A Fiscal Policy Dashboard for Low-Income Economies

Jean-Luc Schneider

Abstract

We construct a fiscal policy dashboard to provide a snapshot of the fiscal system of a country, focusing on macro-sustainability, revenue mobilization, spending composition, and redistributive effects. The dashboard is designed to suit low-income economies, taking into account specificities of their fiscal challenges as well as the relative scarcity of data. Benchmarks are constructed to assess the level of a nation's indicators in relation to those observed in comparable countries. As a tool for analyzing and comparing national tax systems, such a dashboard is especially useful for governments, international organizations, and civil society organizations operating in low-income economies. To illustrate the methodology, we construct the dashboard for three countries—Mozambique, Ethiopia, and Cambodia—and provide examples of how the dashboard could be exploited by different users.

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Foreword

The level and composition of taxes and expenditures vary considerably across low-income countries. Understanding these effects requires a simultaneous and consolidated examination of the many dimensions of revenue mobilization and expenditure. In this paper, Jean-Luc Schneider proposes a methodology to assess these multiple dimensions of fiscal policy in a low-income country. He applies the proposed methodology to three countries: Cambodia, Ethiopia, and Mozambique.

The "fiscal dashboard" can be especially useful in benchmarking a country against comparable economies and useful not only to its policymakers but also to foreign investors, international institutions, and civil society organizations. Its design is sufficiently flexible to allow a focus on issues that are more pressing and adaptable to data constraints facing low-income countries.

This paper was prepared as part of the domestic resource mobilization project. I am hopeful that a wider use of the "fiscal dashboard" would stimulate debate on the "quality" of fiscal policies being pursued in different low-income countries.

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1. Introduction

Fiscal policy is a key determinant of the level and quality of services that governments deliver to citizens. The United Nations' adoption of the Sustainable Development Goals (SDGs) in 2015 has increased the pressure on all countries to adapt their fiscal policy to reach the set objectives by 2030. Realizing that this is more of a challenge for low-income economies[1] since they are further from their goals, the Addis Ababa Action Agenda has identified domestic revenue mobilization as the key to any strategy aimed at the SDGs in developing countries, a point stressed by the International Monetary Fund (IMF), which estimates that the average low-income economy would need additional revenue of more than 15 percent of gross domestic product (GDP) to meet the SDGs, of which 5 points could come from domestic sources (UN 2019; Gaspar et al. 2019; Lee 2018; D'Alelio 2018).

However, there is more to fiscal policy than the level of domestic revenue mobilization. How, and not just how much, revenue the public sector mobilizes and spends determines the path and sustainability of economic growth, creation and distribution of income in the economy, progress toward the SDGs, and eventually the short- and long-term welfare of the citizens. As the composition of taxes and of expenditures varies a lot across countries, so do their effects in terms of growth, stability, redistribution, and welfare. Assessing the performance of a fiscal system therefore involves looking simultaneously at many dimensions of revenue mobilization and expenditures.

As a first step toward such multidimensional assessment, this paper proposes a "fiscal dashboard," showing how revenues are generated and spent by governments, as well as some of the stylized effects of fiscal policy, with a view to comparability over time and across countries. The dashboard is designed to suit low-income economies, in particular in sub-Saharan Africa (SSA), taking into account specificities of their fiscal challenges as well as the relative scarcity of data.

The word "dashboard" refers to a set of selected indicators organized so as to give an easily readable picture of the main features of fiscal policy, reproducible for different countries and years. More precisely, for a given country, the dashboard is composed of

- a set of (mostly) quantitative indicators for the most recent year;

- a comparison of the indicators against those observed in other countries; and

- an indication of the direction in which they have been moving lately.

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[1] In this paper, the expression "low-income economy" is used in a general sense. It corresponds broadly to the "low-income developing country" (LIDC) group defined by the IMF. When, in Section 5, a more precise definition is needed, low-income economies are defined as belonging either to the World Bank's lending group of "low-income countries" (LICs) or to that of "lower-middle-income countries" (LMICs).

A dashboard serves several purposes. It may serve as a tool for national authorities to assess both fiscal performance against comparators and progress toward their own objectives. It is also expected to be useful to other parties, such as donors, as a help to monitor developments in the fiscal system and to identify challenges and needs for further investigation. More generally, a dashboard may provide researchers and the general public with a sense of how public finances develop and social outcomes compare in different countries. Of course, it cannot pretend to provide exhaustive information about fiscal issues, many of which need to be analyzed against the specific background of the country under consideration. The main ambition of the dashboard is to perform the somewhat mechanical task of showing, for each country, a number of standardized indicators and their position relative to those observed in comparable countries. It is then up to the dashboard's user to make a judgment about the reasons why any indicator may deviate from general practice and whether that should be considered as a ground for concern (or complacency).

The focus of this paper is on the selection of indicators and the construction of benchmarks against which to assess the level of national indicators. The paper is organized as follows. Section 2 identifies the main issues to be covered by the dashboard, with a focus on relevance in low-income economies. Section 3 makes a few general points about the data, the construction of indicators, and precautions called for when using them. Section 4 briefly discusses different approaches to address the main fiscal issues and introduces the indicators selected for use in the dashboard. Section 5 presents the criteria used to make a judgment on the level and trend of national indicators. Section 6 explains how national authorities, donors, and international organization can use the dashboard, based on the example of three countries (Mozambique, Ethiopia, and Cambodia). Section 7 concludes with a discussion of updating requirements, robustness in the face of a crisis (such as the one precipitated by the Covid-19 pandemic), and further improvements that could be considered, not least on the basis of feedback expected from users.

2.   The scope of a fiscal policy dashboard for low-income economies

2.1.   General issues in fiscal policy

We can classify the main issues raised by fiscal policy in a given country broadly into four buckets, covering (1) macroeconomic aspects, (2) the composition and efficiency of revenue collection, (3) expenditure policy and its adequacy to national needs, and (4) the incidence and redistributive effects of fiscal policy.

Macroeconomic issues include the size of the government, the level of domestic revenue mobilization, possible imbalances between revenue and spending and whether they raise concerns about the long-term sustainability of public debt, and the capacity to use public finances to stabilize the economy in the face of macroeconomic shocks. Without pretending to describe the full complexity of macro-fiscal interactions, a dashboard should provide basic indicators that broadly capture macro-fiscal developments.

Revenue policy affects the growth and distribution of income through the burden imposed by taxes on different economic activities and agents. This depends on marginal and effective tax rates, [2] as well as the efficiency of each tax, reflecting legislated exemptions, tax administration capabilities, and the size of the informal economy. How the tax burden falls on the main economic bases, namely, labor, capital, and consumption, is a determinant among others, but an important one, of attractiveness for foreign investment, a key issue in many low-income economies.

Expenditure policy is first about how public spending is apportioned among various functions of the government—such as the provision of public infrastructure, education, healthcare services, defense, or security—and the way revenue is spent, in financing public investment, current primary expenses, or interest payments on public debt. Spending efficiency is more difficult to assess, given how much it may depend on national circumstances. Still, one can design rough indicators of outcomes from government expenditure in a few domains to shed light on the adequacy of the spending choices to national priorities.

More generally, an incidence analysis of the fiscal system would have to describe how the well-being of different categories of agents, differentiated by income level, gender, and so forth, is affected directly or indirectly by government taxes and expenditures. In practice, tracing the consequences of fiscal decisions for a specific class of agents is far from easy in any country, if only because of the absence of a counterfactual. Even if more and more countries are developing tools to address such issues—such as, for example, regarding tax expenditures (Heady and Mansour 2019)—the scope remains relatively narrow in most cases, limited to specific fiscal provisions, and rarely concerned with cross-country comparability. More comprehensive incidence analysis would require complex models and a wealth of microdata on individual households or firms, which is beyond the reach of many countries and beyond the scope of this paper. Still, indirect indications of how much the fiscal system as a whole redistributes income or how it bears on women can be gathered in many countries.

2.2. Issues in low-income countries

Although the aforementioned fiscal issues are fairly generic, many of them cannot easily be fully answered by simple indicators, even in high-income countries, where they can only be partly addressed through idiosyncratic national analyses. In a dashboard, generalization and simplification are demanded, which can be accomplished in different ways. In doing it for low-income countries, it is useful to take into account a few specificities that have a bearing on their fiscal priorities.

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[2] The marginal tax rate is the increase in tax to be paid when the tax base increases by one unit. The effective tax rate is the tax paid divided by the base to which it applies.

Prioritization of fiscal issues

Fiscal sustainability and domestic revenue mobilization remain overarching priorities in many low-income economies, whereas in more developed economies curbing expenditures through efficiency gains is often given prominence. Developing countries are disproportionately threatened by current-account crises, and preventing them is a primary responsibility of fiscal policy, which needs to ensure that public debt is kept on a moderate path. To do that, the ability to finance the fiscal deficit without excessive reliance on central bank financing is key to macroeconomic stability.

In principle, a fiscal balance consistent with long-term sustainability could be reached either through cuts in expenditures or by increasing revenue. However, given the SDGs and the estimated amount of public spending required to achieve them, reducing the overall expenditure level is usually not the preferred route to sustainability in low-income economies. Regardless of the SDGs, according to the IMF, a government needs to collect at least 13 to 15 percent of GDP to be able to perform its basic institutional functions (Gaspar, Jaramillo, and Wingender 2016). In the numerous countries that mobilize less than that,[3] disproportionate attention has to be paid to increasing the tax-to-GDP ratio, creating a de facto hierarchy of objectives, a point reflected by objectives included in IMF programs.[4]

As a consequence, in revenue-challenged countries, low reliability or the outright lack of some of the indicators that relate to lower-priority objectives need not be a major concern, nor a reason for excluding these indicators from the dashboard, as long as they are available and relevant in other countries. In fact, for the sake of current or future comparability, the dashboard design should not discriminate across countries, at the cost of some indicators sometimes being not filled.

Trade-offs

Still, very poor or fragile countries face challenges other than revenue mobilization, and some trade-offs between fiscal objectives are more acute there than in developed countries, making it important that the dashboard include the relevant indicators. On the revenue side, trade-offs include the following:

Revenue mobilization vs. vulnerability: Some countries can mobilize revenue by relying heavily on receipts from the exploitation of natural resources, with corresponding exposure to resource

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[3] Thirty-five of the world's 75 lowest-income economies raised less than 15 percent of GDP in taxes in 2015, according to the World Bank.

[4] Domestic revenue mobilization features among the conditionalities of most if not all of the IMF programs. It has also been prioritized by the Addis Ababa Action Agenda to foster progress toward the SDGs and in its declinations, such as in the Addis Tax Initiative, urging low-income economies to boost domestic revenue mobilization in order to achieve their SDGs (ATI 2018), or in the Tax for Development program, launched in 2018 by the Norwegian Agency for Development Cooperation (Lundstol 2018). Also see Crivelli and Gupta (2016).

exhaustion or a commodity price shock (Crivelli and Gupta 2014; Lundgren, Thomas, and York 2013).

Revenue mobilization vs. productivity gains: Tariffs are often higher in low-income economies, to protect nascent industries and because they are easier to collect than domestic taxes, although high tariffs may slow down productivity in businesses shielded from competitive pressures.

Growth vs. redistribution: Direct taxes, especially the corporate income tax (CIT), weigh more on growth and may be more administration-intensive than indirect taxes (Arnold et al. 2011; Xing 2012), but the former have more potential for progressivity than the latter.[5]

On the expenditure side, trade-offs are often captured in allocation decisions, which would, in theory, make them amenable to cost–benefit analysis. In practice comparing the (marginal) benefits of different types of expenditures (e.g., on health, education, social protection, and so on) would require knowing the objective function of the government and the efficiency of each category of spending, both unavailable in both high- and low-income economies. Spending gaps identified in the context of the SDGs exercise (Gaspar et al. 2019; Lafortune et al. 2018; Sachs 2019) provide an indication of spending needs. Since they are often large in low-income economies and unevenly distributed across the SDGs, the priority setting may be less sensitive to national preferences than in more developed countries already closer to their SDGs. However, using SDG gaps as benchmarks against which to assess the distribution of public expenses raises a number of other difficulties and will not be pursued in the dashboard, which will stick to a more down-to-earth presentation of the share of spending devoted to various functions of the government.[6]

Because of the presence of these acute trade-offs, no normative judgments about the level or direction of indicators will be expressed in the dashboard. In other words, there will be no green, yellow, or red colorings, which would imply that a higher or rising indicator is always deemed better than the opposite. It is rather hoped that presenting a variety of indicators and their position vis-à-vis benchmarks relative to a group of comparable countries will enable readers to make a more informed judgment about the adequacy of the fiscal system to the challenges faced by a country.

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[5] On average across countries, the share of direct taxes rises with income level, but such correlation collapses for the most fragile countries, characterized by low GDP per capita and a very low tax-to-GDP ratio (Mansour and Schneider 2019; Leuthold 1991).

[6] One difficulty in using estimated SDG gaps is that there is no reason why the participation of the public sector in relation to the private sector should be the same in the pursuit of all SDGs. Another is that linking fiscal assessment to SDGs may foster misclassification (harder to rule out for expenditures than for revenue) if donors make aid conditional on a measurable level of domestic effort toward the same goal. The size and direction of biases are difficult to predict, depending on how the SDG gaps are estimated and on the additionality requirements imposed by donors.

The policy–administration nexus

One issue arising everywhere, but more acutely in low-income economies, is the difficulty in dividing fiscal performance between what is due to legislated policy and what stems from the way the legislation is implemented and administered. Many tax indicators can be read only as resulting from the interaction of tax policy and tax administration, and likewise, albeit to a lesser extent, on the expenditure side. To disentangle policy from administrative aspects of tax performance, information would have to be collected on tax expenditures and tax administration capability, a task not yet performed on low-income economies in a systematic and comparable manner by any institution.[7]

More parsimoniously, the policy–administration nexus can be addressed by constructing, whenever feasible, "efficiency indicators" that compare actual tax revenue with the revenue that would result from the application of the legislated statutory tax rate to an estimated tax base. Such indicators have the advantage of being easily replicable and, therefore, somewhat comparable across countries. However, they must be interpreted with due caution, bearing in mind that the identified "inefficiencies" result from the interactions of the tax design, exemptions provided by the law, shortfalls in tax administration, and the extent of informal activities, the last two being of particular relevance in low-income economies (Fenochietto and Pessino 2013).

3.   Data

3.1.   Sources of indicators

The primary source of most indicators is national data. Most countries publish detailed information in the annual Budget Act, but its presentation often pays only scant attention to medium-term consistency or to cross-country comparability. This is especially the case in low-income economies, where limited administrative capacity of the statistical and budgetary authorities may be confronted with more pressing priorities than full alignment with international practices. However, parts of the national fiscal data are subsequently processed by international financial institutions (IFIs) to ensure comparability, so that their databases are sources of choice for indicators to fill a dashboard.

The World Bank and the IMF compile national macroeconomic and fiscal data, with a special focus on comparability over time and across countries.[8] So does the Organisation for

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[7] The International Survey of Revenue Administration (ISORA), under the aegis of the IMF and the Organisation for Economic Co-operation and Development, provides detailed comparable data on about 60 high-income and emerging economies. Those data can be used to unbundle tax administration and tax policy issues in those countries through econometric analyses, the results of which, however, do not lend themselves to inclusion in a dashboard. See Crandall, Gavin, and Masters (2019).

[8] Sometimes IFIs also run their own surveys according to their usual standards ensuring appropriate comparability, as is the case for the World Bank's Country Policy and Institutional Assessment indices and its Doing Business database.

Economic Co-operation and Development (OECD),[9] albeit for smaller sets of countries depending on the database. Regarding information on specific sectors, such as health, education, social security, trade, or the environment, harmonized data are also made available by sectoral United Nations (UN) agencies. Comparable data, including on fiscal policy and performance of many countries, are also available from large donors, such as the United States Agency for International Development or global pooled financing funds;[10] research networks;[11] or private sources, such as international consulting firms.[12]

Regarding macroeconomic information, the IMF's Article IV reports provide an overview of each country's public finances every year in a unified presentation, paying at least as much attention to low-income economies as to richer ones. This is complemented by other IMF publications—such as the *World Economic Outlook*, the *Government Finance Statistics*, or the *Fiscal Monitor*—in which revenue mobilization and expenditures are presented more in detail, at the cost of a more patchy coverage of countries in some of the tables (De Clerck and Wickens 2014). As a rule, revenue is generally more precisely documented than spending, given the IMF stakeholders' concern for macroeconomic sustainability and revenue mobilization. On expenditures, other sources, not least the UN sectoral agencies and the World Bank, supplement the IMF data, but the coverage is not universal and not annual for all variables.

What is more critically lacking in low-income economies are microeconomic surveys that would enable one to study the effects of fiscal policies on different categories of agents. This makes it difficult to assess the redistributive effects of policies, which can only be approached through proxy indicators based on mostly macrodata (see *infra*). Although imperfect, these proxies have the advantage of ensuring a degree of comparability between countries, whereas microeconomic studies are often idiosyncratic, an issue encountered in developed economies as well. That said, efforts are being made by different groups of researchers to fill this gap, by collecting basic data for as many countries as possible or by developing more sophisticated indicators for the subsets of countries that already collect the required data.[13] Resorting to these sources is therefore possible in some cases.

3.2. Derivative indicators

Some indicators are derivative, in the sense that they result from combining primary indicators from different sources, not necessarily fully consistent among themselves.

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[9] In particular in publications by its Development Assistance Committee, dealing with aid recipients among low-income economies.

[10] Including the Global Fund to Fight AIDS, Tuberculosis, and Malaria; Gavi, the Vaccine Alliance; the Global Environment Facility; and the Green Climate Fund.

[11] In particular, the International Centre for Tax and Development has developed an extensive revenue database by compiling and harmonizing data retrieved mostly from international organizations. See Prichard, Cobham, and Goodall (2014).

[12] In particular, KPMG, EY, Deloitte, PwC, McKinsey, and Boston Consulting Group all maintain public databases about the tax legislation of most countries.

[13] For example, the Commitment to Equity Institute at Tulane University provides estimates of the incidence of the tax and transfer system by decile of income in a selection of countries.

Derivative indicators should be considered as proxies. They are likely to be less reliable than primary indicators, but they can be used to measure progress in a country or to benchmark it against comparable countries. Not all primary data that feed into the calculation of derivative indicators feature in the dashboard, but sources of background information used to compute derivative indicators are provided in Appendix Table A, so as to facilitate replication and interpretation.

3.3. Accounting issues

Public accounting practices differ across countries, despite international guidelines.[14] Even if the merits of accrual accounting (under which transactions are recognized when the event occurs that generates the cash flow, even if the latter is deferred) are increasingly acknowledged and many countries are making progress toward adopting it, about three-quarters of countries still record fiscal operations under a cash system, among which are the overwhelming majority of low-income economies. For that reason, the dashboard follows a cash approach in most cases, and prefers it in the few cases where there is a choice.[15]

In some countries, the fiscal year does not coincide with the calendar year used in most national accounts, creating a time discrepancy between macroeconomic and budgetary series. Adjusting fiscal indicators for this lag would be either costly, where infra-annual data are available, or too approximate, where they are not. The discrepancy has been ignored in the dashboard, on the grounds that, absent big shocks, the adjustment to normalized ratios would remain benign.[16]

Most countries have several levels of government, with widely varying institutional and fiscal arrangements. Social security institutions are often managed with social partners outside the perimeter of central government, even if their operations for collecting and spending funds are of a fiscal nature. Some countries run extrabudgetary funds that may not fall within the purview of central government in spite of their quasi-fiscal operations. While the concept of general government, which covers most public operations of a fiscal nature, would be preferable for macroeconomic and redistributive assessments, operations of the general government are seldom documented in a comprehensive, timely, and consolidated manner. Therefore, for practical reasons, most indicators pertain to operations of the central government, supplemented with available information about social security. Regarding liabilities, however, the gross debt of the general government is preferred, because it consolidates explicit and implicit cross-liabilities among levels of government.

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[14] Most emerging and developed countries record fiscal data according to guidelines developed in the 2014 version of the IMF's *Government Finance Statistics Manual* (*GFSM 2014*). Other countries follow the *GFSM 2001*, but many low-income economies still publish fiscal data based on the *GFSM 1986*.

[15] See Cavanagh, Flynn, and Moretti (2016) for a discussion of the merits of both approaches.

[16] More precisely, where the fiscal year ends after June 30, it is associated to the current calendar year. Otherwise it is matched to the previous calendar year.

3.4. Timeliness

The dashboard aims at displaying the most recent information, subject to the availability of sufficiently detailed and reliable data. Both budget execution and macroeconomic statistics are needed, to normalize budget figures by GDP and to estimate proxies of the tax bases. A time lag of one to two years is therefore bound to occur in most countries, with the most recent indicators available in year N typically relating to year $N-2$, and many of them still estimates, subject to adjustment in subsequent years.

Not all data sources become available at this pace and some of them not yearly. Some indicators available in year N refer to years prior to $N-2$, sometimes lagging by several years. To minimize the inconvenience, derivative indicators combining data referring to different years are avoided as far as possible. However, a few indicators updated at low frequency are extrapolated by taking the most recent value, provided it does not go back beyond year $N-6$.[17]

3.5. Coverage, comparability, and consistency

In choosing a set of indicators, a "trilemma" arises, making it impossible to maximize simultaneously (1) the extent to which fiscal issues are covered, (2) the extent to which the indicators allow for comparisons across countries, and (3) the extent to which the indicators are consistent among themselves in a given country. For example, resorting mostly to national data usually ensures maximum coverage and reasonable within-country consistency, but at the cost of poor comparability across countries. Conversely, drawing indicators from a single multilateral database allows for high comparability across countries and usually good consistency within each country, but only partial coverage of the variety of fiscal issues.

In line with the objectives of the dashboard, coverage and comparability have been given priority over within-country consistency.[18] To limit the inconvenience of possible discrepancies, each indicator is sourced explicitly, so that consistency should only be expected among indicators coming from the same source. In addition, only one indicator is selected for any given concept in order to reduce the cases of open inconsistencies between indicators pertaining to nearby concepts.[19]

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[17] An exception is made for some indicators relying on infrequently collected data, including Gini coefficients, social security coverage, and gender budgeting indicators, which may date back to earlier years.

[18] An example of discrepancy across indicators can be found in Ethiopia (see *infra.*), where local governments receive transfers from the central government to implement primary and secondary public education policy. The breakdown of public expenditures by the central government, as published by the IMF, shows low educational spending and high outgoing transfers, whereas the UNESCO database records the full amount of public money spent on education, including by local governments. Both figures are useful, the IMF one as a component of a breakdown that is comparable with other countries, and the UNESCO one as informative about the actual functioning of public education in Ethiopia, but they do look inconsistent. An explanatory note would be needed to clarify the discrepancy, but it is not in the spirit of a dashboard to resort to such notes.

[19] To continue with the previous example, the share of education in government expenses will come from the IMF, whereas public spending on primary education per pupil will come from UNESCO.

4.   Selection of indicators

In this section, we discuss the selection of indicators to cover each of the four buckets of fiscal issues by looking at the way they are addressed in data-rich countries and adapting it to data constraints and priorities of low-income economies. For each set of variables, values in years 2016, 2017, and 2018 for Mozambique, Ethiopia, and Cambodia are provided in Appendix Tables B, C, D, and E.

4.1.   Macro-fiscal indicators

Countries carefully follow the main variables describing their respective macroeconomic and fiscal situation. As such information is key to investors' decisions to purchase treasury bonds, governments and national statistical offices collect it according to international standards, with the assistance of IFIs, which gather and publish it. As a consequence, except in extremely fragile countries where the statistical system and cooperation with IFIs have collapsed,[20] the main macro-fiscal indicators are no less available in low-income economies than in richer countries.

General indicators

To capture the macroeconomic situation, the dashboard includes nonfiscal variables, such as **GDP per capita** (in purchasing power parity), the rate of **real GDP growth,** and the rate of **real GDP-per-capita growth** found in the World Bank's national accounts database.[21] The amount of **resource rents,** namely the share of GDP stemming from the exploitation of natural resources, is calculated by the World Bank for each country as the sum of rents from oil, natural gas, coal, minerals, and forestry—that is, the difference between earnings of each sector and the cost of exploiting the resource.[22] It is included in the dashboard because of its relevance for the fiscal potential of many low-income economies. It varies a lot across countries as well as over time.[23]

Fiscal operations

To track revenue operations, the following macro variables are selected: **total government revenue,** including grants received from foreign sources; **domestic revenue,** defined as total revenue minus grants; and **tax revenue.** All are expressed as a share in GDP and drawn from the IMF Government Finance Statistics (GFS) database.[24] On the expenditure side, indicators include **total expenditure,** which contains interest payments, grants, and social

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[20] Somalia is a case in point, where no GDP figure has been available since 1990.

[21] Information about sources can be found in Appendix Table A for all indicators.

[22] See Jarvis et al. (2011) for a description of the methodology.

[23] The indicator is published with a lag, 2017 being the latest year available by mid-2020. Given how sensitive natural resource rents are to commodity prices, in the dashboard no attempt is made at extending the indicator to 2018.

[24] As of early 2020, the IMF GFS database was more up to date than alternative sources of fiscal data, such as the IMF World Economic Outlook database, the IMF World Revenue Longitudinal Data set, or the International Centre for Tax and Development dataset.

security expenditure where applicable, and **interest payments** shown separately. Again, both are expressed as a proportion of GDP and drawn from the IMF GFS database. To complete the macroeconomic picture of fiscal operations, we include the **overall balance,** corresponding to the difference between total revenue and total expenditure and measuring the annual change in government liabilities (recorded as "net lending/net borrowing" in the IMF GFS database), and the **primary balance,** defined as the difference between overall balance and interest payments, net of possible financial income received.

Debt burden and stabilization

Assessing debt burden and sustainability is difficult on the basis of just a few variables. For that reason the dashboard resorts both to basic macroeconomic indicators and to more sophisticated indicators constructed by IFIs, which focus on debt monitoring.

To assess fiscal sustainability and monitor the accumulation of fiscal imbalances, we look to the level and dynamics of **public debt** as a share of GDP as key indicators.[25] However, with year-to-year debt dynamics being influenced by the growth cycle as much as by fiscal policy, many countries try to get a more precise view of fiscal sustainability by separating cyclical developments in revenues, expenditures, and balances from more structural features of the fiscal system. To do that, they need to estimate trend output, a nontrivial exercise in terms of methodology and data, for which high-income countries have developed a variety of approaches.[26] Estimates of potential output exist for some low-income economies too, constructed by IFIs or academic researchers, but they are even more disparate than in richer countries and are not consistently maintained in many countries.[27]

As a consequence, the assessment of sustainability in low-income economies is bound to resort to more cursory indicators. In the dashboard, in addition to the debt-to-GDP ratio (measured at the end of the year and taken from the IMF's *Fiscal Monitor* reports), two simple sustainability indicators are included. First, **interest payments as a share of tax revenue** shows how much the tax burden would be alleviated if the government defaulted on its liabilities. It is a proxy for possible political pressure toward public bankruptcy and a rough measure of government default risk.

Secondly and more tentatively, to identify **debt stabilization effort,** a YES/NO annual variable is defined as YES on year N if public debt as a share of GDP has decreased between year $N-2$ and $N-1$ or if primary balance as a share of GDP has increased between year $N-1$ and year N.[28] If consistently YES, including when public debt is

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[25] Mostly but not exclusively: for example, low and spiraling-down expenditure may foreshadow a country sinking into a situation of fragility, where the government may become unable to perform its core functions.
[26] Whereas purely statistical filtering methods can deliver ex post estimates of trend output and growth, they perform poorly on end points, which are the most important in a fiscal dashboard. More structural methods, based on the estimation of a production function, require detailed information about capital and labor utilization, which most often is not available in low-income economies. See D'Auria et al. (2010) and CBO (2004).
[27] Among SSA countries, cyclically adjusted balance is estimated by the IMF only for Kenya and South Africa.
[28] See Debrun et al. (2019), who proposed a similar indicator, as a second best in the absence of a reliable estimate of cyclically adjusted balance.

growing, it signals government's commitment to curbing debt developments through changes in the fiscal stance. Rather than reporting the year N value of this indicator, the dashboard reflects the degree of government's commitment to debt reduction by recording debt stabilization effort as YES if the above annual indicator has been YES at least two times in the last three years, and NO otherwise.

Short-term growth stabilization is another objective of fiscal policy, often to be balanced against the debt stabilization goal.[29] Assessing properly the contribution of fiscal policy to growth stabilization requires us to sort the endogenous response of the fiscal system (the so-called automatic stabilizers) from effects of newly legislated measures, this being complicated by the fact that new measures often have lagged budget implications. Still, such calculations are routinely performed in many countries by the government or by IFIs,[30] most of the time ex ante as an input into the decision process when new measures are considered. But again, the way it is done is far from standardized. An alternative, more statistical, approach, developed by IFIs and academics, consists in using econometrics to estimate the short-term buoyancy of taxes and spending—that is, how much they actually react to GDP developments—without trying to identify the part of automatic stabilizers (Gupta and Liu 2020). This approach relies on long fiscal series and controls for other factors, which cannot be replicated easily over time.

To be applicable to most countries, one must resort to more summary measures of responsiveness, based on observable real-time variables rather than historical series or reconstructed counterfactuals. A single rough YES/NO indicator is proposed as a proxy of **short-term growth stabilization.** The annual variable is defined as YES if the sign of change in primary fiscal balance to GDP is opposite to the sign of change in real GDP growth rate, and NO otherwise. A YES signals that the budget was relaxed during a slowdown, and therefore supported growth, or that an acceleration in growth offered an opportunity to tighten the budget. Conversely, a NO signals budget procyclicality. As in the case of debt stabilization, a YES is recorded in the dashboard if the annual indicator has signaled contracyclicality (by a YES) for at least two of the last three years.[31]

Finally, the dashboard includes as an additional background indicator the latest assessment by the IMF of the **risk of overall debt distress,** included in its debt sustainability assessment based on a joint IMF–World Bank methodology. This indicator can take four values (LOW, MODERATE, HIGH, and IN DISTRESS). It summarizes the results of an exercise that addresses the complexity of assessing debt risks in low-income economies by

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[29] Although assessing the fiscal stance is an important part of any macro-assessment in developed countries, it is given less prominence in low-income economies, where macroeconomic shocks (e.g., through commodity prices or agricultural production) are often too big for the relatively small available fiscal leeway to make much difference.

[30] In particular, by the IMF in its annual Article IV reviews.

[31] Even more than the others, this indicator needs to be put into context before jumping to interpretation. For example, policies that would be recorded as procyclical may be desirable during the beginning of a recovery from a large negative shock, or they may be a lesser evil in the face of high concerns for debt sustainability.

calculating the present value of external debt, debt burden and public debt as a share of GDP, exports, and revenue under a number of stress scenarios (see IMF 2017).

4.2. Revenue indicators

Revenue sources and tax composition

In most countries, taxes, defined as compulsory payments to the government, make up by far the largest share of domestic revenue. They are complemented by nontax revenue, such as income from government property, sales of goods and services, or fines and penalties, which, taken together, usually amount to only a small part of total revenue. Therefore, the decomposition of **tax revenue** by tax category is key to any description of revenue policy. Such breakdown is available in great detail from national public accounts but needs to be simplified and standardized for readability and comparability, a task the IMF carries out in accordance with GFS standards, classifying taxes into broad categories according to their base. Data are published in the IMF's GFS revenue database for all countries the IMF covers.

Following this classification, tax revenue **as a share of GDP** is broken down in the dashboard into (1) **trade taxes,** covering tariffs and duties collected by customs at the border on imports and sometimes exports, but excluding taxes on imported goods that would also apply if the goods were produced domestically, such as a value-added tax (VAT) or excise duties; (2) **taxes on goods and services,** which include general tax on goods and services (a VAT in most countries), excises levied on some goods, and other specific taxes levied on some products (such as banking or telecommunication); and (3) **income taxes.** Income taxes are divided into taxes of income by individuals, from labor, property, and unincorporated enterprises, corresponding mostly to the personal income tax (PIT), and taxes on income by corporations, covering mostly the CIT but also other taxes on profits or surtaxes applicable to specific firms or sectors.

To facilitate the direct reading of national characteristics regarding tax composition, **trade taxes**, **taxes on goods and services,** and **income taxes** are also shown in the dashboard **as a share of total tax revenue.** It should be noted that these categories do not exactly cover all domestic revenue, since there may exist other taxes, but those generally account for less than 0.5 percent of GDP.[32]

Statutory rates

The breakdown of tax revenue provides only a partial view of the tax system. Economic agents react to the tax rate applied to each base rather than to tax-to-GDP ratios. In that regard statutory rates play an important part in shaping a country's image to external investors even if they may differ significantly from the effective rate of taxation (see below).

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[32] However, in some countries, such as Maldives, other taxes amount to up to 3 percent of GDP. See Akitoby et al. (2019).

The following main statutory rates are included in the dashboard: **weighted tariffs,** that is, the weighted mean of applied tariff rates; the **standard VAT rate** that applies to a majority of goods or, in the few countries where the general sales tax differs from a VAT, the rate applying to most sales; the **marginal PIT rate,** that is, the top marginal rate; and the **standard CIT rate.** All these rates are taken from the database of Trading Economics[33] except for the weighted tariffs, which are computed on the basis of World Trade Organization and United Nations Conference on Trade and Development data and are available in the World Bank database.

Implicit rates by economic function

Taxes usually come with a variety of rates and exemptions. Implicit (or "effective") rates provide information about how the tax system bears on specific economic functions, such as consumption, labor, or capital. To compute implicit rates, taxes need to be regrouped according to their base and total taxes levied on it to be divided by an estimate of the base. Implicit rates differ from statutory rates not only because of the schedules and exemptions attached to each tax, but also according to the possible compounding of several taxes levied on the same base, the size of the informal sector, and the capability of the tax administration (Mendoza, Razin, and Tesar 1994).

Implicit tax rates can be computed using data on individual taxpayers, which record both taxable base and tax paid, or by dividing the total tax levied by an estimate of its base calculated on the basis of national accounts. In developed and some emerging countries, this is done by multilateral organizations in a way that ensures at least some comparability.[34] In less developed economies, it is sometimes done by national authorities, academics, or IFIs using the same methodology, but on an ad hoc basis in specific years or for specific taxes. Actually, the amount of information needed to estimate implicit rates differs a lot between consumption taxes, whose base can be reasonably approximated by final household consumption as published in the national accounts, and taxes on capital, for which a satisfactory estimate of the base requires much more data.[35] Because of the lack of data in low-income economies, the dashboard includes only proxies for implicit rates, intended to call attention to cases in which implicit rates deviate from usually observed levels.

In order of decreasing reliability, the following indicators are used. The **implicit rate on consumption** is defined as the sum of revenues from trade taxes and from taxes on goods and services, divided by final household consumption. The **implicit rate on labor** is calculated as the sum of taxation on income earned by individuals (thus ignoring capital income possibly taxed under the PIT, and classifying all income of the self-employed as

[33] Trading Economics is a private online provider of official economic data. See https://tradingeconomics.com/indicators.

[34] See European Commission (2019) for a general presentation of the methodology applied in European countries, and Carey and Rabesona (2002) for the OECD methodology.

[35] See Ueda (2018) on methodology and data requirements. In low-income economies, even the gross operating surplus of corporations, a key input in estimating the CIT base, is rarely available on a basis that would make it comparable across countries.

labor income), taxes on payroll, and social security contributions (even though they are not considered as part of the tax revenue under the GFS guidelines), divided by two-thirds of GDP.[36] And the **implicit rate on capital** is the sum of taxation of corporate income and taxes on property, divided by one-third of GDP.[37] The sum of labor and capital taxes is close to the concept of direct taxation, whereas consumption taxes are close to the indirect taxation definition.[38]

In addition to these standard economic functions, in some countries, the government raises a large share of revenue by levying against the exploitation of natural resources.[39] Assessing such contribution on the basis of internationally available data is not easy, because a government may put a levy on revenue in different ways, classified under several tax and nontax items in government statistics: natural resource enterprises may pay a CIT as other corporations do; they may also or alternatively be subject to a specific taxation of their income or of their sales; the government may have shares in national resource enterprises and realize dividends from them; or it may charge royalties, considered as a rent for the use of the subsoil.[40]

One may get a rough idea of the maximum possible contribution of natural resource enterprises to government revenue by adding the revenues recorded under the various headings to which natural resource enterprises are most likely to contribute. This is an upper bound, since activities other than resource exploitation also contribute to each of the components. To be precise, maximum resource revenue is constructed by adding government income from property (covering both rents and dividends received), taxes of income and capital gains from corporations (covering many other corporations than natural resource firms, but among which natural resource firms may be prominent in some countries), and "other taxes" (not attributable to the main bases). The **upper bound of the implicit rate on natural resources** is obtained by dividing the upper bound of resource revenue by total natural resources rent (and capping it at 100 percent). The rationale for including this indicator in the dashboard is that in countries where resource rents are significant, a low indicator signals a largely untapped source of revenue for the government especially if the indicator is lower than the statutory CIT rate, which happens surprisingly often. Where the indicator is high, its information content is much lower.[41]

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[36] The two-thirds coefficient corresponds to the labor share in the usual Cobb–Douglas production function, so that the denominator approximates the share of labor income in GDP.

[37] In line with what is done on labor, the one-third coefficient corresponds to the capital share in the Cobb–Douglas production function, to approximate capital income.

[38] The concepts, however, do not coincide exactly, since, for example, the taxation of the profits of fiscal monopolies is recorded as a tax on goods and services.

[39] Typically 45 to 85 percent of domestic revenue in resource-rich countries. See IMF (2012).

[40] See Jimenez de Lucio (2014) and Jimenez de Lucio and Jones (2017), in which a template is proposed to assess mobilization of revenue from natural resources. The data collected by the IMF under the template considered has not yet been published for many countries.

[41] In some countries, especially where "other taxes" and income from property, taken together, easily dwarf low natural resource rents, the indicator rate should not be considered as informative even if the dashboard reports it.

Tax efficiency

We can measure the efficiency of a tax by dividing actual receipts by the theoretical revenue calculated as the statutory rate applied to the base. This is equivalent to dividing the implicit rate by the statutory rate of the tax, and it carries the same caveats concerning the approximation of the tax base. For **VAT efficiency,** the indicator coincides with the widely used concept of C-efficiency (Ueda 2017). With the dashboard definition, **PIT efficiency** equals PIT revenue divided by the marginal PIT rate times two-thirds of GDP, and **CIT efficiency** is CIT revenue divided by the statutory rate times one-third of GDP.[42] A high PIT efficiency may signal a schedule with only little progressivity, or that PIT applies to more than just labor income, or an efficient administration of PIT. Similarly, CIT efficiency reflects the design of the CIT, the quality of compliance, and cyclical fluctuations of losses that can be deducted or carried forward. Although caution is due when interpreting the efficiency indicators, they differ so much between countries (see below) that they do convey a sense of how effectively the income taxes are designed and collected.[43]

4.3.   Expenditure indicators

Public expenditures can be examined either according to the functions of government (defense, education, health, etc.) to which they contribute or according to their nature (capital, public wages, subventions, etc.). In most countries, the Budget Act provides detailed information about public expenditure, both before and after the budget execution, but not always in a consistent manner, and it is difficult to separate current expenditure from capital expenditure by function in a way that is consistent across countries. No broad international database provides such data, which means that the approach by nature has to remain distinct from that by function.

Other classifications of some expenditures according to beneficiaries—such as by gender, age, or quantile of revenue, or by type of agent (households vs. firms)—are sometimes available in developed countries, but on a partial basis, and limited to new measures or specific expenditures. Even in Austria, Belgium, and Spain, identified as strong performers in terms of gender budgeting, where estimates are published of how much each gender benefits from measures intended to strengthen women's participation in the labor market, they concern only a limited part of the budget, and no country has a full budget classification according to a gender perspective (Fouad and Renteria 2017). A fortiori, in low-income economies, one has to settle for only indirect information about the beneficiaries of the fiscal system (see below).

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[42] In the tax literature, indicators of efficiency or productivity of the PIT or the CIT are often constructed by dividing revenue by GDP, without correcting by the two-thirds coefficient for PIT and the one-third coefficient for CIT. They are homothetic to the dashboard indicators and convey the same information.

[43] We could have similarly defined trade tax efficiency as trade taxes divided by the product of the weighted mean of tariffs by imports of goods and services. However, this indicator turns out to be highly instable in many countries, making it difficult to use it.

Spending by function

The international Classification of the Functions of Government (COFOG) distributes expenditures by the purpose for which they are used on the basis of the administration to which the funds are allocated. Initially developed by the OECD for its member countries, the COFOG has been extended to many, but not all, countries and is available in the IMF GFS COFOG database (see Eurostat 2019 for a presentation).

Indicators selected for the dashboard are based on the first-level classification or on grouping second-level items in some cases. **Defense** covers spending for military and civil defense, including research and development spending. **Public order** includes justice, police, and prisons. The indicator for **infrastructure** expenditure is calculated as the sum of spending for "transport," "communication," and "fuel and energy."[44] **Health** is the cost of running and expanding public health services, both in-hospital and outpatient services, including the purchase of medicine and equipment. **Education** corresponds to the costs of primary, secondary, and tertiary education provided by the government. **Social protection** is social spending by the government for sickness, disability, old age, child and family allowances, unemployment, and housing. Finally, **transfers** by the central government to other levels of government, part of the "general public services" COFOG category, are included in the dashboard, as they provide information about the level of decentralization and devolution of responsibilities in the country. [45] Transfers also inform us about the size of central government spending not classified by COFOG, because its final destination is defined by another government entity. Thus, it is also an indicator of the uncertainty surrounding the interpretation of COFOG variables that pertain to the perimeter of the central government only.

All the indicators of functional spending are given **as a share of primary expenditure**, that is, total expenditure minus (net of) interest payments.

Spending by nature

The distinction between capital and current spending is meant to help distinguish expenditure that boosts medium-to-long-term potential output from expenditure that mostly contributes to the day-to-day functioning of the government and to redistribution objectives, although the distinction is far from clear-cut in practice. Some capital expenditures may support demand without any effect on the supply side of the economy (the so-called "white elephants"), and current expenditures on education are known to improve trend growth, as does spending on health or law enforcement in poor and fragile countries (Fournier and Johansson 2016). And there is a growing consensus that a more equal distribution of income

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[44] These are second-level items in the COFOG, all belonging to the "economic affairs" category. Energy spending may cover the direct purchase of energy by the government in some cases in addition to investment in production and network infrastructure.

[45] In countries where the COFOG is not available, transfers to other levels of government may still be recorded in the IMF GFS expense database, as "grants expense to other general government." This is the case in particular for Cambodia.

and wealth, obtained through transfers to the poor, can boost trend growth too (Lustig 2018; Ostry, Berg, and Tsangarides 2014).

In the dashboard, **capital expenditure** reflects the acquisition of nonfinancial assets by the government,[46] whereas **current expenditure** covers expenses that are not associated with any change in the government balance sheet.[47] These variables are available on a comparable basis for a large number of countries in the IMF GFS Statement of Government Operations database. They are both shown **as a share of primary expenditure**.

4.4. Incidence indicators

Incidence indicators are intended to measure the effects of the fiscal system on individuals categorized by income level, gender, or other characteristics. These indicators do not substitute for in-depth analysis of how fiscal policy contributes to reducing inequalities, which would require country-, measure-, and objective-specific studies. Such assessment is often prepared ex ante in developed countries as an input to the discussion of new measures introduced by the Budget Act and, less often, ex post to decide the continuation, extension, or termination of a policy already implemented. On a cross-country basis, similar ex post exercises are also run sometimes through macro-panel econometrics by the OECD, other IFIs, and researchers, but they are limited to specific fiscal aspects and run on only a selection of data-rich countries.[48] Incidence analysis is rarer in low-income countries and relies mostly on research based on existing or ad hoc national surveys (Inchauste and Lustig 2017).

Income distribution

Income distribution is directly modified by taxes and transfers. An assessment of their effects can be made on the basis of detailed household surveys, which more and more countries, including low-income economies, have been conducting, but only at infrequent intervals and using idiosyncratic questionnaires and methodologies. Still, some academic teams have been collecting, extrapolating, and harmonizing information collected through these surveys in as many countries as possible. As a consequence, it is possible to construct simple synthetic indicators of the actual or potential effects of fiscal policy on income distribution in most countries.[49]

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[46] While in theory capital expenditure should cover new acquisitions of government assets net of disposals and consumption of fixed capital, in practice it often is limited to the new acquisition of assets in low-income economies.

[47] In practice, current expenditure is calculated as the sum of expenditures on wages, goods and services, subsidies, grants, social benefits, and "other expenses" in the IMF GFS expenses database. It is equal to the difference between primary expenditure and capital expenditure.

[48] See Causa and Hermansen (2017) and Lustig (2018) for examples of such studies on income redistribution in high- and low-income economies, respectively.

[49] For example, the World Inequality Database assembles some data on the (pretax) distribution of income and wealth in more than 100 countries.

The overall effect of taxes and transfers on inequality reduction is reflected in the difference between the distribution of market income (i.e., before taxes and transfers) and the distribution of disposable income (i.e., after taxes and transfers). The dashboard measures this by an indicator of **relative inequality reduction,** defined as the difference (in percentage) between the Gini coefficients of each of the distributions. Both Gini coefficients are available for most countries (though not for every year) in the Standardized World Income Inequality Database (see Solt 2020). As a general background indicator of **inequality,** the Gini coefficient of the distribution of disposable income is also reported.

One can also infer the consequences of fiscal policy on income distribution from characteristics of the fiscal system. On the revenue side, **potential tax progressivity** can be defined as the ratio of income taxes to consumption taxes. It is based on the idea that, regardless of the actual tax schedules, income taxes have a greater potential for progressivity, because the PIT can embed progressivity in its design and the CIT taxes the ownership of productive capital, which is more concentrated at the richest end of the income distribution than income itself. Conversely, consumption taxes cannot discriminate among consumers and are even regressive, since their burden falls more on the poor, who consume a larger share of their income.[50]

To look at how effective the PIT is at taxing the richest households, we include a tentative **top 1 percent PIT indicator** in the dashboard. It is obtained by dividing the PIT-to-GDP ratio by the share of the top 1 percent households in national income multiplied by the statutory marginal PIT rate. The income share of the top 1 percent is taken from the World Inequality Database, estimated on the basis of national household surveys. The dashboard variable shows the ratio of actual PIT collected divided by the hypothetical PIT, in which only the top 1 percent would pay the tax at the full statutory marginal rate on all their income. A low indicator signals narrowness of the PIT base, poor effective progressivity of the PIT schedule, or high avoidance of the PIT.

On the expenditure side, to get a sense of the comprehensiveness of the transfer system, the dashboard includes a **social protection coverage** indicator—that is, the percentage of the population benefiting from social protection and labor programs intended to transfer income to the neediest. Based on household surveys run (infrequently) in each country, this indicator is published by the World Bank in The Atlas of Social Protection Indicators of Resilience and Equity (ASPIRE).

Gender inequality

Enhancing gender equality is an objective of all governments and it is one of the UN's SDGs; it has the potential to bring considerable economic improvements (Duflo 2012). There are various ways fiscal policy can be geared toward this objective, including by removing tax and transfer disincentives against women's participation in the labor market,

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[50] Rate differentiation by product is observed in many countries, but does not correct for regressivity, since in most cases the rich still consume more of the low-rate products than the poor.

improving public education opportunities for girls, and providing adequate health support to women (Stotsky et al. 2016). More generally, more and more countries realize that raising awareness of the gender effects of new measures during the budget process is key to making progress toward equality, and they are developing gender budgeting to this effect.

However, whether in high-income or low-income economies, there exists no single indicator that would synthesize the multiple dimensions of gender inequality and measure progress toward more fairness. The 11 indicators relating to the fifth SDG ("Achieve gender equality and empower all women and girls") measure achievements in gender equality, and such measurement has no direct link with how the economy or fiscal policy work. But a few indicators that concern other SDGs, such as health, education, and labor force participation, are collected by sex and relate more directly to fiscal policy. The dashboard includes four of those outcome indicators as the next best thing to a properly gendered assessment of fiscal incidence.

Female-to-male labor participation, as computed and available in ILOSTAT,[51] is in part a result of how the tax and transfer system treats the second earners in a household and of the availability of affordable childcare services provided or subsidized by the government. Of course, other factors, such as cultural characteristics and the sectoral specialization, also influence women's participation in the labor force.

Secondary school enrollment parity compares the proportion of girls receiving education to that of boys. The secondary level has been chosen because that level of schooling is usually provided by the central or local government and it is the level at which attendance by gender starts to differ in many countries. Like other gender outcomes, it reflects social and cultural choices, but, whatever the reason, it represents the share of public expenditure for secondary education that benefits each gender. The enrollment parity indicator is collected on selected years by the UNESCO Institute for Statistics and published in its database.[52]

Maternal mortality reflects the number of mothers who die per 100,000 deliveries. It indicates whether effective health services, public or private, are available, accessible, and oriented toward women's care. A high rate can be interpreted as a need for public health services to devote more resources to supporting women in pregnancy and childbirth. Internationally comparable maternal maternity rates are estimated by the Maternal Mortality Estimation Inter-Agency Group and published in the WHO International Database.

Finally, a **gender budgeting** indicator describes how involved countries are in including the gender dimension in the budgetary process. This is a qualitative indicator taking a value of 1, 2, or 3, with a higher value representing more gender awareness in the definition of fiscal

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[51] For comparability, modeled estimates of this ratio by the International Labour Organization are preferred to national estimates.
[52] It can also be found in the World Bank's statistical database.

policy.[53] Initially developed by the United Nations Development Programme, this indicator is maintained and published by the IMF in its IMF DataMapper.

5.   Interpretation of dashboard indicators

To guide the interpretation of quantitative variables, the dashboard includes an indication of whether they should be considered as low, high, or in the average, and of whether they have been rising, falling, or neither rising nor falling in the recent past. While the directional assessment is derived easily from looking at national data collected over three years, making a judgment about the level of a given indicator involves getting a sense of what it is in other comparable countries.

5.1.   Levels

For a given country, each variable is compared to benchmarks based on that variable's observed level in a set of comparable countries, the "comparators." To avoid resorting to ad hoc comparisons and to try to make the dashboard useful to users of IFI data, the set of comparators is defined as the lending group to which the country belongs, as established by the World Bank, which classifies all countries in four income groups according to the level of gross national income (GNI) per capita in current U.S. dollars.[54] Low-income economies fall within the low-income country (LIC) or lower-middle-income country (LMIC) categories, whose list is provided in Appendix Table F.

For every selected variable, the first quartile (Q1) and the third quartile (Q3) of its distribution among the LIC and LMIC sets are computed and used as benchmarks, against which to assess the level of the variable observed in a given country belonging to the lending group. A national indicator is marked as low if it is below the Q1 benchmark, high if above the Q3 benchmark, and average if between the Q1 and Q3 benchmarks (only high and low indicators are highlighted in the dashboard). As an example, real GDP-per-capita growth was 4.0 percent in Ethiopia and 0.5 percent in Mozambique in 2018. Both countries belong to the LIC group, for which the first quartile of the distribution of real GDP-per-capita growth is −0.4 percent and the third quartile is 3.2 percent. GDP-per-capita growth is therefore marked as high in Ethiopia (above the Q3 mark) and average in Mozambique (between that of Q1 and Q3).

The merits of this approach are twofold. First, for any indicator, by classifying only 25 percent of countries every year as high (or low), the dashboard focuses on those variables for which each country differs most from its comparators. Second, completing the level

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[53] See Stotsky et al. (2016) and Stotsky (2016) for a description of the methodology used to construct the indicator.

[54] As of July 2020, a country belongs to the low-income country group if it has a nominal current GNI per capita below US$1,036; to the lower-middle-income country group if it is between US$1,036 and US$4,045; to the upper-middle-income country (UMIC) group if it is between US$4,045 and US$12,535; and to the high-income country group, if it is above US$12,535.

assessment with a trend assessment (see below) allows the dashboard user to see immediately whether the country is further diverging from its comparators or if it shows some reversal toward the median behavior. A drawback is that each indicator has to be available for a sufficient number of countries in order for the Q1 and Q3 benchmarks to constitute meaningful benchmarks, which may involve mixing indicators concerning different years (the last available year) for different countries. Resorting to quartiles is, however, hoped to minimize the sensitivity of the thresholds to the specifics of national data.

Benchmarks for the LIC and LMIC groups are provided in Appendix Table G. They are based on data available in July 2020.

5.2. Trends

To highlight recent trends in fiscal policy, all variables are collected or constructed for three successive years. Only the most recent value of each variable is shown in the dashboard, together with an indication of whether it has been consistently moving upward (if it has been increasing in both last years), moving downward (if it has been decreasing), or moving nondirectionally (if it has been moving up one year and down the other). Note that an upward assessment for a given indicator is stronger than just saying that the level of the indicator is higher in year N than in year $N - 2$, since it contains also a judgment on the time-consistency of the change upward. Conversely, the trend in an indicator can be recorded as nondirectional even if its level in year N differs significantly from year $N - 2$, provided this difference results from two consecutive movements in opposite directions.

The choice of basing the trend assessment on a three-year timespan has evident drawbacks: it is subject to the influence of short-term economic fluctuations, and it cannot pretend to shed light on long-term or even medium-term trends in fiscal policy. The former inconvenience affects all indicators and could only be overcome by correcting them for cycles, which, as noted, is beyond the scope of most low-income economies. The latter flaw results from the approach chosen, according to which the dashboard should provide a snapshot of the most recent fiscal developments, including short-term trends, if they show any consistency. On balance, this approach has been preferred to one that would have tried to assess longer-term trends by looking at the change in the level of indicators observed over a longer period, which would have been affected by macroeconomic fluctuations too, while having also to give up the criterion of time-consistency in the changes observed. [55]

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[55] A mixed approach, basing the trend assessment on more than two changes in the indicator level, would raise other issues. If one required there to be three or more consecutive upward changes for the indicator to qualify as showing an upward trend, the dashboard would record a huge majority of indicators as nondirectional. And if a majority of upward annual changes over a given period were sufficient for an indicator to qualify as trending upward, the direction of the trend assessment could differ from that of the actual change in the indicator level over the period.

As several vintages of the dashboard of a country become available for different years, a longer-term picture of trends in fiscal policy should emerge. One can obtain that picture not only by comparing the actual levels of indicators registered at different dates but also by checking the consistency over time of short-term trends recorded in each of the years.

6.   Utilization of the dashboard

Different users should be able to exploit the dashboard in different ways:

- International organizations can use the dashboard as a source of comprehensive information to identify issues for concern (or satisfaction) that may go beyond what they are used to examining within their own mandate but are nevertheless deserving of consideration. In that regard, combined level and trend assessments help to spot variables that may be spiraling out of control or, on the contrary, be already on the way back toward normality, and to adjust peer pressure or conditionalities accordingly.

- For national authorities with no immediate access to data in other countries, there is value-added especially in the level assessments reflecting the position of each variable in comparison with other countries in the same group. Similarly, the derivative indicators, such as efficiency ratios or implicit tax rates, not readily available otherwise, provide insight into national performance in relation to what is observed elsewhere.

- For donors interested in fiscal policy, the dashboard constitutes a synoptic source of simple quantitative and qualitative data on a broad set of issues, allowing interventions to be focused on the most useful areas and, possibly through technical assistance, aimed at collecting more information in areas where information is lacking or where further investigation is called for.

Whatever the user's objective, that user should not be content with the information in the dashboard alone, but should put that information in the context of the situation in the country under consideration and of its specificities.

To illustrate how the dashboard can be used, we have constructed it for three countries: Mozambique, Ethiopia, and Cambodia (Appendix Tables H, I, and J). Benchmarks, against which national indicators are assessed, differ between Mozambique and Ethiopia, on the one hand, which are LICs, and Cambodia, on the other, which is an LMIC. For ease of reading, the level and trend assessments are reported only if they differ from "average" or "nondirectional" and are left void otherwise. Data that are not available (n.a.) are signaled explicitly.

6.1. The dashboard of Mozambique

To international organizations, the Mozambique's 2018 dashboard shows a number of worrying indicators: low and diminishing GDP-per-capita growth, high income inequality, and a high public debt whose service absorbs a large share of tax revenue, leaving no scope for short-term fiscal stabilization. This is a combination that has often led to political and economic uncertainty, and to which the high share of natural resources rents in Mozambique's GDP may further contribute. This points to the need for a coordinated approach between IFIs to reduce the debt burden, through rescheduling or pardon, while promoting structural reforms (to be identified) to foster growth and focusing aid programs on poverty reduction.

Beyond the growth and inequality indicators, which should be of major concern, national authorities may find in the dashboard some grounds for satisfaction. Domestic revenue mobilization is high, given Mozambique's development level. The government relies on high and efficient taxation of both consumption and income, but potentially also on the increasing natural resources rents, while keeping the economy open through low border taxes. In spite of the debt burden, public expenditure is strongly oriented to health and education and increasingly geared to the accumulation of capital. These characteristics suggest that the government is right to focus on debt reduction, which involves improving the primary balance. But to do that, rather than continuing to increase taxes, whose effective rates may already have reached levels that could deter investors, effort should be put into curbing primary expenditures, perhaps through a reversal of recent increases in spending on defense and public order, when the security situation makes that possible.

The dashboard may help donors prioritize their interventions, as it points out that some of the usual objectives, such as tax administration efficiency, health and education spending, or gender inequality reduction, may be less in need of external support in Mozambique than in most low-income economies. Instead, aid would be best directed to poverty relief programs to complement authorities' effort to reduce inequality.

These general insights taken from the dashboard (most of which date back to 2018) must of course be considered in the context of the external shocks Mozambique has experienced since then: devastating tropical cyclones in early 2019, intensifying terrorist attacks, the Covid-19 pandemic, and falling commodity prices in 2020. Given that it will take some time before fiscal data and indicators reflect the full consequences of those disruptions, observers should use appropriate discernment when using the dashboard in the meantime.

6.2. The dashboard of Ethiopia

The same approach applied to the dashboard of Ethiopia delivers a radically different picture. International organizations can see a country that has been growing fast, albeit at a pace now slowing, and has been delivering to its population growing per capita income, both relatively high and relatively equally distributed. Those achievements are, however, marred by the increasing burden of public debt, low and diminishing government revenue (still far from the 15 percent threshold), and an increasing bias in public spending against capital and

infrastructure expenditures (although that is perhaps blurred by a high level of fiscal decentralization, indicating a need for more research). For Ethiopia, therefore, improving domestic revenue mobilization should remain the overarching priority, as other objectives of fiscal policy do not lag significantly behind what is observed elsewhere.

 With regard to boosting domestic revenue, the dashboard may help national authorities in different ways. First it signals the need for modernizing the indirect tax system. This does not apply so much to the tariff system, which combines relatively low rates with high receipts, but it does apply to domestic consumption taxes, especially the VAT, whose rate is low and efficiency-eroding. A second objective would be to fix the PIT, which currently is characterized by a high statutory rate and low efficiency and wide-ranging avoidance by the richest taxpayers. On the expenditure side, the dashboard illuminates the need for reversing the recent trend and reprioritizing long-term growth-enhancing investment and infrastructure spending as opposed to current expenses.

Taking stock of Ethiopian priorities, donors may wish to focus their aid, on the one hand, on improving the tax system, especially the collection of the VAT and the design and efficiency of the PIT, and on the other, on identifying and financing valuable infrastructure projects. Moreover, donors should consider providing technical assistance to help Ethiopia enhance its public accounting system, so that it can keep more accurate and timely track of the large share of public expenditure under the responsibility of local governments.

Ethiopia, like other countries, has been hit by the increased uncertainty associated with the Covid-19 pandemic and trade tensions. This has been particularly detrimental to its investment-based growth model, which has also been hampered recently by civil unrest and population displacement. Those developments, not reflected in the dashboard, need to be taken into account when prioritizing public expenditures.

6.3.   The dashboard of Cambodia

International organizations are likely to be pleased by most of Cambodia's dashboard variables. Growth has been high and increasing and domestic revenue mobilization is on the way up, as is the primary balance, against a background of an overall balanced budget. Public debt is low and its burden decreasing, public spending is highly and increasingly oriented toward the accumulation of public capital, and income inequality is low. All of these indicators strongly suggest that Cambodia is in no need of heavy international assistance.

Still, the dashboard highlights several issues deserving the attention of national authorities. In the case of direct taxes, statutory rates are low versus what is usually observed in comparable countries in the LMIC group. Regarding the CIT, it may be a deliberate policy to foster and attract investment, since the efficiency of the tax is high and increasing, but that is not the case with the PIT, which with a low rate and low efficiency leaves labor largely untaxed. More generally, by relying strongly on consumption, the tax system has little capacity to contribute to income redistribution. On the expenditure side, social protection coverage is low, leaving little means to deal with a crisis or merely with the increase in

inequality observed in many economies as they keep emerging. Be it due to the PIT design, the lack of social protection, or other factors, the fall in female participation in the labor market should worry authorities, as it suggests gender discrimination and deprives the country of a source of growth.

Donors can contribute to setting effective social protection programs and to improving the design and administration of the PIT. Noting the lack of data on the distribution of public expenditure, they may also provide assistance to enhance budget statistics and set up a proper COFOG information system, which may help uncover vulnerabilities or waste relating to the way Cambodia spends public revenue.

Cambodia has continued to benefit from stable and favorable economic conditions against a background of rising global uncertainties. This has allowed it to make significant progress toward some SDGs, although social and labor policies remain a concern, including for the international community.[56]

7. Discussion

The dashboard offers a snapshot of a country's fiscal system positioned amidst comparators, but as all variables are made available with time lags, updates are important, and particular caution should be exercised to avoid misinterpretation in the event of a major economic shock. A similar challenge would arise in developed countries, which may at least partly explain why in countries where data and research abound dashboards are not the most common tool for analyzing the fiscal situation. But the fact remains that dashboards are useful in data-poorer countries; before a country reaches a position where it can do without dashboards, adopting certain statistical practices of richer countries can help improve the quality of its fiscal policy analysis.

7.1. Updates

The dashboard aims to shed light on primarily structural characteristics of the fiscal system. Some variables do react to, and show a country's vulnerabilities to, downturns or accumulation of tensions resulting from annual developments, but the dashboard's value is not in providing real-time data during cyclical changes or crises, something at which markets and IFIs are much more effective. Yearly updates of national indicators are, however, desirable to keep pace with reforms and structural developments, which may occur especially rapidly in low-income, high-growth countries.

It is less clear whether the benchmarks against which national indicators are assessed should be updated every year. On the one hand, changing them too often may blur information conveyed by national indicators, which would be marked against moving targets. In addition, as long as there is no global crisis, quartiles of the distribution of comparators are likely to be

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[56] Concerns over human and labor rights might jeopardize Cambodia's access to the Everything but Arms preferential trade scheme.

fairly inert except for the yearly change in the list of comparators published by the World Bank, which does not constitute a strong rationale for reassessing progress made by third countries. On the other hand, waiting too long before updating the thresholds would allow changes in comparators and quartiles to accumulate and possibly involve radical reevaluation of the performance of individual countries. And even if the reference year for the thresholds is unchanged, that year's data continue to arrive in subsequent years, either through adjustments to previously published data or through coverage of new comparator countries, so that the thresholds may change over time even if they continue to relate to the same year.

All in all, given the trade-offs, the recommendation would be to update the thresholds about every three years, so as not to lose pace with national indicators, while justifying changes in benchmarks by a reasonable lapse of time.

7.2. Crises

As is the case with all statistics, a country's dashboard may become quickly outdated during an economic crisis, whether national or global, like the one precipitated by the coronavirus pandemic. Therefore, first and foremost, the advent of a crisis calls for precautions in the way one reads the dashboard, to take into account the lags. For one or two years at least, the dashboard will keep relating to the precrisis period, and that may last even longer if the crisis involves a disruption in the collection of statistical data. In the interval, the best one can do is keep in mind that the economic situation is evolving, including the relative positions of countries, but that precrisis information may remain a source of insight into the way a country's fiscal system may be reacting during the crisis. For example, a low (potential) reliance on revenue from natural resources shelters public finances from a fall in commodity prices, or extensive social security coverage may prevent too steep an increase in inequality, while subjecting the general budget to fiscal pressures.

Once data concerning a period of crisis becomes available through updates, the reading of the dashboard should depend on whether the crisis affected only one country (such as a war, a local epidemic, or a shock to the price of a commodity the country produces) but not the majority of its comparators, or whether the crisis simultaneously visited a large number of comparable countries. In the former case, the dashboard is heavily affected by national short-term developments and valuable information may be derived from the boxes left empty. By showing the variables that, despite the shock, did not diverge much from those observed elsewhere, the dashboard would signal strength of the country that underwent a crisis. Such may be the case, for example, if the tax-to-GDP revenue remains in the average range or if capital expenditure has remained above the Q1 threshold. In addition, some variables may deserve particular attention during a national crisis, such as the tax efficiency indicators (signaling changes in the prevalence of informality) or the female participation indicators (signaling women's vulnerability during economic shocks).

A global crisis, instead, will in due time affect both national indicators and benchmarks against which those indicators are assessed. Consequently, in such a case, one should interpret the dashboard differentially rather than in absolute terms, since it is how a country

diverges from the common trajectory that will prove informative about its fiscal characteristics rather than its trajectory by itself. In this case, however, one should not overinterpret the first deviations that appear, because they may reflect a gap between collection of the national data and that of the benchmarks, which need more time to be updated. A global crisis, then, presents a good reason for a temporary increase in the frequency at which the benchmarks are revalued.

7.3. Improvements

The dashboard can be improved by more comprehensive and timely gathering of information by governments and IFIs. In terms of timeliness, many countries (belonging to both the LIC and LMIC groups) are statistical laggards. Efforts to catch up would improve the quality and accuracy of the dashboard through more up-to-date national data and benchmarks more representative of the practice in the whole comparator group.[57]

Beyond timeliness of reporting, the dashboard could be improved in several directions if more data were gathered in more countries and if it could be done along an agreed, harmonized methodology. A case in point is the adjustment for the business cycle. It would be good to be able to see through cyclical developments when the budget balance and, ideally, tax receipts and expenses are analyzed. More than data, it is commonly agreed that it is detrending methodology applicable to both high- and low-income economies that is missing. Numerous efforts to compute revenue and expenditure elasticities in different sets of countries have not yet solidified into a globally accepted and permanent approach to building a large database of structural fiscal developments and maintaining it over time (Dudine and Jalles 2017; Price, Dang, and Botev 2015; Shome 1988). A key improvement to any fiscal dashboard would be to separate more effectively medium- and long-term structural issues in fiscal policy from short-term ones.

On the revenue side, forthcoming results from the IMF initiative to develop a proper assessment of government revenue from exploitation of natural resources should greatly improve on the imperfect upper-bound implicit taxation indicator proposed in the dashboard (Jimenez de Lucio and Jones 2017; Jimenez de Lucio 2014; IMF 2012). It would be especially useful if the data were collected and organized so that the other sources of revenue could easily be trimmed from revenue from extractive industries.

On the expenditure side, a priority would be to extend the COFOG to all countries. Since many countries already provide data organized along this classification, it does make sense to try to convince the remaining countries to adopt it one by one. A further improvement, which would require a more global adoption before it could be added as an input in a dashboard, would consist of separating capital and current expenditures for at least some functions of government. This would be of particular interest in the cases of the

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[57] In July 2020, to get a sufficiently large sample of comparators and in order to compute thresholds for derivative indicators on the basis of input variables that all relate to the same year, a majority of the benchmark figures shown in Appendix Table G still relate to year 2017.

transportation, communication, and energy functions, enabling one to monitor public investment in infrastructure. In addition, extending the COFOG to general government, including local governments, would greatly improve the expenditure assessment in some countries. As that would likely be a heavy statistical endeavor, it could be limited to those countries where fiscal federalism is most developed[58] and supported by external technical assistance.

Much remains to be done also in terms of incidence analysis to get a better idea of how the costs and benefits of the fiscal system are distributed between households and genders. A first step would be to conduct more household surveys, extend their coverage, and increase their frequency. In particular, countries where they are almost nonexistent[59] would benefit from assistance in developing them. A second, more tentative, step would consist in agreeing on a core questionnaire that would be included and processed similarly in all national household surveys, so as to foster stronger comparability on at least a subset of priority variables, such as sources of income or consumption of public goods and services (Chancel et al. 2019).

Finally, it should be stressed that the dashboard proposed here is based on the current challenges and constraints low-income economies face. As those change over time, some indicators may become obsolete and not be worth being maintained, whereas others may become relevant and/or available. To take only one example, starting in 2020, the Covid-19 crisis will interact heavily with fiscal policy in most countries, through tax receipts, tax relief, health and social security spending, and more. As long as the crisis lasts, an indicator of the national incidence of the pandemic would be key in interpreting fiscal developments. To that effect, one could easily construct a background variable describing the excess mortality rate and include it in the dashboard for most countries, which would help when interpreting the other indicators.[60]

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[58] Such as Ethiopia.

[59] Such as Cambodia.

[60] Crude mortality rates per 1,000 inhabitants are published by the United Nations. They are currently available until 2018 for most countries. For example, the excess death indicator could be defined as the 2020 rate minus the rate that would result from prolonging the trend observed over the 2015–2019 period (downward sloping in most low-income economies).

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Appendix

Table A. Sources of the indicators used in the dashboard

	Indicator	Unit	Source	Included in the dashboard
1	GDP per capita (nominal)	Current USD	World Bank National Accounts Database	no
2	GDP per capita (PPP)	Current international USD	World Bank National Accounts Database	yes
3	Real GDP growth	%	World Bank National Accounts Database	yes
4	Real GDP-per-capita growth	%	World Bank National Accounts Database	yes
5	Natural resources rents	% of GDP	World Bank Database	yes
6	Total revenue	% of GDP	IMF GFS Statement of Operations Database	yes
7	Grants	% of GDP	IMF GFS Revenue Database	no
8	Domestic revenue	% of GDP	IMF GFS Statement of Operations Database	yes
9	Tax revenue	% of GDP	IMF GFS Revenue Database	yes
10	Trade taxes	% of GDP	IMF GFS Revenue Database	yes
11	Taxes on goods and services	% of GDP	IMF GFS Revenue Database	yes
12	VAT	% of GDP	IMF GFS Revenue Database	no
13	Income taxes	% of GDP	IMF GFS Revenue Database	yes
14	CIT	% of GDP	IMF GFS Revenue Database	no
15	PIT	% of GDP	IMF GFS Revenue Database	no
16	Payroll taxes	% of GDP	IMF GFS Revenue Database	no
17	Taxes on property	% of GDP	IMF GFS Revenue Database	no
18	Other taxes	% of GDP	IMF GFS Revenue Database	no

19	Nontax revenue	% of GDP	IMF GFS Revenue Database	no
20	Social contributions	% of GDP	IMF GFS Revenue Database	no
21	Property income revenue	% of GDP	IMF GFS Revenue Database	no
22	Upper bound of resource revenue	% of GDP	(22) = (14) + (18) + (21)	no
23	Total expenditure	% of GDP	IMF GFS Statement of Operations Database	yes
24	Interest payments	% of GDP	IMF GFS Expenses Database	yes
25	Primary expenditure	% of GDP	(25) = (23) − (24)	yes
26	Defense	% of GDP	IMF GFS COFOG Database	no
27	Public order	% of GDP	IMF GFS COFOG Database	no
28	Infrastructure	% of GDP	(28) = (29) + (30) + (31)	no
29	Transportation	% of GDP	IMF GFS COFOG Database	no
30	Communication	% of GDP	IMF GFS COFOG Database	no
31	Fuel and energy	% of GDP	IMF GFS COFOG Database	no
32	Health	% of GDP	IMF GFS COFOG Database	no
33	Education	% of GDP	IMF GFS COFOG Database	no
34	Social protection	% of GDP	IMF GFS COFOG Database	no
35	Transfers	% of GDP	IMF GFS COFOG Database	no
36	Capital expenditure	% of GDP	IMF GFS Statement of Operations Database	no
37	Current expenditure	% of GDP	(35) = (25) − (36)	no
38	Defense	% of primary expenditure	(38) = (26) / (25)	yes
39	Public order	% of primary expenditure	(39) = (27) / (25)	yes
40	Infrastructure	% of primary expenditure	(40) = (28) / (25)	yes

41	Health	% of primary expenditure	(41) = (32) / (25)	yes
42	Education	% of primary expenditure	(42) = (33) / (25)	yes
43	Social protection	% of primary expenditure	(43) = (34) / (25)	yes
44	Transfers	% of primary expenditure	(44) = (35) / (25)	yes
45	Capital expenditure	% of primary expenditure	(45) = (36) / (25)	yes
46	Current expenditure	% of primary expenditure	(46) = (37) / (25)	yes
47	Overall balance	% of GDP	IMF GFS Statement of Operations Database	yes
48	Primary balance	% of GDP	IMF GFS Statement of Operations Database	yes
49	Public debt	% of GDP	IMF Fiscal Monitor	yes
50	Interest payments as a share of tax revenue	% of domestic revenue	(50) = (24) / (9)	yes
51	Debt stabilization effort	Yes/No	Yes if (48) increases or (49) decreases	yes
52	Short-term stabilization	Yes/No	Yes if (48) and (3) move in opposite direction	yes
53	Weighted tariffs	%	UNCTAD and WTO in World Bank Database	yes
54	Imports of goods and services	% of GDP	World Bank Macroeconomic	no
55	Trade tax efficiency	%	(55) = (10) / [(53) ∗ (54)]	yes
56	Standard VAT rate	%	Trading Economics	yes
57	Final household consumption	% of GDP	World Bank Macroeconomic	no
58	VAT efficiency	%	(58) = (12) / [(56) ∗ (57)]	yes
59	Marginal PIT rate	%	Trading Economics	yes
60	PIT efficiency	%	(60) = (15) / [(59) ∗ (2/3)]	yes
61	Standard CIT rate	%	Trading Economics	yes
62	CIT efficiency	%	(62) = (14) / [(61) ∗ (1/3)]	yes

63	Implicit rate on consumption	%	$(63) = [(10) + (11)] / (57)$	yes
64	Implicit tax on labor	%	$(64) = [(13) + (16) + (20)]/(2/3)$	yes
65	Implicit rate on capital	%	$(65) = [(14) + (17)]/(1/3)$	yes
66	Implicit rate on natural resources (upper	%	$(66) = (22) / (5)$	yes
67	Potential tax progressivity	%	$(67) = (13) / [(10) + (11)]$	yes
68	Top 1% PIT indicator	%	$(68) = (15) / [(69)*(59)]$	yes
69	Top 1% share in GDP	% of GDP	World Inequality Database	no
70	Social protection coverage	% of population	World Bank ASPIRE	no
71	Gini of market income	%	SWIID	no
72	Gini of disposable income	%	SWIID	yes
73	Relative inequality reduction	%	$(73) = [(71) − (72)] / (71)$	yes
74	Gender budgeting index	1/2/3	IMF DataMapper	yes
75	Risk of overall debt distress	Low/Moderate/High/In distress	IMF Article IV Reviews	yes

Note: GDP = gross domestic product; USD = U.S. dollars; PPP = purchasing power parity; IMF GFS = International Monetary Fund Government Finance Statistics; VAT = value-added tax; CIT = corporate income tax; PIT = personal income tax; COFOG = Classification of the Functions of Government; UNCTAD = United Nations Conference on Trade and Development; WTO = World Trade Organization; SWIID = Standardized World Income Inequality Database.

Table B. Underlying macro-fiscal variables for Mozambique, Ethiopia, and Cambodia

		Mozambique			Ethiopia			Cambodia		
		2016	2017	2018	2016	2017	2018	2016	2017	2018
GDP per capita (PPP)	(current international USD)	1,365	1,284	1,321	1,880	2,021	2,154	3,675	3,928	4,262
Real GDP growth	(%)	3.8	3.7	3.4	8.0	10.1	7.7	7.0	7.0	7.5
Real GDP-per-capita growth	(%)	0.9	0.8	0.5	6.5	6.6	4.0	5.4	5.4	5.9
Resource rents	(% of GDP)	17.6	19.5	n.a.	11.4	10.6	n.a.	1.9	1.7	n.a.
Total revenue	(% of GDP)	25.9	27.1	25.8	11.4	10.4	10.2	19.8	20.5	22.2
Total expenditure	(% of GDP)	27.8	25.2	28.0	15.1	15.1	14.2	20.2	21.5	22.2
Domestic revenue	(% of GDP)	23.7	25.1	23.8	9.5	9.6	9.0	17.4	18.6	20.1
Tax revenue	(% of GDP)	22.2	23.2	21.9	8.2	7.7	7.5	14.8	15.8	17.2
Overall balance	(% of GDP)	-2.0	1.9	-2.2	-3.7	-4.7	-4.0	-0.4	-1.0	0.0
Primary balance	(% of GDP)	0.4	4.1	0.9	-3.3	-4.2	-3.5	0.0	-0.7	0.3
Public debt	(% of GDP)	119.9	102.4	107.2	55.8	57.7	61.1	29.1	30.0	28.6
Interest payments	(% of GDP)	2.4	2.3	3.1	0.5	0.5	0.5	0.4	0.3	0.4
Interest payments/tax revenue	(%)	10.7	9.7	14.2	5.7	6.2	6.7	2.4	2.0	2.0
Debt stabilization effort	(YES/NO)	n.a.	Yes	Yes	No	No	Yes	Yes	Yes	Yes
Short-term stabilization	(YES/NO)	Yes	Yes	No	Yes	Yes	Yes	Yes	No	No
Risk of overall debt distress		In distress *(2018)*			High *(2018)*			Low *(2018)*		

Sources: See Table A.

Note: GDP = gross domestic product; PPP = purchasing power parity; USD = U.S. dollars; n.a. = not available.

Table C. Underlying revenue variables for Mozambique, Ethiopia, and Cambodia

		Mozambique			Ethiopia			Cambodia		
		2016	2017	2018	2016	2017	2018	2016	2017	2018
Tax revenue	(% of GDP)	22.2	23.2	21.9	8.2	7.7	7.5	14.8	15.8	17.2
Trade taxes	(% of GDP)	1.8	1.5	1.7	2.2	2.0	2.2	2.5	2.2	2.4
Taxes on goods and services	(% of GDP)	9.6	8.1	8.6	4.1	3.9	3.7	8.7	9.4	10.7
Income taxes	(% of GDP)	9.3	12.0	10.3	2.3	2.3	2.2	3.6	4.2	4.1
Nontax revenue	(% of GDP)	1.0	1.2	1.1	1.3	1.9	1.5	2.5	2.8	2.9
Trade taxes	(% of tax revenue)	8.3	6.5	7.8	26.7	25.3	29.6	16.5	13.9	13.9
Taxes on goods and services	(% of tax revenue)	43.0	35.1	39.4	50.1	50.1	49.5	58.9	59.3	62.2
Income taxes	(% of tax revenue)	41.6	51.8	46.9	28.1	29.7	29.3	24.5	26.8	23.9
Weighted tariffs	(%)	3.6	5.6	4.2	12.1	12.1	12.1	9.8	9.8	9.8
Standard VAT rate	(%)	17.0	17.0	17.0	15.0	15.0	15.0	10.0	10.0	10.0
Marginal PIT rate	(%)	32.0	32.0	32.0	35.0	35.0	35.0	20.0	20.0	20.0
Standard CIT rate	(%)	32.0	32.0	32.0	30.0	30.0	30.0	20.0	20.0	20.0
Implicit tax on consumption	(%)	17.4	14.9	15.8	9.5	8.7	8.5	14.7	15.8	18.5
Implicit tax on labor	(%)	6.6	6.6	6.9	0.6	0.7	0.6	1.5	1.7	1.3
Implicit tax on capital	(%)	16.0	25.0	19.5	5.1	5.3	4.9	7.8	9.2	9.7
Implicit tax on natural resources	(%)	43.0	54.7	n.a.	17.9	20.7	n.a.	100.0	100.0	n.a.
VAT efficiency	(%)	63.1	51.3	56.9	33.4	31.1	28.3	67.0	71.9	79.9
PIT efficiency	(%)	18.3	17.3	17.7	1.9	2.3	2.1	7.7	8.6	6.6
CIT efficiency	(%)	50.1	78.0	60.9	14.5	15.0	14.1	39.2	46.2	48.5

Sources: See Table A.

Note: GDP = gross domestic product; n.a. = not available; VAT = value-added tax; PIT = personal income tax; CIT = corporate income tax.

Table D. Underlying expenditure variables for Mozambique, Ethiopia, and Cambodia

		Mozambique			Ethiopia			Cambodia		
		2016	2017	2018	2016	2017	2018	2016	2017	2018
Primary expenditure	(% of GDP)	25.5	23.0	24.9	14.6	14.6	13.7	19.9	21.2	21.9
Defense	(% of GDP)	1.1	1.0	1.4	0.6	0.6	0.6	n.a.	n.a.	n.a.
Public order	(% of GDP)	2.7	2.6	2.8	0.3	0.3	0.3	n.a.	n.a.	n.a.
Infrastructure	(% of GDP)	1.9	1.7	2.3	1.8	1.5	1.2	n.a.	n.a.	n.a.
Health	(% of GDP)	2.8	2.4	2.6	0.5	0.4	0.6	n.a.	n.a.	n.a.
Education	(% of GDP)	6.4	6.1	5.9	2.2	2.4	2.1	n.a.	n.a.	n.a.
Social protection	(% of GDP)	1.2	0.5	0.8	1.2	0.7	0.7	n.a.	n.a.	n.a.
Transfers	(% of GDP)	0.5	0.5	0.5	5.5	6.2	5.7	1.0	1.2	1.6
Defense	(% of primary expenditure)	4.5	4.5	5.4	4.1	4.3	4.2	n.a.	n.a.	n.a.
Public order	(% of primary expenditure)	10.7	11.4	11.4	2.3	2.1	2.2	n.a.	n.a.	n.a.
Infrastructure	(% of primary expenditure)	7.3	7.2	9.4	12.3	10.5	8.5	n.a.	n.a.	n.a.
Health	(% of primary expenditure)	11.1	10.5	10.6	3.8	2.9	4.3	n.a.	n.a.	n.a.
Education	(% of primary expenditure)	25.2	26.6	23.9	15.1	16.1	15.4	n.a.	n.a.	n.a.
Social protection	(% of primary expenditure)	4.7	2.4	3.0	8.3	4.5	5.4	n.a.	n.a.	n.a.
Transfers	(% of primary expenditure)	1.9	2.0	1.9	37.8	42.5	41.6	5.2	5.6	7.5
Capital expenditure	(% of primary expenditure)	28.8	29.4	30.8	33.1	25.4	24.7	36.4	34.9	32.8
Current expenditure	(% of primary expenditure)	71.2	70.6	69.1	66.9	74.6	75.2	63.6	66.1	67.3

Sources: See Table A.

Note: GDP = gross domestic product; n.a. = not available.

Table E. Underlying incidence variables for Mozambique, Ethiopia, and Cambodia

		Mozambique			Ethiopia			Cambodia		
		2016	2017	2018	2016	2017	2018	2016	2017	2018
Inequality in disposable income	(%)	47,3 *(2015)*			33,4 *(2015)*			35,8 *(2012)*		
Inequality reduction	(%)	3,1 *(2015)*			1,9 *(2015)*			2,1 *(2012)*		
Potential tax progressivity	(%)	81,1	124,7	99,4	36,6	39,4	37,0	32,4	36,6	31,4
Top 1% PIT indicator	(%)	39.4	37.2	n.a.	7.6	8.9	n.a.	n.a.		
Social protection coverage	(%)	6.3 *(2014)*			13.2 *(2010)*			3.1 *(2013)*		
Female/male labor participation	(%)	97,5	97,7	98,0	84,6	85,1	85,5	86,3	86,1	86,0
2° school enrollment parity	(%)	89,4 *(2017)*			96,2 *(2015)*			85,5 *(2008)*		
Maternal mortality	(per 100,000)	304	289	n.a.	422	401	n.a.	169	160	n.a.
Gender budgeting	(1 to 3)	2 *(2015)*			2 *(2015)*			n.a.		

Sources: See Table A.

Note: PIT = personal income tax; n.a. = not available.

Table F. Low-income countries and lower-middle-income countries as of July 1, 2020

Low-income	Lower-middle-income
Afghanistan	Angola
Burkina Faso	Algeria
Burundi	Bangladesh
Central African Republic	Benin
Chad	Bhutan
Congo Democratic Republic	Bolivia
Eritrea	Cabo Verde
Ethiopia	Cambodia
The Gambia	Cameroon
Guinea	Comoros
Guinea-Bissau	Congo Republic
Haiti	Côte d'Ivoire
North Korea	Djibouti
Liberia	Egypt
Madagascar	El Salvador
Malawi	Eswatini
Mali	Ghana
Mozambique	Honduras
Niger	India
Rwanda	Kenya
Sierra Leone	Kiribati
Somalia	Kyrgyz Republic
South Sudan	Laos
Sudan	Lesotho
Syria	Mauritania
Tajikistan	Micronesia
Togo	Moldova
Uganda	Mongolia
Yemen	Morocco
	Myanmar
	Nepal
	Nicaragua
	Nigeria
	Pakistan
	Papua New Guinea
	Philippines
	Sao Tomé and Principe
	Senegal
	Solomon Islands
	Sri Lanka
	Tanzania
	Timor-Leste
	Tunisia
	Ukraine
	Uzbekistan

	Vanuatu
	Vietnam
	West Bank and Gaza*
	Zambia
	Zimbabwe

Source: World Bank.

* We exclude West Bank and Gaza from the list of comparators although the World Bank classifies them together as an LMIC.

Table G. Benchmarks used to assess the level of dashboard variables

	LICs		LMICs			LICs		LMICs	
	Q1	Q3	Q1	Q3		Q1	Q3	Q1	Q3
Economic background					*Debt burden*				
GDP per capita (PPP)	1290	2140	3460	7820	Public debt	40.8	64.6	30.5	65.4
Real GDP growth	2.0	6.5	2.3	6.3	Interest payments	0.5	2.0	0.9	2.7
Real GDP-per-capita growth	-0.4	3.2	0.6	4.0	Interest payments/tax revenue	5.3	9.9	3.2	18.6
Resource rents	5.8	19.7	1.5	9.1	Debt stabilization effort				
Inequality	38.0	44.6	35.9	46.9	Risk of overall debt distress				
					Short-term stabilization				
Budget balance					*Expenditure (% of primary expenditure)*				
Total revenue	13.0	22.5	18.2	34.8	Capital expenditure	28.0	35.0	8.6	25.7
Domestic revenue	10.9	18.6	15.1	27.3	Current expenditure	65.0	71.96	91.4	74.3
Tax revenue	9.4	16.9	12.2	18.3	Defense	2.6	15.4	1.3	10.8
Total expenditure	15.7	24.6	19.9	30.2	Public order	1.4	15.3	4.6	11.3
Primary expenditure	15.0	22.9	17.1	29.2	Infrastructure	4.0	11.9	2.8	16.0
Overall balance	-4.6	0.1	-5.8	-1.2	Health	3.7	8.4	4.6	9.9
Primary balance	-1.3	1.0	-4.0	0.4	Education	12.3	16.9	12.9	19.0
Revenue (% of GDP)					Social protection	1.3	6.3	1.1	16.2
Trade taxes	1.2	1.8	0.6	1.8	Transfers	1.3	12.8	1.9	22.5
Taxes on goods and services	2.5	6.6	3.5	7.0	*Implicit tax rates*				
Income taxes	1.5	3.6	2.0	4.9	Implicit tax on consumption	5.0	12.1	7.1	12.3
Revenue (% of total taxes)					Implicit tax on labor	1.7	6.0	1.8	5.1
Trade taxes	10.1	33.9	6.9	18.3	Implicit tax on capital	2.7	8.1	5.3	11.3
Taxes on goods and services	38.4	56.0	39.6	57.5	Implicit tax on natural resources (upper bound)	8.8	31.1	35.6	100.0
Income taxes	19.9	36.5	26.0	45.1	*Income redistribution*				
Statutory tax rates					Inequality reduction	5.0	5.9	5.1	6.6
Weighted tariffs	6.4	13.9	2.1	10.3	Potential tax progressivity	28.4	59.1	36.5	87.2
Standard VAT rate	15.0	18.0	10.0	18.0	Top 1% PIT indicator	9.5	43.6	37.4	76.4
Marginal PIT rate	20.0	31.5	22.8	35.0	Social protection coverage	5.3	30.5	16.8	60.0
Standard CIT rate	28.5	33.5	23.6	30.0	*Gender incidence*				
Tax efficiency					Female-to-male labor participation	73.9	94.8	58.9	88.5
VAT efficiency	27.2	49.7	31.2	71.6	Secondary school enrollment parity	74.3	101.3	98.5	109.7
PIT efficiency	5.1	19.3	7.0	17.3	Maternal mortality	308	650	64	310
CIT efficiency	9.0	25.0	20.6	47.3	Gender budgeting	1	3	1	3

Sources and units: See Table A.

Note: LIC = low-income country; LMIC = lower-middle-income country; GDP = gross domestic product; PPP = purchasing power parity; VAT = value-added tax; PIT = personal income tax; CIT = corporate income tax.

Table H. Dashboard of Mozambique

	2018	Level	Direction		2018	Level	Direction
Economic background				*Debt burden*			
GDP per capita (PPP)	1,321			Public debt	107.2	HIGH	
Real GDP growth	3.4		DOWN	Interest payments	3.1	HIGH	
Real GDP-per-capita growth	0.5	LOW	DOWN	Interest payments/tax revenue	14.2	HIGH	
Resource rents	19.7	HIGH	UP	Debt stabilization effort	Yes		
Inequality	47.3	HIGH	n.a.	Risk of overall debt distress	In distress		
				Short-term stabilization	No		
Budget balance				*Expenditure (% of primary expenditure)*			
Total revenue	25.8	HIGH		Capital expenditure	30.8		UP
Domestic revenue	23.8	HIGH		Current expenditure	69.1		DOWN
Tax revenue	21.9	HIGH		Defense	5.4		UP
Total expenditure	28.0	HIGH		Public order	11.4		UP
Primary expenditure	24.9	HIGH		Infrastructure	9.4		
Overall balance	-2.2			Health	10.6	HIGH	
Primary balance	0.9			Education	23.9	HIGH	
Revenue (% of GDP)				Social protection	3.0		
Trade taxes	1.7			Transfers	1.9		
Taxes on goods and services	8.6	HIGH		*Implicit tax rates*			
Income taxes	10.3	HIGH		Implicit tax on consumption	15.8	HIGH	
Revenue (% of total taxes)				Implicit tax on labor	6.9	HIGH	UP
Trade taxes	7.8	LOW		Implicit tax on capital	19.5	HIGH	
Taxes on goods and services	39.4			Implicit tax on natural resources (upper bound)	54.7	HIGH	UP
Income taxes	46.9	HIGH		*Income redistribution*			
Statutory tax rates				Inequality reduction	6.2	HIGH	n.a.
Weighted tariffs	4.2	LOW		Potential tax progressivity	99.4	HIGH	
Standard VAT rate	17.0			Top 1% PIT indicator	37.2		n.a.
Marginal PIT rate	32.0	HIGH		Social protection coverage	6.3		n.a.
Standard CIT rate	32.0			*Gender incidence*			
Tax efficiency				Female-to-male labor participation	98.0	HIGH	
VAT efficiency	56.9	HIGH		Secondary school enrollment parity	89.4		
PIT efficiency	17.7			Maternal mortality	289		
CIT efficiency	60.9	HIGH		Gender budgeting	2		

Sources and units: See Tables A to G.

Note: GDP = gross domestic product; PPP = purchasing power parity; VAT = value-added tax; PIT = personal income tax; CIT = corporate income tax; n.a. = not available.

Table I. Dashboard of Ethiopia

	2018	Level	Direction		2018	Level	Direction
Economic background				*Debt burden*			
GDP per capita (PPP)	2,154	HIGH	UP	**Public debt**	61.1		UP
Real GDP growth	7.7	HIGH		**Interest payments**	0.5	LOW	
Real GDP-per-capita growth	4.0	HIGH	DOWN	**Interest payments/tax revenue**	6.7		UP
Resource rents	10.6		DOWN	**Debt stabilization effort**	No		
Inequality	33.4	LOW	n.a.	**Risk of overall debt distress**	High		
				Short-term stabilization	Yes		
Budget balance				*Expenditure (% of primary expenditure)*			
Total revenue	10.2	LOW	DOWN	**Capital expenditure**	24.7	LOW	DOWN
Domestic revenue	9.0	LOW	DOWN	**Current expenditure**	75.2	HIGH	UP
Tax revenue	7.5	LOW	DOWN	**Defense**	4.2		
Total expenditure	14.2	LOW	DOWN	**Public order**	2.2		
Primary expenditure	13.7	LOW	DOWN	**Infrastructure**	8.5		DOWN
Overall balance	-4.0			**Health**	4.3		
Primary balance	-3.5			**Education**	15.4		
Revenue (% of GDP)				**Social protection**	5.4		
Trade taxes	2.2	HIGH		**Transfers**	41.6	HIGH	
Taxes on goods and services	3.7			*Implicit tax rates*			
Income taxes	2.2		DOWN	**Implicit tax on consumption**	7.6		DOWN
Revenue (% of total taxes)				**Implicit tax on labor**	0.6	LOW	
Trade taxes	29.6			**Implicit tax on capital**	4.9		
Taxes on goods and services	41.3			**Implicit tax on natural resources (upper bound)**	20.7		UP
Income taxes	29.3			*Income redistribution*			
Statutory tax rates				**Inequality reduction**	5.4		n.a.
Weighted tariffs	4.2	LOW		**Potential tax progressivity**	37.0		
Standard VAT rate	15.0	LOW		**Top 1% PIT indicator**	8.9	LOW	n.a.
Marginal PIT rate	35.0	HIGH		**Social protection coverage**	13.2		n.a.
Standard CIT rate	30.0			*Gender incidence*			
Tax efficiency				**Female-to-male labor participation**	85.5		UP
VAT efficiency	28.3		DOWN	**Secondary school enrollment parity**	96.2		n.a.
PIT efficiency	2.1	LOW		**Maternal mortality**	401		DOWN
CIT efficiency	14.1			**Gender budgeting**	2		n.a.

Sources and units: See Tables A to G.

Note: GDP = gross domestic product; PPP = purchasing power parity; VAT = value-added tax; PIT = personal income tax; CIT = corporate income tax; n.a. = not available.

Table J. Dashboard of Cambodia

	2018	Level	Direction		2018	Level	Direction
Economic background				*Debt burden*			
GDP per capita (PPP)	4,262		UP	**Public debt**	28.6	LOW	
Real GDP growth	7.5	HIGH	UP	**Interest payments**	0.4	LOW	
Real GDP-per-capita growth	5.9	HIGH	UP	**Interest payments/tax revenue**	2.0	LOW	DOWN
Resource rents	1.7		DOWN	**Debt stabilization effort**	Yes		
Inequality	35.8	LOW	n.a.	**Risk of overall debt distress**	Low		
				Short-term stabilization	No		
Budget balance				*Expenditure (% of primary expenditure)*			
Total revenue	22.2		UP	**Capital expenditure**	32.8	HIGH	DOWN
Domestic revenue	20.1		UP	**Current expenditure**	67.3	LOW	UP
Tax revenue	17.2		UP	**Defense**	n.a.		
Total expenditure	22.2		UP	**Public order**	n.a.		
Primary expenditure	21.9		UP	**Infrastructure**	n.a.		
Overall balance	0.0	HIGH		**Health**	n.a.		
Primary balance	0.3		UP	**Education**	n.a.		
Revenue (% of GDP)				**Social protection**	n.a.		
Trade taxes	2.4	HIGH		**Transfers**	7.5		UP
Taxes on goods and services	10.7	HIGH	UP	*Implicit tax rates*			
Income taxes	4.1			**Implicit tax on consumption**	18.5	HIGH	UP
Revenue (% of total taxes)				**Implicit tax on labor**	1.3	LOW	
Trade taxes	13.9	HIGH	DOWN	**Implicit tax on capital**	9.7		UP
Taxes on goods and services	62.2	HIGH	UP	**Implicit tax on natural resources (upper bound)**	100.0	HIGH	
Income taxes	23.9	LOW		*Income redistribution*			
Statutory tax rates				**Inequality reduction**	5.5		n.a.
Weighted tariffs	9.8			**Potential tax progressivity**	31.4	LOW	
Standard VAT rate	10.0	LOW		**Top 1% PIT indicator**	n.a.		
Marginal PIT rate	20.0	LOW		**Social protection coverage**	3.1	LOW	n.a.
Standard CIT rate	20.0	LOW		*Gender incidence*			
Tax efficiency				**Female-to-male labor participation**	86.0		DOWN
VAT efficiency	79.9	HIGH	UP	**Secondary school enrollment parity**	85.5	LOW	n.a.
PIT efficiency	6.6	LOW		**Maternal mortality**	160		DOWN
CIT efficiency	48.5	HIGH	UP	**Gender budgeting**	n.a.		

Sources and units: See Tables A to G.

Note: GDP = gross domestic product; PPP = purchasing power parity; VAT = value-added tax; PIT = personal income tax; CIT = corporate income tax; n.a. = not available.