth in many countries have focused attention on policies to support inclusive growth. While some inequality is inevitable in a market-based economic system, excessive inequality can erode social cohesion, lead to political polarization, and ultimately lower economic growth. This *Fiscal Monitor* discusses how fiscal policies can help achieve redistributive objectives. It focuses on three salient policy debates: tax rates at the top of the income distribution, the introduction of a universal basic income, and the role of public spending on education and health.

Inequality, Growth, and Fiscal Redistribution

Global inequality—measured across all citizens of the world by abstracting from national borders—has been declining in recent decades, reflecting strong income growth in some large emerging market economies such as China and India. However, the picture of inequality within countries is mixed: while income inequality has increased in most advanced economies, trends in other economic groups have been more varied. In fact, inequality has declined in almost half the countries for which data are available. The forces underlying rising inequality also vary across time and regions. A key source has been technological change favoring higher skills.

Economic growth is fundamental. In many countries, growth has ensured that increases in inequality are compatible with improving living standards for households across all deciles of the income distribution, although there are significant differences across countries regarding the extent to which growth has been inclusive. This diversity of experiences and empirical analysis suggest that there is no systematic adverse trade-off between increasing growth and decreasing inequality.

A substantial share of the differences in inequality across economic groups and over time can be attributed to differences in redistributive fiscal policies. In advanced economies, direct taxes and transfers reduce income inequality on average by about one-third, with three-quarters of this reduction achieved through transfers. In developing economies, fiscal redistribution is much more limited, reflecting lower and less progressive taxation and spending and greater reliance on regressive indirect taxes.

Progressivity of Income Taxes and Transfers

Progressive taxation and transfers are key components of efficient fiscal redistribution. At the top of the income distribution, marginal income tax rates that increase with income levels can achieve greater progressivity. While various instruments can enhance progressivity at the bottom of the income distribution, this *Fiscal Monitor* focuses on the universal basic income (UBI)—an identical transfer to the entire population—a proposal that has been widely debated recently and is being tested in several countries. Overall, the appropriate combination of progressive tax and transfer instruments should reflect country-specific circumstances, including administrative capacity, the performance of the existing safety net, underlying fiscal pressures, and social preferences.

Progressivity at the Top . . .

How steeply should marginal (and average) tax rates increase with income? Optimal tax theory suggests significantly higher marginal tax rates on top income earners than current rates, which have been on a declining trend. Could declining progressivity be a response to concerns about potential negative effects of progressivity on growth? Empirical results do not support this argument, at least for levels of progressivity that are not excessive. Advanced economies with relatively low levels of progressivity in their personal income tax (PIT) may therefore have scope for raising the top marginal tax rates without hampering economic growth. Different types of wealth taxes can also be considered. Emerging markets and low-income developing countries should focus on gradually expanding the coverage of the PIT and raising indirect taxes—including excise taxes on luxury goods and consumption items that generate negative externalities, such as fossil-fuel-based energy, alcohol, and tobacco—to generate funding for progressive spending.

How should capital income (including profits, interest, and capital gains) be taxed? Capital income is distributed more unequally than labor income, its share in total income has risen over recent decades, and it is often taxed at a lower (and declining) rate than labor income. Adequate taxation of capital income is needed to protect the overall progressivity of the income tax system by reducing incentives to reclassify labor income as capital income and through a more uniform treatment of different types of capital income. Many countries should emphasize reducing opportunities for tax evasion and avoidance. Taxes on real estate or land are both equitable and efficient and remain underused, but may require a sizable investment in administrative infrastructure, particularly in low-income developing countries.

. . . and at the Bottom

The UBI has received growing attention in academic, policy, and public discourse, and several countries are experimenting with different forms. While some countries already have some components of a UBI in place (such as universal child benefits and social pensions), no country has yet adopted a UBI that covers its entire population. Proponents argue that a UBI can address poverty and inequality more effectively than means-tested programs in the presence of information constraints, high administrative costs, and other obstacles (including social stigma) that limit the take-up of benefits. Others see a UBI as an instrument for addressing greater income decline and uncertainty generated by the impact of changing technology (particularly automation) on jobs. It is also advocated as a way to build support for structural reforms. Opponents highlight that universality implies an unnecessary leakage of benefits to higher-income groups. The associated high fiscal cost raises concerns about the program's affordability and the risk of crowding out other high-priority spending that promotes inclusive growth. UBI opponents also find problematic the delinking of income from labor force participation.

Is there a case for the adoption of a UBI? Under what circumstances could it be desirable, and how should it be financed? Or should governments focus on strengthening their capacity to use means-tested transfers? Whether a UBI is a good substitute for an existing social benefit system will depend on that system's performance as well as on the government's administrative capacity and prospects for enhancing targeting.

In developing economies, where it is more likely for the current benefit system to be very sparse and coverage of lower-income groups might be very low, the adoption of a UBI may be an option for governments wishing to strengthen their safety nets in the short term. However, to be effective and preserve fiscal sustainability, such an expansion would need to be financed through efficient and equitable increases in taxes or cuts in spending, such as eliminating universal price subsidies or broadening the consumption tax base, including through taxes on consumption with negative externalities. Capacity constraints for mobilizing revenues may be an important factor that weighs on developing a universal safety net.

At the other end of the spectrum, for systems with generous benefits, broad coverage, and high progressivity, replacement of the existing system with a UBI would result in substantial decreases in benefits for many lower-income households—a likely scenario in advanced economies. It is therefore preferable to focus efforts on further strengthening existing systems through directly addressing any remaining coverage gaps in social safety nets due to eligibility rules or incomplete take-up and well-designed wage subsidies for low-income workers to provide incentives for work. The adoption of a UBI in such circumstances would therefore have to be motivated by other considerations, such as enhancing income insurance in the context of rising job insecurity due to rapid technological change and automation or building public and political support for structural reforms, such as eliminating food or energy subsidies and broadening the consumption tax base.

The fiscal cost of a UBI will depend on the level at which it is set. To illustrate, if it were set at 25 percent of median per capita income, the fiscal cost would be about 6–7 percent of GDP in advanced economies and 3–4 percent in emerging markets and developing economies. The impact on inequality, before financing, would be substantial in all countries, with one measure of inequality, the Gini coefficient, decreasing on average by five points. The reduction in poverty in emerging markets and developing economies would also be significant. The net redistributive impact of a UBI will, however, depend on how it is financed. This *Fiscal Monitor* analyzes a UBI with illustrative country cases, using microsimulation methods and a general equilibrium model to

account for behavioral responses, financing, and the trade-off between equity and efficiency.

Addressing Inequalities in Education and Health

Investments in education and health can help reduce income inequality over the medium term, address the persistence of poverty across generations, enhance social mobility, and ultimately promote sustained inclusive growth. Yet many countries still have sizable gaps in education and health services. Closing these gaps will also help address inequalities in other dimensions, such as gender and regional disparities.

Despite progress in education, sizable enrollment gaps between socioeconomic groups remain in almost the entire developing world. Globally, even when students from socioeconomically disadvantaged families are enrolled in education systems, they have substantially poorer actual learning outcomes than those from more affluent backgrounds, reflecting low-quality education.

Disparities in health outcomes are not narrowing in many countries. In advanced economies, the gap in life expectancy between males with tertiary education and those with secondary education or less ranges from about four to fourteen years and has even widened in some countries. The ratio of the infant mortality rate in the top socioeconomic quintile to that in the bottom quintile has increased in about half of emerging markets and developing countries, mostly reflecting slower improvements among the disadvantaged. While progress in health coverage has contributed to improvements in health outcomes, significant gaps remain in some emerging market economies and many low-income countries. Increasingly, health outcomes are determined by factors other than health care, including nutrition, education, and healthy behaviors, particularly in advanced economies.

Addressing remaining inequalities will require better targeting of public spending to disadvantaged groups to improve access to quality education and health care. This would also enhance overall efficiency.

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CHAPTER 1

TACKLING INEQUALITY

Introduction

Depending on whether income inequality is assessed across or within countries, the picture that emerges can be starkly different. If inequality is examined at the global level, that is, abstracting from national boundaries, inequality has declined substantially over the past three decades. This decline reflects income convergence between developing and advanced economies aided by globalization and technological advancement. Income inequality within national boundaries, however, presents a mixed picture: some countries have experienced a reduction in inequality while others, particularly advanced economies, have seen a significant uptick in inequality. Although increased global integration and technological progress are widely recognized as having generated widespread economic growth and falling global inequality and poverty, the rising inequality in advanced economies, in conjunction with job insecurity and stagnating real incomes for a segment of the population, has led to growing public backlash against globalization.

While some inequality is inevitable in a market-based economic system as a result of differences in talent, effort, and luck,[1] excessive inequality could erode social cohesion, lead to political polarization, and ultimately lower economic growth (Berg and Ostry 2011; Rodrik 1999). But when is inequality excessive? There is no easy answer, but it will depend on several country-specific factors, including the growth context in which inequality arises, along with societal preferences. To the extent that inequality is deemed excessive, how can it be reduced? A multipronged approach based on the sources of inequality will be needed—including fiscal policy and labor and financial market reforms (OECD 2015; Fabrizio and others 2017). This *Fiscal Monitor* focuses on how fiscal policy can help governments address high inequality while minimizing potential trade-offs between efficiency and equity. The primary focus is on *income inequality,* data for which are available for a large sample of countries and relatively long periods, but other measures, such as wealth inequality, inequality of opportunity, and gender inequality, are also discussed. All these measures tend to be highly correlated.

Fiscal policy can help enhance redistribution by reducing both disposable (post-tax-and-transfer) and market (pre-tax-and-transfer) income inequalities. Taxes and income-related transfers affect disposable income inequality, whereas in-kind transfers such as health and education spending influence the inequality of market incomes. Fiscal policy can be a powerful redistributive instrument. Consider the difference in inequality in disposable income between Latin America and the Caribbean (the region with the highest average income inequality in the world) and in advanced economies (which have the lowest). More than three-quarters of the difference can be explained by the greater extent of fiscal redistribution in advanced economies (Bastagli, Coady, and Gupta 2015).

This *Fiscal Monitor* starts with a section that documents recent trends in income inequality, including inequality both between and within countries. Next, it examines the redistributive role of fiscal policies over recent decades and underscores the importance of appropriate design to minimize any efficiency costs. In particular, the public finance literature emphasizes the importance of simultaneously considering both taxes and transfers when designing redistributive fiscal policies.

While other research has provided a broad overview of the redistributive role of fiscal policy (IMF 2014; Clements and others 2015), the third and fourth sections focus on the following key components of fiscal redistribution that are currently widely debated: (1) progressivity of income taxation, (2) universal basic income (UBI), and (3) public spending policies for achieving more equitable education and health outcomes. Progressive income taxation and education and health spending are two of the most important fiscal policy tools for addressing disposable and market income inequality, and the UBI is a forward-looking idea for addressing current tax and transfer system

[1] *Luck* is associated with various factors, including socioeconomic background and the uncertainties inherent in a market-based economic system.

weaknesses, and is particularly attuned to how labor markets and social contracts may continue to evolve with technological change. These sections address the following questions:

- *How has income tax progressivity evolved, and can it be increased without adversely affecting growth?* Should marginal income tax rates be increased for high-income individuals or has increased mobility of capital and high-income individuals undermined the case for such policies? Is a wealth tax a good alternative?
- *Is there a case for the adoption of a UBI?* Under what circumstances could a UBI be desirable, and how could it be financed? *Or should governments focus on strengthening their capacity to use means-tested transfers?*
- *Why is expanding access to quality education and health services important for addressing income inequality?* What policies can governments adopt for closing health and education gaps?

The analysis relies on the existing theoretical and empirical literature, IMF work on inequality and fiscal policy, country experiences, and new analytical work, including various static microsimulation analyses based on household survey data. Given the importance of an integrated approach to tax and transfer policies when designing efficient redistributive fiscal policies, this *Fiscal Monitor* also draws on the results of fiscal policy simulations using a dynamic general equilibrium model calibrated to country-specific data and behavioral parameters. These simulations illustrate the potential impact of alternative budget-neutral tax and transfer measures on income inequality and economic growth.

Inequality and Fiscal Redistribution

Income Inequality and Growth

Inequality can be viewed from different perspectives, all of which are related. *Inequality of income*—which is the most standard metric—measures the distribution of income at a moment in time. It is typically measured by the Gini coefficient—which takes values between 0 and 1, with 0 representing perfect equality—and by income shares of certain segments of the population. Most of the analysis is centered on the concept of income inequality as captured by the Gini coefficient, which is available for a large number of countries and relatively long periods. Unless specified otherwise, Gini income inequality refers to disposable income or consumption and thus already reflects any redistribution through taxes and transfers. Annex 1.1 provides a short description of the Gini data set compiled from various data sources. Other measures of inequality—some of which are used in this chapter as well—include *lifetime inequality* (inequality in incomes for an individual over his or her lifetime), *inequality of wealth* (distribution of wealth across households or individuals at a moment in time), and *inequality of opportunity* (impact on income of circumstances over which individuals have no control, such as family socioeconomic status, gender, or ethnic background). All of these inequality concepts are related and offer different yet complementary insights into the causes and consequences of inequality, hence providing better guidance to governments when designing specific policies aimed at addressing inequality.

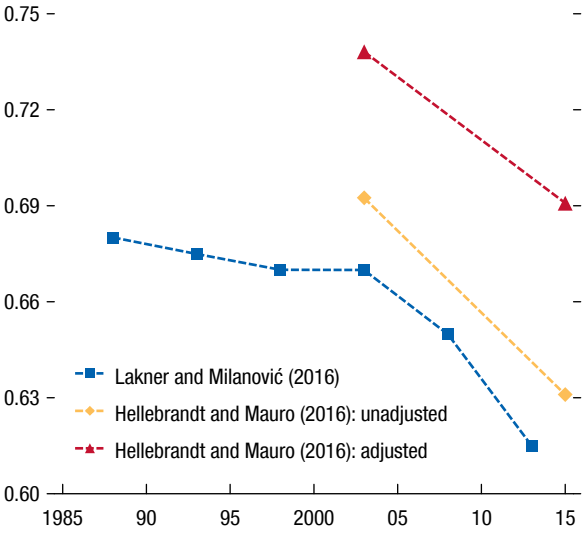
This section focuses primarily on income inequality; wealth inequality, inequality of opportunity, and gender inequality are analyzed in Annex 1.2. It starts by documenting the main trends in global inequality, distinguishing between inequality across countries (*between*-country inequality) and inequality *within* countries. It then briefly reviews the main determinants of the observed changes in within-country inequality. Next, it discusses the importance of considering the growth context in which inequality changes have taken place.

Inequality Trends and Drivers

In 2015, global inequality—which refers to the distribution of income over the entire population of the globe by abstracting from country borders (Milanović 2016)—ranged from 0.63 to 0.69 (Figure 1.1). Decomposing global inequality into its between- and within-country components, Lakner and Milanović (2016) show that differences in per capita income between countries accounted for about 65 percent of global inequality in 2013 (Figure 1.2).

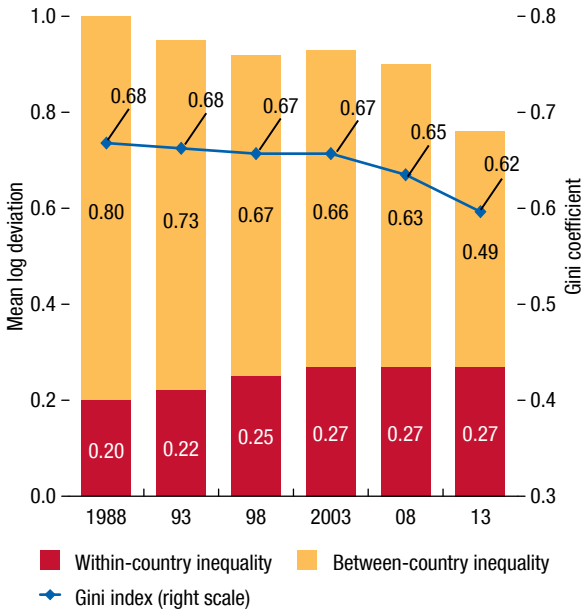
During the nineteenth and most of the twentieth centuries, global inequality increased dramatically, reflecting widening disparities between countries' per capita income as advanced economies took off sharply compared with the rest of the world. The declining trend in global inequality observed over the past three decades sharply contrasts with the preceding long-term secular rise. Several emerging market economies, including the two most populous

Figure 1.1. Global Income Inequality: Gini Coefficient, 1988–2015



Sources: Hellebrandt and Mauro 2016; Lakner and Milanović 2016; and World Bank 2016.
Note: "Adjusted" refers to adjustment carried out by Hellebrandt and Mauro (2016), which increases self-employment income and income from top earners to reconcile differences between income and consumption data from household surveys and mean values from national accounts.

Figure 1.2. Decomposition of Global Income Inequality, 1988–2013



Sources: Lakner and Milanović 2016; Milanović 2016; and World Bank 2016.
Note: Bar height indicates level of global inequality as measured by mean log deviation. Red bars show corresponding level of population-weighted inequality within countries; yellow bars show level of between-country inequality, which captures differences in average income across countries.

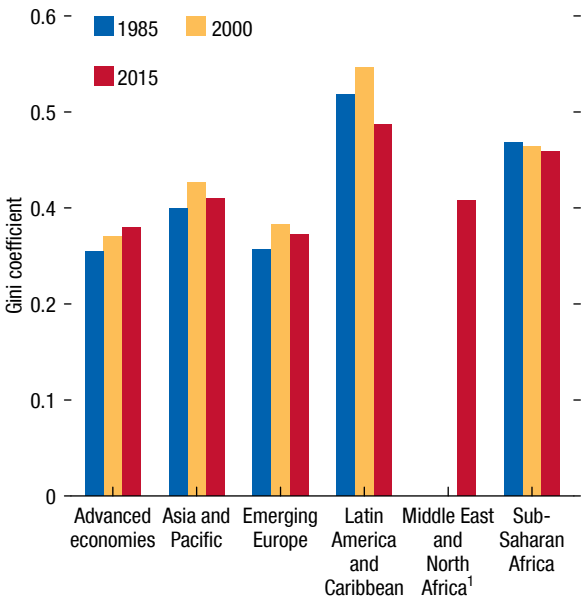
countries—China and India—have moved up along the global income distribution, contributing substantially to income convergence across countries (Bourguignon 2015). Meanwhile, inequality within many countries has risen, slightly offsetting the large decline in between-country inequality. Looking forward, as Box 1.1 shows, the downward trend in global inequality will likely continue. Given that global inequality has significantly declined and is likely to continue to decline, *increasing inequality* in the remainder of the chapter refers to increasing inequality within some countries.

The global picture, however, masks wide heterogeneities across countries and regions (Figure 1.3). Over the past three decades, 53 percent of countries have seen an increase in income inequality, with some countries recording an increase in their Gini coefficients exceeding two points.[2] Most advanced economies have experienced a sizable increase in income inequality (Figure 1.4), driven primarily by the growing income of the top 1 percent. Emerging market and developing economies exhibit large disparities in recent inequality trends (World Bank 2016). For instance, Eastern Europe and Central Asia experienced an increase in inequality during the postcommunist transition years and a decline afterward. Similarly, average inequality in Latin America increased during the 1980s and 1990s before declining sharply as a result of shared economic progress and a stable macroeconomic environment. Notwithstanding the recent decline, countries in Latin America remain among the most unequal in the world. Inequality in other regions, including sub-Saharan Africa, has also declined, on average, although the evolution of inequality has been more diverse.

Not only do income inequality trends vary greatly, both over time and across regions, but so do the underlying forces governing those trends. A large number of global and domestic factors—which may reinforce each other—have been proposed in the theo-

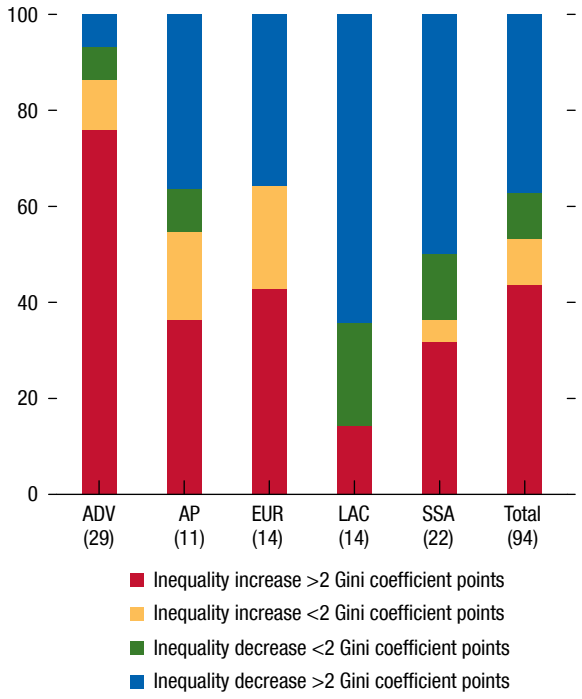
[2]Variations in the Gini coefficient are commonly expressed in terms of "points." Thus, an increase in the Gini coefficient of 0.02, for example, is phrased as an increase "of two points."

Figure 1.3. Average Income Inequality across Regions and over Time, 1985–2015



Source: IMF staff calculations.
Note: Figure shows population-weighted averages of country Gini coefficients for a balanced sample, by region.
[1]Middle East and North Africa includes Jordan, Egypt, Iran, Pakistan, Mauritania, Morocco, and Tunisia; data shown are 2005 for Morocco and 2010 for the remaining countries in this group.

Figure 1.4. Change in Inequality by Region, 1985–2015
(Percent of total number of countries in region)



Source: IMF staff calculations.
Note: Total number of countries represented in each bar is shown in parentheses. Absolute changes in Gini coefficient greater than 2 points are considered economically significant (see Atkinson 2015 for further discussion of economically significant changes). ADV = advanced economies; AP = Asia and Pacific; EUR = Europe; LAC = Latin America and the Caribbean; SSA = sub-Saharan Africa.

retical and empirical literature. The key forces include the following:

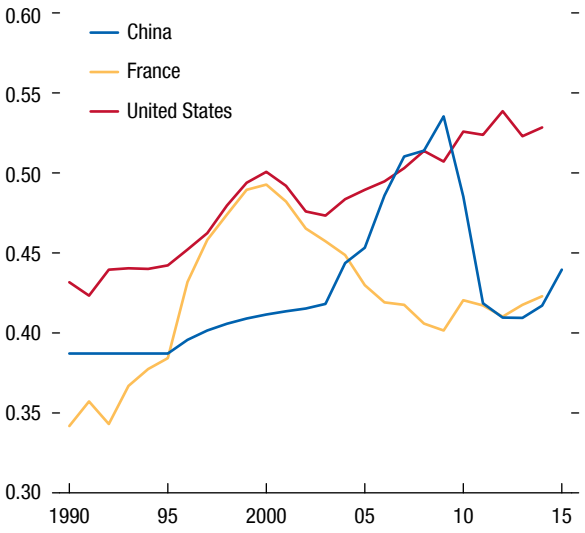
- *Global factors,* such as technological progress, globalization, and commodity price cycles, play an important role. For instance, technological advancement has contributed to the skill premium, because individuals with higher education have a comparative advantage in using new technologies (Card and DiNardo 2002). In Western Europe and the United States, technological progress has also translated into a hollowing out of middle-class jobs, a phenomenon known as job polarization (Goos and Manning 2007).
- *Country-specific factors,* such as those related to economic developments and economic stability as well as to domestic policies—including financial integration, redistributive fiscal policies, and liberalization and deregulation of labor and product markets—also play an important role in explaining inequality trends within countries. In advanced economies, incomes at the bottom and top experience important losses during recessions (Guvenen, Ozkan, and Song 2014). In the European Union, for example, the Great Recession negatively affected all income deciles, with a particularly strong incidence in the bottom decile—which experienced an income loss of 17 percent relative to its precrisis level. Political instability can also exacerbate within-country income disparities.[3]

Changes in income inequality are reflected in other inequality dimensions, such as wealth inequality. The upsurge of top incomes combined with high saving rates has resulted in growing wealth inequality (Annex 1.2).[4] Many countries, like the United States,

[3]Tcherneva (2015), looking at the US economy, provides a broader overview of the increasingly unequal distribution of income growth during expansions.

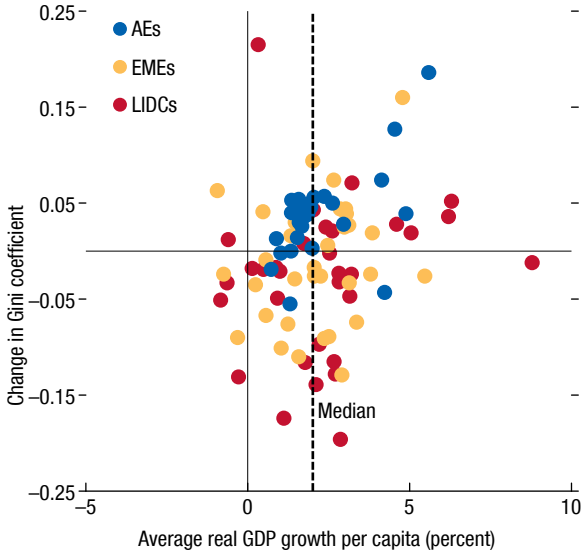
[4]The correlation between the high shares of income and wealth at the top of the income distribution reveals that the main fiscal redistributive policy for addressing wealth inequality is taxation.

Figure 1.5. Ratio of Share of Wealth Held by Top 1 Percent to Share Held by Top 10 Percent



Source: IMF staff calculations, using data from the World Wealth & Income Database.

Figure 1.6. Change in Gini Coefficient and GDP Growth, 1985–2015



Source: IMF staff calculations.
Note: Dashed line shows cross-country median average real GDP growth per capita over the period 1985–2015 for all countries considered. AEs = advanced economies; EMEs = emerging market economies; LIDCs = low-income developing countries.

have seen an increase in wealth inequality due to the rising concentration of wealth held by the top 1 percent of the population (Figure 1.5).

Growth, Inequality, and Social Welfare

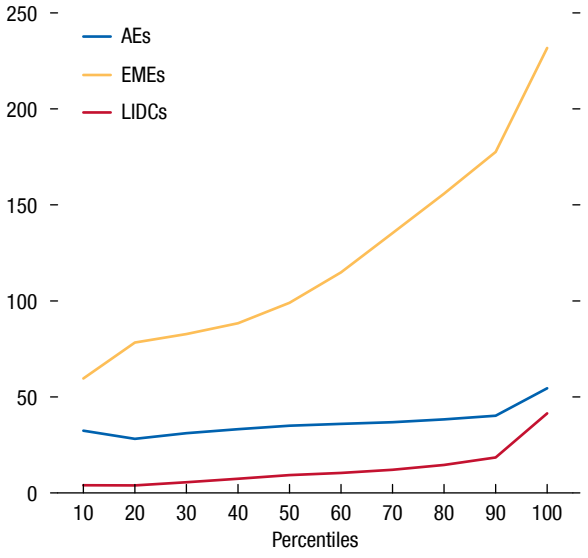
Changes in income distributions need to be considered within the economic growth context in which they take place. Many advanced economies experienced increases in inequality in a context of low growth over the period 1985–2015 (Figure 1.6). This contrasts with many emerging market and developing economies that experienced increases in inequality during periods of strong economic growth. In some countries, inequality declined as a result of widespread sharing of the benefits of economic growth.[5] A review of the income growth experienced by different percentiles of the population shows the extent to which growth has been inclusive and provides further insights into why the economic growth context matters. Although income growth has not been evenly shared in emerging market economies, all deciles of the income distribution have benefited from economic growth, even when inequality has increased (Figure 1.7). In advanced economies and low-income developing countries, however, economic growth has accrued mainly to the top.

To the extent that some policies may have conflicting effects on growth and distribution, how would these policies be ranked on the basis of these two objectives? Ranking them would require specifying a social welfare function that depends on both efficiency and equity. Box 1.2 presents Atkinson's monetary measure of welfare—the *equally distributed equivalent income*—and its relationship with mean income and income equality. In a first step, this welfare function is used to decompose variations in social welfare into contributions from growth and inequality. Later in the chapter, the welfare function is also used to rank various policies. Historically, changes in social welfare have been heavily influenced by changes in mean income, even with high aversion to inequality (see Figure 1.2.1). Dollar, Kleineberg, and Kraay (2015) document that economic growth has dominated the evolution of social welfare over the past four decades.

The importance of growth for the welfare of households, particularly those at the bottom of the income distribution, is evident when the role of growth in

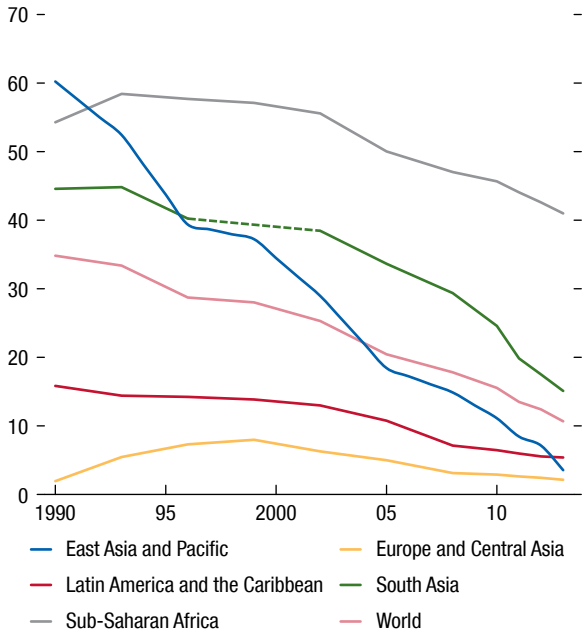
[5]Note that a reduction in inequality may lead to higher growth because the marginal propensity to consume among the poor is higher.

Figure 1.7. Growth of Real Income per Capita, by Income Percentile in the Population, 1988–2008
(Population-weighted average by country income group; percent)



Source: IMF staff calculations, using data from Lakner and Milanović (2016).
Note: 2005 US dollars at purchasing-power parity. AEs = advanced economies; EMEs = emerging market economies; LIDCs = low-income developing countries.

Figure 1.8. Regional and World Trends in Extreme Poverty Headcount, 1990–2013
(Percent of population)



Source: World Bank 2016.
Note: Extreme poverty is measured using a poverty line of 2011 US$1.90 a day at purchasing-power parity. Breaks in the trend line for South Asia arise because of the lack of good-quality data.

reducing poverty is examined.[6] Benefiting from high economic growth, East and South Asia and the Pacific region, in particular, showed remarkable success in reducing poverty between 1985 and 2015 (Figure 1.8). Likewise, a period of strong growth has led to a sustained decline in absolute poverty rates in sub-Saharan Africa and in Latin America and the Caribbean.

Given the importance of economic growth for social welfare, it is imperative that redistributive policies do not unduly undermine growth. Empirical evidence suggests that promoting growth and reducing inequality are not necessarily incompatible (Figure 1.6) (Dollar, Kleineberg, and Kraay 2015).[7] However, cross-country regression analysis fails to clearly identify specific policies that promote growth while reducing inequality, suggesting that the underlying forces at work are complex and cannot be easily captured by such analyses. Hence, an in-depth look at country case studies may be more fruitful for identifying useful policy lessons (Box 1.3 illustrates the case of Bolivia).

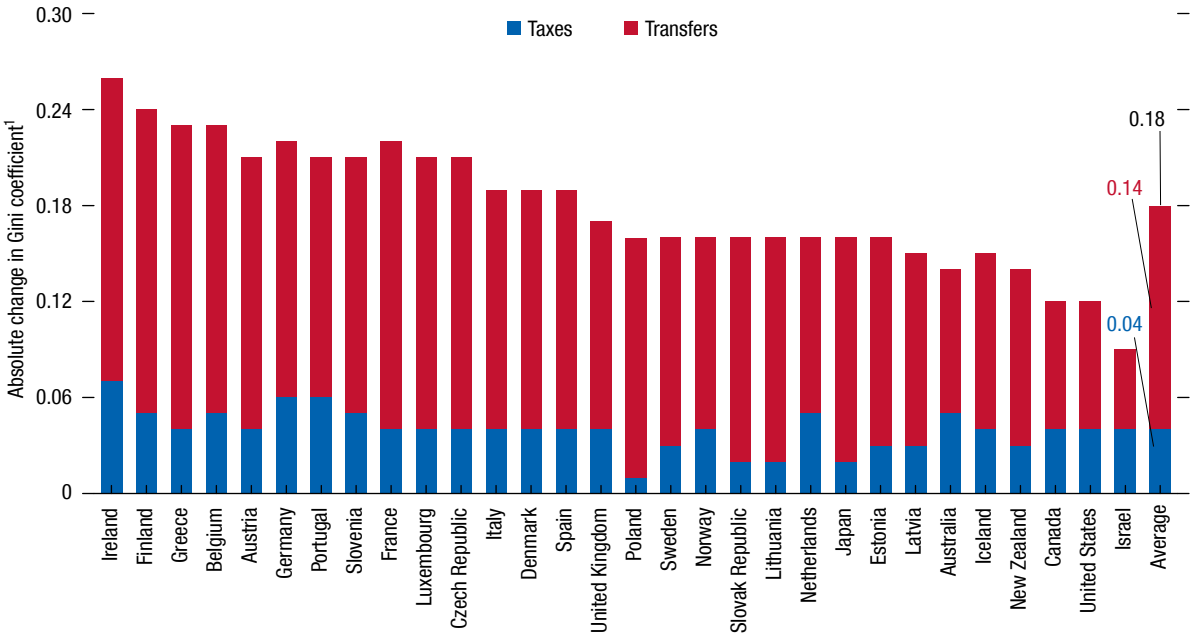
[6]See Ravallion 2001 and Kraay 2006 for a discussion.
[7]Some research finds that redistributive policies may slow growth (Alesina and Rodrik 1994; Rajan 2011).

Fiscal Redistribution

Fiscal policy can help reduce income inequality through various channels. First, progressive direct taxes and transfers can reduce disposable income inequality (that is, inequality of income after taxes and transfers) so that it is less than market income inequality (that is, inequality of income before taxes and transfers). Second, it can affect "real" disposable income inequality via consumption taxes. Third, through in-kind transfer spending (such as on education and health), it can reduce the inequality of "full income" (that is, disposable income adjusted for in-kind transfers). In-kind transfers such as those for education and health also affect market income inequality over time by changing the distribution of human capital, including across generations by promoting social mobility.

The extent of fiscal redistribution will depend on both the magnitude of taxes and transfers and their progressivity. The following discussion focuses first on advanced economies, where the magnitude of taxes and transfers, and thus the potential for fiscal redistribu-

Figure 1.9. Redistributive Impact of Taxes and Transfers in Advanced Economies, 2015 or Latest Year



Source: Organisation for Economic Co-operation and Development, Income Distribution Database.
[1]Calculated as Gini coefficient for market income minus Gini coefficient for disposable income.

tion, is relatively high. It then turns to emerging market and developing economies, where tax and spending levels are typically much lower.

Advanced Economies

In advanced economies, direct taxes and transfers reduce income inequality, on average, by about one-third. In 2015, the average Gini coefficient for disposable income in these economies was 0.31 compared with 0.49 for market income. Approximately three-quarters of this fiscal redistribution was achieved on the transfer side of the budget (Figure 1.9), with public pension benefits accounting for about half of this (Wang and Caminada 2011).

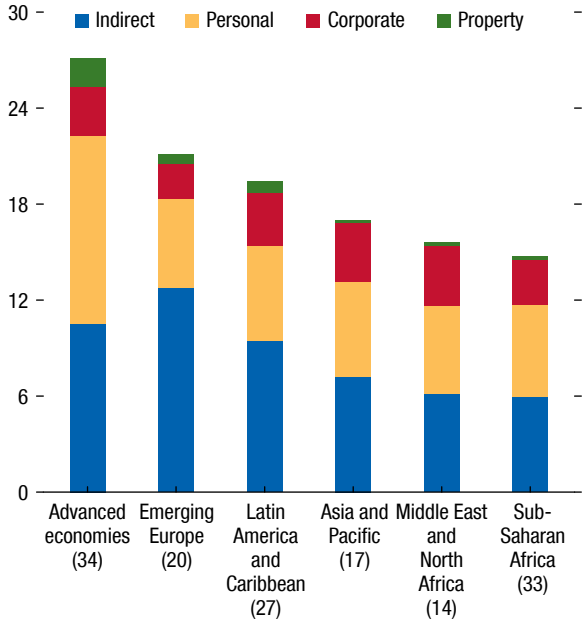
However, evidence suggests that the role of fiscal redistribution in offsetting increases in market income inequality has weakened somewhat in recent decades (Immervoll and Richardson 2011).[8] Between 1985 and 1995, rising fiscal redistribution was able to offset about 60 percent of the increase in market income inequality.[9] In contrast, average fiscal redistribution hardly changed between 1995 and 2010, while market income inequality continued to increase. As a result, average disposable income inequality increased broadly in line with market income inequality. The stability of average fiscal redistribution over this recent period is surprising since, in the absence of policy reforms, progressive tax and transfer systems should have automatically increased the magnitude of fiscal redistribution in response to the increased market income inequality. This suggests that tax and transfer policy reforms have, on net, decreased the progressivity of these redistributive instruments in some countries.[10] In a number of countries, fiscal redistribution—though it remains high, as shown in Figure 1.9—actually decreased over this more recent period despite rising market income inequality (such as in Denmark, Finland, and Sweden).

[8]In a model calibrated to the US economy, Hubmer, Krusell, and Smith (2016) find that the drop in tax progressivity has been the most important driver of rising wealth inequality.

[9]Fiscal redistribution increased over the period 1985–95 in all countries in a sample of Organisation for Economic Co-operation and Development member countries except the Netherlands. Most of the rise in fiscal redistribution reflected increases in progressive transfers (Immervoll and Richardson 2011).

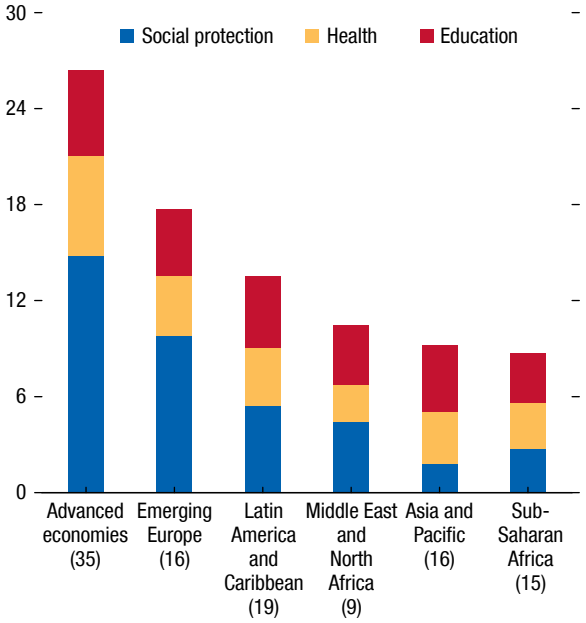
[10]The next section further discusses the decline in the progressivity of income tax systems.

Figure 1.10. Composition of Tax Revenues, by Region
(Percent of GDP)



Source: IMF staff calculations, using IMF Fiscal Affairs Department World Revenue Longitudinal Database.
Note: Number of countries in each group in parentheses.

Figure 1.11. Composition of Social Spending, by Region
(Percent of GDP)



Sources: IMF staff calculations, using data from EUROSTAT; Economic Commission for Latin America and the Caribbean; Organisation for Economic Co-operation and Development, Social Expenditure Database; and World Bank.
Note: Number of countries in each group in parentheses.

The overall redistributive impact of fiscal policy is also influenced by the distribution of indirect taxes and in-kind transfers. In general, the primary role of indirect taxes is to increase revenue, not to enhance equity. Empirical evidence suggests that indirect taxes can be regressive (O'Donoghue, Baldini, and Mantovani 2004).[11] However, it is worth reiterating that progressivity assessments should be performed on overall policy packages, since regressive but efficient taxes, such as the value-added tax (VAT), can be used to finance progressive spending. In-kind transfers, however, have been found to decrease the Gini coefficient by 5.8 points in five European economies (Belgium, Germany, Greece, Italy, and the United Kingdom), with transfers related to health (3.6 points) and education (2.2 points) accounting for virtually all of this impact (Paulus, Sutherland, and Tsakloglou 2010).

[11]Regressivity of indirect taxes is typically much smaller when assessed against lifetime income or consumption.

Emerging Market and Developing Economies

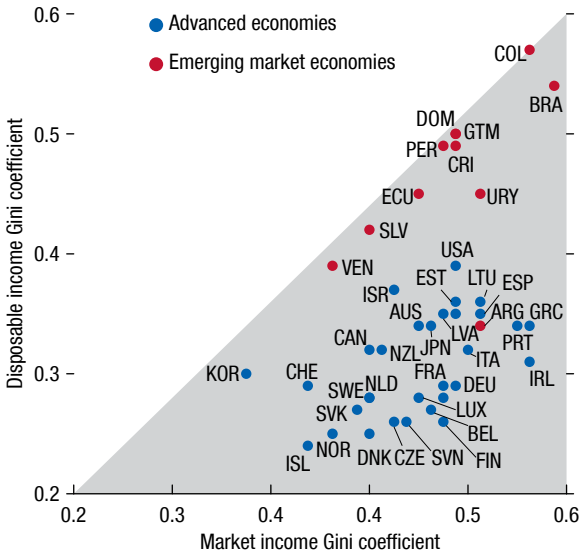
The substantially lower levels of taxes and transfers in emerging market and developing economies (Figures 1.10 and 1.11) mean that the redistributive impact of fiscal policy can be expected to be significantly lower than in advanced economies. This thesis is further reinforced by the composition of taxes and spending. On the tax side, these countries rely more heavily on indirect taxes as a source of revenue. Overall, indirect taxes in these countries tend to be either slightly progressive or slightly regressive and therefore have only a small impact on income inequality (Chu, Davoodi, and Gupta 2000; Gemmell and Morrissey 2005). The low level of direct transfers also limits the extent of fiscal redistribution that can be achieved on the spending side of the budget. In addition, a high share of total transfers is absorbed by in-kind education and health transfers, which are crucial for promoting economic growth and poverty reduction, as well as for reducing the inequality of market income over the medium term.

The importance for income inequality of lower fiscal redistribution in emerging market and developing economies is starkly demonstrated by comparing the redistributive impact of fiscal policy in Latin America (the region with the highest average level of income inequality, and higher tax and spending levels compared with other developing countries) with the impact in advanced economies (the country group with the lowest average level of income inequality). Figure 1.12 compares the inequalities in market and disposable incomes for these two groups of countries. Whereas income taxes and transfers reduced the Gini coefficient by 0.17 in the sample of advanced economies, they decreased it by only 0.03 in the sample of Latin American economies.[12] In other words, more than three-quarters of the difference in average inequality of disposable income between advanced economies and Latin American countries is explained by differences in the redistributive impact of taxes and transfers (that is, 0.14 out of 0.17). Whereas Estonia, Lithuania, and the United Kingdom have market income inequalities similar to those in Peru and Uruguay, their disposable income inequalities are substantially lower because of much greater fiscal redistribution.[13]

The extent of fiscal redistribution in emerging market and developing economies is limited not only by the low level of direct transfers, but also by their low progressivity, reflecting low coverage (the share of the poorest 40 percent who receive any public transfer) and benefit incidence (the share of transfers received by the poorest 40 percent). Other than in countries in emerging Europe and Latin America and the Caribbean, coverage is very low. Even in Latin American and Caribbean countries with high coverage, the share of total transfers going to the poorest 40 percent is often less than 20 percent. Emerging Europe performs best in both coverage and incidence. In virtually all emerging market and developing economies, the share of transfers going to the bottom 40 percent is less than 40 percent. Evidence from the World Bank's Atlas of Social Protection Indicators of Resilience and Equity (ASPIRE) database confirms the low redistributive impact of transfers in most emerging market and developing economies, with transfers decreasing the Gini coefficient by a median of about two points in countries in Latin America and the Caribbean and in the Middle East and North Africa and by less than one point in other regions.

With low tax revenues, many emerging market and developing economies face a difficult choice between financing redistributive direct transfers to reduce current poverty and increasing spending on education and health to enhance growth and reduce future poverty and income inequality. While existing empirical evidence shows that public spending on education and health is in many cases not very progressive, there is substantial evidence that increases in education and health spending directed at expanding access to education have been strongly progressive. A recent empirical analysis of the relationship between income inequality and education expansion finds that improved education outcomes (as measured by average years of schooling) have been associated with a significant decline in the inequality of education outcomes (as measured by inequality in years of schooling), which, in turn, has put strong downward pressure on income inequality (Coady and Dizioli 2017). The decline in income inequality due to

Figure 1.12. Redistributive Impact of Income Taxes and Transfers, 2015 or Latest Year



Sources: Lustig 2017; and Organisation for Economic Co-operation and Development, Income Distribution Database.
Note: Data labels in figure use International Organization for Standardization (ISO) country codes.

[12]The average Gini coefficient for market income for advanced economies was 0.48 compared with 0.51 in Latin America, a gap of 3 points. The corresponding coefficients for disposable income were 0.31 and 0.48, respectively—a gap of 17 points.

[13]Analysis presented in Figure 1.12 is based on latest available data: Estonia (2013), Lithuania (2013), Peru (2009), the United Kingdom (2010), and Uruguay (2009).

declining inequality of education outcomes between 1990 and 2005 ranged from 4.8 Gini points in the Middle East and North Africa to 2.8 points in Latin America and the Caribbean.

To the extent that continued expansion of education can further reduce inequality in education outcomes, it will also put downward pressure on income inequality over the coming decades. Interventions such as the conditional cash transfer programs adopted on a large scale in Brazil and Mexico, which link cash transfers to lower-income households to enrollment of family members in school and attendance at nutrition and health clinics, can help reduce both human capital inequalities (and thus future income inequalities) and current income inequalities. The importance of addressing remaining education and health disparity gaps is discussed in detail later in the chapter.

Progressivity at the Top and at the Bottom

Progressive Income Taxation

Tax policy has an important role to play in addressing income inequality, beyond providing revenue to finance spending policies aimed at reducing inequality. Together with the income-related transfer system in place, tax policy determines the net distributive impact and efficiency costs associated with fiscal redistribution.

At the lower end of the income distribution—where the focus is on reducing poverty—tax policy can support other policies discussed in this *Fiscal Monitor* by ensuring that poor individuals pay little or no tax. Tax policy can also directly address income inequality by providing in-work tax credits—such as the Earned Income Tax Credit (EITC) in the United States—to stimulate labor force participation and provide income support to low-income groups.[14] However, redistributive tax policies should be used with caution because they can also have unintended consequences for efficiency. For example, steep phasing out of benefits as income increases implies high marginal tax rates and creates adverse labor supply effects (De Mooij 2008). Also, in-work benefits can increase labor supply while reducing low-skill wages and thus shift some of the benefit to employers by reducing their labor costs.[15] Empirical evidence of the distributional impact, however, is inconclusive.[16] Implementation of in-work tax credits is most suitable for countries with a strong tax administration based on the withholding of tax obligations, to curb noncompliance and false claims.

At the upper part of the income (and wealth) distribution, especially the group with very high shares of income, taxation is the main means of redistribution. The theoretical literature argues that an income tax schedule that entails higher tax rates for upper-income groups compared with those in the middle of the income distribution is optimal in the sense that redistributive gains dominate efficiency costs (Diamond 1998; Saez 2001). In practice, the question is how steeply marginal (and average) tax rates should increase with income. In addition, the taxation of different income categories can play an important role in determining the overall progressivity of a tax system. For instance, when capital income is taxed at lower rates than labor income, as is the case in many countries, the overall progressivity of the system is typically reduced because capital income is usually distributed more unequally than wages. In addition, taxing capital income at lower rates creates arbitrage opportunities that also reduce the effective progressivity in the system.

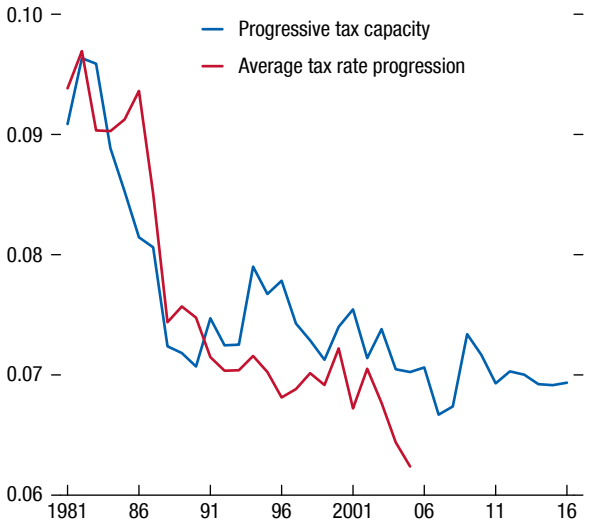
This section examines the recent evolution of progressivity of the personal income tax (PIT). Drawing from new empirical results based on optimal tax theory, it analyzes the factors behind changes in tax progressivity. The section then examines the role of taxes on capital income—as well as wealth—in strengthening the progressivity of a tax system.

[14]In general, in-work benefits and tax credits constitute a net transfer to the individual when they exceed income tax liabilities. In-work benefits are usually phased out as incomes rise, with the steepness of the phase-out depending on the primary objective of the program. In countries that emphasize the labor force participation objective, benefits are usually gradually phased out with individual income (Belgium, Finland, Germany, Netherlands, Sweden). In countries that emphasize the income support objective, benefits are often conditional on the presence of children in the household and are generally phased out more steeply with family income to prevent leakage of benefits to higher-income families and to reduce fiscal cost (Canada, France, Korea, New Zealand, Slovak Republic, United Kingdom, United States).

[15]Evidence from empirical studies suggests positive net employment effects from in-work credits (Hotz and Scholz 2003; Immervoll and Pearson 2009), but the aggregate effect on labor supply (and therefore on low-skill wages) has been found to be quite small (Eissa and Hoynes 2006).

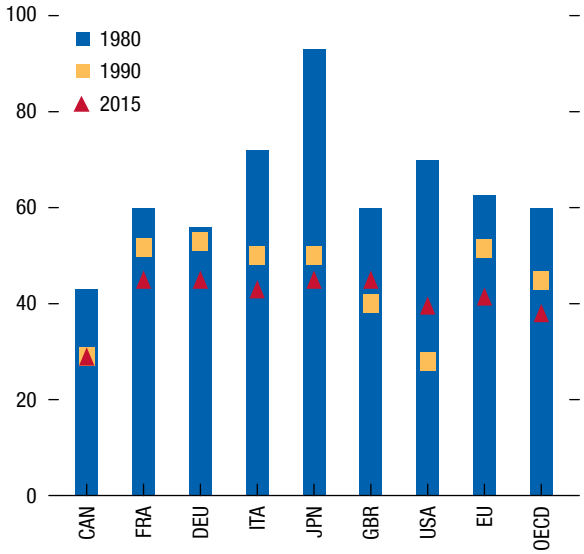
[16]Some authors estimate that 70 cents of each dollar spent on the EITC ultimately benefits employers by reducing their labor costs (Rothstein 2010).

Figure 1.13. Median Tax Progressivity in Organisation for Economic Co-operation and Development Member Countries
(Percentage points; index)



Sources: Andrew Young School of Policy Studies, World Tax Indicators database; Organisation for Economic Co-operation and Development, Tax Database; and IMF staff estimates.
Note: The average tax rate progression is the slope coefficient from regressing actual average tax rates on log of gross income (see Box 1.4). The progressive tax capacity index is calculated as twice the area between the Lorenz curve for income and taxation, using uniform distribution of income (see Box 1.4).

Figure 1.14. Selected Advanced Economies: Top Statutory Personal Income Tax Rate over Time
(Percent)



Source: IMF Fiscal Affairs Department, Tax Policy Rates Database.
Note: Bars for the European Union (EU) and Organisation for Economic Co-Operation and Development (OECD) show the simple average of 16 EU and 26 OECD member states for which data are available for all reported years. The OECD sample includes three emerging markets: Chile, Mexico, and Turkey. Data labels in figure use International Organization for Standardization (ISO) country codes.

Progressivity of PIT

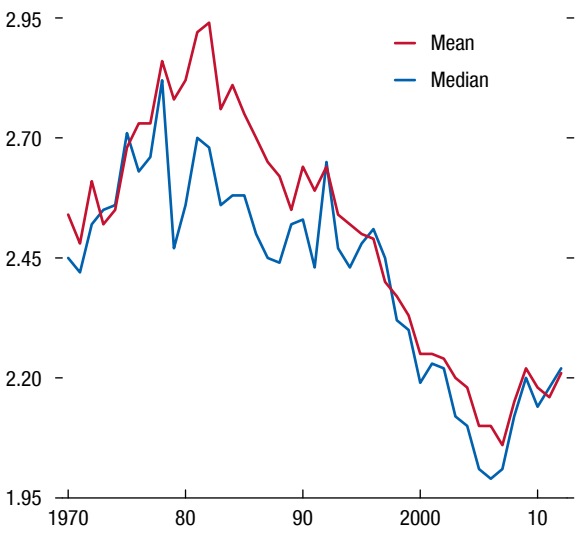
Tax progressivity—the degree to which the average tax rate rises with income—has been on a declining trend in recent decades. Box 1.4 discusses several measures of tax progressivity, including a new measure denoted *progressive tax capacity*. Irrespective of the chosen measure, PIT progressivity declined steeply in the 1980s and 1990s and has remained broadly stable since then (Figure 1.13). The downward trend over the past three decades is consistent with the decline in top income tax rates in advanced economies (Figure 1.14), with the average for Organisation for Economic Co-operation and Development (OECD) member countries falling from 62 percent in 1981 to 35 percent in 2015.[17] Many tax reforms since the 1990s have involved an increase in the exemption threshold together with a lower top PIT rate, causing a shift in the tax burden from very low and very high incomes toward the middle (Keen, Kim, and Varsano 2008).

In reality, tax systems may be even less progressive than suggested by these measures, because wealthy individuals often have more access to tax relief and more opportunities to avoid taxes. For instance, since households with high incomes are more likely to be homeowners, they benefit more from deductions for mortgage interest, where applicable. Any allowable deduction is also worth more at higher marginal tax rates. In addition, the wealthier have more resources to dedicate to tax planning, as well as greater incentives to engage in such activities. Alstadsaeter, Johannesen, and Zucman (2017) provide empirical evidence suggesting that tax evasion is particularly high at the upper end of the income distribution.

What might explain this declining trend in progressivity? According to optimal tax theory, a less progressive tax system (such as one with a lower top income tax rate) could be the result of greater tax elasticity of taxable income, a change in the income distribution so that a smaller share of income is earned by the

[17]During the 1970s, many OECD countries had especially high top marginal personal income tax rates (Tanzi 2011).

Figure 1.15. Concentration of Income above the 95th Percentile, 1970–2012
(Pareto index)



Source: IMF staff calculations, using World Wealth & Income Database.
Note: The Pareto index shows the density of individuals at the top 5 percent of the income distribution. Lower values indicate income is more concentrated at the top of the distribution.

highest-paid individuals, or society's placing greater weight on the welfare of high-income individuals.[18] This *Fiscal Monitor* assessed each of these possibilities and finds the following:

- *There is no evidence of an increase in income tax elasticity for top earners*. An increase in income tax elasticity could appear plausible given the enhanced and cheaper access to international tax planning, mobility of residence, and reduced costs of international financial transactions made possible by globalization and technological progress. In addition, the decline in corporate income tax rates, in response to tax competition, may have created an incentive for shifting personal income into corporate income for tax purposes (see the discussion that follows). Still, the existing empirical literature estimating tax elasticities—which typically focuses on a single country and often even a single reform—has not revealed a rising trend (Saez, Slemrod, and Giertz 2012; Brewer, Saez, and Shephard 2010).[19] Our estimated elasticities for a large number of OECD countries starting in 1981 also does not provide evidence of an increasing trend (Annex 1.4).
- *The share of income earned by the top income percentiles has not declined, but increased*. To confirm this in a way directly linked to optimal tax theory, the Pareto index—a measure of the density of individuals at the top of the income distribution—was calculated for the top 5 percent (Figure 1.15). Over the past 35 years, a clear downward trend in this index has become evident, implying a great share of income being earned in the upper tail of the distribution.
- *Changes in social preferences do not seem to support higher welfare weights for the very rich.* Figure 1.16 shows how the optimal top marginal income tax rate would change as the social welfare weight on high-income individuals increases. Assuming a welfare weight of zero for the very rich, the optimal marginal income tax rate can be calculated as 44 percent, based on an average income tax elasticity of 0.4 and a Pareto index of 2.2 in the most recent years.[20] The fact that the gap between this optimal tax rate and the lower top tax rates in the average OECD country has risen over time suggests that a greater social welfare weight is placed on well-off individuals. Put differently, the substantial decline in the average top marginal PIT rate to 35 percent would be consistent with a rise in the social welfare weight on high-income earners from zero to about 0.38 over the past 35 years, assuming the other parameters entering the optimal tax formula have

[18]Optimal tax theory links the optimal income tax schedule to income tax elasticity, the distribution of income, and preferences about income inequality. The optimal top income tax rate (t^*) can be calculated based on the following formula (Saez 2001): $t^* = (1 - g)/(1 - g + ae)$, in which g is the social welfare weight on high-income earners, a is the Pareto index, and e is the elasticity of income with respect to the tax rate. The formula simplifies to $t^* = 1/(1 + ae)$ if the marginal welfare weight is set to zero, which is simply the revenue-maximizing rate.

[19]A notable exception is Piketty, Saez, and Stantcheva 2014, which computes the long-term elasticities of the top 1 percent of income for the United States and 17 other OECD countries and finds that the elasticity of the top income share in 1981–2010 was much higher than in the early period of 1960–80.

[20]The share of total income accruing to the qth percentile is derived as

$$\left(\frac{q}{100}\right)^{\frac{Pareto\ index\ -\ 1}{Pareto\ index}},$$

when the income distribution follows the Pareto model. Then a Pareto index of 2.2 means that the top 5 percent have approximately a 19½ percent share of total income.

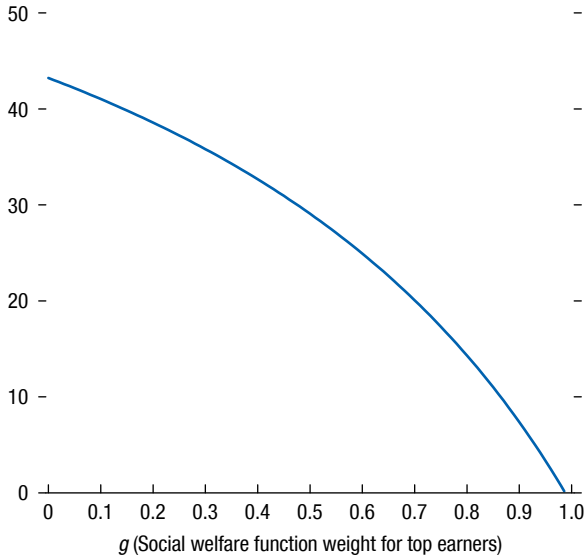
not changed over the period (Figure 1.16).[21] However, evidence from the Integrated Values Survey shows that societal preferences in favor of redistribution have become stronger since the 1980s, which would instead imply a reduction in the social welfare weight on high-income earners.[22]

From the foregoing analysis, it is clear that it is difficult to rationalize the decline in progressivity within optimal tax theory. The next question is whether the decline in progressivity could have been a response to concerns about potential negative effects of tax progressivity on growth.

There is no strong empirical evidence showing that progressivity has been harmful for growth. Some empirical work has focused on the relationship between fiscal redistribution and growth and finds no (or even positive) effects for nonextreme redistribution (for example, Ostry, Berg, and Tsangarides 2014). But empirical evidence on the direct link between tax progressivity and growth is mixed.[23] This relationship is analyzed in Annex 1.5, and most specifications yield no effect of progressivity on growth. This outcome does not rule out the possibility of a negative growth impact of extremely progressive tax systems, like the tax rates of nearly 100 percent in Sweden or the United Kingdom in the 1970s, but it suggests that there is no clear evidence that progressivity levels seen since 1981 in OECD countries have been demonstrably harmful for growth. Though this empirical finding may appear surprising, there are theoretical arguments as to why progressivity may lead to more efficient outcomes.[24]

In sum, the analysis confirms a decline in tax progressivity that cannot be fully explained by optimal tax theory or likely by a strong negative impact of progressivity on growth. Therefore, there would appear to be scope for increasing the progressivity of income taxation without significantly hurting growth for countries wishing to enhance income redistribution. However, this could be difficult to implement politically, because better-off individuals tend to have more political influence, for example, through lobbying, access to media, and greater political engagement. Ardanaz and Scartascini (2011) find that countries with historically more unequal income distributions often have political systems that are dominated by elites.

Figure 1.16. Top Marginal Personal Income Tax Rate across Social Welfare Function Weight for Top Earners
(Percent)



Source: IMF staff estimates, using data from IMF Fiscal Affairs Department, Tax Policy Rates Database.
Note: The calculation is based on the optimal tax rate formula in note 18, using an average income tax elasticity of 0.4 and a Pareto index of 2.2. The optimal marginal tax rate calculation accounts for additional social contributions (including any cap, if applicable) and consumption tax.

[21]Social welfare marginal weights represent the government's relative value of an additional dollar of consumption at each income level. More precisely, the government is indifferent between giving $1/g(z_1)$ additional dollars to a taxpayer with income z_1 or giving $1/g(z_2)$ dollars to a taxpayer with income z_2. In this example, a social welfare weight for top earners of 0.38 implies that the government is indifferent between giving $2.63 (1/0.38 = $2.63) to top income earners and giving $1.61 (1/(1–0.38) = $1.61) to the rest. These weights transparently summarize the government's distributive objectives (Saez 2001).

[22]Of course, societal preferences may not be reflected in actual policy implementation because of the concentration of political power in certain affluent groups.

[23]Several earlier studies, mainly focused on advanced economies, do find a small negative effect of tax progressivity on economic growth. For example, Padovano and Galli (2002) find a negative relationship between progressivity and growth for 25 advanced economies in the three decades of 1970–79, 1980–89 and 1990–98. Rhee (2013) finds a negative relationship between income tax progressivity and economic growth within US states, though the negative effect comes with a three-year lag.

[24]Van Ewijk and others (2003) list a total of 10 arguments, including inefficient labor markets, in which higher taxes may discourage unions from negotiating excessively high wages. Piketty, Saez, and Stantcheva (2014) discuss rent seeking within firms, in which low taxes on high incomes may encourage managers to increase their share of rents at the expense of workers and owners, but without adding to output.

Capital Income Taxation

Taxes on capital income play an equally important role in shaping the progressivity of a tax system. Capital income, including profits, interest, and capital gains, is distributed more unequally than labor income (Annex 1.2) and has risen over the past few decades (April 2017 *World Economic Outlook,* Chapter 3).[25] Moreover, capital income is often taxed at a lower rate than labor income, reducing overall tax progressivity across all incomes. Why is capital often taxed at lower rates? There are two main justifications, one based on theoretical arguments about efficient tax systems and another based on the empirical observation that the elasticity of capital income with respect to the tax rate is much higher:[26]

- *Economic theory suggests that taxing capital income can lower efficiency.* Specifically, a comprehensive income tax that includes capital income effectively taxes future consumption at a higher rate than current consumption, thereby discouraging saving and thus investment and economic growth. Moreover, it means that an individual who earns most of his or her income early in life pays more in tax than another who earns the same lifetime income, but spread out over time. Based on these arguments, some economists contend that only consumption or—equivalently—labor income should be taxed.[27] Although this is a powerful argument, there are negative equity consequences of taxing only consumption, given that the richest individuals may consume only a fraction of their wealth during their lifetime. A compromise between solely taxing consumption and taxing income comprehensively can be achieved by creating tax-favored vehicles, such as pension funds, that can allow individuals to save efficiently for their life cycle needs, while still taxing capital incomes of individuals with much higher wealth.
- *Empirically, capital income may be much more responsive (elastic) to taxation than labor income.* Taxation influences the location of firms. Savings can be invested in foreign locations with lower tax rates, making it harder for home countries to enforce taxes. Even within a country, investors and investment vehicle providers have some choices about the nature of capital returns. For example, in many countries capital gains are tax-favored over dividends and interest, meaning that opportunities to avoid taxation arise. In the framework of optimal capital taxation theory, a higher elasticity of capital income implies a lower optimal capital tax.[28]

Equally important is the role of corporate income tax in enforcing the taxation of labor income. First, while dividends can easily be taxed at the shareholder level, taxing reinvested earnings would be difficult without a tax at the corporate level.[29] Second, corporate taxation mitigates arbitrage in response to taxation of entrepreneurial income, because distinguishing labor income from capital income can be difficult (or impossible) when individuals can freely choose the form through which they declare their income (IMF 2014). When the PIT base can be shifted to some alternative tax base that is taxed at a lower rate (such as corporate income), the optimal tax theory previously discussed implies that the optimal tax rate on personal income rises with the

[25]Capital gains can make up a large share of an individual's income, especially for the rich. For example, in the United States in 2014, the 400 highest-income taxpayers received 60 percent of their income from capital gains (US IRS 2016).

[26]Additionally, a reason for a reduced rate on dividends is the previous taxation at the corporate level. In this case, the combined effect should be compared with personal income taxes.

[27]For example, Chamley (1986) and Judd (1985) argue for a zero tax rate on capital income. Atkinson and Stiglitz's (1976) theorem implies that governments should abstain from capital income taxation if nonlinear income taxation is an option, since capital income taxation would not improve equity compared with the nonlinear income tax and would also distort savings. Diamond and Saez (2011) summarize these studies.

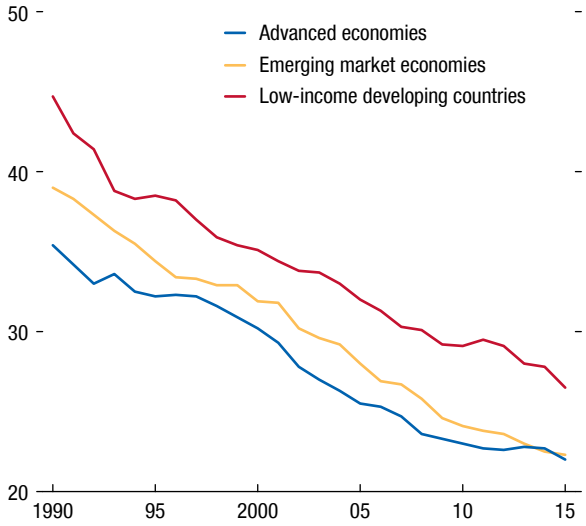
[28]Similar to that for PIT, optimal capital tax theory links the optimal capital tax to the elasticity of capital income with respect to the marginal capital tax rate, the distribution of capital income, and preferences about income inequality. The optimal top capital income tax rate (t_K^*) is given by (Saez and Stantcheva 2016) $t_K^* = (1 - g_K)/(1 - g_K + e_K)$, in which g_K is the social welfare weight on earners of high capital income and e_K is the elasticity of capital income with respect to the marginal tax rate. The formula simplifies to $t_K^R = 1/(1 + e_K)$ if the marginal welfare weight is set to zero, which turns it simply into the revenue-maximizing tax rate.

[29]Although distributed earnings can be taxed, in principle, through withholding taxes, many countries, especially developing countries, have signed tax treaties restricting withholding taxes on foreign shareholders. For those countries, the corporate income tax is also very important with respect to taxing distributed earnings. In countries that have converted their corporate income tax to a corporate level tax that is payable only on distributed profits, the level tax cannot fulfill the withholding function on retained earnings.

tax rate on the alternative base.[30] In recent decades, international tax competition—resulting from capital mobility—has led to a steady downward trend in corporate income tax rates (Figure 1.17). This trend, for the reasons discussed, reduces overall tax progressivity and may also put downward pressure on PIT rates. International tax coordination could potentially address this problem but has proved very difficult to implement.

An alternative, or complement, to capital income taxation for economies seeking more progressive taxation is to tax wealth, especially immovable property, directly, as discussed in Box 1.5.

Figure 1.17. Average Corporate Income Tax Rate, 1990–2015
(Percent)



Source: IMF Fiscal Affairs Department, Tax Policy Rates Database.
Note: Figure shows average statutory corporate income tax rate for balanced samples of 37 advanced economies, 92 emerging markets, and 59 low-income developing countries.

Fiscal Transfers: Universality or Means Testing

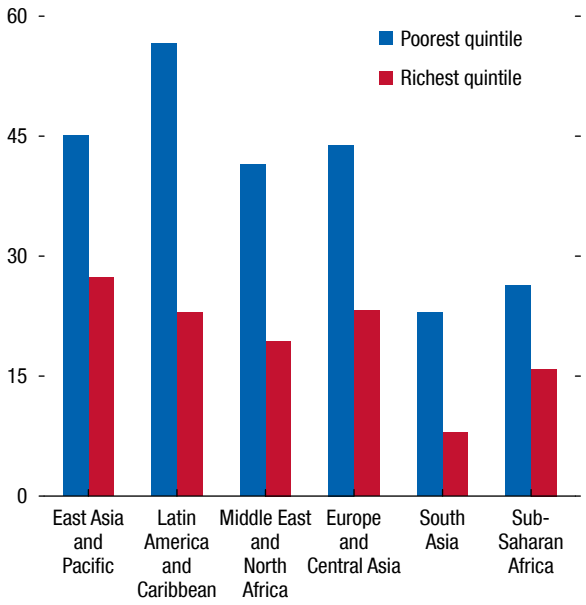
Switching from the tax side to the spending side, an important choice for countries is the extent to which they rely on universal or means-tested transfers to achieve their distributional objectives. This choice will be influenced by a range of factors, including the administrative ability to implement means testing (including the verification of incomes), the range of tax instruments available to raise revenue efficiently, and the responsiveness of labor supply in different parts of the income distribution.

In practice, countries often use a variety of means-tested and universal benefits. For example, most advanced economies have means-tested income support programs intended to provide a minimum income guarantee for households. These programs are often combined with universal categorical "family benefits," such as universal child benefits or social pensions. On the other hand, most developing economies spend substantially less on such transfers (see Figure 1.11), and administrative constraints mean that they often rely on indirect approaches for targeting their limited fiscal resources to lower-income groups by "tagging" based on characteristics thought to be highly correlated with poverty such as geographic location, being disabled, being widowed, or participation in public works programs. However, this often results in coverage gaps among the poor and leakage of benefits to the nonpoor (Brown, Ravallion, and van de Walle 2016) (Figure 1.18). Recent technological advances have the potential to enhance capacity in developing countries to reduce leakages and improve their ability to implement means-tested programs.

Careful attention to the design of means-tested programs is also required to minimize work disincentives if benefits are withdrawn quickly as income rises. Evidence indicates that disincentives for labor force participation and labor supply may be sizable under the current means-tested systems in many advanced economies, suggesting ample room for reforms that reduce such disincentives. For example, considering the combined effect of taxes and transfers, Immervoll and others (2007) estimate that effective participation taxes vary between 30 and 85 percent in European countries (with the higher values in Nordic countries). In 2015, the average marginal effective tax rate (METR) in EU27 countries on earned income in the bottom quartile was 28 percent, and it has increased since 2011, albeit with large variations across members (Figure 1.19). To avoid the work disincentives inherent in means-tested transfers, most advanced economies condition eligibility on participation in active labor

[30]The optimal top income tax rate (t^*), allowing for income shifting, can be calculated based on the following formula (Saez, Slemrod, and Giertz 2012): $t^* = (1 + s \cdot \tau \cdot ae)/(1 + ae)$, in which s is the share of marginal income shifted from the individual base, τ is the tax rate on the alternative tax base (for example, corporate income or capital income), and all other parameters are as previously defined, with the marginal welfare weight set to zero.

Figure 1.18. Average Coverage of Social Assistance Programs among Middle- and Low-Income Countries, by Region, Latest Available Year
(Percent)



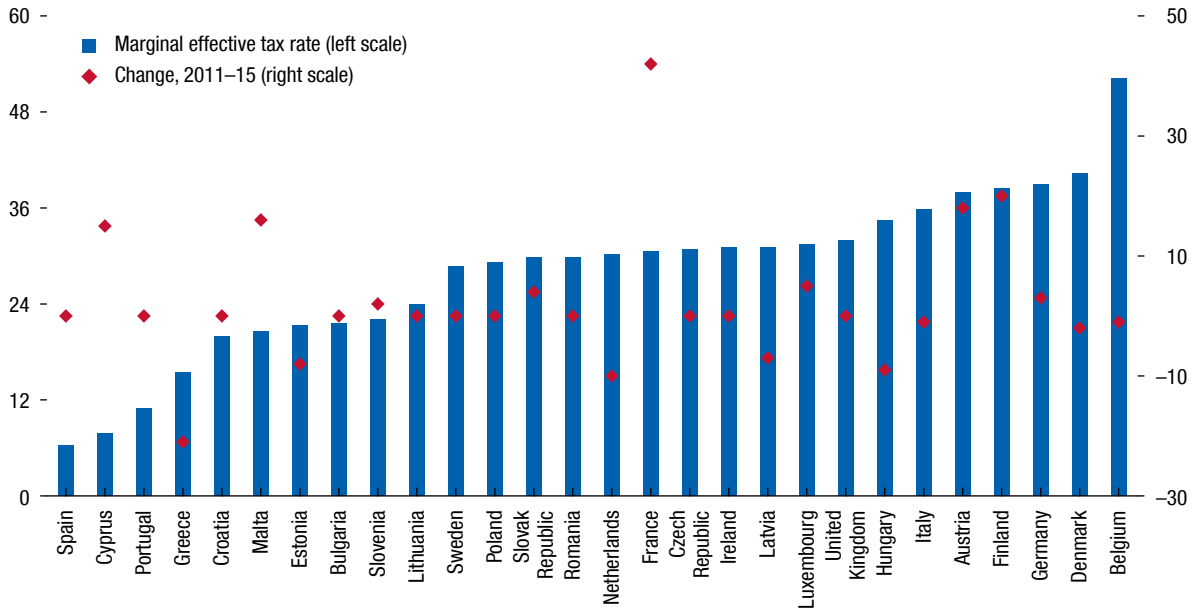
Source: IMF staff calculations using data from World Bank, Atlas of Social Protection Indicators of Resilience and Equity (ASPIRE).

market programs, and in-work benefits (that is, wage subsidies) are being increasingly used to enhance work incentives for the lowest-income households, which tend to be especially responsive to financial incentives.

While means-tested transfers are an important component of an efficient redistributive system, especially in revenue-constrained environments, they also require adequate administrative capacity to regularly verify information on incomes, process applications, and deliver transfers. Where this capacity is lacking, countries often use cruder forms of targeting based on household characteristics that are seen as being strongly correlated with poverty, but this often results in undercoverage of the poor and leakage of benefits to the rich. Partly for this reason, the idea of a UBI has received growing attention in recent years, and several countries have experimented with different forms of UBI.[31] Its definition is not universally

[31]Experiences with UBI include the oil dividend scheme in the US state of Alaska (in place since 1982), the Canadian city of Dauphin's monthly stipend of 60 percent of the poverty threshold paid to one-tenth of its population from 1974 to 1977, and the foreign-financed experiment currently being run in Kenya (https://www.givedirectly.org/operating-model).

Figure 1.19. European Union Countries: Marginal Effective Tax Rates in Bottom Quartile of Income Distribution
(Percent)



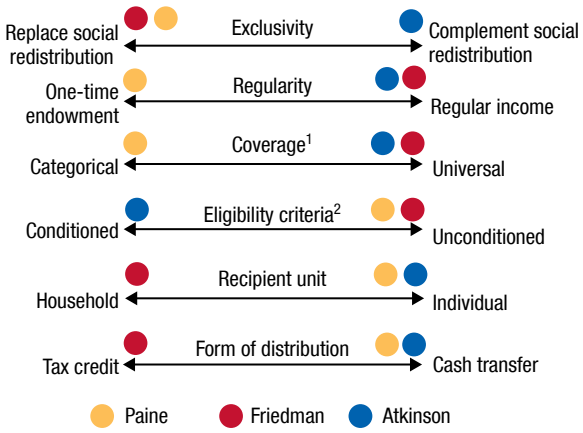
Sources: EUROMOD statistics on distribution and decomposition of disposable income; and IMF staff estimates.

agreed upon. Figure 1.20 summarizes the key features characterizing various forms of UBI advocated by some scholars. This *Fiscal Monitor* defines a UBI as a cash transfer of an equal amount to all individuals in a country.

UBI is a subject of heated debate. Proponents argue that a UBI can be used as a redistributive tool to help address poverty and inequality better than means-tested programs, which suffer from information constraints, high administrative costs, and other obstacles that limit benefit take-up. A UBI could also help address increased income uncertainty resulting from the impact of technology (particularly automation) on jobs. Finally, it could help garner public support for unpopular structural reforms, such as eliminating food and energy subsidies or broadening the consumption tax base. Those opposing a UBI argue that it is very costly; massively "leaks" to the nonpoor, including wealthy households; discourages labor supply; and severs links between rights and responsibilities of job seekers.

To evaluate the conditions under which the introduction of a UBI could be an option for providing income support, its potential impacts on inequality and poverty are examined in this section, along with the associated fiscal cost. For a UBI calibrated at 25 percent of median per capita income (additional to existing programs and without taking into account its financing or the associated changes in behavior in response to its introduction), the estimated distributional impact could be substantial, particularly where income is more unequally distributed and the proportion of the population below the poverty line is large.[32] For a selection of emerging market and developing economies, displayed in Figure 1.21, the average reduction in inequality (5.3 Gini points) and relative poverty (about 10.4 percentage points) is higher than the average for selected advanced economies. The gross fiscal cost could be sizable, particularly in advanced economies, reflecting a higher ratio of median to mean income. A UBI set at 25 percent of median per capita net market income would cost about 6½ percent of GDP and 3¾ percent of GDP for the average advanced and emerging market economy, respectively.[33]

Figure 1.20. Key Features of Various Forms of Universal Basic Income



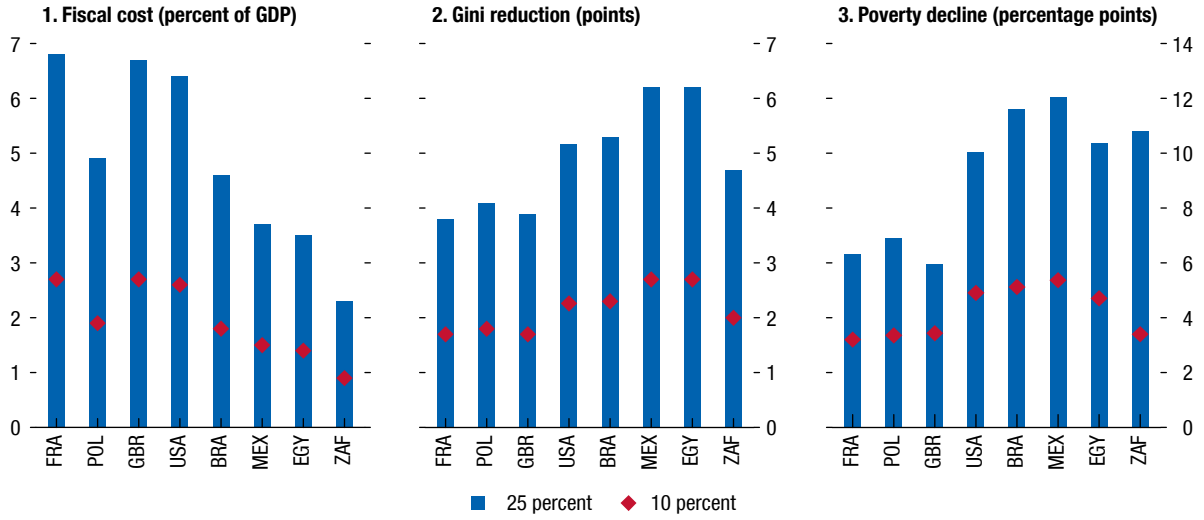
Source: IMF staff compilation.
Note: Scholars have advocated various universal basic income types along some key parameters: (1) Thomas Paine's (1797) "ground-rent" resembles a universal minimum endowment; (2) Milton Friedman's (1968) "negative income tax" couples a fixed flat transfer with a proportional income tax; and (3) Anthony Atkinson's (1996, 2015) "participation income" complements existing social safety nets and is conditioned on some form of social participation.
[1]Coverage refers to the program being fully universal or restricted to specific groups of the population (such as children or the elderly).
[2]Eligibility refers to criteria other than income that are required for participation in the program, such as the presence of some form of conditionality.

Given limited fiscal space in many countries, the simulations presented subsequently focus on budget-neutral options. The net redistributive impact of a UBI will depend on how it is financed. Financing options that are budget neutral can involve any combination of cutting spending or increasing direct or indirect taxes. Other sources of revenue could include those resulting from the elimination of energy and other subsidies (see the case of India in Box 1.6). As an illustration, if the fiscal envelope dedicated to the UBI equals the sum of existing universal and means-tested noncontributory transfers, then the generosity of the UBI will be larger in

[32]Annex 1.6 presents details on the methodology and underlying assumptions for the partial static equilibrium analysis on which this section is based. Many other empirical assessments of UBI implementation use a similar methodology (see, for example, OECD 2017).

[33]If UBI financing relies solely on revenues, budget neutrality would require increasing total revenues by that amount. For the eight countries in the sample considered in Annex 1.6, this would imply an average general government revenue of 47 percent of GDP for advanced economies and 32 percent for emerging market economies, taking 2016 as the base year.

Figure 1.21. Universal Basic Income: Gross Fiscal Cost and Distributional Impact



Source: IMF staff estimates, using Luxembourg Income Study (LIS) microdata.
Note: Computations are based on the most recent data available from LIS: 2010 (France), 2012 (Egypt, Mexico, South Africa), 2013 (Brazil, Poland, United Kingdom, United States). Estimates ignore behavioral responses. Universal basic income is calibrated at 10 and 25 percent of median market income (after direct taxes) per capita and is distributed equally to every individual. The relative poverty threshold is defined as 50 percent of per capita equivalent disposable income. Data labels in figure use International Organization for Standardization (ISO) country codes.

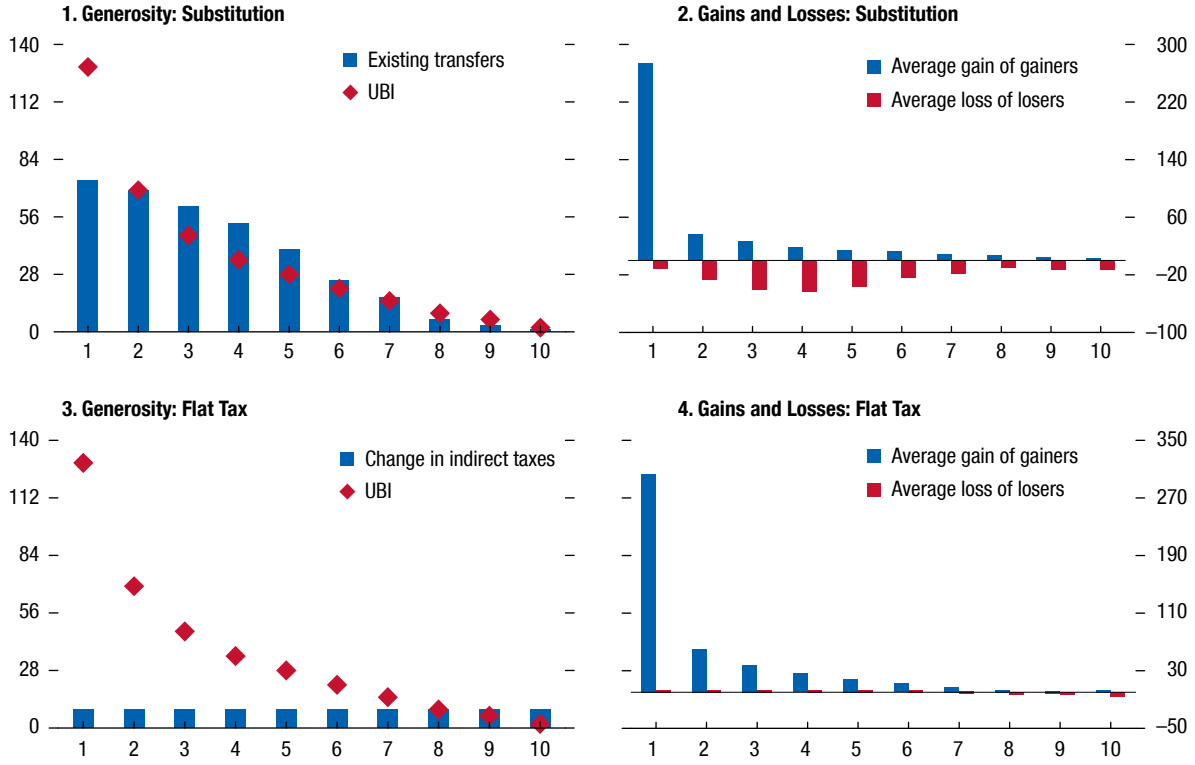
advanced economies than in emerging markets and low-income countries (Annex 1.6). The distributive impact of replacing existing transfers with a UBI will also depend on the coverage and progressivity of the existing transfer system—in other words, on how well the current system covers and targets the vulnerable population. A UBI distributes existing transfers uniformly across the population, thus potentially improving coverage of lower-income households, but it may do so at the expense of the generosity of benefits for those lower-income households that receive transfers under the current system. For instance, for the lowest two income deciles, the average drop in benefits for households covered under the existing transfer system (about 65 percent of households in the bottom two deciles) is 19 percent of per capita disposable income in South Africa (Figure 1.22, panels 1 and 2). However, the average gain for the remaining 35 percent of households in the bottom two income deciles, who are currently not covered by existing programs, will be about 150 percent of their per capita disposable income. If instead of replacing current transfers, the UBI is financed through an increase in indirect taxes (for example, a flat tax on consumption), the net impact could be progressive if income (and consumption) inequality is very high (Figure 1.22, panels 3 and 4).

When would a UBI be a potentially desirable substitute for existing safety nets? Should governments instead focus on strengthening their capacity to use means-tested transfers? The answer depends on the performance of the current safety net versus the UBI in relative generosity, coverage of lower-income groups, progressivity of benefits, and efficiency.[34] The administrative capacity of governments and the prospects for enhancing the targeting or the administration of the UBI by relying on new technology will also matter when comparing a UBI to the current system.[35] For illustrative purposes, the desirability of a UBI is examined in the context of how well the existing safety net is working. Figure 1.23 plots progressivity and coverage—two important dimensions with respect to

[34]Generosity refers to the size of the benefit as a share of per capita equivalent disposable income across deciles; progressivity refers to the share of total benefits accruing to each income decile. Efficiency losses are often related to potential unfavorable behavioral effects from income transfers.

[35]It has been noted, however, that technological improvements may not necessarily address all issues related to targeting (Kanbur, forthcoming).

Figure 1.22. Financing Options for Universal Basic Income Scheme: South Africa, 2012
(Percent of per capita equivalent income)



Source: IMF staff estimates, using Luxembourg Income Study 2012 microdata for South Africa.
Note: Horizontal axes show deciles of per capita equivalent disposable income (PCDI). For households in the bottom income decile, universal basic income (UBI) represents 130 percent of PCDI, more generous than current transfers, which represent 74 percent of PCDI (panel 1). If current transfers were replaced by a UBI, losing households in the bottom income decile would lose, on average, 12 percent of their PCDI, and households in the bottom decile not previously receiving transfers would gain, on average, 274 percent (panel 2).

redistribution—for the eight country case studies in Annex 1.6.[36] Of course, the decision to adopt a UBI would need to be based on a more refined analysis of the design and outcomes of country safety nets.

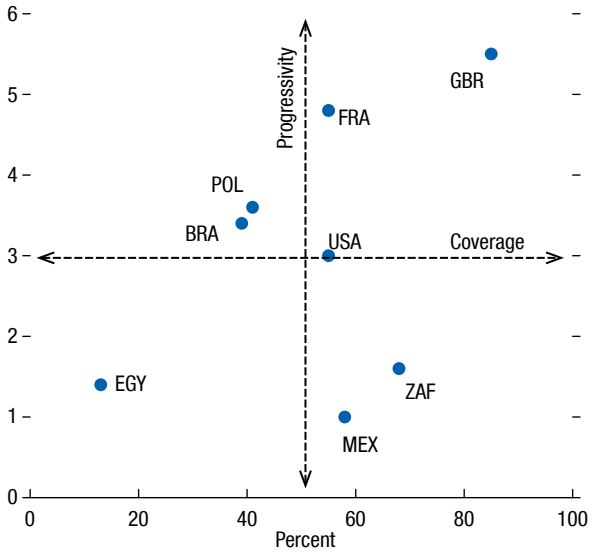
Countries that lack or have only a minimal transfer system. When the current transfer system in a country is almost nonexistent, the introduction of a UBI could be an option for providing income support if it can be financed through progressive taxation and other fiscal reforms (such as the elimination of energy subsidies in oil-exporting economies) without generating large costs to efficiency. A UBI could similarly be an option for strengthening safety nets in low-income developing countries where coverage of programs and capacity to means-test are low.[37]

Countries whose transfer systems perform well. In countries where both coverage and progressivity are relatively high, such as France and the United Kingdom, expanding coverage by replacing the existing systems with a UBI would result in a very large reduction in progressivity and losses in the size of benefits for many poor households and could even lead to higher poverty. This potential outcome suggests that priority should

[36]The fiscal envelope used in the exercises is estimated based on data reported in the Luxembourg Income Study data sets, which may differ from budgetary data.

[37]Brown, Ravallion, and van de Walle (2016) find that even with a budget sufficient to eliminate poverty in sub-Saharan African countries with full information, most targeting methods, as well as a UBI, do not bring the poverty rate below about three-quarters of its initial value. However, a UBI does almost as well in reducing poverty as proxy means testing or categorical targeting based on demographic criteria, given that these methods help filter out the nonpoor but also exclude many poor.

Figure 1.23. Coverage and Progressivity of Safety Net Systems in Eight Country Cases



Source: IMF staff estimates, using data from Luxembourg Income Study (LIS) microdata.
Note: Computations are based on the most recent data available from LIS: 2010 (France), 2012 (Egypt, Mexico, South Africa), 2013 (Brazil, Poland, United Kingdom, United States). Households' position in the income distribution is determined by per capita equivalent disposable income. The ratio of the share of total spending received by the bottom 40 percent of income distribution to the share of total spending received by the top 40 percent (shown on the vertical axis) serves as a proxy for progressivity. Coverage refers to the percentage of households in the bottom 40 percent of the income distribution receiving any transfer. Dashed lines are unweighted averages of coverage and progressivity. See Annex 1.6. Data labels in figure use International Organization for Standardization (ISO) country codes.

be given to reforming and strengthening the current system to enhance its coverage and targeting.

Countries whose transfer systems perform poorly. A UBI may also be an option for providing income support in countries where social safety nets exist but suffer from serious shortcomings. Replacing these systems with a UBI would expand coverage to all households at the cost of lowering progressivity and reducing benefits for the average beneficiary under the current system.[38] In other words, adopting a UBI entails a trade-off between coverage and progressivity, which is more relevant when the current system is characterized by low coverage and relatively good progressivity.[39] This points to the need to weigh the option of introducing a UBI against the capacity to expand coverage under the existing progressive transfer system. For instance, replacing the current system with a UBI in a country such as Brazil, with relatively low existing coverage but relatively high progressivity (as compared with Mexico and South Africa), could improve coverage, but at the cost of sizable losses for some lower-income households. India, discussed in Box 1.6, provides an additional illustration.

All the considerations discussed highlight the complexity of assessing the net distributive and efficiency impact of introducing a UBI. Simulations using a general equilibrium model help shed some light on the macroeconomic and equity impact of a UBI when behavioral responses, the modalities of financing, and potential trade-offs between equity and efficiency are jointly taken into account (Annex 1.3). The welfare-based framework presented in Box 1.2 is used to compare various policy options and their efficiency-equity trade-offs. The model calibrated to the US economy suggests, as expected, that the cost to efficiency, that is, forgone output, is larger when financing is raised from more progressive PIT rates than when it is raised with higher value-added taxes. As aversion to inequality increases, the adoption of a UBI financed with progressive taxation is preferable, in terms of welfare, to financing with indirect taxes. In a comparison of a UBI to an expansion of the EITC with equivalent fiscal cost, welfare improvements are higher with the EITC than with the UBI, since the EITC is a targeted subsidy.[40] A similar analysis of a UBI was performed for Bolivia, a developing economy whose structure and policy instruments are very different from those of the United States.[41] The calibration of the model to Bolivia shows that the costs to efficiency associated with the UBI and its financing are offset by gains to

[38]Under a UBI, each decile receives the same share of UBI transfers, resulting in a progressivity index of one.

[39]Poor coverage may reflect difficulties in reaching certain segments of the population (such as indigenous peoples or vulnerable households in remote rural areas). Increased coverage for these groups with adoption of the UBI rests on the assumption that a simpler system will make it easier to provide support to these communities. As already mentioned, technological advances may change the comparative advantage of alternative transfer program designs.

[40]For relatively high levels of aversion to inequality, EITC dominates regardless of financing modalities.

[41]In Bolivia, as in many developing countries, informality dominates in the labor market. Further, there is no formal personal income tax in Bolivia (though there is a form of flat tax on wages that can be fully offset by deductions, primarily against VAT paid). Because of the high premium on working in the formal sector and the low effective PIT tax rates, the labor supply of formal workers in Bolivia is very inelastic.

equity, even for low values of aversion to inequality, mostly because of the lack of formal PIT and very low effective income tax rates. The model shows that a UBI can be a powerful instrument for combating poverty and extreme poverty. This, however, does not imply that a UBI is the appropriate redistributive instrument in Bolivia. A more in-depth analysis of all options is necessary.

In addition to redistributive objectives, there could be other reasons for adopting a UBI. In an economic environment in which job insecurity is increasing (for example, because of job market disruptions associated with technological progress), expanding available insurance mechanisms may become an important policy objective.[42] A UBI could provide a stable source of income to individuals and households and therefore limit the impact of income and employment shocks. The insurance benefit must be weighed against potential moral hazard and disincentives for adapting skills in a rapidly changing economic environment. A uniform transfer also provides greater social insurance to lower-income groups that are less able to self-insure through savings and may possibly be more at risk. A UBI could also be considered by policymakers to generate political and economic support for a broader structural reform agenda, for example, the removal of energy subsidies (Coady and others 2017). Since the bulk of energy subsidies accrue to higher-income groups, their replacement with a UBI set at a level that fully protects lower-income groups would generate substantial fiscal space while yielding significant health and environmental benefits (see Box 1.6).

To sum up, if means testing could be perfectly designed and implemented, it would be a superior alternative to universality. In practice, however, the choice is not always obvious, given limited administrative capacity and information constraints in many countries. While universal transfers can help fill coverage gaps in administratively constrained environments, they present their own challenges, not least the leakage of benefits to higher-income groups and the need to finance their sizable cost with distortionary taxation. As discussed previously, the choice between the two instruments (or the combination of both) will depend critically on several factors, including the country's administrative capacity, availability of financing, and the potential impact of the two instruments on labor supply.

[42]Technological change and greater automation will inevitably increase income and employment risks across the income distribution (Bourguignon 2015).

Equalizing Opportunities through Education and Health

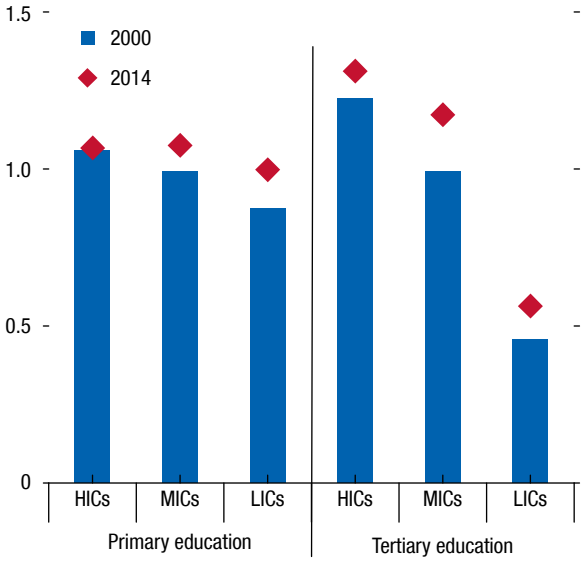
This section focuses on education and health policies, given their unique role in addressing income inequality and inequality of opportunity. Unlike redistributive fiscal policies, which aim at lowering disposable income inequality through taxes and income-related transfers, public spending on education and health can directly reduce market income inequality. Another key feature that distinguishes education and health policies from other redistributive fiscal instruments is that they have the potential to promote both growth and equity. In particular, education and health gaps are still sizable in many countries, and closing them—for example, through better allocation of public spending—would improve equity and efficiency by enhancing human capital and productivity.

Education

Despite progress over the past decades, education enrollment gaps remain for certain groups in the population in many countries. Gender gaps in enrollment have been largely eliminated, except in low-income developing countries (Figure 1.24). Socioeconomic status is still a main determinant of access to education, especially in emerging market and developing economies. Sizable gaps among socioeconomic groups in attending early childhood, secondary, and tertiary education remain in almost the entire developing world (Figure 1.25). Primary education gaps have mostly narrowed, but children from families with a disadvantaged socioeconomic status continue to suffer from low access in sub-Saharan Africa and the Middle East and North Africa, and to a lesser extent in emerging and developing Asia and in Latin America and the Caribbean.

Even when enrolled, students from disadvantaged socioeconomic families lag well behind in education and learning outcomes. Across all regions, disadvantaged students perform substantially worse than students from better socioeconomic backgrounds (Figure 1.25, panel 2). One important reason for their poor outcomes is that these students receive

Figure 1.24. Ratio of Female to Male Enrollment, Primary and Tertiary Education, 2000 and 2014



Source: World Bank.
Note: The observed gaps are qualitatively similar for secondary education. HICs = high-income countries; LICs = low-income countries; MICs = middle-income countries.

low-quality education because they are typically enrolled in schools with fewer resources, such as educational materials and staff (OECD 2016; Lafortune, Rothstein, and Schanzenbach, forthcoming).[43]

Narrowing the disparities in education and learning outcomes—by improving enrollment and quality of education for the disadvantaged—is crucial for reducing inequality. First, it lowers the persistence of income inequality across generations. Achieving better education outcomes for children from disadvantaged families is associated with larger intergenerational earnings mobility (Figure 1.26), as illustrated by the United States, where some states have more limited social mobility and larger education disparities (Figure 1.27). Addressing education disparities also leads to an improvement in economic efficiency in that education resources are allocated more on the basis of children's ability than of their family socioeconomic status. Second, education expansion is typically associated with lower inequality of education outcomes (as measured by years of schooling), which lowers future income inequality (Coady and Dizioli 2017). The impact diminishes as countries develop but still can be enhanced with a stronger focus on reducing inequality in the quality of education. Third, reducing learning gaps can also help reduce the disparities in health outcomes, given the strong and positive association between education and health outcomes (Cutler and Lleras-Muney 2008, 2014).

By relaxing households' budget constraints, public education spending can also have a distributional impact by increasing household consumption. Although benefit incidence of public education spending varies substantially across countries, in many cases public education spending accrues mainly to the rich. On average, public education spending tends to be pro-poor in advanced economies (with the exception of tertiary education spending, which tends to be regressive) (Paulus, Sutherland, and Tsakloglou 2010). In contrast, it is often pro-rich in emerging market and low-income countries (Davoodi, Tiongson, and Asawanuchit 2010).

Reallocating public education spending toward disadvantaged students and schools would likely lead to an improvement in efficiency. Cross-country comparisons show a negative relationship between gaps in school resources (study materials and educational staff) in advantaged compared with disadvantaged schools and average Program for International Student Assessment (PISA) test scores in a country (Figure 1.28). This finding suggests that better targeting of public education spending to disadvantaged students and schools could potentially reduce education inequality and raise overall education outcomes, while keeping the total public education budget unchanged.

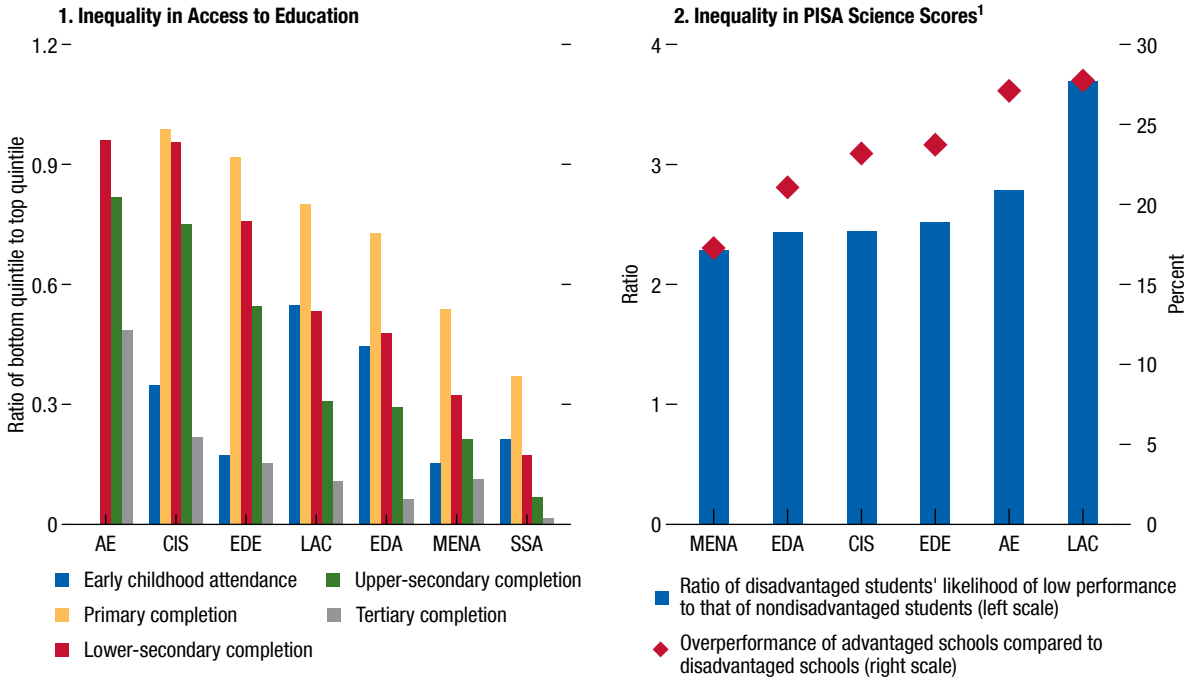
Health

Disparities in health outcomes between groups in the population according to their socioeconomic status are sizable in many countries and do not appear to be narrowing. In advanced economies, the gap in life expectancy between males with tertiary education and those with lower secondary education or less ranges from about 4 years in Italy to 14 years in Hungary (Figure 1.29).[44] In the United States, the gap in life expectancy between the rich and the poor has widened

[43]Factors outside of the education system also play an important role in determining education outcomes, including nutrition and cognitive development in early childhood, early childhood education, parenting skills, and education resources at home, such as books and study environment (World Bank, forthcoming; OECD 2016).

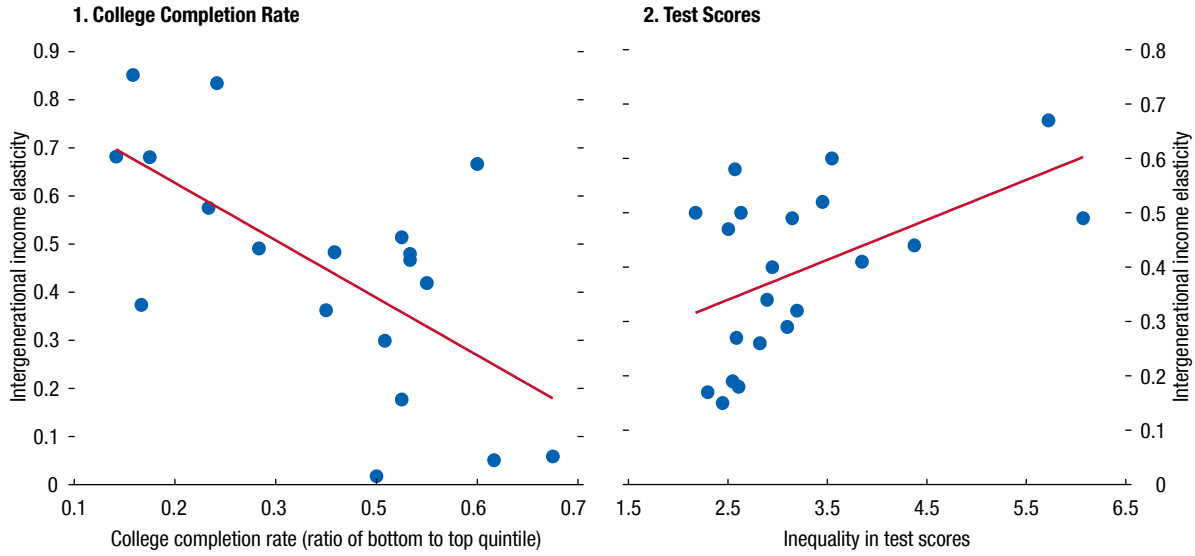
[44]The gap is smaller for females, possibly reflecting a dominance of genetics over other factors and smaller differences in occupation, lifestyle, and risky behaviors between socioeconomic groups (Figure 1.29).

Figure 1.25. Inequality in Access to Education and Test Scores by Socioeconomic Status



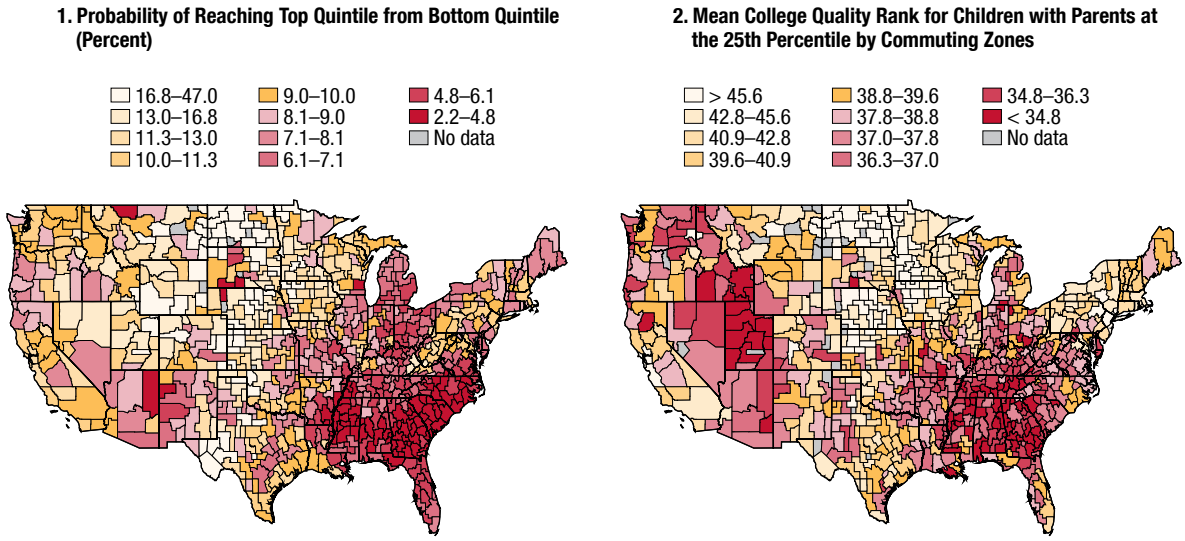
Sources: United Nations Educational, Scientific, and Cultural Organization; OECD 2016; and IMF staff calculations.
[1]The number of countries covered in each region is 6 in MENA, 4 in EDA, 3 in CIS, 9 in EDE, 35 in AE, and 10 in LAC. AE = advanced economies; CIS = Commonwealth of Independent States; EDA = emerging and developing Asia; EDE = emerging and developing Europe; LAC = Latin America and the Caribbean; MENA = Middle East and North Africa; PISA = Program for International Student Assessment; SSA = sub-Saharan Africa.

Figure 1.26. Education Inequality and Inequality of Opportunity



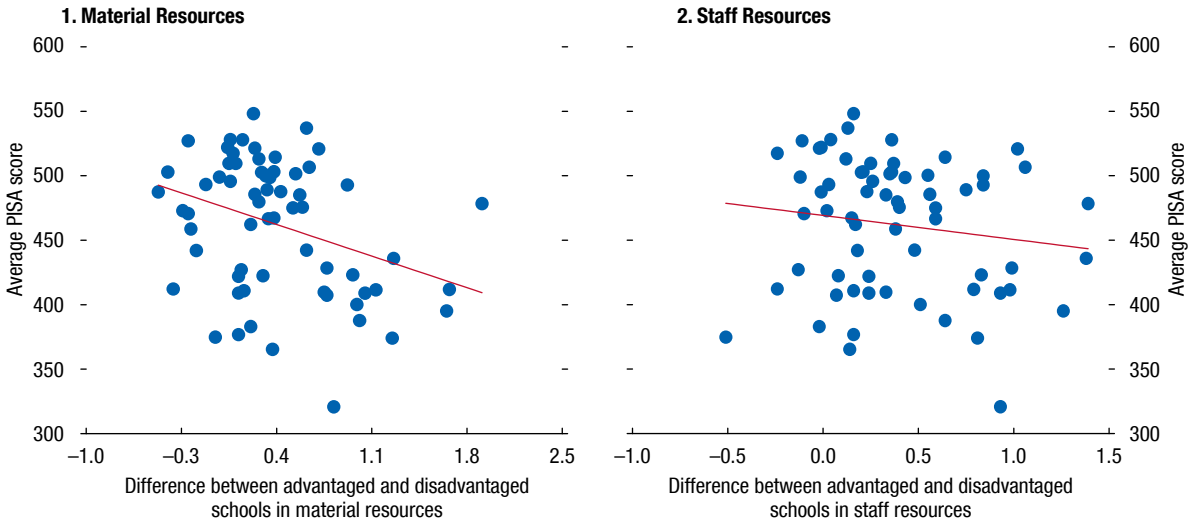
Sources: Corak 2016; OECD 2016; and IMF staff calculations.
Note: Intergenerational income elasticity is defined as the percentage difference in earnings of a child's generation associated with the percentage difference in the parent's generation. Inequality in test scores is defined as the ratio of disadvantaged students' odds of poor performance on the Program for International Student Assessment (PISA) science assessment to those of nondisadvantaged students.

Figure 1.27. US Social Mobility and Education Outcomes by Parents' Income, by State



Source: Chetty and others 2014.
Note: Commuting zones are geographical aggregations of counties that are similar to metro areas but cover the entire United States, including rural areas.

Figure 1.28. Inequality in School Resources and Education Outcomes

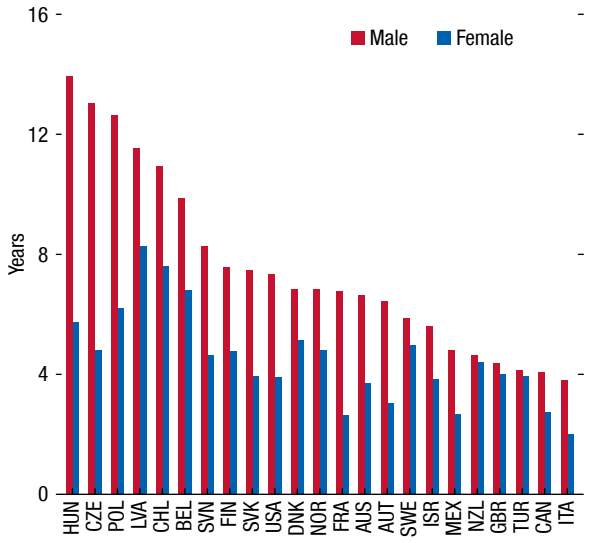


Sources: OECD 2016; and IMF staff calculations.
Note: PISA = Program for International Student Assessment.

over the past decades (Bosworth, Burtless, and Zhang 2016; Case and Deaton 2017). In emerging market economies and low-income countries, large disparities in health outcomes within countries remain. Over the past decade health disparities—measured by the ratio of the infant mortality rate of the top to the bottom quintile in the population according to their socioeconomic status—have increased in about half of emerging market and developing economies, reflecting slower improvements among the disadvantaged rather than deteriorations in health outcomes in about half of the cases (Figure 1.30; Wagstaff and others 2014).

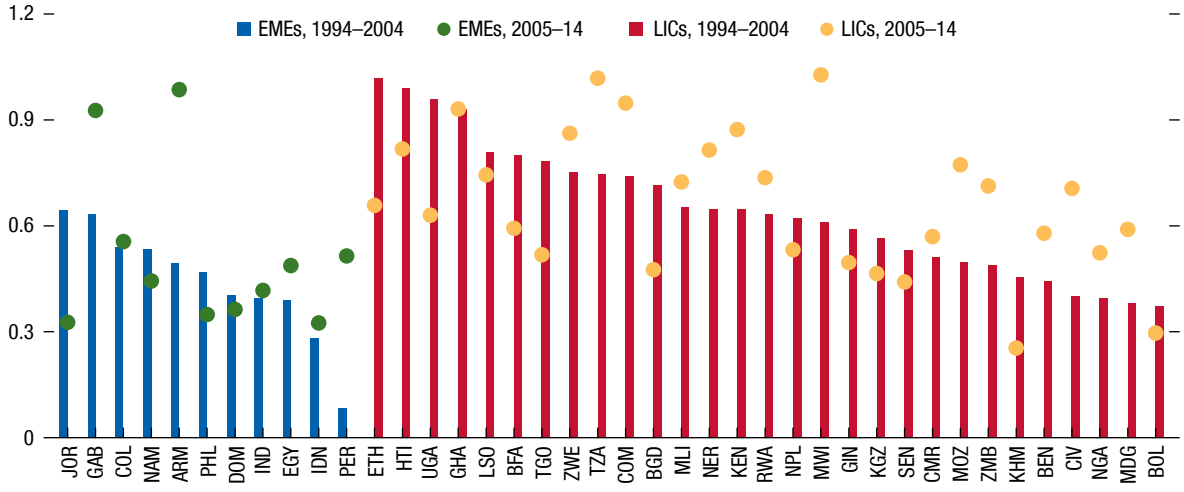
Although some progress has been made, large gaps in health coverage still exist between the rich and the poor. The progress in health coverage—reflecting efforts toward universal coverage—has likely contributed to the improvement in health outcomes. However, a significant gap in basic health coverage persists in some emerging market economies and many low-income countries (Figure 1.31; Wagstaff and

Figure 1.29. Inequality in Longevity in High-Income Countries



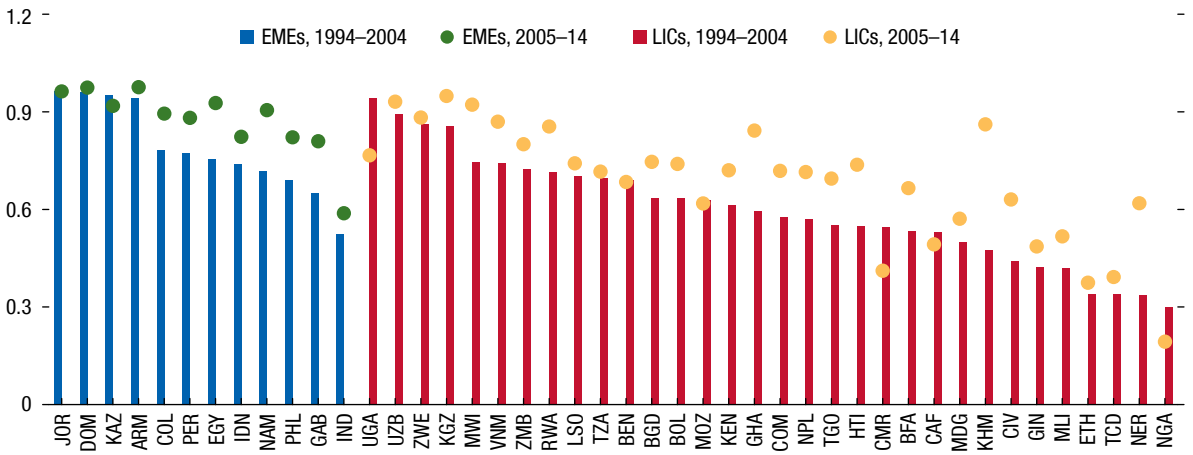
Source: Murtin and others 2017.
Note: The figure shows the longevity gap at 25 years of age between those with high and low levels of education. Data labels in the figure use International Organization for Standardization (ISO) country codes.

Figure 1.30. Infant Mortality in Emerging Market Economies and Low-Income Countries, 1994–2014
(Ratio of top to bottom quintile of socioeconomic distribution)



Source: World Health Organization.
Note: EMEs = emerging market economies; LICs = low-income countries. Data labels in the figure use International Organization for Standardization (ISO) country codes.

Figure 1.31. Basic Health Coverage in Emerging Market Economies and Low-Income Countries, 1994–2014
(Ratio of bottom to top quintile of socioeconomic distribution)



Source: World Health Organization.
Note: EMEs = emerging market economies; LICs = low-income countries. Data labels in the figure use International Organization for Standardization (ISO) country codes.

others 2016).[45] In addition, quality of care received by the poor is also substantially lower than that received by the rich (Houweling and others 2007). Health outcomes are also increasingly determined by factors other than health care, including nutrition, drinking water, sanitation and hygiene, education, and healthy behaviors, particularly in advanced economies (Chetty and others 2016; WHO and UNICEF 2017).[46]

Narrowing health outcome gaps can help reduce inequality. First, better health outcomes for the disadvantaged by themselves improve social welfare. Second, better health outcomes can also lead to higher productivity, employment, and earnings. Third, better health outcomes also help improve school attendance and education outcomes and contribute to equality of opportunity and income equality.[47]

Public health spending can also have a distributional impact by providing financial protection and increasing household consumption. Many households fall into poverty because of high out-of-pocket spending. Public health coverage can help limit out-of-pocket spending and reduce financial exposure to adverse health-related events, which can also free up households from the need to accumulate unproductive precautionary savings (Wagstaff and others 2009; Baldacci and others 2010). Although out-of-pocket spending has declined modestly, progress has been slow, and it remains high in low-income countries and emerging market economies (Figure 1.32). The benefit incidence of public health spending is pro-rich in many countries, similar to that of public education spending (Wagstaff and others 2014), because the rich typically use more health care services and thus even identical health coverage packages benefit the rich more than the poor.

Similarly to reallocations in the area of education spending, reallocating public health spending toward the poor would likely lead to an improvement in spending efficiency. There is a strong positive associa-

[45]Basic health coverage refers to a weighted score calculated by the World Health Organization reflecting coverage of eight reproductive, maternal, newborn, and child health interventions.

[46]The widening in life expectancy between the rich and the poor in the United States is in large part driven by these factors, whereas access to medical care appears to play only a minor role (Chetty and others 2016; Ho and Fenelon 2015). It is likely the case that, in most advanced economies, on the margin health care makes very little difference in health outcomes, because most of the essential care is already universally available in these countries and benefits from additional care—though perhaps very costly—are small (Joumard, André, and Nicq 2010).

[47]For further discussion on these channels, see, for example, Jones and Klenow 2016; García-Gómez and López Nicolás 2006; García-Gómez, Jones, and Rice 2010; Hafner and others 2015; Loeppke and others 2009; Grantham-McGregor and others 2007; Suhrcke and de Paz Nieves 2011; Bleakley 2007, 2010; and Malucccio and others 2009.

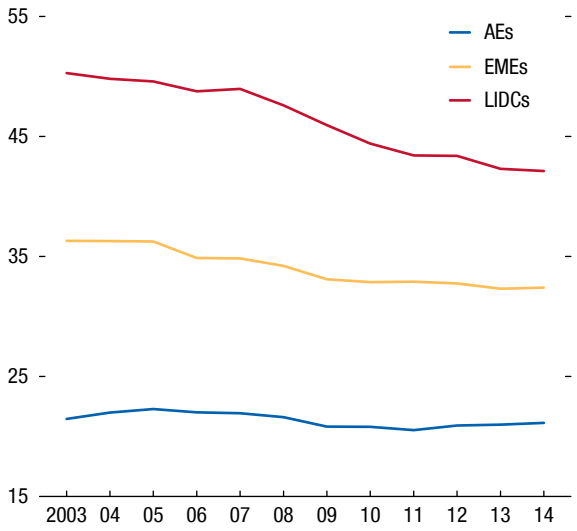
tion between lower inequality in health coverage and average life expectancy in a country, and this relationship remains after other key determinants of health outcomes are controlled for (Figure 1.33). The effect appears to mainly reflect that the marginal benefit of health spending is larger for the poor, and therefore, reallocating public health spending from the rich to the poor raises overall health outcomes. Simulation analysis indicates that eliminating inequalities in basic health coverage could raise life expectancy, on average, by 1.3 years in low- and middle-income countries (see Annex 1.7 for a more detailed description of the method and discussion of the results).

Policy Implications and Conclusions

Fiscal policy is a powerful tool for governments wishing to tackle high or rising inequality. However, the appropriate design of fiscal redistribution will depend on various country-specific factors:

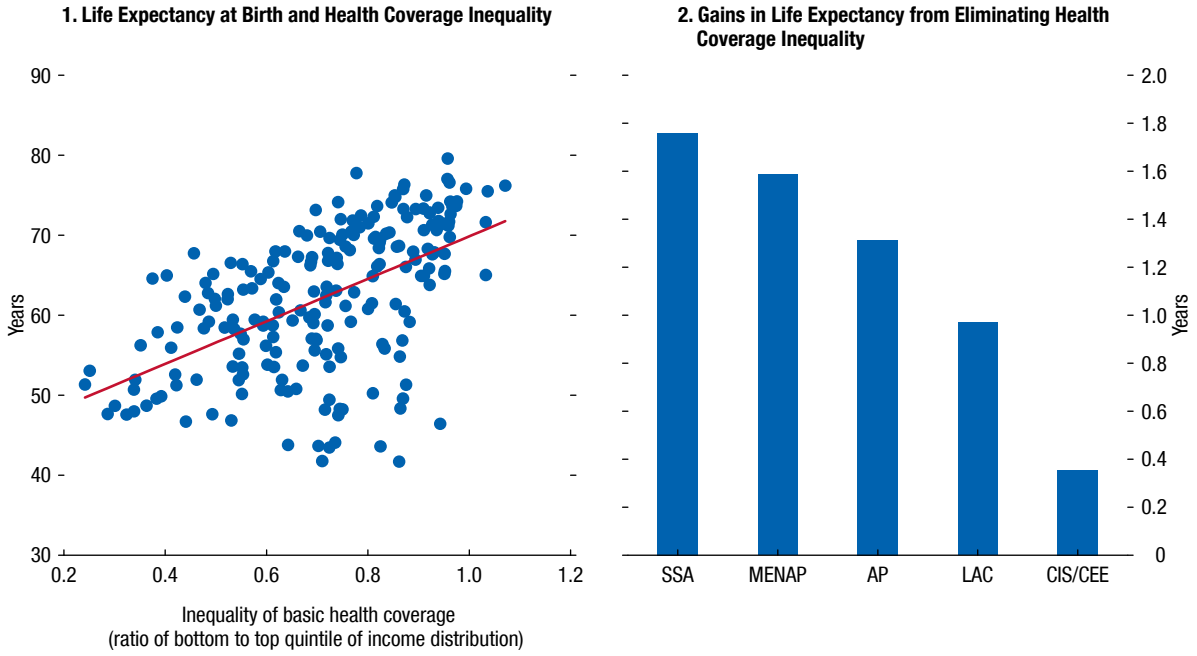
- *Social preferences*. Although some countries may be concerned about sharing the gains from growth

Figure 1.32. Trends in Out-of-Pocket Spending, 2003–14
(Percent of total health expenditure)



Sources: World Bank; and IMF staff calculations.
Note: AEs = advanced economies; EMEs = emerging market economies; LIDCs = low-income developing countries.

Figure 1.33. Basic Health Coverage Inequality and Health Outcomes



Sources: World Bank; World Health Organization; and IMF staff calculations.
Note: See Annex 1.7 for further details. AP = Asia and Pacific (10 countries); CIS/CEE = Commonwealth of Independent States and Central and Eastern Europe (13); LAC = Latin America and Caribbean (13); MENAP = Middle East, North Africa, Afghanistan, and Pakistan (10); SSA = sub-Saharan Africa (37).

more equally across the income distribution, others may be more concerned with reducing poverty and raising incomes for lower-income groups. For example, developing countries with low per capita incomes may be willing to accept larger increases in income inequality when growth is high and all income groups are benefiting.

- *Administrative capacity*. Countries with lower administrative capacity also have more limited tools available for redistribution. Whereas high-income countries often have the capacity to implement more sophisticated and more progressive fiscal policies (such as through greater use of means-tested benefits and more progressive income tax schedules), more limited administrative capacity in low-income countries typically means that they need to rely on less sophisticated redistributive instruments. Still, recent technological advances can present opportunities for enhancing the design and implementation of these policies through, for example, improved collection, sharing, and cross-checking of information, possibly expanding the range of tax and spending policy instruments available to governments.
- *Fiscal pressures*. Redistributive fiscal policies must be consistent with fiscal sustainability. Countries with high debt or fiscal deficits that wish to scale up fiscal redistribution would need to generate fiscal space. In addition to high debt, many advanced economies already have high tax and spending levels, which can leave little room for further increasing government size without adversely affecting growth. The limited fiscal space highlights the importance of achieving fiscal and redistributive objectives by reallocating spending and improving overall spending efficiency.

All these factors need to be considered when determining the appropriate redistributive role of fiscal policy. Focusing on the combined distributional impact of both tax and transfer instruments is also important, since regressive but efficient tax financing can be used to fund progressive spending. In addition, other fiscal and nonfiscal policy instruments can play an important role in achieving redistributive objectives while minimizing potential efficiency costs.

Enhancing Progressivity of Taxation

Progressivity of the PIT has declined over the past three decades in many advanced economies. Empirical evidence suggests that it may be possible to increase progressivity without adversely affecting economic growth, for instance, by raising marginal tax rates at the top in countries with relatively low rates and progressivity. Emerging market and low-income developing countries with lower administrative capacity and larger informal sectors will find it advisable to set a relatively high tax-exempt threshold and then focus on expanding PIT coverage by gradually decreasing the threshold in line with improvements in administrative capacity. In many of these countries, the PIT does not have a threshold; therefore, introducing one would help ease the administrative burden, strengthen tax compliance, and enhance progressivity (IMF 2014).

Both efficiency and equity considerations underscore the importance of reducing opportunities for tax avoidance and evasion, especially among high-income earners. Reforms should focus on capping or eliminating deductions such as the tax-favored status of fringe benefits or the unlimited tax deductibility of medical insurance costs or mortgage interest, where applicable. Measures to reduce the scope for turning labor income into capital income are also important. To ensure adequate taxation of capital income, differences between the taxation of different capital income types should be reduced, which may require higher and uniform taxation of capital gains. The recent OECD/Group of Twenty (G20) initiative on Base Erosion and Profit Shifting (BEPS) aimed at limiting the scope of international tax avoidance is a welcome first step. The automatic exchange of information could be extended to more countries and types of incomes. Although technology that enables funds to be shifted at low cost across the globe may have contributed to tax evasion, it can also help fight it, provided revenue authorities have access to the right data and technological tools and laws are adapted to the new realities.

Most countries have room to enhance revenues from the taxation of immobile capital significantly. Different types of wealth taxes—such as recurrent taxes on property or net wealth, transaction taxes, and inheritance and gift taxes—can also be an important source of progressive taxation. Taxes on real estate or land are both equitable and efficient and remain underused in many countries. An even stronger impact on equity can be achieved through higher taxes on second homes. Effective implementation of taxation of immovable property may require a sizable investment in admin-

istrative infrastructure, particularly in low-income countries. New geospatial technologies could help ease the challenges associated with the development and management of a cadaster.

Consumption taxes play an important role in fiscal redistribution by raising revenues to finance progressive spending, especially in emerging market and low-income countries with limited capacity to raise income taxes. Consumption taxes can be made more progressive by complementing them with excise taxes on luxury goods such as yachts and luxury cars. Increasing excise taxes on consumption with significant negative externalities (such as alcohol, tobacco, and fossil fuel energy) and using revenues for progressive spending is desirable on both efficiency and distributional grounds and can generate large revenue and health gains.

A Universal Basic Income or Means-Tested Programs

The extent to which countries emphasize universal or means-tested transfers to achieve their distributional objectives will depend on their administrative ability to implement means testing, the range of tax instruments available to them to raise revenue efficiently, and the responsiveness of labor supply at different parts of their income distribution. It will also depend on the policy challenges being addressed, for example, whether a UBI is being considered as a substitute for or complement to existing safety nets, as a response to increasing labor income uncertainty across the income distribution, or to generate public support for important structural reforms that may entail short-term costs.

In advanced economies, where existing safety nets are often generous and progressive, a UBI is unlikely to be an effective substitute. Where existing systems have gaps in coverage or progressivity, countries should first focus on addressing these gaps, such as by reforming eligibility rules or promoting benefit take-up. Indeed, many advanced economies already have an extensive array of categorical family benefits that have universal reach (such as child benefits and social pensions). Countries with means-tested programs also need to address any disincentives for labor force participation by strengthening administrative capacity and information systems as well as through the design of reforms, including greater use of well-designed in-work benefits.

In emerging market and developing economies, a UBI could be an attractive alternative where existing systems have large coverage gaps and low progressivity, provided it can be efficiently financed. This is more likely in countries that currently rely heavily on inefficient and regressive universal price subsidies (such as those on food or energy) and that have large gaps in their consumption tax bases. However, the adoption of a UBI would need to be consistent with other fiscal priorities such as generating fiscal space to finance other spending needs while ensuring fiscal sustainability. It would also require strengthening the capacity to distribute cash transfers and developing a strong communications campaign to generate support for a broader package of reform measures.[48] Administrative, political, and fiscal constraints therefore suggest that a gradual approach to reform would be desirable, possibly focusing first on universal coverage of subgroups of the population, such as children and the elderly. Recent technological developments such as biometric identification, information digitalization, and electronic finance have greatly enhanced the attractiveness of a UBI to strengthen the social safety net quickly while continuing to enhance administrative capacity to better target redistributive spending.

Where the case for a UBI is predicated on the need to strengthen social insurance mechanisms in the context of growing labor income uncertainty (such as that caused by continued technological change), its role needs to be considered as part of a broader set of income insurance instruments. By design, progressive income tax and transfer systems provide an important source of income insurance—particularly to those who have lower capacity to self-insure through savings—since after-tax-and-transfer income is more stable than before-tax-and-transfer income.

Reducing Gaps in Education and Health

Efforts related to the health and education sectors should focus on improving the outcomes of the disadvantaged. Countries could consider a broad set of policy options—including policies to tackle factors beyond the education and health systems—to close

[48]Such reforms could include the promotion of a renewed social contract based on higher government transparency and accountability, broadening consumption tax bases by eliminating exemptions and privileged rates, and efficient taxation of energy and other consumption externalities (for example, tobacco and alcohol).

outcome gaps in education and health and to improve the redistributive effect of public education and health spending.

- *Improving access to quality education and health care for the disadvantaged*. In education, efforts should be focused on expanding basic—primary and secondary—education to eliminate remaining enrollment gaps. For tertiary education, the main objective is to achieve equality of opportunity so that admission is based on ability rather than family socioeconomic background. Since much of the benefit from tertiary education accrues to graduates in the form of higher earnings, a strong case can be made for expanding the role of private financing and income-contingent student loans (Barr 2012). In health, the priority is to achieve universal health coverage of a broad package of essential health services. Many developing countries, for example, Brazil, China, Ethiopia, India, Mexico, Thailand, and Tunisia, have successfully expanded their health coverage.[49] Targeted subsidies—including reduced or zero charges for the poor and those with chronic illnesses, and preventive care (such as immunizations)—can play an important role. Since many low-income households often reside in less developed areas (including in urban areas), public provision of health care or additional incentives for service provision may be required. Equal access does not automatically lead to equal enrollment or utilization. Conditional cash transfer programs (such as those in Brazil and Mexico) and information dissemination, for example, can help stimulate demand, particularly among the disadvantaged.
- *Improving learning and quality of health care for the disadvantaged*. A starting point would be the development and enforcement of appropriate regulations and guidelines and the allocation of more resources to schools and health care facilities used primarily by the disadvantaged. But for the additional resources to be most effective, they need to be spent to provide performance incentives, instead of, for example, merely increasing wages (Hanushek 2006; World Bank, forthcoming).[50]
- *Investing in early childhood education and parenting skills, strengthening nutritional programs, and improving access to clean water and sanitation.* Acquiring foundational skills in early childhood is essential for learning, and early learning deficits tend to be amplified later in the education system (World Bank 2016). Subsidies targeted to disadvantaged households could be considered for early childhood education, which could also boost employment and earnings in these households. Programs to improve parenting skills have also shown positive effects and could be expanded (as in Bangladesh, Colombia, and Jamaica). Food subsidy programs and healthy meal programs for students are generally effective in providing the needed nutrition for low-income households (Frisvold 2015). A large share of the global population still lacks access to safe water and sanitation services, and improving access could generate substantial health benefits (WHO and UNICEF 2017).
- *Taxing unhealthy behaviors*. Taxing smoking and alcohol consumption can help improve health outcomes while at the same time raising revenues. The health costs of energy subsidies arising from the pollution associated with energy consumption are also very large, and raising energy prices to efficient levels could reduce associated pollution deaths by nearly 60 percent (Coady and others 2017). Although there are concerns that a large share of these taxes might fall on the poor, their overall effect should be pro-poor as long as the revenues are directed toward financing progressive spending measures.
- *Improving efficiency*. Inefficiencies in education and health spending are large (Grigoli 2015; WHO 2010). In addition to allocating more resources to the disadvantaged, reforms to address other sources of inefficiency could help free resources to finance inequality-reducing initiatives. These include curbing tax incentives and deductions for health and education expenses as they tend to benefit the rich more than the poor, improving governance, and tackling corruption and waste. In education, realigning the number of teachers to the decline in the number of students in many

[49]In the United States, The Patient Protection and Affordable Care Act of 2010 (ACA) substantially reduced the number of uninsured. Recent proposals to "repeal and replace" the ACA, however, could lead to the loss of health insurance coverage for millions of Americans, according to the estimates by the Congressional Budget Office.

[50]Korea has improved the quality of education for disadvantaged students by providing various incentives for teachers to work in high-need schools (Schleicher 2014). Canada, Chile, France, Ireland, the Netherlands, and Spain have adopted reform initiatives to identify disadvantaged schools and provide additional support (OECD 2012b; Schleicher 2014).

advanced economies could lead to significant fiscal savings with little effect on outcomes (Rivkin, Hanushek, and Kain 2005; Chingos 2013; Glewwe and Muralidharan 2015; Coupé, Olefir, and Alonso 2016). In health, the efforts could focus on shifting resources toward the most cost-effective services, such as primary and preventive care; fostering competition and choice; improving provider payment systems; adopting health information technology; and improving public financial management (Coady, Francese, and Shang 2014; World Bank 2017).

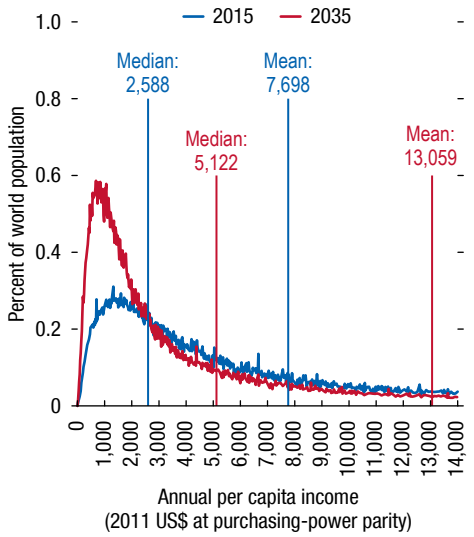
Box 1.1. Global Inequality Today and in 2035

The declining trend of global inequality, mentioned in the chapter text, is expected to continue. Based on projections of population growth (from the United Nations) and projections of per capita income growth (from the IMF and World Bank, the Organisation for Economic Co-operation and Development, and *Consensus Forecasts*), and assuming within-country inequality is unchanged, the global Gini coefficient would decline from 0.69 in 2015 to 0.66 in 2035. The income of individuals in the 90th percentile of the income distribution would amount to 25 times that of individuals in the 10th percentile (compared with 28 times in 2015). The number of people with annual incomes of $2,000–$20,000 would increase by 1.78 billion, with the largest gains in China, India, and Latin America and the Caribbean (Figures 1.1.1 and 1.1.2). Most of the population growth in sub-Saharan Africa would be among those with incomes of less than $2,000 (Figure 1.1.1).

The projection of declining global inequality is robust to different underlying assumptions. First, if within-income inequality, rather than being constant, evolves with economic growth based on the relationship between inequality and affluence observed across countries in the recent past (the Kuznets curve), the global Gini coefficient would fall faster, reaching 0.63 in 2035. Indeed, several highly populous emerging market economies are currently at the top of the Kuznets curve and thus poised to experience a decline

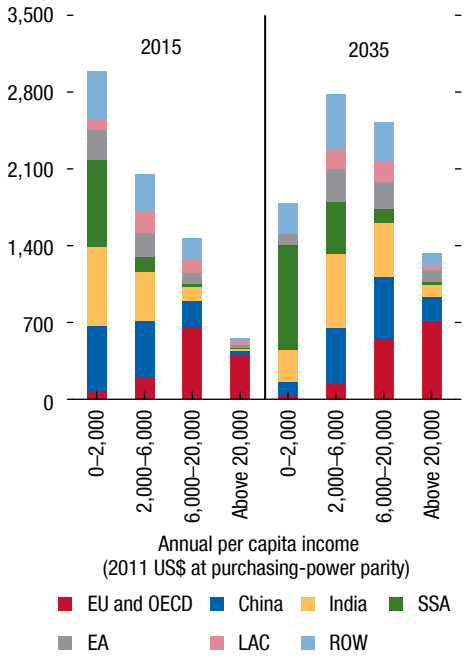
Further details on data and methodology are available from Hellebrandt and Mauro (2016). The household surveys and projections for population and income growth used in this *Fiscal Monitor* reflect the most up-to-date versions available.

Figure 1.1.1. Distribution of Global Income, 2015 and 2035



Source: IMF staff calculations, using data from the Luxembourg Income Study and World Bank.
Note: Household surveys are adjusted for underreporting of self-employment income and undersampling of rich households. The vertical axis shows the share of world population in narrowly defined income brackets. See Hellebrandt and Mauro 2016 for further details.

Figure 1.1.2. Population by Individual Income Level and Region, 2015 and 2035



Source: IMF staff calculations, using data from the Luxembourg Income Study and World Bank.
Note: EA = East Asia; EU = European Union; LAC = Latin America and the Caribbean; OECD = Organisation for Economic Co-operation and Development; ROW = rest of world; SSA = sub-Saharan Africa.

Box 1.1 *(continued)*

in within-country inequality. For global inequality to remain stable, the within-country Gini coefficient would need to worsen in each country by 6.6 Gini points (a remote scenario given that a deterioration of this magnitude has been observed only in one or two countries over the past 20 years). Second, under a more pessimistic economic growth scenario, the global Gini coefficient would decline to 0.67.[1] The decline in inequality would be somewhat less pronounced, but still noticeable, if the slowdown in growth applied only to a few highly populous emerging market economies. On the other hand, higher economic growth in emerging markets and developing economies would result in a steeper decline in global inequality compared to the baseline.[2]

[1]The lower-growth scenario assumes that real GDP growth for each country is revised downward over the projection period (2015–35) by about half a standard deviation in the annual historical growth rates over the preceding 10-year period.

[2]Global inequality would decline by an additional 1.1 Gini points if each emerging market and developing economy grew half a standard deviation (calculated over the 10-year preceding period) faster than in the baseline or by an additional half Gini point if emerging market and developing economies implemented the structural reforms recommended in IMF 2017b.

Box 1.2. Equally Distributed Equivalent Income as a Measure of Social Welfare

Welfare-based measures can help policymakers when they face decisions that entail important trade-offs between equity and efficiency. Though relying on assumptions—which need to be appropriately made known—about how to represent social welfare, reducing the welfare associated with income distributions to a single number can provide a ranking among alternative distributional outcomes. One way to quantify social welfare in monetary units is to use the concept of equally distributed equivalent income, introduced by Atkinson in 1970 and recently used to estimate the relative contributions of mean income and inequality to social welfare (Dollar, Kleineberg, and Kraay 2015; Gaspar, Mauro, and Poghosyan 2017).

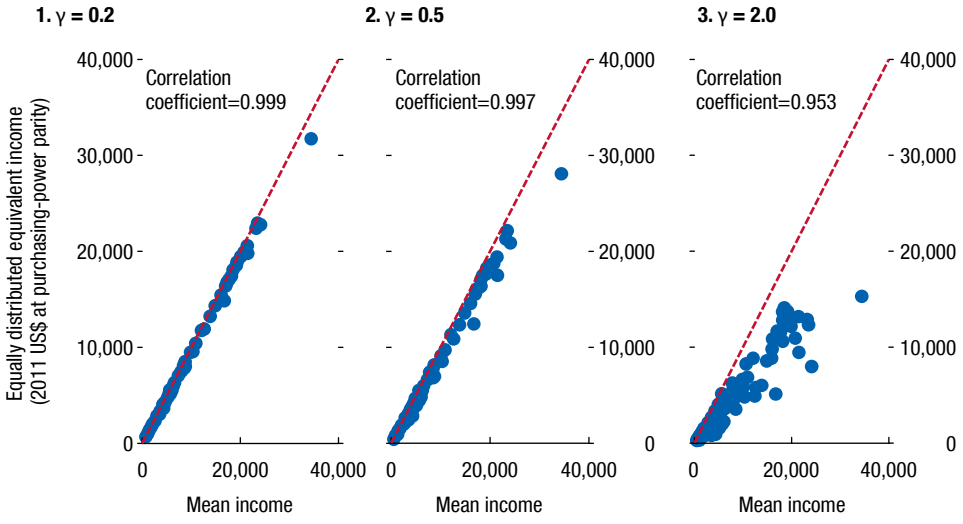
Atkinson defines a welfare-based measure of inequality (I) with values that range between 0 and 1, with 1 being complete inequality and 0 being complete equality. A value of, say, 0.3 means that if incomes were equally distributed, then society would need only 70 percent (1 – 0.3) of the present national income to achieve the same level of welfare it currently enjoys (in which incomes are not equally distributed). The level of income per person that if equally distributed would enable the society to reach the same level of welfare as the existing distribution is termed *equally distributed equivalent income (EDEI)*. A symmetric interpretation of this concept is how much society is willing to give up (of the current average income) to be in a world where everyone is certain to receive $(1 - I)$ income.

Operationally, EDEI satisfies $U(EDEI)\int f(y)dy \equiv \int U(y)f(y)dy \equiv W$, in which f is the distribution of income, U is the "utility" of the individual with income y, and W is average welfare under the current distribution. The Atkinson measure is then defined as $I = 1 - \frac{EDEI}{\mu}$, in which μ is the mean of the current distribution. It can be shown that $W = \mu(1 - I)$. Therefore, the change in welfare can be expressed as $\Delta W = \Delta\mu + \Delta(1 - I)$, in which Δ indicates the percentage operator.

If U is isoelastic, then $U(y) = \frac{y^{1-\gamma} - 1}{1 - \gamma}$, in which γ is the degree of aversion to inequality. The larger the γ, the greater is the aversion to inequality. Then $I = 1 - \frac{(W(1-\gamma)+1)^{\frac{1}{1-\gamma}}}{\mu}$, and $EDEI = [(1-\gamma)W + 1]^{\frac{1}{(1-\gamma)}}$.

Figure 1.2.1 estimates social welfare for a set of countries using an isoelastic functional form for the individual's utility functions and a plausible range of inequality aversion parameters based on the "leaky bucket" experiment of Okun (1975). The figure shows that welfare is dominated by mean income.

Figure 1.2.1. Relationship between Social Welfare (or Equally Distributed Equivalent Income) and Average Income



Sources: Gaspar, Mauro, and Poghosyan 2017; and IMF staff calculations.
Note: Gamma (γ) is the inequality aversion parameter.

Box 1.3. Bolivia: Inequality Decline during a Commodity Boom

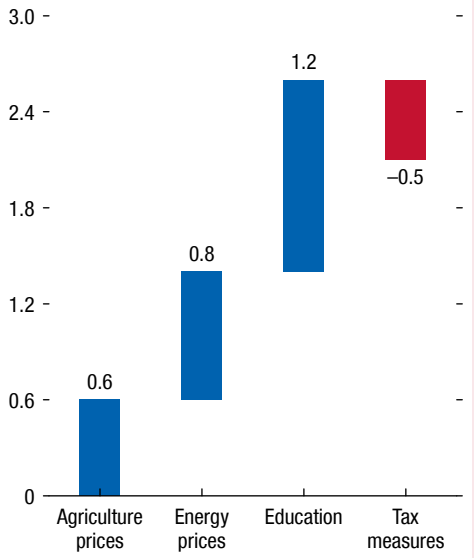
Bolivia experienced a strong economic expansion during 2005–12 that was accompanied by a sizable decrease in inequality (8.7 Gini points) and poverty (20 percentage points). The IMF (2016) and Balakrishnan and others (forthcoming) use a dynamic stochastic general equilibrium model calibrated to Bolivia to disentangle the contributions of different domestic and global factors—including commodity prices—to the observed changes in growth and inequality.

The 2 percent increase in potential growth observed during the period 2006–14 is explained mostly by the commodity price boom, which led to higher profitability in the energy and agricultural sectors and a surge in government revenues (Figure 1.3.1). These revenues allowed more infrastructure investment, improving private sector productivity. The substantial increase in the fraction of skilled individuals in the urban labor force helped the industrial sector expand and take advantage of the increased private sector productivity. Some of the fiscal policies undertaken included higher taxes, which, taken in isolation, had a moderate negative impact on growth.

What were the distributional implications? The increase in the average skill level of the workforce (the share of workers with education higher than high school rose from 30 percent to 45 percent between 2000 and 2012) led to higher incomes in urban areas. Skilled workers also became less scarce, which ultimately reduced the skills wage premium. Overall, the increase in the average skill level of the workforce is found to account for about one-third of the observed decline in inequality. Higher prices for tradable agricultural commodities increased demand for the corresponding raw agricultural products (which are processed minimally and then exported), ultimately raising the prices of agricultural goods and incomes in rural areas. Higher rural incomes reduced differences between rural and urban inequality and also boosted the demand for nontradable goods, bidding up wages for the lowest-skilled workers (including those in the informal sector), accounting for another one-third of the observed decrease in inequality. Energy prices were not found to have a direct impact on inequality (the gas sector has very low labor intensity), but generated higher government revenues, allowing a substantial expansion in social programs, including conditional cash transfers, which accounts for the remainder of the observed decline in inequality (Figure 1.3.2).

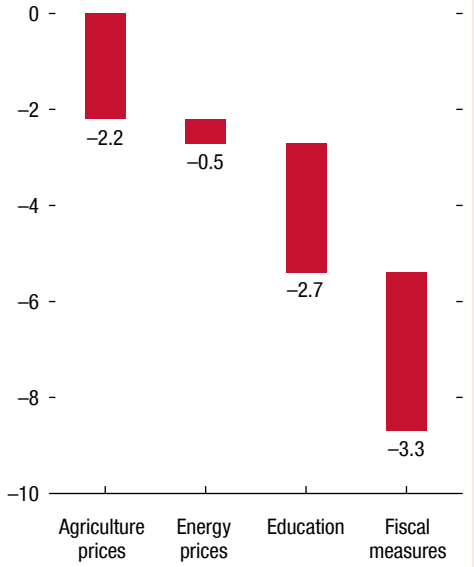
Higher energy prices could, in principle, have had a negative effect on economic activity (since energy is used in the production of all types of goods), but Bolivia had price controls on final user prices, which attenuated this effect (with substantial budgetary implications). Similarly, higher agricultural prices could have hurt the urban poor, but price controls on food lessened this effect (while also attenuating the potential income increases for rural households).

Figure 1.3.1. Contribution of Individual Factors to GDP Growth
(Percent)



Source: IMF staff calculations.

Figure 1.3.2. Contribution of Individual Factors to Decline in Gini Coefficient
(Gini points)



Source: IMF staff calculations.

Box 1.4. Measuring Tax Progressivity

There are a number of different ways to measure tax progressivity.

A simple measure, dating back to Pigou (1928), is the ratio of the change in the average tax rate to the change in income.[1] As shown in Figure 1.4.1, even for a very simple system with one flat rate (30 percent in this example) and a personal allowance (50 percent of the average wage in this example), progressivity changes substantially over the income distribution. This change creates a challenge for expressing overall progressivity in a single measure.

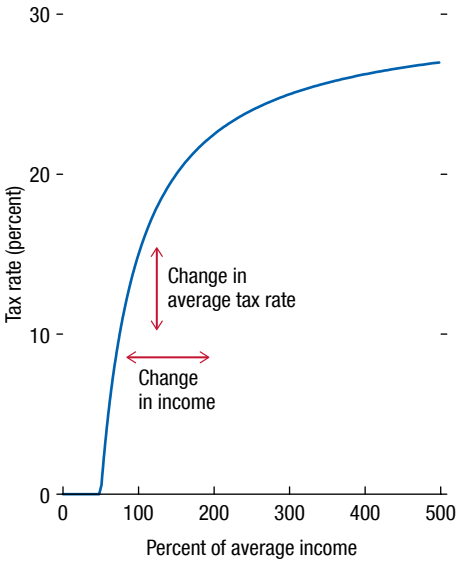
Peter, Buttrick, and Duncan (2010) address the challenge of capturing the overall progressivity in one estimate. They calculate progressivity for a wide set of countries by calculating the average tax rate progression over 100 data points ranging from 4 to 400 (also 100 to 300) percent of per capita GDP (calculated as the slope of a regression of the average tax rate on income). Their estimates expand until the end of 2005.

Inspired by the Gini coefficient, a different approach is suggested by Kakwani (1977). Specifically, progressivity is measured as twice the area between the income (red in Figure 1.4.2) and the tax payment (blue) Lorenz curves (gray area). A drawback of this measure is that it depends on the pretax income distribution. In this measure, a tax system will appear less progressive if the pretax distribution is relatively even, because for a given tax system, there will be less actual redistribution. Moreover, an increase in the top tax rate may show up as a reduction in the measure of progressivity if the higher tax rate discourages labor effort for very high incomes, resulting in a drop in pretax income inequality.

To address the concerns associated with the Kakwani measure, this box suggests "progressive tax capacity" of the system as a new measurement for tax progressivity. This is essentially the Kakwani measure calculated over a fixed range of incomes (0–500 percent of per capita GDP), each of which is given equal weight. Using data on tax systems of Organisation for Economic Co-operation and Development countries, including tax brackets, rates, allowances, surtaxes, and most tax credits, this measure calculates tax progressivity from 1981 onward.

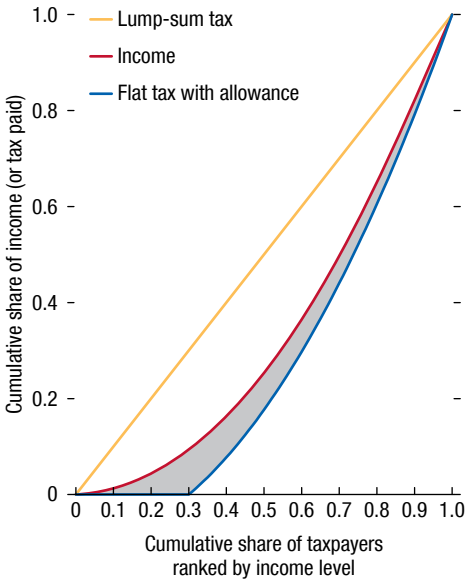
[1]This measure equals the difference between the marginal and average tax rate divided by income (see Musgrave and Thin 1948).

Figure 1.4.1. Average Tax Rate across Incomes



Source: IMF staff calculations.
Note: The figure shows average tax rates under a flat tax of 30 percent and a personal allowance of 50 percent of average income.

Figure 1.4.2. Lorenz Curves



Source: IMF staff calculations.

Box 1.5. Taxing Wealth and Wealth Transfers

Taxes on Wealth Stocks

Because the distribution of wealth is very unequal (Annex 1.2), taxing wealth may appear to be a potential source of progressive taxation. However, taxing income from wealth, rather than taxing wealth itself, is more equitable and efficient. Wealth taxes are equivalent to taxing a fixed return to wealth, leaving any excess return untaxed.[1] They are therefore particularly burdensome for investors holding safe assets, while benefiting better-off investors who can afford the risk of higher-yielding portfolios.

In some cases, however, taxes on wealth can play an important role, such as when taxing returns to capital is administratively or politically difficult. A typical type of wealth taxation is real estate property taxes. A property tax applied directly on estimated value is common practice in many countries and has the additional advantage of being levied on the least-mobile asset.

Taxes on Wealth Transfers

Taxes on wealth transfers apply to gifts and inheritances, or in some countries, on estates. They can play an important role in reducing wealth (including intergenerational) inequality. Opponents of inheritance taxes claim that they are an unfair double-taxation mechanism—given that the bequeathed wealth was already taxed when originally earned—and reduce future savings. Against the double-taxation claim, it can be argued that (1) some incomes were never taxed and that taxing transmission of wealth provides an opportunity for ensuring minimum taxation and (2) provided there is a sufficiently large allowance, any double taxation will affect only very rich individuals and thus simply strengthen tax systems' overall progressivity. Another argument against inheritance taxes is that if assets are accumulated with the motive of leaving a bequest, then taxing this bequest will affect labor supply and saving decisions (unlike in the case of an accidental bequest by someone living a shorter life than expected). However, again, provided there is a sufficiently large allowance, these efficiency costs may be very small. It can also be argued that a reduction in labor supply or effort by extremely wealthy individuals would also contribute to a more equal income distribution.

Inheritance taxes are preferable to estate taxes on equity grounds, because a lower tax is applied when a bequest is split among many heirs. It is important to integrate gift and inheritance taxes to address avoidance opportunities.

Taxes on wealth transfers are politically sensitive and administratively costly. Their beneficial equity impact could be lost if there are loopholes that allow the best-off individuals to avoid them. In practice, none of the Group of Seven countries has collected more than 1 percent of GDP per year from estate, gift, or inheritance taxes over the past four decades (Boadway, Chamberlain, and Emmerson 2010).

[1]If the tax rate is set at a level that implies that the fixed rate of return is equal to the normal rate of return, then a wealth tax would effectively be levied only on normal profits, leaving economic rents untaxed, precisely the opposite of what would be efficient and of what is recommended for corporate income taxes.

Box 1.6. Adopting a Universal Basic Income to Support Subsidy Reform in India

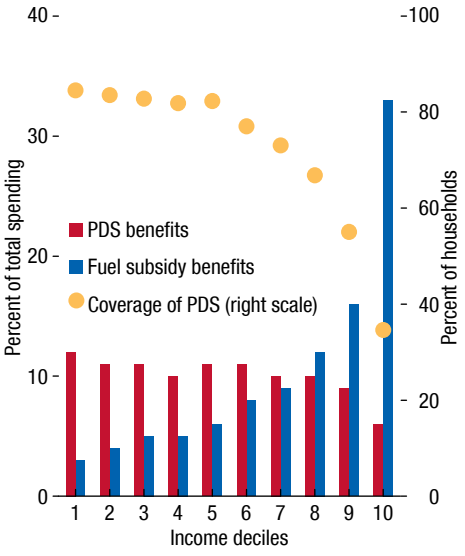
The need to reform existing subsidy programs in India has recently gained momentum (IMF 2017d). Part of the policy debate has focused on the potential role of a universal basic income (UBI) as an alternative to the existing system of state subsidies, which are typically characterized as fraught with inefficiencies and inequities (Ministry of Finance, Government of India 2017).

This box presents the results from a microsimulation analysis of a policy reform that replaces food and fuel subsidies in India with a UBI. Food and kerosene subsidies are managed through the Public Distribution System (PDS), which targets rationed quantities of these goods to poor households. In addition, fuel (gasoline, diesel, coal, liquefied petroleum gas [LPG], and kerosene) prices are substantially below efficient levels that would internalize the negative externalities associated with fossil fuel consumption. Eliminating these energy "tax subsidies" would require a substantial increase in fuel taxes and retail fuel prices (Coady and Hanedar 2016): gasoline (67 percent), diesel (69 percent), kerosene (10 percent), LPG (94 percent), and coal (455 percent). These large price increases reflect a broad definition of "tax subsidies" that reflects the environmental cost associated with fossil fuel consumption. The fiscal revenue yield from eliminating these "tax subsidies" therefore could potentially be larger than the fuel subsidies typically reported on budget, which are based on a narrower definition of subsidies that ignores the negative externalities associated with fuel consumption.

The simulations are intended to illustrate the potential benefits from using a UBI both to reform a current but inefficient social safety net (in this case, the PDS) and to generate public support for an ambitious fuel price reform. Based on India's 2011–12 National Sample Survey, the analysis assesses the welfare impact of replacing the subsidies that existed in that year with a UBI in a fiscally neutral manner. The fiscal envelope devoted to the UBI is equivalent to the combined fiscal cost of the PDS and energy subsidies in 2011–12, which would finance an annual uniform UBI for every person in India of 2,600 rupees (Rs) (about US$54) in 2011–12, equivalent to about 20 percent of median per capita consumption in that year. Although such a transfer is more modest than that often discussed in public debate, it would still incur a fiscal cost of approximately 3 percent of GDP.

Since the analysis is anchored in 2011–12, it does not take into account the significant subsidy reforms enacted by the government of India in more recent years. These reforms mean that fuel prices are now linked to import parity prices—gasoline prices were liberalized in 2010, diesel and natural gas prices in 2014, and kerosene and LPG prices in 2016. Fuel excise duties have been raised, the prices of kerosene and LPG are being gradually increased, and a tax of Rs 400 ($6) per ton has been imposed on coal consumption, substantially decreasing the tax subsidies on these products and reducing subsidies on the budget to only 0.2 percent of GDP in fiscal year 2016/17 (Parry, Mylonas, and Vernon 2017). Similarly, better targeting of food subsidies has reduced these subsidies to about 1.5 percent of GDP. The government of India has also made significant progress on the introduction of improved identification technology using the Aadhaar biometric citizen registry, which has the potential to greatly improve the administration of all social programs, and has already started to replace subsidies with the Direct Benefit Transfer, which is helping to improve targeting and reduce the fiscal cost of transfers (IMF 2017a).

Figure 1.6.1. India: Progressivity and Coverage of Public Distribution System and Fuel Subsidies



Source: IMF staff calculations, based on data from 2011–12 National Sample Survey.
Note: PDS = Public Distribution System.

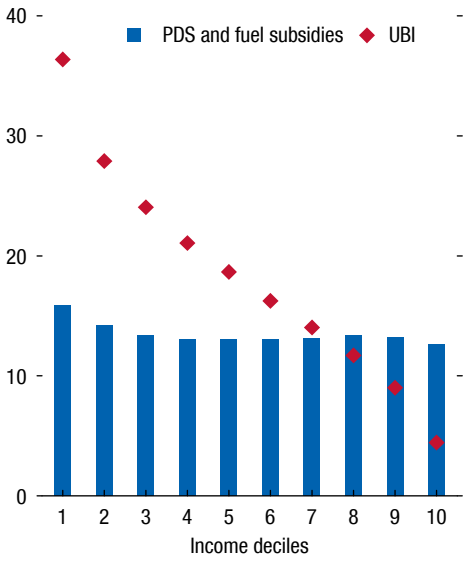
Box 1.6 *(continued)*

The microsimulation results indicate that a UBI would outperform the PDS and energy subsidies along three key dimensions:

- *Coverage*. Despite its broad coverage of the population, significant undercoverage of lower-income groups (at nearly 20 percent) still exists under the PDS (Figure 1.6.1).
- *Progressivity*. Higher-income deciles receive a larger share of PDS spending (with the richest 40 percent of households receiving 35 percent), and implicit energy subsidies are also highly regressive (with the top two income quintiles receiving 69 percent of implicit subsidies compared with 17 percent for the bottom two quintiles) (Figure 1.6.1).
- *Generosity*. Replacing PDS subsidies and implicit energy subsidies with a UBI would result in a substantial increase in the generosity of benefits received by lower-income groups (Figure 1.6.2).

In general, reaping the potential gains from the introduction of a UBI would need careful planning to overcome political, social, and administrative challenges, especially when subsidy reforms involve such large price increases as in the simulation above. Country experiences with reforming energy subsidies suggest a range of factors that can enhance the likely success of reforms (Clements and others 2013). These factors include, for example, a comprehensive energy sector reform plan, transparent and extensive communication, price increases that are phased in over time, measures to protect the poor, and institutional reforms that depoliticize energy pricing, such as the introduction of automatic pricing mechanisms.

Figure 1.6.2. India: Generosity of Public Distribution System and Fuel Subsidies
(Percent of household consumption)



Source: IMF staff calculations, based on data from 2011–12 National Sample Survey.
Note: PDS = Public Distribution System; UBI = universal basic income.

Annex 1.1. Inequality Data Set

This annex describes the methodology used for compiling the Gini income inequality data set used in this *Fiscal Monitor*, which builds on the data set constructed by Bastagli, Coady, and Gupta (2012).

First, a data set covering 152 countries (35 advanced economies, 65 emerging market economies, and 52 low-income developing countries) was built. Gini coefficient estimates for any given country were always from a single data source, based on household survey data, and priority was given to reporting estimates based on disposable income; otherwise, estimates were based on consumption or expenditure. For advanced, emerging Europe, and Latin American and Caribbean economies, the Gini coefficients were based on disposable household income. For most of the other economies in the data set, estimates were based on household consumption or expenditures.

The data sources used were (1) the Luxembourg Income Study (LIS) Database, mainly for advanced economies; (2) Eurostat Income Inequality Statistics, based on European Union Statistics on Income and Living Conditions (EU-SILC), used mainly to complement LIS Gini coefficient estimates for advanced economies; (3) the OECD's Income Distribution Database (IDD), used mainly to complement LIS and EU-SILC Gini coefficient estimates for advanced economies; (4) the Socio-Economic Database for Latin America and the Caribbean (SEDLAC), for Latin American and Caribbean countries from 1980 onward; and (5) World Bank PovcalNet, for emerging and developing Asia, emerging Europe and Central Asia, the Middle East and North Africa, and sub-Saharan Africa.

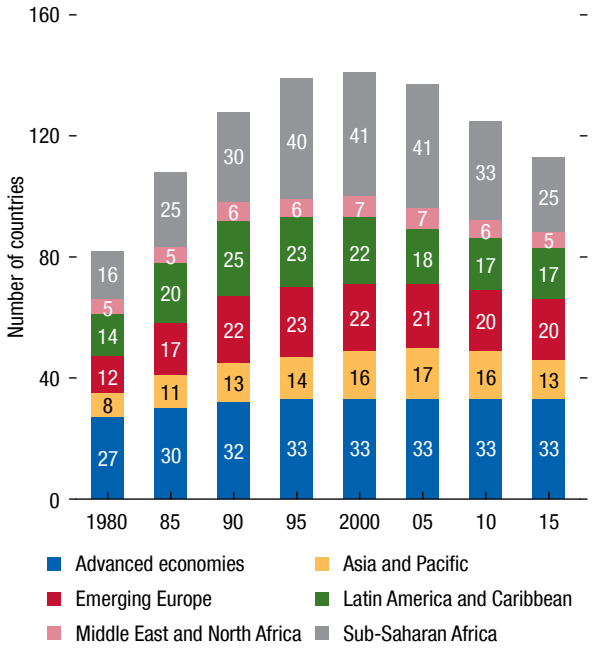
Because the Gini coefficients in the initial annual unbalanced database do not exist for all economies and for all years, three steps were taken to construct a balanced data set for five-year windows starting in 1980 and ending in 2015:

- The first step was to expand the annual Gini database using alternative data sources. For example, for advanced economies, for 2000 onward, when the Gini coefficient estimates from the LIS were not available on an annual basis, the absolute changes in the disposable income Gini coefficients from EU-SILC or the OECD were applied to the Gini coefficient estimates from the LIS.
- The second step was to create a Gini database with five-year windows (starting in 1980 and ending in 2015). If the Gini coefficient estimate for each of the benchmark years (1980, 1985, 1990, 1995, and so on) was available, it was used. If it was missing, the average of the Gini coefficient estimates for the benchmark years immediately before and after the benchmark year were used. Annex Figure 1.1.1 displays the sample size at each of the benchmark years by region.
- The third step was to construct the database with a balanced sample of Gini coefficients for these benchmark years by linearly interpolating the Gini coefficient estimates at the benchmark years, as well as applying constant extrapolation for these estimates backward and forward up to two benchmark years (two five-year intervals).

As a result of this process, the balanced sample for the period 1985 (1995) to 2015 includes 95 (112) countries, of which 30 (33) are advanced economies, 33 (44) are emerging market economies, and 32 (35) are low-income developing countries. Coverage of countries in some regions, in particular, the Middle East and North Africa, is very limited (Annex Figure 1.1.2).

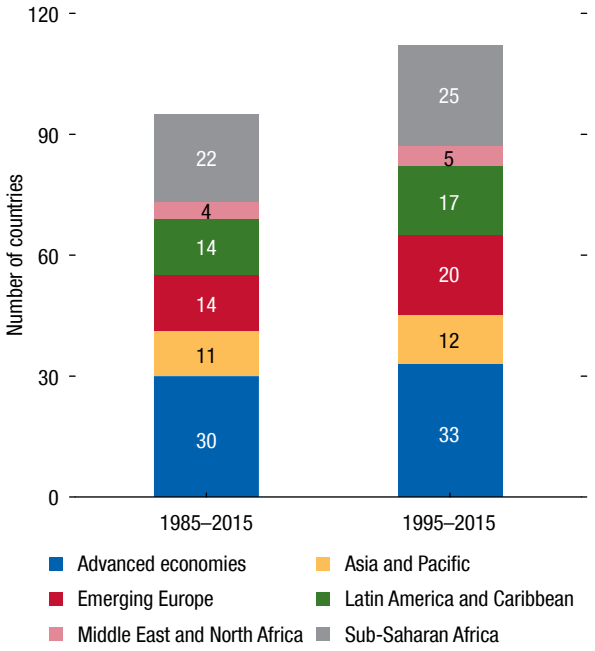
The analysis of the sample data in the chapter text focuses primarily on trends in inequality over time.

Annex Figure 1.1.1. Gini Income Inequality Data Set: Five-Year Window, Unbalanced Sample, 1980–2015



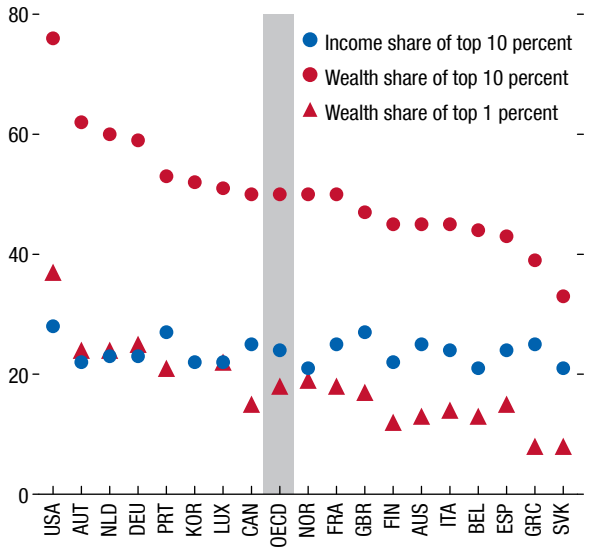
Sources: IMF staff calculations, using data from the Luxembourg Income Study; the Organisation for Economic Co-operation and Development's Income Distribution Database; Eurostat Income Inequality Statistics; the Socio-Economic Database for Latin America and the Caribbean; and PovcalNet.

Annex Figure 1.1.2. Gini Income Inequality Data Set: Five-Year Window, Balanced Sample, 1985–2015 and 1995–2015



Sources: IMF staff calculations, using data from the Luxembourg Income Study; the Organisation for Economic Co-operation and Development's Income Distribution Database; Eurostat Income Inequality Statistics; the Socio-Economic Database for Latin America and the Caribbean; and PovcalNet.

Annex Figure 1.2.1. Wealth and Income Shares of Top Percentiles of Households, Selected OECD Countries, 2010 or Latest Available Year
(Percent)



Source: Organisation for Economic Co-operation and Development (OECD), Wealth Distribution Database.
Note: The figure presents data for 18 OECD countries and their average, sorted by share of wealth held by the top 10 percent. Data labels in the figure use International Organization for Standardization (ISO) country

This analysis is likely to be robust, since Gini measures of inequality for any country are chosen according to a single measure based on income, expenditure, or consumption. However, greater care needs to be taken when comparing inequality levels across regions, since the measures tend to differ systematically across regions. Whereas Gini coefficients for advanced economies and Latin America and the Caribbean are typically based on income, measures for other regions are based on expenditure and consumption, both of which tend to be more equally distributed than income. For a detailed discussion of available Gini databases, see Ferreira, Lustig, and Teles 2015.

Annex 1.2. Inequality Dimensions: Wealth, Opportunities, and Gender

What Does Wealth Inequality Tell Us?

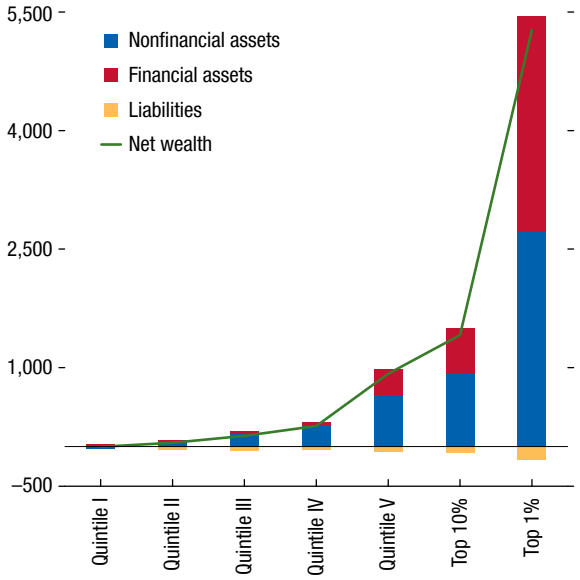
Wealth inequality reflects not only differences in income over a longer time span, but also differences in saving rates, inheritances, and bequests.

Evidence for a limited number of economies for which data are available shows that wealth is more unequally distributed than income. In the OECD, the average share of net wealth held by the top 10 percent of households (50 percent) significantly exceeds the average share of income held by the top 10 percent (24 percent) (Annex Figure 1.2.1). In the United States, where wealth is most unequally distributed, the top 1 percent alone holds nearly 40 percent of total net wealth. Financial assets—which include currency, equities, fixed income, life insurance, and pensions (individual retirement accounts, defined-contribution pension funds, and funded defined-benefit pensions)—make up a large share of household wealth at the very top (Annex Figure 1.2.2).

Wealth inequality has risen considerably in recent decades. The rapid growth of wealth held by the top decile in China has led to a concentration of wealth in the hands of the top 10 percent similar to that observed in the United States (Annex Figure 1.2.3). In the United States, a greater concentration of wealth has also taken place, reflecting the upsurge

Annex Figure 1.2.2. Household Wealth Composition by Quintile and in Top Percentiles, Average among OECD Countries, 2010 or Latest Available Year

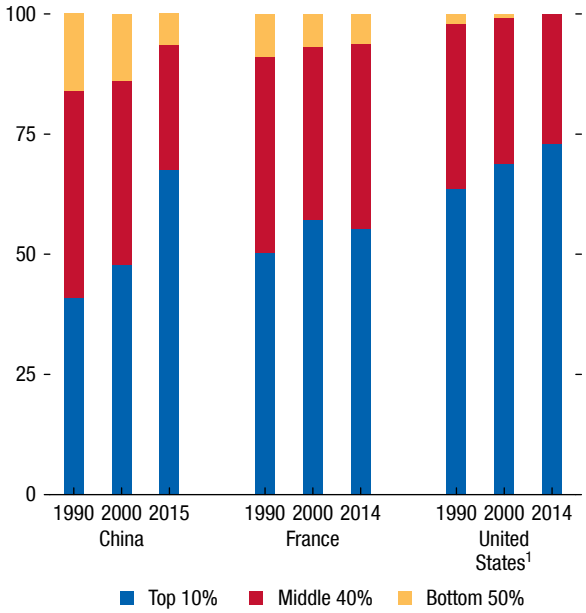
(Thousands of 2005 US dollars at purchasing-power parity and adjusted by consumer price indices)



Sources: Murtin and Mira d'Ercole 2015; and Organisation for Economic Co-operation and Development (OECD), Wealth Distribution Database.

Annex Figure 1.2.3. Wealth Distribution, 1990–2015 or Latest Available Year

(Percentage of total wealth held by individuals at various percentiles of distribution)



Source: World Wealth & Income Database.
Note: The middle 40 percent comprises those with less wealth than the top 10 percent but more than the bottom 50 percent.
[1]In 2014, the share of wealth for the bottom 50 percent (not distinguishable in the figure) was very close to zero but negative, notably as a result of negative equity in homes.

of top incomes (Saez and Zucman 2016). Saez and Zucman (2016) find that the wealth share of the top 0.1 percent grew from 7 percent to 22 percent over the period 1978 to 2012. Labor income, including entrepreneurial income, as well as the increase in the share of income in the economy accruing to capital, combined with high saving rates at the top, is having a snowball effect on wealth distribution (Annex Figure 1.2.4) (Perez-Arce and others 2016; Saez and Zucman 2016).

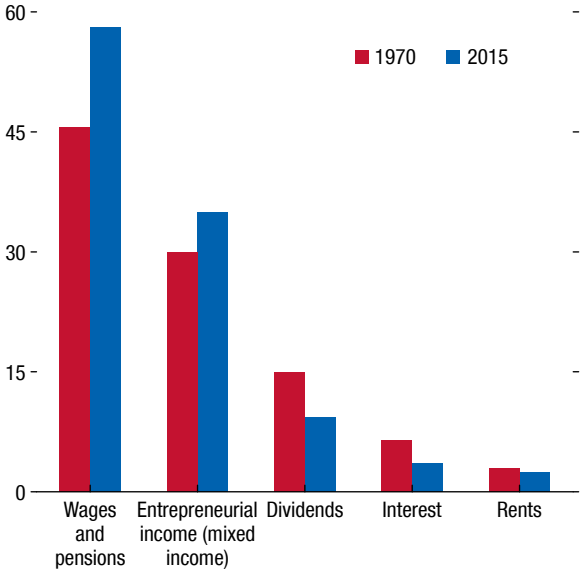
Inequality of Opportunity and Social Mobility

Inequality of opportunity is the extent to which circumstances over which individuals have no control (such as family socioeconomic status, gender, or ethnic background) affect the likelihood of a specific economic outcome as an adult (Roemer and others 2003). Restricted opportunities can involve lack of access to early childhood or tertiary education or lack of access to certain professions (Clements and others 2015).

Different measures of inequality of opportunity provide evidence of a positive correlation between inequality of opportunity and income inequality. One such proxy measure is *intergenerational income elasticity*, which is measured as the predicted percentage change in a child's earnings attributable to a percentage change in his or her parents' earnings and reflects the degree of intergenerational social mobility (Annex Figure 1.2.5). Another such measure, *inequality of opportunity (relative)*, captures the proportion of income inequality that can be explained by circumstances beyond the control of the individual (Annex Figure 1.2.6). Both measures suggest that inequality of opportunity is higher, on average, in emerging markets, especially in Latin American countries, than in advanced economies (as is income inequality). Among advanced economies, social mobility is much higher in the more egalitarian Nordic countries.

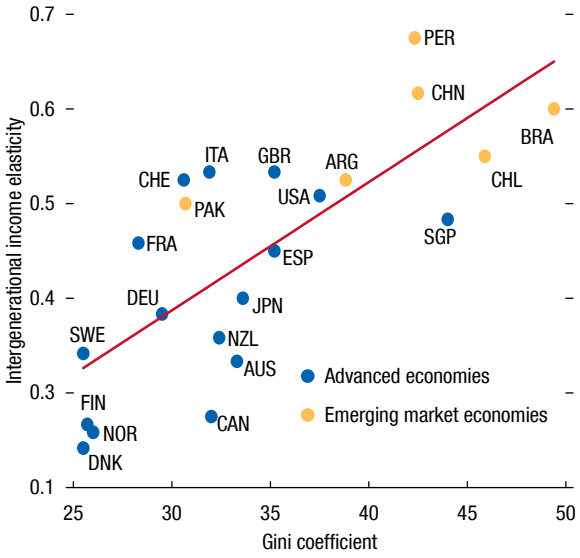
Given the cross-country link between inequalities of opportunities and outcomes, is it likely that coun-

Annex Figure 1.2.4. Decomposition of Income of Top 1 Percent
(Percent of total income)



Source: World Wealth & Income Database.
Note: Data in the figure exclude capital gains. Entrepreneurial or mixed income is the surplus (or deficit) from production by unincorporated enterprises owned by households; it includes a labor component and a capital component.

Annex Figure 1.2.5. Great Gatsby Curve: Income Inequality and Social Mobility



Sources: Corak 2016; and IMF staff calculations.
Note: Gini coefficients are as of 2015 or the most recent year available. Intergenerational income elasticity is defined as the percentage change in earnings of a child's generation associated with the percentage change in the parent's generation. Data labels in the figure use International Organization for Standardization (ISO) country codes.

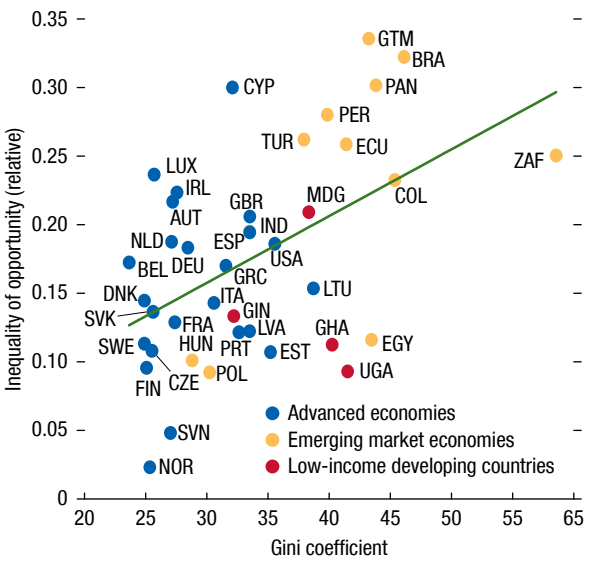
tries where inequality has increased will experience a reduction in social mobility? Although more evidence is needed, the few studies that have examined the link between inequality of opportunities and inequality of income for a given country over time have failed to find a strong relationship (Amaral and Perez-Arce 2015; Perez-Arce and others 2016). One explanation could be that public policies—such as access to education—help limit the impact of changes in inequality on social mobility.

Gender Inequality

Despite notable advances, gender disparities persist worldwide and are still particularly large in some regions. When indicators of disparities of opportunity with respect to education, health, financial access, and legal rights are taken into account, Europe appears to be the most gender-equal region, the Asia and Pacific region and the Western Hemisphere follow, and sub-Saharan Africa and the Middle East remain the regions with the highest gender inequality (Annex Figure 1.2.7) (Jain-Chandra and others 2017). For instance, maternal death and adolescent fertility rates remain particularly high in sub-Saharan Africa. In low-income developing countries, only 9 girls are enrolled in secondary education for every 10 boys. With regard to financial services, in South Asia, only 37 percent of women have an account at a financial institution versus 54 percent of men, and in the Middle East and North Africa, men are twice as likely as women to have an account (Demirgüç-Kunt and others 2015). Gender-based legal restrictions that constrain women's economic opportunities are widespread. For example, women are barred by law from specific professions in 79 countries, and in some countries, restrictions impede women's property rights.

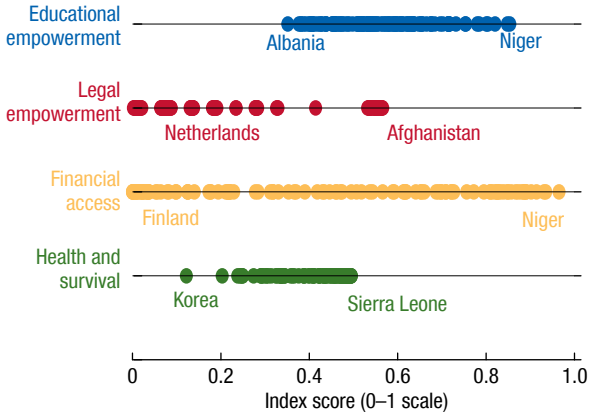
In addition to the unequal opportunities, labor market disparities are striking. Women's labor force participation varies from a low of 21 percent in the Middle East and North Africa to more than 63 percent in East Asia and the Pacific and sub-Saharan Africa. Across OECD countries, the average gender wage

Annex Figure 1.2.6. Income Inequality and Inequality of Opportunity



Sources: Brunori, Ferreira, and Peragine 2013; and IMF staff calculations.
Note: Gini coefficients are as of 2015 or the most recent year available. Inequality of opportunity (relative) measures the extent to which circumstances beyond an individual's control (such as family background, gender, and race) affect joint distribution of outcomes (income). It is a lower-bound estimate, because it is not possible to take into account all external circumstances (see Brunori, Ferreira, and Peragine 2013 for details). Data labels in the figure use International Organization for Standardization (ISO) country codes.

Annex Figure 1.2.7. Gender Inequality Measures, 2015



Source: IMF staff calculations.

gap—calculated as the difference between male and female median wages divided by male median wages—is estimated to be about 15 percent (IMF 2017c). Among emerging markets, wage gaps vary considerably: they are relatively high in China, Indonesia, and South Africa. Comparatively narrow wage gaps in the Middle East and North Africa are explained by the small share of women in wage employment; women who are employed are often more highly educated than their male colleagues. In several countries, earnings differences are even more significant when women and men with higher educational attainment are compared (OECD 2012a).

These various dimensions of gender-based inequality have major macroeconomic implications. For example, gender equality is positively associated with a country's per capita GDP and its level of competitiveness (World Economic Forum 2014; Duflo 2012). Higher economic participation and earnings by women translates into higher expenditure on school enrollment of children (Aguirre and others 2012; Miller 2008; Rubalcava, Teruel, and Thomas 2004; Thomas 1990). Gender gaps in economic participation restrict the pool of talent in the labor market and can thus result in total factor productivity losses (Cuberes and Teignier 2016; Esteve-Volart 2004).

Wider gender gaps also go hand-in-hand with broader inequality of income. Gonzales and others (2017) document the strong association between gender-based economic inequalities and a more unequal overall income distribution. They find that for advanced economies—with more equal economic opportunities across sexes—income inequality arises mainly through gender gaps in economic participation. In emerging market and low-income countries, inequality of opportunity, in particular, gender gaps in education, political empowerment, and health, appears to pose the main obstacle to a more equal income distribution.

Annex 1.3. Model Simulations

For this *Fiscal Monitor,* a dynamic stochastic general equilibrium model is developed to provide a better understanding of the possible quantitative effects of alternative fiscally neutral redistributive fiscal reform packages on income distribution and the macroeconomy.[51]

[51]The model builds on work by Lizarazo, Peralta-Alva, and Puy (2017).

Annex Table 1.3.1. Industrial Sector Characteristics

Sector	Labor Intensity	Type of Labor	Tradability
Low-Skill Service	Very high	Low and middle skill	No
High-Skill Service	High	Middle and high skill	No
Manufacturing	Low	All	High

Source: IMF staff estimates.

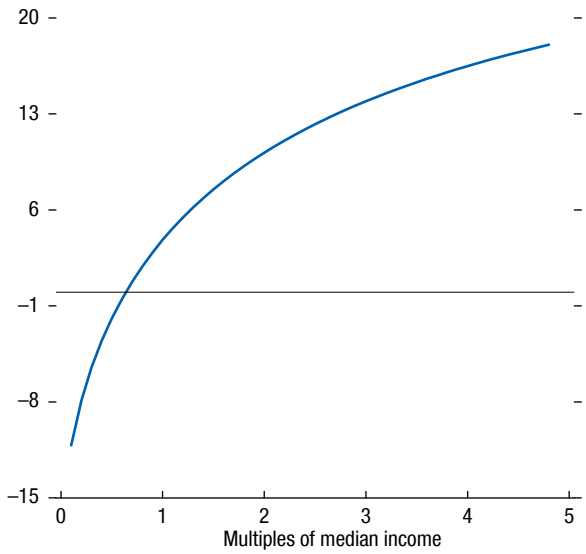
Households are divided into predetermined types, differentiated by education level, and are subject to idiosyncratic productivity shocks that generate income heterogeneity within household types. There are three industrial sectors—manufacturing, high-skill services, and low-skill services—each producing a different commodity with different technologies, as summarized in Annex Table 1.3.1. Markets are assumed to be competitive. International trade occurs at prices determined in international markets. Capital markets are closed, except for the government, which may hold an exogenously given level of external debt, with an exogenously given interest and amortization schedule.[52]

The economy is subject to important but realistic assumptions. First, given that the analysis horizon is the short to medium term (up to five years), a household's skill level is fixed. Second, labor markets are segmented, so that low-skill individuals cannot work in the high-skill services sector. Third, domestic credit markets are incomplete, because there is only one nonstate contingent bond for households to use to borrow and save. Households are subject to exogenous borrowing constraints that differ across skill levels.

A stationary equilibrium for this economy, with international prices and the policy setting (taxes and transfer functions) taken as given, is such that households maximize their lifetime expected utility and firms maximize profits. Domestically determined prices are such that markets clear and the government balances its budget.

Calibrating the model to the economy of the United States yields the "benchmark economy."[53]

Annex Figure 1.3.1. United States: Average Effective Personal Income Tax Rate
(Percent)



Source: IMF staff calculations.

The model specification also incorporates a PIT function that closely tracks the average and marginal rates of the US economy, as reported by Guner, Kaygusuz, and Ventura (2014) (Annex Figure 1.3.1). This includes negative and very progressive income tax rates for low levels of income (reflecting the EITC).[54]

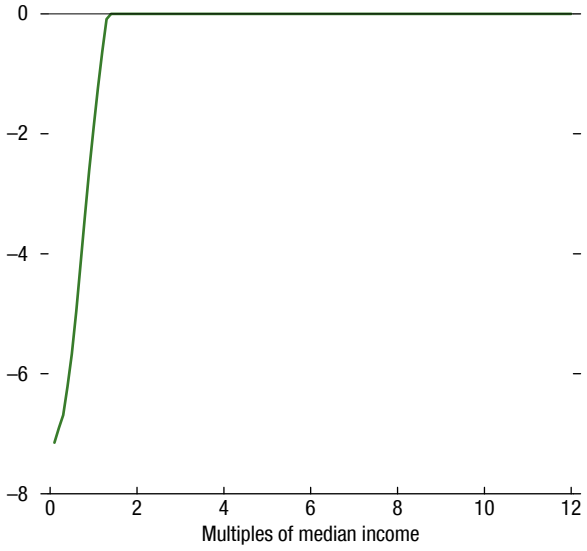
The policy scenarios considered comprise an expansion of the EITC and the introduction of a UBI (a lump-sum transfer given to all households), combined with alternative financing options, so that the reform is budget neutral. The first option considered is reducing government spending on tradable goods. This is the most neutral financing choice for both the macroecon-

[52]The sensitivity of the results to the closed-capital-markets assumption is tested by assuming instead that the economy is open financially and taking interest rates in international credit markets as given.

[53]The stationary equilibrium matches key features of the US economy, including macro ratios (private investment to GDP, private consumption to GDP, and so forth) and sectoral ratios (sectoral shares of output, the input-output structure of the economy, and so forth), as well as key distributional statistics.

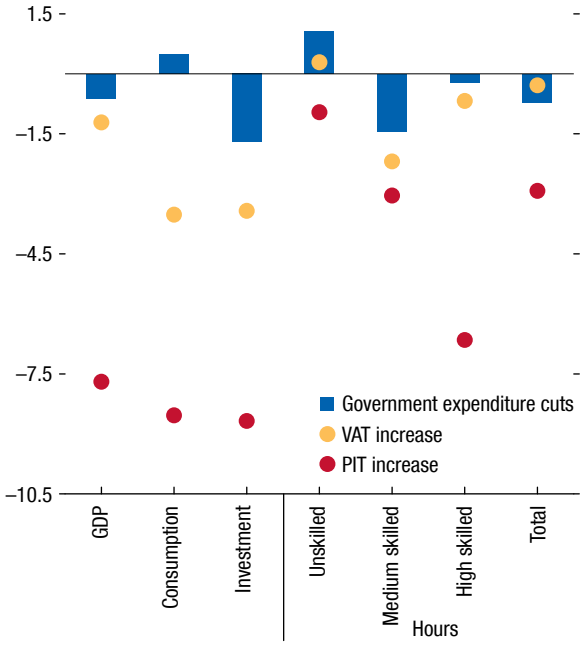
[54]A key parameter for labor responses is the labor supply elasticity, which is set to one-third, which is within the range of values in the literature.

Annex Figure 1.3.2. United States: Changes in Effective Average Personal Income Tax Rate from Expanding Earned Income Tax Credit
(Percent)



Source: IMF staff calculations.

Annex Figure 1.3.3. United States: Macroeconomic Impact of Expansion of EITC under Various Financing Options
(Percent change; cumulative effect over five years)



Source: IMF staff calculations.
Note: EITC = Earned Income Tax Credit; PIT = personal income tax; VAT = value-added tax.

omy and distribution.[55] The macroeconomic, distributional, and sectoral features of the new stochastic steady state are compared with those of the benchmark economy. Key variables are close to their new stationary equilibrium in about five years; therefore, the macroeconomic numbers reported, if divided by five, give an idea of the average yearly effect of the reforms.

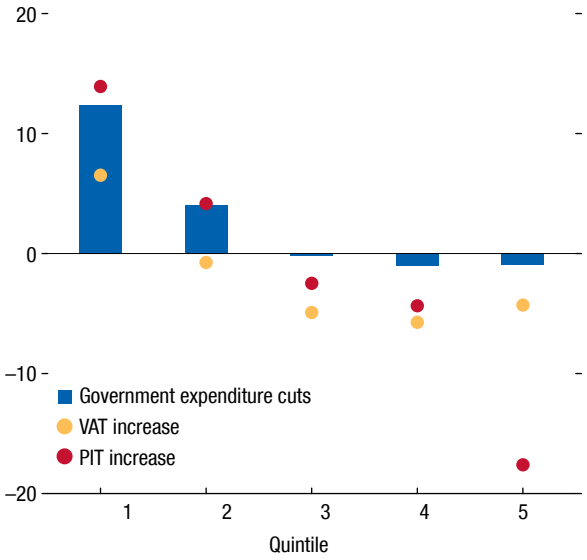
Expanding the EITC

The magnitude of the cut in effective personal income tax rates (as a function of median income) is displayed in Annex Figure 1.3.2. The EITC expansion results in a loss of government revenues of 1 percent of GDP, equivalent to approximately the cost of doubling the current EITC. The macroeconomic and distributional implications of the simulations for three financing alternatives are the following:

- *Reduction in government consumption of tradable goods*. A larger EITC results in a slightly lower GDP, because the exchange rate effects penalize the tradable goods sector, causing both the hours worked of middle-skill workers and investment to decline (Annex Figure 1.3.3). Subsidizing the labor of lower-income individuals increases their labor supply. The increase in the labor supply of low-skill workers exerts downward pressure on low-skill wages. Lower low-skill wages, paired with the fact that medium-skill workers can be substituted for low-skill workers, results in lower demand (and therefore, lower wages) for low-skill workers. Lower wages and hours worked are why the consumption of the second through the fourth quintiles does not benefit as much from the reform (Annex Figure 1.3.4). Higher consumption for the lowest quintile is expected, because those in this quintile are the direct recipients of the higher subsidy. The income of the fifth quintile depends more on capital than that of the other quintiles, and since the tradables sector (which is capital intensive) contracts, one would expect a decline in consumption for those in this group. However, this decline

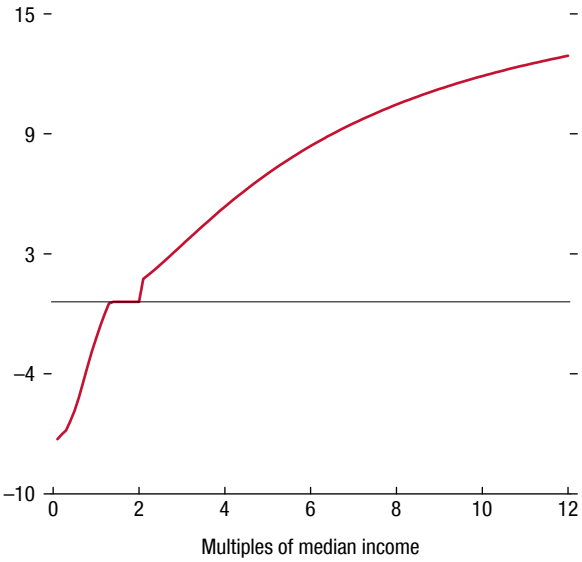
[55]Lowering government spending in tradables has an effect on the economy via the exchange rate. Specifically, lower purchases imply that more tradable goods become available for export although the need for imports may not have changed. To keep the trade balance in equilibrium, the exchange rate has to adjust.

Annex Figure 1.3.4. United States: Distributional Impact of Expansion of EITC under Various Financing Options
(Percent change in consumption by quintile; cumulative effect over five years)



Source: IMF staff calculations.
Note: EITC = Earned Income Tax Credit; PIT = personal income tax; VAT = value-added tax.

Annex Figure 1.3.5. United States: Changes in Effective Average Personal Income Tax Rates from EITC and Financing with Progressive Taxation
(Percent)



Source: IMF staff calculations.
Note: EITC = Earned Income Tax Credit.

does not happen, because lower wages preserve capital income.

- *VAT rate increase* (2 percentage point increase in the VAT rate). The negative impact on GDP growth is more pronounced (about 1.2 percent in total) when the EITC expansion is financed with a higher VAT, which distorts consumption and labor decisions (Annex Figure 1.3.3). The distributional implications are that VATs are regressive and thus, relative to other scenarios considered here, the households losing the most are those in the bottom quintile, although they are still substantially better off than before the EITC expansion was introduced (Annex Figure 1.3.4).
- *More progressive PIT.* Annex Figure 1.3.5 shows the simulated changes in the average effective PIT rate. The impact on GDP is substantially more negative, since the PIT distorts labor and capital choices and is expected to be more distortionary than indirect taxes (Annex Figure 1.3.3). Because the PIT is more progressive, the upper quintiles of the population experience consumption losses (Annex Figure 1.3.4); the bottom quintiles benefit much more than if the EITC expansion is financed through a VAT increase.

Introducing a Universal Basic Income

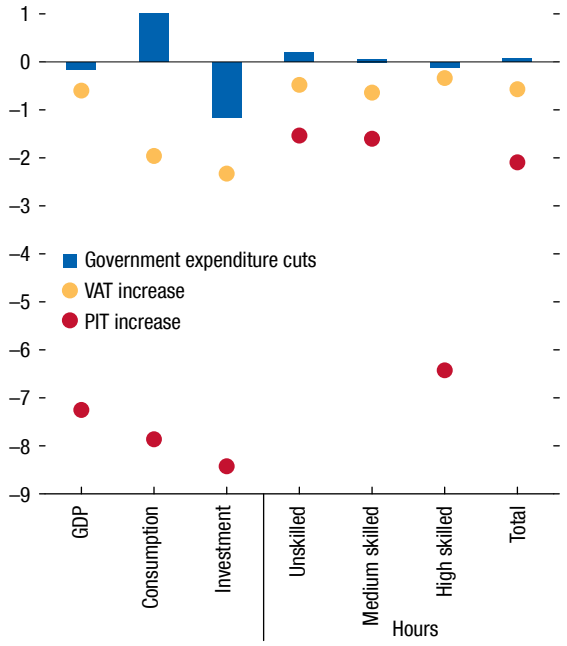
Every household in the economy is given a cash transfer of equal value. To make this comparable to the expansion in the EITC, the cost of the UBI program is set at 1 percent of GDP.

- *Reduction in government consumption of tradable goods.* The UBI has a negligible impact on GDP (Annex Figure 1.3.6). The cash transfer raises demand for all goods; as a result, nontradable prices and wages also increase, resulting in a switch from the production of tradables to the production of nontradables.[56] The increase in low-skill wages compensates for the negative direct impact that the UBI could have on the labor effort exerted by low-income individuals, whose hours worked barely change. Since nontradables do not use capital, private investment and private capital stock decline moderately.

  The UBI is highly progressive (Annex Figure 1.3.7). Relative to the size of their incomes, households in the bottom quintile see a 5 percent

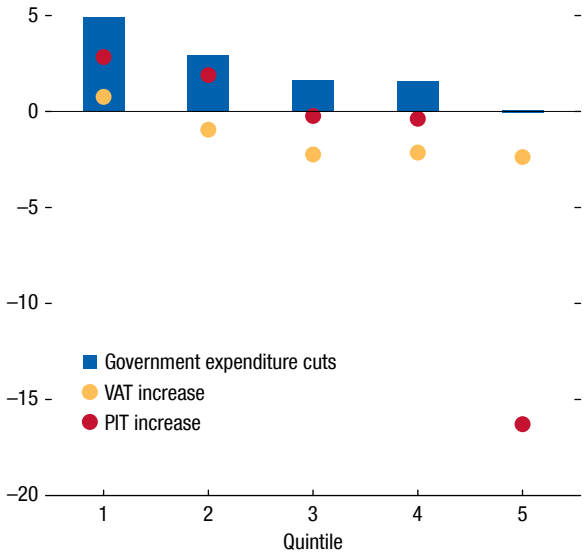
[56]The cash transfer affects demand because it is relatively large for individuals with high marginal propensity to consume. Because demand for all goods goes up, the prices of nontradables, which are endogenous, also go up.

Annex Figure 1.3.6. United States: Macroeconomic Impact of Universal Basic Income under Various Financing Options
(Percent change; cumulative effect over five years)



Source: IMF staff calculations.
Note: PIT = personal income tax; VAT = value-added tax.

Annex Figure 1.3.7. United States: Distributional Impact of Universal Basic Income under Various Financing Options
(Percent change in consumption by quintile; cumulative effect over five years)



Source: IMF staff calculations.
Note: PIT = personal income tax; VAT = value-added tax.

increase in their consumption (which is smaller than with the expansion in the EITC, because the EITC is targeted to the lower quintiles). Medium-skill workers are also employed in the production of services, and because of the higher demand for these services, their wages and hours worked increase. Medium-skill workers can also substitute for capital, and capital has declined. This further benefits the demand for medium-skill workers. Because of the increased demand for their labor, and in part because of the receipt of the cash transfer, consumption increases among the second through fourth quintiles.

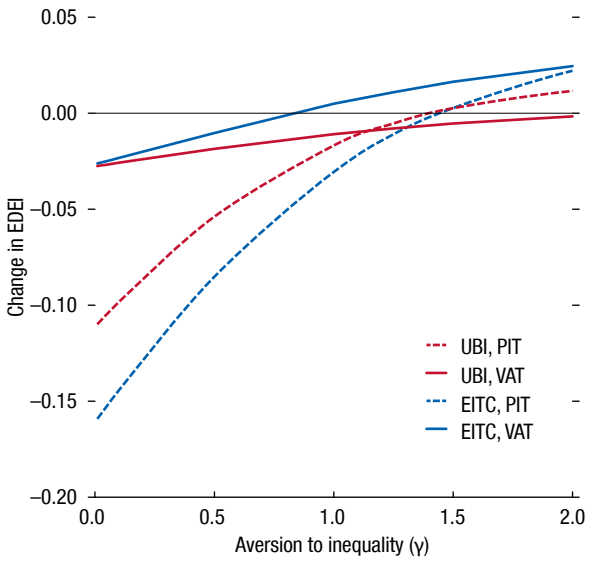
- *VAT rate increase* (the VAT would have to increase 2 percentage points to exactly finance the transfer). The macroeconomic impact of the reform worsens, because the VAT penalizes consumption and the returns to labor (Annex Figure 1.3.6). The reform is primarily beneficial to the bottom quintile of the consumption distribution (mostly because of the cash transfer itself) (Annex Figure 1.3.7).
- *More progressive PIT.* Investment would fall four times as much, because progressivity penalizes higher-income individuals, who are the savers. Financing with higher and more progressive taxes is more progressive by construction (Annex Figure 1.3.7).

Welfare Impact

The concept of equally distributed equivalent income (EDEI), proposed by Atkinson (1970) as a measure of welfare in monetary units and described in Box 1.2, permits comparison of the social welfare impact derived from the different fiscal packages considered. The value of EDEI depends crucially on the parameter *aversion to income inequality* (γ). As γ increases, societies are more willing to forgo average income to achieve more equity. Annex Figure 1.3.8 summarizes the results.

Redistributing income is costly (that is, it lowers economic efficiency), and more so when financed through increases in distortive taxation. For low values of γ, all policy packages reduce EDEI, with those financed with PIT being more costly to welfare than those financed with VAT. EDEI associated with all policy packages has a positive slope with respect to γ, which reflects that society is willing to trade efficiency for more equity.

Annex Figure 1.3.8. United States: Changes in Equally Distributed Equivalent Income under Reform Packages



Source: IMF staff calculations.
Note: The universal basic income (UBI) and the Earned Income Tax Credit (EITC) expansion are of equivalent size, equal to 1 percent of GDP. EDEI = equally distributed equivalent income; PIT = personal income tax; VAT = value-added tax.

The VAT is more efficient than PIT, but it is regressive. Thus, as aversion to inequality increases, packages financed with increases in PIT (in the analysis, the increase in PIT also increases its progressivity) improve and may even dominate in their effect on welfare.

As seen in earlier experiments, the EITC redistributes to poor working households, but through its effects on labor supply it also redistributes to higher-income households that benefit from lower labor costs. The EITC dominates the UBI because it is a targeted program and hence disproportionately benefits the lower quintiles of the consumption distribution. In addition, it has an important positive effect on the labor supply.

Annex 1.4. The Estimation of Elasticities

For this *Fiscal Monitor,* income tax elasticities are calculated for 35 countries over the period 1981–2016. The income distribution data are from the World Wealth & Income Database, and tax data are from the OECD tax database.

Following the method used in Brewer, Saez, and Shephard 2010, elasticities are calculated based on the incomes (Y) or income shares (s) of the top 1 and top 5 percent, either independently or in a difference-in-differences approach, as follows:[57]

$$e = \frac{\Delta \ln(Y)}{\Delta \ln(1-t)} \text{ or } \frac{\Delta \ln(s)}{\Delta \ln(1-t)}.$$

Income share is frequently reported in the data, but real income is often missing. Where it is missing, it is estimated, assuming that incomes are Pareto-distributed:

$$Y_5 = \frac{a}{a-1} t_5,$$

in which a is the Pareto index, the subscript refers to the top 5 percent (or 1 percent in the case of t_1), and t_5 is the threshold for the top 5 percent (and equivalently for t_1 and the top 1 percent). The Pareto index is estimated by rearranging the survival function of the Pareto distribution:

$$a = \frac{\ln(0.2)}{\ln(t_5/t_1)} = \frac{\ln(0.2)}{\ln(s_5/5s_1)},$$

in which the second approach is used if thresholds t_5 and t_1 for the top 5 percent and top 1 percent, respectively, are unavailable.[58]

The denominator is calculated as the income-weighted average of the tax rates that apply in the relevant tail, although in most cases it is simply the top income tax rate given the position in the income distribution. Elasticities can be estimated only for years in which there are tax rate changes (in most years at least one country has a tax reform).[59]

Annex Table 1.4.1 shows a descriptive summary of the six estimated median elasticities. To detect any trend over time, these six elasticities are regressed individually on a year variable. To address outliers, in addition to an unrestricted regression, regressions are conducted imposing three alternative restrictions: elasticities must be (1) below 5 in absolute value, (2) below 2 in absolute value, or (3) positive. Finally, to address concerns about temporary income shifting in reform years, elasticities are recalculated as changes in income from two years before to one year after the reform year. Out of these 48 regressions, only two have a positive and significant

[57]Under the difference-in-differences approach, the elasticity is calculated as

$$e = \frac{\Delta \ln(Y_1) - \Delta \ln(Y_{2-5})}{\Delta \ln(1-t_1) - \Delta \ln(1-t_{2-5})}.$$

[58]For countries for which no data on the top 5 percent are available (only Ireland), it is equivalently calculated based on the top decile versus the top percentile (for countries for which both are available, the correlation between both estimates is very high).

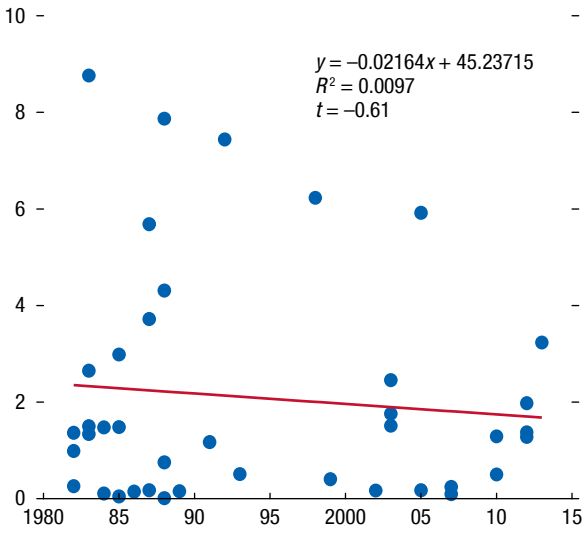
[59]To be precise, an elasticity is calculated only when there is a change in the personal income tax rate of at least 1 percentage point. No elasticity is calculated if the average tax rate changes simply because of changes in the income distribution.

Annex Table 1.4.1. Median of Estimated Elasticities

Numerator: Income Shares			Numerator: Real Incomes		
Top 5 percent	Top 1 percent	Difference-in-differences	Top 5 percent	Top 1 percent	Difference-in-differences
0.11	0.26	0.40	0.22	0.42	0.40

Source: IMF staff estimates.

Annex Figure 1.4.1. Elasticities of Taxable Income, Based on Top Income Shares



Source: IMF staff calculations, using data from the World Wealth & Income Database.
Note: The figure shows income elasticities for top earners estimated using the difference-in-differences approach (top 1 to top 2–5 percent) in 17 member countries of the Organisation for Economic Co-operation and Development.

coefficients, while the remaining regressions show a nonsignificant trend. As an example, Annex Figure 1.4.1 shows the difference-in-differences income share elasticities, restricted to positive values.

Annex 1.5. Growth Regressions

In this *Fiscal Monitor,* to assess the effect progressivity has on growth $\hat{y}_{it}$, the following regression is performed on a sample of annual data from OECD countries during the period 1981–2016:

$$\hat{y}_{it} = a + \beta_1 p_{i,t-1} + \beta_2 y_{i,t-1} + \gamma' \mathbf{X}_{i,t-1} + f_i + g_t + \varepsilon_{it}, \quad (1.5.1)$$

in which $p_{i,t-1}$ is the initial level of progressivity, $y_{i,t-1}$ the initial level of real per capita GDP, $\mathbf{X}_{i,t-1}$ a vector of control variables, and f_i and g_t country and year fixed effects. This regression closely follows Ostry, Berg, and Tsangarides 2014, except that it uses tax progressivity measures rather than measures of overall distribution. Notably, the country fixed effects capture any structural differences between countries, while the year dummies control for global economic shocks.

A range of progressivity measures are used to corroborate the results, which show that progressivity measures are nonsignificant in most specifications, but turn positive and significant in a few (Annex Table 1.5.1). These results suggest that there is not a strong relationship between progressivity and growth (with the few positive results not overinterpreted).[60]

A range of robustness checks are conducted, none of which change the results:

- The regression is performed on samples restricted to 10-year periods to allow for a change in the relationship over decades.[61]
- In line with Ostry, Berg, and Tsangarides 2014,[62] the regression is performed on five-year intervals, using as the dependent variable the average growth rate over five years, and as the explanatory variables, the value at the start of the five-year period (Annex Table 1.5.2).
- To address potential nonlinearities in the relationship between growth and progressivity, quantile

[60]One potential concern is that the large standard errors may result in low power of the regression to reject the null hypothesis that progressivity has no effect on growth. This concern is acknowledged, with the accompanying observation that some of the results (columns (1) and (3) in Annex Table 1.5.2) are positive and significant, which may suggest less of a low-power problem.

[61]This is done in two instances, by placing the following restrictions on the value of index t in equation (1.5.1): (1) $1981 \le t \le 1989$, $1990 \le t \le 1999$, $2000 \le t \le 2016$; and (2) $1985 \le t \le 1994$, $1995 \le t \le 2004$, $2005 \le t \le 2016$. Because of data availability limitations, this exercise is carried out only for the following progressivity measures: (1) the top statutory rate and its square and (2) the newly proposed measure of redistributive capacity, based on Kakwani 1977.

[62]Like Ostry, Berg, and Tsangarides (2014), the analysis here also specifies a system generalized method of moments to regress the five-year real per capita GDP growth rate on the same regressors, which, despite the relatively small sample of 35 countries, serves as an additional verification and yields the same results as the other regressions.

Annex Table 1.5.1. Progressivity and Growth: Annual Regressions

	(1)	(2)	(3)	(4)	(5)
Progressive capacity$_{t-1}$					–0.408
					(6.412)
Average rate progression, 0–400% per capita GDP$_{t-1}$	12.08				
	(7.465)				
Δ Average tax rate / 100–167% Average wage$_{t-1}$		3.927			
		(8.561)			
Δ Average tax rate / 67–100% Average wage$_{t-1}$		–3.784			
		(5.450)			
Δ Average wedge / 100–167% Average wage$_{t-1}$			13.19		
			(10.24)		
Δ Average wedge / 67–100% Average wage$_{t-1}$			1.880		
			(4.238)		
Top statutory rate$_{t-1}$				–0.00180	
				(0.0312)	
Top rate$^2_{t-1}$				0.000110	
				(0.000326)	
Constant	3.963**	40.60***	39.20***	5.308**	22.18**
	(1.784)	(14.71)	(11.71)	(2.243)	(10.52)
Number of observations	2,019	350	350	2,591	712
R-squared	0.105	0.635	0.638	0.175	0.502
Number of countries	135	33	33	146	34

Source: IMF staff calculations.
Note: Robust standard errors are in parentheses. Columns use several progressivity measures: the average rate progressions calculated for 0 percent–400 percent of per capita GDP (Peter, Buttrick, and Duncan 2010); the ratio of the change in the average tax rate (and wedge) to the change in the average wage from 67 percent to 100 percent and from 100 percent to 167 percent (calculated by the IMF staff, based on the OECD Taxing Wages database); the top statutory rate and its square; and a newly proposed measure of redistributive capacity, based on Kakwani 1977 (see the note to Figure 1.13). Control variables include population growth, the Gini coefficient for net personal income, and capital account openness (Chinn-Ito index). To address endogeneity issues related to the use of Gini coefficient for net income, an alternative specification excludes it, with no change to the results.
***$p < 0.01$; **$p < 0.05$.

Annex Table 1.5.2. Progressivity and Growth Regressions: Five-Year Intervals

	(1)	(2)	(3)	(4)	(5)	(6)
Progressive capacity$_{t-5}$			–0.0541			0.0775
			(0.337)			(0.359)
Average rate progression, 0–400% per capita GDP$_{t-5}$	1.877*			1.849*		
	(0.968)			(0.959)		
Top statutory rate$_{t-5}$		0.000468			4.71e-05	
		(0.00433)			(0.00428)	
Top rate$^2_{t-5}$		4.51e-06			–2.50e-05	
		(5.01e-05)			(4.73e-05)	
Constant	0.630**	0.730***	5.638***	1.089***	0	2.531***
	(0.266)	(0.249)	(0.759)	(0.261)	(0)	(0.586)
Number of observations	2,019	2,591	712	2,019	2,591	712
R-squared	0.528	0.519	0.805			
Number of countries	135	146	34	135	146	34
AR1 *p*				0.000	0.000	0.002
AR2 *p*				0.345	0.820	0.460
Hansen *p*				1.000	1.000	1.000

Source: IMF staff calculations.
Note: Robust standard errors are in parentheses. Control variables include population growth, the Gini coefficient of net personal income, and capital account openness (Chinn-Ito index). Regressions (4) to (6) are generalized method of moments. AR*n* refers to an autoregressive model of order *n*.
***$p < 0.01$; **$p < 0.05$; *$p < 0.1$.

Annex Table 1.6.1. Gross Fiscal Cost and Redistributive Impacts of Universal Basic Income: All Individuals

Country (year of data)	Gross Fiscal Cost (percent of GDP)	Reduction in Gini Coefficient	Initial Poverty Rate (percent)	Reduction in Poverty Rate (percentage points)	Annual UBI Amount (per person)
Brazil (2013)	4.60	0.05	19.04	11.6	R$1,286
Egypt (2012)	3.50	0.06	18.55	10.4	LE 725
France (2010)	6.80	0.04	9.49	6.3	€2,122
Mexico (2012)	3.70	0.06	19.68	12.0	Mex$4,994
Poland (2013)	4.90	0.04	10.70	6.9	Zl 2,111
South Africa (2012)	2.30	0.05	23.65	10.8	R1,584
United Kingdom (2013)	6.70	0.04	9.28	6.0	£1,839
United States (2013)	6.40	0.05	17.42	10.1	US$3,516

Source: IMF staff estimates using Luxembourg Income Study microdata.
Note: Universal basic income is calibrated at 25 percent of net median market income per capita.

regressions are run,[63] as well as regressions with a term for the interaction between the measure of progressive capacity and a dummy indicating high progressivity values (95th or higher percentile).

Annex 1.6. Empirical Assessment of a Universal Basic Income

The empirical assessment in this *Fiscal Monitor* of the fiscal cost and distributional impact following the adoption of a UBI covers eight countries (Brazil, Egypt, France, Mexico, Poland, South Africa, the United Kingdom, and the United States) and uses the standardized LIS microdata for the latest year available.[64] Given data availability, the countries have been selected to ensure heterogeneity in geographical area, development stage (emerging market and advanced economies), and generosity and progressivity of the countries' current noncontributory transfers. The analysis performs partial static equilibrium simulations, so only households are considered, and no behavioral responses (for example, change in labor supply or consumption patterns) are accounted for.[65]

First, the *gross* fiscal cost of a UBI calibrated at 25 percent of the country net median market income per capita (that is, earned market income minus direct taxes paid) is estimated.[66] Three variants are considered, depending on the population covered by the UBI: (1) full UBI given to all individuals in the country, (2) full UBI given to all children (17 and younger) in the country, and (3) full UBI given to all children (17 and younger) and elderly (65 and older) in the country.

Annex Table 1.6.1 shows the results of the estimation when all individuals are covered (variant (1)). All things equal, the reduction in inequality could be substantial (about 5 Gini points) and relatively similar across countries. The reduction in poverty would be higher in emerging markets than in advanced economies in the sample, reflecting higher returns to a UBI where income inequality levels are greater. The gross fiscal cost could be sizable and higher in richer economies than in poorer ones, and averages 6½ percent of GDP in the advanced economies selected in this experiment versus an average of 3.8 percent of GDP in the selected emerging markets.

Restricting the subset of UBI recipients scales down both its gross fiscal cost and its impact on inequality and poverty. Annex Table 1.6.2 shows the results from estimations for variants (2) and (3). In advanced economies, where life expectancy is higher and the population older, a UBI given to both children and the elderly helps reduce poverty more than when its eligibility is restricted to children (it also costs 70 percent more, on average). In emerging market economies, where the population is younger, the impact on poverty of a UBI given only to children does not differ

[63]An analysis is conducted using both regular and bootstrapped standard error quantile regressions for quantiles 75, 80, and 90.

[64]LIS Database (http://www.lisdatacenter.org).

[65]Simulations assume the existing tax and transfer schedules and eligibility requirements remain unchanged.

[66]In this first approach, simulations do not account for financing of the UBI or for household behavioral responses. In this sense, inequality and poverty impacts and fiscal costs are "gross."

Additional levels of UBI are also simulated, including 10, 20, 30, 40, and 50 percent of net median market income per capita. These levels are set arbitrarily. As comparison points, one can think of the LIS relative poverty threshold set at 50 percent of the per capita equivalent median market income, or levels currently being experimented with in different countries (for instance, in Finland, selected unemployed recipients are given 560 euros a month).

Annex Table 1.6.2. Gross Fiscal Cost and Redistributive Impacts of Universal Basic Income: Children and the Elderly

	Children Only			Children and Elderly Only		
Country (year of data)	Gross Fiscal Cost (percent of GDP)	Reduction in Gini Coefficient	Reduction in Poverty Rate (percentage points)	Gross Fiscal Cost (percent of GDP)	Reduction in Gini Coefficient	Reduction in Poverty Rate (percentage points)
Brazil (2013)	1.30	0.03	5.5	1.70	0.03	6.0
Egypt (2012)	1.30	0.03	5.6	1.50	0.03	6.1
France (2010)	1.50	0.01	2.7	2.60	0.02	3.4
Mexico (2012)	1.30	0.03	6.1	1.50	0.03	6.7
Poland (2013)	1.10	0.01	2.7	1.70	0.02	3.3
South Africa (2012)	0.80	0.02	4.7	0.90	0.03	5.5
United Kingdom (2013)	1.40	0.01	2.0	2.50	0.02	3.1
United States (2013)	1.50	0.02	4.0	2.50	0.03	5.4

Source: IMF staff estimates, using Luxembourg Income Study microdata.

much from the impact of a UBI given to both children and the elderly.

A second step in the empirical analysis simulates both the introduction of a UBI and its financing (so that the UBI net fiscal cost is set to zero). The fiscal envelope dedicated to the UBI is calibrated as the sum of existing universal and means-tested noncontributory transfers in each sample country (Annex Table 1.6.3).[67] The UBI is distributed to all individuals in a country, and three financing options are considered: (1) the UBI substitutes for existing noncontributory transfers; (2) direct income taxes are increased, with the current progressive shape of direct income taxes held constant; and (3) a flat tax on disposable income is levied. General lessons and highlights from these exercises are discussed in the chapter text.

[67]In-kind transfers or subsidies and contributory programs are not included as part of the budget envelope in the analysis presented here. In other words, the budget considered captures a subset of monetary transfers and is estimated based on LIS data. Discrepancies between data reported in household surveys and budgetary data are common.

Annex 1.7. Health Outcomes and Inequality in Public Health Spending

The relationship between health outcomes and inequality in basic health coverage is estimated for 72 low- and middle-income countries over the period 1995–2015, based on the following specification:

$$y_{it} = \alpha + \beta_1 \ln\left(h_{it}^{\text{Ineq}}\right) + \gamma' \mathbf{X}_{it} + c_i + \tau + \varepsilon_{it},$$

in which y_{it} denotes average life expectancy at birth for country i at the last year of period t; α is a constant; and c_i and τ refer to country and period fixed effects, respectively. The main variable of interest is the measure of inequality in basic health coverage, denoted as h_{it}^{Ineq}. This measure is calculated as the ratio of

Annex Table 1.6.3. Calibration of Universal Basic Income to Current Noncontributory Transfers

			Existing Transfers			
			Coverage		Share of Total Spending	
Country (year of data)	Fiscal Envelope (percent of GDP)	Annual Amount (per person)	Bottom Two Deciles (percent)	Top Two Deciles (percent)	Bottom Two Deciles (percent)	Top Two Deciles (percent)
Brazil (2013)	0.7	R$183	55	5	39	7
Egypt (2012)	0.2	LE 51	16	6	28	17
France (2010)	2.3	€709	66	19	48	6
Mexico (2012)	1.0	Mex$1,378	63	28	23	26
Poland (2013)	0.8	Zl 368	46	17	41	8
South Africa (2012)	3.1	R2,126	65	13	16	11
United Kingdom (2013)	6.2	£1,444	84	36	39	7
United States (2013)	1.5	US$822	61	20	38	9

Source: IMF staff estimates, using Luxembourg Income Study microdata.

Annex Table 1.7.1. Life Expectancy at Birth and Basic Health Coverage Inequality

	(1)	(2)	(3)	(4)	(5)	(6)
ln(WHO Health Coverage Ratio (Q1/Q5))	6.862***	5.522***	6.558**	4.693*	4.422**	4.092**
	(1.990)	(1.932)	(3.013)	(2.358)	(2.010)	(1.956)
ln(Public Health Spending)	2.413*	1.969	4.193**	3.513**	0.612	0.638
	(1.381)	(1.289)	(1.613)	(1.502)	(1.492)	(1.460)
ln(Private Health Spending)		3.430**		4.479**		1.845
		(1.503)		(2.102)		(1.414)
ln(GDP per capita)	2.160	–0.254	0.944	–3.264	3.594**	1.967
	(1.400)	(1.894)	(2.997)	(4.543)	(1.531)	(2.281)
Income Gini Coefficient	–9.114	–9.480	14.414	8.791	–2.852	–3.593
	(7.435)	(7.481)	(11.872)	(12.541)	(7.337)	(7.711)
ln(Schooling)	4.697**	3.491*	3.376	2.335	1.069	1.055
	(1.895)	(1.847)	(2.282)	(1.902)	(1.961)	(1.854)
Education Gini Coefficient	0.013	0.013	0.011	0.016	0.013	0.012
	(0.015)	(0.013)	(0.017)	(0.014)	(0.013)	(0.012)
Number of observations	179	179	179	179	179	179
Number of countries	72	72	72	72	72	72
Country effects	Random	Random	Fixed	Fixed	Random	Random
Period fixed effects	No	No	No	No	Yes	Yes

Source: IMF staff calculations.
Note: Robust standard errors are in parentheses. Q1 = first (top) income quintile; Q5 = fifth (bottom) income quintile; WHO = World Health Organization.
***$p < 0.01$; **$p < 0.05$; *$p < 0.1$.

household health coverage between the bottom (Q1) and the top (Q5) quintiles of a socioeconomic index within each country (so a larger value reflects lower health coverage inequality).[68] The health coverage for each wealth quintile is obtained from the World Health Organization's health equity monitor database and is based on an index reflecting coverage of eight reproductive, maternal, newborn, and child health interventions.[69]

The vector $\mathbf{X}_{it}$ includes additional key determinants of health outcomes, including public and private health spending (in constant 2011 purchasing-power-parity terms), level of development (GDP per capita in constant 2011 purchasing-power-parity terms), and educational attainment (average years of schooling). Inequality in income (Gini coefficient for disposable income) and education (Gini coefficient for average years of schooling) are also controlled for to ensure that the coefficient on the health inequality measure is not reflecting other types of inequalities.[70] All independent variables are averaged within each five-year nonoverlapping period of the sample. Both fixed and random country fixed effects are used to control for unobservables that are constant over time within each country.

Inequality in basic health coverage can affect overall health outcomes in a country—while public health spending is held unchanged—through several channels. First, the marginal health benefit of health spending is likely to be larger for the poor; therefore, reallocating public health spending from the rich to the poor raises overall health outcomes. Second, both the level and distribution of private spending are expected to respond to changes in the distribution of public health spending. Reallocating public health spending to the poor will result in an increase in overall private health spending because the rich will increase their spending, offsetting any decline in spending by the poor, which, in levels, is likely to be small in the first place. Third, changes in both health

[68]Quintiles have been determined at the household level, using a socioeconomic index. Country-specific indices have been based on owning selected assets and having access to certain services and have been constructed using principal component analysis.

[69]Interventions include demand for family planning; antenatal care; bacillus Calmette-Guérin (BCG), measles, and diphtheria, tetanus, and pertussis (DTP3) immunization among one-year-olds; and children younger than five years old receiving oral rehydration therapy and continued feeding in case of diarrhea or taken to a health facility in case of pneumonia symptoms.

[70]The income and health spending variables are from World Bank's World Development Indicators. The income Gini database used throughout this *Fiscal Monitor* is employed here. The education variables have been obtained from the World Bank's Education Statistics database.

spending and health outcomes have implications for income and its distribution, which, in turn, affect health spending and health outcomes. The effect from the third channel is likely small, and the model employed here does not allow for it by controlling for income and education as well as their distributions. The specifications in columns (1), (3), and (5) of Annex Table 1.7.1 allow the level of private health spending to respond, while specifications in columns (2), (4), and (6) do not. The differences in the coefficients provide a sense of how important the second channel is.

The results presented in Annex Table 1.7.1 suggest that lower inequality in health coverage is associated with higher average life expectancy when public health spending and other key determinants of health outcomes—including income, education, and their distributions—are held constant (columns (1), (3), and (5) in Annex Table 1.7.1).[71] The coefficients drop by somewhere between 7.5 and 20 percent—depending on the specification—when private health spending is included in the model (columns (2), (4), and (6)), indicating that the impact of inequality in health coverage on overall health operates mainly through the first channel.

Overall, these estimates suggest that the effect of reducing public health spending inequality could be large in low- and middle-income countries. Increasing h_{it}^{Ineq} from its most recent level—if it is less than 1—to 1, and therefore closing the inequality gap in health coverage, would raise life expectancy by 1.3 years, on average, in 83 countries (including 72 countries included in the regression analysis and 11 additional countries for which some other variables were not available), based on the estimate from column (5).

[71]The results are robust to using healthy life expectancy (HALE) at birth (available from World Health Organization) as an alternative measure for health outcomes.

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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
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

Average tax rate progression Percentage point increase in the average tax rate for an increase in income by 1 percentage point of per capita GDP.

Benefit incidence Share of public benefits received by a particular socioeconomic group.

Between-country inequality Reflects differences in average income between countries.

Budget-neutral policies Policies that keep a country's fiscal deficit unchanged.

Categorical targeting Selecting individuals based on specific easily observable characteristics—such as age, gender, or disability status.

Conditional cash transfer programs Social assistance programs that transfer cash to households only if they meet certain conditions, for example, enrolling their children in schools.

Coverage of 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).

Disposable income Amount of money that households have available for spending and saving after direct taxes and income-related transfers have been accounted for.

Equally distributed equivalent income Level of income per person which, if equally shared, would generate the same level of social welfare as the observed income distribution.

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

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 quasi-corporations.

Generosity of benefits Size of benefits as a share of per capita equivalent disposable income across deciles.

Gini coefficient Measures the extent to which the distribution of a variable, such as income or wealth, among individuals or households within an economy deviates from a perfectly equal distribution. A Gini coefficient of 0 represents perfect equality, while an index of 1 implies perfect inequality.

Global income inequality Inequality measured across all citizens of the world by abstracting from national borders.

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.)

Income tax schedule Set of tax rates and the relevant income bands to which they apply.

Inequality of opportunity Impact on income inequality of circumstances over which individuals have no control, such as family socioeconomic status, gender, or ethnic background.

Infant mortality rate Number of deaths of young children, typically under one year of age, per thousand live births.

In-work tax credits Tax credit for taxpayers with low incomes and a minimum number of hours worked.

Means-tested transfers Transfers contingent on a determination of whether an individual or family is eligible based upon the individual or family income.

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.

Nonfinancial public sector General government plus nonfinancial public corporations.

Out-of-pocket health spending Households' direct outlays for health care expenses, including gratuities and in-kind payments made to public and private health care providers and to suppliers of pharmaceuticals, therapeutic appliances, and other goods and services.

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.

Pareto distribution A statistical distribution that tends to fit the income (or wealth) distribution data, especially for high income (or wealth) levels.

Pareto index Parameter specifying a Pareto distribution, indicating the density of incomes. The greater the Pareto index, the smaller the proportion of individuals with very high income (or wealth).

PISA test scores Test scores from the Program for International Student Assessment (PISA), a triennial international survey that aims to evaluate education systems worldwide by testing the skills and knowledge of 15-year-old students in science, mathematics, and reading.

Potential growth Growth in potential output.

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 payment (interest expenditure minus interest revenue).

Primary spending Government expenditure excluding interest payments.

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

Public debt See *gross debt*.

Public sector General government sector plus government-controlled entities, known as public corporations, whose primary activity is to engage in commercial activities.

Revenue-maximizing rate Tax rate that maximizes revenue, taking into account that raising tax rates discourages labor supply, effort, and compliance.

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).

Universal basic income Uniform cash transfer level received by all individuals in a country without conditions attached.

Within-country inequality Refers to income inequalities within a country.

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 2017–18 and the medium-term scenario for 2019–22. "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 on the basis of information available through September 5, 2017.

Data and Conventions

Country-specific data and projections for key fiscal variables are based on the October 2017 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 (LIDCs) 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 the calendar year, except in the cases of Bangladesh, Egypt, Ethiopia, Haiti, Hong Kong Special Administrative Region, India, the Islamic Republic of Iran, 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 Twenty (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 (CPI) data, see the "Country Notes" section in the Statistical Appendix of the October 2017 *World Economic Outlook*.

Australia: For cross-country comparability, gross and net debt levels reported by national statistical agencies for countries 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 69.9 percent of GDP at the end of 2016.

Canada: For cross-country comparability, gross and net debt levels reported by national statistical agencies for countries 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: Cyclically adjusted balances include adjustments for 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 the 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/.

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

Japan: Gross debt is equal to total unconsolidated financial liabilities for the general government. Net debt is calculated by subtracting financial assets from financial liabilities for the general government.

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

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

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

Myanmar: Data are on a fiscal year basis.

Nepal: Data are on a fiscal year basis.

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

Pakistan: Data are on a fiscal year basis.

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

Singapore: Data are on a fiscal year basis. 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, 0.0 percent of GDP for 2015, 0.2 percent of GDP for 2016, and 0.1 percent of GDP for 2017.

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

Switzerland: Data submissions at the cantonal and commune level are received with a long and variable lag and are subject to sizable revisions. Cyclically adjusted balances include adjustments for extraordinary operations related to the banking sector.

Thailand: Data are on a fiscal year basis.

Turkey: 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 countries 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 2010–22 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 2017 *World Economic Outlook*, unless noted otherwise. For underlying assumptions other than on fiscal policy, see the October 2017 *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, fiscal measures announced by the authorities, and IMF staff macroeconomic projections.

Australia: Fiscal projections are based on Australian Bureau of Statistics data, the fiscal year 2017/18 budget, and IMF staff estimates.

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

Belgium: Projections reflect the IMF staff's assessment of policies and measures laid out in the 2017 budget and 2016–19 Stability Programme, incorporated into the IMF staff's macroeconomic framework.

Brazil: Fiscal projections for the end of 2017 take into account budget performance through July 31, 2017, 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 2017 federal budget and 2017 provincial budgets as available. The IMF staff makes some adjustments to these forecasts, including for differences in macroeconomic projections. The IMF staff forecast also incorporates the most recent data releases from Statistics Canada's Canadian System of National Economic Accounts, including federal, provincial, and territorial budgetary outturns through the second quarter of 2017.

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 on a cash basis based on the latest information on the budget and fiscal measures and on the 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 2016 are aligned with the latest official budget estimates and the underlying economic projections, adjusted where appropriate for the IMF staff's macroeconomic assumptions. For 2017–18, the projections incorporate key features of the medium-term fiscal plan as embodied in the authorities' 2016 Convergence Programme submitted to the European Union.

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 2017 reflect the budget law and cancellation of spending taken in July 2017. For

2018–19, they are based on the multiyear budget and the preliminary fiscal path announced by the new government in July 2017, adjusted for differences in assumptions on macro and financial variables, and revenue projections. Historical fiscal data reflect the May 2017 revisions and update of the fiscal accounts, debt data, and national accounts for 2014 and 2015.

Germany: The IMF staff's projections for 2017 and beyond are based on the 2017 Stability Programme Update, adjusted for the differences in the IMF staff's macroeconomic framework and assumptions concerning revenue elasticities. The estimate of gross debt includes portfolios of impaired assets and noncore business transferred to institutions that are winding up, as well as other financial sector and European Union support operations.

Greece: Fiscal projections reflect the IMF staff's assessment of implementation of legislated fiscal measures under the IMF and European Stability Mechanism (EMF) program.

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

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 2017 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 two years; 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 2017, Stability Programme Update 2017, and Summer Economic Statement 2017.

Israel: Historical data are based on Government Finance Statistics data prepared by the Central Bureau of Statistics. Projections for 2017 and 2018 are based on the 2017–18 budget, adjusted for the fiscal impact of new measures announced in April 2017 (the "Net Family Plan"). The central government deficit is assumed to remain at the current ceiling level of 2.9 percent of GDP in subsequent years, rather than declining in line with medium-term fiscal targets, consistent with long experience of revisions to those targets.

Italy: IMF staff estimates and projections are based on the fiscal plans included in the government's 2017 budget and April 2017 Economic and Financial Document.

Japan: The projections include fiscal measures already announced by the government, including the fiscal stimulus package for 2017 and 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 government's announced medium-term consolidation path.

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

Malaysia: Projections are based on the Fiscal Budget Economic Report, October 2016.

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 2017 are broadly in line with the approved budget; projections for 2018 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 2017–22 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 authorities' fiscal year 2017/18 budget and on IMF staff estimates.

Norway: Fiscal projections are based on the latest 2017 revised budget.

Philippines: Fiscal projections assume that the authorities' fiscal deficit target will be achieved in 2017 and beyond. 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: Projections for 2017 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 2017 reflect the adopted budget measures as of August 2017 (including the amendments to the tax code). Projections for 2018 reflect the full effect of the 2017 budget measures, amendments to the tax code that go into effect in 2018, 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 2018.

Russia: Projections for 2017–19 are IMF staff estimates based on the authorities' budget. Projections for 2020–22 are based on an oil price rule to be in effect in 2022, with adjustments by IMF staff.

Saudi Arabia: IMF staff projections of oil revenues are based on *World Economic Outlook* (WEO) baseline oil prices and the assumption that Saudi Arabia continues to meet its commitments under the OPEC+ agreement. For non-oil revenues, staff estimates of the revenue impact of announced policies in the Fiscal Balance Program are included in the baseline. On the expenditure side, starting in 2017, following recent reforms, the wage bill estimates no longer include the 13th-month wage payment that used to be awarded every three years in accordance with the lunar calendar. Expenditure projections take the 2017 budget as a starting point and reflect staff estimates of the effects of the latest changes in policies and economic developments.

Singapore: For fiscal years 2016/17 and 2017/18, projections are based on budget numbers. For the remainder of the projection period, the IMF staff assumes unchanged policies.

Slovak Republic: Projections for 2017 take into consideration both the budget and developments to date. Projections for 2018 and beyond reflect a no-policy-change scenario.

Spain: For 2017, fiscal data are IMF staff projections, reflecting the cash outturn through May and the 2017 budget passed by Parliament. For 2018 and beyond, fiscal projections are based on the measures specified in the Stability Programme Update 2017–20 and on the 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 2017 Spring Budget. The impact of cyclical developments on the fiscal accounts is calculated using the Organisation for Economic Co-operation and Development's 2005 elasticity 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 the country'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: Fiscal projections for 2017 are based on the authorities' Medium Term Programme 2017–19, with adjustments for additional announced fiscal measures and the IMF staff's higher inflation forecast. For the medium term, the fiscal projections assume a more gradual fiscal consolidation than envisaged in the Medium Term Programme.

United Kingdom: Fiscal projections are based on the country's Budget 2017, published in March 2017, 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 U.K. Office for Budget Responsibility.

United States: Fiscal projections are based on the January 2017 Congressional Budget Office baseline adjusted for the IMF staff's policy and macroeconomic assumptions. The baseline incorporates the key provisions of the Bipartisan Budget Act of 2015, including a partial rollback of the sequester spending cuts in fiscal year 2016. In fiscal years 2017 through 2022, the IMF staff assumes that the sequester cuts will continue to be partially replaced, in proportions similar to those already implemented in fiscal years 2014 and 2015, with back-loaded measures generating savings in mandatory programs and additional revenues. Projections also incorporate the Protecting Americans From Tax Hikes Act of 2015, which extended some existing tax cuts for the short term and some permanently. 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 government finance statistics, this is in accordance with GFSM 2014. Because of data limitations, most series begin in 2001.

Venezuela: Projecting the economic outlook in Venezuela, including assessing past and current economic developments as the basis for 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 are the authorities' estimate. From 2016 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" includes 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	NC	GG	CG, SG, LG, TG	NC	GG	CG, SG, LG, TG	Nominal
Austria	GG	CG, SG, LG, SS	NC	GG	CG, SG, LG, SS	NC	GG	CG, SG, LG, SS	Face
Belgium	GG	CG, SG, LG, SS	NC	GG	CG, SG, LG, SS	NC	GG	CG, SG, LG, SS	Face
Canada	GG	CG, SG, LG, SS	NC	GG	CG, SG, LG, SS	NC	GG	CG, SG, LG, SS	Face
Cyprus[3]	GG	CG, LG, SS	C/NC	. . .	. . .	. . .	GG	CG, LG, SS	Face
Czech Republic	GG	CG, LG, SS	NC	GG	CG, LG, SS	NC	GG	CG, LG, SS	Nominal
Denmark	GG	CG, LG, SS	NC	GG	CG, LG, SS	NC	GG	CG, LG, SS	Nominal
Estonia	GG	CG, LG, SS	C	. . .	. . .	. . .	GG	CG, LG, SS	Nominal
Finland	GG	CG, LG, SS	NC	GG	CG, LG, SS	NC	GG	CG, LG, SS	Nominal
France	GG	CG, LG, SS	NC	GG	CG, LG, SS	NC	GG	CG, LG, SS	Face
Germany	GG	CG, SG, LG, SS	NC	GG	CG, SG, LG, SS	NC	GG	CG, SG, LG, SS	Face
Greece	GG	CG, LG, SS	NC	GG	CG, LG, SS	NC	GG	CG, LG, SS	Nominal
Hong Kong SAR	GG	CG	C	GG	CG	C	GG	CG	Face
Iceland	GG	CG, LG, SS	NC	GG	CG, LG, SS	NC	GG	CG, LG, SS	Face
Ireland	GG	CG, LG, SS	NC	GG	CG, LG, SS	NC	GG	CG, LG, SS	Nominal
Israel	GG	CG, LG, SS	Other	GG	CG, SS, LG	Other	GG	CG, SS, LG	Nominal
Italy	GG	CG, LG, SS	NC	GG	CG, LG, SS	NC	GG	CG, LG, SS	Face
Japan	GG	CG, LG, SS	NC	GG	CG, LG, SS	NC	GG	CG, LG, SS	Nominal
Korea	CG	CG	C	CG	CG	C	GG	CG, LG	Nominal
Latvia	GG	CG, LG, SS, NFPC	C	GG	CG, LG, SS, NFPC	C	GG	CG, LG, SS, NFPC	Nominal
Lithuania	GG	CG, LG, SS	NC	GG	CG, LG, SS	NC	GG	CG, LG, SS	Nominal
Luxembourg	GG	CG, LG, SS	NC	GG	CG, LG, SS	NC	GG	CG, LG, SS	Face
Malta	GG	CG, SS	NC	GG	CG, SS	NC	GG	CG, SS	Nominal
Netherlands	GG	CG, LG, SS	NC	GG	CG, LG, SS	NC	GG	CG, LG, SS	Nominal
New Zealand	CG	CG	NC	CG	CG	NC	CG	CG	Current market
Norway	GG	CG, LG, SS	NC	GG	CG, LG, SS	NC	GG	CG, LG, SS	Current market
Portugal	GG	CG, LG, SS	NC	GG	CG, LG, SS	NC	GG	CG, LG, SS	Nominal
Singapore	GG	CG	C	GG	CG	C	GG	CG	Nominal
Slovak Republic	GG	CG, LG, SS	NC	GG	CG, LG, SS	NC	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	NC	GG	CG, SG, LG, SS	NC	GG	CG, SG, LG, SS	Nominal
Sweden	GG	CG, LG, SS	NC	GG	CG, LG, SS	NC	GG	CG, LG, SS	Nominal
Switzerland	GG	CG, SG, LG, SS	NC	GG	CG, SG, LG, SS	NC	GG	CG, SG, LG, SS	Nominal
United Kingdom	GG	CG, LG	NC	GG	CG, LG	NC	GG	CG, LG	Nominal
United States	GG	CG, SG, LG	NC	GG	CG, SG, LG	NC	GG	CG, SG, LG	Nominal

Note: Coverage: CG = central government; GG = general government; LG = local governments; NFPC = nonfinancial public corporations; SG = state governments; SS = social security funds; TG = territorial governments. Accounting practice: C = cash; NC = noncash.

[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] Historical data until 2012 are reported on an accrual basis, as general government cash data are not available for years that preceded the IMF program.

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	Other	. . .	. . .	. . .	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	NC	CG	CG, LG	NC	GG	CG, LG	Face
China	GG	CG, LG	C	GG	CG, LG	C	GG	CG, LG	Face
Colombia[5]	GG	CG, SG, LG, SS	C/NC	GG	CG, SG, LG, SS	C/NC	GG	CG, SG, LG, SS	Face
Croatia	GG	CG, LG	NC	GG	CG, LG	NC	GG	CG, LG	Nominal
Dominican Republic	GG	CG, SG, LG, SS, NMPC	C/NC	GG	CG, SG, LG, SS, NMPC	C/NC	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	CG	CG, LG, SS, MPC	C	GG	CG, LG, SS, MPC	C	GG	CG, LG, SS, MPC	Nominal
Hungary	GG	CG, LG, SS, NMPC	NC	GG	CG, LG, SS, NMPC	NC	GG	CG, LG, SS, NMPC	Face
India	GG	CG, SG	NC	GG	CG, SG	NC	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	NC	. . .	. . .	. . .	GG	CG, LG	Nominal
Kuwait	CG	CG	C/NC	. . .	. . .	. . .	CG	CG	Nominal
Libya	GG	CG, SG, LG	C	. . .	. . .	. . .	GG	CG, SG, LG	Face
Malaysia	GG	CG, SG, LG	C	GG	CG	C	GG	CG, SG, LG	Nominal
Mexico	PS	CG, SS, NFPC, NMPC	C	GG	GG	C	PS	CG, SS, NFPC, NMPC	Face
Morocco	CG	CG	NC	. . .	. . .	. . .	CG	CG	Face
Oman	CG	CG	C	. . .	. . .	. . .	CG	CG	Nominal
Pakistan	GG	CG, LG, SG	C	. . .	. . .	. . .	GG	CG, LG, SG	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	CG	CG	C	GG	CG, LG, SS	Nominal
Poland	GG	CG, LG, SS	NC	GG	CG, LG, SS	NC	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	C/NC	GG	CG, SG, SS	C/NC	GG	CG, SG, SS	Current market
Saudi Arabia	GG	CG	C	. . .	. . .	. . .	GG	CG	Nominal
South Africa[6]	GG	CG, SG, SS	C	GG	CG, SG, SS	C	GG	CG, SG, SS	Nominal
Sri Lanka	GG	CG, SG, LG, SS	C	. . .	. . .	. . .	GG	CG, SG, LG, SS	Nominal
Thailand[7]	PS	CG, BCG, LG, SS	NC	PS	CG, BCG, LG, SS	NC	PS	CG, BCG, LG, SS	Nominal
Turkey	GG	CG, LG, SS	NC	GG	CG, LG, SS	NC	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	NC	. . .	. . .	. . .	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 practice: C = cash; NC = noncash.

[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	CG	CG	Other	. . .	. . .	. . .	CG	CG	Face
Cambodia	GG	CG, LG	NC	GG	CG, LG	NC	GG	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	NC	. . .	. . .	. . .	GG	CG, LG	Nominal
Republic of Congo	CG	CG	NC	. . .	. . .	. . .	CG	CG	Nominal
Côte d'Ivoire	CG	CG	NC	. . .	. . .	. . .	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	Other	. . .	. . .	. . .	CG	CG	Nominal
Haiti	CG	CG	C	CG	CG	C	CG	CG	Nominal
Honduras	CPS	CG, LG, SS, NFPC	NC	CPS	CG, LG, SS, NFPC	NC	CPS	CG, LG, SS, NFPC	Nominal
Kenya	CG	CG	NC	. . .	. . .	. . .	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	Nominal
Mali	CG	CG	C/NC	. . .	. . .	. . .	CG	CG	Nominal
Moldova	GG	CG, LG, SS	C	GG	CG, LG, SS	C	GG	CG, LG, SS	Nominal
Mozambique	CG	CG, SG	C/NC	CG	CG, SG	C/NC	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	NC	. . .	. . .	. . .	CG	CG	Nominal
Nigeria	GG	CG, SG, LG, NFPC	C	. . .	. . .	. . .	GG	CG, SG, LG, NFPC	Current market
Papua New Guinea	CG	CG	C	. . .	. . .	. . .	CG	CG	Face
Rwanda	GG	CG, LG	C/NC	. . .	. . .	. . .	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	C/NC	. . .	. . .	. . .	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: CG = central government; CPS = combined public sector; GG = general government; LG = local governments; NFPC = nonfinancial public corporations; NFPS = nonfinancial public sector; SG = state governments; SS = social security funds. Accounting practice: C = cash; NC = noncash.

[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, 2008–22

(Percent of GDP)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Australia	–1.1	–4.6	–5.1	–4.5	–3.4	–2.8	–2.9	–2.8	–2.6	–2.2	–1.8	–1.0	–0.1	0.2	0.3
Austria	–1.5	–5.4	–4.5	–2.6	–2.2	–1.4	–2.7	–1.1	–1.6	–0.9	–0.6	–0.4	–0.4	–0.6	–0.7
Belgium	–1.1	–5.4	–4.0	–4.1	–4.2	–3.1	–3.1	–2.5	–2.6	–1.8	–1.8	–1.9	–1.9	–2.0	–2.0
Canada	0.2	–3.9	–4.7	–3.3	–2.5	–1.5	0.0	–1.1	–1.9	–2.2	–1.8	–1.6	–1.4	–1.3	–1.1
Cyprus[1]	0.9	–5.4	–4.7	–5.7	–5.8	–4.1	–0.2	–1.4	–0.3	0.9	0.3	0.5	0.7	0.7	0.7
Czech Republic	–2.1	–5.5	–4.4	–2.7	–3.9	–1.2	–1.9	–0.6	0.6	0.5	0.6	0.7	0.5	0.5	0.5
Denmark	3.2	–2.8	–2.7	–2.1	–3.5	–1.0	1.1	–1.8	–0.6	–1.5	–0.6	–0.4	0.0	0.1	0.2
Estonia	–2.9	–1.9	0.1	1.1	–0.3	–0.2	0.7	0.1	0.3	0.0	–0.7	–0.6	–0.5	–0.4	–0.4
Finland	4.2	–2.5	–2.6	–1.0	–2.2	–2.6	–3.2	–2.7	–1.9	–1.5	–1.2	–0.9	–0.5	–0.4	–0.3
France	–3.2	–7.2	–6.8	–5.1	–4.8	–4.0	–3.9	–3.6	–3.4	–3.0	–3.0	–3.2	–1.8	–1.2	–0.8
Germany	–0.2	–3.2	–4.2	–1.0	0.0	–0.1	0.3	0.6	0.8	0.7	0.8	1.0	1.1	1.1	1.1
Greece	–10.2	–15.1	–11.2	–10.3	–6.6	–3.7	–4.1	–3.1	1.0	–1.7	–1.1	0.2	0.0	–0.1	–0.4
Hong Kong SAR	0.1	1.5	4.1	3.8	3.1	1.0	3.6	0.6	4.4	2.2	1.4	1.3	1.3	1.2	1.2
Iceland	–13.0	–9.7	–9.8	–5.6	–3.7	–1.8	–0.1	–0.8	12.4	0.9	1.3	1.4	1.3	1.2	1.0
Ireland[1]	–7.0	–13.8	–32.0	–12.7	–8.1	–5.7	–3.7	–1.9	–0.7	–0.5	–0.2	–0.2	0.0	0.4	0.8
Israel	–2.7	–5.6	–3.5	–2.7	–4.7	–4.0	–3.2	–2.7	–2.5	–3.2	–3.7	–3.7	–3.7	–3.7	–3.7
Italy	–2.7	–5.3	–4.2	–3.7	–2.9	–2.9	–3.0	–2.7	–2.4	–2.2	–1.3	–0.3	0.0	0.0	0.0
Japan	–4.1	–9.8	–9.1	–9.1	–8.3	–7.6	–5.4	–3.5	–4.2	–4.1	–3.3	–2.9	–2.3	–2.2	–2.1
Korea	1.5	0.0	1.5	1.7	1.6	0.6	0.4	0.6	1.7	1.2	1.4	1.4	1.2	1.1	1.1
Latvia	–3.2	–7.0	–6.5	–3.2	0.2	–0.6	–1.7	–1.5	–0.4	–0.7	0.0	–0.4	–0.3	–0.2	–0.2
Lithuania	–3.3	–9.3	–6.9	–8.9	–3.1	–2.6	–0.7	–0.2	0.3	0.1	0.5	0.3	0.4	0.3	0.2
Luxembourg	3.3	–0.7	–0.7	0.5	0.3	1.0	1.4	1.4	1.6	0.3	0.2	0.0	0.0	0.1	0.0
Malta	–4.2	–3.3	–3.2	–2.5	–3.7	–2.6	–2.0	–1.3	1.0	0.5	0.5	0.5	0.5	0.5	0.5
Netherlands	0.2	–5.4	–5.0	–4.3	–3.9	–2.4	–2.3	–2.0	0.4	0.6	0.9	1.2	1.5	1.7	1.7
New Zealand[2]	1.3	–1.7	–5.9	–5.4	–1.9	–1.0	–0.3	0.6	0.9	0.4	0.3	0.9	1.7	1.8	1.8
Norway	18.5	10.3	10.9	13.2	13.5	10.5	8.5	5.9	3.1	4.5	4.6	5.4	6.1	6.6	7.0
Portugal	–3.8	–9.8	–11.2	–7.4	–5.7	–4.8	–7.2	–4.4	–2.0	–1.5	–1.4	–1.5	–1.5	–1.4	–1.5
Singapore	6.1	0.0	6.0	8.7	7.9	6.6	5.5	3.7	3.3	1.7	1.5	1.7	1.4	1.7	1.7
Slovak Republic	–2.4	–7.8	–7.5	–4.3	–4.3	–2.7	–2.7	–2.7	–1.7	–1.2	–0.7	–0.1	–0.1	0.0	0.0
Slovenia	–0.3	–5.4	–5.2	–5.5	–3.1	–13.8	–5.8	–3.3	–1.8	–0.9	–0.9	–1.2	–1.4	–1.5	–1.6
Spain[1]	–4.4	–11.0	–9.4	–9.6	–10.5	–7.0	–6.0	–5.1	–4.5	–3.2	–2.5	–2.1	–2.0	–2.0	–2.1
Sweden	1.9	–0.7	–0.1	–0.2	–1.0	–1.4	–1.6	0.2	0.9	1.0	1.0	0.8	0.5	0.4	0.3
Switzerland	1.9	0.5	0.4	0.7	0.4	–0.4	–0.2	0.6	0.1	–0.1	–0.1	0.0	0.0	0.2	0.2
United Kingdom	–5.2	–10.1	–9.4	–7.5	–7.7	–5.5	–5.6	–4.3	–2.9	–2.9	–2.3	–1.4	–1.2	–1.2	–1.2
United States[3]	–6.7	–13.1	–10.9	–9.6	–7.9	–4.4	–4.0	–3.5	–4.4	–4.3	–3.7	–4.0	–4.0	–4.2	–4.3
Average	–3.5	–8.7	–7.6	–6.2	–5.4	–3.6	–3.1	–2.6	–2.8	–2.8	–2.3	–2.1	–2.0	–2.0	–2.0
Euro Area	–2.2	–6.3	–6.2	–4.2	–3.6	–3.0	–2.6	–2.1	–1.5	–1.3	–1.0	–0.7	–0.3	–0.2	–0.1
G7	–4.5	–9.8	–8.7	–7.3	–6.3	–4.2	–3.6	–3.0	–3.5	–3.4	–2.9	–2.8	–2.6	–2.6	–2.7
G20 Advanced	–4.2	–9.4	–8.3	–6.9	–6.0	–4.0	–3.4	–2.9	–3.3	–3.2	–2.7	–2.5	–2.3	–2.4	–2.4

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

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

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

[2] 2008 data are IMF staff estimates.

[3] 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 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 U.S. Bureau of Economic Analysis.

Table A2. Advanced Economies: General Government Primary Balance, 2008–22

(Percent of GDP)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Australia	–1.1	–4.5	–4.8	–4.0	–2.7	–2.0	–2.0	–1.8	–1.6	–1.3	–0.9	0.0	0.9	1.1	1.2
Austria	0.7	–3.2	–2.3	–0.4	0.0	0.8	–0.7	0.8	0.1	0.7	0.7	0.9	0.8	0.6	0.6
Belgium	2.4	–2.0	–0.7	–0.9	–1.0	–0.2	–0.2	0.2	–0.1	0.4	0.2	–0.1	–0.1	–0.3	–0.3
Canada	0.5	–2.8	–3.9	–2.7	–1.8	–1.0	0.2	–0.5	–1.2	–1.5	–1.3	–0.9	–0.7	–0.5	–0.2
Cyprus[1]	3.1	–3.4	–3.2	–3.9	–3.2	–1.8	2.6	1.2	2.3	3.3	2.7	3.0	3.0	3.0	3.0
Czech Republic	–1.4	–4.5	–3.3	–1.7	–2.8	–0.2	–0.8	0.3	1.4	1.2	1.3	1.4	1.1	1.1	1.0
Denmark	3.4	–2.4	–2.1	–1.4	–3.0	–0.6	1.5	–1.0	–0.1	–1.0	–0.1	0.1	0.5	0.6	0.7
Estonia	–3.3	–2.2	0.0	0.9	–0.4	–0.3	0.6	0.0	0.2	0.0	–0.7	–0.6	–0.5	–0.4	–0.4
Finland	3.7	–2.9	–2.5	–1.0	–2.0	–2.5	–2.9	–2.5	–1.6	–1.4	–1.2	–0.9	–0.5	–0.5	–0.4
France	–0.5	–4.9	–4.5	–2.6	–2.4	–1.9	–1.9	–1.7	–1.7	–1.4	–1.4	–1.5	–0.1	0.5	0.9
Germany	2.2	–0.8	–2.1	1.1	1.8	1.5	1.7	1.8	1.9	1.7	1.4	1.6	1.6	1.6	1.5
Greece	–5.4	–10.1	–5.3	–3.0	–1.5	0.4	–0.1	0.5	4.2	1.7	2.2	3.5	3.5	3.5	3.5
Hong Kong SAR	–2.6	–0.4	2.3	1.9	1.3	–0.7	3.6	0.6	3.6	1.4	0.5	0.7	0.7	0.6	0.6
Iceland	–13.2	–6.6	–7.0	–2.9	–0.4	1.6	3.6	2.9	15.7	3.2	3.4	3.2	2.9	2.7	2.5
Ireland[1]	–6.3	–12.3	–29.7	–10.2	–4.8	–2.2	–0.3	0.4	1.5	1.5	1.6	1.6	1.7	2.1	2.4
Israel	1.3	–1.8	0.2	0.8	–1.1	–0.7	–0.1	–0.1	–0.2	–0.8	–1.2	–1.1	–1.1	–1.1	–1.1
Italy	2.0	–1.0	–0.1	0.8	2.1	1.7	1.4	1.3	1.4	1.5	2.3	3.3	3.6	3.7	3.7
Japan	–3.8	–9.3	–8.6	–8.3	–7.5	–7.0	–4.9	–3.1	–4.0	–4.0	–3.4	–2.9	–2.4	–2.2	–2.1
Korea	1.2	–0.7	0.8	0.9	0.8	–0.2	–0.3	–0.3	0.8	0.4	0.7	0.5	0.5	0.6	0.7
Latvia	–2.8	–5.9	–5.1	–1.8	1.7	0.9	–0.2	0.3	0.8	0.4	1.0	0.5	0.6	0.7	0.6
Lithuania	–2.8	–8.2	–5.2	–7.2	–1.2	–0.9	1.0	1.3	1.6	1.4	1.9	1.7	1.7	1.7	1.5
Luxembourg	2.1	–1.2	–0.9	0.3	0.1	0.8	1.1	1.2	1.4	0.2	–0.1	–0.4	–0.4	–0.6	–0.8
Malta	–0.9	0.0	–0.1	0.7	–0.7	0.3	0.8	1.2	3.2	2.5	2.3	2.2	2.1	2.0	2.1
Netherlands	1.6	–4.2	–3.8	–3.0	–2.8	–1.3	–1.2	–1.0	1.3	1.5	1.6	1.8	2.0	2.2	2.2
New Zealand[2]	1.6	–1.4	–5.4	–4.8	–1.1	–0.4	0.1	1.1	1.3	0.8	0.8	1.5	2.2	2.4	2.3
Norway	15.5	8.0	8.8	11.1	11.7	8.7	6.4	3.4	0.8	2.2	2.5	3.4	4.1	4.5	4.9
Portugal	–1.1	–7.1	–8.5	–3.6	–1.4	–0.6	–2.8	–0.1	2.0	2.4	2.4	2.2	2.2	2.2	2.2
Singapore	3.7	–1.1	5.4	8.2	7.4	6.1	4.8	2.9	2.3	0.7	0.5	0.7	0.4	0.7	0.7
Slovak Republic	–1.6	–6.7	–6.4	–2.9	–2.8	–1.1	–1.1	–1.3	–0.3	0.1	0.5	1.1	1.0	1.1	1.1
Slovenia	0.5	–4.6	–4.0	–4.2	–1.4	–11.5	–2.8	–0.6	0.9	1.3	1.2	1.0	1.0	0.9	0.8
Spain[1]	–3.4	–9.6	–7.8	–7.6	–8.0	–4.1	–3.0	–2.4	–2.0	–0.7	0.0	0.3	0.5	0.5	0.5
Sweden	2.5	–0.4	0.3	0.2	–0.8	–1.2	–1.5	0.0	0.7	0.7	0.8	0.5	0.2	0.1	0.0
Switzerland	2.4	1.0	0.8	1.1	0.8	–0.2	0.0	0.9	0.3	0.1	0.1	0.1	0.2	0.3	0.3
United Kingdom	–3.7	–8.7	–7.0	–4.8	–5.4	–4.2	–3.8	–2.9	–1.3	–1.1	–0.6	0.2	0.4	0.5	0.5
United States	–4.6	–11.2	–8.9	–7.3	–5.7	–2.4	–2.0	–1.6	–2.3	–2.2	–1.5	–1.5	–1.4	–1.4	–1.5
Average	–1.9	–7.1	–5.9	–4.4	–3.6	–2.0	–1.5	–1.2	–1.3	–1.3	–0.8	–0.6	–0.4	–0.3	–0.2
Euro Area	0.4	–3.8	–3.7	–1.6	–1.0	–0.5	–0.2	0.0	0.4	0.6	0.7	1.0	1.3	1.5	1.5
G7	–2.6	–8.0	–6.8	–5.2	–4.3	–2.4	–1.8	–1.4	–1.8	–1.7	–1.2	–1.0	–0.7	–0.6	–0.6
G20 Advanced	–2.4	–7.7	–6.5	–5.0	–4.1	–2.3	–1.8	–1.4	–1.7	–1.6	–1.1	–0.9	–0.6	–0.5	–0.5

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

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

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

[2] 2008 data are IMF staff estimates.

Table A3. Advanced Economies: General Government Cyclically Adjusted Balance, 2008–22

(Percent of potential GDP)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Australia	–1.4	–4.5	–4.9	–4.2	–3.1	–2.4	–2.3	–2.1	–1.9	–1.5	–1.2	–0.5	0.2	0.4	0.3
Austria	–3.2	–4.5	–4.1	–3.1	–2.5	–1.1	–2.1	–0.3	–1.0	–0.8	–0.8	–0.6	–0.7	–0.8	–0.9
Belgium	–1.7	–4.5	–3.8	–4.3	–4.0	–2.4	–2.6	–2.3	–2.4	–1.8	–1.9	–2.1	–2.1	–2.2	–2.2
Canada	–0.2	–2.4	–3.8	–2.9	–2.0	–1.1	0.2	–0.6	–1.3	–2.1	–2.0	–1.8	–1.6	–1.5	–1.2
Cyprus	–1.9	–7.2	–6.7	–7.7	–6.1	–2.7	1.5	0.2	0.8	1.3	0.4	0.5	0.5	0.5	0.4
Czech Republic	–5.0	–5.4	–4.3	–3.0	–3.2	0.1	–1.1	–0.8	0.3	0.1	0.4	0.6	0.4	0.4	0.5
Denmark	1.6	–0.4	–1.5	–1.4	–2.6	–0.2	1.3	–1.6	–0.5	–1.7	–0.9	–0.4	–0.4	0.1	–0.3
Estonia	–4.7	2.0	3.7	2.5	0.4	0.4	0.9	0.3	0.6	–0.1	–0.9	–0.7	–0.6	–0.4	–0.3
Finland	1.7	–0.3	–1.8	–1.5	–1.7	–1.7	–1.6	–0.8	–0.8	–1.0	–1.1	–0.9	–0.5	–0.4	–0.3
France	–3.7	–5.5	–5.6	–4.5	–3.8	–2.8	–2.6	–2.3	–2.3	–2.1	–2.4	–2.8	–1.6	–1.2	–0.9
Germany	–1.3	–1.1	–3.5	–1.5	–0.3	0.0	0.3	0.6	0.6	0.3	0.2	0.5	0.6	0.6	0.7
Greece	–13.9	–18.7	–12.2	–8.8	–2.7	0.2	–1.1	–0.4	3.2	0.1	–0.2	0.7	0.2	–0.1	–0.3
Hong Kong SAR[1]	–0.5	–0.9	0.9	0.4	0.4	–1.8	2.7	0.0	2.5	0.5	0.1	0.1	0.1	0.0	0.0
Iceland	–4.5	–10.0	–7.5	–4.6	–3.0	–1.6	–0.1	–1.1	11.3	–0.2	0.7	1.1	1.2	1.2	1.0
Ireland[1]	–8.0	–10.1	–9.0	–6.9	–5.2	–2.8	–2.9	–1.0	–0.9	–0.9	–0.6	–0.5	–0.2	0.3	0.8
Israel	–3.0	–4.9	–3.4	–3.3	–4.7	–4.1	–3.4	–2.5	–2.6	–3.5	–3.7	–3.7	–3.7	–3.7	–3.7
Italy	–3.6	–3.6	–3.6	–3.5	–1.4	–0.8	–0.9	–0.9	–1.0	–1.4	–0.8	0.0	0.1	0.1	0.0
Japan	–3.6	–6.3	–7.5	–7.5	–7.1	–7.1	–5.1	–3.9	–3.8	–3.9	–3.2	–2.8	–2.1	–2.0	–2.0
Korea	1.3	0.5	1.5	1.6	1.7	0.9	0.6	0.8	2.0	1.5	1.6	1.5	1.3	1.2	1.1
Latvia	–8.4	–3.2	–3.3	–1.4	0.9	–1.0	–1.5	–1.4	–0.2	–0.7	0.0	–0.5	–0.3	–0.2	–0.2
Lithuania	–8.9	–6.7	–4.2	–7.5	–2.4	–2.2	–0.6	0.1	0.4	0.1	0.4	0.2	0.2	0.2	0.2
Luxembourg	2.4	0.9	–0.6	0.3	1.3	1.5	1.2	1.3	1.4	0.2	0.0	–0.1	0.0	0.1	0.0
Malta	–5.5	–2.7	–3.5	–2.3	–3.1	–1.8	–2.4	–2.2	0.4	0.0	0.1	0.3	0.5	0.5	0.5
Netherlands	–1.5	–5.0	–4.5	–4.3	–3.1	–1.2	–1.2	–1.4	0.8	0.5	0.3	0.7	0.9	1.1	1.1
New Zealand[2]	1.2	–1.5	–5.4	–5.0	–1.6	–0.9	–0.3	0.7	0.9	0.2	–0.1	0.6	1.4	1.6	1.7
Norway[1]	–2.9	–5.2	–5.2	–4.4	–4.8	–5.1	–5.9	–6.8	–7.8	–8.2	–8.4	–8.3	–8.2	–8.2	–8.1
Portugal	–4.3	–9.0	–11.1	–6.4	–3.1	–1.7	–4.5	–2.5	–0.8	–1.1	–1.5	–2.1	–2.3	–2.3	–2.5
Singapore	6.7	0.2	6.5	8.5	7.8	6.5	5.5	3.8	3.4	1.4	1.5	1.4	1.4	1.4	1.4
Slovak Republic	–0.6	–9.2	–7.7	–4.2	–4.4	–3.1	–3.1	–2.7	–1.6	–1.2	–0.7	0.1	0.0	0.1	0.1
Slovenia	–3.2	–4.4	–4.7	–4.3	–2.0	–1.6	–2.7	–1.8	–1.5	–1.0	–1.6	–1.7	–1.8	–1.9	–1.8
Spain[1]	–7.3	–10.6	–8.5	–7.4	–3.3	–2.3	–1.9	–2.3	–3.0	–2.6	–2.5	–2.5	–2.5	–2.6	–2.7
Sweden[1]	0.7	1.2	0.5	–0.1	–0.6	–0.7	–0.7	0.0	0.7	0.7	0.6	0.4	0.2	0.1	0.1
Switzerland[1]	0.9	0.8	0.4	0.7	0.6	–0.3	–0.3	0.7	0.3	0.2	0.2	0.2	0.2	0.2	0.2
United Kingdom[1]	–6.2	–7.8	–6.8	–5.4	–5.7	–3.9	–4.8	–4.1	–2.8	–2.8	–2.2	–1.3	–1.1	–1.2	–1.2
United States[1, 3]	–6.0	–7.7	–9.6	–8.2	–6.4	–4.4	–3.8	–3.6	–4.1	–4.4	–4.0	–4.3	–4.3	–4.4	–4.5
Average	–4.0	–5.8	–6.6	–5.5	–4.4	–3.2	–2.7	–2.5	–2.5	–2.8	–2.5	–2.4	–2.2	–2.3	–2.3
Euro Area	–3.4	–4.8	–5.0	–3.9	–2.6	–1.3	–1.3	–1.1	–0.9	–1.0	–1.0	–0.8	–0.5	–0.4	–0.4
G7	–4.5	–6.1	–7.4	–6.3	–5.1	–3.7	–3.2	–2.9	–3.1	–3.4	–3.0	–2.9	–2.8	–2.8	–2.8
G20 Advanced	–4.2	–5.9	–7.1	–6.0	–4.8	–3.5	–3.0	–2.7	–2.9	–3.1	–2.7	–2.7	–2.5	–2.5	–2.5

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 B.

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

[2] 2008 data are IMF staff estimates.

[3] 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 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 U.S. Bureau of Economic Analysis.

Table A4. Advanced Economies: General Government Cyclically Adjusted Primary Balance, 2008–22

(Percent of potential GDP)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Australia	–1.4	–4.4	–4.6	–3.7	–2.4	–1.6	–1.4	–1.2	–0.9	–0.5	–0.2	0.5	1.2	1.3	1.3
Austria	–0.9	–2.3	–1.9	–1.0	–0.4	1.1	–0.2	1.6	0.7	0.7	0.5	0.7	0.6	0.4	0.3
Belgium	1.8	–1.1	–0.6	–1.1	–0.8	0.5	0.2	0.4	0.1	0.4	0.1	–0.2	–0.3	–0.4	–0.4
Canada	0.1	–1.3	–3.0	–2.3	–1.3	–0.6	0.4	0.0	–0.6	–1.4	–1.5	–1.2	–0.8	–0.6	–0.3
Cyprus	0.5	–5.1	–5.1	–5.9	–3.4	–0.5	4.1	2.7	3.2	3.7	2.9	3.0	2.9	2.8	2.7
Czech Republic	–4.2	–4.4	–3.2	–1.9	–2.1	1.2	0.0	0.1	1.1	0.8	1.0	1.2	1.0	1.0	1.0
Denmark	1.8	0.0	–0.9	–0.8	–2.0	0.2	1.7	–0.8	0.0	–1.2	–0.4	0.1	0.1	0.6	0.2
Estonia	–5.2	1.8	3.5	2.4	0.3	0.3	0.8	0.2	0.5	–0.2	–0.9	–0.8	–0.6	–0.4	–0.4
Finland	1.1	–0.7	–1.8	–1.5	–1.5	–1.6	–1.4	–0.6	–0.5	–0.8	–1.0	–0.9	–0.5	–0.5	–0.4
France	–1.0	–3.4	–3.4	–2.0	–1.4	–0.7	–0.6	–0.5	–0.6	–0.5	–0.8	–1.1	0.0	0.5	0.8
Germany	1.1	1.2	–1.4	0.6	1.6	1.6	1.6	1.8	1.6	1.2	0.9	1.0	1.1	1.1	1.1
Greece	–8.6	–13.3	–6.1	–1.7	2.0	3.9	2.7	3.0	6.3	3.4	3.1	4.0	3.6	3.5	3.5
Hong Kong SAR[1]	–3.3	–2.9	–1.0	–1.5	–1.5	–3.5	2.7	0.0	1.7	–0.3	–0.8	–0.6	–0.5	–0.6	–0.6
Iceland	–4.6	–7.0	–4.9	–2.0	0.3	1.8	3.6	2.7	14.7	2.2	2.8	2.9	2.8	2.7	2.5
Ireland[1]	–7.3	–8.7	–6.8	–4.4	–2.1	0.5	0.4	1.4	1.3	1.1	1.3	1.3	1.6	2.0	2.4
Israel	1.0	–1.2	0.2	0.3	–1.0	–0.8	–0.3	0.1	–0.2	–1.1	–1.2	–1.1	–1.1	–1.1	–1.1
Italy	1.2	0.5	0.5	1.0	3.4	3.7	3.3	2.9	2.7	2.2	2.8	3.6	3.7	3.7	3.7
Japan	–3.3	–5.8	–6.9	–6.8	–6.3	–6.4	–4.6	–3.5	–3.6	–3.8	–3.2	–2.8	–2.2	–2.0	–2.0
Korea	0.9	–0.2	0.8	0.9	1.0	0.0	–0.1	0.0	1.1	0.7	0.9	0.6	0.6	0.6	0.7
Latvia	–8.0	–2.2	–2.0	–0.1	2.4	0.5	0.0	0.4	1.0	0.4	1.0	0.5	0.6	0.7	0.6
Lithuania	–8.3	–5.6	–2.6	–5.8	–0.4	–0.5	1.0	1.6	1.8	1.4	1.8	1.6	1.6	1.6	1.5
Luxembourg	1.2	0.4	–0.8	0.0	1.1	1.4	0.9	1.0	1.2	0.0	–0.2	–0.5	–0.5	–0.6	–0.8
Malta	–2.0	0.7	–0.2	1.0	0.0	1.1	0.5	0.4	2.7	2.0	2.0	2.1	2.1	2.1	2.1
Netherlands	–0.1	–3.8	–3.4	–3.0	–2.0	–0.1	–0.2	–0.4	1.7	1.3	1.0	1.3	1.5	1.6	1.7
New Zealand[2]	1.5	–1.2	–4.9	–4.3	–0.9	–0.3	0.1	1.2	1.4	0.6	0.5	1.1	1.9	2.1	2.2
Norway[1]	–7.0	–8.3	–7.9	–7.0	–7.1	–7.4	–8.6	–9.9	–10.6	–11.1	–11.0	–10.8	–10.7	–10.6	–10.6
Portugal	–1.5	–6.3	–8.3	–2.6	1.1	2.3	–0.3	1.5	3.1	2.7	2.2	1.7	1.4	1.4	1.2
Singapore	4.4	–0.9	5.9	8.0	7.3	6.0	4.8	3.0	2.5	0.4	0.5	0.4	0.4	0.4	0.5
Slovak Republic	0.2	–8.1	–6.6	–2.8	–2.8	–1.4	–1.4	–1.3	–0.2	0.1	0.6	1.2	1.0	1.1	1.1
Slovenia	–2.4	–3.5	–3.5	–2.9	–0.4	0.5	0.2	0.9	1.2	1.1	0.5	0.5	0.5	0.6	0.6
Spain[1]	–6.2	–9.2	–6.9	–5.5	–0.9	0.4	0.9	0.2	–0.5	–0.1	–0.1	–0.1	–0.1	0.0	–0.1
Sweden[1]	1.2	1.6	0.8	0.2	–0.4	–0.5	–0.7	–0.2	0.4	0.4	0.3	0.2	–0.1	–0.1	–0.1
Switzerland[1]	1.5	1.3	0.8	1.1	0.9	–0.1	–0.1	0.9	0.5	0.4	0.3	0.3	0.3	0.3	0.3
United Kingdom[1]	–4.7	–6.5	–4.4	–2.7	–3.4	–2.5	–3.0	–2.6	–1.2	–1.0	–0.5	0.3	0.5	0.5	0.5
United States[1]	–4.0	–5.9	–7.6	–6.0	–4.2	–2.4	–1.9	–1.7	–2.0	–2.3	–1.7	–1.8	–1.7	–1.7	–1.6
Average	–2.4	–4.2	–5.0	–3.7	–2.6	–1.6	–1.1	–1.0	–1.1	–1.3	–1.0	–0.9	–0.6	–0.6	–0.5
Euro Area	–0.8	–2.4	–2.6	–1.3	0.0	1.1	1.0	1.0	1.0	0.8	0.7	0.8	1.1	1.2	1.3
G7	–2.5	–4.3	–5.6	–4.3	–3.1	–2.0	–1.4	–1.3	–1.4	–1.6	–1.3	–1.1	–0.9	–0.8	–0.7
G20 Advanced	–2.4	–4.2	–5.3	–4.1	–3.0	–1.9	–1.4	–1.2	–1.3	–1.5	–1.1	–1.0	–0.7	–0.7	–0.6

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

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

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

[2] 2008 data are IMF staff estimates.

Table A5. Advanced Economies: General Government Revenue, 2008–22
(Percent of GDP)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Australia	34.0	33.4	32.0	32.1	33.3	33.9	34.1	34.7	34.9	34.6	35.0	35.2	35.6	35.5	35.6
Austria	48.7	49.1	48.6	48.5	49.2	49.9	50.0	50.6	49.5	49.8	49.8	49.7	49.7	49.6	49.6
Belgium	49.2	48.8	49.3	50.3	51.6	52.7	52.0	51.4	50.8	50.9	50.6	50.1	49.9	49.9	49.9
Canada	39.1	39.6	38.4	38.4	38.5	38.6	38.6	39.1	38.9	38.8	38.7	38.8	38.8	38.8	38.8
Cyprus	39.1	36.5	37.1	36.4	36.1	37.5	39.3	38.9	38.8	38.8	37.8	37.8	37.6	37.6	37.5
Czech Republic	38.0	38.0	38.5	40.3	40.5	41.4	40.3	41.1	40.0	40.4	40.8	40.8	40.9	40.9	40.9
Denmark	53.6	53.7	54.0	54.4	54.5	54.8	56.4	53.1	52.9	52.2	51.9	51.5	51.3	51.0	51.0
Estonia	36.1	42.3	40.7	38.5	39.0	38.3	39.1	40.3	40.3	40.7	41.0	40.8	40.7	40.4	40.2
Finland	52.4	52.2	52.1	53.3	54.0	54.9	54.9	54.2	53.8	52.7	51.9	51.8	52.0	51.9	51.9
France	49.8	49.6	49.6	50.8	52.0	52.9	53.2	53.1	53.0	53.1	52.5	51.6	51.3	51.2	50.9
Germany	43.4	44.3	43.0	43.8	44.3	44.5	44.6	44.5	45.0	45.3	45.4	45.5	45.5	45.5	45.5
Greece	40.7	38.9	41.3	44.0	45.9	47.9	46.7	48.2	50.0	48.6	46.9	46.8	46.2	45.3	45.1
Hong Kong SAR	18.9	18.8	20.7	22.4	21.4	21.0	20.8	18.6	22.7	20.6	20.6	20.6	20.7	20.8	20.8
Iceland	42.3	38.7	39.6	40.1	41.7	42.1	45.2	42.0	58.4	41.7	41.9	41.7	41.5	41.3	41.0
Ireland	34.8	33.2	33.1	33.6	33.9	34.2	34.0	27.0	26.4	25.9	25.5	25.2	24.9	24.8	24.7
Israel	38.7	35.9	37.0	37.0	36.1	36.5	36.8	37.0	37.6	37.8	37.7	37.6	37.6	37.6	37.6
Italy	45.1	45.9	45.6	45.7	47.8	48.1	47.9	47.8	47.1	46.8	47.4	47.7	47.6	47.6	47.6
Japan	30.1	29.1	28.8	29.8	30.4	31.2	32.7	33.1	32.6	32.5	32.3	32.4	33.0	33.1	33.1
Korea	22.3	21.3	21.0	21.6	22.1	21.5	21.2	21.5	22.5	22.3	22.5	22.6	22.5	22.5	22.5
Latvia	33.5	35.8	36.5	35.6	37.4	36.7	36.1	36.2	36.2	37.4	37.3	36.5	36.3	35.9	35.3
Lithuania	33.8	34.3	34.3	32.6	32.1	32.1	33.3	34.2	33.8	34.8	36.0	35.6	35.6	35.4	35.3
Luxembourg	43.0	44.5	43.5	42.9	44.4	44.3	43.2	42.7	42.7	41.3	40.8	40.5	40.4	40.3	40.2
Malta	38.5	38.6	37.9	38.7	39.1	39.4	39.4	39.9	38.9	38.5	38.5	38.3	38.0	38.0	38.1
Netherlands	43.8	42.7	43.2	42.7	43.2	43.9	43.9	42.8	43.8	43.8	43.9	44.2	44.5	44.7	44.7
New Zealand[1]	36.1	34.8	34.0	33.9	34.0	33.9	33.9	34.8	35.0	34.1	33.7	33.8	34.0	33.9	33.8
Norway	57.4	55.4	55.0	56.2	55.8	53.9	53.7	53.9	53.3	53.5	54.7	55.1	55.7	56.1	56.4
Portugal	41.6	40.4	40.6	42.6	42.9	45.1	44.6	44.0	43.0	43.0	42.8	42.6	42.5	42.5	42.4
Singapore	24.0	17.4	21.1	23.2	22.3	21.6	21.5	22.0	22.0	20.8	21.1	21.2	21.4	21.6	21.8
Slovak Republic	34.5	36.3	34.7	36.5	36.3	38.7	39.3	42.8	40.0	39.9	39.4	39.7	39.3	39.3	39.3
Slovenia	40.4	39.8	40.8	40.6	41.6	40.6	41.2	40.5	39.2	39.2	39.0	39.1	39.1	39.1	39.0
Spain	36.7	34.8	36.2	36.2	37.6	38.6	38.9	38.6	37.9	38.5	38.3	38.1	38.0	37.9	37.7
Sweden	51.3	51.4	50.1	49.4	49.7	50.0	48.9	49.5	49.5	48.7	48.6	48.6	48.6	48.6	48.6
Switzerland	32.4	32.7	32.4	32.7	32.6	32.7	32.5	33.5	33.5	33.5	33.5	33.5	33.5	33.5	33.5
United Kingdom	35.7	34.4	35.4	36.1	36.0	36.4	35.4	35.8	36.4	36.5	36.7	36.8	36.7	36.5	36.3
United States	30.6	28.4	29.1	29.4	29.4	31.6	31.5	31.6	31.2	31.4	31.7	31.9	32.2	32.3	32.4
Average	36.4	35.0	34.9	35.5	35.6	36.9	36.9	36.4	36.2	36.3	36.5	36.6	36.7	36.7	36.7
Euro Area	44.4	44.4	44.3	44.9	46.0	46.7	46.7	46.3	46.1	46.2	46.1	45.9	45.8	45.7	45.6
G7	35.6	34.2	34.1	34.8	34.9	36.4	36.4	36.1	35.8	36.0	36.2	36.3	36.5	36.5	36.5
G20 Advanced	35.1	33.8	33.7	34.2	34.4	35.8	35.8	35.5	35.3	35.4	35.6	35.7	35.9	35.9	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 country-specific details, see "Data and Conventions" in text, and Table B.

[1] 2008 data are IMF staff estimates.

Table A6. Advanced Economies: General Government Expenditure, 2008–22

(Percent of GDP)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Australia	35.1	37.9	37.1	36.5	36.7	36.7	37.0	37.5	37.5	36.8	36.8	36.2	35.6	35.3	35.3
Austria	50.2	54.5	53.1	51.1	51.5	51.2	52.7	51.7	51.1	50.7	50.4	50.1	50.1	50.2	50.3
Belgium	50.3	54.1	53.3	54.4	55.9	55.8	55.1	53.9	53.4	52.7	52.4	52.1	51.8	51.9	51.9
Canada	38.9	43.5	43.2	41.7	41.0	40.1	38.6	40.3	40.8	40.9	40.6	40.4	40.2	40.1	40.0
Cyprus	38.2	41.9	41.8	42.1	41.9	41.6	39.5	40.3	39.1	38.0	37.5	37.3	37.0	36.9	36.9
Czech Republic	40.1	43.5	42.9	43.0	44.5	42.6	42.2	41.7	39.4	39.9	40.1	40.1	40.4	40.4	40.4
Denmark	50.4	56.5	56.7	56.4	58.0	55.8	55.3	54.8	53.5	53.7	52.5	51.9	51.3	50.9	50.8
Estonia	39.0	44.2	40.5	37.4	39.3	38.4	38.4	40.2	40.1	40.7	41.7	41.4	41.2	40.8	40.5
Finland	48.3	54.8	54.8	54.4	56.2	57.5	58.1	57.0	55.7	54.3	53.1	52.7	52.4	52.3	52.2
France	53.0	56.8	56.4	55.9	56.8	57.0	57.1	56.7	56.4	56.2	55.6	54.8	53.1	52.4	51.7
Germany	43.6	47.6	47.3	44.7	44.3	44.7	44.3	43.9	44.2	44.7	44.6	44.5	44.3	44.4	44.4
Greece	50.8	54.1	52.5	54.3	52.4	51.6	50.8	51.3	49.0	50.3	48.0	46.6	46.2	45.4	45.5
Hong Kong SAR	18.8	17.3	16.6	18.6	18.3	20.0	17.3	18.0	18.3	18.4	19.2	19.3	19.5	19.6	19.6
Iceland	55.3	48.4	49.3	45.7	45.4	43.9	45.3	42.9	46.1	40.9	40.6	40.3	40.2	40.0	40.0
Ireland	41.8	47.0	65.1	46.3	42.0	39.9	37.6	28.9	27.0	26.5	25.8	25.5	24.9	24.4	23.9
Israel	41.5	41.5	40.5	39.7	40.8	40.4	40.1	39.7	40.1	41.0	41.4	41.3	41.3	41.3	41.3
Italy	47.8	51.2	49.9	49.4	50.8	51.0	50.9	50.5	49.6	49.0	48.7	48.0	47.7	47.6	47.6
Japan	34.2	38.9	38.0	38.9	38.7	38.9	38.0	36.7	36.8	36.7	35.7	35.3	35.4	35.3	35.2
Korea	20.8	21.3	19.5	19.9	20.6	20.9	20.8	20.9	20.7	21.1	21.1	21.3	21.3	21.3	21.3
Latvia	36.6	42.8	43.0	38.8	37.2	37.3	37.8	37.7	36.7	38.2	37.3	36.9	36.6	36.1	35.5
Lithuania	37.0	43.6	41.2	41.5	35.2	34.7	34.0	34.4	33.5	34.8	35.6	35.3	35.2	35.1	35.1
Luxembourg	39.7	45.1	44.1	42.4	44.1	43.3	41.8	41.3	41.1	41.0	40.6	40.5	40.4	40.2	40.2
Malta	42.7	41.9	41.1	41.2	42.8	42.0	41.4	41.2	37.9	37.9	38.1	37.8	37.5	37.6	37.7
Netherlands	43.6	48.2	48.1	47.0	47.1	46.3	46.2	44.9	43.4	43.1	43.0	43.0	43.0	43.0	43.0
New Zealand[1]	34.7	36.5	39.9	39.3	35.9	34.9	34.2	34.2	34.1	33.7	33.4	32.9	32.3	32.1	32.0
Norway	38.9	45.0	44.1	43.0	42.2	43.3	45.1	48.0	50.2	49.0	50.0	49.7	49.6	49.5	49.4
Portugal	45.3	50.2	51.8	50.0	48.5	49.9	51.8	48.3	45.1	44.5	44.2	44.1	43.9	43.9	43.9
Singapore	17.9	17.3	15.0	14.5	14.5	14.9	16.0	18.3	18.7	19.1	19.6	19.5	20.0	19.9	20.1
Slovak Republic	36.9	44.1	42.1	40.8	40.6	41.4	42.0	45.6	41.6	41.1	40.2	39.8	39.4	39.3	39.3
Slovenia	40.7	45.3	46.0	46.1	44.7	54.4	47.0	43.8	40.9	40.1	40.0	40.3	40.4	40.6	40.7
Spain	41.1	45.8	45.6	45.8	48.1	45.6	44.9	43.8	42.4	41.7	40.7	40.2	40.0	39.9	39.8
Sweden	49.4	52.1	50.2	49.6	50.6	51.4	50.5	49.3	48.6	47.7	47.5	47.8	48.1	48.2	48.3
Switzerland	30.4	32.2	32.0	31.9	32.2	33.1	32.7	32.9	33.5	33.6	33.6	33.6	33.5	33.4	33.4
United Kingdom	40.9	44.5	44.8	43.6	43.7	42.0	41.1	40.1	39.3	39.4	39.0	38.3	37.9	37.7	37.6
United States	37.3	41.6	40.0	38.9	37.3	36.0	35.5	35.2	35.6	35.8	35.5	35.9	36.2	36.5	36.7
Average	39.9	43.7	42.5	41.7	41.0	40.5	40.0	39.1	39.1	39.0	38.8	38.7	38.7	38.7	38.7
Euro Area	46.6	50.7	50.5	49.1	49.7	49.7	49.3	48.3	47.7	47.5	47.0	46.6	46.1	45.9	45.7
G7	40.1	44.0	42.9	42.1	41.2	40.6	40.1	39.2	39.3	39.4	39.1	39.1	39.0	39.1	39.1
G20 Advanced	39.4	43.2	41.9	41.2	40.4	39.8	39.2	38.4	38.6	38.6	38.3	38.3	38.2	38.3	38.3

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 B.

[1] 2008 data are IMF staff estimates.

Table A7. Advanced Economies: General Government Gross Debt, 2008–22

(Percent of GDP)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Australia[1]	11.7	16.7	20.5	24.2	27.8	30.7	34.2	37.9	41.0	41.9	42.3	41.8	40.2	38.0	36.0
Austria	68.8	80.1	82.8	82.6	82.0	81.3	84.4	85.5	84.6	80.2	77.5	74.8	72.2	69.9	68.3
Belgium	92.5	99.5	99.7	102.6	104.3	105.6	106.7	106.0	106.0	104.3	102.9	101.5	100.2	98.8	97.4
Canada[1]	67.8	79.3	81.1	81.5	84.8	85.8	85.4	91.6	92.4	89.6	87.7	85.8	84.0	81.9	79.9
Cyprus	44.1	52.8	55.8	65.2	79.3	102.2	107.1	107.5	107.8	105.5	102.0	96.4	92.0	88.3	83.7
Czech Republic	28.6	34.0	38.1	39.8	44.5	44.9	42.2	40.0	36.8	34.5	32.5	30.4	28.6	27.0	25.4
Denmark	33.3	40.2	42.6	46.1	44.9	44.0	44.0	39.6	37.7	37.8	37.0	35.9	34.5	33.0	31.4
Estonia	4.5	7.0	6.6	6.1	9.7	10.2	10.7	10.0	9.4	8.7	8.8	8.9	8.9	8.8	8.7
Finland	32.7	41.7	47.1	48.5	53.9	56.5	60.2	63.6	63.1	63.3	62.6	61.8	60.6	59.5	58.3
France	68.0	78.9	81.6	85.2	89.5	92.3	94.9	95.6	96.3	96.8	97.0	97.0	95.6	93.6	91.2
Germany	65.1	72.6	81.0	78.7	79.9	77.5	74.7	70.9	68.1	65.0	61.8	58.7	55.7	52.9	50.1
Greece	109.4	126.7	146.2	172.1	159.6	177.9	180.9	179.4	181.6	180.2	184.5	177.9	171.4	165.4	161.2
Hong Kong SAR[1]	0.9	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
Iceland	67.1	82.7	88.1	95.1	92.5	84.7	82.4	68.1	54.0	41.2	39.0	35.5	33.1	30.2	24.9
Ireland	42.4	61.5	86.1	110.4	119.7	119.6	104.7	77.1	72.9	69.3	67.8	66.2	62.1	59.9	56.4
Israel	71.9	74.6	70.7	68.8	68.4	67.1	66.1	64.2	62.3	62.7	63.6	64.1	64.3	64.4	64.6
Italy	102.4	112.5	115.4	116.5	123.4	129.0	131.8	132.1	132.6	133.0	131.4	128.8	125.8	122.8	120.1
Japan	191.3	208.6	215.9	230.6	236.6	240.5	242.1	238.1	239.3	240.3	240.0	238.5	237.2	235.7	233.9
Korea	28.2	31.4	30.8	31.5	32.1	33.8	35.9	37.8	38.3	38.0	38.3	38.6	38.9	39.4	40.0
Latvia	16.2	32.5	40.3	37.5	36.7	35.8	38.5	34.8	37.2	35.6	33.2	31.8	30.4	29.0	27.8
Lithuania	14.6	29.0	36.2	37.2	39.8	38.7	40.5	42.7	40.2	37.5	35.0	32.9	30.7	28.8	27.0
Luxembourg	14.9	15.7	19.8	18.7	21.7	23.4	22.4	21.6	20.0	18.6	17.5	16.6	15.7	14.9	14.1
Malta	62.7	67.8	67.6	70.3	68.0	68.7	64.1	60.6	58.0	55.9	53.6	50.3	48.0	45.2	42.4
Netherlands	54.5	56.5	59.3	61.6	66.4	67.8	68.0	64.6	61.8	57.4	54.2	51.2	48.4	45.8	42.8
New Zealand[2]	16.5	21.1	26.0	30.8	31.3	30.0	29.5	29.5	29.2	26.5	23.7	22.1	20.1	17.8	15.7
Norway	47.3	42.0	42.4	28.9	30.2	30.5	28.4	33.1	33.1	33.1	33.1	33.1	33.1	33.1	33.1
Portugal	71.7	83.6	96.2	111.4	126.2	129.0	130.6	129.0	130.3	125.7	122.5	119.8	117.6	115.8	114.0
Singapore	95.3	99.7	97.0	101.0	105.7	102.2	97.9	103.2	111.5	110.6	109.2	107.8	106.3	104.9	103.4
Slovak Republic	28.1	35.9	40.7	43.2	52.2	54.7	53.6	52.5	51.9	50.9	49.7	47.8	46.3	44.7	43.3
Slovenia	21.6	34.5	38.2	46.4	53.8	70.4	80.3	82.6	78.4	75.0	73.9	73.3	73.0	72.8	72.7
Spain	39.4	52.7	60.1	69.5	85.7	95.5	100.4	99.8	99.4	98.7	97.2	95.8	94.5	93.4	92.4
Sweden	36.8	40.3	38.3	37.5	37.8	40.4	45.2	43.9	41.6	38.8	36.5	33.8	30.4	29.2	28.2
Switzerland	46.8	45.2	44.0	44.1	44.7	43.8	43.7	43.6	43.3	42.8	41.7	40.7	39.6	38.4	37.2
United Kingdom	50.2	64.5	76.0	81.6	85.1	86.2	88.1	89.0	89.3	89.5	89.7	88.9	87.6	86.7	85.6
United States[1]	73.6	87.0	95.7	100.0	103.4	105.4	105.1	105.2	107.1	108.1	107.8	107.9	108.3	108.8	109.6
Average	79.2	92.5	99.3	103.5	107.7	106.2	105.5	105.1	107.4	106.3	105.2	104.2	102.9	101.9	101.0
Euro Area	68.6	78.4	83.8	86.1	89.5	91.4	91.9	90.0	89.0	87.4	85.6	83.5	81.1	78.8	76.3
G7	89.7	104.5	112.9	118.2	122.3	120.1	118.6	117.5	120.3	119.8	118.8	118.0	116.9	116.0	115.3
G20 Advanced	85.7	100.0	107.1	111.7	115.5	113.6	112.5	111.9	114.6	113.9	113.0	112.1	111.0	110.1	109.3

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 B.

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

[2] 2008 data are IMF staff estimates.

Table A8. Advanced Economies: General Government Net Debt, 2008–22

(Percent of GDP)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Australia[1]	–5.3	–0.6	3.9	8.1	11.2	13.2	15.5	17.9	19.5	19.9	20.5	20.0	18.8	17.1	15.6
Austria	49.5	57.0	60.7	60.6	60.6	60.5	59.4	58.8	58.2	55.3	53.5	51.6	49.8	48.2	47.3
Belgium[2]	81.5	88.2	88.3	90.7	91.6	92.6	93.6	93.1	93.1	91.9	90.8	89.8	88.9	87.8	86.8
Canada[1]	18.4	24.4	26.8	27.1	28.2	29.0	27.2	25.2	27.4	24.6	22.7	20.9	19.0	17.0	14.9
Cyprus	37.9	44.4	49.1	53.5	68.9	80.1	90.5	92.8	90.8	. . .	. . .	. . .	. . .	. . .	. . .
Czech Republic	14.7	21.1	27.1	26.8	28.3	29.1	29.4	28.1	24.8	. . .	. . .	. . .	. . .	. . .	. . .
Denmark	7.8	11.5	15.0	15.1	18.5	18.3	17.8	16.2	16.8	17.7	17.6	17.3	16.6	15.8	15.0
Estonia	–8.0	–9.7	–8.5	–6.8	–4.9	–4.4	–3.9	–2.2	–2.7	–0.8	–0.1	0.6	1.0	1.4	1.7
Finland[3]	–10.8	–3.7	1.4	3.4	9.6	13.2	14.6	20.9	22.3	23.1	23.5	23.6	23.2	22.8	22.3
France	60.4	70.2	74.0	76.9	80.6	83.5	86.1	86.9	87.8	88.5	88.7	88.7	87.3	85.3	82.9
Germany	51.9	58.8	60.4	58.7	58.2	57.0	53.5	50.5	48.3	45.8	43.2	40.6	38.2	35.9	33.7
Greece	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Hong Kong SAR	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Iceland	53.0	66.1	65.6	61.7	63.8	62.2	55.8	49.3	41.9	33.2	31.0	27.6	18.8	16.6	14.1
Ireland[4]	22.4	36.4	66.1	78.5	86.5	89.5	85.9	65.8	63.8	60.9	58.9	57.1	55.4	53.4	50.1
Israel	64.4	66.4	64.2	63.3	63.1	62.0	62.0	60.2	58.5	59.0	60.1	60.7	61.1	61.4	61.6
Italy	94.1	102.8	104.7	106.8	111.6	116.7	118.8	119.8	120.6	121.2	119.9	117.5	114.7	112.1	109.6
Japan	84.9	96.2	106.2	117.9	120.5	117.4	119.0	118.4	119.8	120.9	120.7	119.2	117.8	116.3	114.6
Korea	. . .	. . .	. . .	. . .	–2.1	0.3	2.0	4.6	5.1	4.9	5.1	5.4	5.7	6.2	6.8
Latvia	6.0	16.0	22.8	24.8	24.2	26.0	27.7	29.7	28.6	27.6	25.8	24.8	23.8	22.7	21.8
Lithuania	10.1	20.8	26.3	33.1	33.4	34.2	32.7	35.1	32.8	30.6	28.5	26.7	24.9	23.2	21.8
Luxembourg	–23.0	–20.3	–13.3	–10.9	–9.7	–8.3	–11.0	–12.2	–11.7	–11.4	–11.0	–10.5	–10.0	–9.6	–9.1
Malta	54.3	57.6	57.4	58.4	58.3	59.3	54.6	51.9	45.4	. . .	. . .	. . .	. . .	. . .	. . .
Netherlands	38.9	41.6	45.6	48.2	51.9	53.6	54.7	52.8	50.5	46.9	44.3	41.8	39.5	37.4	34.9
New Zealand	–2.2	–0.6	2.5	6.3	7.9	7.9	7.2	6.4	5.8	5.1	4.6	3.9	2.4	0.5	–1.4
Norway[5]	–48.9	–43.8	–47.5	–48.4	–49.9	–61.3	–76.1	–86.8	–87.8	–88.3	–90.2	–91.7	–93.4	–95.5	–97.5
Portugal	64.1	76.0	87.7	96.1	104.8	107.3	111.9	113.3	112.7	111.2	108.8	107.1	105.3	103.9	102.5
Singapore	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Slovak Republic	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Slovenia	13.7	21.0	26.6	32.2	36.7	45.5	46.5	50.4	52.1	. . .	. . .	. . .	. . .	. . .	. . .
Spain	25.6	36.6	46.1	56.5	71.7	81.1	85.6	86.1	86.8	86.6	85.6	84.6	83.7	83.0	82.3
Sweden	12.6	13.5	13.2	11.6	11.2	11.3	11.1	10.8	8.0	6.9	5.8	4.2	2.0	1.6	1.2
Switzerland	28.1	26.8	25.6	25.6	25.0	23.8	23.8	23.9	24.1	23.0	22.0	20.9	19.9	18.7	17.5
United Kingdom	44.3	57.7	68.7	73.2	76.4	77.8	79.7	80.3	80.1	80.5	80.6	79.9	78.6	77.7	76.6
United States[1]	51.2	62.9	70.4	76.8	80.2	81.6	80.8	80.2	81.3	82.5	81.1	81.0	81.3	81.8	82.8
Average	51.0	61.5	67.3	71.9	72.9	72.6	72.4	72.5	73.6	73.5	72.2	71.3	70.4	69.6	69.0
Euro Area	53.8	62.0	66.0	68.5	72.2	74.6	74.9	73.9	73.3	71.8	70.3	68.6	66.7	64.7	62.7
G7	58.2	69.3	75.8	81.2	84.0	83.4	82.9	82.3	83.5	83.7	82.3	81.5	80.7	80.0	79.6
G20 Advanced	56.2	67.1	73.2	78.2	78.2	77.8	77.5	77.2	78.5	78.4	77.1	76.3	75.5	74.8	74.3

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 B.

[1] For cross-country comparability, net debt levels reported by national statistical agencies for countries 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 have been 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 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.

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

Table A9. Emerging Market and Middle-Income Economies: General Government Overall Balance, 2008–22
(Percent of GDP)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Algeria	9.6	–5.8	0.0	–0.1	–4.4	–0.4	–7.3	–15.3	–13.5	–3.2	–1.1	–0.5	0.1	0.2	0.3
Angola	–4.5	–7.4	3.4	8.7	4.6	–0.3	–6.6	–3.3	–5.0	–6.8	–5.5	–4.0	–3.6	–2.8	–2.4
Argentina	0.3	–2.6	–1.4	–2.7	–3.0	–3.3	–4.3	–5.9	–5.8	–6.6	–5.6	–4.6	–4.3	–4.6	–5.0
Azerbaijan	18.4	5.9	13.8	11.1	3.8	1.7	2.7	–4.8	–1.1	–0.3	0.7	0.5	0.1	–0.6	–1.8
Belarus	–11.3	–7.5	–4.2	–2.8	0.4	–1.0	0.1	–2.2	–3.4	–5.6	–3.8	–2.3	–1.5	0.3	0.7
Brazil	–1.5	–3.2	–2.7	–2.5	–2.5	–3.0	–5.4	–10.3	–9.0	–9.2	–9.3	–8.8	–8.3	–7.6	–7.3
Chile	3.9	–4.2	–0.4	1.4	0.7	–0.5	–1.5	–2.1	–2.9	–3.1	–2.6	–2.0	–1.4	–1.3	–1.1
China	0.0	–1.7	–0.4	–0.1	–0.3	–0.8	–0.9	–2.8	–3.7	–3.7	–3.7	–3.9	–4.0	–4.1	–4.2
Colombia	–0.3	–2.8	–3.3	–2.0	0.1	–0.9	–1.8	–3.4	–3.0	–3.2	–2.8	–1.9	–1.0	–0.9	–0.9
Croatia	–2.8	–6.0	–6.2	–7.8	–5.3	–5.3	–5.4	–3.4	–0.8	–1.3	–1.0	–0.7	–0.5	–0.3	–0.2
Dominican Republic	–3.2	–3.0	–2.7	–3.1	–6.6	–3.5	–3.0	–0.2	–2.9	–3.6	–3.4	–3.5	–3.6	–3.8	–3.9
Ecuador	0.6	–3.6	–1.4	–0.1	–0.9	–4.6	–5.2	–5.2	–8.4	–5.8	–4.1	–3.6	–3.0	–3.0	–3.0
Egypt[1]	–7.4	–6.6	–7.9	–9.3	–9.9	–13.3	–11.8	–11.4	–10.9	–9.5	–7.3	–5.6	–4.4	–3.3	–2.9
Hungary	–3.6	–4.6	–4.5	–5.5	–2.3	–2.6	–2.1	–1.6	–1.8	–2.6	–2.6	–2.3	–2.3	–2.5	–2.6
India	–9.0	–9.5	–8.6	–8.3	–7.5	–7.0	–7.2	–7.1	–6.6	–6.4	–6.2	–5.9	–5.8	–5.6	–5.4
Indonesia	0.1	–1.6	–1.2	–0.7	–1.6	–2.2	–2.1	–2.5	–2.5	–2.7	–2.5	–2.5	–2.5	–2.5	–2.5
Iran	0.6	0.8	2.8	0.6	–0.3	–0.9	–1.1	–1.8	–2.3	–2.2	–2.2	–2.2	–1.8	–1.9	–2.7
Kazakhstan	1.2	–1.3	1.5	5.8	4.4	4.9	2.5	–6.3	–4.0	–6.5	–2.0	–1.7	–0.8	–1.0	–0.9
Kuwait	20.2	27.2	26.0	33.1	32.1	34.1	22.3	5.8	0.3	1.5	1.5	0.8	–0.1	–0.8	–0.6
Libya	32.5	–6.5	12.5	–17.2	28.6	–5.1	–73.8	–126.6	–102.7	–43.0	–23.3	–30.6	–34.1	–37.0	–37.4
Malaysia	–3.5	–6.5	–4.5	–3.6	–3.8	–4.1	–2.7	–2.8	–3.0	–3.0	–2.7	–2.4	–2.0	–1.7	–1.3
Mexico	–0.8	–5.0	–3.9	–3.4	–3.8	–3.7	–4.6	–4.1	–2.8	–1.4	–2.5	–2.5	–2.5	–2.5	–2.5
Morocco	0.7	–1.8	–4.3	–6.6	–7.2	–5.1	–4.8	–4.2	–4.1	–3.5	–3.0	–2.7	–2.5	–2.2	–2.1
Oman	16.8	–0.3	5.5	9.4	4.6	4.7	–1.1	–15.7	–21.6	–13.0	–11.4	–9.2	–8.6	–8.3	–7.0
Pakistan	–7.5	–5.0	–6.0	–6.7	–8.6	–8.4	–4.9	–5.3	–4.4	–5.7	–5.4	–5.5	–5.5	–5.6	–5.6
Peru	2.7	–1.4	0.1	2.0	2.1	0.7	–0.3	–2.2	–2.3	–2.9	–3.4	–2.8	–1.8	–1.0	–1.0
Philippines	0.0	–2.7	–2.4	–0.3	–0.3	0.2	0.9	0.6	–0.4	–1.0	–1.1	–1.2	–1.3	–1.3	–1.3
Poland	–3.6	–7.3	–7.3	–4.8	–3.7	–4.1	–3.5	–2.6	–2.4	–2.7	–2.7	–2.6	–2.3	–2.0	–1.9
Qatar	10.0	15.0	6.7	7.4	11.2	22.6	15.3	5.6	–3.9	–1.0	0.5	1.5	2.0	2.7	4.2
Romania	–4.7	–7.1	–6.3	–4.2	–2.5	–2.5	–1.9	–1.5	–2.4	–3.0	–4.4	–4.5	–4.5	–4.2	–3.9
Russia	4.5	–5.9	–3.2	1.4	0.4	–1.2	–1.1	–3.4	–3.7	–2.1	–1.5	–1.0	–0.5	0.3	0.5
Saudi Arabia	29.8	–5.4	3.6	11.1	12.0	5.8	–3.4	–15.8	–17.2	–8.6	–7.2	–5.0	–1.6	–1.3	–0.9
South Africa	–0.7	–5.3	–4.9	–3.9	–4.4	–4.3	–4.2	–4.6	–4.0	–4.5	–4.3	–4.3	–4.2	–4.1	–3.8
Sri Lanka	–6.1	–8.6	–7.0	–6.2	–5.6	–5.2	–6.2	–7.0	–5.4	–5.2	–4.7	–3.7	–3.5	–3.5	–3.5
Thailand	0.8	–2.2	–1.3	0.0	–0.9	0.5	–0.8	0.1	0.6	–1.4	–1.7	–1.7	–1.7	–1.7	–1.6
Turkey	–2.7	–5.9	–3.4	–0.7	–1.8	–1.5	–1.4	–1.3	–2.3	–3.2	–2.4	–2.3	–2.3	–2.3	–2.3
Ukraine	–3.0	–6.0	–5.8	–2.8	–4.3	–4.8	–4.5	–1.2	–2.2	–2.9	–2.5	–2.3	–2.1	–2.0	–1.9
United Arab Emirates	17.6	–6.1	0.6	5.3	9.0	8.4	1.9	–3.4	–4.1	–3.7	–2.2	–1.1	–0.1	0.6	1.4
Uruguay	–1.6	–1.6	–1.4	–0.9	–2.7	–2.3	–3.5	–3.6	–4.0	–3.0	–2.7	–2.5	–2.5	–2.5	–2.5
Venezuela	–3.5	–8.7	–9.2	–10.6	–14.6	–14.1	–16.5	–17.7	–17.8	–18.5	–18.7	–19.2	–19.7	–19.8	–19.7
Average	0.8	–3.7	–2.2	–1.0	–1.0	–1.5	–2.4	–4.4	–4.8	–4.4	–4.2	–4.0	–3.9	–3.8	–3.7
Asia	–1.7	–3.3	–2.2	–1.6	–1.6	–1.8	–1.9	–3.2	–3.9	–3.9	–3.9	–3.9	–4.0	–4.1	–4.1
Europe	0.5	–5.8	–3.7	–0.2	–0.7	–1.5	–1.4	–2.7	–2.9	–2.8	–2.2	–1.9	–1.6	–1.2	–1.1
Latin America	–0.9	–3.9	–3.1	–2.8	–3.1	–3.3	–4.8	–7.3	–6.6	–6.3	–6.4	–5.9	–5.5	–5.1	–5.0
MENAP	12.6	–1.3	2.2	4.2	5.7	4.0	–1.4	–8.4	–9.5	–5.7	–4.5	–3.7	–2.7	–2.6	–2.6
G20 Emerging	0.5	–3.9	–2.3	–1.1	–1.2	–1.8	–2.5	–4.4	–4.8	–4.5	–4.3	–4.2	–4.1	–4.0	–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.

Table A10. Emerging Market and Middle-Income Economies: General Government Primary Balance, 2008–22

(Percent of GDP)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Algeria	9.4	–6.3	–0.5	–1.3	–5.3	–0.5	–7.4	–15.9	–13.5	–3.5	–1.5	–0.9	–0.3	–0.2	–0.1
Angola	–2.5	–5.6	4.6	9.6	5.5	0.5	–5.4	–1.3	–2.2	–3.9	–2.5	–0.8	–0.1	0.7	1.1
Argentina	1.8	–1.2	–0.6	–1.6	–1.7	–2.6	–3.5	–4.7	–4.8	–4.5	–3.4	–2.3	–2.0	–1.9	–1.9
Azerbaijan	18.6	6.0	13.8	11.2	3.9	1.8	2.9	–4.4	–0.7	0.5	1.6	1.7	1.3	0.5	–0.8
Belarus	–10.7	–6.7	–3.5	–1.7	1.7	0.0	1.1	–0.5	–1.4	–3.1	–1.0	0.6	1.5	3.5	3.6
Brazil	3.8	1.9	2.3	2.9	1.9	1.7	0.0	–1.9	–2.5	–2.5	–2.3	–1.8	–0.8	0.2	0.8
Chile	3.6	–4.4	–0.3	1.5	0.8	–0.4	–1.3	–1.9	–2.6	–2.8	–2.1	–1.5	–0.8	–0.5	–0.2
China	0.4	–1.3	0.1	0.4	0.2	–0.3	–0.4	–2.2	–2.9	–2.8	–2.7	–2.7	–2.9	–2.9	–3.0
Colombia	1.9	–1.1	–1.6	–0.1	1.6	1.2	0.3	–0.7	0.0	–0.2	0.0	0.8	1.6	1.5	1.5
Croatia	–1.1	–4.1	–4.1	–5.1	–2.3	–2.2	–2.4	–0.1	2.1	1.7	2.0	2.2	2.5	2.6	2.7
Dominican Republic	–1.7	–1.2	–0.9	–1.0	–4.2	–1.2	–0.5	2.4	0.0	–0.4	–0.1	0.0	0.0	–0.1	–0.2
Ecuador	1.7	–3.0	–0.8	0.5	–0.2	–3.5	–4.2	–3.9	–6.8	–3.5	–1.6	–0.7	0.2	0.5	0.8
Egypt[1]	–3.7	–3.6	–3.6	–4.5	–4.8	–6.3	–4.7	–4.6	–3.2	–1.7	0.6	2.0	2.2	2.2	2.0
Hungary	0.0	–0.6	–0.7	–1.7	1.9	1.7	1.7	1.9	1.3	0.1	–0.2	–0.1	–0.1	–0.2	–0.1
India	–4.3	–5.0	–4.4	–4.0	–3.2	–2.4	–2.7	–2.5	–1.8	–1.5	–1.5	–1.4	–1.3	–1.3	–1.2
Indonesia	1.7	–0.1	0.0	0.5	–0.4	–1.0	–0.9	–1.1	–1.0	–1.1	–0.9	–0.8	–0.7	–0.7	–0.7
Iran	0.7	0.8	2.7	0.7	–0.2	–0.8	–1.1	–1.7	–2.2	–1.2	–0.6	–0.1	0.3	0.3	–0.5
Kazakhstan	1.5	–1.4	1.8	5.7	3.8	4.4	2.0	–5.9	–4.1	–6.5	–2.3	–1.9	–1.0	–1.1	–0.9
Kuwait	11.1	18.1	16.9	26.5	25.4	25.8	12.7	–7.5	–13.6	–11.5	–10.7	–10.8	–11.1	–11.1	–10.2
Libya	32.5	–6.5	12.5	–17.2	28.6	–5.1	–73.8	–126.6	–102.7	–43.0	–23.3	–30.6	–34.1	–37.0	–37.4
Malaysia	–2.1	–5.0	–2.9	–2.0	–2.0	–2.2	–0.8	–1.2	–1.3	–1.0	–0.6	–0.2	0.1	0.4	0.8
Mexico	1.7	–2.3	–1.4	–1.0	–0.7	–0.7	–1.6	–1.1	0.5	1.8	0.6	0.6	0.8	0.9	1.0
Morocco	3.2	0.6	–2.0	–4.4	–4.7	–2.5	–2.1	–1.4	–1.4	–1.0	–0.6	–0.4	–0.3	–0.1	0.0
Oman	15.6	–1.3	4.6	8.9	3.3	2.6	–2.1	–15.9	–22.5	–13.0	–10.8	–8.3	–7.2	–6.4	–4.7
Pakistan	–2.9	–0.2	–1.7	–2.9	–4.2	–3.9	–0.3	–0.5	–0.1	–1.4	–1.5	–1.1	–0.9	–0.8	–0.7
Peru	4.1	–0.3	1.2	3.1	3.0	1.7	0.7	–1.3	–1.4	–1.8	–2.2	–1.6	–0.6	0.2	0.2
Philippines	3.4	0.6	0.7	2.3	2.3	2.7	3.1	2.6	1.5	0.9	0.8	0.7	0.6	0.5	0.4
Poland	–1.5	–4.8	–4.9	–2.3	–1.0	–1.6	–1.5	–0.8	–0.7	–0.9	–0.8	–0.8	–0.5	–0.2	–0.1
Qatar	10.4	16.0	7.9	8.8	12.7	23.7	16.5	7.1	–3.2	0.1	1.5	2.6	3.2	3.9	5.4
Romania	–4.1	–6.1	–5.0	–2.8	–0.7	–0.8	–0.4	–0.2	–1.1	–1.8	–3.2	–3.3	–3.2	–3.0	–2.7
Russia	4.7	–6.2	–3.1	1.7	0.7	–0.8	–0.7	–3.1	–3.1	–1.6	–1.0	–0.4	0.2	1.0	1.2
Saudi Arabia	29.2	–5.2	4.0	11.2	11.8	5.4	–4.0	–17.7	–20.4	–10.9	–8.6	–6.1	–2.5	–2.2	–1.7
South Africa	1.6	–3.0	–2.4	–1.4	–1.7	–1.4	–1.2	–1.4	–0.6	–0.9	–0.6	–0.4	–0.2	0.1	0.4
Sri Lanka	–1.9	–3.0	–1.5	–1.3	–0.9	–0.6	–2.0	–2.2	–0.2	0.0	1.0	2.0	2.2	2.1	2.0
Thailand	1.6	–1.5	–0.7	0.8	–0.1	1.2	–0.1	0.7	1.0	–0.7	–0.7	–0.6	–0.6	–0.5	–0.5
Turkey	1.5	–1.5	0.1	1.8	0.7	0.8	0.5	0.6	–0.9	–1.6	–0.6	–0.1	0.0	0.0	0.0
Ukraine	–2.5	–4.9	–4.1	–0.8	–2.4	–2.3	–1.2	3.0	1.9	1.2	1.8	1.9	1.9	1.9	1.9
United Arab Emirates	17.7	–5.9	0.9	5.5	9.3	8.8	2.2	–3.2	–3.9	–3.5	–2.1	–1.0	0.0	0.7	1.5
Uruguay	1.4	1.1	1.5	1.9	–0.2	0.4	–0.6	0.0	–0.7	0.0	0.1	0.4	0.6	0.8	0.8
Venezuela	–2.0	–7.2	–7.4	–8.5	–11.3	–10.6	–12.6	–16.0	–16.9	–18.0	–18.5	–19.1	–19.6	–19.8	–19.7
Average	2.5	–2.0	–0.5	0.7	0.6	0.1	–0.8	–2.7	–3.1	–2.5	–2.2	–1.9	–1.8	–1.6	–1.6
Asia	–0.3	–1.9	–0.8	–0.3	–0.4	–0.6	–0.7	–2.0	–2.4	–2.3	–2.2	–2.2	–2.3	–2.3	–2.3
Europe	2.0	–4.3	–2.3	1.0	0.5	–0.3	–0.2	–1.5	–1.7	–1.5	–0.9	–0.5	–0.1	0.2	0.4
Latin America	2.4	–0.6	0.2	0.7	0.0	–0.1	–1.3	–2.9	–2.8	–2.2	–2.2	–1.6	–1.0	–0.4	–0.1
MENAP	12.6	–1.0	2.7	4.7	6.2	4.6	–0.8	–7.9	–9.3	–5.4	–3.9	–2.8	–1.8	–1.7	–1.6
G20 Emerging	2.4	–2.0	–0.5	0.7	0.4	–0.2	–0.8	–2.6	–3.0	–2.5	–2.2	–2.1	–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: 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.

Table A11. Emerging Market and Middle-Income Economies: General Government Cyclically Adjusted Balance, 2008–22

(Percent of potential GDP)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Algeria	7.7	–13.3	–5.3	–1.1	–3.5	1.6	–9.3	–18.4	–15.4	–2.5	–3.0	–1.8	0.2	1.0	1.9
Angola	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Argentina	–0.8	–0.5	–1.4	–3.9	–3.2	–3.9	–3.7	–6.5	–4.9	–6.0	–5.0	–4.2	–4.1	–4.5	–5.0
Azerbaijan	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Belarus	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Brazil	–2.3	–2.7	–3.6	–3.6	–3.4	–4.0	–6.5	–10.0	–7.5	–7.8	–9.6	–10.2	–10.5	–10.4	–10.5
Chile[1]	–1.5	–4.3	–2.5	–1.0	0.0	–1.0	–1.5	–2.0	–2.2	–0.7	–1.2	–1.3	–1.1	–0.8	–0.6
China	–0.3	–1.8	–0.4	–0.1	–0.1	–0.5	–0.5	–2.5	–3.6	–3.8	–3.8	–3.9	–4.0	–4.1	–4.1
Colombia	–0.6	–2.3	–2.7	–2.1	0.1	–1.1	–2.1	–3.6	–3.0	–2.9	–2.4	–1.7	–0.9	–0.9	–0.8
Croatia	–5.1	–5.4	–5.1	–6.8	–3.5	–3.2	–3.2	–2.0	–0.3	–1.4	–1.1	–0.8	–0.5	–0.3	–0.2
Dominican Republic	–4.1	–2.4	–3.2	–3.1	–6.3	–3.2	–2.9	–0.3	–3.1	–3.6	–3.5	–3.5	–3.6	–3.8	–3.9
Ecuador	–3.9	–3.2	–2.4	–2.3	–3.5	–8.6	–9.4	–7.7	–5.8	–3.6	–2.1	–1.4	0.1	0.0	0.0
Egypt[2]	–7.9	–7.1	–8.6	–9.6	–10.0	–13.0	–11.4	–11.2	–10.7	–9.4	–7.1	–5.5	–4.3	–3.3	–2.9
Hungary	–6.2	–3.3	–3.1	–4.4	0.0	–0.5	–1.1	–1.1	–1.2	–2.4	–2.9	–2.7	–2.7	–2.8	–2.8
India	–8.6	–9.3	–9.0	–8.6	–7.5	–6.8	–7.1	–7.0	–6.4	–6.2	–5.9	–5.8	–5.7	–5.5	–5.3
Indonesia	–0.1	–1.6	–1.2	–0.7	–1.6	–2.2	–2.2	–2.5	–2.5	–2.6	–2.5	–2.5	–2.5	–2.5	–2.5
Iran	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Kazakhstan	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Kuwait	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Libya	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Malaysia	–3.4	–5.5	–4.2	–2.9	–3.8	–3.5	–2.4	–3.2	–3.2	–3.1	–2.7	–2.4	–2.1	–1.8	–1.3
Mexico	–1.2	–4.0	–3.6	–3.3	–3.9	–3.7	–4.5	–4.2	–4.0	–2.8	–2.4	–2.4	–2.5	–2.5	–2.5
Morocco	–0.5	–2.1	–4.3	–6.9	–7.5	–5.5	–5.7	–4.3	–4.9	–4.4	–3.6	–3.0	–2.6	–2.6	–2.8
Oman	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Pakistan	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Peru[1]	1.0	–0.2	–0.4	1.2	1.4	0.1	–0.2	–1.7	–1.9	–2.6	–3.3	–2.8	–1.9	–1.1	–1.0
Philippines	–0.5	–1.8	–2.5	0.0	–0.3	0.1	0.6	0.6	–0.4	–1.0	–1.0	–1.2	–1.3	–1.3	–1.3
Poland	–4.2	–6.8	–7.1	–5.4	–3.6	–3.2	–3.1	–2.6	–2.5	–3.0	–3.1	–3.1	–2.6	–2.3	–2.0
Qatar	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Romania	–9.6	–8.0	–6.1	–3.7	–1.4	–1.7	–1.2	–1.0	–2.4	–3.5	–5.1	–5.2	–5.1	–4.8	–4.4
Russia	4.3	–5.0	–2.8	1.4	0.2	–1.3	0.1	–2.4	–2.9	–2.0	–1.5	–1.0	–0.5	0.3	0.5
Saudi Arabia	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
South Africa	–1.1	–3.6	–3.6	–3.6	–4.2	–4.2	–4.0	–3.9	–3.6	–3.4	–3.4	–3.4	–3.4	–3.4	–3.4
Sri Lanka	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Thailand	0.4	–1.4	–1.4	0.0	–0.7	0.3	–0.4	0.5	0.7	–1.6	–1.9	–1.8	–1.7	–1.7	–1.7
Turkey	–3.1	–3.3	–2.1	–1.0	–1.7	–2.0	–1.7	–1.7	–2.3	–3.5	–2.4	–2.2	–2.2	–2.2	–2.2
Ukraine	–3.5	–2.1	–2.7	–3.2	–4.5	–4.6	–3.2	1.7	–1.0	–3.0	–2.2	–2.2	–2.2	–2.2	–2.1
United Arab Emirates	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Uruguay	–1.9	–1.9	–2.5	–2.1	–3.6	–3.3	–4.4	–3.7	–3.8	–2.9	–2.6	–2.5	–2.5	–2.5	–2.5
Venezuela	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Average	–1.4	–3.6	–2.8	–2.0	–1.9	–2.2	–2.4	–3.7	–4.0	–4.1	–4.1	–4.1	–4.0	–4.0	–4.0
Asia	–1.8	–3.2	–2.2	–1.6	–1.4	–1.5	–1.5	–3.0	–3.7	–3.9	–3.9	–3.9	–4.0	–4.0	–4.1
Europe	–0.2	–4.9	–3.5	–0.8	–1.0	–1.8	–1.0	–2.0	–2.5	–2.7	–2.3	–2.0	–1.8	–1.3	–1.2
Latin America	–1.6	–2.8	–3.1	–3.1	–2.9	–3.5	–4.9	–6.6	–5.4	–5.3	–5.8	–5.9	–5.8	–5.8	–5.9
MENAP	–1.6	–7.5	–6.8	–6.8	–7.8	–7.7	–9.7	–11.6	–10.7	–6.3	–5.1	–3.9	–2.7	–2.0	–1.6
G20 Emerging	–1.0	–3.4	–2.6	–1.7	–1.7	–2.1	–2.2	–3.8	–4.2	–4.3	–4.3	–4.3	–4.3	–4.3	–4.3

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] 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.

Table A12. Emerging Market and Middle-Income Economies: General Government Cyclically Adjusted Primary Balance, 2008–22

(Percent of potential GDP)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Algeria	7.3	–14.0	–6.0	–3.1	–4.9	1.5	–9.5	–19.1	–15.5	–2.9	–3.5	–2.3	–0.3	0.5	1.5
Angola	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Argentina	0.8	0.8	–0.6	–2.7	–1.8	–3.3	–3.0	–5.3	–3.9	–3.9	–2.9	–1.9	–1.7	–1.7	–1.8
Azerbaijan	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Belarus	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Brazil	3.1	2.4	1.6	2.0	1.2	0.9	–0.9	–1.7	–1.3	–1.4	–2.9	–3.2	–3.0	–2.6	–2.5
Chile[1]	–1.9	–4.5	–2.4	–0.9	0.1	–0.9	–1.3	–1.8	–1.9	–0.4	–0.7	–0.7	–0.4	0.0	0.3
China	0.1	–1.4	0.0	0.4	0.4	0.0	0.1	–1.9	–2.8	–2.8	–2.7	–2.8	–2.9	–2.9	–2.9
Colombia	1.6	–0.7	–1.1	–0.2	1.6	1.0	0.0	–0.9	0.1	0.0	0.3	1.0	1.7	1.6	1.5
Croatia	–3.4	–3.5	–3.0	–4.2	–0.6	–0.2	–0.4	1.1	2.6	1.6	1.9	2.2	2.5	2.6	2.7
Dominican Republic	–2.5	–0.6	–1.3	–1.0	–3.9	–0.9	–0.5	2.3	–0.2	–0.4	–0.1	0.0	0.0	–0.1	–0.2
Ecuador	–2.8	–2.6	–1.8	–1.7	–2.8	–7.6	–8.4	–6.3	–4.3	–1.3	0.3	1.4	3.2	3.4	3.7
Egypt[2]	–4.1	–4.0	–4.1	–4.7	–4.9	–6.1	–4.4	–4.4	–3.1	–1.6	0.7	2.1	2.2	2.2	2.0
Hungary	–2.4	0.6	0.6	–0.8	4.1	3.6	2.7	2.3	1.9	0.2	–0.5	–0.5	–0.5	–0.5	–0.3
India	–4.0	–4.8	–4.7	–4.2	–3.1	–2.3	–2.6	–2.4	–1.7	–1.3	–1.3	–1.3	–1.3	–1.3	–1.2
Indonesia	1.5	0.0	0.1	0.5	–0.4	–1.1	–0.9	–1.1	–1.0	–1.0	–0.8	–0.7	–0.7	–0.7	–0.7
Iran	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Kazakhstan	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Kuwait	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Libya	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Malaysia	–2.0	–4.0	–2.7	–1.3	–2.0	–1.7	–0.5	–1.6	–1.5	–1.1	–0.7	–0.3	0.1	0.4	0.8
Mexico	1.4	–1.5	–1.1	–0.9	–0.8	–0.7	–1.5	–1.2	–0.7	0.4	0.7	0.7	0.7	0.9	1.0
Morocco	2.1	0.3	–2.1	–4.7	–5.1	–3.0	–3.0	–1.6	–2.2	–1.8	–1.2	–0.7	–0.4	–0.5	–0.7
Oman	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Pakistan	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Peru[1]	2.4	0.9	0.6	2.2	2.3	1.1	0.7	–0.8	–1.0	–1.5	–2.1	–1.7	–0.8	0.1	0.2
Philippines	3.0	1.5	0.5	2.6	2.3	2.6	2.9	2.7	1.4	0.9	0.8	0.7	0.6	0.5	0.4
Poland	–2.0	–4.3	–4.7	–2.8	–1.0	–0.7	–1.2	–0.8	–0.8	–1.2	–1.2	–1.2	–0.8	–0.5	–0.3
Qatar	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Romania	–8.9	–7.0	–4.9	–2.3	0.3	–0.1	0.3	0.2	–1.1	–2.2	–3.9	–4.0	–3.8	–3.5	–3.2
Russia	4.5	–5.3	–2.7	1.7	0.5	–1.0	0.5	–2.1	–2.3	–1.6	–1.0	–0.4	0.2	1.0	1.2
Saudi Arabia	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
South Africa	1.2	–1.4	–1.2	–1.1	–1.5	–1.2	–1.0	–0.7	–0.2	0.1	0.3	0.4	0.6	0.7	0.8
Sri Lanka	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Thailand	1.3	–0.7	–0.8	0.9	0.2	1.1	0.3	1.1	1.1	–0.9	–0.9	–0.7	–0.6	–0.5	–0.5
Turkey	1.1	0.7	1.2	1.5	0.8	0.3	0.3	0.2	–1.0	–1.8	–0.6	–0.1	0.1	0.0	0.0
Ukraine	–3.0	–1.1	–1.1	–1.2	–2.6	–2.2	0.0	5.5	3.0	1.1	2.2	2.1	2.0	1.9	1.9
United Arab Emirates	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Uruguay	1.1	0.9	0.6	0.8	–1.0	–0.5	–1.4	–0.1	–0.5	0.1	0.1	0.5	0.6	0.8	0.8
Venezuela	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Average	0.6	–1.7	–0.9	–0.1	–0.1	–0.4	–0.6	–1.8	–2.1	–1.9	–1.9	–1.8	–1.8	–1.7	–1.7
Asia	–0.5	–1.9	–0.9	–0.3	–0.2	–0.3	–0.3	–1.8	–2.3	–2.3	–2.2	–2.3	–2.3	–2.3	–2.3
Europe	1.4	–3.4	–2.0	0.6	0.3	–0.5	0.2	–0.7	–1.2	–1.4	–0.9	–0.5	–0.2	0.2	0.3
Latin America	1.9	0.5	0.2	0.5	0.3	–0.2	–1.3	–2.0	–1.5	–1.1	–1.5	–1.5	–1.2	–0.9	–0.9
MENAP	0.7	–5.6	–4.2	–4.3	–4.9	–3.5	–5.5	–7.3	–5.8	–2.0	–0.9	0.2	0.9	1.1	1.3
G20 Emerging	1.0	–1.5	–0.6	0.2	0.0	–0.4	–0.5	–1.9	–2.2	–2.1	–2.1	–2.0	–2.1	–2.0	–2.0

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

Note: Cyclically adjusted primary balance is defined as the cyclically adjusted balance plus net interest payable/paid (interest expense minus interest revenue) following the *World Economic Outlook* convention. For country-specific details, see "Data and Conventions" in text, and Table 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.

Table A13. Emerging Market and Middle-Income Economies: General Government Revenue, 2008–22
(Percent of GDP)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Algeria	47.6	36.8	37.2	40.0	39.1	35.8	33.3	30.6	29.0	32.3	30.9	29.9	28.8	28.6	28.5
Angola	50.9	34.6	43.5	48.8	45.9	40.2	35.3	27.3	18.7	17.1	16.6	17.2	17.1	17.1	17.1
Argentina	31.0	31.8	31.9	32.2	33.8	34.3	34.1	35.7	35.7	35.0	34.8	34.8	34.7	34.7	34.6
Azerbaijan	51.4	40.4	45.8	45.4	40.9	39.7	39.1	33.9	34.5	37.8	36.1	35.8	35.4	34.3	32.5
Belarus	50.8	46.0	40.1	37.5	39.3	39.8	38.9	41.3	42.7	41.5	42.1	42.0	41.9	41.9	41.8
Brazil	35.9	33.9	36.1	35.1	34.7	34.5	32.5	28.0	30.2	29.4	28.9	28.9	29.1	29.6	29.5
Chile	25.8	20.7	23.0	24.3	23.8	22.6	22.3	23.0	23.4	23.6	24.7	25.1	25.3	25.5	25.8
China	22.4	23.8	24.6	26.9	27.8	27.7	28.1	28.5	28.2	27.5	27.5	27.4	27.1	27.0	26.8
Colombia	26.4	26.7	26.1	26.7	28.3	28.1	27.7	26.4	25.0	25.0	25.1	25.5	25.6	25.7	25.8
Croatia	42.0	41.6	41.3	41.0	41.8	43.0	43.1	45.0	47.3	45.7	45.6	45.7	45.9	46.1	46.1
Dominican Republic	15.0	13.2	13.1	12.9	13.6	14.4	14.8	17.5	14.7	14.9	14.9	14.8	14.8	14.7	14.6
Ecuador	35.8	29.4	33.3	39.3	39.3	39.2	38.2	33.5	31.0	32.9	32.8	32.5	32.4	32.3	32.3
Egypt[1]	26.6	26.3	23.9	20.9	20.8	21.7	24.4	22.0	21.2	21.6	22.2	21.0	20.8	21.4	21.4
Hungary	45.1	46.0	45.0	44.2	46.2	46.8	46.9	48.5	45.6	48.8	48.5	47.2	46.0	43.6	43.7
India	19.7	18.5	18.8	19.3	19.8	19.6	19.2	20.4	21.3	21.1	21.1	21.2	21.2	21.3	21.3
Indonesia	19.4	15.4	15.6	17.0	17.2	16.9	16.5	14.9	14.3	14.3	14.3	14.3	14.3	14.3	14.4
Iran	22.6	21.4	21.9	18.9	13.9	13.5	14.3	16.1	17.3	18.8	18.8	18.8	19.1	18.9	17.9
Kazakhstan	28.3	22.1	23.9	27.0	26.3	24.8	23.7	16.6	18.0	19.3	19.7	20.0	20.9	20.8	20.8
Kuwait	60.6	69.4	70.7	72.1	70.9	72.3	66.6	60.2	53.2	52.1	51.2	49.9	48.6	47.3	45.8
Libya	80.7	65.6	70.4	42.4	74.2	83.0	69.3	49.5	28.8	42.4	41.6	33.8	28.2	23.4	20.3
Malaysia	23.8	24.8	22.5	23.9	25.0	24.1	23.7	22.2	20.4	19.4	19.3	19.4	19.5	19.5	19.6
Mexico	25.0	23.3	22.8	23.7	23.9	24.2	23.3	23.1	23.2	21.8	20.0	19.9	19.9	20.0	20.0
Morocco	31.3	28.7	26.8	27.2	28.0	27.8	28.0	26.5	26.1	25.9	25.9	25.8	26.0	26.2	26.3
Oman	46.1	37.9	39.4	48.7	48.7	49.4	46.3	34.5	29.9	33.0	33.9	34.7	33.9	32.9	32.8
Pakistan	14.4	14.2	14.3	12.6	13.0	13.5	15.2	14.5	15.5	15.7	16.2	16.6	16.8	17.0	17.0
Peru	22.3	20.1	21.2	22.0	22.8	22.8	22.3	20.1	18.7	18.1	18.4	18.6	18.8	19.1	19.0
Philippines	18.7	17.4	16.8	17.6	18.6	18.9	19.0	19.4	19.1	19.2	19.2	19.2	19.2	19.2	19.2
Poland	40.9	38.0	38.5	39.1	39.1	38.5	38.8	39.0	38.8	39.8	40.3	40.2	40.0	40.0	39.9
Qatar	33.0	47.8	37.3	35.9	42.2	50.9	48.7	47.1	33.3	32.5	31.9	31.2	30.3	29.6	28.7
Romania	31.6	30.6	31.6	32.1	32.4	31.4	32.0	32.8	29.0	28.9	30.0	30.3	30.3	30.5	30.5
Russia	36.5	32.6	32.2	34.6	34.4	33.4	33.8	31.8	32.8	32.8	32.0	31.8	31.9	32.2	32.4
Saudi Arabia	56.5	31.7	37.5	44.4	45.2	41.3	36.8	25.0	21.4	25.0	27.7	30.5	34.0	33.9	34.1
South Africa	28.0	26.4	26.5	26.9	27.0	27.3	27.6	28.3	28.9	29.1	29.4	29.6	29.7	29.7	29.7
Sri Lanka	13.6	13.1	13.0	13.6	12.2	12.0	11.6	13.3	14.3	14.5	15.4	16.5	16.7	16.9	16.9
Thailand	20.0	19.5	20.7	21.1	21.3	22.1	21.4	22.4	22.4	22.4	22.5	22.7	22.7	22.7	22.7
Turkey	31.9	32.5	32.8	32.7	32.6	32.8	31.9	32.2	32.6	30.8	30.7	30.2	30.2	30.2	30.2
Ukraine	42.4	40.8	43.4	42.9	44.7	43.3	40.3	41.9	38.4	40.7	41.4	42.2	41.8	41.5	41.2
United Arab Emirates	39.6	28.9	32.8	36.5	38.1	38.7	35.0	29.0	28.5	26.8	27.3	27.3	27.1	26.5	26.1
Uruguay	27.1	28.1	29.0	28.3	27.8	29.5	28.8	28.8	29.3	29.7	29.7	29.9	30.1	30.3	30.3
Venezuela	31.4	24.6	21.0	27.6	25.1	25.9	30.1	19.0	17.1	13.3	12.7	12.1	11.6	11.5	11.6
Average	29.6	26.9	27.6	28.9	29.4	29.1	28.5	27.2	26.9	26.6	26.5	26.5	26.4	26.3	26.2
Asia	21.5	21.9	22.4	24.3	25.3	25.3	25.6	26.1	25.8	25.2	25.2	25.2	25.0	24.9	24.8
Europe	36.8	34.2	34.1	35.3	35.1	34.4	34.3	33.4	33.8	33.7	33.6	33.3	33.3	33.3	33.3
Latin America	30.5	28.8	29.9	30.4	30.2	30.2	29.1	26.5	27.1	26.5	25.9	26.0	26.1	26.4	26.4
MENAP	40.5	31.3	32.9	33.8	36.3	35.5	32.7	26.6	24.0	25.5	26.4	26.7	27.3	26.9	26.4
G20 Emerging	28.2	26.0	26.9	28.5	28.9	28.6	28.1	27.3	27.2	26.7	26.6	26.5	26.5	26.4	26.3

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.

Table A14. Emerging Market and Middle-Income Economies: General Government Expenditure, 2008–22

(Percent of GDP)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Algeria	37.9	42.6	37.3	40.1	43.5	36.2	40.6	45.8	42.4	35.5	32.0	30.4	28.7	28.5	28.2
Angola	55.4	41.9	40.0	40.2	41.3	40.5	41.9	30.6	23.7	23.9	22.1	21.2	20.7	20.0	19.6
Argentina	30.6	34.4	33.4	34.9	36.8	37.6	38.4	41.7	41.5	41.7	40.4	39.5	39.0	39.3	39.6
Azerbaijan	33.0	34.5	32.0	34.3	37.1	38.1	36.4	38.7	35.6	38.1	35.4	35.3	35.3	34.9	34.3
Belarus	62.0	53.5	44.3	40.3	38.9	40.8	38.8	43.5	46.1	47.1	45.8	44.3	43.5	41.7	41.1
Brazil	37.4	37.1	38.8	37.6	37.2	37.4	37.8	38.3	39.3	38.6	38.1	37.7	37.5	37.1	36.8
Chile	21.8	24.9	23.4	22.8	23.1	23.1	23.7	25.1	26.3	26.7	27.3	27.2	26.7	26.8	26.8
China	22.4	25.5	25.0	27.0	28.1	28.5	29.0	31.3	31.9	31.2	31.2	31.2	31.1	31.1	31.0
Colombia	26.6	29.5	29.4	28.7	28.3	29.0	29.4	29.8	28.1	28.2	27.9	27.4	26.6	26.6	26.7
Croatia	44.7	47.6	47.5	48.8	47.1	48.3	48.5	48.4	48.1	46.9	46.7	46.4	46.3	46.4	46.3
Dominican Republic	18.3	16.2	15.8	16.0	20.1	17.9	17.7	17.7	17.6	18.5	18.3	18.3	18.4	18.5	18.6
Ecuador	35.2	33.0	34.7	39.5	40.3	43.7	43.4	38.7	39.4	38.7	36.8	36.1	35.4	35.4	35.2
Egypt[1]	34.0	32.9	31.8	30.3	30.7	35.0	36.2	33.4	32.1	31.1	29.5	26.6	25.2	24.6	24.2
Hungary	48.7	50.6	49.5	49.7	48.6	49.3	49.0	50.0	47.5	51.4	51.1	49.5	48.3	46.1	46.3
India	28.7	28.1	27.4	27.6	27.4	26.6	26.4	27.4	27.9	27.5	27.3	27.1	27.0	26.8	26.7
Indonesia	19.4	17.0	16.9	17.7	18.8	19.1	18.6	17.4	16.8	17.0	16.8	16.8	16.8	16.8	16.9
Iran	22.0	20.6	19.2	18.3	14.3	14.4	15.4	17.9	19.5	21.0	21.0	21.0	20.9	20.7	20.6
Kazakhstan	27.1	23.5	22.5	21.2	21.9	19.8	21.3	22.9	22.1	25.9	21.7	21.7	21.7	21.8	21.7
Kuwait	40.4	42.2	44.7	39.1	38.8	38.1	44.3	54.4	52.9	50.6	49.7	49.1	48.7	48.1	46.4
Libya	48.2	72.1	57.9	59.7	45.7	88.1	143.1	176.1	131.4	85.4	64.9	64.4	62.4	60.4	57.8
Malaysia	27.3	31.3	27.0	27.5	28.8	28.2	26.3	25.1	23.4	22.4	22.0	21.8	21.5	21.3	21.0
Mexico	25.8	28.2	26.7	27.1	27.7	28.0	27.9	27.2	26.0	23.2	22.5	22.4	22.4	22.5	22.5
Morocco	30.6	30.4	31.1	33.8	35.2	32.9	32.9	30.7	30.2	29.4	28.9	28.5	28.5	28.3	28.4
Oman	29.3	38.2	33.9	39.3	44.0	44.8	47.4	50.2	51.5	46.0	45.3	44.0	42.4	41.2	39.8
Pakistan	21.8	19.3	20.3	19.3	21.7	21.8	20.1	19.8	19.9	21.3	21.7	22.2	22.4	22.5	22.6
Peru	19.6	21.5	21.1	20.0	20.7	22.0	22.5	22.3	21.0	20.9	21.8	21.4	20.6	20.1	20.0
Philippines	18.6	20.1	19.2	17.9	18.9	18.7	18.1	18.8	19.5	20.2	20.2	20.4	20.4	20.5	20.5
Poland	44.5	45.3	45.8	43.9	42.8	42.6	42.3	41.6	41.3	42.6	43.0	42.8	42.3	42.0	41.8
Qatar	23.0	32.9	30.6	28.5	31.0	28.3	33.4	41.5	37.2	33.5	31.4	29.7	28.3	27.0	24.5
Romania	36.3	37.8	37.9	36.3	34.9	33.9	33.9	34.3	31.4	31.9	34.4	34.9	34.8	34.7	34.5
Russia	31.9	38.5	35.4	33.2	34.0	34.6	34.9	35.2	36.4	34.9	33.5	32.8	32.4	31.8	32.0
Saudi Arabia	26.7	37.1	34.0	33.3	33.2	35.5	40.2	40.7	38.6	33.6	35.0	35.5	35.6	35.2	35.0
South Africa	28.7	31.7	31.4	30.9	31.4	31.6	31.8	32.9	32.9	33.5	33.7	33.9	33.9	33.7	33.5
Sri Lanka	19.7	21.7	20.0	19.9	17.8	17.2	17.9	20.4	19.7	19.7	20.2	20.3	20.3	20.4	20.4
Thailand	19.2	21.7	22.0	21.1	22.2	21.6	22.2	22.3	21.8	23.8	24.2	24.4	24.4	24.4	24.4
Turkey	34.6	38.3	36.2	33.4	34.4	34.2	33.3	33.4	34.9	34.0	33.1	32.4	32.4	32.4	32.4
Ukraine	45.4	46.8	49.2	45.7	49.0	48.1	44.8	43.0	40.6	43.6	43.9	44.5	43.9	43.5	43.1
United Arab Emirates	21.9	35.0	32.2	31.1	29.1	30.3	33.1	32.4	32.6	30.4	29.5	28.4	27.2	25.9	24.7
Uruguay	28.7	29.7	30.5	29.2	30.5	31.8	32.3	32.3	33.3	32.8	32.4	32.4	32.6	32.8	32.8
Venezuela	34.9	33.3	30.2	38.2	39.7	40.0	46.6	36.6	35.0	31.7	31.4	31.3	31.3	31.3	31.3
Average	28.8	30.6	29.7	29.8	30.4	30.6	30.9	31.6	31.7	31.0	30.7	30.5	30.3	30.1	29.9
Asia	23.2	25.2	24.6	26.0	26.9	27.1	27.4	29.3	29.7	29.1	29.1	29.1	29.0	28.9	28.9
Europe	36.2	40.0	37.8	35.5	35.8	35.9	35.7	36.0	36.7	36.5	35.7	35.2	34.9	34.5	34.4
Latin America	31.4	32.6	32.9	33.2	33.3	33.5	33.9	33.8	33.7	32.9	32.3	31.9	31.6	31.5	31.4
MENAP	27.9	32.6	30.7	29.6	30.6	31.6	34.1	35.0	33.5	31.2	30.9	30.5	30.0	29.5	29.0
G20 Emerging	27.7	29.9	29.3	29.6	30.1	30.4	30.7	31.7	32.0	31.2	30.9	30.8	30.6	30.5	30.3

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.

Table A15. Emerging Market and Middle-Income Economies: General Government Gross Debt, 2008–22
(Percent of GDP)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Algeria	8.1	9.8	10.5	9.3	9.3	7.6	7.7	8.8	20.6	17.7	17.7	17.0	15.8	14.5	13.2
Angola	16.6	22.7	44.3	33.8	29.5	32.9	40.7	65.4	75.8	65.1	66.0	67.1	66.9	66.0	66.1
Argentina	52.6	53.8	42.0	37.5	38.9	41.7	43.6	56.0	54.2	53.4	52.0	50.7	50.3	50.6	51.6
Azerbaijan	7.3	12.4	12.5	11.4	13.9	12.7	14.4	35.0	51.1	46.4	41.1	37.2	33.8	31.3	29.0
Belarus	21.0	33.4	36.5	53.9	37.0	36.9	39.5	53.3	53.9	58.8	56.8	56.7	52.9	48.0	44.8
Brazil[1]	61.9	64.9	63.0	61.2	62.2	60.2	62.3	72.5	78.3	83.4	87.7	91.1	93.7	95.5	96.9
Chile	4.9	5.8	8.6	11.1	11.9	12.7	14.9	17.4	21.3	24.9	27.6	29.4	30.3	31.0	31.4
China	27.0	34.3	33.7	33.6	34.3	37.0	39.9	41.1	44.3	47.6	50.8	53.9	57.0	59.7	62.2
Colombia	32.1	35.2	36.4	35.7	34.1	37.8	43.7	50.6	50.2	48.5	48.6	47.5	45.5	43.5	41.6
Croatia	39.6	49.0	58.3	65.2	70.7	82.2	86.6	86.3	83.7	81.9	79.6	76.9	74.5	72.0	68.0
Dominican Republic	19.5	22.6	23.7	25.9	30.0	34.3	33.7	33.0	35.0	36.7	37.9	39.1	40.5	41.9	43.5
Ecuador[2]	16.9	16.3	16.2	16.9	15.5	16.6	22.0	26.1	36.2	39.0	42.7	45.5	47.4	49.2	50.6
Egypt[3]	66.8	69.5	69.6	72.8	73.8	84.0	85.1	88.5	96.9	101.2	88.8	88.0	82.8	79.6	74.5
Hungary	71.6	77.8	80.5	80.7	78.2	76.6	75.7	74.7	74.1	72.9	71.3	70.2	69.4	69.0	68.7
India	74.5	72.5	67.5	69.6	69.1	68.5	68.5	69.5	69.6	68.7	67.1	65.2	63.3	61.4	59.6
Indonesia	30.3	26.5	24.5	23.1	23.0	24.8	24.7	26.9	27.9	28.7	29.2	29.8	29.8	30.0	30.0
Iran	9.2	10.4	12.2	8.8	11.6	10.7	11.8	42.3	34.5	32.1	30.8	29.3	27.6	26.4	26.0
Kazakhstan	6.8	10.2	10.7	10.2	12.1	12.6	14.5	21.9	21.0	17.4	17.7	18.3	18.6	19.1	19.5
Kuwait	9.6	11.0	11.3	8.5	6.8	6.5	7.5	11.0	18.5	27.1	33.0	36.2	39.1	41.5	41.3
Libya	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Malaysia	39.9	51.1	51.9	52.6	54.6	56.4	56.2	57.9	56.2	55.2	54.2	52.8	51.1	49.0	46.5
Mexico	42.8	43.9	42.2	43.2	43.2	46.4	49.5	53.7	58.4	53.3	52.4	52.4	52.5	52.4	52.4
Morocco	45.4	46.1	49.0	52.5	56.5	61.7	63.3	63.7	64.7	62.8	62.4	60.6	60.0	58.5	57.0
Oman	4.7	6.7	5.7	5.2	4.9	5.0	4.9	15.3	33.6	44.5	50.8	54.2	58.2	61.8	62.7
Pakistan	57.2	58.5	60.6	58.9	63.2	63.9	63.5	63.3	67.6	68.0	68.7	68.5	68.2	67.7	67.0
Peru	28.0	28.4	25.5	23.3	21.6	20.8	20.7	24.0	24.4	25.5	27.2	28.2	28.2	27.6	27.1
Philippines	44.2	44.3	43.5	41.4	40.6	39.3	36.4	36.2	34.6	33.9	33.2	32.6	32.0	31.5	31.1
Poland	46.6	49.8	53.1	54.1	53.7	55.7	50.2	51.1	54.4	54.2	53.8	53.5	52.9	52.1	51.3
Qatar	11.1	36.0	41.8	36.0	37.2	33.1	32.3	34.9	56.5	54.4	54.4	55.2	55.5	53.9	50.5
Romania	13.4	23.3	30.5	33.9	37.7	38.9	40.5	39.4	39.1	38.9	40.2	42.0	43.9	45.6	46.9
Russia	7.4	9.9	10.6	10.8	11.5	12.7	15.6	15.9	15.6	17.4	17.7	18.2	18.2	18.0	17.9
Saudi Arabia	12.1	14.0	8.4	5.4	3.0	2.1	1.6	5.8	13.1	17.0	20.7	24.3	24.9	24.9	24.9
South Africa	26.5	30.1	34.7	38.2	41.0	44.1	47.0	49.3	51.7	53.0	55.6	57.1	58.1	58.8	59.2
Sri Lanka	71.1	75.2	71.6	71.1	68.7	70.8	71.3	77.6	79.3	79.6	77.6	74.8	72.1	69.7	67.3
Thailand	34.9	42.4	39.8	39.1	41.9	42.2	43.4	42.7	42.2	40.6	39.6	38.9	38.4	38.3	38.2
Turkey	38.3	43.9	40.1	36.5	32.7	31.3	28.7	27.5	28.1	27.9	28.0	27.5	27.2	27.1	27.1
Ukraine	19.7	34.1	40.6	36.9	37.5	40.5	70.3	79.3	81.2	86.2	83.5	77.9	71.7	66.0	60.9
United Arab Emirates	12.5	24.1	21.9	17.4	17.0	15.7	15.5	18.7	20.7	20.7	20.8	20.8	20.6	20.2	19.9
Uruguay	67.7	63.1	59.4	58.1	58.0	60.2	61.4	64.6	61.9	59.8	61.3	61.0	61.2	61.6	61.8
Venezuela	20.3	27.6	36.5	50.6	58.1	72.3	63.5	32.1	31.4	23.0	19.7	19.8	20.2	20.3	20.2
Average	33.8	39.0	38.3	37.4	37.4	38.6	40.8	44.0	46.8	48.4	50.1	51.7	52.9	54.0	55.0
Asia	36.9	41.7	40.3	39.7	39.7	41.4	43.6	44.6	47.2	49.4	51.5	53.4	55.3	56.9	58.4
Europe	22.9	28.4	28.2	26.8	25.5	26.4	28.5	30.9	32.1	32.3	32.6	32.5	32.2	31.8	31.4
Latin America	46.7	49.7	48.6	48.6	48.7	49.4	51.4	55.6	59.3	61.0	62.8	64.3	65.2	66.0	66.6
MENAP	20.2	26.2	25.1	21.9	23.2	23.8	24.4	34.1	39.8	38.7	39.1	40.2	39.9	39.5	38.8
G20 Emerging	35.7	40.5	39.0	38.0	37.5	38.6	41.2	44.0	46.9	49.2	51.4	53.3	55.0	56.5	57.8

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

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

[1] 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.

Table A16. Emerging Market and Middle-Income Economies: General Government Net Debt, 2008–22

(Percent of GDP)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Algeria	–35.5	–39.6	–33.7	–31.1	–29.0	–29.5	–21.8	–7.6	13.4	15.2	15.4	14.8	13.7	12.5	11.2
Angola	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Argentina	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Azerbaijan	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Belarus	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Brazil	37.1	40.4	38.0	34.5	32.2	30.5	32.6	35.6	46.2	53.1	57.7	61.3	64.0	65.9	67.4
Chile	–19.3	–10.5	–7.0	–8.6	–6.8	–5.6	–4.3	–3.5	1.0	3.9	6.3	8.2	9.4	10.3	11.0
China	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Colombia	22.3	26.1	28.4	27.1	24.9	27.0	33.2	42.2	40.5	40.5	41.1	40.6	39.3	37.9	36.5
Croatia	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Dominican Republic	13.9	15.8	16.6	18.7	24.0	26.5	26.1	25.2	26.4	27.9	29.0	30.1	31.4	32.8	34.4
Ecuador	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Egypt[1]	52.8	55.9	57.1	61.3	63.5	73.7	77.1	78.8	88.1	94.5	83.5	83.5	78.9	76.2	71.5
Hungary	63.6	72.1	75.1	74.4	72.0	71.1	70.5	70.8	70.2	69.3	67.9	67.0	66.3	66.0	66.0
India	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Indonesia	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Iran	–2.8	2.5	2.0	–2.7	0.8	–5.7	–5.7	25.6	21.5	20.3	17.8	16.7	15.6	15.2	15.9
Kazakhstan	–13.9	–11.0	–10.2	–12.7	–15.9	–17.6	–19.2	–30.9	–22.8	–15.5	–12.2	–9.6	–8.0	–6.3	–4.9
Kuwait	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Libya	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Malaysia	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Mexico	33.2	36.2	36.2	37.5	37.7	40.4	43.1	47.3	50.5	45.0	44.3	44.3	44.4	44.3	44.4
Morocco	44.7	45.5	48.5	52.1	56.0	61.2	62.8	63.1	64.2	62.3	61.9	60.1	59.5	58.0	56.5
Oman	–24.7	–32.0	–29.2	–29.7	–29.0	–43.8	–44.1	–42.5	–27.1	–9.8	2.3	11.4	19.4	26.9	32.7
Pakistan	52.7	54.5	56.5	55.8	59.2	60.1	58.0	58.2	61.2	61.6	62.4	62.3	62.2	61.7	61.1
Peru	13.0	12.3	10.3	7.2	4.6	3.6	3.6	5.6	7.5	9.9	12.6	14.6	15.5	15.7	15.8
Philippines	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Poland	39.2	43.2	47.2	48.3	47.9	50.9	44.5	46.4	48.3	49.5	49.1	48.7	48.2	47.4	46.6
Qatar	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Romania	8.3	15.9	22.7	27.1	28.9	29.5	29.7	29.7	31.2	31.2	32.6	34.5	36.6	38.3	39.6
Russia	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Saudi Arabia	–38.4	–39.3	–37.8	–37.7	–47.7	–50.9	–47.1	–35.9	–17.1	–7.7	–0.1	4.9	6.3	7.4	8.1
South Africa	21.7	25.4	28.5	31.3	34.8	38.2	40.8	44.1	45.4	47.6	50.1	52.1	53.8	55.3	56.4
Sri Lanka	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Thailand	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Turkey	32.3	37.4	34.9	31.1	27.5	25.9	23.8	23.0	23.4	23.1	22.9	22.4	22.3	22.3	22.2
Ukraine	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
United Arab Emirates	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Uruguay	31.6	30.7	31.1	28.8	25.9	24.2	22.9	25.8	30.1	31.3	32.6	32.3	32.5	32.9	33.1
Venezuela	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Average	22.6	26.5	26.5	24.3	22.6	22.6	24.0	28.9	35.0	37.1	39.0	40.5	41.2	41.7	42.1
Asia	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Europe	30.9	36.0	36.3	34.3	31.2	30.6	28.5	27.5	30.6	31.3	31.6	31.6	31.5	31.5	31.3
Latin America	30.6	33.8	33.0	31.1	29.4	29.5	32.0	35.3	41.3	43.8	46.4	48.4	49.7	50.6	51.2
MENAP	–4.1	1.1	0.9	–1.3	–3.3	–4.0	–0.7	15.3	25.6	26.7	28.4	30.6	30.7	31.0	31.1
G20 Emerging	25.3	29.1	28.3	25.9	22.4	21.9	23.6	26.9	34.1	37.8	40.7	42.9	44.3	45.2	. . .

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

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

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

Table A17. Low-Income Developing Countries: General Government Overall Balance, 2008–22
(Percent of GDP)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Bangladesh	–4.0	–3.2	–2.7	–3.6	–3.0	–3.4	–3.1	–3.9	–3.4	–4.5	–5.0	–5.0	–5.2	–5.2	–5.2
Benin	–0.1	–3.1	–0.4	–1.3	–0.3	–1.9	–2.3	–7.6	–5.9	–6.1	–4.0	–1.9	–0.8	–0.2	0.6
Burkina Faso	–4.1	–4.7	–3.0	–1.4	–3.1	–4.0	–2.0	–2.2	–3.3	–5.5	–4.6	–3.0	–3.1	–3.0	–3.3
Cambodia	0.5	–4.1	–2.8	–4.1	–3.8	–2.1	–1.1	–1.6	–2.8	–3.7	–4.6	–4.4	–4.0	–4.0	–3.8
Cameroon	2.2	0.0	–1.1	–2.6	–1.6	–4.0	–4.0	–2.7	–6.1	–3.6	–2.8	–2.0	–1.6	–1.4	–1.3
Chad	3.6	–9.2	–4.2	2.4	0.5	–2.1	–4.2	–3.1	–2.0	1.7	1.5	1.1	1.4	1.3	1.7
Congo, Democratic Republic of the	–0.5	0.9	–1.0	–1.0	1.9	3.1	1.2	0.9	0.1	–0.3	0.6	0.9	1.0	1.0	1.1
Congo, Republic of	27.2	4.9	15.7	16.0	7.3	–4.5	–11.3	–41.7	–12.9	–1.8	3.8	4.6	4.9	5.6	4.1
Côte d'Ivoire	–0.4	–1.4	–1.8	–4.0	–3.1	–2.2	–2.2	–2.9	–4.0	–4.5	–3.7	–3.0	–3.0	–2.9	–2.9
Ethiopia	–2.9	–0.9	–1.3	–1.6	–1.2	–1.9	–2.6	–1.9	–2.4	–2.4	–2.5	–2.7	–2.8	–3.0	–2.9
Ghana	–8.0	–7.2	–10.1	–7.4	–11.3	–12.0	–10.9	–5.4	–8.9	–4.5	–3.7	–3.2	–3.1	–2.9	–2.8
Guinea	0.4	–4.9	–9.6	–0.9	–2.5	–3.9	–3.2	–6.9	–0.1	–0.5	–1.9	–1.9	–1.8	–1.8	–1.8
Haiti	–3.0	–3.5	–2.7	–2.5	–4.8	–7.2	–6.4	–2.5	0.0	–1.4	–1.3	–1.3	–1.4	–1.5	–1.6
Honduras	–0.3	–4.9	–3.4	–2.9	–3.5	–5.7	–2.9	–0.8	–0.4	–0.6	–0.6	–0.7	–0.8	–0.7	–0.8
Kenya	–3.4	–4.3	–4.4	–4.1	–5.0	–5.7	–7.4	–8.1	–8.7	–8.4	–6.6	–5.6	–4.1	–3.1	–3.0
Kyrgyz Republic	0.5	–1.5	–5.9	–4.7	–5.9	–3.7	1.0	–1.2	–4.5	–3.0	–2.4	–1.9	–1.8	–1.7	–1.7
Lao P.D.R.	–1.3	–3.6	–2.9	–1.6	–0.5	–5.0	–4.1	–2.4	–5.2	–5.2	–5.2	–5.1	–5.1	–5.0	–5.0
Madagascar	–2.0	–2.5	–0.9	–2.4	–2.6	–4.0	–2.3	–3.3	–1.3	–5.1	–4.7	–4.5	–3.8	–3.5	–3.3
Mali	–2.0	–3.7	–2.6	–3.4	–1.0	–2.4	–2.9	–1.8	–3.9	–3.5	–3.3	–3.0	–3.0	–3.0	–3.0
Moldova	–0.9	–6.4	–2.6	–2.5	–2.3	–1.9	–1.9	–2.3	–2.1	–3.2	–3.0	–3.0	–3.0	–2.8	–2.6
Mozambique	–2.1	–4.9	–3.8	–4.8	–3.9	–2.7	–10.7	–7.2	–5.7	–7.3	–7.0	–5.5	–4.5	–3.4	–2.8
Myanmar	–2.1	–4.4	–5.5	–3.5	0.9	–1.3	–0.9	–4.4	–4.1	–4.4	–4.5	–4.4	–4.5	–4.4	–4.3
Nepal	–0.4	–2.6	–0.8	–0.8	–1.3	1.8	1.5	0.7	1.4	–2.6	–3.4	–3.1	–2.6	–2.6	–2.6
Nicaragua	–0.2	–1.2	0.1	0.1	–0.1	–0.7	–1.2	–1.4	–1.6	–1.8	–1.1	–1.0	–1.0	–1.8	–2.0
Niger	1.5	–5.3	–2.4	–1.5	–1.1	–2.6	–8.0	–9.1	–6.2	–7.5	–6.2	–4.8	–2.9	–0.8	0.0
Nigeria	5.7	–5.4	–4.2	0.4	0.2	–2.3	–2.1	–3.4	–4.7	–5.0	–4.5	–4.3	–3.8	–3.7	–3.6
Papua New Guinea	2.7	–5.5	3.1	2.2	–1.2	–6.9	–6.3	–4.3	–4.9	–4.5	–4.3	–4.1	–4.0	–3.6	–3.6
Rwanda	0.9	0.3	–0.7	–0.9	–2.5	–1.3	–4.0	–2.8	–2.3	–1.9	–2.1	–2.0	–1.5	–1.0	–0.9
Senegal	–4.4	–4.6	–4.9	–6.1	–5.2	–5.5	–5.0	–4.8	–4.2	–3.7	–3.0	–3.0	–3.0	–3.0	–3.0
Somalia	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Sudan	0.6	–4.2	0.2	0.1	–3.3	–2.3	–1.4	–1.9	–1.8	–2.4	–2.6	–2.8	–3.0	–3.1	–3.6
Tajikistan	–5.1	–5.2	–3.0	–2.1	0.6	–0.8	0.0	–1.9	–10.6	–6.5	–5.4	–1.9	–1.8	–1.7	–1.7
Tanzania	–1.9	–4.5	–4.8	–3.6	–4.1	–3.9	–3.0	–3.3	–3.1	–3.4	–4.3	–4.6	–4.1	–3.3	–2.6
Timor-Leste	44.8	40.9	41.1	43.7	39.9	41.7	22.9	3.6	–32.6	1.6	–22.9	–27.1	–21.1	–15.3	–14.7
Uganda	–2.6	–2.1	–5.7	–2.7	–3.0	–4.0	–4.7	–4.6	–3.9	–3.2	–4.9	–4.8	–4.9	–1.2	–0.9
Uzbekistan	7.7	2.5	3.6	7.8	7.8	2.4	3.4	0.8	0.4	0.6	1.0	1.1	1.2	1.3	1.3
Vietnam	–0.5	–6.0	–2.8	–1.1	–6.9	–7.4	–6.3	–6.2	–6.6	–5.8	–5.8	–5.3	–5.1	–5.0	–4.6
Yemen	–4.5	–10.2	–4.1	–4.5	–6.3	–6.9	–4.1	–10.6	–13.5	–9.9	–6.6	–2.5	–1.8	–1.6	–1.8
Zambia	–0.7	–2.1	–2.4	–1.8	–2.8	–6.2	–5.7	–9.3	–5.8	–8.0	–7.8	–7.2	–6.5	–5.3	–4.3
Zimbabwe	–2.0	–2.0	0.7	–0.5	0.0	–1.7	–1.4	–1.0	–8.4	–5.1	–3.4	–3.2	–3.3	–3.3	–3.1
Average	1.2	–4.0	–2.8	–0.9	–1.7	–3.3	–3.1	–4.0	–4.4	–4.3	–4.1	–3.9	–3.6	–3.4	–3.4
Oil Producers	5.3	–4.5	–2.8	0.7	0.2	–2.5	–2.5	–4.3	–5.5	–5.0	–4.4	–4.0	–3.5	–3.3	–3.3
Asia	–1.0	–4.0	–2.3	–1.6	–3.0	–4.0	–3.7	–4.5	–4.7	–4.8	–5.2	–5.0	–4.9	–4.9	–4.7
Latin America	–0.9	–3.5	–2.3	–2.0	–2.8	–4.6	–3.2	–1.3	–0.7	–1.1	–0.9	–0.9	–1.0	–1.3	–1.4
Sub-Saharan Africa	2.4	–4.1	–3.6	–1.0	–1.3	–3.2	–3.3	–4.1	–4.8	–4.6	–4.1	–3.8	–3.4	–3.0	–2.8
Others	0.8	–3.7	–0.2	0.9	–0.5	–1.8	–0.4	–2.6	–3.1	–2.5	–2.1	–1.8	–1.9	–2.0	–2.4

Source: IMF staff estimates and projections. Projections are based on staff assessment of current policies (see "Fiscal Policy Assumptions" in text).
Note: For country-specific details, see "Data and Conventions" in text, and Table D.

Table A18. Low-Income Developing Countries: General Government Primary Balance, 2008–22

(Percent of GDP)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Bangladesh	–1.9	–1.0	–0.8	–1.9	–1.1	–1.4	–1.0	–1.8	–1.5	–2.7	–3.0	–3.0	–3.0	–2.9	–2.8
Benin	0.3	–2.6	0.1	–0.9	0.3	–1.4	–1.9	–6.9	–4.7	–4.2	–2.3	0.0	0.9	1.3	2.0
Burkina Faso	–3.7	–4.3	–2.6	–0.8	–2.4	–3.4	–1.2	–1.6	–2.4	–4.6	–3.6	–1.9	–1.9	–1.8	–2.2
Cambodia	0.7	–3.9	–2.5	–3.8	–3.3	–1.4	–0.8	–1.3	–2.4	–3.3	–4.1	–4.0	–3.7	–3.6	–3.5
Cameroon	2.6	0.2	–0.8	–2.2	–1.2	–3.6	–3.6	–2.3	–5.2	–2.7	–1.9	–1.3	–0.9	–0.7	–0.6
Chad	3.8	–8.8	–3.6	3.0	0.9	–1.5	–3.6	–2.7	0.1	3.7	2.8	2.2	2.4	2.2	2.5
Congo, Democratic Republic of the	–0.1	1.3	–0.7	–0.3	2.5	3.6	1.6	1.2	0.4	0.1	0.9	1.2	1.3	1.3	1.5
Congo, Republic of	30.1	6.3	16.6	16.1	7.3	–4.2	–11.1	–41.0	–9.9	1.6	6.8	7.0	6.8	7.1	5.5
Côte d'Ivoire	1.3	0.1	–0.3	–2.2	–1.4	–0.9	–0.9	–1.3	–2.3	–2.7	–1.6	–0.9	–1.1	–1.1	–1.1
Ethiopia	–2.4	–0.6	–0.9	–1.2	–0.9	–1.6	–2.2	–1.5	–1.9	–1.9	–2.0	–2.2	–2.3	–2.4	–2.4
Ghana	–5.8	–4.4	–6.9	–4.8	–7.8	–7.3	–4.7	1.3	–2.0	2.0	2.2	2.2	2.0	1.8	1.6
Guinea	2.1	–3.5	–8.3	0.5	–1.2	–3.0	–2.2	–6.1	1.0	0.9	–0.7	–0.9	–0.9	–1.1	–1.1
Haiti	–2.3	–2.9	–2.2	–2.1	–4.4	–6.7	–5.9	–2.2	0.3	–1.0	–0.7	–0.8	–0.9	–1.0	–1.1
Honduras	–1.3	–5.8	–4.1	–3.2	–3.6	–5.6	–2.6	0.0	0.2	–0.2	–0.2	0.0	–0.2	–0.2	–0.3
Kenya	–1.8	–2.7	–2.5	–2.2	–2.9	–3.3	–4.8	–5.3	–5.7	–5.1	–3.2	–2.3	–1.2	–0.6	–0.7
Kyrgyz Republic	1.2	–0.7	–5.1	–3.7	–4.9	–2.9	1.9	–0.2	–3.4	–1.7	–1.1	–1.0	–0.9	–0.8	–0.8
Lao P.D.R.	–0.8	–3.3	–2.5	–1.1	0.2	–4.0	–3.3	–1.5	–4.1	–4.1	–3.8	–3.6	–3.5	–3.4	–3.4
Madagascar	–1.2	–1.8	–0.1	–1.5	–1.9	–3.3	–1.7	–2.5	–0.5	–4.2	–3.7	–3.5	–2.8	–2.5	–2.4
Mali	–1.7	–3.4	–2.2	–2.8	–0.4	–1.9	–2.3	–1.2	–3.3	–2.7	–2.5	–2.1	–2.1	–2.1	–2.1
Moldova	0.3	–5.0	–1.8	–1.6	–1.5	–1.3	–1.3	–1.4	–0.8	–1.7	–1.7	–1.7	–1.6	–1.6	–1.4
Mozambique	–1.7	–4.4	–3.1	–3.9	–2.9	–1.9	–9.6	–5.9	–3.3	–3.1	–1.6	–0.6	–0.3	0.0	0.1
Myanmar	–1.6	–3.6	–4.6	–2.5	2.3	–0.1	0.3	–3.3	–2.8	–3.3	–3.0	–2.8	–2.8	–2.7	–2.7
Nepal	0.3	–1.9	0.0	0.0	–0.5	2.6	2.1	1.1	1.7	–2.1	–2.9	–2.6	–2.0	–2.0	–2.0
Nicaragua	0.0	–0.8	0.4	0.6	0.5	–0.4	–0.9	–0.9	–0.9	–0.9	–0.4	–0.3	–0.3	–1.1	–1.1
Niger	1.7	–5.1	–2.2	–1.1	–0.8	–2.3	–7.7	–8.4	–5.2	–6.5	–5.0	–3.5	–1.7	0.3	1.0
Nigeria	6.3	–4.7	–3.6	1.2	1.2	–1.3	–1.1	–2.4	–3.5	–3.9	–3.2	–3.0	–2.4	–2.2	–2.0
Papua New Guinea	4.0	–4.0	4.0	3.2	–0.2	–5.8	–4.7	–2.5	–2.9	–2.2	–2.1	–1.8	–1.5	–1.2	–1.0
Rwanda	1.4	0.6	–0.2	–0.5	–2.1	–0.4	–3.2	–1.9	–1.3	–0.8	–0.9	–0.9	–0.4	0.1	0.2
Senegal	–3.8	–3.9	–4.0	–4.6	–3.7	–4.0	–3.3	–2.8	–2.1	–1.5	–0.9	–0.8	–0.9	–1.0	–1.0
Somalia	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Sudan	1.5	–3.2	1.3	1.3	–2.2	–1.8	–0.5	–1.1	–1.3	–1.8	–2.1	–2.2	–2.4	–2.6	–2.8
Tajikistan	–4.8	–4.7	–2.5	–1.6	1.1	0.1	0.4	–1.5	–9.2	–5.5	–4.0	–0.2	0.0	0.1	0.1
Tanzania	–1.2	–3.8	–4.1	–2.8	–3.1	–2.7	–1.6	–1.8	–1.6	–1.9	–2.6	–2.7	–2.2	–1.3	–0.6
Timor-Leste	44.8	40.9	41.1	43.7	39.9	41.7	22.9	3.6	–32.6	1.6	–22.7	–26.8	–20.7	–14.7	–14.1
Uganda	–1.4	–1.1	–4.8	–1.7	–1.7	–2.7	–3.2	–2.9	–1.5	–0.7	–2.2	–2.1	–2.2	1.3	1.4
Uzbekistan	7.8	2.5	3.6	7.8	7.8	2.4	3.4	0.8	0.4	0.6	1.0	1.1	1.2	1.3	1.3
Vietnam	0.5	–4.9	–1.6	–0.1	–5.6	–5.9	–4.6	–4.2	–4.4	–3.8	–3.5	–2.9	–2.5	–2.3	–1.9
Yemen	–2.1	–7.7	–1.7	–0.2	–0.9	–1.5	1.5	–3.1	–5.3	–2.4	1.0	4.9	5.3	5.2	5.0
Zambia	0.7	–0.7	–1.0	–0.8	–1.5	–4.7	–3.5	–6.5	–2.3	–4.3	–3.8	–3.2	–2.7	–1.6	–0.5
Zimbabwe	0.3	0.3	1.8	–0.2	0.3	–0.9	–0.5	0.0	–7.7	–4.0	–2.2	–1.6	–1.5	–1.5	–1.4
Average	2.2	–3.0	–1.8	0.1	–0.5	–2.0	–1.7	–2.4	–2.8	–2.7	–2.4	–2.1	–1.9	–1.7	–1.6
Oil Producers	6.2	–3.7	–2.0	1.7	1.4	–1.3	–1.2	–2.8	–3.8	–3.5	–2.8	–2.4	–1.9	–1.6	–1.5
Asia	0.3	–2.6	–1.0	–0.4	–1.6	–2.5	–2.1	–2.7	–2.9	–3.1	–3.3	–3.0	–2.8	–2.7	–2.5
Latin America	–1.1	–3.7	–2.4	–1.9	–2.6	–4.3	–2.8	–0.7	–0.1	–0.6	–0.3	–0.2	–0.4	–0.7	–0.7
Sub-Saharan Africa	3.2	–3.2	–2.7	0.0	–0.2	–2.0	–2.0	–2.7	–3.1	–2.9	–2.3	–2.0	–1.6	–1.3	–1.1
Others	1.8	–2.6	0.8	2.4	1.1	–0.4	1.2	–0.9	–1.6	–1.3	–1.0	–0.7	–0.8	–1.0	–1.2

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, 2008–22
(Percent of GDP)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Bangladesh	9.8	9.5	10.0	10.4	11.2	11.2	10.9	9.9	10.4	10.8	11.2	11.2	11.2	11.2	11.2
Benin	19.8	20.2	18.9	18.8	19.2	18.5	17.2	17.3	15.3	17.9	17.9	18.5	18.9	18.9	19.3
Burkina Faso	16.8	19.5	19.8	20.7	22.4	24.5	21.7	19.4	19.6	22.6	22.7	23.6	24.2	24.8	25.2
Cambodia	15.9	15.8	17.1	15.6	16.9	18.5	19.8	18.8	19.8	19.5	19.6	19.7	20.1	20.2	20.4
Cameroon	21.2	17.4	16.6	17.9	17.9	18.0	18.1	17.9	16.3	16.6	17.2	17.6	17.7	17.7	17.8
Chad	22.4	14.9	20.2	24.8	24.4	20.7	17.8	14.0	12.6	16.5	15.8	15.7	15.8	15.5	15.9
Congo, Democratic Republic of the	11.5	13.7	15.6	13.7	16.5	14.6	18.6	16.8	12.0	10.6	11.6	11.7	12.2	12.7	13.3
Congo, Republic of	54.8	30.3	36.7	41.4	42.7	45.1	40.7	30.4	32.3	32.7	32.9	33.3	33.0	32.6	32.6
Côte d'Ivoire	19.9	18.5	18.1	14.2	19.2	19.7	18.9	20.2	19.8	19.8	20.2	20.6	20.9	21.0	21.0
Ethiopia	15.9	16.2	17.2	16.6	15.5	15.8	14.9	15.4	16.0	15.1	15.1	15.3	15.6	15.9	16.3
Ghana	15.9	16.4	16.7	19.1	18.5	16.7	18.4	19.6	17.3	18.9	18.6	19.0	19.1	18.9	18.7
Guinea	10.5	11.4	10.8	15.1	17.5	14.8	17.0	14.9	16.2	17.6	18.1	18.8	19.3	19.4	19.3
Haiti	15.1	16.8	19.9	22.0	23.8	21.0	18.9	19.4	18.5	16.9	20.6	19.9	19.5	19.1	18.7
Honduras	26.1	23.5	23.1	23.0	22.9	23.8	24.7	25.4	27.2	26.5	26.6	26.7	26.7	26.7	26.7
Kenya	19.4	18.8	19.8	19.5	19.1	19.7	19.8	19.2	18.8	19.0	19.5	19.6	19.8	20.0	19.9
Kyrgyz Republic	29.8	32.9	31.2	32.7	34.7	34.4	35.3	35.6	34.7	37.0	34.1	34.0	33.7	33.7	33.8
Lao P.D.R.	14.2	15.0	20.1	20.0	21.4	21.1	20.8	21.1	16.8	17.1	18.0	18.2	18.6	18.8	18.8
Madagascar	15.9	11.5	13.2	11.7	10.8	10.9	12.4	11.8	14.7	15.1	15.3	15.6	15.0	15.4	15.7
Mali	17.0	19.1	17.7	17.1	14.6	17.4	17.1	19.1	18.3	20.6	20.0	20.4	20.4	20.6	20.8
Moldova	40.6	38.9	38.3	36.6	37.9	36.7	37.9	35.6	34.1	35.5	34.4	33.7	33.3	33.0	32.6
Mozambique	21.8	24.0	26.1	27.3	27.0	31.4	31.8	28.1	26.1	24.7	26.1	26.2	26.2	25.9	25.9
Myanmar	10.1	9.3	9.1	9.8	19.0	20.1	22.0	18.7	18.3	15.5	15.0	15.2	15.4	15.4	15.6
Nepal	14.9	16.8	18.0	17.8	18.0	19.6	20.4	20.8	23.4	24.0	23.8	23.9	23.9	23.8	23.8
Nicaragua	21.5	21.3	22.5	23.5	23.9	23.5	23.3	23.9	25.2	25.5	25.6	25.7	25.7	25.4	25.4
Niger	24.1	18.6	18.2	17.9	21.4	24.6	23.0	23.5	20.6	21.2	21.3	22.1	23.4	24.0	24.6
Nigeria	20.1	10.1	12.4	17.7	14.3	11.0	10.5	7.7	5.3	5.2	5.7	5.9	6.4	6.6	6.8
Papua New Guinea	22.5	19.2	21.5	21.9	21.2	20.7	21.0	18.8	16.6	15.2	14.8	14.8	14.8	14.9	14.9
Rwanda	24.8	23.8	24.6	25.3	23.2	25.5	24.2	24.7	23.7	22.1	21.9	21.7	21.7	21.7	21.7
Senegal	21.8	22.0	22.1	22.7	23.3	22.6	24.8	25.1	26.8	25.1	25.7	26.0	26.0	26.3	24.1
Somalia	. . .	. . .	. . .	. . .	. . .	1.9	2.4	2.3	2.7	3.6	3.9	4.3	5.1	6.0	6.8
Sudan	24.0	16.4	19.7	18.6	9.9	11.0	12.0	11.0	10.0	9.8	9.2	8.8	8.4	8.1	7.6
Tajikistan	22.1	23.4	23.2	24.9	25.1	26.9	28.4	29.9	28.8	27.4	29.1	29.4	29.6	29.6	29.8
Tanzania	16.6	15.7	15.5	15.6	15.7	15.5	14.9	14.5	15.5	16.1	16.3	16.7	16.9	17.1	17.5
Timor-Leste	63.7	68.8	67.9	68.2	62.4	65.5	63.2	53.9	34.8	56.0	47.7	46.4	42.5	42.2	37.3
Uganda	14.2	13.2	13.2	14.5	13.6	12.7	13.5	14.8	14.9	16.3	16.5	17.2	17.0	18.4	19.0
Uzbekistan	40.7	36.7	37.0	40.2	41.5	35.9	34.9	34.4	32.5	30.5	31.1	31.1	31.1	31.1	31.1
Vietnam	26.6	25.6	27.3	25.9	22.6	23.1	22.2	23.7	23.2	23.2	23.1	23.1	23.1	23.0	23.3
Yemen	36.7	25.0	26.1	25.3	29.9	23.9	23.6	12.9	10.8	10.7	17.4	23.4	24.1	24.9	25.0
Zambia	18.8	15.7	15.6	17.7	18.7	17.6	18.9	18.8	18.2	17.3	18.4	18.4	18.9	19.4	19.6
Zimbabwe	2.2	11.7	21.8	24.2	24.9	24.6	23.8	24.3	21.7	21.7	21.1	20.9	20.7	20.6	19.4
Average	20.5	16.3	17.5	19.4	18.4	17.1	16.8	15.6	15.0	15.0	15.1	15.1	15.1	15.2	15.3
Oil Producers	22.5	13.2	15.2	19.4	17.1	14.1	13.3	10.0	8.1	8.3	8.8	9.1	9.4	9.8	9.9
Asia	17.9	16.9	17.9	17.9	18.6	18.8	18.4	17.7	17.3	17.1	17.1	17.1	17.2	17.1	17.2
Latin America	22.3	21.4	22.2	22.9	23.4	23.1	23.1	23.7	24.9	24.4	25.1	25.0	24.9	24.8	24.7
Sub-Saharan Africa	19.4	13.9	15.3	18.3	16.7	14.9	14.6	13.0	12.2	12.6	12.8	12.8	13.1	13.5	13.7
Others	31.5	25.3	26.7	27.4	26.4	23.5	23.7	20.6	19.1	17.7	17.4	17.2	16.6	16.0	15.3

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 D.

Table A20. Low-Income Developing Countries: General Government Expenditure, 2008–22

(Percent of GDP)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Bangladesh	13.8	12.7	12.7	14.0	14.2	14.6	14.0	13.8	13.7	15.3	16.2	16.3	16.4	16.4	16.4
Benin	19.9	23.2	19.2	20.1	19.5	20.4	19.4	24.9	21.3	23.9	21.9	20.4	19.7	19.1	18.7
Burkina Faso	20.9	24.2	22.8	22.1	25.5	28.4	23.7	21.6	22.9	28.1	27.4	26.7	27.3	27.7	28.5
Cambodia	15.4	19.9	19.9	19.7	20.7	20.7	21.0	20.4	22.7	23.2	24.1	24.1	24.1	24.2	24.2
Cameroon	19.0	17.5	17.7	20.5	19.5	21.9	22.2	20.6	22.4	20.2	20.0	19.6	19.3	19.1	19.1
Chad	18.8	24.1	24.4	22.4	23.9	22.8	22.0	17.0	14.5	14.8	14.4	14.6	14.4	14.2	14.2
Congo, Democratic Republic of the	12.1	12.7	16.6	14.7	14.6	11.6	17.4	15.8	11.8	10.8	11.0	10.8	11.2	11.7	12.2
Congo, Republic of	27.6	25.3	21.0	25.4	35.4	49.6	52.0	72.1	45.2	34.4	29.1	28.7	28.1	27.0	28.4
Côte d'Ivoire	20.3	19.9	20.0	18.2	22.3	21.9	21.0	23.1	23.7	24.4	24.0	23.6	23.9	24.0	23.9
Ethiopia	18.8	17.1	18.5	18.2	16.6	17.8	17.5	17.3	18.4	17.6	17.6	18.0	18.4	18.9	19.2
Ghana	24.0	23.6	26.8	26.6	29.8	28.7	29.4	25.0	26.1	23.3	22.4	22.2	22.1	21.8	21.6
Guinea	10.1	16.2	20.5	16.0	20.0	18.6	20.2	21.8	16.4	18.1	20.0	20.7	21.1	21.2	21.1
Haiti	18.0	20.3	22.7	24.5	28.6	28.1	25.3	21.9	18.5	18.3	21.9	21.3	20.9	20.7	20.3
Honduras	26.4	28.4	26.5	25.9	26.4	29.6	27.6	26.2	27.6	27.1	27.2	27.4	27.5	27.4	27.5
Kenya	22.8	23.1	24.2	23.6	24.2	25.4	27.2	27.3	27.5	27.3	26.1	25.2	23.9	23.0	23.0
Kyrgyz Republic	29.3	34.4	37.1	37.4	40.6	38.1	34.3	36.8	39.2	40.0	36.5	35.9	35.5	35.5	35.5
Lao P.D.R.	15.4	18.6	23.0	21.6	21.9	26.1	24.9	23.5	22.0	22.3	23.2	23.3	23.7	23.8	23.8
Madagascar	17.9	14.1	14.0	14.1	13.4	14.9	14.7	15.1	16.0	20.2	20.0	20.1	18.8	18.9	19.0
Mali	19.0	22.8	20.3	20.6	15.5	19.7	20.0	20.9	22.2	24.0	23.3	23.4	23.4	23.6	23.8
Moldova	41.5	45.3	40.9	39.1	40.3	38.6	39.8	37.9	36.1	38.6	37.4	36.8	36.3	35.8	35.3
Mozambique	23.9	28.9	29.9	32.2	30.8	34.1	42.5	35.2	31.8	32.0	33.0	31.7	30.7	29.3	28.6
Myanmar	12.2	13.7	14.6	13.4	18.1	21.4	22.9	23.2	22.4	20.0	19.4	19.6	19.8	19.8	19.9
Nepal	15.4	19.4	18.8	18.7	19.3	17.8	18.8	20.1	22.0	26.6	27.2	27.0	26.5	26.4	26.4
Nicaragua	21.7	22.5	22.4	23.3	24.0	24.2	24.5	25.3	26.8	27.2	26.8	26.7	26.7	27.3	27.4
Niger	22.6	23.9	20.6	19.4	22.5	27.2	31.1	32.5	26.8	28.7	27.5	26.8	26.4	24.8	24.6
Nigeria	14.4	15.5	16.7	17.4	14.1	13.4	12.6	11.1	10.0	10.1	10.2	10.2	10.2	10.3	10.4
Papua New Guinea	19.8	24.7	18.4	19.7	22.4	27.6	27.3	23.1	21.4	19.6	19.1	18.9	18.8	18.6	18.6
Rwanda	23.9	23.5	25.3	26.2	25.7	26.8	28.3	27.5	26.0	24.0	24.0	23.7	23.2	22.7	22.6
Senegal	26.3	26.6	27.0	28.8	28.5	28.1	29.8	29.9	31.0	28.8	28.7	29.0	29.0	29.3	27.1
Somalia	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Sudan	23.5	20.6	19.5	18.5	13.3	13.3	13.4	12.9	11.8	12.2	11.8	11.6	11.4	11.2	11.3
Tajikistan	27.2	28.6	26.1	27.0	24.6	27.7	28.4	31.8	39.4	33.9	34.5	31.3	31.4	31.4	31.4
Tanzania	18.5	20.2	20.2	19.1	19.8	19.4	17.9	17.8	18.6	19.5	20.6	21.3	21.0	20.4	20.0
Timor-Leste	18.9	27.9	26.7	24.5	22.5	23.8	40.3	50.4	67.4	54.4	70.5	73.6	63.7	57.5	52.0
Uganda	16.8	15.3	18.8	17.2	16.6	16.7	18.2	19.4	18.9	19.6	21.4	21.9	21.9	19.6	19.9
Uzbekistan	33.0	34.3	33.4	32.4	33.7	33.6	31.6	33.6	32.1	29.9	30.1	30.0	29.9	29.8	29.8
Vietnam	27.1	31.6	30.0	27.0	29.5	30.5	28.5	30.0	29.8	29.0	28.9	28.4	28.2	28.0	27.9
Yemen	41.2	35.2	30.2	29.8	36.2	30.8	27.8	23.5	24.4	20.6	24.0	26.0	25.9	26.6	26.8
Zambia	19.5	17.8	18.1	19.5	21.5	23.8	24.6	28.1	24.0	25.3	26.2	25.6	25.5	24.7	23.9
Zimbabwe	4.3	13.7	21.2	24.7	24.8	26.2	25.2	25.3	30.2	26.9	24.4	24.1	23.9	23.9	22.4
Average	19.3	20.2	20.3	20.4	20.2	20.5	20.0	19.6	19.5	19.4	19.3	19.0	18.8	18.7	18.7
Oil Producers	17.1	17.7	18.0	18.7	16.9	16.6	15.7	14.3	13.6	13.3	13.3	13.1	13.0	13.1	13.2
Asia	19.0	20.9	20.1	19.5	21.6	22.8	22.1	22.1	21.9	22.0	22.3	22.2	22.1	22.0	21.9
Latin America	23.1	24.9	24.5	24.9	26.2	27.7	26.2	25.0	25.6	25.5	26.0	26.0	26.0	26.0	26.1
Sub-Saharan Africa	17.1	18.0	18.9	19.3	18.0	18.1	17.8	17.1	16.9	17.2	16.9	16.6	16.4	16.4	16.5
Others	30.7	29.0	26.9	26.5	26.9	26.0	24.7	23.7	22.7	20.6	19.9	19.3	18.7	18.1	17.8

Source: IMF staff estimates and projections. Projections are based on staff assessment of current policies (see "Fiscal Policy Assumptions" in text).
Note: For country-specific details, see "Data and Conventions" in text, and Table D.

Table A21. Low-Income Developing Countries: General Government Gross Debt, 2008–22
(Percent of GDP)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Bangladesh	40.6	39.5	36.6	35.3	33.8	34.5	33.9	33.9	33.0	33.7	34.7	35.7	36.8	37.7	38.6
Benin	25.0	25.6	28.7	29.9	26.7	25.3	30.5	42.4	50.3	53.4	53.6	51.5	47.6	44.0	40.6
Burkina Faso	25.6	29.1	30.7	28.1	28.2	28.8	30.6	33.4	35.7	36.5	37.7	37.3	37.0	36.7	37.0
Cambodia	29.9	32.1	33.5	34.9	34.7	35.4	34.1	35.8	36.7	37.9	38.3	38.6	38.9	39.9	40.4
Cameroon	9.7	10.1	11.5	13.2	15.4	19.0	26.2	34.2	35.2	35.7	35.4	35.0	33.9	32.5	30.9
Chad	19.9	31.6	30.1	30.6	28.8	30.5	39.4	43.3	51.2	47.6	43.3	39.2	34.5	30.4	29.1
Congo, Democratic Republic of the	73.8	84.5	30.9	24.5	22.7	20.0	17.5	16.1	16.8	17.0	15.8	14.5	13.3	12.0	11.2
Congo, Republic of	79.3	63.3	22.2	23.8	28.6	34.2	46.8	96.3	115.0	117.7	116.0	111.1	102.4	88.8	81.9
Côte d'Ivoire	70.8	64.2	63.0	69.2	45.0	43.4	44.8	47.8	47.8	48.7	48.3	47.1	46.5	45.9	45.5
Ethiopia	41.7	37.8	40.5	43.9	36.9	42.4	46.3	60.0	57.9	59.7	59.1	58.3	56.9	55.8	55.1
Ghana	33.6	36.1	46.3	42.6	47.9	57.2	70.2	72.2	73.4	70.5	66.1	62.8	60.1	57.6	55.1
Guinea	58.5	61.3	68.8	58.1	27.2	34.0	35.1	42.1	42.9	42.9	47.2	48.3	47.6	45.5	43.7
Haiti	38.0	27.8	17.3	11.8	16.3	21.5	26.3	30.2	33.7	32.6	32.7	32.1	31.5	30.9	30.0
Honduras	22.3	27.2	24.5	25.1	32.1	40.1	39.9	40.1	41.5	44.1	44.9	45.9	44.5	42.6	39.2
Kenya	41.5	41.1	44.4	43.0	43.9	44.0	48.6	51.6	52.6	56.2	56.0	52.5	51.4	48.7	46.6
Kyrgyz Republic	48.3	58.1	59.7	49.4	49.0	46.2	52.3	64.9	58.1	56.9	58.0	57.4	56.0	54.6	52.9
Lao P.D.R.	53.6	55.2	55.1	50.8	55.2	54.3	58.4	57.6	58.9	62.0	64.7	66.0	66.6	66.8	66.7
Madagascar	31.5	33.7	31.7	32.2	33.0	33.9	34.7	35.5	38.7	41.9	42.8	43.7	43.4	42.8	41.9
Mali	20.3	21.9	25.3	24.0	25.4	26.4	27.3	30.7	35.9	34.7	35.5	36.9	38.4	39.8	41.1
Moldova	22.0	32.4	30.5	29.0	30.9	29.6	36.0	44.8	43.2	41.3	40.5	41.1	39.7	39.3	39.4
Mozambique	36.3	41.9	43.3	38.0	40.1	53.1	62.4	88.1	113.6	88.2	85.6	82.0	78.8	73.8	65.6
Myanmar	53.1	55.1	49.6	46.1	40.7	33.2	29.9	34.9	36.4	36.7	37.0	37.2	37.3	37.5	37.7
Nepal	41.9	38.5	34.0	31.7	33.9	31.9	28.3	25.0	27.3	26.8	27.2	29.0	30.6	32.1	33.4
Nicaragua	26.0	29.3	30.3	28.8	27.9	28.8	28.7	28.9	31.0	32.4	33.1	33.6	34.0	34.9	35.7
Niger	21.1	27.7	24.3	27.8	26.9	26.3	32.0	41.0	46.3	51.5	52.8	53.8	52.1	49.8	47.5
Nigeria	7.3	8.6	9.6	12.1	12.6	12.4	12.5	13.2	17.6	21.3	22.8	23.8	24.3	24.8	25.2
Papua New Guinea	21.6	21.7	17.3	16.3	19.1	24.9	27.1	30.8	34.6	35.9	37.2	38.9	40.4	41.4	44.0
Rwanda	19.5	19.5	20.0	19.9	20.0	26.7	29.1	33.4	37.6	40.2	42.1	44.1	44.3	43.7	42.9
Senegal	23.9	34.2	35.5	40.7	42.8	46.9	54.4	56.9	60.6	61.1	59.9	58.1	56.4	54.8	53.6
Somalia	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Sudan	68.8	72.1	73.1	70.6	94.5	89.9	77.3	72.6	66.5	53.5	47.9	44.1	41.6	39.4	37.6
Tajikistan	30.2	36.9	36.8	35.9	32.4	29.1	27.5	34.3	41.8	52.4	56.2	56.3	54.6	52.9	51.8
Tanzania	21.5	24.4	27.3	27.8	29.2	30.9	33.8	36.7	37.2	37.4	38.3	39.5	40.3	40.8	41.0
Timor-Leste	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Uganda	20.3	19.2	22.4	23.4	24.5	27.6	30.7	33.3	37.3	38.6	39.9	41.3	41.6	41.2	40.0
Uzbekistan	12.7	11.0	10.0	9.1	8.6	7.9	8.4	11.5	12.8	14.1	14.4	14.9	15.3	15.8	16.4
Vietnam	39.4	45.2	48.1	45.8	47.9	51.8	55.1	57.3	60.7	61.5	63.6	64.0	64.4	64.6	64.7
Yemen	36.4	49.8	42.4	45.7	47.3	48.2	48.7	66.7	85.4	83.5	71.0	55.0	48.7	45.4	43.0
Zambia	19.2	20.5	18.9	20.8	25.4	27.1	35.6	61.4	60.5	55.6	60.0	62.4	63.3	63.7	62.8
Zimbabwe	68.6	51.4	59.3	41.6	38.8	48.3	49.6	51.9	69.7	70.7	68.5	67.0	68.4	69.9	71.8
Average	29.3	31.8	30.6	30.3	30.8	31.6	32.4	36.5	40.3	41.4	41.4	40.9	40.6	40.5	40.3
Oil Producers	15.0	16.5	15.2	17.5	16.9	17.3	18.0	21.0	26.3	29.4	29.3	28.9	28.8	28.9	29.1
Asia	40.9	42.9	41.9	40.0	39.9	40.9	41.4	42.9	44.1	44.8	46.0	46.8	47.4	48.0	48.5
Latin America	27.0	27.9	24.6	23.3	27.5	32.7	33.7	34.7	36.8	38.4	38.9	39.4	38.6	37.8	36.3
Sub-Saharan Africa	21.8	23.7	22.2	23.1	22.7	24.1	25.9	30.6	36.0	38.6	38.6	38.0	37.6	37.3	37.0
Others	44.6	48.0	47.2	44.8	51.7	48.7	44.8	49.5	49.7	45.1	41.8	38.7	36.8	35.4	34.3

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 D.

Table A22. Low-Income Developing Countries: General Government Net Debt, 2008–22

(Percent of GDP)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Bangladesh	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Benin	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Burkina Faso	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Cambodia	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Cameroon	5.2	5.7	6.9	9.8	12.9	16.5	24.4	29.6	33.6	32.7	32.0	31.2	30.0	28.1	26.3
Chad	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Congo, Democratic Republic of the	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Congo, Republic of	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Côte d'Ivoire	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Ethiopia	36.9	34.9	40.2	39.5	32.2	37.3	42.2	49.2	50.1	56.2	56.1	55.8	54.7	53.9	53.4
Ghana	30.1	32.6	43.0	38.8	45.8	53.2	63.4	66.7	66.9	64.4	60.8	58.0	55.7	53.6	51.5
Guinea	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Haiti	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Honduras	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Kenya	37.1	36.9	40.2	39.1	40.1	40.1	44.4	46.5	47.3	52.0	52.8	50.2	49.6	47.0	44.8
Kyrgyz Republic	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Lao P.D.R.	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Madagascar	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Mali	14.6	12.4	16.9	17.1	21.2	20.5	19.9	24.7	28.9	29.4	30.5	31.2	32.4	33.3	34.5
Moldova	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Mozambique	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Myanmar	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Nepal	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Nicaragua	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Niger	12.9	23.2	20.1	24.0	21.9	20.5	25.6	35.9	41.6	47.2	48.4	49.4	48.2	45.5	42.1
Nigeria	0.5	6.0	8.9	10.7	10.0	11.7	11.6	12.4	16.4	20.2	21.8	23.0	23.6	24.1	24.6
Papua New Guinea	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Rwanda	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Senegal	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Somalia	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Sudan	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Tajikistan	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Tanzania	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Timor-Leste	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Uganda	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Uzbekistan	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Vietnam	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Yemen	31.4	43.6	38.3	42.3	45.3	46.7	47.8	65.6	84.2	82.5	70.3	54.5	48.3	45.1	42.7
Zambia	16.3	16.5	15.9	16.4	20.1	25.2	31.2	55.2	51.2	50.8	56.5	59.8	62.5	63.2	62.4
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. Selected Advanced Economies: Gross Financing Need, 2017–19

(Percent of GDP)

	2017			2018			2019		
	Maturing Debt	Budget Deficit	Total Financing Need	Maturing Debt[1]	Budget Deficit	Total Financing Need	Maturing Debt[1]	Budget Deficit	Total Financing Need
Australia	0.3	2.2	2.5	2.3	1.8	4.1	2.5	1.0	3.5
Austria	3.0	0.9	3.8	6.3	0.6	6.9	7.4	0.4	7.7
Belgium	26.1	1.8	27.9	25.8	1.8	27.6	25.5	1.9	27.4
Canada	5.8	2.2	8.0	10.3	1.8	12.1	8.9	1.6	10.4
Czech Republic	4.9	–0.5	4.4	7.9	–0.6	7.3	7.7	–0.7	7.0
Denmark	3.4	1.5	4.9	3.5	0.6	4.1	4.5	0.4	4.9
Finland	4.1	1.5	5.7	5.6	1.2	6.9	5.0	0.9	5.9
France	6.4	3.0	9.5	12.1	3.0	15.1	11.1	3.2	14.3
Germany	1.7	–0.7	1.0	5.2	–0.8	4.5	3.9	–1.0	2.9
Iceland	0.2	–0.9	–0.6	5.4	–1.3	4.1	2.8	–1.4	1.4
Ireland	5.0	0.5	5.5	5.5	0.2	5.7	7.4	0.2	7.6
Italy	7.1	2.2	9.4	16.1	1.3	17.4	13.4	0.3	13.7
Japan	25.4	4.1	29.5	39.0	3.3	42.3	33.1	2.9	35.9
Korea	1.7	–1.2	0.5	3.3	–1.4	1.9	2.5	–1.4	1.2
Lithuania	5.0	–0.1	4.9	7.3	–0.5	6.8	7.1	–0.3	6.8
Malta	4.9	–0.5	4.4	4.8	–0.5	4.4	4.9	–0.5	4.4
Netherlands	1.8	–0.6	1.1	7.5	–0.9	6.6	5.6	–1.2	4.4
New Zealand	3.0	–0.4	2.7	1.4	–0.3	1.1	4.6	–0.9	3.7
Portugal	14.6	1.5	16.0	14.1	1.4	15.4	14.6	1.5	16.1
Slovak Republic	7.5	1.2	8.6	4.1	0.7	4.9	2.3	0.1	2.4
Slovenia	3.5	0.9	4.3	5.6	0.9	6.6	5.8	1.2	7.0
Spain[2]	15.9	3.2	19.1	14.5	2.5	17.0	14.4	2.1	16.5
Sweden	3.9	–1.0	2.9	3.9	–1.0	2.9	5.2	–0.8	4.4
Switzerland	1.0	0.1	1.1	2.2	0.1	2.3	1.8	0.0	1.9
United Kingdom	4.5	2.9	7.4	5.6	2.3	7.9	6.8	1.4	8.2
United States[3]	11.1	4.3	15.5	17.5	3.7	21.2	14.9	4.0	18.9
Average	9.9	2.9	12.8	15.4	2.4	17.8	13.4	2.3	15.6

Sources: Bloomberg Finance L.P.; and IMF staff estimates and projections.

Note: For most countries, data on maturing debt refer to central government securities. For some countries, general government deficits are reported on an accrual basis. For country-specific details, see "Data and Conventions" in text, and Table B.

[1] Assumes that short-term debt outstanding in 2017 and 2018 will be refinanced with new short-term debt that will mature in 2018 and 2019, respectively. Countries that are projected to have budget deficits in 2017 or 2018 are assumed to issue new debt based on the maturity structure of debt outstanding at the end of 2016.

[2] Data refer to the general government on a consolidated basis.

[3] 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 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 U.S. Bureau of Economic Analysis.

Table A24. Selected Emerging Market and Middle-Income Economies: Gross Financing Need, 2017–18

(Percent of GDP)

	2017			2018		
	Maturing Debt	Budget Deficit	Total Financing Need	Maturing Debt	Budget Deficit	Total Financing Need
Argentina	6.6	6.6	13.2	7.1	5.6	12.7
Brazil	3.4	9.2	12.6	6.4	9.3	15.7
Chile	1.0	3.1	4.1	1.1	2.6	3.7
Colombia	2.1	3.2	5.3	1.6	2.8	4.4
Croatia	14.1	1.3	15.4	10.9	1.0	12.0
Dominican Republic	3.7	3.6	7.3	4.1	3.4	7.6
Ecuador	10.4	5.8	16.2	8.4	4.1	12.4
Egypt	33.8	9.5	43.3	35.2	7.3	42.4
Hungary	13.6	2.6	16.2	16.9	2.6	19.5
India	4.5	6.4	10.8	4.4	6.2	10.6
Indonesia	1.5	2.7	4.2	2.4	2.5	5.0
Malaysia	7.8	3.0	10.8	7.9	2.7	10.6
Mexico	7.7	1.4	9.1	6.8	2.5	9.3
Morocco	7.8	3.5	11.4	7.5	3.0	10.5
Pakistan	27.7	5.7	33.4	26.7	5.4	32.1
Peru	3.9	2.9	6.8	2.1	3.4	5.4
Philippines	5.8	1.0	6.8	6.6	1.1	7.6
Poland	6.4	2.7	9.2	5.8	2.7	8.5
Romania	5.3	3.0	8.3	4.2	4.4	8.7
Russia	1.4	2.1	3.6	1.2	1.5	2.7
South Africa	8.2	4.5	12.7	8.5	4.3	12.8
Sri Lanka	13.3	5.2	18.6	14.9	4.7	19.6
Thailand	5.5	1.4	7.0	5.4	1.7	7.1
Turkey	3.8	3.2	7.0	3.9	2.4	6.3
Ukraine	4.4	2.9	7.3	7.2	2.5	9.7
Uruguay	11.4	3.0	14.4	8.8	2.7	11.5
Average	5.6	4.6	10.2	6.0	4.4	10.4

Source: IMF staff estimates and projections.

Note: Data in the table refer to general government data. For some countries, general government deficits are reported on an accrual basis. For country-specific details, see "Data and Conventions" in text, and Table C.

Table A25. 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, 2017[3]	Average Term to Maturity, 2017 (years)[4]	Debt-to-Average Maturity, 2017	Projected Interest Rate–Growth Differential, 2017–22 (percent)	Precrisis Overall Balance, 2000–07	Projected Overall Balance, 2017–22	Nonresident Holding of General Government Debt, 2017 (percent of total)[5]
Australia	0.8	21.7	1.6	52.8	2.5	7.4	5.7	–1.4	1.1	–0.8	39.5
Austria	0.5	13.7	1.8	63.6	3.8	8.3	9.6	–1.2	–2.2	–0.6	73.4
Belgium	0.5	18.0	2.2	81.3	27.9	9.4	11.1	–1.1	–0.5	–1.9	60.0
Canada	1.0	24.0	1.1	40.4	8.0	5.4	16.5	–0.6	1.1	–1.6	22.7
Cyprus	0.4	0.7	. . .	. . .	6.2	4.9	21.4	–1.4	–2.3	0.6	73.9
Czech Republic	0.0	1.9	0.7	27.5	4.4	1.5	23.8	–1.5	–3.8	0.6	66.1
Denmark	–1.2	–36.9	1.4	44.9	4.9	7.8	4.8	–0.1	2.5	–0.4	31.9
Estonia	–0.5	–13.4	0.3	13.8	. . .	. . .	. . .	–5.1	1.2	–0.4	68.5
Finland	1.6	21.8	1.4	43.9	5.7	6.2	10.3	–2.0	4.0	–0.8	69.2
France	–0.1	–16.8	0.8	30.6	9.5	7.4	13.2	–1.3	–2.7	–2.2	56.4
Germany	1.4	40.0	0.9	37.5	1.0	5.8	11.2	–1.7	–2.4	1.0	52.2
Hong Kong SAR	1.4	36.6	. . .	. . .	. . .	. . .	. . .	0.8	0.0	1.4	. . .
Iceland	0.4	7.5	2.6	89.1	–0.6	13.4	3.1	0.5	1.2	1.2	27.8
Ireland	1.3	37.7	0.8	29.5	5.5	10.7	6.5	–1.9	1.5	0.0	59.6
Israel[6]	0.4	13.0	0.3	14.0	. . .	7.4	10.6	1.1	–4.3	–3.6	13.2
Italy[7]	0.1	–1.8	1.1	40.0	9.4	6.9	19.4	0.8	–3.0	–0.6	32.0
Japan	–0.7	–7.7	2.0	63.3	29.5	7.7	31.4	–1.0	–5.6	–2.8	9.8
Korea	2.0	72.5	2.4	82.5	0.5	6.4	5.9	–1.9	2.0	1.2	13.0
Latvia	–1.4	–39.6	0.7	23.9	. . .	7.8	4.6	–2.8	–1.3	–0.3	74.9
Lithuania	1.5	33.6	0.8	30.4	4.9	6.3	6.0	–1.1	–1.8	0.3	82.2
Luxembourg	2.2	59.2	1.0	38.9	. . .	6.9	2.7	–3.4	2.4	0.1	54.4
Malta	0.0	6.4	. . .	. . .	4.4	9.0	6.2	–2.3	–4.9	0.5	9.5
Netherlands	0.9	28.8	3.8	123.5	1.1	6.9	8.3	–1.8	–0.6	1.3	48.3
New Zealand	2.5	69.4	2.3	76.6	2.7	6.8	3.9	0.2	2.9	1.2	72.8
Norway	1.1	28.1	1.6	54.4	. . .	5.0	6.6	–1.4	13.2	5.7	55.8
Portugal	1.0	22.7	2.5	83.4	16.0	6.2	20.2	–0.1	–4.4	–1.4	58.0
Singapore[8]	0.7	21.8	. . .	. . .	. . .	3.7	29.7	–3.5	5.6	1.6	. . .
Slovak Republic	–0.5	–1.0	0.8	30.3	8.6	7.5	6.8	–2.4	–5.0	–0.3	60.5
Slovenia	0.6	36.9	0.9	35.2	4.3	8.5	8.8	–0.9	–1.0	–1.3	70.2
Spain	–0.5	–1.1	2.1	72.7	19.1	7.0	14.1	–0.7	0.4	–2.3	45.3
Sweden	–0.8	–25.4	0.4	16.4	2.9	4.7	8.3	–2.7	1.2	0.7	38.5
Switzerland	0.5	15.2	3.2	107.4	1.1	10.4	4.1	–1.0	–0.3	0.0	12.2
United Kingdom	0.3	9.1	1.6	55.3	7.4	14.9	6.0	–0.6	–1.9	–1.7	32.4
United States	1.5	35.6	3.9	118.3	15.5	5.8	18.6	–0.8	–3.1	–4.1	30.0
Average	0.8	22.2	2.5	80.8	12.9	6.9	16.4	–1.0	–2.2	–2.2	34.1
G7	0.9	22.4	2.7	84.6	14.4	6.9	18.3	–0.9	–3.0	–2.8	31.8
G20 Advanced	0.9	24.3	2.6	83.4	13.5	6.9	17.4	–0.9	–2.7	–2.6	31.4

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

Note: All country averages are weighted by nominal GDP converted to U.S. 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 European Union countries, pension projections are based on *The 2015 Ageing Report* of the European Commission. When authorities' estimates are not available, staff projections use the methodology described in Clements, Eich, and Gupta, *Equitable and Sustainable Pensions: Challenges and Experience* (IMF, 2014). Staff projections for health care spending are driven by demographic and other factors. The difference between the growth of health care spending and real GDP growth that is not explained by demographics ("excess cost growth") is assumed to start at the country-specific historical average and converge to the advanced economy historical average by 2050 (0.8 percent).

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

[3] Gross financing need is defined as the projected overall deficit and maturing government debt in 2017. Data are from Bloomberg Finance L.P. and IMF staff projections.

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

[5] Nonresident holding of general government debt are for the fourth quarter of 2016 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 U.S. dollars is converted to local currency, then taken as a percentage of 2016 gross general government debt.

[6] Average term to maturity for Israel refers to 2015 figure.

[7] Italy's pension projections do not reflect the new demographic assumptions which will be incorporated in the next round of Ageing Working Group (AWG) projections.

[8] Singapore's general government debt is covered by financial assets and issued to develop the bond market.

Table A26. 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, 2017[3]	Average Term to Maturity, 2017 (years)[4]	Debt-to-Average Maturity, 2017	Projected Interest Rate–Growth Differential, 2017–22 (percent)	Precrisis Overall Balance, 2000–07	Projected Overall Balance, 2017–22	Nonresident Holding of General Government Debt, 2017 (percent of total)[5]
Algeria	. . .	0.0	1.4	51.8	. . .	. . .	. . .	–4.3	7.4	–0.7	5.1
Angola	. . .	0.0	0.4	13.0	. . .	. . .	. . .	–10.0	3.1	–4.2	. . .
Argentina	1.0	40.7	1.3	49.7	11.4	9.7	5.5	–10.2	–0.2	–5.1	38.8
Azerbaijan	4.9	134.2	0.4	14.9	. . .	. . .	. . .	–5.3	6.3	–0.3	. . .
Belarus	2.3	64.9	0.9	31.2	. . .	2.9	20.6	–2.7	–7.2	–2.1	45.4
Brazil[6]	5.9	203.8	1.7	61.8	12.6	6.6	12.6	3.5	–3.6	–8.4	8.7
Chile	–1.1	–22.8	1.4	50.0	4.1	9.6	2.6	–1.4	2.4	–1.9	17.6
China	2.7	83.7	1.3	47.1	. . .	. . .	. . .	–5.6	–1.8	–3.9	. . .
Colombia	–1.0	–37.8	2.1	74.9	5.3	10.1	4.8	0.4	–1.9	–1.8	30.9
Croatia	–1.2	–48.9	1.5	51.9	15.4	4.6	18.0	0.2	–4.3	–0.7	38.0
Dominican Republic	0.5	15.1	0.8	31.0	7.3	8.3	4.4	0.9	–2.0	–3.6	67.3
Ecuador	0.9	33.4	0.9	33.5	16.2	5.8	6.7	4.9	1.2	–3.7	65.9
Egypt	2.6	50.8	0.4	15.9	43.3	2.9	35.5	–8.3	–8.5	–5.5	13.5
Hungary	–1.9	–35.8	1.2	42.7	16.2	3.7	19.6	–1.7	–6.5	–2.5	46.0
India	0.0	–5.5	0.4	14.3	10.8	9.5	7.2	–3.8	–8.6	–5.9	5.7
Indonesia	0.2	6.8	0.4	13.2	4.2	8.5	3.4	–2.6	–0.7	–2.5	. . .
Iran	2.0	97.2	1.1	41.6	. . .	. . .	. . .	–5.7	3.1	–2.2	. . .
Kazakhstan	1.0	27.9	0.6	19.9	. . .	6.7	2.6	–5.0	4.7	–2.2	45.0
Kuwait	4.1	169.8	0.7	28.7	. . .	6.5	4.2	–3.4	29.0	0.4	. . .
Malaysia	0.3	13.1	0.8	28.3	10.8	6.5	8.5	–3.0	–3.9	–2.2	23.4
Mexico	0.6	18.6	1.1	41.0	9.1	9.1	5.8	–0.7	–2.0	–2.3	32.7
Morocco	. . .	0.0	0.7	25.6	11.4	6.3	10.0	–1.8	–3.3	–2.7	20.7
Oman	0.5	25.6	0.8	33.8	. . .	8.3	5.4	–0.6	10.0	–9.6	. . .
Pakistan	0.1	6.2	0.2	8.0	33.4	1.8	38.4	–3.3	–2.9	–5.5	. . .
Peru	0.4	15.3	0.9	35.3	6.8	7.6	3.4	–1.4	–0.4	–2.1	36.9
Philippines	0.2	6.1	0.4	15.7	6.8	9.3	3.6	–3.5	–2.4	–1.2	28.1
Poland	–0.8	–23.9	1.6	56.3	9.2	4.9	11.0	–1.8	–4.1	–2.4	48.4
Qatar	. . .	0.0	0.7	27.4	. . .	5.9	9.3	–4.4	8.9	1.6	. . .
Romania	–0.1	1.5	1.1	38.9	8.3	5.3	7.3	–3.7	–2.6	–4.1	43.7
Russia	1.8	58.3	0.9	30.5	3.6	7.3	2.4	0.0	4.2	–0.7	18.0
Saudi Arabia	2.5	87.5	0.8	30.2	. . .	10.2	1.7	0.3	6.9	–4.1	. . .
South Africa	0.5	16.6	1.0	37.2	12.7	12.8	4.1	0.4	–0.7	–4.2	32.2
Sri Lanka	0.7	24.4	0.5	18.7	18.6	5.7	13.9	–1.9	–6.9	–4.0	41.1
Thailand	2.7	82.4	1.4	48.4	7.0	6.9	5.9	–1.5	–0.4	–1.6	12.3
Turkey	–1.6	–36.4	1.6	59.5	7.0	6.2	4.5	–2.5	–6.0	–2.4	37.5
Ukraine	3.5	113.6	0.9	31.5	7.3	5.8	14.9	–5.8	–2.3	–2.3	40.6
United Arab Emirates	0.7	26.7	0.9	35.4	. . .	. . .	. . .	–5.0	9.1	–0.9	. . .
Uruguay	–0.5	–3.9	1.3	47.9	14.4	11.8	5.1	–3.8	–2.1	–2.6	38.4
Venezuela	. . .	. . .	. . .	. . .	. . .	9.3	2.5	–95.1	0.1	–19.3	. . .
Average	1.9	60.3	1.1	40.6	10.4	7.0	7.8	–4.1	–1.1	–4.0	22.5
G20 Emerging	2.1	69.3	1.1	41.7	9.0	7.2	7.1	–3.7	–1.9	–4.2	18.6

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

Note: All country averages are weighted by nominal GDP converted to U.S. 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 European Union countries, pension projections are based on *The 2015 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 historical 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 2017. Data are from IMF staff projections.

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

[5] Nonresident holding of general government debt are the fourth quarter of 2016 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 U.S. dollars is converted to local currency, then taken as a percentage of 2016 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).

Table A27. 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, 2017 (years)[3]	Debt-to-Average Maturity, 2017	Projected Interest Rate–Growth Differential, 2017–22 (percent)	Precrisis Overall Balance, 2000–07	Projected Overall Balance, 2017–22	Nonresident Holding of General Government Debt, 2017 (percent of total)[4]
Bangladesh	0.4	17.9	0.4	15.5	4.8	7.0	–5.6	–2.8	–5.0	35.6
Benin	0.0	1.9	0.4	16.3	3.5	15.3	–4.4	–2.3	–2.1	. . .
Burkina Faso	–0.1	1.9	0.6	21.9	2.3	15.8	–4.9	–1.8	–3.8	60.0
Cambodia	0.3	12.1	0.4	14.7	. . .	. . .	–8.3	–3.2	–4.1	. . .
Cameroon	–0.1	–0.1	0.3	11.5	6.4	5.6	–3.8	5.7	–2.1	. . .
Chad	0.0	–0.2	0.2	9.2	. . .	. . .	–2.0	–2.4	1.4	. . .
Congo, Democratic Republic of the	0.0	–0.3	0.5	17.2	. . .	. . .	–21.8	–1.1	0.7	. . .
Congo, Republic of	0.0	1.1	0.4	15.0	. . .	. . .	0.0	6.6	3.5	. . .
Côte d'Ivoire	0.0	–0.2	. . .	0.0	. . .	. . .	–4.1	–1.0	–3.4	. . .
Ethiopia	0.0	0.6	0.4	14.9	. . .	. . .	–13.4	–4.8	–2.7	. . .
Ghana	0.0	3.7	0.6	21.5	3.8	18.4	–5.1	–4.6	–3.4	. . .
Guinea	0.0	0.0	0.3	11.3	. . .	. . .	–10.2	–2.5	–1.6	. . .
Haiti	. . .	0.0	0.4	13.7	. . .	. . .	–6.7	–1.9	–1.4	. . .
Honduras	0.0	2.3	1.4	52.2	3.4	12.9	–2.0	–2.0	–0.7	. . .
Kenya	0.1	8.2	0.4	14.4	4.5	12.5	–5.0	–1.4	–5.1	. . .
Kyrgyz Republic	0.7	22.1	1.1	40.6	. . .	. . .	–5.8	–5.2	–2.1	. . .
Lao P.D.R.	0.0	0.9	0.4	14.3	. . .	. . .	–6.8	–3.6	–5.1	. . .
Madagascar	0.0	1.4	0.5	18.4	. . .	. . .	–8.1	–3.4	–4.2	63.8
Mali	–0.3	–3.1	0.3	13.1	2.4	14.5	–3.4	1.3	–3.1	. . .
Moldova	1.1	49.8	1.7	61.3	8.3	5.0	–5.4	–0.4	–2.9	47.2
Mozambique	–0.1	–1.5	0.4	15.9	3.3	26.4	–7.8	–3.3	–5.1	. . .
Myanmar	. . .	0.0	. . .	0.0	. . .	. . .	–8.5	–4.1	–4.4	. . .
Nepal	0.0	3.4	0.6	22.2	. . .	. . .	–7.7	–1.0	–2.8	. . .
Nicaragua	1.1	47.6	1.6	61.1	1.3	24.8	–7.8	–1.3	–1.5	77.7
Niger	–0.1	–1.6	0.4	13.4	. . .	. . .	–4.6	2.6	–3.7	. . .
Nigeria	–0.1	–1.3	0.3	11.2	4.6	4.6	–8.1	2.3	–4.2	. . .
Papua New Guinea	0.0	0.5	1.0	35.9	. . .	. . .	–1.0	1.8	–4.0	26.0
Rwanda	0.1	5.6	1.5	56.1	. . .	. . .	–8.7	–0.5	–1.6	. . .
Senegal	–0.1	3.3	0.5	18.7	1.5	40.0	–4.6	–1.2	–3.1	. . .
Somalia	. . .	. . .	. . .	. . .	. . .	. . .		. . .	. . .	. . .
Sudan	0.0	0.9	0.4	12.9	. . .	. . .	–15.9	–1.1	–2.9	. . .
Tajikistan	1.0	29.6	0.5	16.5	. . .	. . .	–6.9	–2.8	–3.2	. . .
Tanzania	–0.1	1.7	0.5	17.2	3.6	10.5	–6.0	–1.8	–3.7	. . .
Timor-Leste	. . .	. . .	. . .	. . .	. . .	. . .		10.3	–16.6	. . .
Uganda	–0.1	–0.6	0.3	11.9	3.3	11.7	–3.8	–1.0	–3.3	. . .
Uzbekistan	2.5	96.0	0.9	34.0	. . .	. . .	–14.9	0.6	1.1	. . .
Vietnam	2.2	82.2	1.0	38.6	6.2	10.0	–5.6	–1.7	–5.3	. . .
Yemen	–0.4	5.7	0.3	12.4	. . .	. . .	–8.4	–0.7	–4.0	. . .
Zambia	2.9	90.3	0.7	26.1	4.8	11.6	–5.0	–0.4	–6.5	. . .
Zimbabwe	. . .	. . .	. . .	. . .	. . .	. . .	–3.4	. . .	–3.6	. . .
Average	0.4	16.5	0.5	17.7	1.0	2.7	–8.1	0.0	–3.6	0.0

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

Note: All country averages are weighted by nominal GDP converted to U.S. 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 European Union countries, pension projections are based on *The 2015 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 historical 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 are the fourth quarter of 2016 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 U.S. dollars is converted to local currency, then taken as a percentage of 2016 gross general government debt.

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IMF EXECUTIVE BOARD DISCUSSION OF THE OUTLOOK, OCTOBER 2017

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 21, 2017.*

Executive Directors broadly shared the assessment of global economic prospects and risks. They observed that global activity has strengthened further and is expected to rise steadily into next year. The pickup is broad based across countries, driven by investment and trade. Nevertheless, the recovery is not complete, with medium-term global growth remaining modest, especially in advanced economies and fuel exporters. In most advanced economies, inflation remains subdued amid weak wage growth, while slow productivity growth and worsening demographic profiles weigh on medium-term prospects. Meanwhile, several emerging markets and developing economies continue to adjust to a range of factors, including lower commodity revenues.

Directors noted that, while risks are broadly balanced in the near term, medium-term risks remain skewed to the downside, with rising financial vulnerabilities. These include the possibility of a sudden tightening of global financial conditions, a rapid increase in private sector debt in key emerging market economies, low bank profitability and pockets of still-elevated nonperforming loan ratios, and policy uncertainty about financial deregulation. Directors also pointed to risks associated with inward-looking policies, rising geopolitical tensions, and weather-related factors.

Given this landscape, Directors underscored the continued importance of employing a range of policy tools, in a comprehensive, consistent, and well-communicated manner, to secure the recovery and improve medium-term prospects. They recognized that major central banks have made every effort to communicate their monetary normalization policies to markets. The cyclical upturn in economic activity provides a window of opportunity to accelerate critical structural reforms, increase resilience, and promote inclusiveness.

Directors stressed that a cooperative multilateral framework remains vital for amplifying the mutual benefits of national policies and minimizing any cross-border spillovers. Common challenges include maintaining the rules-based, open trading system; preserving the resilience of the global financial system; avoiding competitive races to the bottom in taxation and financial regulation; and further strengthening the global financial safety net. Multilateral cooperation is also essential to tackle various noneconomic challenges, among which are refugee flows, cyberthreats and, as most Directors highlighted, mitigating and adapting to climate change. Concerted effort is also needed to reduce excess global imbalances, through a recalibration of policies with a view to achieving their domestic objectives as well as strengthening prospects for strong, sustainable, and balanced global growth. In this context, as a few Directors emphasized, the IMF also has a role to play by continuing to strengthen its multilateral analysis of external imbalances and exchange rates.

Directors agreed that continued accommodative monetary policy is still needed in countries with low core inflation, consistent with central banks' mandates. Fiscal policy should gear toward long-term sustainability, avoid procyclicality, and promote inclusive growth. At the same time, fiscal policy should be as growth friendly as possible, using space, where available, to support productivity and growth-enhancing structural reforms. In many cases, policymakers should prioritize rebuilding buffers, improving medium-term debt dynamics, and enhancing resilience. Efforts to raise potential output should be prioritized based on country-specific circumstances, including increasing the supply of labor, upgrading skills and human capital, investing in infrastructure, and lowering product and labor market distortions. Social safety nets remain important to protect those adversely affected by technological progress and other structural transformation.

Directors noted that income disparities among countries have narrowed, but inequality has increased in some economies. They saw a role that well-designed fiscal policies can play in achieving redistributive

objectives without necessarily undermining growth and incentives to work. Directors generally concurred that there may be scope for strengthening means-testing of transfers in many countries and for increasing the progressivity of taxation in some others. Most Directors noted that any consideration of a universal basic income would have to be weighed carefully against a host of country-specific factors—including existing social safety schemes, financing modalities, fiscal cost, and social preferences, as well as its impact on incentives to work—which, in the view of many Directors, raised questions about its attractiveness and practicality. Directors emphasized that improving education and health care is key to reducing inequality and enhancing social mobility over time.

Directors underlined the continued need for emerging market and developing economies to bolster economic and financial resilience to external shocks, including through enhanced macroprudential policy frameworks and exchange rate flexibility. They noted that a common challenge across these economies is how to speed up their convergence toward living standards in advanced economies. While priorities differ across countries, many need to improve governance, infrastructure, education, and access to health care. In several countries, policies should also facilitate greater labor force participation, reduce barriers to entry into product markets, and enhance the efficiency of credit allocation.

Directors observed that the global financial system continues to strengthen, and market confidence has improved generally. They recognized the substantial progress made in resolving weak banks in many advanced economies, while a majority of systemic institutions are adjusting business models and restoring profitability. However, a prolonged period of monetary accommodation could lead to further increases in asset valuations and a buildup of leverage in the nonfinancial sector that could signal higher risks to financial stability. These developments call for continued vigilance about household debt ratios and investors' exposure to market and credit risks. In this context, Directors stressed the need to calibrate the path of normalization of monetary policies carefully, implement macro- and microprudential measures as needed, and address remaining legacy problems.

Directors noted a generally subdued outlook for commodity prices. They encouraged low-income developing countries that are commodity exporters to continue improving revenue mobilization and strengthening debt management, while safeguarding social outlays and capital expenditures. Countries with more diversified export bases should further strengthen fiscal positions and foreign exchange buffers. Across all low-income developing countries, an overarching challenge is to maintain progress toward their Sustainable Development Goals.

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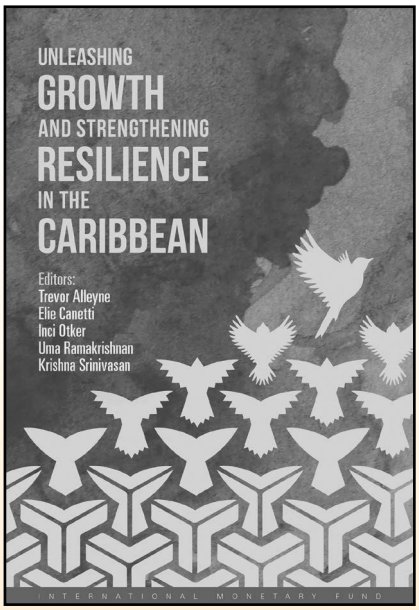

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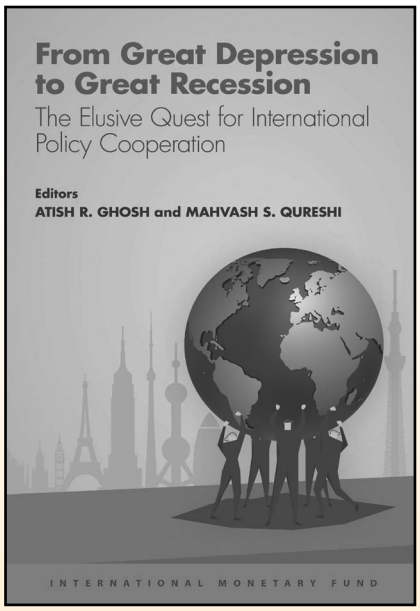

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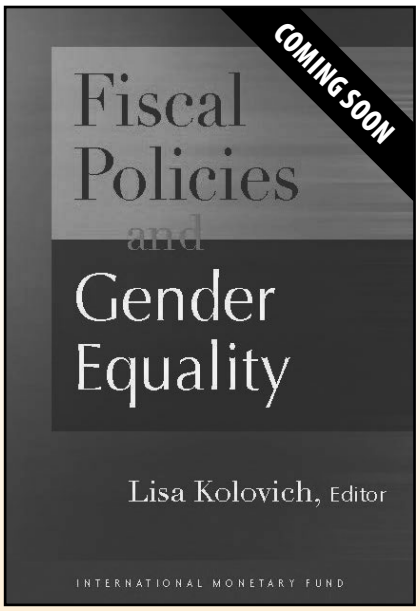

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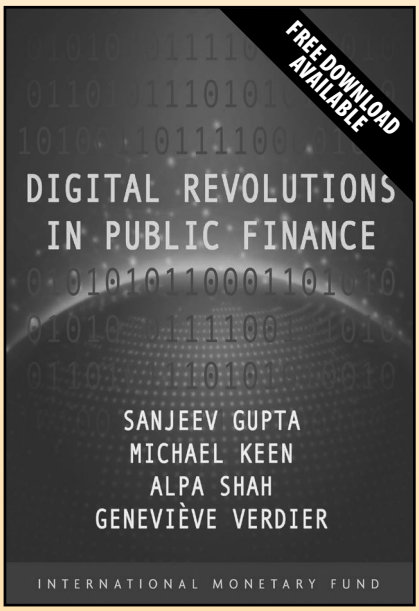

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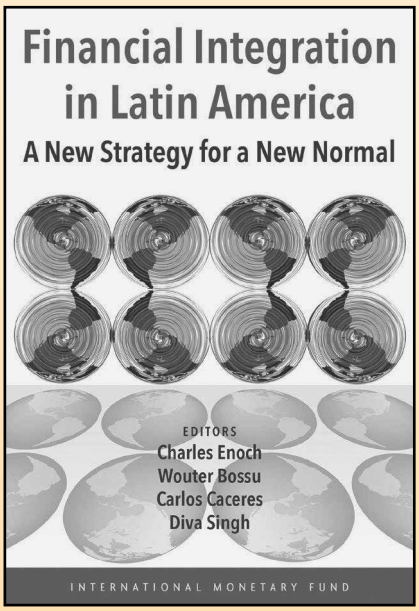

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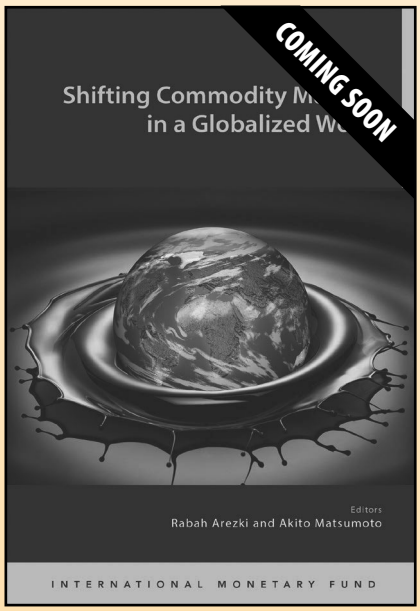

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