



BACKGROUND PAPER

Developing Asia's Fiscal Landscape and Challenges

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DEVELOPING ASIA'S FISCAL LANDSCAPE AND CHALLENGES

Eugenia Go, Sam Hill, Maria Hanna Jaber, Yothin Jinjarak, Donghyun Park, and Anton Ragos

I. INTRODUCTION

A fundamental role of government in promoting sustainable and inclusive development is providing essential public goods and services, and direct support to households to tackle poverty and inequality. Governments can help ensure the provision of public goods and services that would be under-provided by the private sector. Particularly in developing countries, governments also provide goods and services that directly augment private goods as well as market-supporting public goods that enable the poor to participate in the economy (Besley and Ghatak 2006). Social returns on spending in areas that generate positive externalities, notably health and education, and physical infrastructure such as water and sanitation can exceed private returns, providing a further strong rationale for government provision. Moreover, where credit constraints are often large because of underdeveloped financial markets, poor households are highly dependent on government provision.

Meeting public expenditure needs require governments to have access to a strong, reliable, and adequate stream of revenues such as tax revenues. Among available revenue sources, official development assistance (ODA) is inherently limited and depends on economic circumstances and policy priorities of donor countries. The ability of governments to borrow varies according to income levels, with the governments of the poorest countries the least able to borrow. Large-scale borrowing is typically confined to physical infrastructure, for which collateral is more readily available, and less available for funding general spending gaps or recurrent expenditure. Governments can face difficulties borrowing precisely when expenditure shortfalls and borrowing requirements are greatest, e.g., during an economic crisis. Even in normal times, developing countries pay a risk premium, and may be forced to borrow short term in foreign currencies. Finally, revenues from state-owned enterprises can be unreliable. Indeed, inefficient state-owned enterprises often impose a burden on public finances.

Ensuring adequate government expenditures and tax revenues is a critical element of domestic resource mobilization (DRM) and central to domestic and international development efforts (Addison et al. 2018). Since the mid-1990s, successive heavily indebted poor country initiatives have aimed to ease debt burdens and create fiscal space for government spending. More recently, in 2015, the Third United Nations Conference on Financing for Development focused on mobilizing financial resources to meet development goals, concluding with the Addis Ababa Action Agenda on a sustainable financing strategy. The Agenda emphasizes “public policies and the mobilization and effective use of domestic resources... [recognizing] that domestic resources are first and foremost generated by economic growth, supported by an enabling environment at all levels” (United Nations 2015, 10). DRM can be conceptualized as a virtuous cycle of domestic revenue generation, the efficient and effective allocation of domestic resources, and the contribution this makes towards sustainable economic growth and development (Figure 1). Within this framework tax revenue represents a vital component of domestic resources. The achievement of the Sustainable Development Goals (SDGs)—especially the elimination of poverty and hunger, access to education, reduced inequalities, and improvements in infrastructure—depend on

adequate public funding, and efficient government provision. Indeed, the centrality of sound tax and spending policies is encapsulated in SDG 17, which includes strengthening DRM as a subgoal.

Figure 1: The Virtuous Cycle of Domestic Resource Mobilization



Source: Authors.

Policy objectives of financing public goods and redistribution must be considered within the broader goals of fiscal policy. Rather than a mere vehicle for raising revenue, a strong tax system is an integral part of state capacity building that is essential to promoting broader development (Besley and Persson 2014. and Keen and Slemrod 2021). The authority to raise taxes is a defining feature of modern states, underpins the contract between government and society, and is inextricably linked to the development of strong legal frameworks. Since economic transactions are the basis for revenue generation, states seeking to generate more revenue have an incentive to build institutions that support markets and economic development. Moreover, state institutions and tax systems evolve together and reinforce each other. Stronger tax systems provide states with the resources to build strong institutions which, in turn, can simplify tax collection and encourage tax compliance. Finally, state capacity to raise adequate domestic revenues reduces dependence on unstable foreign aid and costly borrowing from private lenders.

Tax and spending policies can support specific public policy objectives. For example, by altering prices and therefore incentives, tax and other fiscal instruments can be efficient tools for correcting externalities. Classic examples include environmental challenges such as water and air pollution and climate change mitigation. Health taxes can discourage the consumption of tobacco and unhealthy food and beverages, curtailing the incidence of lifestyle diseases. Moreover, while all taxes distort economic activity and impose welfare costs, an efficient tax mix that does not unduly rely on highly distortive taxes which deter investment and employment contributes to strong economic growth, which helps reduce poverty. Equally important is the efficient deployment of government resources to minimize tax burdens and reduce the risk of government spending crowding out productive private spending.

Finally, effective government spending and adequate tax revenues, together with a prudent approach to public debt, can help ensure resilient public finances and counter-cyclical fiscal policy that can promote macroeconomic stability. Indeed, the experiences of the Global Financial Crisis (GFC) and the coronavirus disease (COVID-19) pandemic have challenged long-standing macroeconomic policy orthodoxy that stabilization was primarily the domain of monetary policy (Cottarelli et al. 2014). When interest rates are very low, fiscal policy may prove to be an especially effective macroeconomic stabilization tool (Delong and Summers 2012). During a severe downturn, fiscal policy also gives governments the flexibility to provide targeted economic support to hard hit industries and households. Moreover, as highlighted by the COVID-19 pandemic, during a multifaceted crisis, fiscal policy provides additional policy levers to government to complement broad economic stimulus. More specifically, adequate public support for health care and education has contributed to managing the COVID-19 pandemic and promoting economic recovery.

Across much of developing Asia, particularly East Asia, there is a long history of prudent fiscal policy. Overall, tax revenues and the government sector, measured by the share of public spending in the economy, often have been smaller in Asia than in peer developing regions and high-income countries. Governments have also channeled public resources towards investments in growth-enhancing physical infrastructure and education, rather than social protection and redistribution (Asian Development Bank [ADB] 2014). Such public support has enabled the private sector to flourish and drive growth and development. In tandem with lower levels of government spending, fiscal imbalances have also generally been modest, contributing to relatively low public debt levels across developing Asia. While the region's public debt was generally below 50% of gross domestic product (GDP), much lower than in Latin America and Sub-Saharan Africa (ADB 2020).

In many ways, this fiscal prudence has served the region well, promoting macroeconomic stability and supporting high savings that has underpinned strong investment. These factors, together with the focus on growth-enhancing spending, have supported the rapid growth that has been essential for driving down poverty and lifting general living standards across the region.

However, low fiscal revenues and spending in many developing Asian economies have held back public goods and services in social areas, while weak social protection left the poor vulnerable and exacerbated inequality. The COVID-19 pandemic has exposed chronic weaknesses in health and other areas, with the poor disproportionately affected. Promoting sustainable development requires enormous investments across a swathe of sectors, including education, health, social protection, infrastructure, and climate change adaptation and mitigation. As developing Asia looks to recover from the COVID-19 pandemic and chart a course back to the region's trademark sustained rapid growth, it is vital that governments address shortfalls in the provision of essential public goods and directly support households to tackle poverty and inequality. This will require increasing the resources that are available to governments, in particular adequate and stable tax revenues.

Framed against these broad policy objectives, the purpose of this paper is to provide an overview of Asia's fiscal landscape and challenges as the region emerges from the COVID-19 pandemic. Section II takes stock of tax trends in the lead up to COVID-19 and some key implications for government expenditure. To put Asia's fiscal landscape in context, comparisons are drawn with other developing regions and high-income countries. Section III then provides a preliminary assessment of the impact of the pandemic on taxes and expenditures, while section IV concludes.

II. DEVELOPING ASIA'S TAX AND EXPENDITURE LANDSCAPE

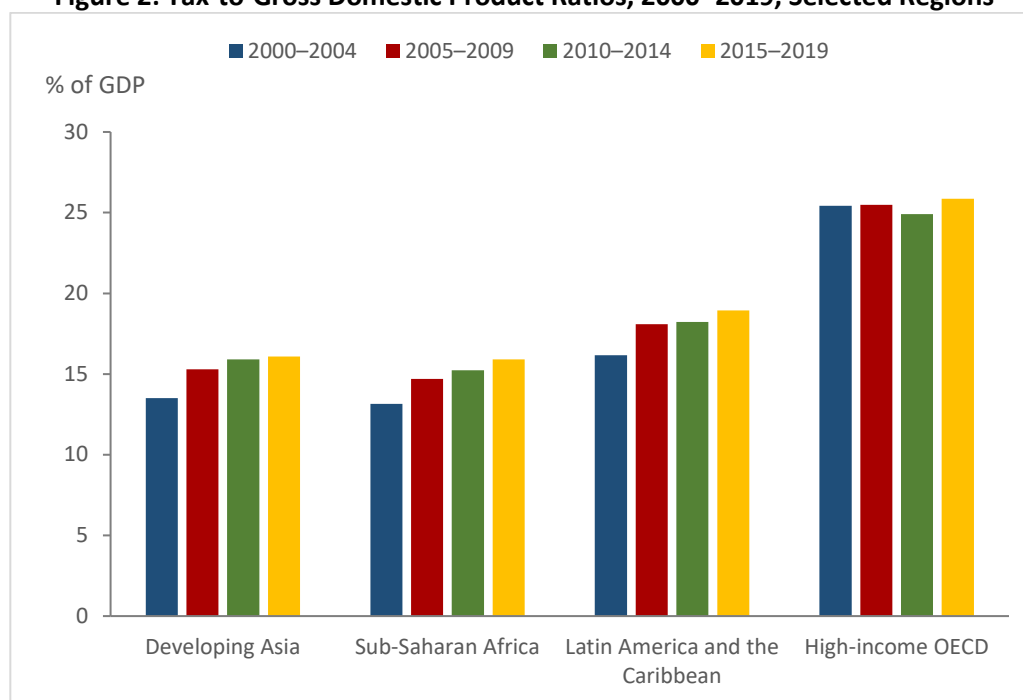
A. Tax Trends in Developing Asia Prior to COVID-19

Tax revenue data presented in this paper are generally drawn from three sources to maximize data coverage and timeliness, particularly for developing Asia, while also enabling comparisons with a wide variety of other countries. First, wherever possible, we use data from the Revenue Statistics of the Organisation for Economic Co-operation and Development (OECD 2020a), which has superior temporal coverage of tax revenues and subcomponents for 113 countries that are consistently presented on a general government basis. This was supplemented by the International Monetary Fund (IMF) Government Financial Statistics (GFS), which has data for more than 180 countries. Finally, when data for developing Asia are unavailable or incomplete in the OECD or IMF-GFS, we supplement with the ADB's *Key Indicators* database. Data from this database are collected directly from national authorities and are compiled following the GFS methodology. Where possible, we report data on a general government basis, which incorporates central and subnational revenues and spending, or alternatively central government. Further information in data sources is presented in Appendix: Summary of Country Level Data.

We focus on analyzing trends in tax-to-GDP ratios. Normalizing revenues as a share of GDP is a simple way to provide a snapshot of the size of revenues available to governments and a way to control for inflation. A drawback of this metric is that revisions to GDP may cause changes in the ratio that are unrelated to tax revenues. Further, comparing tax-to-GDP ratios across a diverse sample of countries ignores important underlying differences in economic structures and institutional features that are likely to have a significant bearing on revenues. At least in theory, such differences can be controlled by instead examining tax effort, which compares actual tax revenues with the level of revenues predicted by underlying country characteristics. However, while providing important insights, tax effort is influenced by methodological choices and, given greater data needs, will generally be less widely available. Tax-to-GDP ratios offer the advantage of being widely available over time and across countries and to address some of the shortcomings with this metric, we supplement selectively with figures on actual tax revenues and include comparisons with countries of similar development levels.

In the two decades prior to the onset of COVID-19 in 2020, developing Asia made gradual progress in lifting tax revenues. In the period 2015–2019, the tax-to-GDP ratio of developing Asia, calculated as a simple average, stood at 16%, up from 14% in 2000–2004 (Figure 2). The increase in the years just before the GFC was particularly pronounced, with further small gains in the years immediately prior to COVID-19. Tax-to-GDP ratios also rose in Sub-Saharan Africa and Latin America, albeit more modestly, reaching 16% and 19%, respectively, by 2015–2019. Hence, tax revenues in developing Asia were broadly comparable to Sub-Saharan Africa, but below Latin America just prior to COVID-19. In 2015–2019, the tax-to-GDP ratio for high-income OECD countries stood at 26%, broadly unchanged from 2000 to 2004. Hence, while developing Asia achieved some convergence in tax revenues with OECD countries, they continued to lag well behind, collecting a little more than a third less than OECD countries.

Figure 2: Tax-to-Gross Domestic Product Ratios, 2000–2019, Selected Regions



GDP = gross domestic product, OECD = Organisation for Economic Co-operation and Development.

Note: 26 countries in developing Asia, 28 in Sub-Saharan Africa, 27 in Latin America and the Caribbean, and 33 among high-income OECD members.

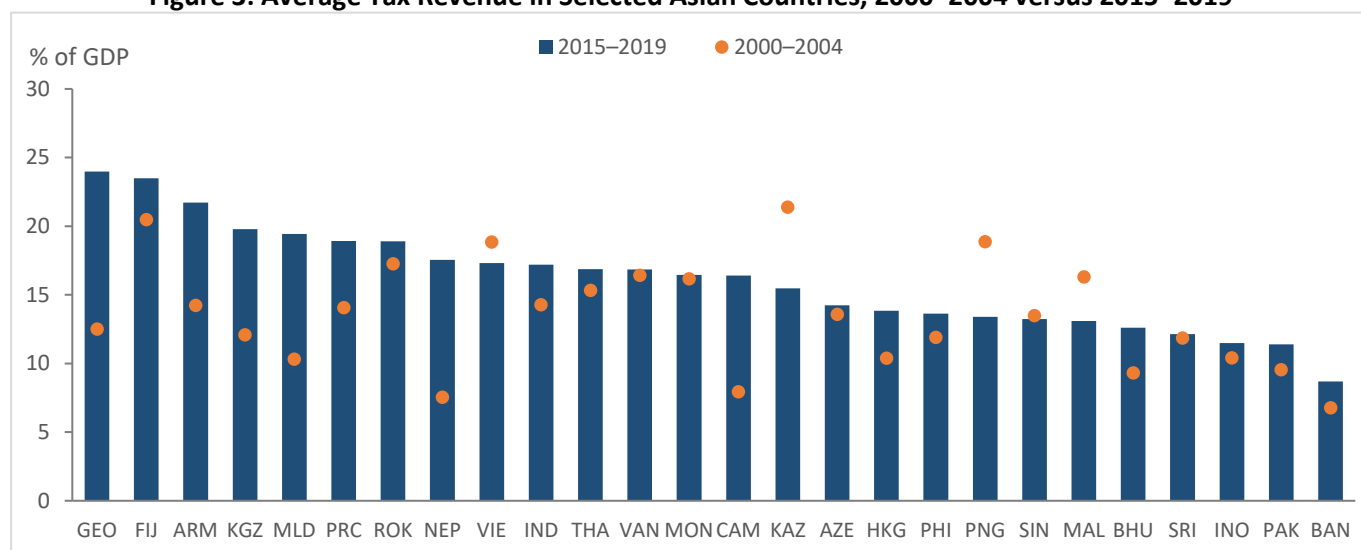
Sources: OECD. Global Revenue Statistics Database. <https://www.oecd.org>; IMF. Government Finance Statistics online database. <https://www.imf.org> (both accessed 31 January 2022); and Asian Development Bank estimates.

According to GFS definitions, social security contributions (SSC) are treated as nontax revenues but are nonetheless sometimes combined with tax revenues for presentational purposes. For example, OECD statistics on total tax revenues typically include SSCs. With some exceptions, notably the People's Republic of China (PRC) and the Republic of Korea, SSCs are not particularly large in developing Asia, reflecting underdeveloped social protection systems or a reliance on general revenue to fund social protection. However, SSCs can be quite large, particularly in OECD countries where they often amount to 10% of GDP or more. Therefore, applying a broader definition of tax revenues, which includes SSCs, the gap between developing Asia and OECD countries is even larger.

Across developing Asia subregions, tax revenues varied considerably. They were generally higher in East Asia, Central and West Asia, and Pacific island economies, averaging about 17%, 19%, and 18% of GDP, respectively, and lower in Southeast and South Asia, at 15% and 10% of GDP, respectively. To put these figures in context, developing Asia subregions with the lowest tax-to-GDP ratios collected significantly less tax than the average for other developing regions, including Sub-Saharan Africa. From 2000 to 2004, average tax revenues rose in all developing Asia subregions, with East Asia recording the largest increase. In contrast, tax revenues were more stagnant in South Asia and Southeast Asia.

Across developing Asia tax revenues varied considerably (Figure 3). Developing Asia with the highest tax revenues prior to COVID-19 were generally either Pacific island economies or more advanced developing Asian economies. These include Georgia at 24% of GDP and Fiji at about 23% of GDP. For the Republic of Korea, tax revenues without SSCs stood at 19% but increases to 27% of GDP once SSCs are included. For these countries, levels of revenue are broadly comparable to the United States. Developing Asian economies with the lowest revenues as a percentage of GDP are Bangladesh, Pakistan, and Indonesia, at 9%, 11% and 12%, respectively.

Figure 3: Average Tax Revenue in Selected Asian Countries, 2000–2004 versus 2015–2019



ARM = Armenia; AZE = Azerbaijan; BAN = Bangladesh; BHU = Bhutan; CAM = Cambodia; FIJ = Fiji; GDP = gross domestic product; GEO = Georgia; HKG = Hong Kong, China; IND = India; INO = Indonesia; KAZ = Kazakhstan; KGZ = Kyrgyz Republic; MAL = Malaysia; MLD = Maldives; MON = Mongolia; NEP = Nepal; PAK = Pakistan; PHI = Philippines; PNG = Papua New Guinea; PRC = People's Republic of China; ROK = Republic of Korea; SIN = Singapore; SRI = Sri Lanka; THA = Thailand; VAN = Vanuatu; VIE = Viet Nam.

Sources: Organisation for Economic Co-operation and Development. Global Revenue Statistics Database. <https://www.oecd.org>; International Monetary Fund. Government Finance Statistics online database. <https://www.imf.org> (both accessed 31 January 2022); and Asian Development Bank estimates.

Except for Kazakhstan, Malaysia, Papua New Guinea, Singapore, and Viet Nam, tax-to-GDP ratios rose across developing Asia in the two decades before COVID-19, with the largest increases in Georgia and Nepal. However, despite this widespread progress across the region, tax revenues in several developing Asian economies remained below a widely applied minimum threshold of about 15% of GDP that is associated with improvements in state capacity and growth accelerations (Gaspar et al. 2016). Moreover, mirroring a global trend, across developing Asia, tax revenues were generally correlated with levels of development, with revenues generally lowest in the poorer countries in the region which also have the greatest spending needs.

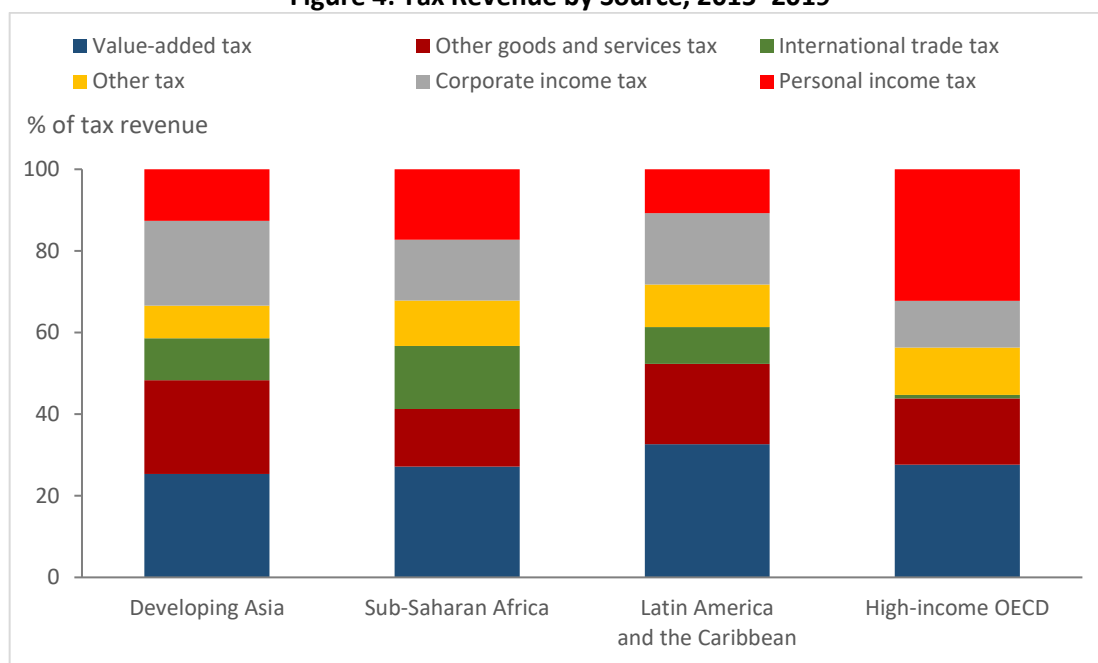
Finally, while we focus on tax revenues, it is useful to briefly compare tax and nontax government revenues. The latter includes grants, such as ODA, property income, which incorporates revenue from government-owned assets, sales of goods and services, fines and penalties, and other miscellaneous revenue sources. Except in some smaller, predominantly Pacific island economies, nontax revenues are

generally much smaller than tax revenues in developing Asia. Excluding Pacific island economies, nontax revenues average 8% of GDP in 2015–2019, or less than half the amount of tax revenue. In the case of Pacific island economies, the importance of nontax revenues reflects comparatively high ODA flows and income generated from a narrow range of nontax sources, particularly from fisheries and foreign vessels.

B. Tax Revenue Structures in Developing Asia Prior to Covid-19

As in other developing regions, developing Asia tend to rely heavily on revenues from value-added taxes (VATs), which were widely introduced throughout Asia during the 1980s and the 1990s, and other taxes on goods and services, including excises (Figure 4). In the years just prior to COVID-19, revenues from these consumption-related taxes for developing Asia accounted for about a half of all tax revenue. Of this, about half came from VAT, making it the single most important tax revenue source for developing Asia. These shares are marginally higher than the average for Sub-Saharan Africa and a little lower than the Latin America average.

Figure 4: Tax Revenue by Source, 2015–2019



OECD = Organisation for Economic Co-operation and Development.

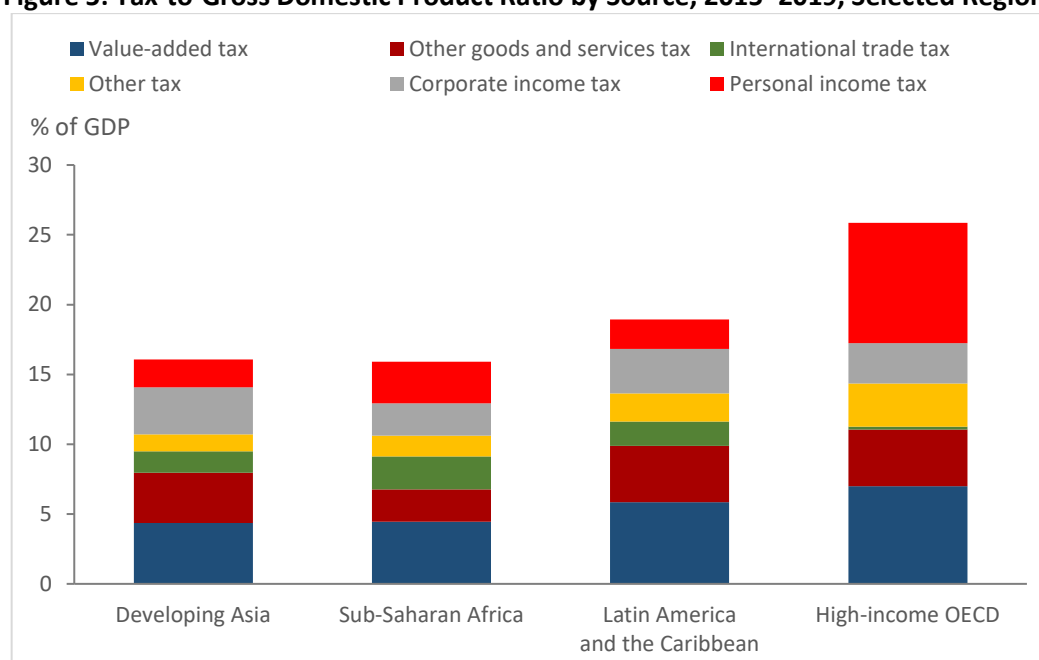
Sources: OECD. Global Revenue Statistics Database. <https://www.oecd.org>; International Monetary Fund. Government Finance Statistics online database. <https://www.imf.org> (both accessed 31 January 2022); and Asian Development Bank estimates.

After consumption taxes, corporate income taxes, which are relatively easy to collect, at least from large firms, account for the next largest share of tax revenue in developing Asia, at about 21%. This share is higher than other developing regions, and much higher than in OECD countries. Personal income taxes account for 13% of revenues in developing Asia, comparable to Latin America but much lower than

OECD countries, where they account for 32% of tax revenues. Trade taxes account for about 10% of the tax revenues of developing Asia, comparable to other developing regions but much higher than OECD countries where the share is negligible.

While comparing revenue shares from different taxes provides a snapshot of their relative importance, it obscures differences in the revenue levels generated by each tax type. Given that developing Asian economies collect less revenues than OECD countries in particular, it is instructive to also compare the level of revenues generated by each tax as a share of GDP across regions. Despite their large share of total revenues, the level of revenue that developing Asian economies generate from VAT and other taxes on goods and services as a percentage of GDP is still lower than OECD countries (Figure 5). In contrast, corporate income tax revenue as a share of GDP is similar in developing Asia, at about 3.4%, to OECD countries. Finally, the level of revenue generated by personal income taxes as a share of GDP in developing Asia, at about 2.1%, is about a quarter the level of OECD countries.

Figure 5: Tax-to-Gross Domestic Product Ratio by Source, 2015–2019, Selected Regions

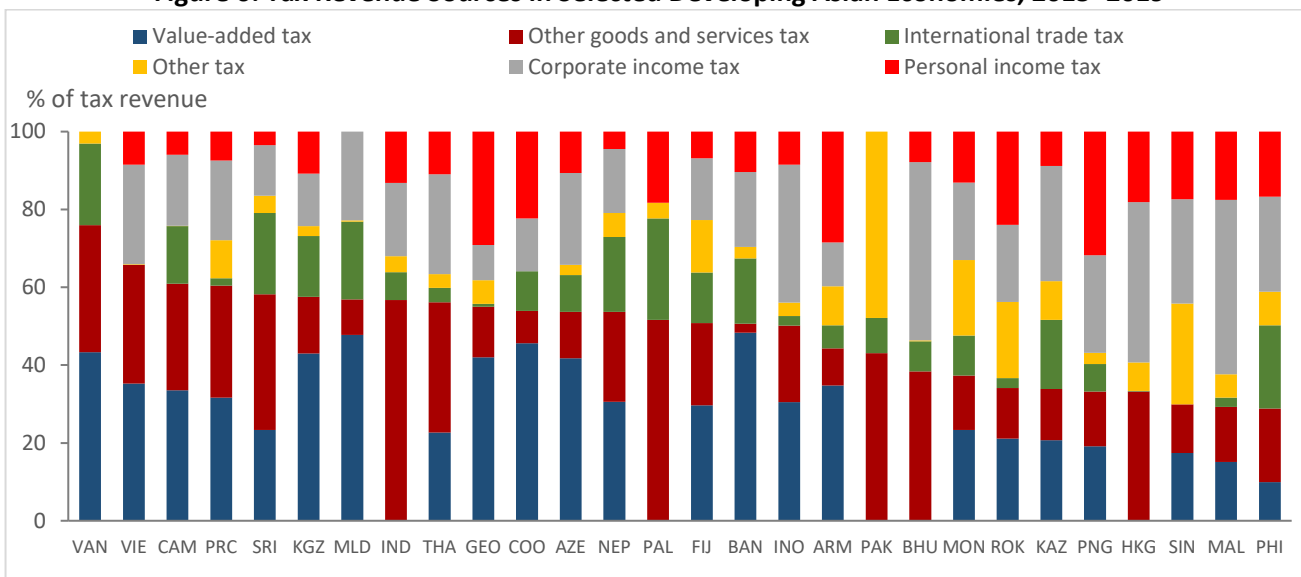


GDP = gross domestic product, OECD = Organisation for Economic Co-operation and Development.

Sources: OECD. Global Revenue Statistics Database. <https://www.oecd.org>; International Monetary Fund. Government Finance Statistics online database. <https://www.imf.org> (both accessed 31 January 2022); and Asian Development Bank estimates.

Across individual developing Asian economies, the reliance on VAT and other consumption taxes is especially high in some smaller countries, accounting for three quarters or more of total tax revenue in Vanuatu, Viet Nam, and Cambodia (Figure 6). In other developing Asian economies, revenues are generally more diversified, with a greater balance between consumption and corporate income taxes. In the vast majority of developing Asia, the personal income tax share of revenues is small and, in relatively few, it generates revenue greater than 2% of GDP (Figure 7).

Figure 6: Tax Revenue Sources in Selected Developing Asian Economies, 2015–2019

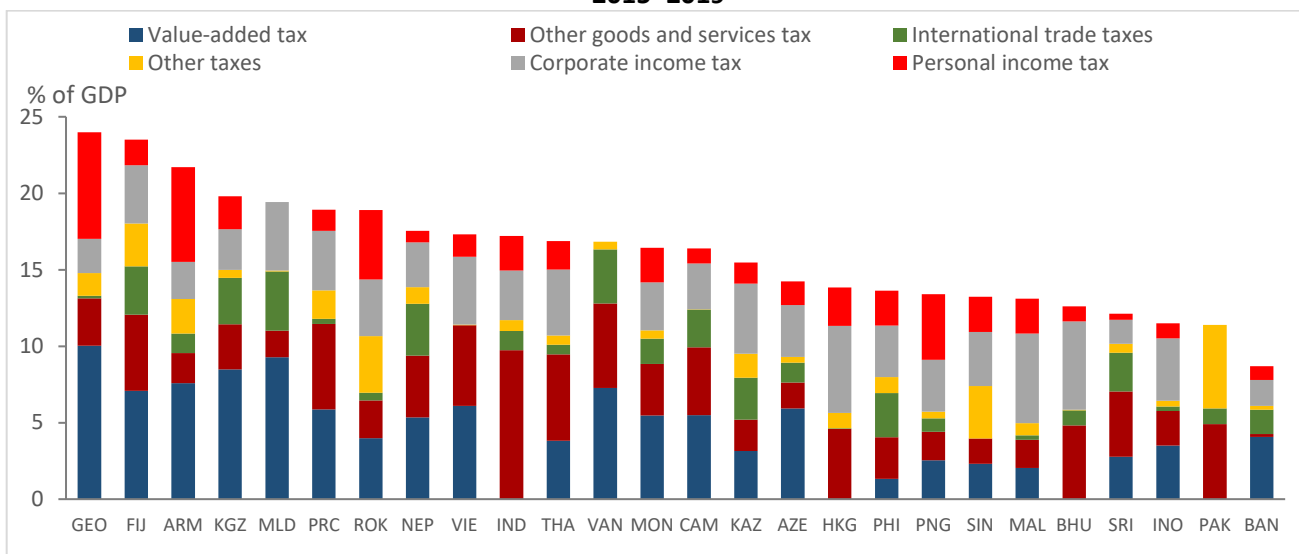


ARM = Armenia; AZE = Azerbaijan; BAN = Bangladesh; BHU = Bhutan; CAM = Cambodia; CIT = corporate income tax; COO = Cook Islands; FIJ = Fiji; GEO = Georgia; HKG = Hong Kong, China; IND = India; INO = Indonesia; KAZ = Kazakhstan; KGZ = Kyrgyz Republic; MAL = Malaysia; MLD = Maldives; MON = Mongolia; NEP = Nepal; PAK = Pakistan; PAL = Palau; PHI = Philippines; PIT = personal income tax; PNG = Papua New Guinea; PRC = People's Republic of China; ROK = Republic of Korea; SIN = Singapore; SRI = Sri Lanka; THA = Thailand; VAN = Vanuatu; VAT = value-added tax; VIE = Viet Nam.

Notes: Bhutan recently adopted goods and services tax. Hong Kong, China does not levy VAT.. For India, VAT is subsumed under taxes on goods and services, which includes general taxes on goods and services, excise taxes, taxes on specific services, and taxes on the use of/permission to use goods. As no data is available on PIT in Maldives, it is subsumed in other taxes. As no data are available on VAT, CIT, or PIT in Pakistan, VAT is subsumed in other goods and services tax, and CIT and PIT are subsumed in other taxes. Palau does not levy VAT or make available data on CIT, which is subsumed in other taxes. Singapore and Viet Nam report no revenue from international trade tax. Vanuatu reports no revenue from CIT or PIT.

Sources: Organisation for Economic Co-operation and Development. Global Revenue Statistics Database. <https://www.oecd.org>; International Monetary Fund. Government Finance Statistics online database. <https://www.imf.org> (both accessed 31 January 2022); and Asian Development Bank estimates.

Figure 7: Tax-to-Gross Domestic Product Ratio by Source in Selected Developing Asian Economies, 2015–2019



ARM = Armenia; AZE = Azerbaijan; BAN = Bangladesh; BHU = Bhutan; CAM = Cambodia; CIT = corporate income tax; FIJ = Fiji; GEO = Georgia; GDP = gross domestic product; HKG = Hong Kong, China; IND = India; INO = Indonesia; KAZ = Kazakhstan; KGZ = Kyrgyz Republic; MAL = Malaysia; MLD = Maldives; MON = Mongolia; NEP = Nepal; PAK = Pakistan; PHI = Philippines; PIT = personal income tax; PNG = Papua New Guinea; PRC = People's Republic of China; ROK = Republic of Korea; SIN = Singapore; SRI = Sri Lanka; THA = Thailand; VAN = Vanuatu; VAT = value-added tax; VIE = Viet Nam.

Notes: Bhutan recently adopted goods and services tax. Hong Kong, China does not levy VAT. As no data are available on VAT in India, it is subsumed in other goods and services tax. As no data is available on PIT in Maldives, it is subsumed in other taxes. As no data are available on VAT, CIT, or PIT in Pakistan, VAT is subsumed in other goods and services tax, and CIT and PIT are subsumed in other taxes. Palau does not levy VAT or make available data on CIT, which is subsumed in other taxes. Singapore and Viet Nam report no revenue from international trade tax. Vanuatu reports no revenue from CIT or PIT.

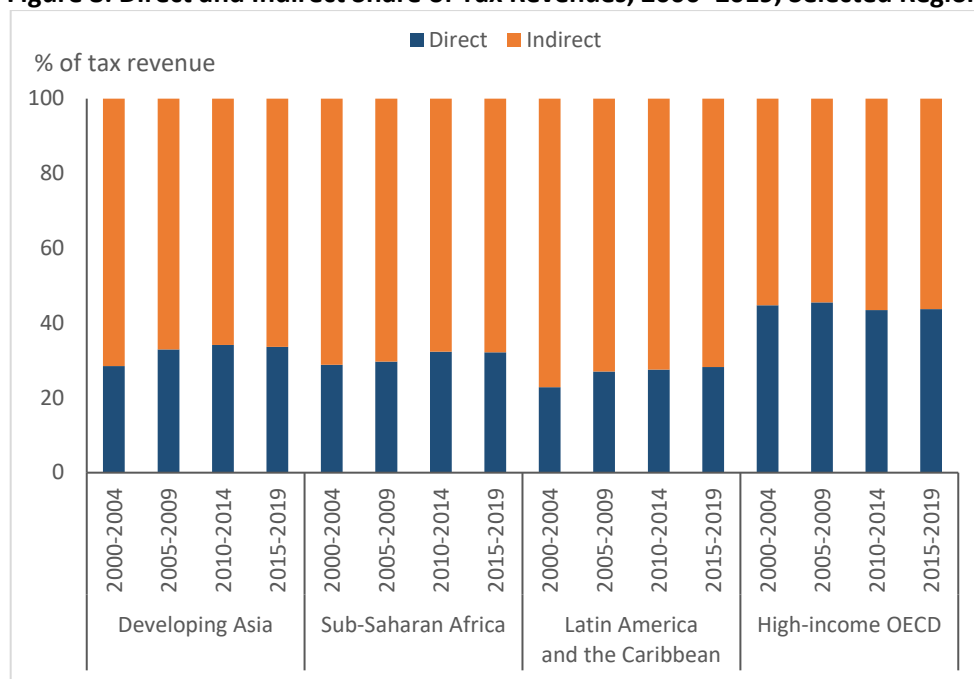
Sources: Organisation for Economic Co-operation and Development. Global Revenue Statistics Database. <https://www.oecd.org>; International Monetary Fund. Government Finance Statistics online database. <https://www.imf.org> (both accessed 31 January 2022); and Asian Development Bank estimates.

Over the past two decades, higher VAT revenues accounted for a significant share of increased revenue in developing Asia. In most developing Asian economies, corporate income taxes also contributed to an overall increase in revenues, despite the pressure from global corporate tax competition. Changes in the share of revenues from other taxes were more mixed.

The progressivity of a tax system depends on detailed policy design, including tax rates and the effective tax base, which will depend on exemptions. Nevertheless, a rough indicator of progressivity is the proportion of tax revenue raised through direct taxes, defined here as personal and corporate income taxes, compared with indirect taxes, encompassing all other taxes. Direct taxes are sometimes considered more progressive, particularly personal income taxes that are applied at a higher marginal rate for higher-income earners, although they are also considered more distortive and, therefore, less efficient (Bhattacharya et al. 2022). In contrast, indirect taxes and particularly consumption taxes, are sometimes considered more regressive but also more efficient.

A tax structure that relies more on direct taxes relative to indirect taxes, therefore, is generally considered more regressive and less efficient. As is the case in other developing regions, in developing Asia direct taxes account for a smaller share of revenues than in high-income countries. In 2015–2019, the share of direct taxes for developing Asia was about 33.6%, compared with 43.7% for OECD countries (Figure 8). Moreover, the proportion of direct tax revenue in developing Asia did not change significantly in the two decades before COVID-19. On this broad metric, therefore, tax systems in developing Asian economies are less progressive but more efficient than in high-income countries but a little more progressive than in other developing regions.

Figure 8: Direct and Indirect Share of Tax Revenues, 2000–2019, Selected Regions



OECD = Organisation for Economic Co-operation and Development.

Note: Direct is the sum of corporate and personal income taxes, while indirect comprise other taxes.

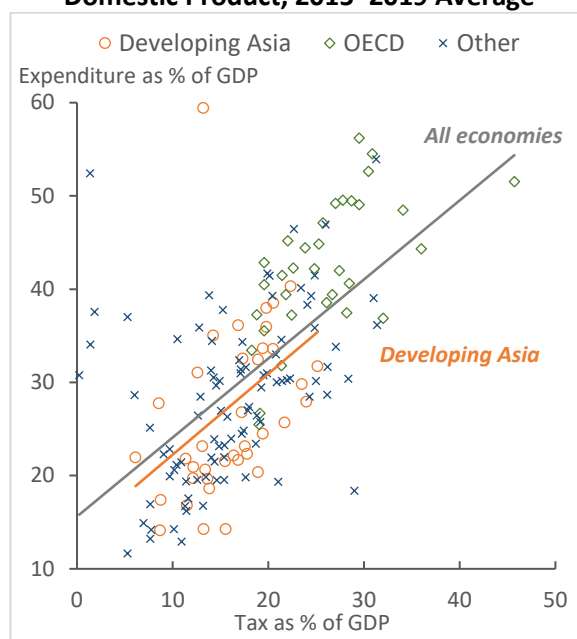
Sources: Organisation for Economic Co-operation and Development. Global Revenue Statistics Database. <https://www.oecd.org>; International Monetary Fund. Government Finance Statistics online database. <https://www.imf.org> (both accessed 31 January 2022); and Asian Development Bank estimates.

C. Developing Asia's Public Expenditure Landscape

As noted, in most countries, taxes represent the primary source of government revenue and, therefore, largely define the public expenditure envelope over the medium to longer term. While governments normally spend more than they collect in tax, reflecting borrowing as well as nontax revenue, there is a strong positive correlation between total taxes and spending across developing Asian economies and other countries (Figure 9). In developing Asia, the correlation is much weaker among Pacific island economies. This reflects both unusually high levels of nontax revenues and the high cost of providing government services to remote and dispersed populations, and spending inefficiencies (Cabezon et al.

2015). Given the low average taxes in developing Asia, excluding Pacific island economies, average public spending of about 27% of GDP is comparable to developing peer regions, but far below OECD countries (Figure 10).

Figure 9: Tax and Expenditure as % of Gross Domestic Product, 2015–2019 Average

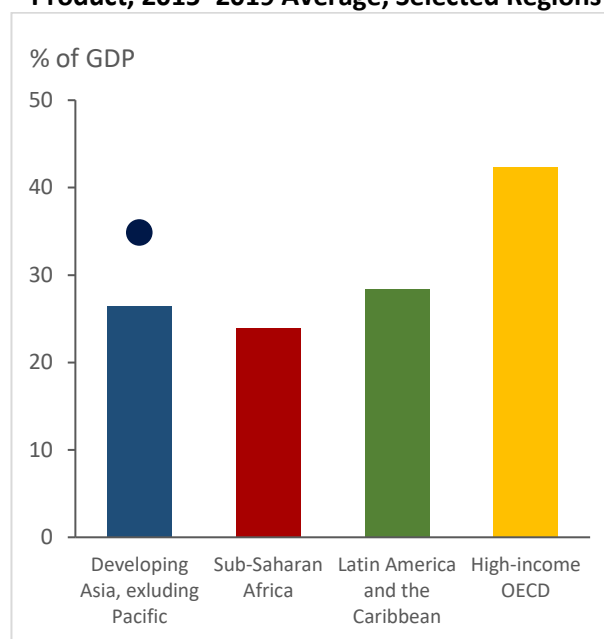


GDP = gross domestic product, OECD = Organisation for Economic Co-operation and Development.

Note: Excludes Timor-Leste, where tax is 24.8% and expenditure 90.3%; Nauru, where tax is 30.3% and expenditure 99.6%; Kiribati, where tax is 23.4% and expenditure 115%; and Tuvalu, where tax is 30.5% and expenditure 116.3%.

Sources: OECD. Global Revenue Statistics Database. <https://www.oecd.org>; IMF. Government Finance Statistics online database. <https://www.imf.org>; International Monetary Fund. World Economic Outlook October 2021 online database. <https://www.imf.org> (all accessed 31 January 2022); and Asian Development Bank estimates.

Figure 10: Expenditure as % of Gross Domestic Product, 2015–2019 Average, Selected Regions



GDP = gross domestic product, OECD = Organisation for Economic Co-operation and Development.

Note: ● is the average for developing Asia including the Pacific. Education and health expenditure is the 2015–2019 average for each region, and social protection expenditure is 2020 or latest value.

Sources: International Monetary Fund. World Economic Outlook October 2021 online database. <https://www.imf.org> (accessed 31 January 2022); and Asian Development Bank estimates.

For developing Asia and other economies, tax revenues are more strongly correlated with public spending in areas essential for promoting inclusive development. Indeed, while education, health, and social protection spending rises with tax revenue around the world, higher education and health spending stands out in developing Asia (Figures 11 and 12). Health and social protection spending are especially high in countries where tax revenues exceed 20% of GDP. Excluding Pacific island economies, developing Asia education and health spending lags not only OECD countries but also other developing regions. Average developing Asia spending on social protection compares a little more favorably to developing peers, but is less than a third of the share of OECD countries. In contrast, defense spending is negatively correlated with taxes, clustered at about 1%–3% of GDP, and on average higher in developing

Asia. This suggests that most governments seek to achieve a threshold level of defense spending irrespective of development and tax levels, and that defense spending accounts for a disproportionately high share of outlays in many of the lowest-taxed and poorest countries.

Figure 11: Tax and Spending on Selected Activities, Percentage of Gross Domestic Product, 2015–2019

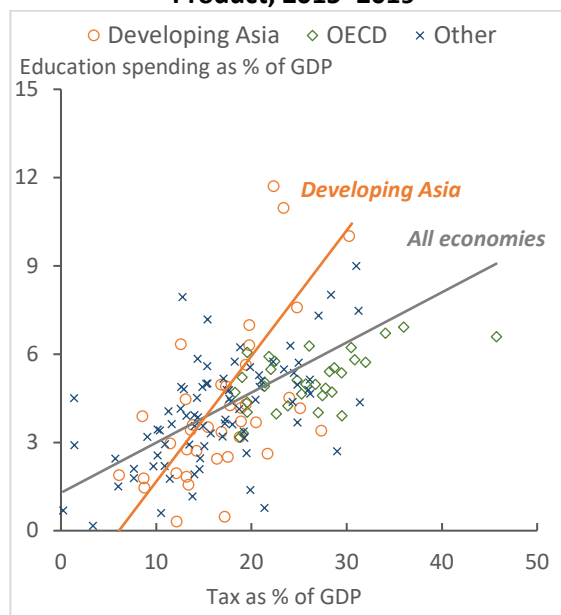
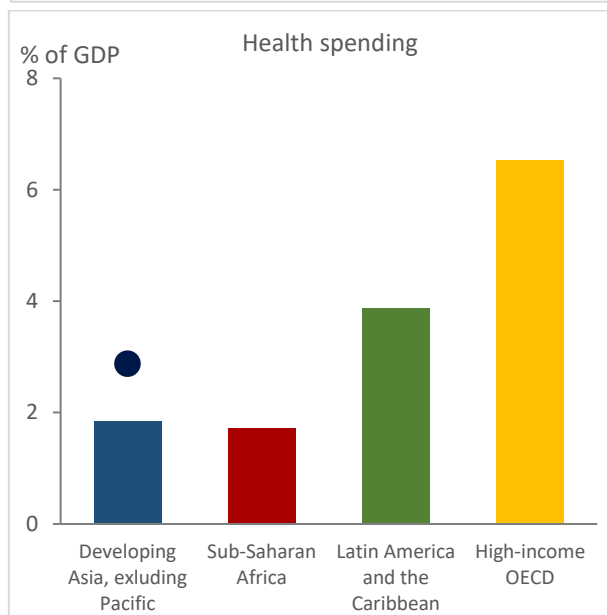
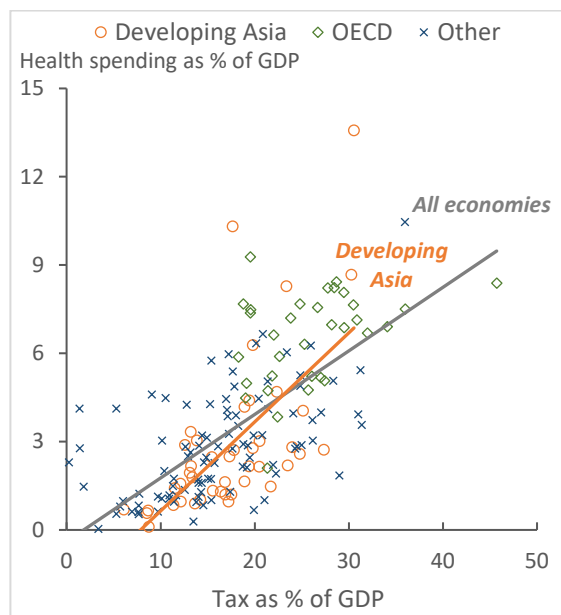
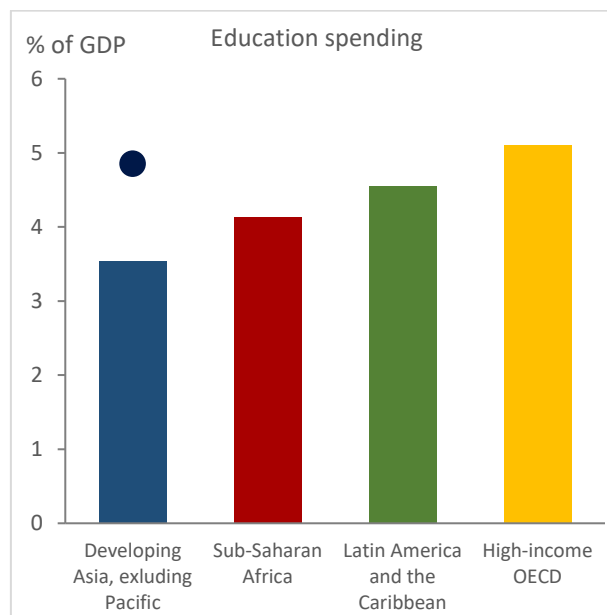
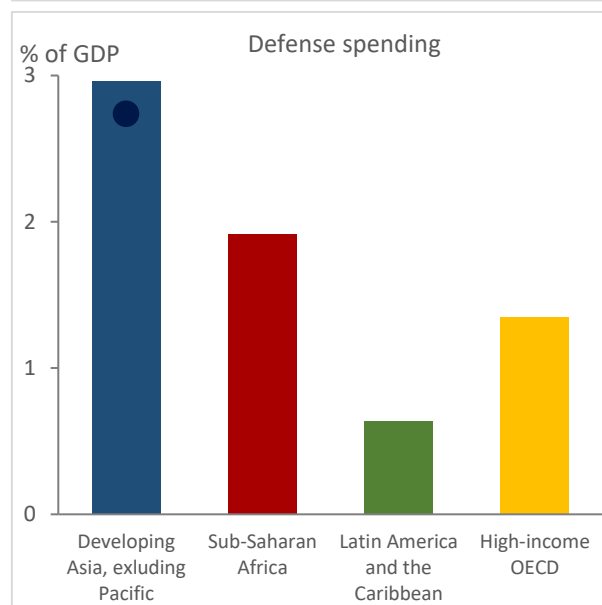
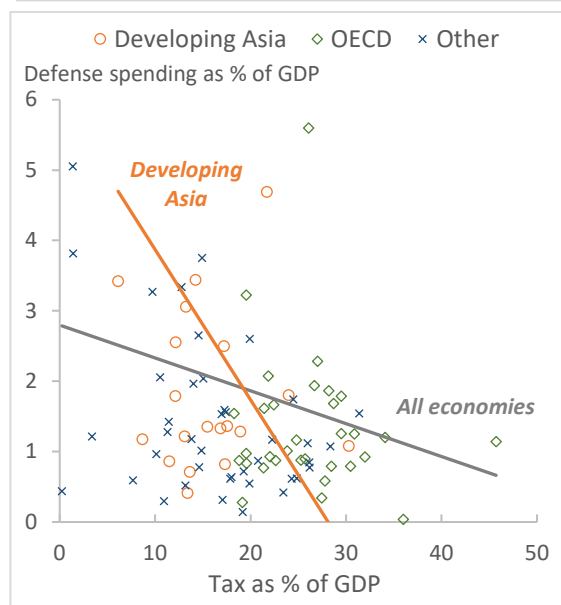
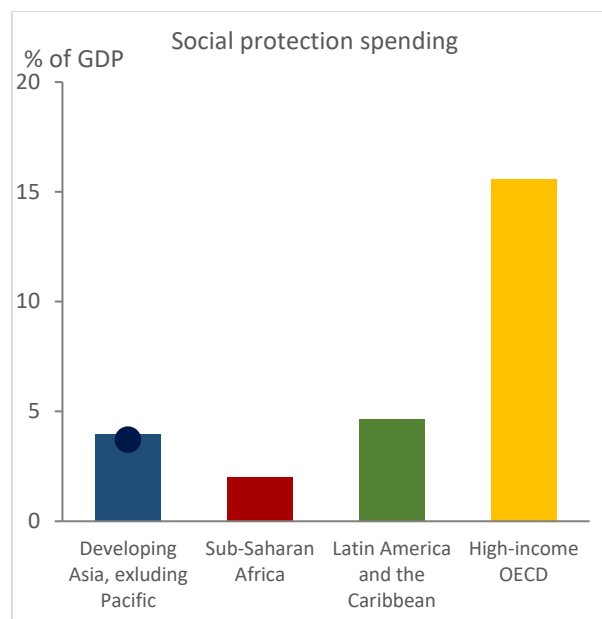
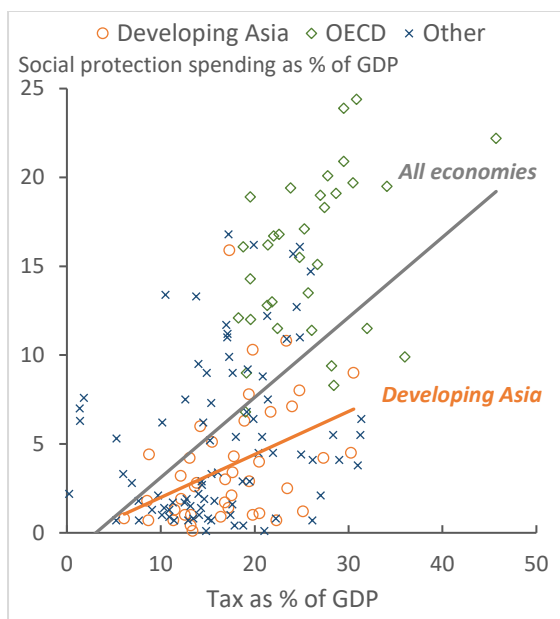


Figure 12: Expenditure on Selected Activities as % of Gross Domestic Product, Selected Regions





GDP = gross domestic product, OECD = Organisation for Economic Co-operation and Development.

GDP = gross domestic product, OECD = Organisation for Economic Co-operation and Development.

Sources: OECD. Global Revenue Statistics Database. <https://www.oecd.org>; International Monetary Fund (IMF). Government Finance Statistics online database. <https://www.imf.org>; IMF. World Economic Outlook October 2021 online database. <https://www.imf.org> (all accessed 31 January 2022); and Asian Development Bank estimates.

Note: ● is the average for developing Asia including the Pacific. Education and health expenditure is the 2015–2019 average for each region, and social protection expenditure is 2020 or latest value.

Sources: World Bank. World Development Indicators online database. <https://www.worldbank.org>; International Labour Organization. World Social Protection Report 2020–2022. <https://www.ilo.org> (both accessed 20 Oct 2021); and Asian Development Bank estimates.

While correlation does not imply causation, these trends suggest that increased tax revenue will often be directed towards development-promoting areas, a claim strengthened by more detailed empirical evidence on taxes and health spending (Carter and Cobham 2016, and Hall et al. 2021).

III. THE IMPACT OF COVID-19 AND MEETING THE CHALLENGE OF FISCAL POLICY FOR SUSTAINABLE DEVELOPMENT

A. The Impact of Covid-19 on Taxes and Expenditures

COVID-19 caused an unprecedented global health and economic shock which had a profound impact on developing Asia. Necessary containment measures imposed to limit the spread of COVID-19 triggered a massive supply shock to the global economy, halting economic activity and disrupting international trade and supply chains, and international financial flows. In 2020, the global economy contracted and, while faring better than most regions, economic growth turned negative in developing Asia for the first time since 1962. Some economies in the region, particularly where lengthy stringent lockdowns were imposed, or those reliant on disproportionately affected sectors, suffered huge economic contractions. As international tourist arrivals collapsed in 2020, some small tourism-dependent economies shrank at double-digit rates. Despite efforts to control the spread of COVID-19 and bolster health care systems, tragically, as in other parts of the world, developing Asia has endured high numbers of infections and tragic loss of lives.

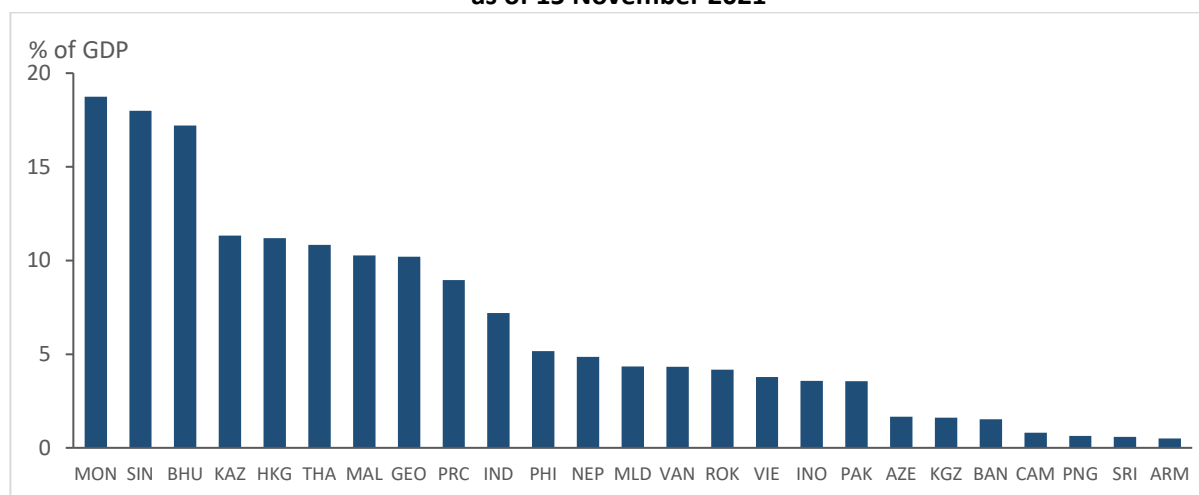
The impact of COVID-19, which has invariably been hardest for the poorest, has set back progress across key dimensions of development. Sharp economic downturns led to falls in employment and incomes, putting upward pressure on inequality, and progress in reducing absolute poverty has been impeded. In developing Asia, it is estimated that the proportion of people living below the extreme poverty line of \$1.90 a day rose by about 2 percentage points in 2020 compared with a no-COVID-19 scenario (ADB 2021a). In addition to the direct health impact of COVID-19, the pandemic disrupted health care systems, including prevention initiatives. Progress with lifting education has been hindered by school closures and, across developing Asia, learning losses are estimated to be the equivalent of about 5% of the region's GDP in 2020 (ADB 2021a). The pandemic magnified food insecurity and malnutrition, with financially constrained households forced to pare back food consumption.

The macroeconomic policy response to these challenges, to save lives and limit the economic damage, was extraordinary, making extensive use of on-and-off budget fiscal measures that boosted spending and eased tax burdens, complemented by significant monetary policy support. As in many other parts of the world, across developing Asia the fiscal policy response was exceptionally large by historical standards (ADO 2021a). Beyond conventional easing in policy rates and targeted measures to ease liquidity pressures, central banks in many economies, including some in the region, went much further, deploying a variety of measures that incorporated wide-scale asset purchases coupled with forward guidance (World Bank 2021). In some cases, asset purchase programs included government bonds, blurring the traditional line between monetary and fiscal policy (Cerutti and Helbling 2021). While not without risks, these interventions were critical for putting downward pressure on public borrowing

costs, expanding fiscal space, and enabling governments to unleash wide ranging tax and spending measures.

Across developing Asia, the discretionary fiscal policy response, as announced on budget fiscal measures in the ADB COVID-19 policy database, was invariably large. In many cases, these amounted to 5% or more of GDP, with Fiji, Mongolia, Singapore, and Bhutan unrolling a particularly large set of measures (Figure 13). In almost all countries, packages comprised both tax and spending measures, with the former generally smaller.

Figure 13: Fiscal Policy Responses to COVID-19 in Selected Developing Asian Economies, as of 15 November 2021



ARM = Armenia, AZE = Azerbaijan, BAN = Bangladesh, BHU = Bhutan, CAM = Cambodia, CIT = corporate income tax, GEO = Georgia, GDP = gross domestic product, HKG = Hong Kong, China, IND = India, INO = Indonesia, KAZ = Kazakhstan, KGZ = Kyrgyz Republic, MAL = Malaysia, MLD = Maldives, MON = Mongolia, NEP = Nepal, PAK = Pakistan, PHI = Philippines, PIT = personal income tax, PNG = Papua New Guinea, PRC = People's Republic of China; ROK = Republic of Korea, SIN = Singapore, SRI = Sri Lanka, THA = Thailand, VAN = Vanuatu, VAT = value-added tax, VIE = Viet Nam.

Notes: Figures comprise health care and public health measures, and income support through forgone government revenue associated with tax deferral, policy rate reduction, and other adjustments.

Sources: Asian Development Bank. COVID-19 Policy Database. <https://www.adb.org> (accessed 31 Jan 2022); and Asian Development Bank estimates.

In almost all economies, announced fiscal stimulus included increases in health-related spending which in some cases, including Tuvalu and Uzbekistan, accounted for the bulk of the fiscal stimulus. Health spending included outlays on health care facilities to treat COVID-19 cases, covering wages for health professionals, ventilators and other critical medical equipment, and laboratory testing. Several countries allocated additional spending for COVID-19 monitoring and case management, including quarantine and specialized COVID-19 testing facilities. In a few countries, such as Azerbaijan and Kazakhstan, modular complexes were built to cater to COVID-19 patients. Singapore introduced a COVID-19 vaccine injury financial assistance program to aid those who suffered serious vaccine side effects. Outlays for vaccine procurement was an additional major component of health-related spending, including increasingly for pediatric and adolescent vaccinations.

Non-health-related spending focused on directly supporting households and alleviating financial stress, notably income support, and reducing pressure on businesses, including subsidies. Direct household support initiatives comprised cash transfers, food subsidies, and child benefit payments. Almost all governments distributed food or food cards to vulnerable and low-income families. Most developing Asian economies, including Azerbaijan, Georgia, Indonesia, Maldives, Mongolia, and Nepal, also provided utilities subsidies to affected households. Unemployment assistance also was provided by the government in Azerbaijan, Fiji, and Sri Lanka. The Cook Islands and Mongolia released childcare allowances to vulnerable and low-income families.

Support to business focused on subsidies, including for loan interest repayments, grants, and loan guarantees. In several developing Asian economies, including Malaysia, wage subsidies were also introduced to encourage businesses to retain workers. Bangladesh announced subsidies on interest payments on working capital loans. In some countries, including Brunei Darussalam, Cambodia, and Thailand, financial support was extended to key industries heavily affected by the pandemic, including textiles and tourism. Finally, some countries provided targeted support to farmers and the agriculture sector, including capital grants and subsidies, and bolstered the provision of fertilizers.

Across developing Asia, the balance of non-health spending support between households and business varied with some countries, such as Afghanistan, India, and Tajikistan, focusing on income support to households. Others, such as the PRC, Mongolia, and Nauru, focused on business subsidies and concessions, and spending on infrastructure projects.

Most developing Asian economies also implemented tax-related measures which in some countries, including Georgia and Viet Nam, represented a very large component of overall fiscal stimulus packages. These measures spanned the full range of major tax categories, including personal income tax, corporate income tax, property, trade, and VAT. In some countries tax-measures were complemented also by nontax revenue measures, such as cuts to, or deferral, of increases in tariffs on electricity, water, and other essential services, and some government surcharges and registration fees.

Countries such as Afghanistan, Bhutan, Cambodia, and India implemented tax deferrals on personal and business income taxes, as well as deferral of payment of mandatory contributions including social pensions. Other countries either reduced their tax rates, provided tax exemptions, or waived late fees and interest payments for outstanding tax liabilities. Bhutan, for example, deferred payment of sales tax and customs duty on listed essential items, while Indonesia temporarily removed its luxury tax on sales of some cars to accelerate the recovery of its automotive industry. Some measures aimed to support poorer households; for example, VAT exemptions were implemented for select food products and income tax waivers provided to low-income households. Reflecting a strong focus of fiscal packages on supporting health systems, taxes, customs duties, and tariffs on certain medical equipment and related products were waived in some countries. For example, in Indonesia, special provisions were provided to manufacturers of personal protective equipment and household antiseptic products. VAT exemptions were also applied to necessary medical products in Azerbaijan, while Bangladesh suspended duties and taxes on imports of medical supplies, including protective equipment and test kits.

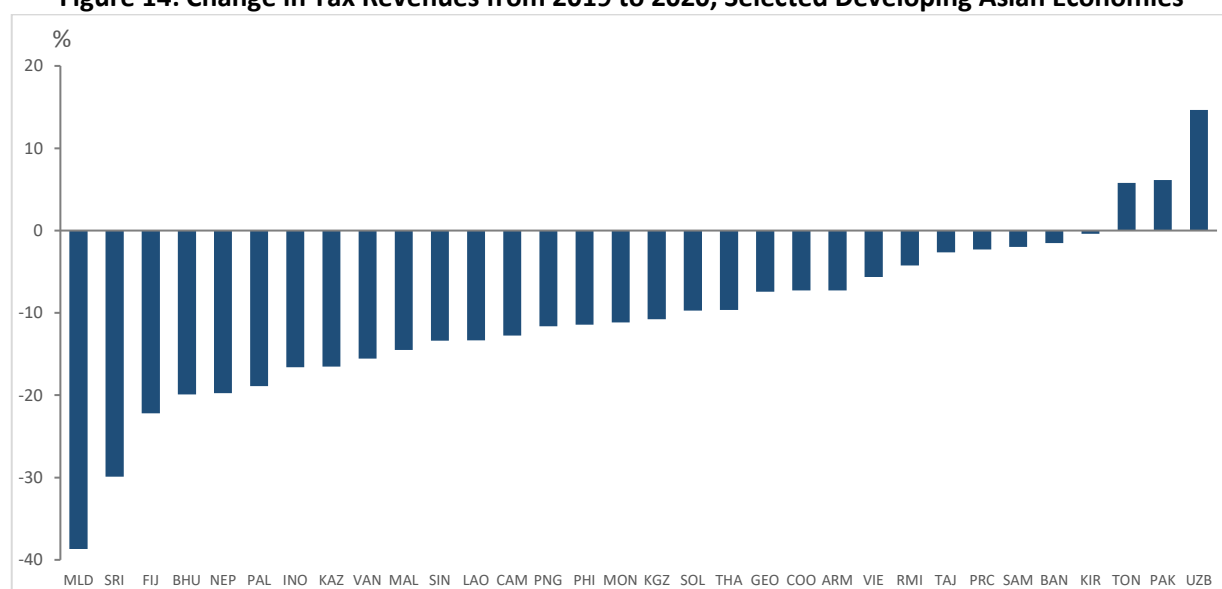
Across developing Asia, COVID-19 fiscal policy responses were generally designed to provide temporary relief through the worst of the pandemic and, in announcing fiscal support measures, many countries specified that these would apply for a limited period before expiring. This helped reduce uncertainty for

households and businesses and the risk that measures would become entrenched and create an enduring impost on government finances.

Many spending initiatives comprised one-off payments or outlays for specific projects such as health-related infrastructure. While some household and business income support measures were intended to apply for a matter of months, others, including some large initiatives, were to last much longer. Indeed, Cambodia's cash transfer for poor and vulnerable households and affected businesses continues to be implemented and regularly evaluated. Similarly, some types of tax and other revenue relief measures applied for whole fiscal years while others for shorter durations. The Lao People's Democratic Republic deferred tax collection from tourism-related businesses for 3 months while Myanmar announced that the license renewal fee for hotel and tourism businesses would be exempted for 1 year. Viet Nam deferred VAT, corporate and income taxes, and land rental payments for 5 months to support affected businesses and individuals, while the PRC allowed for a 6-month deferral of corporate income tax payment for small enterprises and self-employed businesses. By comparison, the Philippines announced that the net operating loss of a business or enterprise incurred in 2020 and 2021 could be carried over for the next 5 years.

Large discretionary fiscal policy responses together with the collapse in economic activity caused a sharp fall in tax receipts across developing Asia in 2020 (Figure 14). These falls were generally correlated with broader economic conditions, with revenues falling furthest in some small island economies including Fiji and Maldives, as well as other hard-hit economies such as Indonesia, Malaysia, and Sri Lanka. Limited data on individual taxes for developing Asia in 2020 indicates that revenue declines were broad based. For example, according to ADB's *Key Indicators* database, personal income tax receipt collapsed by 83% and corporate income tax receipt collapsed by 32% in Sri Lanka, and fell sharply in the Philippines and Armenia.

Figure 14: Change in Tax Revenues from 2019 to 2020, Selected Developing Asian Economies

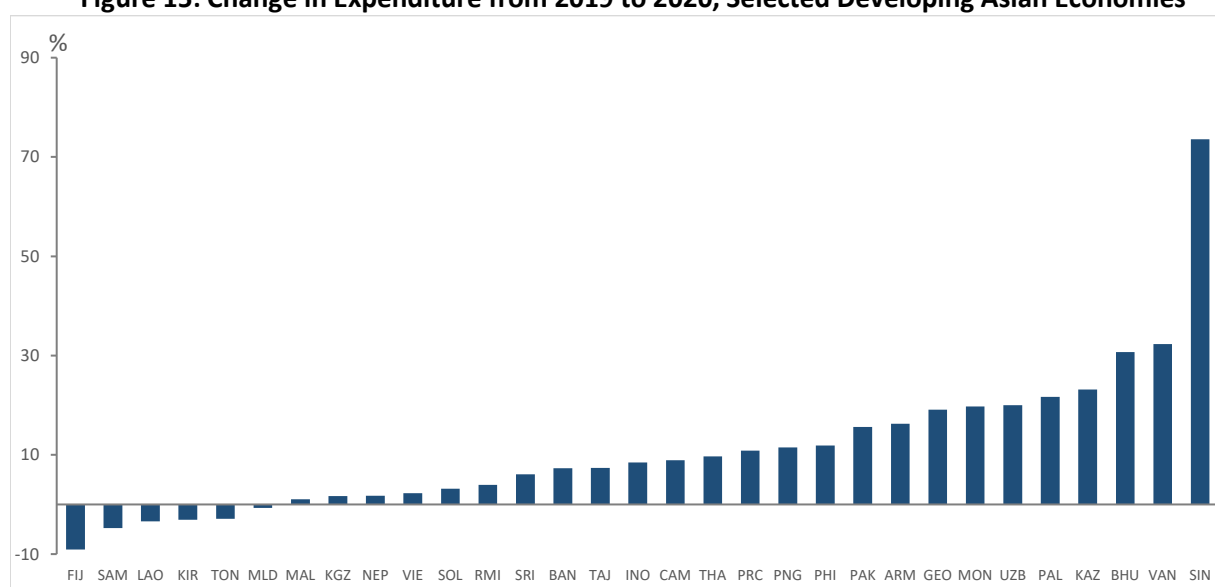


ARM = Armenia, BAN = Bangladesh, BHU = Bhutan, CAM = Cambodia, COO = Cook Islands, FIJ = Fiji, GEO = Georgia, INO = Indonesia, KAZ = Kazakhstan, KGZ = Kyrgyz Republic, KIR = Kiribati, LAO = Lao People's Democratic Republic; MAL = Malaysia, MLD = Maldives, MON = Mongolia, NEP = Nepal, PAK = Pakistan, PAL = Palau, PHI = Philippines, PNG = Papua New Guinea,

PRC = People's Republic of China, RMI = Republic of the Marshall Islands, SAM = Samoa, SIN = Singapore, SOL = Solomon Islands, SRI = Sri Lanka, TAJ = Tajikistan, THA = Thailand, TON = Tonga, UZB = Uzbekistan, VAN = Vanuatu, VIE = Viet Nam. Sources: International Monetary Fund. Government Finance Statistics online database. <https://www.imf.org>; Asian Development Bank (ADB). 2021. *Asian Development Outlook 2021*. <https://www.adb.org> (all accessed 31 Jan 2022); and ADB estimates.

At the same time, significant increases in expenditures were recorded in most developing Asian economies (Figure 15). Consistent with stimulus announcements, limited data suggests health spending rose strongly; for example, rising 15.2% and 13.6%, respectively, in the PRC and Indonesia (ADB 2021c). Spending on social protection also rose strongly, notably in Indonesia and Uzbekistan where it increased by 50% and 60%, respectively.¹

Figure 15: Change in Expenditure from 2019 to 2020, Selected Developing Asian Economies

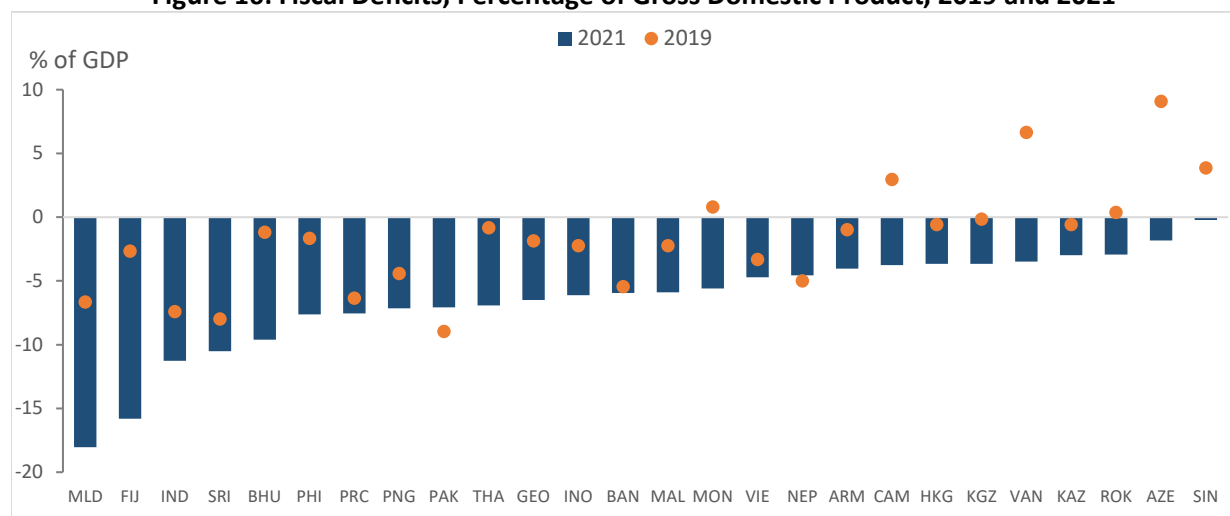


ARM = Armenia, BAN = Bangladesh, BHU = Bhutan, CAM = Cambodia, FIJ = Fiji, GEO = Georgia, INO = Indonesia, KAZ = Kazakhstan, KGZ = Kyrgyz Republic, KIR = Kiribati, LAO = Lao People's Democratic Republic, MAL = Malaysia, MLD = Maldives, MON = Mongolia, NEP = Nepal, PAK = Pakistan, PAL = Palau, PHI = Philippines, PNG = Papua New Guinea, PRC = People's Republic of China; RMI = Republic of the Marshall Islands, SAM = Samoa, SIN = Singapore, SOL = Solomon Islands, SRI = Sri Lanka, TAJ = Tajikistan, THA = Thailand, TON = Tonga, UZB = Uzbekistan, VAN = Vanuatu, VIE = Viet Nam. Sources: International Monetary Fund. World Economic Outlook October 2021 online database. <https://www.imf.org/en/Publications/WEO/weo-database/2021/October> (accessed 31 Jan 2022); and Asian Development Bank estimates.

Weaker revenues and higher spending saw fiscal deficits widen in most countries in the region, on average from 1.8% of GDP in 2019 to 6.4% of GDP in 2021 (Figure 16). In general, the countries that experienced the biggest falls in output and revenues saw the largest increases in deficits. In many cases, this increase was larger than following the GFC, when as during the COVID-19 pandemic, governments in the region deployed large fiscal stimulus to counter the effects of a major economic downturn.

¹ Authors' calculation using IMF World Economic Outlook October 2021 online database (accessed 31 January 2021).

Figure 16: Fiscal Deficits, Percentage of Gross Domestic Product, 2019 and 2021



ARM = Armenia, AZE = Azerbaijan, BAN = Bangladesh, BHU = Bhutan, CAM = Cambodia, FIJ = Fiji, GEO = Georgia, GDP = gross domestic product, HKG = Hong Kong, China, IND = India, INO = Indonesia, KAZ = Kazakhstan, KGZ = Kyrgyz Republic, MAL = Malaysia, MLD = Maldives, MON = Mongolia, NEP = Nepal, PAK = Pakistan, PHI = Philippines, PNG = Papua New Guinea, PRC = People's Republic of China; ROK = Republic of Korea, SIN = Singapore, SRI = Sri Lanka, THA = Thailand, VAN = Vanuatu, VIE = Viet Nam.

Sources: International Monetary Fund. World Economic Outlook October 2021 online database.

<https://www.imf.org/en/Publications/WEO/weo-database/2021/October> (accessed 31 January 2022); and Asian Development Bank estimates.

Higher fiscal deficits have, in turn, led to a marked increase in government debt levels. For developing Asia as a whole, average public gross debt rose from 51.9% of GDP in 2019 to 65.3% in 2021 (footnote 1). While debt levels in many developing Asian economies remain low by global standards, in some, it has reached uncomfortable levels and is projected to rise further in the coming years, continuing an upward trend that preceded the pandemic (Ferrarini et al. 2022). A further concern is that, even if public debt levels are relatively modest, private debt in many countries in the region is more substantial and continuing to rise. To the extent that governments may be forced to backstop private borrowers that face debt distress, headline public debt figures will understate government balance sheet pressures.

As developing Asia continue to recover from the pandemic, fiscal consolidation will be required in many countries to restore fiscal sustainability. While an emerging new fiscal policy orthodoxy argues that countries may have more room to maneuver before consolidation is required, debt limits nevertheless remain and the case for ongoing deficits is weaker in many developing economies where underlying demand is strong (Blanchard et al. 2021). It will also be necessary to ensure that lifeline measures for businesses are appropriately wound back to avoid supporting zombie firms that are kept afloat by policy support that could impede a strong durable recovery (Favara et al. 2021).

The urgency and magnitude of the consolidation task will depend on country-specific factors, particularly the size of the deficit and the adjustment needed to stabilize debt, which in turn will be

influenced by the outlook for growth and interest rates. So far, across the region, low interest rates and supportive financial conditions, combined with economic recoveries, are underpinning relatively favorable debt dynamics and dampening debt pressures. However, global interest rates are rising from very low levels as central banks normalize monetary policy. There is a risk that interest rates could rise suddenly in response to building inflationary pressures, causing an abrupt tightening in financial conditions and a deterioration in debt sustainability (Kose et al. 2021). While inflation across developing Asia is generally expected to remain at comfortable levels, in advanced economies, where recoveries have proceeded more quickly, and labor markets that have tightened, the inflation outlook is less benign (ADB 2022).

B. Meeting the Challenge of Fiscal Policy for Sustainable Development

Developing Asia, therefore, emerges from COVID-19 in a significantly weakened fiscal position, with higher deficits and debt and facing a difficult balancing act to maintain fiscal stimulus where necessary, while safeguarding fiscal sustainability. Tax buoyancy should help strengthen revenues as economic recovery gains traction. As noted in Section III.A, some elements of stimulus packages which were time limited will also begin to unwind, providing a further lift to revenues while reducing spending pressures.

However, there is a risk that the pandemic will cast a long shadow over government finances and that spending remains elevated, revenues weak, and deficits wide. The challenge of managing COVID-19 may endure, particularly in countries where vaccine rollouts are slow, requiring governments to maintain household and business support measures and additional funding for health care for longer than anticipated. Long-term output losses would also lower tax revenues. Despite strong growth rebounds, output is expected to remain below pre-pandemic trends for some time in many developing Asian economies (ADB 2022). There is also a risk that the pandemic permanently lowers potential output through its impact on employment, capital accumulation, and productivity (Fernald and Li 2021). Tax compliance can fall during crises, which may slow the pickup in revenues through the recovery from COVID-19 (Brondolo 2009). Finally, even if economies enjoy a strong recovery and stimulus is no longer needed governments may find it politically difficult to implement painful fiscal consolidation.

Beyond managing the pandemic, recovery, and fiscal consolidation, developing Asia faces huge medium-term and longer-term public spending pressures. While mobilizing resources is a long-standing and widely recognized development challenge, the establishment of the United Nations Sustainable Development Goals in 2014 turned attention to the resource requirements of achieving these goals by 2030. Subsequently, several studies estimated these spending needs in key sectors and in aggregate for individual countries and regions (UNCTAD 2014, Doumbia and Lauridsen 2019, Gaspar et al. 2019, and OECD 2020b). The result is that, even before COVID-19, achieving the SDGs by 2030 was estimated to require annual investments of \$3.0 trillion–\$4.5 trillion, with very large amounts needed in sectors such as energy, climate change mitigation, water and sanitation, education, and health. With actual investment of about \$1.5 trillion, this implied spending shortfalls of about \$2.5 trillion globally. According to the United Nations Economic and Social Commission for Asia and the Pacific (UNESCAP 2019), the Asia and Pacific region alone needed to invest an additional \$1.5 trillion annually. According to IMF estimates, average estimated spending shortfalls amount to about 9% of GDP for a sample of developing Asian economies (ADB 2022).

Adding to the challenges, actual spending levels are lower, required spending higher, and hence spending shortfalls are greatest in the least-developed countries. According to Gaspar et al (2019), the average shortfall in low-income countries amounted to about 15% of GDP. By comparison, spending shortfalls in emerging market economies were about 4% of GDP, more modest but still a significant gap. In addition, while the recovery path from COVID-19 remains uncertain, estimates indicate that SDG spending shortfalls rose considerably because of the pandemic. Based on a small sample of developing countries, including Cambodia and Pakistan, Benedek et al. (2021) estimate that spending shortfalls may have increased by about 2.5 percentage points of GDP because of lower revenues.

Beyond the medium-term SDG 2030 targets, developing Asia faces longer-term challenges that will impose additional financial burdens for decades to come, notably relating to climate change and aging. Achieving net-zero emissions by 2050 will require massive investments in clean energy (IEA 2021). Developing Asia is aging fast and, in the decades ahead, demographic change will add considerable fiscal pressures. Demands will mount for increased spending on pensions and health care and other services to support the elderly. At the same time, the working age share of the population will shrink in many countries, pushing up the dependency ratio and putting additional pressure on public support.

Given the magnitude of these spending pressures, countries will need to draw on the full range of public and private financial resources at their disposal. Private finance, both domestic and foreign, has a critical role to play. This includes green and social finance from private sources which has been growing strongly, driven by the environmental and social goals of investors as well as financial goals (ADB 2021a). Private finance is likely to be especially prominent in more developed countries where the enabling environment for private investors is stronger. Private investment will also flow more readily into energy and other sectors where returns on investment are more certain, and where there is a longer tradition of private sector involvement.

However, there is a risk that COVID-19 will cast a long shadow not just over government finances but also private financial flows. In 2020, global foreign direct investment flows fell by 35% and all but one SDG investment sector registered double-digit declines (UNCTAD 2021). While flows to developing Asia were far more resilient, excluding the PRC and Hong Kong, China, the region suffered a decline. If economic recovery is protracted, the recovery of foreign direct investment and other private investment could be slow. Remittances, another key source of external private finance for many developing Asian economies was also hit hard by COVID-19 because of the global downturn and international border closures, and may take time to fully recover (ADB 2021b).

Moreover, the role of government as the provider of many public goods and services, particularly to the poor, cannot be completely supplanted by the private sector. Opportunities for private investment in some sectors will often be limited because of underdeveloped institutions or market infrastructure, or because of restrictions on private investment. These especially include education, health, and water and sanitation in rural and remote areas, and climate change adaptation. Taking a longer-term view, as post-COVID-19 growth and development resumes across the region, Asian societies may demand greater public goods and redistribution, as hypothesized by “Wagner’s Law” (Akitoby et al. 2006).

Across developing Asia, several trends therefore point to substantially higher future government spending, which will inevitably require mobilizing taxes to ensure a reliable and growing flow of revenues. The need for both higher spending and taxes is especially great in many of the region’s poorest countries where, notwithstanding progress over the past couple of decades, tax revenues

remain at very low levels. A central challenge is for governments to raise these additional revenues without sacrificing the economic growth that the region still desperately needs to reduce poverty and raise living standards (ADB 2022). As spending rises, to minimize the tax burden, it will be important for governments to improve spending efficiency, given large differences in spending effectiveness across countries in key areas such as health and education (Herrera and Pang 2005, Kapsoli and Teodoru 2017, Grigoli and Kapsoli 2018, and Clements et al. 2022).

IV. CONCLUSION

Central to promoting sustainable development in developing Asia is securing adequate tax revenues by governments to fund public expenditures. This paper takes stock of the region's fiscal landscape, including a preliminary assessment of the impact of COVID-19, and highlights the broad fiscal policy challenges that are being faced by the region. While tax revenues steadily rose in the decades prior to the onset of COVID-19, they continue to lag well behind high-income countries and some developing peers. The region continues to rely predominantly on indirect taxes, particularly relatively efficient consumption taxes. However, developing Asia's tax structure is less progressive compared to high-income countries. Government expenditures on education and health, vital for promoting equitable growth, were comparatively modest. Substantial fiscal policy stimulus in response to COVID-19, combined with the impact of the downturn on revenues, has severely weakened public finances in many countries. The combination of falling revenues and higher spending during COVID-19 has markedly widened deficits and caused a further rise in debt levels that were already rising. As the pandemic recedes, governments will need to carefully calibrate fiscal consolidation to safeguard fiscal sustainability while protecting the poor and vulnerable. Beyond the near term, governments across developing Asia face vast public spending needs that will require stronger tax revenues, which is why strengthening tax revenues for sustainable development will remain a key policy challenge in the coming decades.

DATA APPENDIX

A. Data Sources

Our comparative analysis presented in the main section required a range of tax revenue data that provided good temporal and country coverage, particularly of developing Asian economies, as well as details on individual tax revenue components, ideally presented on a general government basis. Against this objective, existing cross-country revenue data sources all suffered from various shortcomings, requiring us to combine data from different sources to maximize data coverage.

The fiscal revenue data used in our analyses mainly comes from two widely used sources: the Organisation for Economic Co-operation and Development ([OECD Revenue Statistics Database](#)) and the International Monetary Fund Government Finance Statistics ([IMF GFS\)-Revenue Database \(IMF-GFS\)](#). Each of these databases have desirable features as well as limitations. The OECD database has superior temporal coverage of 113 countries from 1995 to 2019, presents revenue on a general government basis, and has a full and consistent decomposition of revenues by tax type.

In contrast, the IMF-GFS covers significantly more countries: 181. The IMF-GFS has data for 41 developing Asian economies of the Asian Development Bank (ADB), compared with only 20 for OECD data. The GFS database is updated on a weekly basis and, at the time of writing in early 2022, included some data for 2020, valuable for an initial assessment of the effects of coronavirus disease (COVID-19) on fiscal revenues. However, its temporal coverage is patchier, and the presentation of tax subcomponents are less harmonized across countries. For example, Singapore's value-added tax is missing in the IMF-GFS and subsumed under taxes on goods and services. By comparison, the two components are reported separately for Thailand. Finally, data in the IMF-GFS is a mix of general government (36%) and central government (64%) reporting across countries.

By combining data sources, we create a dataset that maximizes the desirable features of the IMF-GFS and OECD revenue statistics. Table A1 provides a summary of country, temporal, and general government coverage comparisons across the three datasets. Our core dataset includes data for 192 countries from 1995 to 2020, including the main tax aggregates of personal and corporate income, value-added tax and other goods and services, and international trade. The gains are most evident in terms of country coverage. Data for 66% of countries is presented on a general government basis. The lower temporal and general government coverage are simply artefacts of the dataset combination rather than poorer coverage.

Table A1: Comparing Country, Temporal, and General Government Reporting Coverage in Different Datasets

Variables	Total (%)			DMC (%)			Latin America (%)			Sub Saharan Africa (%)			High Income OECD (%)		
	GFS	OECD	ADB Core	GFSCore	OECD	ADB Core	GFS	OECD	ADB Core	GFSCore	OECD	ADB Core	GFSCore	OECD	ADB Core
Country count	181	113	192	41	20	45	29	28	31	43	27	45	33	33	33
Taxes	80	83	81	75	71	76	89	95	97	63	75	65	99.5	100	100
Taxes: income, profits, and capital gains	75	83	78	80	71	68	83	96	95	63	75	65	99.5	100	100
Payable by individuals	64	80	72	56	66	61	66	87	90	54	73	62	93	100	100
Payable by corporations and other enterprises	67	80	74	56	66	60	70	90	90	54	72	61	93	100	100
Taxes on payroll and workforce	25	82	57	16	68	39	24	96	84	19	75	49	53	100	100
Taxes on property	58	80	68	47	70	54	77	96	97	32	65	48	98	100	100
Taxes on goods and services	74	83	77	64	83	66	85	96	97	62	75	64	99	100	100
VAT	51	83	64	32	82	46	57	94	89	43	74	53	90	100	100
Excise tax	64	82	70	51	82	56	70	92	86	54	71	60	94	100	100
Taxes on international trade and transaction	67	82	77	65	70	66	88	92	94	62	71	63	60	100	100
Share of general government observations in OECD core	36	100	65	44	100	57	83	100	81	5	100	54	100	100	100
Note: (i) Shaded columns represent superior country coverage															
(ii) Highlighted entries represents superior temporal coverage measured as the share of non-missing entries to total potential entries from 1995 to 2019.															

ADB = Asian Development Bank, GFS = Government Finance Statistics, OECD = Organisation for Economic Cooperation and Development.

Sources: OECD. Global Revenue Statistics Database. <https://www.oecd.org>; IMF. Government Finance Statistics online database. <https://www.imf.org> (both accessed 31 January 2022); Asian Development Bank estimates

It must be noted that the practice of combining databases is common for cross-country fiscal data analyses. For example, the [IMF World Revenue Longitudinal Data \(WoRLD\)](#) was compiled using data from the OECD, the IMF-GFS, World Economic Outlook, and IMF staff estimates. The [UN-WIDER Government Revenue Dataset](#) similarly draws from multiple sources.

For our purposes, the process of supplementing databases with each other was subject to careful comparisons across the databases, ensuring that (i) data remains comparable within a country over time; (ii) data across countries are as comparable as possible; and (iii) data remains internally consistent, i.e., the subcomponents, in principle, adds up to the aggregate components. The process is described in section B below.

B. Data Compilation Notes

The OECD revenue database served as the base dataset. Data from 75 countries not covered in the OECD were imported from the IMF-GFS. Data for four economies (Brunei Darussalam; Taipei,China; Turkmenistan; and Tuvalu), which are neither in OECD nor in IMF-GFS were sourced from the [ADB Key Indicators Database](#). In total, our core database covers 192 economies. Table A2 presents the matching of variables across the three databases.

Table A2: Variable Mapping across Databases

IMF-GFS	OECD	ADB Key Indicators
Total revenue		Current revenue/Total revenue
Tax revenue	Total taxes (less social security contributions)	Taxes
Income tax	Taxes on income, profits, and capital gains	Taxes: income, profits, and capital gains
Individual taxes	Of individuals	Payable by individuals
Corporate taxes	Of corporations	Payable by corporations
Payroll taxes	Taxes on payroll and workforce	Taxes on payroll and workforce
Property Taxes	Taxes on property	Taxes on property
Taxes and goods and Services	Taxes on goods and services - (Customs and import duties + Taxes on exports + Other taxes on international trade and transactions)	Taxes on goods and services
VAT	Value added taxes	
Excise tax	Excises	
International trade taxes	Customs and import duties + Taxes on exports + Other taxes on international trade and transactions	Taxes on international trade and transaction
Revenue from Social Contributions		Social contributions
Grants		Grants
Other Revenue		Other revenue

ADB = Asian Development Bank, GFS = Government Finance Statistics, IMF = International Monetary Fund, OECD = Organisation for Economic Cooperation and Development, VAT = value-added tax.

Source: Authors.

The ultimate data source for each country was decided using the following criteria:

- (i) The database with the most complete and unbroken series from 1995 to 2019.

For example, the data for the People’s Republic of China in the OECD database only begins from 2009 to 2019, whereas the data in the IMF-GFS is from 1995 to 2019. In this case, we opted to keep the data from the latter source. The final source for each country is documented in the source column of the database.

(ii) Preference for general over central government reporting:

Whereas the OECD presents data for general government, the IMF-GFS presents both central and general government data for some countries. There is a preference for general government, which ideally represents the totality of an economy’s revenues across government levels as described in equation (1).

$$\text{general government} = \text{central} + \text{state} + \text{local} + \text{social security} \quad (\text{eq. 1})$$

When possible, general government series were derived by adding up subcomponents of equation (1). For example, the general government reporting of the People’s Republic of China did not become available until 2005, whereas data on central budgetary government and local government are available from 1995. General government data was derived for years before 2005 by adding together entries for central budgetary and local governments, while state government in equation (1) and extrabudgetary and social security entries in equation (2) are assumed to be zero. The resulting sums for years 2005 onward were confirmed to be equal to the data reported as general government. Similarly, the general government data for India was derived by summing up budgetary central and state government entries.

$$\text{central government} = \text{budgetary} + \text{extrabudgetary} + \text{social security} \quad (\text{eq. 2})$$

Notwithstanding the derivations, less than a third of the countries in the IMF-GFS dataset have good temporal and subcomponent coverage on general government entries. The choice between general or central government was determined based on the series that provided the maximum temporal coverage. Our core dataset is, therefore, a mix of general government (65%) and central government reporting (35%).

In general, we refrain from mixing central and government entries within a country. However, there are a few cases where a country shifted from central to general government reporting without any overlapping years when both are reported: Albania (2004), Armenia (2004), Kyrgyz Republic (2014), and Turkmenistan (2011). We joined the two series after verifying that doing so (a) did not introduce large deviations from overall time trends, and (b) resulting revenue trends are comparable to the total revenue reported in the World Economic Outlook. These cases are indicated by the variable *break*, which is equal to one for the joining year for each of these countries. Changes in fiscal and calendar year reporting are likewise marked by the *break* variable. Annotations on the nature of the break can be found in *breaknotes*.

There are cases where general government is the same as central government (i.e., Hong Kong, China; Singapore), and this is most common for smaller economies such as Fiji, the Lao People’s Democratic Republic, Maldives, Papua New Guinea, and Vanuatu. In these cases, we consider the series as general government.

(iii) Within country mixing of sources and internal consistency:

Both the OECD and GFS databases exhibit data gaps for some countries. An example is Kenya where OECD only reports data from 2001–2018 for general government, whereas GFS has data from 1995 to 2019 with central government reporting. In such cases, we supplement the OECD data with the GFS data if it can be verified from overlapping observations that the two sources are close in magnitude. Specifically, we supplement the OECD data (missing observations) with the GFS data (non-missing observations) provided that $\left| \frac{OECD_t - GFS_t}{OECD_t} \right| \leq .05$ for $t \pm 2$, where t represents the year where data is missing from OECD dataset. This discrepancy check is carried out variable-by-variable to preserve the internal consistency of our database.

For developing Asia, ADB's Key Indicators (KI) provides a valuable resource for extending temporal coverage. For example, in the GFS, data for Armenia (not covered in OECD), begins in 2003, whereas in ADB's KI, it starts in 2000. We augmented Armenia's data using ADB's KI series provided the 5% discrepancy rule of thumb noted above is satisfied. The *Asian Development Outlook Update* database also proved a useful source albeit only for the aggregate tax revenue variable.

One area where mixing of data sources is common surrounds the years 2019 and 2020 because data coverage for OECD ends in 2018 and 2019 for most countries, whereas ADB's KI has 2020 data for 19 developing Asian economies, and the IMF-GFS has 2020 data entries for 64 countries, nine of which are from developing Asia (with coverage expected to grow gradually over its weekly updates. The data in this background reflect GFS data as of 22 January 2022). Data augmentations for 2019 and 2020 generally follow the 5% discrepancy guideline.

APPENDIX: SUMMARY OF COUNTRY LEVEL DATA

Country	Government Level	Fiscal Year	Tax Revenue Data Source(s)
Afghanistan	General	21 March (1995–2011); 20 December (2012–2020)	IMF-GFS
Albania	Central (1995–2004), general	31 December	IMF-GFS
Algeria	Central	31 December	IMF-GFS
Angola	Central	31 December	IMF-GFS
Anguilla	Central	31 December	IMF-GFS
Antigua and Barbuda	General	31 December	OECD
Argentina	General	31 December	OECD
Armenia	Central (1995–2003), general	31 December	IMF-GFS
Australia	General	30 June	OECD
Austria	General	31 December	OECD
Azerbaijan	General	31 December	ADB Key Indicators (2000–2007); IMF GFS
Bahamas	General	30 June	OECD
Bahrain	Central	31 December	IMF-GFS
Bangladesh	Central	30 June	IMF-GFS
Barbados	General	31 December	OECD
Belarus	Central	31 December	IMF-GFS
Belgium	General	31 December	OECD
Belize	General	31 March	OECD
Benin	Central	31 December	IMF-GFS
Bhutan	General	30 June	OECD
Bolivia	General	31 December	OECD
Bosnia and Herzegovina	Central	31 December	IMF-GFS
Botswana	Central (2019), general	31 March	OECD (1995–2018); IMF-GFS (2019)
Brazil	General	31 December	OECD
Brunei Darussalam	Central	31 December (1995–2001); 31 March (2002–2020)	ADB Key Indicators
Bulgaria	General	31 December	OECD
Burkina Faso	Central (2019), general	31 December	OECD (1995–2018); IMF-GFS (2019)
Burundi	Central	31 December	IMF-GFS
Cabo Verde	Central (2019), general	31 December	OECD (1995–2018); IMF-GFS (2019)
Cambodia	Central	31 December	IMF-GFS
Cameroon	General	31 December	OECD
Canada	General	31 December	OECD
Central African Republic	Central	31 December	IMF-GFS
Chad	General	31 December	OECD
Chile	General	31 December	OECD

People's Republic of China	General = Central budgetary + Local	31 December	IMF-GFS
Colombia	General	31 December	OECD
Congo, Democratic Republic of the	General	31 December	OECD
Congo, Republic of	General	31 December	OECD
Cook Islands	General	30 June	OECD (1995–1999); IMF-GFS (2000–2019); ADOU 2021–(2020)
Costa Rica	General	31 December	OECD
Croatia	General	31 December	IMF-GFS
Cuba	General	31 December	OECD
Cyprus	General	31 December	IMF-GFS
Czech Republic	General	31 December	OECD
Côte d'Ivoire	Central (2019), general	31 December	OECD (1995–2018); IMF-GFS (2019–2020)
Denmark	General	31 December	OECD
Dominica	Central	31 December	IMF-GFS
Dominican Republic	General	31 December	OECD
Ecuador	General	31 December	OECD
Egypt	Central (1995–2001), general	30 June	IMF-GFS (1995–2001), OECD (2001–2019)
El Salvador	General	31 December	OECD
Equatorial Guinea	Central (2019), general	31 December	OECD (1995–2018); IMF-GFS (2019)
Estonia	General	31 December	OECD
Eswatini	Central (2019–2020), general	31 March	OECD (1995–2018); IMF-GFS (2019)
Ethiopia	Central	6 July	IMF-GFS
Fiji	General	31 December	IMF-GFS (1995–1996; 2000–2007; 2019–2020); OECD (1997–1999; 2008–2018)
Finland	General	31 December	OECD
France	General	31 December	OECD
Gabon	Central		IMF-GFS
Gambia	Central		IMF-GFS
Georgia	General	31 December	IMF-GFS
Germany	General	31 December	OECD
Ghana	Central (2019), general	31 December	OECD (1995–2018); IMF-GFS (2019)
Greece	General	31 December	OECD
Grenada	Central	31 December	IMF-GFS
Guatemala	General	31 December	OECD
Guinea	Central		IMF-GFS
Guinea-Bissau	Central		IMF-GFS
Guyana	General	31 December	OECD
Honduras	General	31 December	OECD

Hong Kong, China	General	31 March	IMF-GFS
Hungary	General	31 December	OECD
Iceland	General	31 December	OECD
India	General = Central budgetary + State	1 April	IMF-GFS
Indonesia	Central (1995–2007), general	31 December	IMF-GFS (1995–2019); OECD (2020)
Iran	Central		IMF-GFS
Iraq	Central	31 December	IMF-GFS
Ireland	General	31 December	OECD
Israel	General	31 December	OECD
Italy	General	31 December	OECD
Jamaica	General	31 March (1995–2003); 31 December (2004 onward)	OECD
Japan	General	31 March	OECD (1995–2019); IMF-GFS (2020)
Jordan	Central	31 December	IMF-GFS
Kazakhstan	General	31 December	OECD
Kenya	Central	30 June	OECD (1995–2018); IMF-GFS (2019)
Kiribati	General	30 June	IMF-GFS
Korea, Republic of	General	31 December	OECD
Kosovo	General	31 December	IMF-GFS
Kuwait	Central	30 June (1995–1999); 31 March (2000–2020)	IMF-GFS
Kyrgyz Republic	Central (1995–2013), general	31 December	IMF-GFS (1995–2019); ADB Key Indicators (2020)
Lao People's Democratic Republic	General	31 December	OECD (1995–1999; 2010–2019); ADOU (2000–2007); IMF-GFS (2008–2009)
Latvia	General	31 December	OECD
Lebanon	Central	31 December	IMF-GFS
Lesotho	Central	31 March	IMF-GFS
Liberia	Central	30 June	IMF-GFS
Liechtenstein	General	31 December	OECD
Lithuania	General	31 December	OECD
Luxembourg	General	31 December	OECD
Macao, China	General	31 December	IMF-GFS
Madagascar	Central	31 December	OECD (1995–018); IMF-GFS (2019)
Malawi	Central	30 June	OECD (1995–2018); IMF-GFS (2019–2020)
Malaysia	Central	31 December	OECD (1995–2019); ADOU 2021 (2020)
Maldives	General	31 December	IMF-GFS (1995–2006); OECD (2007–2019); ADB Key Indicators (2020)

Mali	Central	31 December	OECD (1995–2018); IMF-GFS (2019)
Malta	General	31 December	IMF-GFS
Marshall Islands	Central	30 September	IMF-GFS
Mauritania	General	31 December	OECD
Mauritius	Central (2019), general	30 June	OECD (1995–2018); IMF-GFS (2019)
Mexico	Central (2019), general	31 December	OECD (1995–2018); IMF-GFS (2019)
Micronesia, Federated States of	Central	30 September	IMF-GFS
Moldova	Central	31 December	IMF-GFS
Mongolia	General	31 December	IMF-GFS (1995–2003; 2019–2020); ADB Key Indicators (2004–2005); OECD (2006–2018)
Montenegro	Central		IMF-GFS
Montserrat	Central	31 December	IMF-GFS
Morocco	Central (1995–1999), general	31 December	IMF-GFS (1995–1999; 2019); OECD (2000–2018)
Mozambique	Central	31 December	IMF-GFS
Myanmar	General	31 March	IMF-GFS
Namibia	Central	31 March	IMF-GFS
Nauru	General	30 June	OECD
Nepal	Central	16 August	IMF-GFS
Netherlands	General	31 December	OECD
New Zealand	General	30 June	OECD
Nicaragua	General	31 December	OECD
Niger	General	31 December	OECD
Nigeria	General	31 December	OECD
North Macedonia	Central	31 December	IMF-GFS
Norway	General	31 December	OECD
Oman	Central	31 December	IMF-GFS
Pakistan	Central	30 June	IMF-GFS
Palau	Central	30 September	IMF-GFS (1995–2019); ADOU 2021 (2020)
Panama	General	31 December	OECD
Papua New Guinea	General	31 December	IMF-GFS (1995–1999); OECD (2000–2019); ADB Key Indicators (2020)
Paraguay	Central (1995–1998), general	31 December	IMF-GFS (1995–1999); OECD (2000–2019)
Peru	General	31 December	OECD
Philippines	Central	31 December	IMF-GFS
Poland	General	31 December	OECD
Portugal	General	31 December	OECD
Qatar	Central		IMF-GFS

Romania	General	31 December	IMF-GFS
Russian Federation	Central	31 December	IMF-GFS
Rwanda	General	31 December	OECD
Saint Kitts and Nevis	Central	31 December	IMF-GFS
Saint Lucia	General	31 March	OECD
Saint Vincent and the Grenadines	General	31 December	IMF-GFS
Samoa	General	30 June	OECD
San Marino	Central	31 December	IMF-GFS
Saudi Arabia	Central	31 December	IMF-GFS
Senegal	Central (2019), general	31 December	OECD (1995; 1997–2019); IMF-GFS (1996)
Serbia	General	31 December	IMF-GFS
Seychelles	General	31 December	IMF-GFS (1995–2018); OECD (2019)
Sierra Leone	Central	30 June (1995–1997); 31 December (1998–2020)	IMF-GFS
Singapore	General	31 March	IMF-GFS (1995–1999); OECD (2000–2019); ADOU 2021 (2020)
Slovak Republic	General	31 December	OECD
Slovenia	General	31 December	OECD
Solomon Islands	Central (2019), general	31 December	OECD (1995–2019), IMF-GFS (2020)
Somalia	Central		IMF-GFS
South Africa	General	31 December	OECD (1995–2018); IMF-GFS (2019)
Spain	General	31 December	OECD
Sri Lanka	Central	31 December	IMF-GFS
Sudan	Central		IMF-GFS
Suriname	Central	31 December	IMF-GFS
Sweden	General	31 December	OECD
Switzerland	General	31 December	OECD
São Tomé and Príncipe	Central	31 December	IMF-GFS
Taipei, China	Central	31 December	ADB Key Indicators
Tajikistan	General	31 December	IMF-GFS
Tanzania	Central	30 June	IMF-GFS
Thailand	General	30 September	IMF-GFS (1995–1999; 2020); OECD (2000–2019)
Timor-Leste	General	31 December	IMF-GFS
Togo	General	31 December	OECD
Tokelau	General	30 June	OECD
Tonga	Central	30 June	IMF-GFS (1995–1999; 2013–2018); ADOU 2021 (2000–2012); ADB Key Indicators (2019–2020)
Trinidad and Tobago	General	30 September	OECD

Tunisia	Central (1995–1999), general	31 December	IMF-GFS (1995–1999); OECD (2000–2019)
Turkey	Central (2019–2020), general	31 December	OECD (1995–2018); IMF-GFS (2019–2020)
Turkmenistan	Central (1995–2010), general	31 December	ADB Key Indicators
Tuvalu	Central	31 December	ADB Key Indicators
Uganda	Central (2019), general	30 June	OECD (1995–2018); IMF-GFS (2019)
Ukraine	Central	31 December	IMF-GFS
United Arab Emirates	Central	31 December	IMF-GFS
United Kingdom	General	31 December	OECD (1995–2019); IMF-GFS (2020)
United States	General	31 December	OECD (1995–2017); IMF-GFS (2018–2020)
Uruguay	General	31 December	OECD
Uzbekistan	General	31 December	IMF-GFS (1995–2019); ADB Key Indicators (2020)
Vanuatu	General	31 December	IMF-GFS (1995–1999; 2019); OECD (2000–2018); ADB Key Indicators (2020)
Venezuela	General	31 December	OECD
Viet Nam	General	31 December	IMF-GFS (1995–2002; 2018–2020); OECD (2003–2017)
West Bank and Gaza	Central	31 December	IMF-GFS
Yemen	General	31 December	IMF-GFS
Zambia	Central	31 December	IMF-GFS
Zimbabwe	Central	30 June	IMF-GFS

ADB = Asian Development Bank, ADOU = Asian Development Outlook Update, GFS = Government Financial Statistics, IMF = International Monetary Fund, OECD = Organisation for Economic Co-operation and Development.

Sources: International Monetary Fund. 2017. *Government Finance Yearbook*. Washington, DC; and Asian Development Bank. 2021. *Key Indicators for Asia and the Pacific*. Manila.

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