INTERNATIONAL MONETARY FUND

Revenue Mobilization for a Resilient and Inclusive Recovery in the Middle East and Central Asia

Prepared by an IMF team led by Geneviève Verdier and Brett Rayner, and including Imen Benmohamed, Mahmoud Harb, Priscilla Muthoora, Nathalie Reyes, Ling Zhu (MCD) and Vincent de Paul Koukpaizan and Charles Vellutini (FAD), with contributions from Thomas Benninger, Shafik Hebous, Andrew Okello, Bernard Sanya (FAD), and Alireza Marahel

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MIDDLE EAST AND CENTRAL ASIA AND FISCAL AFFAIRS DEPARTMENTS

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Acknowledgments

Country Groupings

Throughout this paper *Middle East and Central Asia* (ME&CA) refers to the 32 countries and territories in the Middle East and Central Asia Department of the International Monetary Fund.

For analytical purposes and to facilitate comparisons *Middle East and Central Asia* (ME&CA) countries and territories are divided into subgroups.[1] The composition of the ME&CA and various subgroups is as follows:

CCA	Caucasus and Central Asia: Armenia, Azerbaijan, Georgia, Kazakhstan, the Kyrgyz Republic, Tajikistan, Turkmenistan, and Uzbekistan.
CCAOE	Caucasus and Central Asia hydrocarbon exporters: Azerbaijan, Kazakhstan, Turkmenistan, and Uzbekistan.
CCAOI	Caucasus and Central Asia hydrocarbon importers: Armenia, Georgia, the Kyrgyz Republic, and Tajikistan.
GCC	Gulf Cooperation Council: Bahrain, Kuwait, Oman, Qatar, Saudi Arabia, and the United Arab Emirates.
ME&CA	Afghanistan and Pakistan and countries and territories in the Caucasus and Central Asia and Middle East and North Africa: Afghanistan, Algeria, Armenia, Azerbaijan, Bahrain, Djibouti, Egypt, Georgia, Iran, Iraq, Kazakhstan, Kuwait, the Kyrgyz Republic, Jordan, Lebanon, Libya, Mauritania, Morocco, Oman, Pakistan, Qatar, Saudi Arabia, Somalia, Sudan, Syria,[2] Tajikistan, Tunisia, Turkmenistan, the United Arab Emirates, Uzbekistan, West Bank and Gaza, and Yemen.
ME&CA EMMIs	ME&CA Emerging Market and Middle-Income hydrocarbon importers: Armenia, Egypt, Georgia, Jordan, Lebanon, Morocco, Syria, Tunisia, West Bank and Gaza.
ME&CA LICs	ME&CA Low-income countries: Afghanistan, Djibouti, the Kyrgyz Republic, Mauritania, Somalia, Sudan, Tajikistan, Uzbekistan, and Yemen.
ME&CA OE	ME&CA Emerging Market hydrocarbon exporters: Algeria, Azerbaijan, Bahrain, Iran, Iraq, Kazakhstan, Kuwait, Libya, Oman, Qatar, Saudi Arabia, Turkmenistan, United Arab Emirates.
MENA	Middle East and North Africa: Algeria, Bahrain, Djibouti, Egypt, Iran, Iraq, Kuwait, Jordan, Lebanon, Libya, Mauritania, Morocco, Oman, Qatar, Saudi Arabia, Somalia, Sudan, Syria, Tunisia, the United Arab Emirates, West Bank and Gaza, and Yemen.
MENAP	Middle East, North Africa, Afghanistan, and Pakistan: Afghanistan, Algeria, Bahrain, Djibouti, Egypt, Iran, Iraq, Kuwait, Jordan, Lebanon, Libya, Mauritania, Morocco, Oman, Pakistan, Qatar, Saudi Arabia, Somalia, Sudan, Syria, Tunisia, the United Arab Emirates, West Bank and Gaza, and Yemen.
MENAOE	MENA hydrocarbon exporters: Algeria, Bahrain, Iran, Iraq, Kuwait, Libya, Oman, Qatar, Saudi Arabia, the United Arab Emirates, and Yemen.
MENAPOI	MENA hydrocarbon importers and Afghanistan and Pakistan: Afghanistan, Djibouti, Egypt, Jordan, Lebanon, Mauritania, Morocco, Pakistan, Somalia, Sudan, Syria, Tunisia, and West Bank and Gaza.
FCSs	Fragile and Conflict-affected States: Afghanistan, Djibouti, Iraq, Lebanon, Libya, Somalia, Sudan, Syria, Tajikistan, and Yemen.

[1] Based on the October 2021 MCD Regional Economic Outlook.
[2] Syria is excluded in many cases due to a lack of reliable data.

Acronyms and Abbreviations

AEs	Advanced Economies
CIT	Corporate Income Tax
EMDEs	Emerging Market and Developing Economies
GFC	Global Financial Crisis
LICs	Low-Income Countries
PIT	Personal Income Tax
SDGs	Sustainable Development Goals
SFA	Stochastic Frontier Analysis
UMIC	Upper Middle Income Countries
VAT	Value-Added Tax

Glossary

Gini coefficient	A measure of the dispersion or inequality in the distribution of a given variable, usually income or wealth. The Gini coefficient ranges from 0 to 1, with higher values corresponding to higher inequality.
Progressivity	A feature of the tax system design such that the average tax rate rises with income.
Tax base	The amount of income or assets or value of transactions, as defined in the tax law, subject to taxation. The tax base can be narrowed through the use of exemptions and deductions.
Tax buoyancy	The percentage change in tax revenue in response to percentage change in GDP.
Tax potential	The tax ratio which a country can mobilize given characteristics such as its economic structure, level of development, trade openness, and the quality of its institutions.
Tax effort	The ratio of actual tax collection to estimated tax potential. For a given country, the larger the tax effort, the smaller the gap between actual tax collection and estimated tax potential.
Tax gap	The difference between estimated tax potential and actual tax collection. It measures the scope for mobilizing additional tax revenue.
Tax productivity	The ratio of tax revenue to GDP multiplied by the standard tax rate.
Tax ratio	The ratio of tax collections to GDP.
Redistributive capacity	The difference between the Gini coefficients of respectively pre- and post-tax income.
Stochastic frontier analysis	An econometric modeling approach which allows for the estimation of a production frontier and measurement of technical efficiency or inefficiency relative to this frontier.
VAT C-efficiency	The ratio of actual VAT revenues to the product of private consumption and standard VAT rate. Under an 'idealized' broad-based VAT that is being perfectly enforced and complied with, the C-efficiency measure would be 100 percent; any other value—higher or lower—indicates deviation from a single tax rate on private consumption.

Executive Summary

Domestic revenue mobilization has been a longstanding challenge for countries in the Middle East and Central Asia. Insufficient revenue has often constrained priority social and infrastructure spending, reducing countries' ability to reach the UN Sustainable Development Goals, improve growth prospects, and address climate-related challenges. Moreover, revenue shortfalls have often been compensated by large and sustained debt accumulation, raising vulnerabilities in some countries and limiting fiscal space to address future shocks.

The COVID-19 pandemic and the war in Ukraine have compounded challenges to sustainable public finances, underscoring the need for revenue mobilization efforts. Significant revenue losses during the pandemic, including from measures to ease the tax burden for businesses and households, as well as spending measures to support growth, have weakened public finances and made domestic revenue mobilization an urgent policy priority for the region. Rising commodity prices because of the war in Ukraine and the policy responses have added to fiscal pressures. Policymakers are looking to limit fiscal risks and scarring effects from the pandemic by adapting the design and pace of tax revenue mobilization.

The recent global crises have also exacerbated existing societal inequalities and highlighted the importance of raising revenues in an efficient and equitable manner. As in the rest of the world, the impact of the pandemic has been unequal, falling disproportionately on the poor, the vulnerable, and those in contact-intensive sectors. Meanwhile, rising food and fuel prices resulting from the war in Ukraine have hit vulnerable households the hardest. Increasing the efficiency and equity of revenue collection is therefore crucial to help mitigate the negative distributional effects of the pandemic and higher commodity prices. A more efficient tax system would help boost revenue and fund social and infrastructure spending, which can spur growth and reduce inequality of opportunities. Higher and more inclusive growth can strengthen social cohesion and increase tax collection, thus creating a virtuous circle. A more equitable tax system can, in turn, reduce disparities in income and wealth by redistributing income from the top to the bottom of the income distribution. The challenge is to find the right balance between efficiency and equity in mobilizing revenues for crisis recovery.

This paper examines the scope for additional tax revenue mobilization and discusses policies to gradually raise tax revenue while supporting resilient growth and inclusion in the Middle East and Central Asia. While the specific revenue mobilization strategies will need to reflect country circumstances and the broader fiscal objectives including the level of government spending desired by a country, the paper's main findings can be summarized as follows:

- *Excluding hydrocarbon revenues, the region's average tax intake lags those of other regions.* In the two decades preceding the pandemic, the tax base was broadened notably in several countries, but overall it remained relatively narrow and tax collections underperformed. In fact, excluding hydrocarbon-related revenue, the average tax ratio, at about 12 percent, was below that of emerging market and developing economies (EMDEs) in other regions.

- *The region's fragile and conflict-affected states (FCSs) face particular challenges in mobilizing tax revenue.* Their tax ratios averaged just 8 percent, well below those of FCSs in other regions and insufficient to cover critical social and development needs.

▪ *In general, there is considerable scope to raise additional tax revenue.* Tax revenue gaps—the difference between potential and actual nonhydrocarbon tax collection—are very large, estimated at more than 14 percent of nonhydrocarbon GDP on average for the region. Some of the largest gaps are found in low-income countries and fragile states. Tax gaps are smallest in the Caucasus and Central Asia countries, reflecting recent progress there.

▪ *Countries have made efforts to raise tax collection, but challenges remain.* Countries in the region, like other EMDEs, derive the bulk of their tax revenue from consumption-based taxes, relying on a variety of indirect taxes and fees. However, the revenue yields are relatively low. In addition, the use of direct taxes— especially personal and corporate income taxes—has been relatively limited.

▪ *Tax policy design, notably low tax rates and pervasive tax exemptions, is an important factor driving tax revenue shortfalls.* Hydrocarbon-exporting countries, especially those in the Gulf Cooperation Council, have particularly low rates for corporate income tax, personal income tax (PIT) and consumption-based taxes, despite recent progress. Moreover, exemptions are widespread across the region and significant for both direct and indirect taxes. In addition, many state-owned enterprises in the region benefit from a variety of privileges or concessions, which further erode the tax base and complicate tax administration.

▪ *Weak tax compliance, reflecting both structural features and challenges in revenue administration, also plays a role.* Relevant structural features of the region include the existence of large informal sectors and complex tax systems. Shortcomings in revenue administration include lack of autonomy, inefficient organization, and the underdevelopment of digital taxpayer services. These elements create opportunities for tax avoidance and evasion.

▪ *Personal income tax systems in the region vary in their progressivity—the extent to which the average tax rate increases with income—and in their ability to redistribute income.* In some countries, the PIT is relatively progressive, but revenues are too small to achieve a meaningful redistribution of income. Other countries have larger PIT revenues, but lower progressivity. The most redistributive tax systems in the region can be found among countries in the Middle East and North Africa.

These findings provide insights for policy action to raise revenue while supporting resilient growth and inclusion. Although the appropriate balance between efficiency and equity considerations is different for each country, our analysis points to the following priorities for the region to improve both efficiency and equity of tax systems:

▪ *Improving tax policy design to broaden the tax base and increase progressivity and redistributive capacity.* Such efforts would particularly benefit countries with concentrated tax bases, such as hydrocarbon-exporting countries. More generally, across the region, eliminating widespread exemptions and inefficient tax incentives would broaden tax bases and could improve the progressivity of tax systems. Moreover, redesigning personal income and value-added taxes—or in some cases, accelerating their introduction— could boost revenue collection and support inclusion. Further developing property taxes, whose use is currently limited in the region, would also contribute towards these objectives.

▪ *Strengthening revenue administration to improve compliance.* Modernizing revenue administrations and enhancing their efficiency would improve enforcement and compliance. Key requirements include restructuring revenue administrations on a functional basis and granting them greater autonomy, developing taxpayer services to reduce the cost of compliance, reinforcing control procedures, and leveraging digital technologies and expanding electronic taxpayer services to all main taxes. Enhanced international cooperation can also facilitate information exchange across tax jurisdictions, improving transparency and the integrity and fairness of the tax system.

▪ *Implementing structural reforms to incentivize tax compliance, formalization, and economic diversification.* Promoting financial inclusion and discouraging the use of cash could help improve access to financial services and lower the cost of digital payments. These measures can boost tax compliance and incentivize formalization and economic diversification—two important determinants of revenue performance in the region. Reforms to fight corruption, improve governance and enhance transparency and communication are also crucial for instilling confidence in the fairness of the tax system.

Sustained efforts are needed for successful reforms to mobilize revenues. The experience of countries in the region that have achieved significant and lasting improvements in their tax ratios suggests that reform efforts need to be sustained over relatively long periods. To be successful, tax reforms also require careful timing and design as well as clear and transparent communication to generate buy-in. Political commitment is also essential to drive reform momentum.

1. A Longstanding Challenge

Domestic revenue mobilization has been a longstanding challenge for countries in the Middle East and Central Asia. For the last two decades, domestic tax revenues have generally fallen short of those in other regions, limiting the region's ability to support resilient and inclusive growth. Some progress, however, has been made in recent years, especially by countries in the Caucasus and Central Asia, reflecting reform efforts on both tax policy and revenue administration. Elsewhere, considerable work remains to be done to overcome narrow tax bases and improve progressivity of income taxes; these challenges have been compounded by the COVID-19 pandemic and the war in Ukraine. As policymakers in the region implemented several tax policy and revenue administration measures to mitigate the economic impacts of the pandemic, revenue losses have been significant. While the region's economies have started to recover, the outlook remains uncertain. Although country-specific circumstances and societal preferences on the size of the public sector differ, raising revenues to support resilient and inclusive growth has generally been an important priority in many countries of the region.

A. The Case for Efficient and Equitable Revenue Mobilization

Supporting resilient growth and reducing poverty and inequality are key priorities in the Middle East and Central Asia. A growing body of evidence suggests social and infrastructure spending are critical for promoting resilient growth and inclusion—two mutually reinforcing objectives. Resilient growth supports social development and mobility, while economic inclusion is necessary to sustain growth and political stability.[1] For countries in the Middle East and Central Asia (ME&CA), lackluster and volatile growth has translated into lower average real income per capita in 2018 than in 2008—a notable exception when compared to other regions (Figure 1). Youth unemployment has remained high and access to high-quality affordable public services remains uneven, hampering progress toward the UN Sustainable Development Goals (SDGs). Data on income inequality for the region is scant but estimates on inequality for a small sample of countries point to top incomes being highly concentrated, reflecting both between- and within-country inequality. From 1990 to 2016, the share of income accruing to the top decile of the distribution averaged 64 percent in the region, compared to 47 percent in the United States and 55 percent in Brazil, for example (Piketty, Alvaredo, and Assouad 2017).[2] Public spending can play a critical role for reducing inequality and improving opportunities for all. Additional spending needs to achieve five critical SDGs covering human, social, and physical capital was estimated at 5.3 percent of GDP per year by 2030 on average for the region (Mathai and others 2020). Some countries will require significantly more.

Resilient growth will also require future spending to be covered without building debt vulnerabilities. Countries have often covered spending needs and fiscal deficits through borrowing. However, fiscal space has shrunk just as spending needs are projected to increase further to support the post-COVID recovery while addressing challenges from high and rising commodity prices, economic and gender inequality, youth unemployment and large movements of refugees (Figure 2; Mathai and others 2020). The war in Ukraine has reduced an already diminished policy space, given rising inflation and debt in several countries, and made policy trade-offs more acute (IMF 2022a). Elevated debt levels and financing needs have increased countries' vulnerabilities and made them susceptible to a tightening of global financial conditions. Reducing debt even to pre-COVID levels would require much stronger and sustained fiscal adjustment for more than

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[1] See for example, Ostry, Berg, and Tsangarides (2014); Ostry, Loungani, and Berg (2019); and Cerra, Lama and Loayza (2021).

[2] These estimates are obtained by combining household survey with income tax data. Piketty, Alvaredo and Assouad's (2017) sample of countries for the Middle East region include the following: Bahrain, Egypt, Iran, Iraq, Jordan, Kuwait, Lebanon, Oman, Palestine, Qatar, Saudi Arabia, Syria, United Arab Emirates, and Yemen. Their definition thus differs from that of this paper.

Figure 1. Growth Volatility and GNI per Capita

1. Volatility of Growth Across Regions[1]
(2000–19)
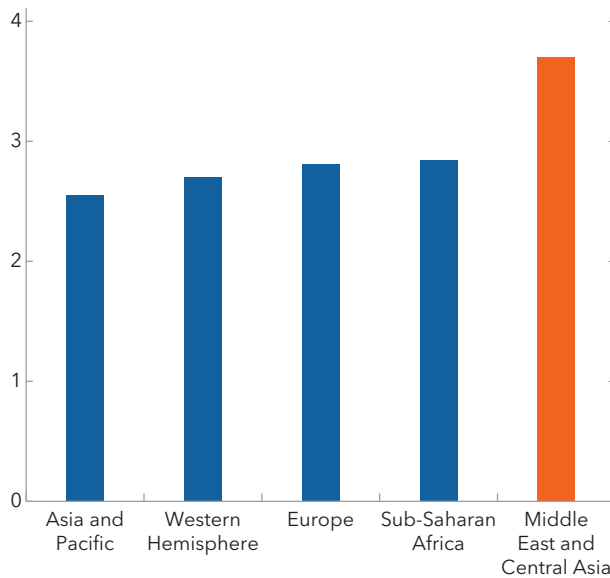
2. Gross National Income per Capita PPP (Constant 2017 international U.S. dollars)
(Percent change, regional averages, 2008–18)
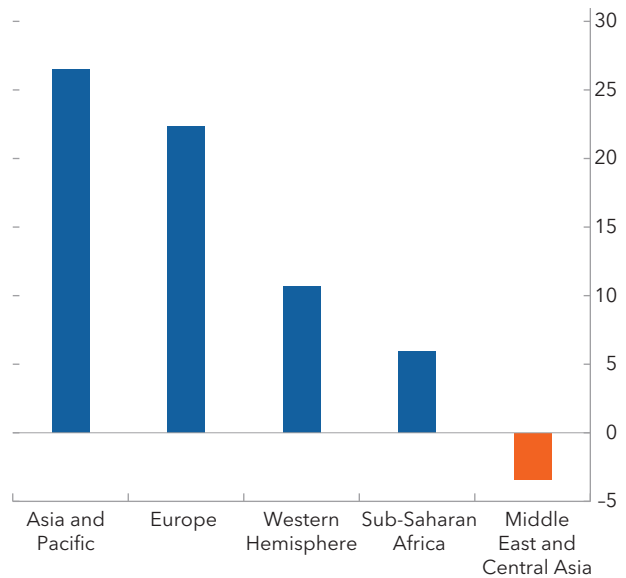
Sources: IMF *World Economic Outlook* October 2021; and IMF staff calculations.
[1]In panel 1, the bars show the volatility of growth, measured by the standard deviation of real GDP growth between 2000 and 2019, and the median in each group.

Figure 2. Additional Spending Estimates in 2030, by Income Group
(Percent of GDP)
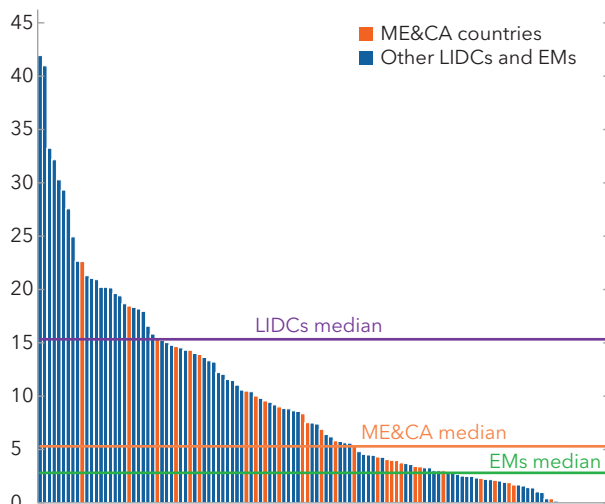
Sources: Mathai and others (2020); and IMF staff calculations based on Gaspar and others (2019).
Note: LIDCs = low-income developing countries; and EMs = emerging markets.

a decade (IMF 2021b). While the more favorable outlook from soaring hydrocarbon prices may reduce the urgency of revenue mobilization for several economies of the region, uncertainty remains exceptionally high. Managing hydrocarbon revenue volatility, and diversification away from hydrocarbons in the longer term, would require the development of the nonhydrocarbon tax base.

Increasing public resources through domestic revenue mobilization would create space to invest in resilient and inclusive growth in a sustainable manner. Before the pandemic, growth-friendly tax revenue mobilization was a key policy priority in the region. In the Caucasus and Central Asia (CCA), revenue mobilization was widely viewed as a necessary element for rebuilding fiscal buffers following a succession of adverse shocks (Gemayel and others 2018). Increasing tax revenue has also become a policy imperative as the region's hydrocarbon-exporting economies transition to a post-oil economy. In low-income countries, and especially in fragile and conflict-affected states (FCSs), revenue mobilization is necessary to help meet development spending needs and achieve the SDGs. Across the ME&CA region, adaptation to climate change is estimated to generate additional public spending needs of up to 3.3 percent of GDP per year over the next 10 years (IMF 2020, Duenwald and others 2022)

Figure 3. Total Revenue and Tax Revenue in ME&CA and Other Emerging Markets

1. **Total Revenue and Tax Revenue**
   (Percent of GDP, average 2000–19)

2. **Tax Revenue**
   (Percent of GDP)
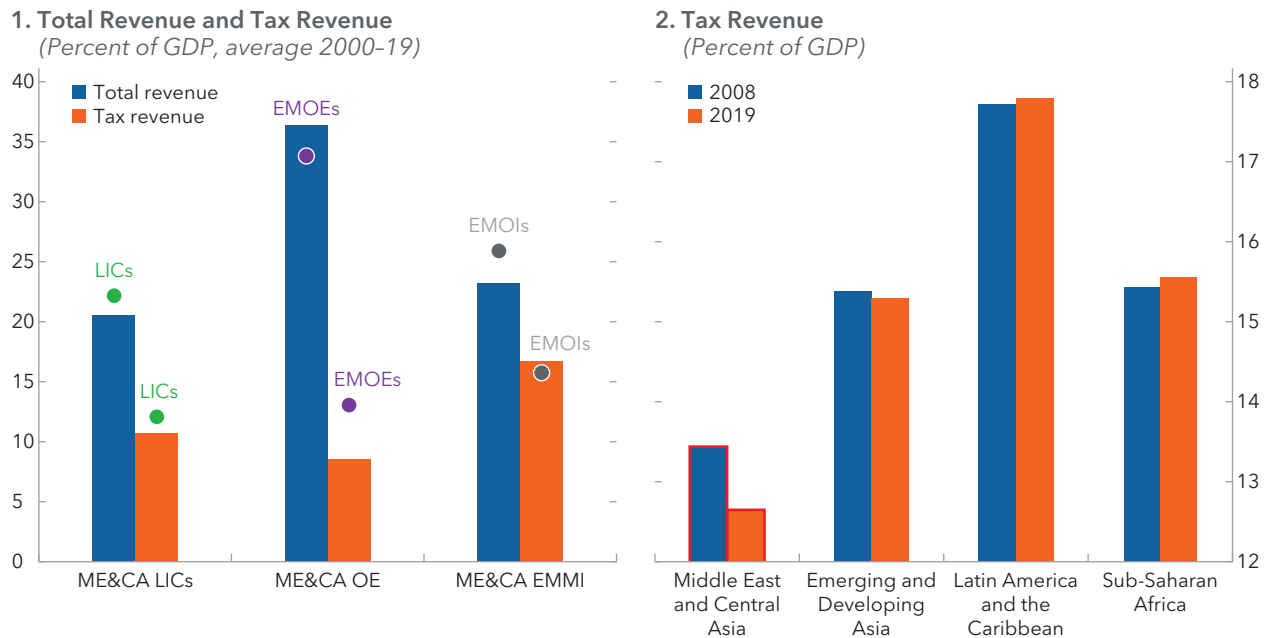
Sources: IMF *World Economic Outlook* October 2021; IMF *Regional Economic Outlook Middle East and Central Asia*, April 2021; and IMF staff calculations.
Note: In panel 1, the dots show the global averages for various country groups: Low Income Countries (LICs), Emerging Market Oil Exporters (EMOEs) and Emerging Market Oil Importers (EMOIs).

Now, following the impacts of the pandemic and war on vulnerable households, countries must redouble efforts to strike the right balance between efficient and equitable revenue mobilization. Although the appropriate balance will be different for each country, there are some general principles for policymakers to consider. In general, consumption taxes have been found to be relatively efficient and supportive of economic growth. By contrast, income taxes have been found to be more equitable (IMF 2013a). Improving the design of taxes can help balance this efficiency-equity trade-off. For example, measures to broaden the base for consumption taxes are found to be more supportive of growth than raising consumption tax rates. Similarly, income taxes can be designed to minimize the distortions to growth. In all tax reform efforts, the equity-efficiency trade-off can only be assessed when evaluating the impact of net taxes: not only the impact of a tax on growth and incentives but also the benefit from financing growth-friendly and equity-enhancing spending.

B. Pre-Pandemic Revenue Stagnation

Despite efforts in recent years, ME&CA countries have generally collected less revenues than other emerging market and developing economies (EMDEs). Between 2000 and 2019, total government revenue in ME&CA countries averaged 29.9 percent of GDP, well above other regions, thanks to hydrocarbon-related revenue. However, from 2012, the average revenue ratio in ME&CA started on a sharp downward trend due to lower oil prices. By 2019, the average revenue ratio in ME&CA countries (26.5 percent of GDP) had fallen below the 2008 level. Indeed, many ME&CA countries faced challenges in mobilizing domestic tax revenue over this period. In 2019, the average tax-to-GDP ratio for ME&CA countries was just 12.7 percent of GDP, lower than in emerging and developing Asia (15.3 percent), sub-Saharan Africa (15.6 percent), and Latin America and the Caribbean (16.9 percent). In 2019, just before the COVID-19 pandemic, the region's average tax revenue intake had fallen below its 2008 level (13.4 percent), the most significant decrease compared to other regions (Figure 3).

Figure 4. Tax Revenue by Type
(Percent of GDP, average 2015–19)
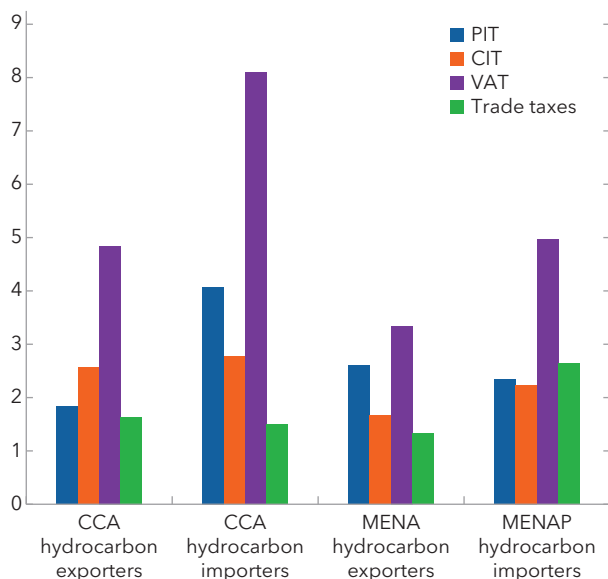
Sources: Country authorities; and IMF staff calculations.

Figure 5. Revenue Mobilization in Fragile Countries
(Percent of GDP, average 2015–19)
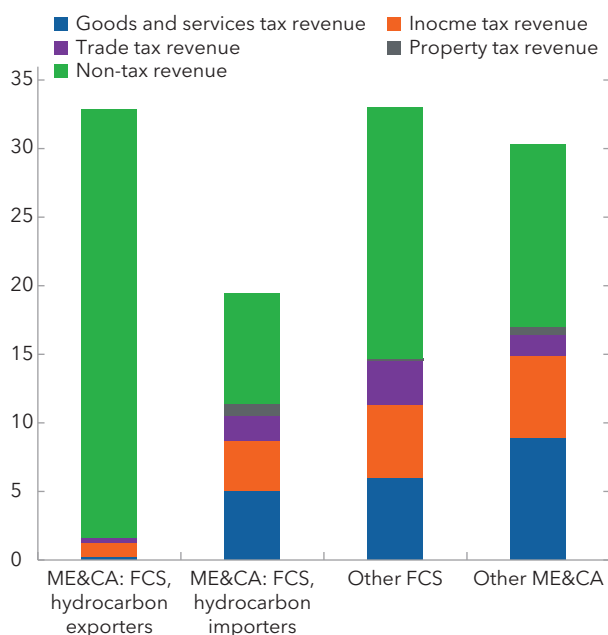
Source: IMF World Revenue Longitudinal data 2020.

Tax collection has been relatively weak across the region, particularly when measured excluding hydrocarbon revenue.[3] There are differences across subregions, however. Countries in CCA have generally higher tax ratios than in the Middle East and North Africa (MENA), Afghanistan, and Pakistan. ME&CA countries, like other EMDEs, derive most of their tax revenue from consumption-based taxes, namely taxes on goods and services and taxes on international trade and transactions (Figure 4). While tax collection on goods and services rose over this period, generalized tariff reductions in the context of trade liberalization resulted in revenue losses from trade taxes (Baunsgaard and Keen 2010; Cagé and Gadenne 2018). In addition, the region's economies, especially Gulf Cooperation Council (GCC) members, tended to have lower direct tax revenues—notably, personal and corporate taxes. Also, property tax revenues have been limited—ranging between zero and 2 percent of GDP in 2019.

Tax collection has been especially weak in the region's many fragile states. The average tax ratio for FCSs in the ME&CA averaged 8.4 percent during 2015–19.[4] This was lower than the average of FCSs in other regions (13 percent) and below the estimated minimum tax ratio (12¾ percent) associated with a significant acceleration of growth (Gaspar, Jaramillo, and Wingender 2016). Resource-rich FCSs in the region depend heavily on non-tax hydrocarbon revenue, raising only 2.8 percent of GDP in tax revenue, having no valued-added tax (VAT) and only limited revenue from income taxes.[5] By contrast, hydrocarbon-importing FCSs in the region (Afghanistan, Tajikistan, Djibouti, Lebanon, Somalia, Sudan) raised around 10 percent of GDP in tax revenue (Figure 5).

Some ME&CA countries, however, managed to make notable progress in mobilizing domestic revenues before COVID. The ratio of nonhydrocarbon tax revenue to nonhydrocarbon GDP, for example, was higher in 2019 relative to its 2000 level in 15 countries. The most significant increases occurred in hydrocarbon-importing economies, particularly in the CCA (Armenia, Georgia, the Kyrgyz Republic, and Tajikistan), which raised

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[3] The ratios reported are nonhydrocarbon revenue to nonhydrocarbon GDP for hydrocarbon-exporting countries.

[4] Total tax revenue (GDP) includes resource-related revenues (GDP).

[5] Hydrocarbon-exporting FCSs in the region include Iraq, Libya, Syria, and Yemen.

more tax revenue than the rest of the region (Figure 6). Nonhydrocarbon tax revenues also rose in several hydrocarbon-exporting countries, notably among the members of the GCC, which introduced new excises.

This progress reflected both tax policy and revenue administration reforms. Countries that achieved long-lasting and sizeable gains did so by sustaining revenue mobilization reforms over a relatively long period. Countries with the largest increase in tax revenue during 2000–19 undertook wide-ranging reforms. For example, tax policy reforms in Georgia and Tajikistan focused on simplifying the tax system by reducing the number of taxes as part of an anti-corruption revenue mobilization strategy. In Amenia, reforms to modernize its revenue administration focused on upgrading the physical information technology infrastructure to enable electronic tax filing, streamlining business processes, and training tax officials (World Bank 2016).[6] Tajikistan also simplified tax procedures (IMF 2021b), as did the Kyrgyz Republic (IMF 2013b).

Figure 6. Tax Revenue
(Percent of GDP, change 2000–19)

Sources: Country authorities; and IMF staff calculations.
Note: Taxes exclude hydrocarbon-related taxes and are expressed as percent of nonhydrocarbon GDP for hydrocarbon-exporting countries.

For many countries in the region, however, tax bases remain narrow and compliance weak. Concentration of economic activity in a few sectors, the prevalence of large informal and hard-to-tax sectors, and tax expenditures erode tax bases. In the MENA region, for example, state-owned enterprises (SOEs) benefit from several tax advantages (Ramirez Rigo and others 2021). Informality—measured by estimates of the shadow economy and the share of self-employment in total employment—is high in several ME&CA countries and has risen in recent years in the region as growth slowed (Cardarelli and others 2022; Figure 7). Informality tends to be negatively correlated with tax performance, as it often implies non-compliance with tax obligations (Kanbur and Keen 2014). In addition, widespread tax exemptions and loopholes undermine tax revenue collection as they narrow the tax base—the amount of income or assets or the value of transactions on which the government can apply taxes—and weaken tax compliance by complicating tax administration.

Meanwhile, the ability of tax systems in the region to redistribute income varies. Redistribution through taxation can reduce disposable income inequality, while funding public spending through domestic revenue mobilization can reduce inequality of opportunities (IMF 2017a). Greater inclusion helps foster more durable growth and a stable socio-political environment and hence reinforces tax collection capacity (Shafik 2018). Yet the progressivity and redistributive capacities of the regional tax systems are, in general, weak. This stems in part from the region's heavy reliance on consumption-based taxes and fees and fines, which tend to be more regressive.[7] Hydrocarbon-exporting countries stand out. GCC members do not have a PIT. In hydrocarbon-exporting countries with
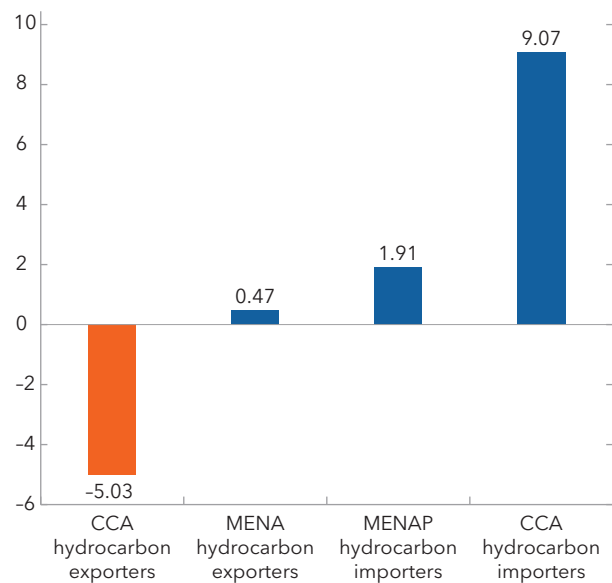
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[6]   World Bank (2016).

[7]   Fees and fines also tend to be less efficient.

Figure 7. Shadow Economy and Income Inequality in the ME&CA

1. Size of the Shadow Economy
(Percent of GDP, change in 3-year averages: 2017 vs 2008)
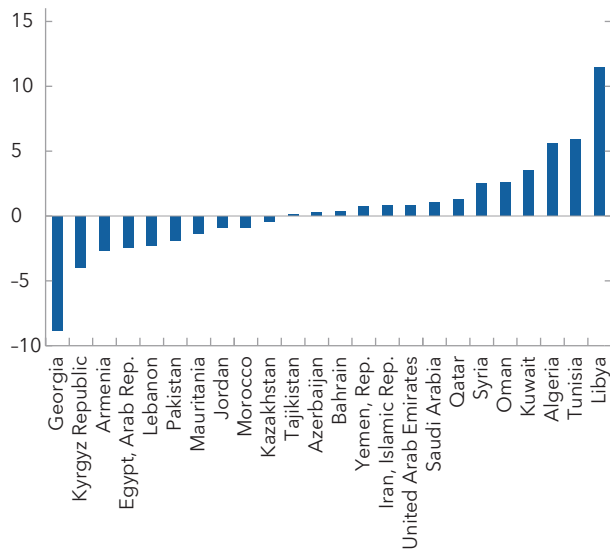
2. Income Inequality and Redistribution
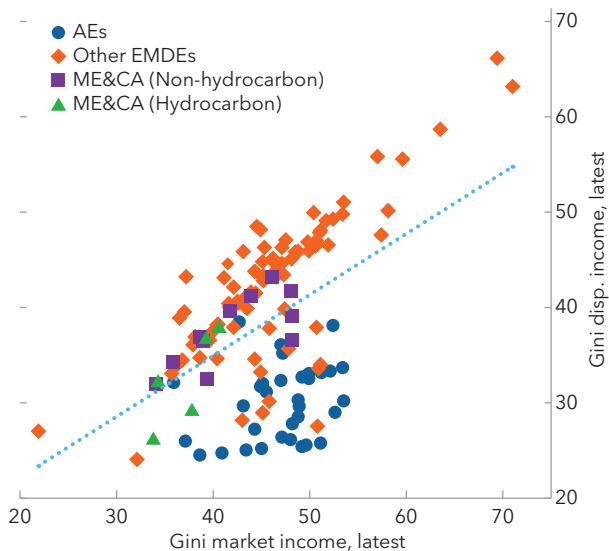
Sources: Country authorities; Schneider and Medina (2018); SWIID; and IMF staff calculations.
Note: In panel 2, the tax and transfer system is effective in redistributing income and reducing inequality when the Gini coefficient for disposable income is lower than the Gini coefficient for market income. Data on the Gini Coefficients are not available for many ME&CA countries.

a PIT, its level and progressivity tend to be low. However, progressivity is necessary but not sufficient to ensure the redistributive capacity of a given tax instrument. The amount of revenues raised also matters.

C. COVID-19 Compounded Revenue Challenges

The COVID-19 pandemic has impacted the region through various channels. Economic activity in all countries was hit by the health effects of the pandemic as well as containment measures, including temporary lockdowns, and reduced mobility and tourism. To mitigate the immediate impact on lives and livelihoods, governments implemented a broad set of health, fiscal, monetary, and financial measures, some of which had a significant impact on public finances. On the tax side, most governments supported households and businesses through temporary tax relief. Several countries implemented revenue administration measures to support their staff's health, service provision, and revenue collections. A few introduced temporary taxes or raised existing rates to deal with the cyclical downturn in revenue (Box 1).

Government revenue losses were significant. MENA hydrocarbon-exporting economies experienced the largest revenue loss (5.2 percentage points, on average), measured by the decline in general government revenue ratios between 2019 and 2020. Most of the shortfall was driven by non-tax hydrocarbon revenue, suggesting that the concomitant oil price shock had a greater immediate impact on revenue than fiscal policy measures. A similar picture emerges among the CCA hydrocarbon-exporting economies, although the magnitude of the overall revenue loss is smaller. By contrast, for hydrocarbon-importing economies of the region, losses were driven by shortfalls in tax revenue (Figure 8). A mixed picture emerges when comparing revenue losses in the immediate aftermath

Figure 8. Overall Government Revenue Losses

1. ME&CA Subregions
(Percent of GDP, change 2019–20)

Legend: Tax revenue, Other revenue

Categories: MENA hydrocarbon exporters, MENAP hydrocarbon importers, CCA hydrocarbon exporters, CCA hydrocarbon importers

2. Recent Crises Comparison
(Percent of GDP, change in total government revenue)

Legend: MENA hydrocarbon exporters, MENAP hydrocarbon importers, CCA hydrocarbon exporters, CCA hydrocarbon importers

Categories: Post-Arab Spring, Oil price slump, Pandemic

Sources: IMF *Regional Economic Outlook Middle East and Central Asia*, April 2021; IMF *WorldEconomic Outlook*, October 2021; and IMF staff calculations.
Note: In panel 1, taxes include hydrocarbon tax revenue and GDP includes hydrocarbon GDP. In panel 2, revenue includes hydrocarbon-related revenues, and GDP includes hydrocarbon GDP. Years of comparison: post-Arab Spring (2010–11), oil price slump (2014–15) and pandemic (2019–20).

of the pandemic with those following other recent crises. Revenue losses between 2019 and 2020 were comparable to—although slightly lower than—those from the 2014 oil price slump for the MENA hydrocarbon-exporting economies. They were significantly smaller for CCA hydrocarbon-exporting economies. Among hydrocarbon-importing economies, the pandemic was broadly revenue neutral for MENAP countries Afghanistan and Pakistan, but had a more marked impact in the CCA region than during previous crises.

The challenge of raising revenues to support inclusive growth has become more pressing following the pandemic. In addition to the need for better health care, preparedness, and vaccinations in many countries, concerns have emerged about scarring from COVID-19 as a constellation of factors could make the economic effects of the pandemic on the region deeper and more persistent. These include the impact on hard-hit and slow-recovering sectors (for example, tourism) and weakened corporate balance sheets, and possible spillovers on financial systems. Meanwhile, the war in Ukraine adds to these challenges. In the ME&CA region, higher food and energy prices and tightening financial conditions are important channels of transmission and will strain public finances.

The need to mobilize tax revenues presents an opportunity to improve the tax system to strike a better balance between efficiency and equity considerations. Recent tax plans and announcements in the countries of the region appear to reflect some of these considerations. In Saudi Arabia, for example, where the concomitant pandemic and oil price shock in 2020 led to large revenue shortfalls, the VAT rate was increased from 5 to 15 percent and custom duties were raised. The revenue from these tax increases were in part used to strengthen the social safety net. Equity considerations led to the reform of Egypt's PIT schedule in 2020 to make it more progressive. Algeria announced new tax reforms in 2022 to improve the taxation of the informal sector and distribute the tax burden more equitably. These steps are important to the goal of improving tax systems.

Box 1. Revenue Administration and Tax Policy Responses to COVID-19 in the Middle East and Central Asia

Recognizing taxpayers' liquidity constraints, countries in the region implemented several administrative and policy measures to provide tax relief, including: (1) tax deferrals on declaration and payments of individual and corporate taxes; (2) exemptions or postponement of rent payment, property and land taxes to selected sectors, including tourism, transportation, and cultural facilities; and (3) reduction or suspension of various government fees like stamp duties (Box Table 1).

Box Table 1. Measures in Response to COVID-19 in the Middle East and Central Asia

	Country
Payment postponement (incl. extension or tax filling and utility bills)	Afghanistan, Algeria, Bahrain, Georgia, Iran, Lebanon, Morocco, Oman, Saudi Arabia, Uzbekistan
Reductions (incl. exemptions, refunds, and delayed introduction of new taxes/fees)	Afghanistan, Azerbaijan, Bahrain, Georgia, Kazakhstan, Kuwait, Mauritania, Morocco, Oman, Pakistan, Qatar, Saudi Arabia, Somalia, Tajikistan, United Arab Emirates, Uzbekistan
By type of tax:	
Property tax	Azerbaijan, Egypt, Georgia, Kazakhstan, United Arab Emirates, Uzbekistan
Customs duty	Afghanistan, Jordan, Mauritania, Pakistan, Qatar, Tunisia, United Arab Emirates
Income tax	Azerbaijan, Georgia, Morocco, Oman, Tunisia, Uzbekistan
VAT	Georgia, Kazakhstan, Mauritania, Tajikistan, Tunisia, United Arab Emirates
Sales (consumption) tax	Jordan, Somalia
Capital income tax	Egypt
Sector-targeted tax relief	Azerbaijan, Bahrain, Egypt, Georgia, Jordan, Kazakhstan, Kyrgyz Republic, Morocco, Tajikistan, United Arab Emirates

Sources: Country authorities; and IMF Policy Tracker.

Measures implemented by revenue administrations in the Middle East and Central Asia region during COVID-19 were similar to those in other regions, including Sub-Saharan Africa and Europe. Most measures aimed to protect staff of revenue administrations, taxpayers, and tax agencies, safeguard revenue and support government, and maintain a reasonable level of operations. Some measures were applied across the board, while others varied based on the stage of the pandemic in which the countries were. Measures generally applied included: work from home arrangements; extended filing and payment deadline and adjusting enforcement programs—suspension of audit and arrears collection activities (Algeria, Iraq, Lebanon, Tunisia, Uzbekistan). Other revenue administration measures included relaxed conditions and terms for paying tax arrears in installments (Algeria, Morocco, Uzbekistan); accelerated tax refund payments (Tunisia); provision of taxpayer incentives to

Box 1. Revenue Administration and Tax Policy Responses to COVID-19 in the Middle East and Central Asia *(continued)*

regularize disrupted tax liabilities (Egypt); enhanced taxpayer service and communication (Jordan, Uzbekistan); streamlined clearance processes for essential goods and medical supplies; and suspension of penalties for minor customs law breaches (Tunisia).

Tax policy measures in the region included exonerations from VAT and customs duties, including for essential commodities (Somalia), pharmaceutical products, and medical equipment used to fight against COVID-19 (Algeria), services and sales of hotels and restaurants (Jordan). Tax holidays were also widely deployed to boost consumption and support small and medium enterprises (Algeria, Somalia, Tajikistan). A few countries implemented measures to raise revenues, including coronavirus taxes on public and private sector salaries and state pensions (Djibouti, Egypt) and temporary solidarity funds financed by voluntary contributions (Tunisia).

2. The Scope for Additional Tax Revenues

The scope to mobilize additional tax revenues can be measured by comparing a country's potential tax revenue and actual tax collection. A country's tax potential, in turn, depends on its structural characteristics and policies. This section presents new estimates for tax potential and tax effort for countries of the Middle East and Central Asia using stochastic frontier analysis. The results suggest that tax gaps—the difference between tax potential and tax collection—are on average 14.2 percent of GDP for nonhydrocarbon taxes, with some of the largest revenue gaps in low-income countries and fragile states. While all countries in the region would benefit from higher tax effort and better design of tax regimes, greater attention to boosting tax potential and effort may be warranted in less-diversified hydrocarbon-exporting countries.

Successfully mobilizing additional domestic revenues for resilient and inclusive growth will depend on a country's tax potential. Estimating tax potential can help provide a sense of relevant magnitudes. Tax potential—the level of tax revenue a country can raise given its economic structure, level of development, trade openness, and the quality of institutions—is not directly observable but can be estimated based on these characteristics. The tax revenue gap—the difference between potential tax revenue and actual tax collection—measures the scope for mobilizing additional tax revenue. A related concept, tax effort, is the ratio of actual tax collection to estimated tax potential.

Structural characteristics and policy factors are important determinants of a country's potential to raise tax revenues. The estimates presented here are based on a stochastic frontier analysis (SFA) which enables computation of a tax gap relative to an estimated tax frontier.[8] This frontier is interpreted as tax potential and defines a theoretical maximum attainable level of tax revenue given a set of country characteristics.[9] Using SFA, the tax gap is interpreted as a "technical inefficiency" that can vary over time and reflects both differences in tax legislation, including, for example, the level of tax rates and exemptions, and shortcomings in revenue administration.

Our analysis reveals several important determinants of tax potential. Higher net foreign direct investment (a proxy for the quality of the business environment), trade openness, and better control of corruption have a statistically significant positive impact on tax potential. In addition, lower levels of economic diversification and high dependency on hydrocarbon revenues have a statistically significant negative impact on tax potential (Annex 2).

The scope to raise tax revenues varies among countries and reflects differences in economic diversification:

- *In hydrocarbon-exporting countries, a narrow nonhydrocarbon economic base limits tax potential relative to peers.* Excluding Bahrain, tax potential in hydrocarbon economies ranges from 14 to 25 percent of nonhydrocarbon GDP, compared to an average of 48 percent in advanced economies and 30 percent in emerging market economies (Figure 9). Possible explanations include: (1) the low level of economic

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[8] Stochastic Frontier Analysis was applied to a panel of 146 countries covering the period 2000–19 (Annex 2). The estimation of tax potential in this approach is based on aggregate-level macroeconomic determinants of tax potential that capture the region's idiosyncrasies such as differences in capital mobility, economic diversification, and features of low-income countries. An alternative approach is the IMF Revenue Administration Gap Analysis Program (RA-GAP), which requires more granular data not readily available in most countries. This approach is applied to decompose the key sources of VAT gaps relative to a normative benchmark into policy gap and compliance gap.

[9] The estimated tax potential does not necessarily correspond to a desirable level of tax revenue. In practice, the efficient amount of tax revenue to GDP that a country can raise could be different from that defined by the frontier.

Figure 9. Tax Revenue Gap

1. Hydrocarbon-Exporting Countries
(Percent of non-hydrocarbon GDP)
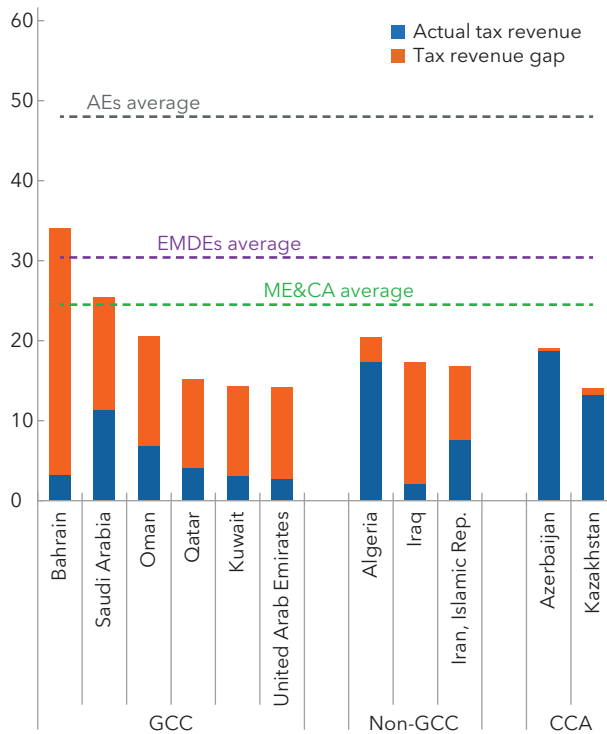
2. Hydrocarbon-Importing Countries
(Percent of GDP)
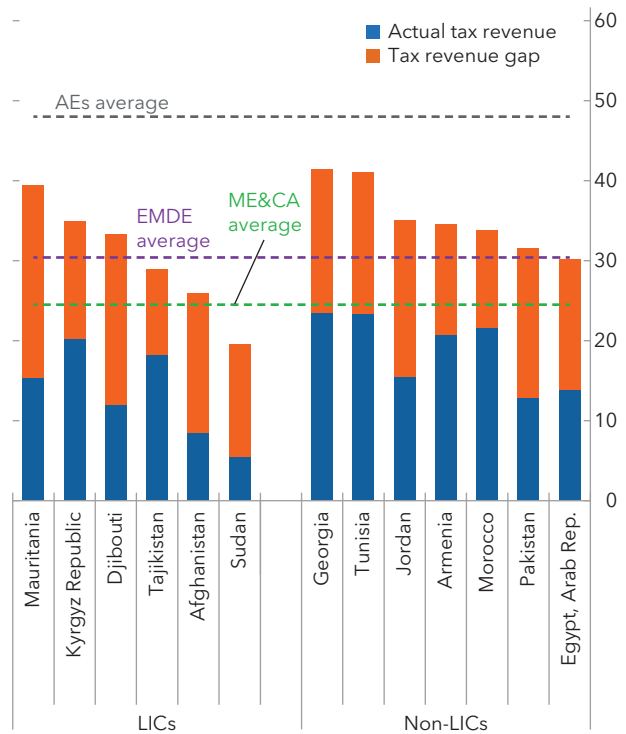
Sources: Country authorities; and IMF staff calculations.

diversification, which could narrow the nonhydrocarbon tax base[10] and (2) extensive tax exemptions and low tax rates—particularly in GCC countries.[11] The resulting estimated tax gaps range from 0.4 to 15 percent of nonhydrocarbon GDP, with the lowest gaps in the CCA subregion.

▪ *In contrast, tax potential is more comparable to peers in more diversified hydrocarbon-importing countries*. The estimated tax potential in hydrocarbon-importing countries in the region ranges from 20 to 41 percent of GDP, with an average of 33 percent, just above the average of 30 percent in EMDEs (Figure 9). The corresponding tax gap varies between 12 and 30 percent of GDP, with the lowest gaps recorded in more developed middle-income countries and the highest gaps mostly in low-income countries.

There is scope to raise revenues in most countries through greater tax effort. Following Le, Moreno-Dodson, and Rojchaichaninthorn (2008), we benchmark countries based on their estimated tax effort (Figure 10) and actual tax collection relative to the median in the ME&CA and full estimation sample (Annex Table 2.3). Relative to the whole sample, many countries are classified as low tax collection/effort (Figure 11). This includes all low-income countries, fragile states, as well as Egypt, Jordan, Kazakhstan, and Saudi Arabia. Less diversified hydrocarbon-exporting countries (mainly GCC countries) and fragile states tend to have the lowest tax effort and collection.[12] Hydrocarbon-importing and CCA countries have both high tax collection and tax effort.

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[10] Only nonhydrocarbon tax revenues are considered in the analysis.

[11] Bahrain, Kuwait, Oman, Qatar, Saudi Arabia, United Arab Emirates. Bahrain has the highest tax capacity (34 percent of nonhydrocarbon GDP) and tax gap (31 percent of nonhydrocarbon GDP) among the hydrocarbon-exporting countries. In Bahrain, FDI inflows and large imports of goods and services relative to GDP explain high estimated tax capacity.

[12] GCC countries do not have a PIT, and the VAT—with a very low rate by international standards—was only introduced in 2018 in some countries.

Figure 10. Tax Effort in ME&CA
(Percent)

Sources: Country authorities; and IMF staff calculations.

Figure 11. Tax Effort and Actual Tax
(Percent of GDP)
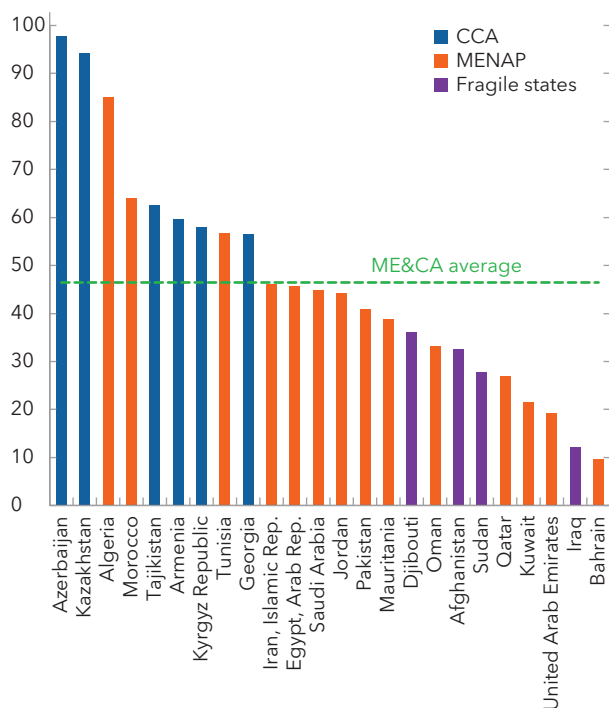
Source: Country authorities; and IMF staff calculations.

Many countries in the region have been able to improve their tax effort. Tax effort increased the most in non-GCC MENA countries, followed by the GCC countries. Four hydrocarbon-exporting countries (Algeria, Azerbaijan, Kazakhstan, and Saudi Arabia) have made efforts to improve tax collection and mobilize nonhydrocarbon taxes. In Saudi Arabia, for example, important reforms were introduced to enhance compliance and improve tax efficiency under the Saudi Vision 2030 strategy.[13] For hydrocarbon-importing countries, tax effort has been increasing slowly—except for low-income countries where tax effort started declining in 2011.

Going forward, a differentiated policy approach may be warranted to raise revenues. All countries in the region would benefit from higher tax effort. But less diversified economies—in particular hydrocarbon-exporting countries—could additionally benefit from reforms to promote diversification and thus raise their tax potential. In these economies, tax gaps are somewhat lower than in advanced and emerging market economies, not because tax potential is high but because they are collecting a higher share of a very narrow tax base. While taking measures to improve their tax regimes, their tax effort and collection still tend to be lower than peers in the region (Figure 12).

Figure 12. Tax Gap and Tax Effort
(Percent of GDP)
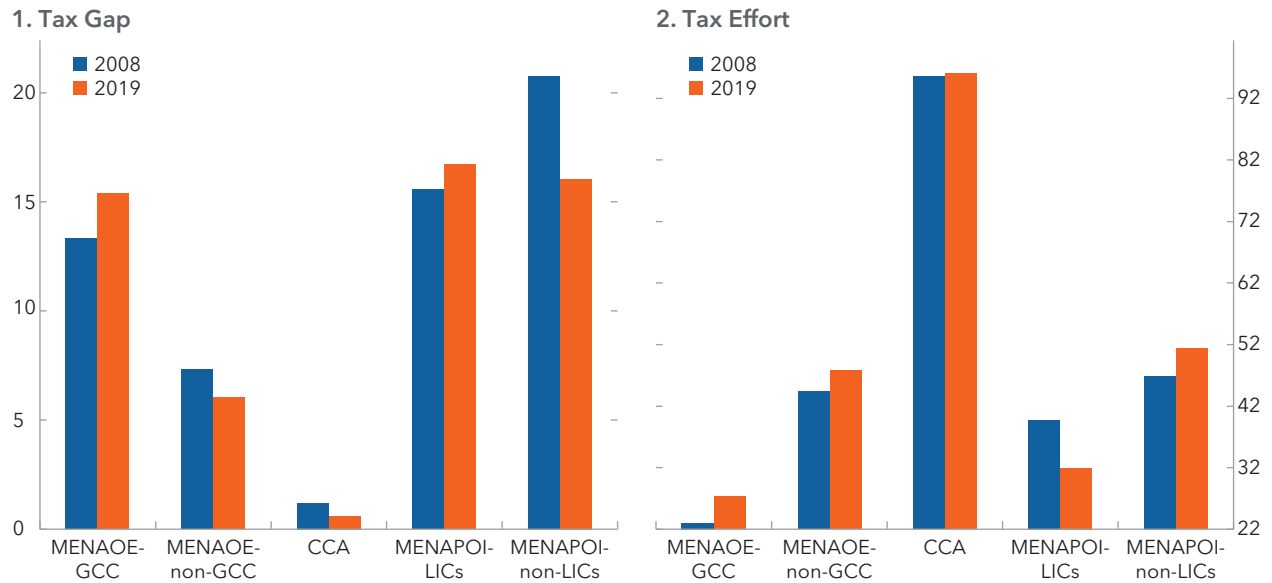
1. Tax Gap

2. Tax Effort

Sources: Country authorities; and IMF staff calculations.
Note: For hydrocarbon-exporting countries (OE), taxes exclude hydrocarbon-related taxes and are expressed as a percent of nonhydrocarbon GDP. The CCA region covers both hydrocarbon exporters (OE) and importers (OI).

3. Identifying Sources of Additional Revenue

Tax revenue shortfalls may reflect policy design, tax compliance challenges, or both. Tax rates are generally low in the region, especially for personal and corporate income taxes. Both direct and indirect tax systems feature prevalent exemptions, narrowing tax bases and reducing the progressivity of tax systems. Corporate income tax regimes provide various tax incentives to boost investment. Value-added taxes are character-ized by the use of multiple rates, which reduce their efficiency. Meanwhile, tax compliance is weak in some countries, reflecting both structural features of the region's economies such as informality and challenges in revenue administration. Tax revenues can be increased, while supporting resilient and inclusive growth, by improving the progressivity of tax systems and reducing exemptions. In some cases, this requires accelerating reforms to develop personal income and indirect taxes. There is also scope to improve tax compliance by reducing tax complexity and strengthening administrative capacity through organizational reforms, enhanced international cooperation on tax issues, and reforms to reduce corruption risks and bolster institutions.

Figure 13. Determinants of Tax Revenue Collection

Tax policy
- Policy rates
- Exemptions

Tax compliance
- Tax administration
- Structural features

Tax revenue collection
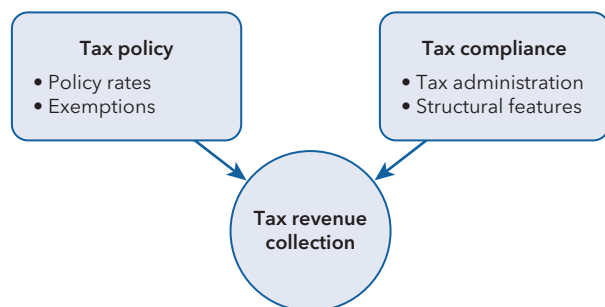
Source: IMF staff.

Tax revenue shortfalls are the result of short-comings in policy design, weak compliance, or both. Policy design features such as low tax rates or inefficient exemptions narrow tax bases and reduce revenue collections. Weak compliance, by contrast, reflects shortcomings in enforce-ment and implementation, including lack of administrative capacity (Figure 13). Insolvencies, bankruptcies, or administrative errors may also contribute to weak compliance. Policy design and compliance challenges are also interre-lated and changes to tax policies can influence compliance. For example, high tax rates could encourage non-compliance. Similarly, reducing exemptions can facilitate tax administration and curtail opportunities for tax optimization.

A. Tax Policy Challenges—Low Rates and Prevalent Exemptions

Tax rates in the region are, in general, low. Personal and corporate income tax rate are particularly low. Furthermore, direct and indirect tax systems are less developed in several MENA hydrocarbon exporters. For example, Bahrain has no corporate income tax and, like the rest of the GCC countries, has no PIT. In countries with existing corporate and PITs, the average standard corporate tax rate and top-tier PIT rate are 20 and 23 percent, compared to 24 and 25 percent in other EMDEs (Figure 14).[14] While the average standard sales tax rate differs little from other regions, a few countries (for example, Iraq, Kuwait, Libya, and Qatar) are yet to introduce a broad-based consumption tax system, such as a VAT.

However, there is significant variability in rates across countries in the region. Standard corporate tax rates range from 0 to 35 percent, with the rates particularly low in CCA and MENA hydrocarbon exporters. Similarly, top marginal PIT rates also vary significantly (from 0 to 40 percent) and are particularly low in many CCA countries and absent in the GCC countries (Figure 15). Standard sales tax rates range from 0 to 20 percent and are particularly low in some hydrocarbon-exporting countries.

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[14] Some countries charge higher tax rates on certain sectors, such as extractive and financial sectors, which are excluded from the calculation of standard corporate tax rates here.

Figure 14. Tax Rates, Regional Comparison
(Average, 2021)
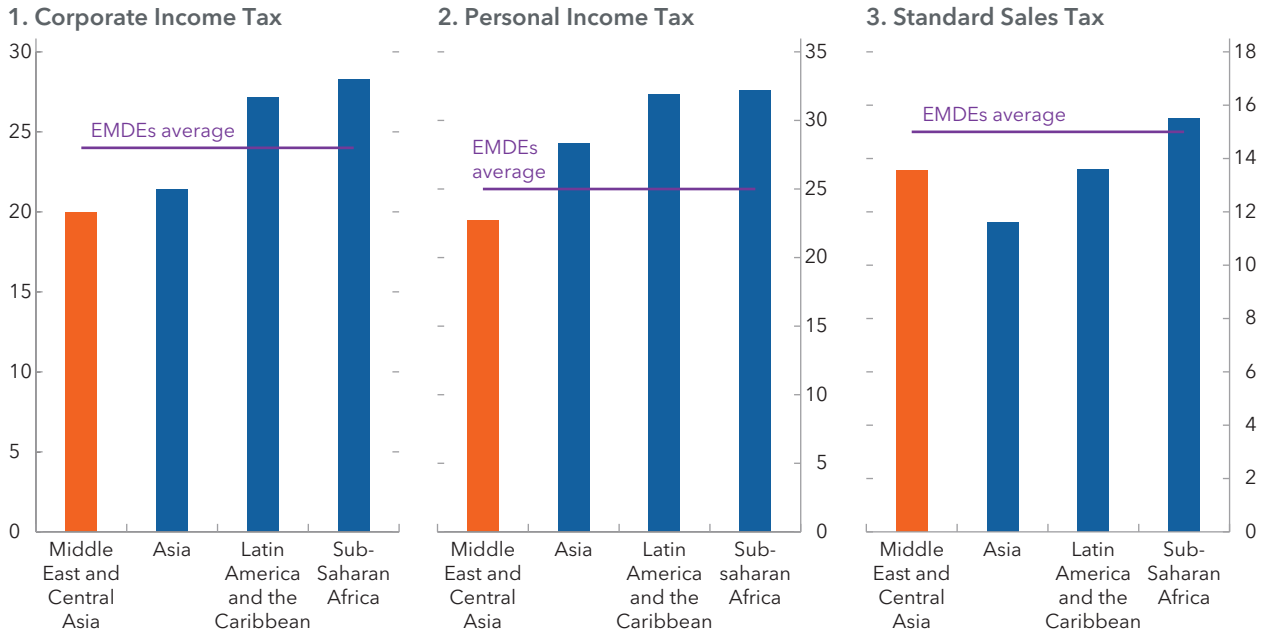
Sources: Country authorities; KPMG International Limited; and IMF staff calculations.
Note: In panel 1, countries without corporate income tax are excluded from the calculations of regional averages. In panel 2, countries without personal income tax are excluded from the calculations of regional averages. In panel 3, countries without a VAT or a general sales tax are excluded from the calculations of regional averages.

Figure 15. Tax Rates in ME&CA
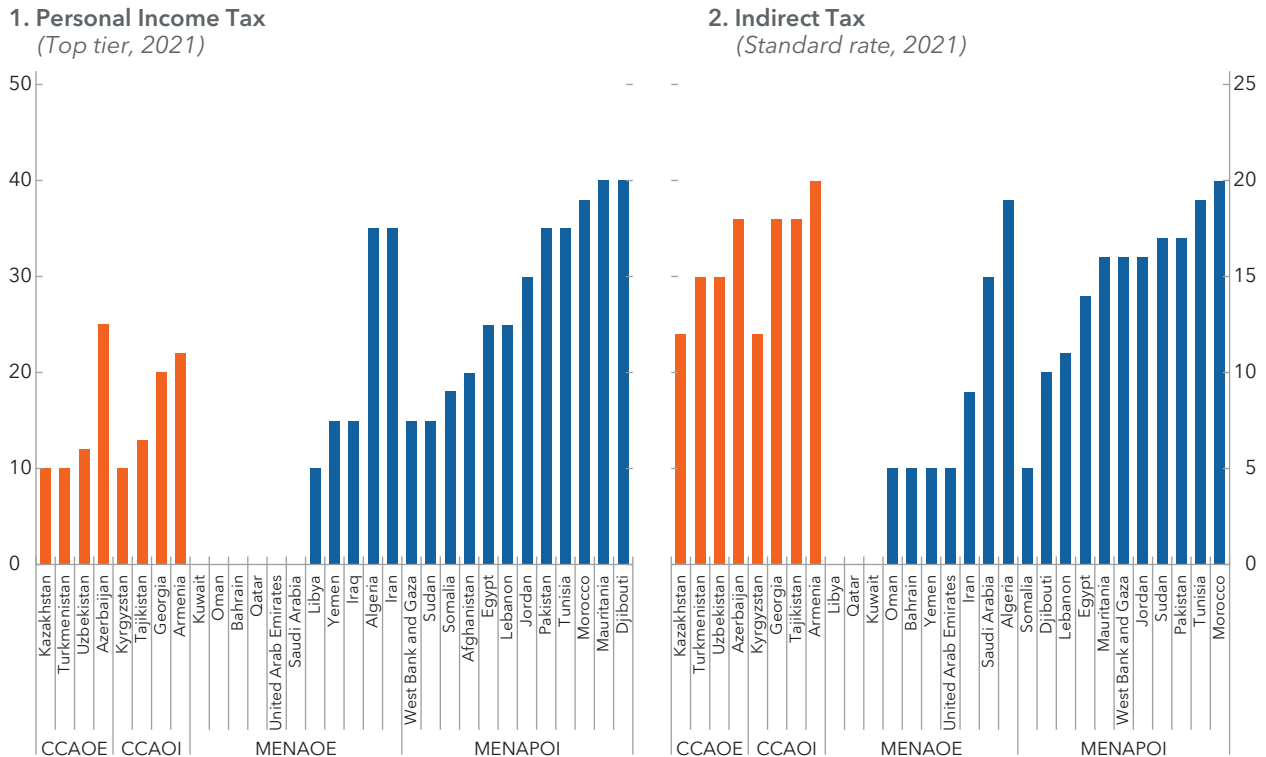
Source: Country authorities; KPMG International Limited; and IMF staff calculations.

Box 2. Progressive and Redistributive Capacities of the Personal Income Tax in the Middle East and Central Asia

Measuring the progressivity of the PIT and its capacity to redistribute income can help governments ensure the inclusiveness of their tax system. A tax system is progressive if the average tax rate increases with income. The system has high redistributive capacity if it significantly reduces inequality in disposable (post-tax) income. Estimating progressivity and redistributive capacity is challenging, but the literature offers several options. The progressive capacity of the PIT is measured by the difference in the distribution of both pre-tax income and tax liabilities, as measured by Gini coefficients. Redistributive capacity is determined by both the progressivity and the average tax rate (or size) of the PIT and is measured by the difference in the Gini coefficients of pre-tax and post-tax income. Multiple combinations of the progressivity and level of the tax rate can lead to the same redistributive capacity.

Following Benítez and Vellutini (2021), we use simulated microdata based on Gini coefficients of pre-tax income to compute indices of redistributive capacity. We decompose country-specific differences in redistributive capacities into two components (1) progressive capacity and (2) the average tax rate. Since the exercise is based on a hypothetical income distribution and reflects primarily the tax rate structure, this can come at the cost of some imprecision in estimates (Annex 1). Results are nevertheless intuitive.

Redistributive and progressive capacities are below those of peers but with variations across countries. In some countries, the PIT is rather progressive—but is just too small to achieve a meaningful redistributive capacity (Iran, Lebanon, and Pakistan). Others have a larger PIT, but low progressivity (Georgia, the Kyrgyz Republic, Turkmenistan, and Uzbekistan—all have a flat PIT rate). The most redistributive tax systems can be found among MENA countries (Algeria, Djibouti, Egypt, Tunisia, Mauritania, and Morocco).

Stark differences also separate ME&CA hydrocarbon exporters from importers, the latter achieving greater redistributive capacity:

For *hydrocarbon exporters* with a PIT, both progressive capacity and average tax rate are low, resulting in a relatively low index for overall PIT redistributive capacity (Box Figure 2.1, panel 4). The median PIT revenue of 1 percent of GDP is significantly lower than elsewhere (Box Figure 2.1, panel 1). The median progressive capacity of the PIT among hydrocarbon exporters is 8.4 compared to a median value in hydrocarbon importers of 16.0 and 33.9 in other EMDEs (Box Figure 2.1, panel 2). Algeria, Iran, and Iraq achieve somewhat higher PIT redistributive capacities compared to the other hydrocarbon exporters, with values above 2. In the case of Algeria, relatively strong progressivity is in part driven by a 35 percent top rate.

For *hydrocarbon importers*, relatively higher average tax rates (Figure 2.1, panel 3) and progressive capacity (Box Figure 2.1, panel 2) yield increased redistributive capacity. The median redistributive capacity of the PIT, at 1.1, is closer to that observed in other emerging market economies and low-income developing countries but remains significantly lower than the advanced economies' median value of 4.9 (Box Figure 2.1, panel 4).

Box 2. Progressive and Redistributive Capacities of the Personal Income Tax in the Middle East and Central Asia

Box Figure 2.1. PIT Revenue, Progressive Capacity, Average PIT Rate and Redistributive Capacity
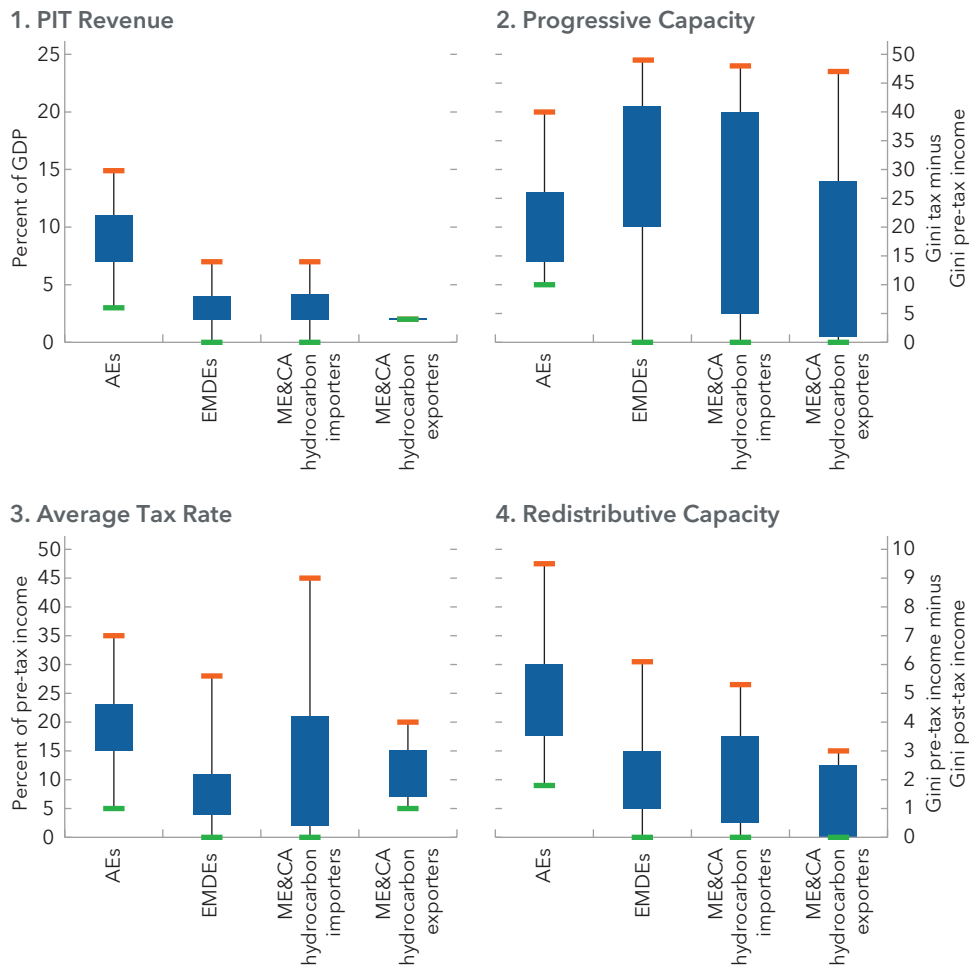
Sources: Ernst & Young LLP; IBFD; SWIID 9.1; IMF, World Revenue Longitudinal Database (IMF); and authors' calculations.
[1]Latest year available in each country.
[2]The average tax rate is defined as the ratio of total tax liabilities over total pre-tax income.

The progressivity and redistributive capacity of the PIT also differs across the region. Hydrocarbon-importing countries fare better, but their redistributive capacity remains significantly lower than that of advanced economies (Box 2, Annex 1). As a result, disposable income inequality in the region is significantly higher than market income—labor and capital incomes plus private transfers—inequality.

Higher tax rates do not always translate into higher revenues in the region. The relationship between income tax rates and revenues is weak. The cross-country correlation was only 0.3 for PIT and –0.15 for corporate income tax in 2019. Moreover, country experiences in raising PIT rates have been mixed. In Jordan, for example, despite a slight uptick after the hike in the top-tier PIT rates from 14 to 30 percent between 2017 and 2019, PIT revenues remained below 1 percent of GDP—one of the lowest in the region. While countries with higher VAT rates tend to have higher VAT revenues (cross-country correlation of 0.8 in 2019), VAT

revenue does not always rise following rate increases. In Egypt, for example, VAT revenue increased after the standard VAT rate was raised in 2016 and in 2017. Algeria's VAT revenue, by contrast, declined as a share of GDP following the increase in the standard VAT rate from 17 to 19 percent in 2017.

This weak relationship between rates and revenues is explained by significant exemptions and poor tax administration. Prevalent tax exemptions and weak tax administration could undermine the effectiveness of tax rate hikes by narrowing the tax base and eroding the tax compliance and hence preventing effective tax rates from increasing. Indeed, tax exemptions and preferential regimes in the region are pervasive. Exemptions are particularly prevalent in personal and corporate income tax regimes:

- *Capital gains and financial incomes are often not taxed or are taxed at low rates.* Specifically, rates applied to dividends, interest income and capital gains are consistently lower than in other regions (Annex 1, Annex Figure 1.3). Most CCA and GCC countries exempt capital gains and other financial income from income tax altogether (Annex 3).[15] Since capital income typically accrues to middle and high-income households, these exemptions reduce the progressivity of tax systems in addition to narrowing the tax base. Moreover, in some countries, the top-tier PIT bracket is set very high at hundreds of times per capita income (Figure 16), reducing the effectiveness of a high marginal tax rate (Annex 1).

Figure 16. Top-Tier Income Tax Bracket
(Lower bound in multiples of per capita income)

Sources: Country authorities; KPMG International Limited; and IMF staff calculations.

- *Corporate income tax exemptions are widely used to encourage investment.* The region's corporate income tax systems include many tax incentives to encourage investment, support strategic sectors, and in some cases, promote domestic entrepreneurship. For example, most countries have special economic zones where companies can be exempt from corporate income tax for years. In several GCC countries, for example, domestic companies owned by GCC nationals are at least partially exempt from corporate income tax.[16] The empirical evidence for the effectiveness of these tax incentives is mixed, and often depends on governance and the investment climate, while their costs in terms of foregone tax revenue are usually high (Klemm and Van Parys 2009, IMF 2015a). Moreover, the adoption of a global minimum corporate tax could severely limit the appeal of tax incentives to multinational corporations going forward.

The recent global corporate tax agreements provide an important opportunity for countries in the region to reform their corporate taxes. In October 2021,136 countries and jurisdictions—including 14 from the region—agreed to establish, as part of a wider package, a minimum effective corporate tax rate of 15 percent, with implementation in 2023.[17] While the adoption of the minimum corporate tax rate is not

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[15] In part, this may reflect differences in capital mobility across countries of the region and difficulties in taxing residents on worldwide capital gains.

[16] While domestic companies owned by GCC nationals do not pay corporate income tax, they pay Zakat which in many cases are more than what foreign companies pay as percent of their profits.

[17] The 14 countries are Armenia, Bahrain, Djibouti, Egypt, Georgia, Jordan, Kazakhstan, Mauritania, Morocco, Oman, Qatar, Saudi Arabia, Tunisia, and United Arab Emirates.

mandatory, countries signing the agreement must accept adoption by others, which could make a strong case for revisiting the effectiveness and efficiency of existing tax incentives. With lower tax competition between countries, domestic political support for removing redundant tax incentives and improving the corporate tax design is likely to be stronger (IMF 2022b).

Exemptions are also significant for the VAT. Common VAT exemptions include basic food-stuffs, financial services and insurance, real property and construction, extractive sectors, and healthcare and education.[18] While some of these exemptions are intended to reduce final prices of the goods and services consumed by vulnerable households, these measures are often poorly targeted (Bodin and others 2001). In addition, several countries have high VAT registra-tion thresholds, reaching multiples of the OECD average in some CCA and GCC countries (Figure 17).[19] While a reasonably high threshold can help keep tax administration costs low, too high of a threshold can negatively affect tax collection efficiency by excluding a large part of economic activity from the VAT tax base.

As a result, the efficiency of VAT is low in the region. VAT C-efficiency ratios compare actual VAT revenues to the product of the standard rate and final consumption, with the latter reflecting revenues that would be collected if the standard rate is applied to total final consumption. This ratio is 100 if tax compliance is perfect and the VAT regime has no exemptions or reduced rates. The relatively low VAT C-efficiency rates in the region reflect the prevalence of VAT exemptions and weak tax compli-ance. But not all countries in the region have low VAT C-efficiency. Notably, the three GCC countries that recently introduced a VAT rate (Bahrain, Saudi Arabia, and United Arab Emirates) have high ratios despite numerous VAT exemptions, likely reflecting high compliance given low VAT rates (Figure 18).

The taxation of extractive industries (EI) has major macroeconomic implications in ME&CA countries. In 2020–21 hydrocarbon revenue accounted for

Figure 17. VAT Registration Threshold
(U.S. dollars, 2021)
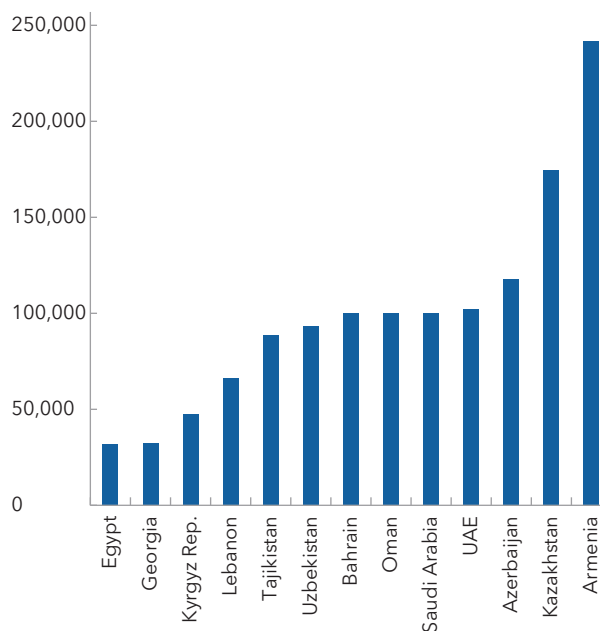
Sources: Country authorities; KPMG International Limited; and IMF staff calculations.

Figure 18. VAT C-Efficiency
(2019)
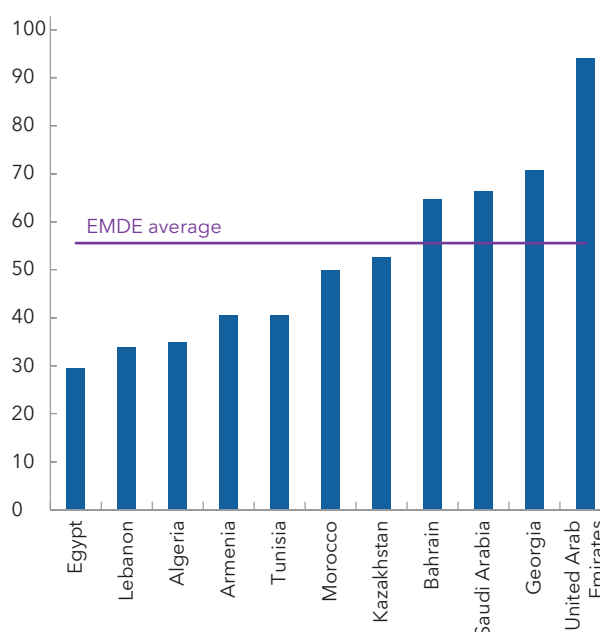
Sources: Country authorities; KPMG International Limited; and IMF staff calculations.

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[18] Exemptions can be with credit or without credit. Exemptions with credit are also sometimes referred to as being "zero-rated," which means a business can charge its customer no VAT for a sale while still being able to record the sale for VAT returns.

[19] A business with a taxable turnover below the threshold level does not have to charge its customers any VAT tax.

about half of government revenue on average in ME&CA resource-rich countries, while mining revenue averaged about 6.6 percent. Examples of countries that impose a higher corporate tax rate on extractive sectors include Bahrain (46 percent), Egypt (41 percent), Iraq (35 percent), Qatar (35 percent), Saudi Arabia (50–85 percent), Turkmenistan (20 percent), United Arab Emirates (55 percent), and Yemen (35 percent). A critical issue is to ensure that governments reap a fair share of revenues from this sector (Box 3).

Box 3. Taxation of Extractive Industries in the Middle East and Central Asia

The central fiscal issue is ensuring an appropriate government share in the rents often arising in EIs. The EI sector is characterized by pervasive uncertainty, asymmetric information, high sunk costs and associated time consistency problems, extensive involvement of multinational enterprises and state-owned enterprises, and the exhaustibility of the resource.

Revenue objectives loom large in designing fiscal regimes for the EIs but involve complex trade-offs. Generating employment in related activities, and addressing environmental impacts, can be significant concerns, but the revenue from the EIs is often the main benefit to the host country. It is the prospect of substantial rents—returns in excess of the minimum required by the investor, arising from relative fixity of supply of the underlying resource—that makes the EIs especially attractive as a potential source of revenue.

These trade-offs are particularly challenging in countries where foreign investments are needed to develop EIs. For example, in countries like Armenia and Mauritania, mining sectors typically accounted for half or more of the merchandise exports, but less than 10 percent of their export proceeds were collected by the government, a reflection of their investment-friendly tax policy (IMF 2015b). By contrast, oil exporters in the region, especially those where oil sectors are well established and less reliant on foreign investment, typically collect 80 percent or more from their crude oil export proceeds. In fact, Armenia is reviewing the mining taxation framework to move toward a permanent reform that better balances the objectives of capturing a fair share of the rents from national resources and enabling investment and the future development of the sector.

Country circumstances require tailored advice. A regime combining a royalty and a tax targeted explicitly on rents (along with the standard corporate income tax) has appeal for many EMDEs. Such a regime ensures that some revenue arises from the start of production, and that the government's revenue rises as rents increase with higher commodity prices or lower costs. In so doing, it can also enhance the stability and credibility of the fiscal regime (though processes to allow renegotiation may also be needed). It can also balance the challenges that each instrument poses for administration. The same sharing of project risk and reward between the investor and the government can be achieved within a production sharing fiscal framework common in petroleum producing countries. Transparent rules and contracts tend to improve stability and credibility. Poorly designed international tax arrangements, however, can seriously undermine revenue potential. Administrative capacity should be taken into account when designing EI fiscal regimes.

The distinct features of EIs trigger increase revenue administration complexity and argue for robust revenue administration capacity. The capital-intensive nature of EIs and the long lead times between exploration and production mean that significant costs incurred prior to commencement of production are often ignored as most revenue authorities prioritize short-term revenue measures, and become statutorily barred from challenge, leading to substantial revenue losses. Moreover, the administration of the sector is often a shared responsibility between multiple regulatory agencies creating challenges of incomplete data sets for risk assessment purposes (each agency collects and maintains data relevant to their mandate), and duplication of functions, leading to confusion and

Box 3. Taxation of Extractive Industries in the Middle East and Central Asia
(continued)

inefficiency. To develop capacity, revenue authorities must accelerate the development of sector expertise and implement robust compliance risk management capabilities to enable effective risk identification and mitigation from the onset of EI activities to protect the revenue. The best practice is to establish and build EI expertise within an integrated EI unit typically within the Large Taxpayers Office to perform non-routine functions such as audit and targeted client assistance.

B. Compliance Challenges—Administrative and Structural Shortcomings

Shortcomings in administrative capacity and structural bottlenecks weaken tax compliance. A number of ME&CA countries face compliance challenges at all stages of the taxation process (registration, filing, and payment) (Figure 19). Efficient collection, monitoring, and enforcement require adequate adminis-trative resources, including modern features like digital technologies. Meanwhile, tax policy design can also have significant implications for admin-istrative capacity. Specifically, excessive policy complexity can overburden tax administrations and taxpayers, while simpler policy frameworks reduce administrative and compliance costs. In addition, international cooperation is important in a world where taxation faces mounting challenges from globalization and digitalization of economic activities. Beyond administrative capacity, struc-tural bottlenecks such as large informal sectors, low financial inclusion, or governance challenges may hinder tax compliance.

Within the region, there is significant heteroge-neity in tax administration capacity. Effective tax administrations alleviate the cost of collection for the state and of compliance for taxpayers, encour-aging voluntary registration and payment.[20] Some countries (for example, the Kyrgyz Republic, Tajikistan, and Tunisia) seem to have particu-larly high tax collection costs, though available estimates for tax collection costs might not reflect recent progress on tax administration reforms in some (for example, Tunisia). In other countries,

Figure 19. ME&CA, Selected Assessment Scores on Tax Compliance Factors
(Percent)
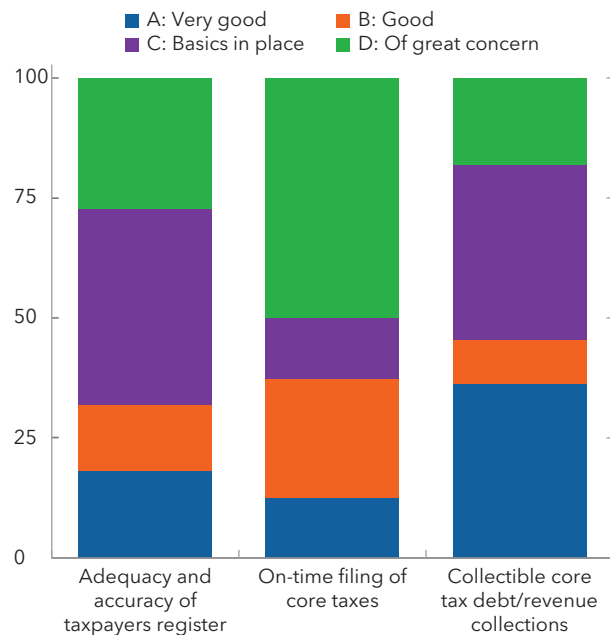
Sources: The Tax Administration Diagnostic Assessment Tool (TADAT); and IMF staff calculations.
Note: Distribution of scores for 11 TADAT assessments in the ME&CA region between 2015 and 2019. The TADAT provides an independent and standardized assessment of the performance of tax administration systems around the world. For more details, see www.tadat.org.

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[20] The cost of tax collection is defined by USAID as "the ratio of the cost of administering the tax system to total tax revenues."

Figure 20. Organization of Tax Administrations, Tax Collection Costs, and Survey-based Indicators of Administrative Efficiency

1. Tax Effort and the Organization of the Tax Administration
(2017–18)
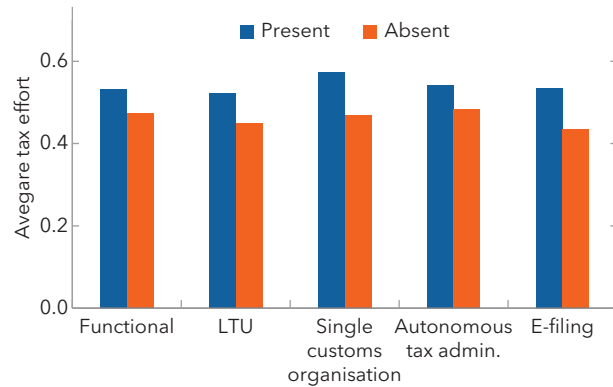
2. Tax Collection Cost
(Percent of tax receipts, 2017 unless otherwise indicated)
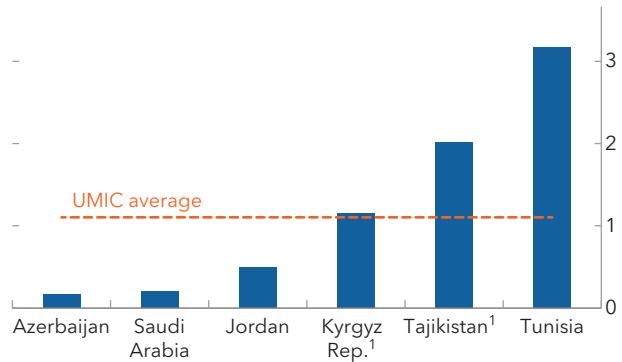
3. Time to Clear Imports From Customs
(Days, latest available data)
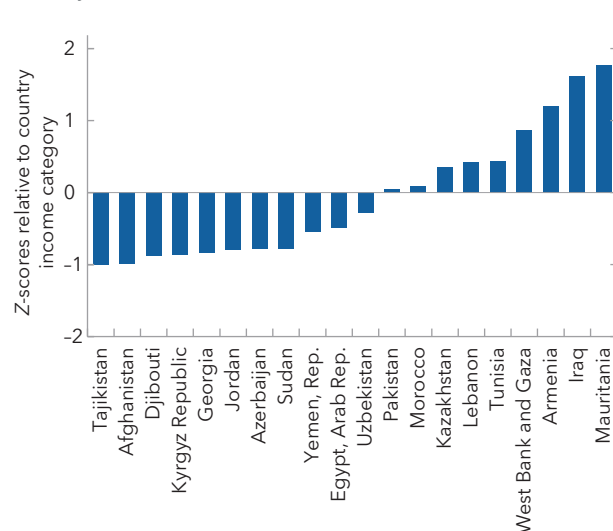
4. Firms Identifying Tax Administration as a Major Constraint
(Percent of respondents, latest available data)
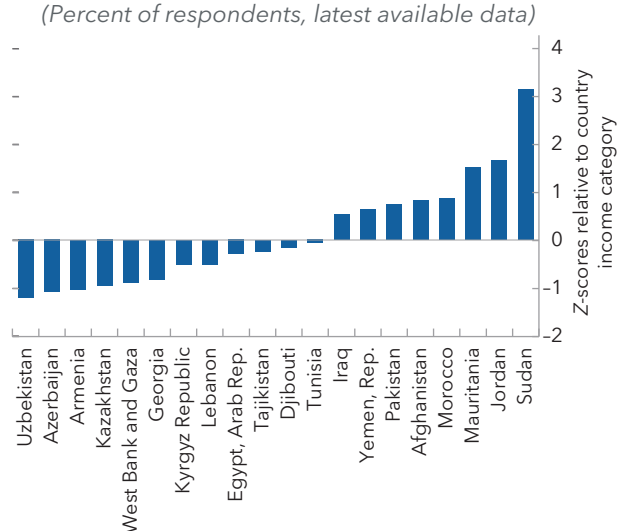
Sources: USAID; WB Enterprise Survey; and IMF staff calculations.
Note: In panel 2, the cost of tax collection is defined by USAID as "the ratio of the cost of administering the tax system to total tax revenues." In panels 3 and 4, the use of these indicators should be considered carefully, as they are derived from perception based data.
LTU = large taxpayer unit.
[1]Year 2015.

survey-based indicators of administrative efficiency point to burdensome procedures and weaknesses in taxpayer services (Figure 20).[21] Factors contributing to low administrative capacity in some countries include (Annex 3):

- *Shortcomings in taxpayer segmentation*. Taxpayer segmentation helps to improve monitoring and control and to develop targeted taxpayer services. Each taxpayer size category raises different risks in terms of compliance (Kanbur and Keen 2014). For instance, large taxpayers are prone to avoidance and evasion and payment issues, while smaller ones pose compliance risks in terms of registration (IMF 2015a). Establishing dedicated units for large taxpayers can improve collection efficiency. In lower- and middle-income

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[21] Several indicators presented in this section are standardized to facilitate comparison between ME&CA countries and their respective income category averages. The standardized indicators are "z-scores" calculated by subtracting the income category average and dividing the result by the standard deviation.

countries, about 90 percent of tax revenue is collected from the largest 10 percent of taxpayers, and half of revenues come from the largest 1 percent (Junquera-Varela and others 2017). A small number of countries in the region (for example, Bahrain, Kazakhstan, Kuwait, and Oman) still lack functional large taxpayer units with full responsibility for all functions related to this segment of the taxpayer population, although some have set up dedicated administrative units which undertake part of the responsibilities of large taxpayer units.[22]

- *Weak autonomy of revenue administrations and separate customs administrations*. A greater degree of autonomy (with appropriate accountability) of revenue administrations can help protect against political interference and improve operational independence and efficiency (IMF 2015a), conditional on adequate administrative and financial resources and the availability of skilled staff (Akitoby and others 2020). Meanwhile, a lack of integration between tax and customs administrations can hinder coordination and exchange of information and weaken efficiency. The collection of customs data strengthens the integrity of tax administrations by helping to identify potential non-compliance such as non-registration, under-reporting of income, and overstatement of input tax credits. Tax data, on the other hand, strengthen the integrity of customs administrations and facilitate the detection of undervaluation of transactions, and misuse of exemptions. Tax administrations in the ME&CA region generally lack autonomy, with notable exceptions (for example, Armenia, Azerbaijan, the Kyrgyz Republic, and Pakistan), while most countries do not have integrated tax and customs administrations.

- *Organizational deficiencies of the revenue administration*. Function-based structures group together similar tasks and activities (for example, audit, processing of payment, enforcement, support functions) under dedicated administrative units. Relative to other types of structures such as organization by type of tax, functional organization of revenue administrations facilitates efficiency gains, minimizes the duplication of efforts and can reduce administrative and compliance costs. The structure of revenue administrations in ME&CA countries tends to be function-based, except for a small number of hydrocarbon exporters (for example, Bahrain, Iraq, and Kuwait).

- *Insufficient development of digital taxpayer services*. The use of digital platforms reduces opportunities for corruption, extortion, and fraud; minimizes compliance costs; enhances taxpayer services; and facilitates monitoring. Automated procedures also allow for more efficient use of scarce administrative resources (Box 4). In Tajikistan, for example, the introduction of and e-filing and payment system for a number of taxes has increased tax compliance among high-risk firms (Okunogbe and Pouliquen 2018). In Georgia, e-filing has helped to reduce compliance costs, which fell by two-thirds between 2009 and 2011 (OECD 2015). Digital tax services are available in most countries in the region and efforts are ongoing to expand them, as illustrated by the recent rollout of digital platforms for corporate tax filing in Egypt (2018), Saudi Arabia (2020), and Algeria (2021). Still, gaps in the development of electronic taxation platforms remain in many countries where currently offered services do not cover all stages of tax compliance (that is, registration, filing, payment) or all core taxes (Figure 21). In some instances, despite the availability of electronic services, their use by taxpayers is low reflecting a lack of trust or awareness (Jordan 2016 TADAT Performance Assessment Report). A number of countries in the region (for example, Bahrain, Kazakhstan, Kuwait, Oman, United Arab Emirates, Uzbekistan) benefit from developed telecommunication infrastructures and human skills—as reflected by high scores on the UN Online Service Index—which could be leveraged to further advance electronic tax services. However, nearly half of the 30 ME&CA countries included in UN Online Service Index lags behind peers on the quality of telecommunication infrastructure or skills, pointing to more entrenched headwinds.

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[22] Oman, for example, has a large taxpayer unit that covers only audits and not all stages of taxation of large taxpayers: Oman Tax Authority.

Figure 21. Online Service Index
(2020)
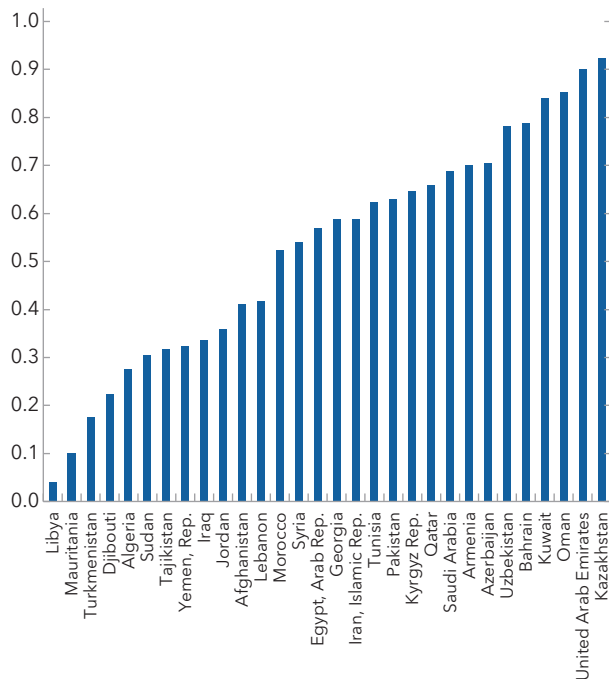
Sources: United Nations Department of Economic and Social
Affairs; and IMF staff calculations.

Figure 22. Complexity of Tariffs
(2019)
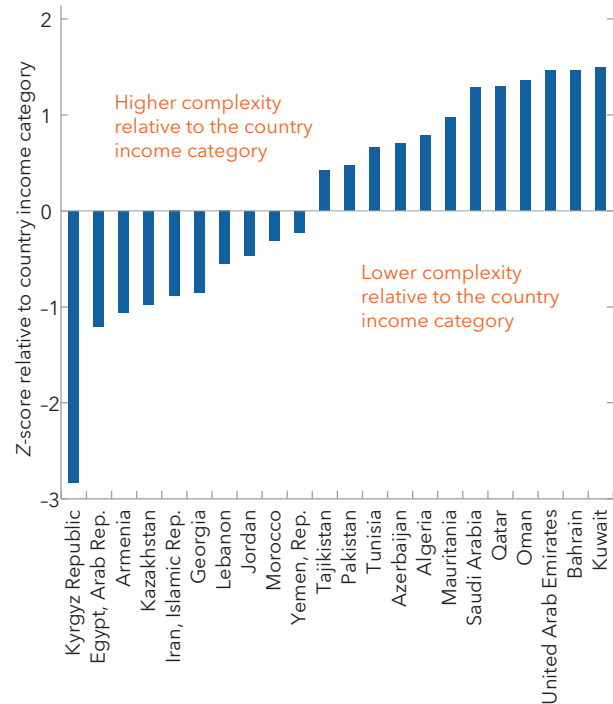
Sources: World Economic Forum; and IMF staff calculations.

The complexity of tax policy compounds weaknesses in administrative capacity. Complex tax systems tend to overstretch thin administrative resources. They also create room for discretion, which could be exploited by corrupt officials for rent-seeking and extorsion (Sumlinksi and others 2021), while also generating opportunities for tax avoidance. Furthermore, compliance with overly complex tax systems could divert resources away from more productive uses, damaging the business and investment climate and narrowing the tax base. Tax complexity can be particularly detrimental for the compliance of micro, small, and medium enterprises (MSMEs), as smaller firms tend to have less resources available for bookkeeping, self-assessment, and reporting. This is of particular relevance in countries in the region where the density of smaller enterprises is high. Several Middle Eastern and Central Asian countries have deployed efforts to reduce tax complexity in recent years. For instance, Georgia (2004–09) and Tajikistan (2013) significantly reduced the number of taxes, Egypt adopted a Unified Tax Procedures Law in 2020 to create a single system of tax procedures for all core taxes, and Morocco adopted a framework law in 2021 which would simplify local taxation. Still, survey-based indicators point to persistent tax complexity in a number of countries in the region (Figure 22).

International cooperation can also affect administrative capacity. Internationalization of global value chains and financial services has created new opportunities for tax evasion and avoidance by large firms and high-net-worth individuals through practices such as profit shifting and concealment of assets and revenue. Meanwhile, the rapid digitalization of the global economy has also generated challenges for revenue administrations. Based on estimates by the Tax Justice Network (2021), revenue losses in the region could reach US$10.4 billion per year as a result of tax abuse and evasion by wealthy individuals. On average, the loss is estimated to be 0.2–0.3 percent of GDP per country but rises to 0.8–1 percent of GDP in some countries (for example, Morocco, Tunisia, and the United Arab Emirates).[23] The ME&CA region has achieved progress on cooperation with other jurisdictions on tax issues in recent years, but the participation of several countries

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[23] Tax Justice Network (2021).

Box 4. Leveraging Digital Transformation to Collect Taxes in Times of COVID-19

Revenue administrations across the world are embarking on a new wave of digital transformation. Even though earlier waves in automating core functions of revenue administrations—such as e-filing—go back to the 1990s in some advanced and emerging market economies, the current wave is showing the potential to deeply transform the way low-income countries collect taxes. By improving the way that revenue administration functions are carried out, digitalization reduces the burden on taxpayers by simplifying procedures and enhancing service delivery, allowing for more effective compliance measures through data collection and matching, improved governance by reducing arbitrary interactions between taxpayers and tax officials, and leaving an audit trail of transactions.

The COVID-19 pandemic has shown the enormous potential of digital transformation for revenue administrations. "Digitalized" revenue administrations, such as Morocco and the United Arab Emirates, were able to keep offering services and collecting taxes while respecting social distance and leveraged the technology to tax the growing e-commerce transactions. Those administrations were well positioned to allow their workforce to telework, serve the taxpayer community, and ensure business continuity to secure revenue collections.

Several countries, such as Jordan, were also able to make significant investment in electronic services in recent years, which has been helpful in facilitating taxpayer compliance and reducing taxpayers' costs. Successful cases involve revenue administrations that (1) invested in a comprehensive digitalization transformation, including redesigning core functions and the organizational structure (to modernize and simplify process instead of adopting solutions to automate old ways of doing business); (2) worked with taxpayers to "educate" them in the use of the new technologies and had a clear taxpayer-oriented vision in place; and (3) embraced good medium-term planning and proper sequencing to implement change.

Although digitalization can help governments secure information, it also provides new avenues for fraud as well as privacy and cybersecurity risks. Individuals and firms can take advantage of new technology to hide information or evade taxes. The risks of fraud arise when taxpayers intentionally falsify information to reduce tax payments, obtain tax refunds, or hide transactions, or when revenue administration staff, contractors and other trusted parties carry out fraudulent activity. Data breaches through hacking, leaks and ransomware exposes revenue administrations to privacy and disclosure risks (likelihood of the revenue administration to lose control of tax information and personal data) which can further erode citizens' trust in the tax system and consequently reduce voluntary compliance. In line with good practice, revenue administrations should implement cyber security and data protection measures in their systems, as well as establish governance arrangements that will reduce risks to reputation, privacy, and revenue.

in international platforms remains limited. For instance, more than half of CCA countries, most FCSs, and hydrocarbon exporting countries do not participate in at least one of the major global initiatives on tax matters such as the Convention on Mutual Administrative Assistance in Tax Matters, the OECD Global Forum on Transparency and Exchange of Information for Tax Purposes or the OECD/G20 Inclusive Framework on Base Erosion and Profit Shifting (BEPS). Of these countries, 11 do not participate in any of the three aforementioned global platforms on tax issues (Annex 4).

Beyond administrative capacity, structural bottlenecks, such as large informal sectors, may hinder tax compliance. Large informal sectors often result in a disproportionate tax burden on the formal sector. For instance, tax coverage of the self-employed is low in the region, while wage earners in the formal (mostly public)

Figure 23. Share of Firms Competing against Informal Actors
(Percent of respondents, latest available data)
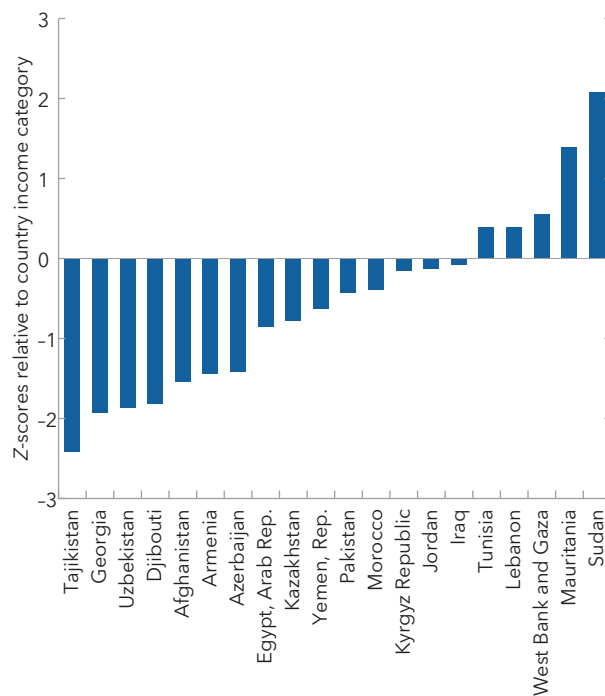
Sources: WB Enterprise Survey; and IMF staff calculations.
Note: The use of these indicators should be considered carefully, as they are derived from perception based data.

sector shoulder most of the weight of income taxation (Jewell and others 2015). Survey-based indicators point to a higher perception of unfair competition from the informal sector by firms in Lebanon, Mauritania, Sudan, Tunisia, and the West Bank and Gaza, and relative to their counterparts in countries with similar income levels (Figure 23). Furthermore, underfunded social and public services resulting from low contributions by the informal sector could undermine their quality and limit their size, reducing the benefits of compliance and creating an informality trap. The causality also runs in the opposite direction as both the design of tax policies and tax administrations can influence informality (Deléchat and Medina 2021). For instance, excessively high tax rates or labor tax wedges—the difference between the cost of labor for employers and the employee take-home pay—could encourage businesses and individuals to operate informally. Cardarelli and others (2022) find that the tax burden is one major determinant of excess informality in North Africa relative to advanced economies. In addition to the level of the tax burden, overly complex tax laws and cumbersome administrative procedures can hinder registration and compliance by capacity-constrained small businesses and individuals. Gaps in enforcement can undermine tax morale and the credibility of the tax system, creating a conducive environment for informality.

Related to informality, low financial inclusion, and the widespread use of cash fosters non-compliance. Widespread use of cash weakens the traceability of transactions and facilitates underreporting, particularly for business-to-consumer transactions, which are hard to tax given the risks of collusion between sellers and buyers for evasion purposes.[24] Conversely, electronic and other dematerialized channels of payments as well as electronic invoicing create a "digital trail" (Lund and others 2017) supporting the ability of the tax administration to monitor transactions, cross-check information through modern digital technology, and enforce laws. More broadly, financial inclusion and wider access to credit reinforces incentives for tax compliance (Capasso and Jappelli 2013). Most countries in the region tend to lag behind peer economies in terms of incidence of digital payment and credit supply to enterprises tends to fall below global averages, underscoring gaps in financial inclusion (Figure 24). The share of currency in circulation outside the banking sector in broad money, a proxy for the magnitude of use of cash, is high in most CCA countries and several MENA countries, pointing to high risks of evasion and challenges for monitoring and enforcement (Figure 25).[25] These countries also have low use of digital transactions whether through payment cards, bank accounts or online channels. GCC countries, by contrast, stand out for having low shares of currency in circulation and a relatively high incidence of digital payments. Financial institutions are a crucial source of information on taxpayers and transactions but, in a number of countries, there are gaps in enlisting the financial sector's cooperation for enforcement. For example, the Court of Audit in Algeria (2021) highlights a lack of

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[24] Tax evasion through nonreporting of transactions and inobservance of transactions are distinct but closely intertwined issues.
[25] Although factors other than evasion could fuel "excess" demand for cash, such as precautionary motives, weak confidence in the banking sector, or lack of access to banking services.

Figure 24. Financial Inclusion Gaps

1. Incidence of Digital Payments
(2017, share of respondents)
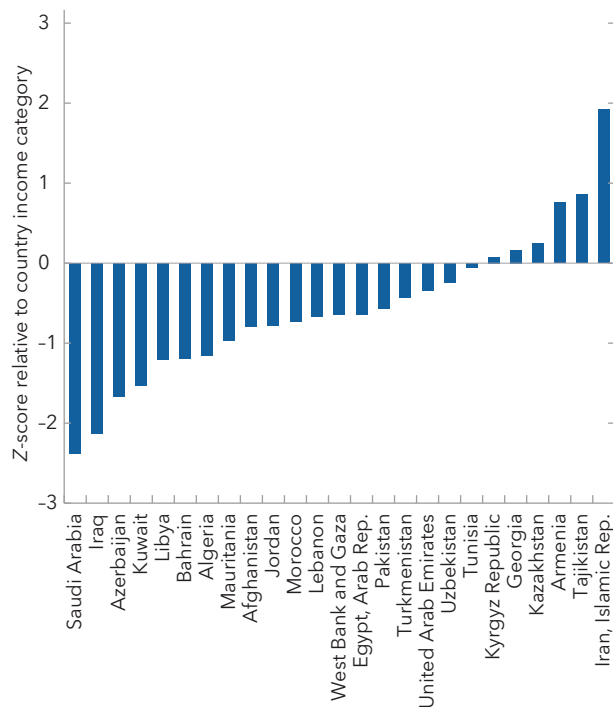
2. Outstanding Bank Credit to SMEs
(Percent of GDP, regional averages over 2018–20)
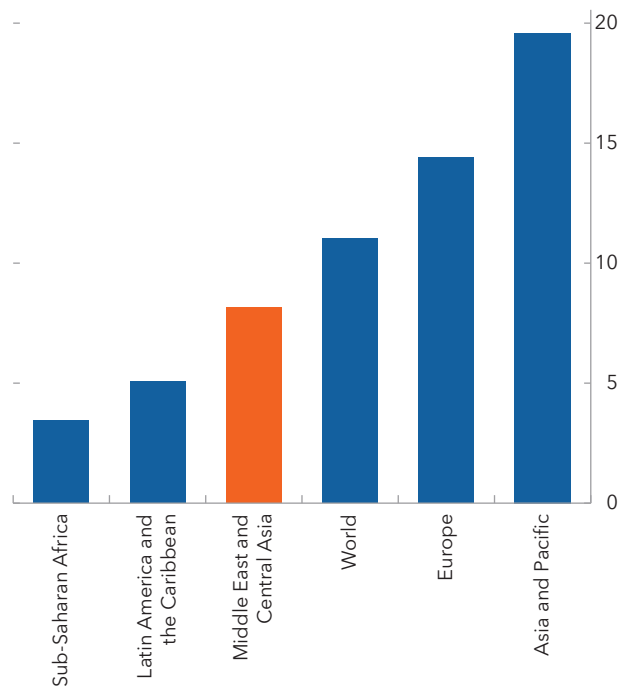
Sources: WB Global Financial Inclusion Database; IMF Financial Access Survey; and IMF staff calculations.
Note: In panel 1, the incidence of digital payments is measured by the percentage of respondents aged 15+, who are in the labor force and who report using a mobile money or financial institution account, a debit or credit card, a mobile phone or the internet to make or receive a transfer or payments over the last 12 months.

exchange of information between the revenue administration and banks as one main driver of weaknesses in tax collection. In other countries (for example, Jordan and Lebanon), bank secrecy laws could hinder the access of revenue administrations to information held by financial institutions. A number of countries in the region have introduced legislative reforms to promote electronic invoicing (for example, Egypt, Saudi Arabia, Tunisia, the United Arab Emirates) but progress on implementation remains slow in some countries.

Perceived weaknesses in the control of corruption also create challenges for tax compliance. Given the nature of their role in collecting funds from the private sector, revenue administrations are exposed to risks of corruption and collusion. More broadly, weaknesses in control of corruption create opportunities for taxpayers to evade their obligations or obtain undue advantages and for corrupt officials to extract rents, whether during the elaboration of the tax legislation, at all levels of the taxation process or in the resolution of disputes between governments and tax administrations (Figure 26). IMF (2019) finds that an improvement in the Control of Corruption Index by one-third of a standard deviation is associated with 1.2 percentage point increase in tax revenue-to-GDP (Figure 27). To address corruption risks at the tax administration level, countries in the ME&CA have implemented a range of safeguards, such as internal investigation units (Armenia, Georgia), universal electronic payment of taxes (Armenia, the Kyrgyz Republic), external oversight by anticorruption unit or an institutionalized ombudsman (Georgia, Pakistan, and Tajikistan) or codes of ethics (Algeria, Jordan, Tajikistan, and the United Arab Emirates). Pakistan also experimented with reward-based schemes for tax collectors, in part to reduce incentives for bribery. A number of countries (Armenia, Georgia, Jordan, the Kyrgyz Republic, Tajikistan, Tunisia) carry out surveys to assess public perception of the integrity of tax administrations and the quality of their services. Enhancing tax compliance would benefit from further efforts to reduce corruption risks across the region.

Figure 25. Share of Currency in Circulation in Broad Money
(2017–19)
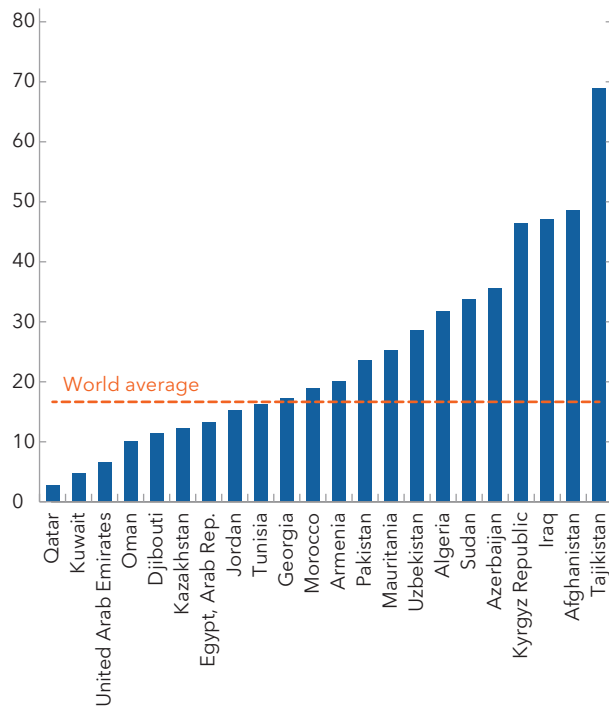
Sources: National authorities; and IMF staff calculations.

Figure 26. Firms Expected to Give Gifts to Tax Officials
(Percent of respondents, latest available data)
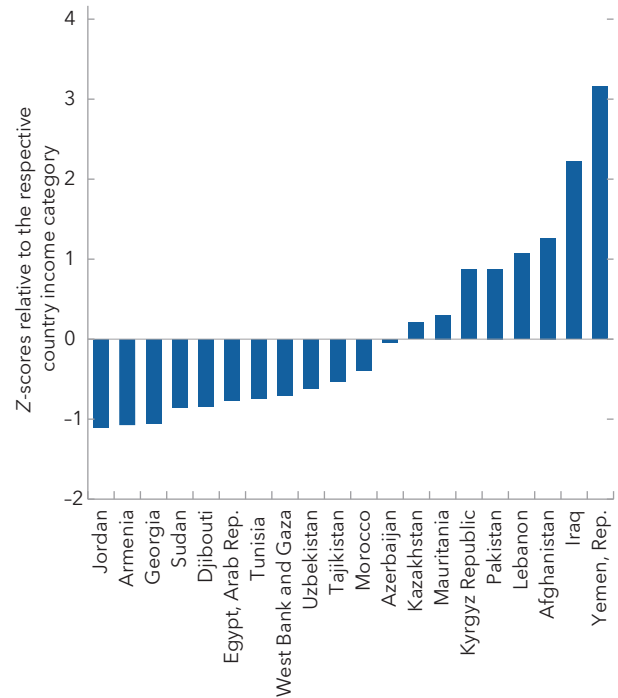
Sources: WB Enterprise Survey; and IMF staff calculations.
Note: The use of these indicators should be considered carefully, as they are derived from perception based data.

Figure 27. Governance and Tax Revenue
(Tax revenue in percent of GDP, 2016–18)
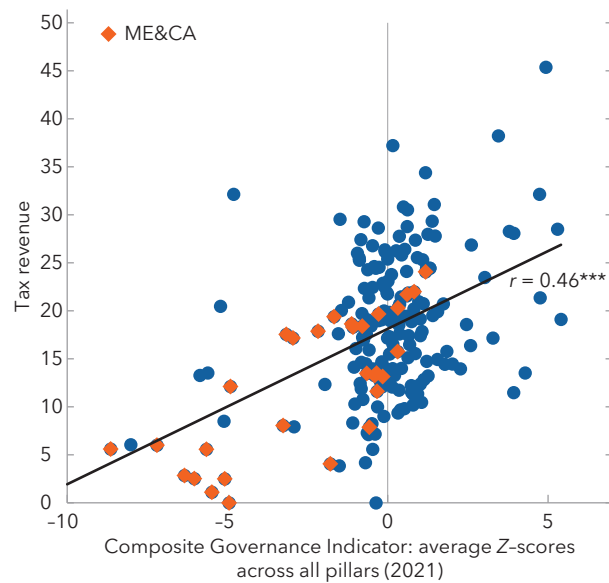
Sources: Worldwide Governance Indicators; and IMF staff calculations.

More broadly, the quality of public institutions matters for compliance. Comparative weaknesses in regulatory quality, voice and accountability, government effectiveness, and rule of law could be detrimental to tax revenue mobilization. Stronger governance is indeed correlated with better tax performance as sound legal institutions and adequate dispute resolution mechanisms enhance fairness and tax certainty, protect taxpayers' rights, and support the credibility of enforcement, thereby promoting compliance. Tax compliance is also encouraged by stronger trust in government, perception of reciprocity and retribution of tax payments through the provision of public services. This is illustrated by the negative correlation between indicators of survey-based indicators of trust in government and social tolerance toward tax cheating (Figure 28). Georgia provides a well-documented example of the key role of governance reforms in promoting domestic revenue mobilization as an anti-corruption campaign and reforms of domestic tax dispute mechanisms have played a key role in the country's success in boosting tax revenue collection

(Akitoby and others 2020, World Bank 2012). Domestic tax dispute resolution mechanisms are well developed in several other countries in the region (for example, Armenia, Jordan, and Pakistan) but are weak in others (for example, Tajikistan, according the 2020 TADAT assessment report). Where dispute resolution mechanisms are well developed, their efficiency is sometimes undermined by lengthy delays in responding to taxpayer requests or the outcome of the process is not acted upon to reform legislation or administrative procedures.

Figure 28. Tax Morale and Trust in Government
(2017–20)
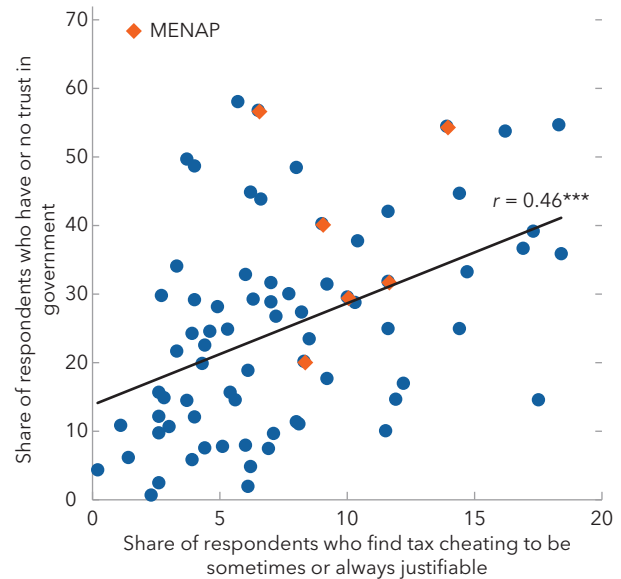
Sources: World Value Survey; and IMF staff calculations.

4. Policies to Mobilize Revenues for Resilient and Inclusive Growth

Post-COVID tax reforms offer opportunities to gradually strengthen the region's tax systems to support resilient growth and inclusion. Although the appropriate balance between efficiency and equity considerations is different for each country and will depend on country-specific circumstances and societal preferences, our analysis points to several priorities to improve both efficiency and equity of tax systems. Specifically, many countries will need to broaden the tax base, improve tax progressivity, strengthen revenue administration to boost tax compliance, and undertake structural reforms to reduce informality.

Domestic revenue mobilization has now become more urgent for policymakers across the Middle East and Central Asia. Countries in the region were already grappling with the challenge of reigniting growth and promoting inclusion amid sharply reduced policy space as they entered the pandemic. Disruptions in lives and livelihoods as a result of the pandemic and, recently, the war in Ukraine have made revenue mobilization more pressing to fund critical infrastructure and social spending and support inclusion.

Efficient and equitable revenue mobilization requires improvements to tax policy design, modernization of revenue administrations, and implementation of structural reforms. Reform priorities will inevitably depend on country-specific circumstances, and the pace of reforms will need to take into consideration potential socio-economic impacts. Fragile and conflict-affected states, for example, face distinct challenges and experience suggests sequencing matters (Box 5). Nevertheless, our analysis highlights that policy action is needed in three key areas.

First, improvements in tax policy design are needed to broaden the tax base and increase progressivity and redistributive capacity by:

- *Reducing widespread tax exemptions on personal and corporate income.* In addition to broadening the tax base, restricting generous and distortive tax exemptions—including those introduced during the pandemic—improves allocative efficiency, simplifies tax administration, and reduces opportunities for non-compliance. In the case of the PIT, reducing exemptions could help improve progressivity. For example, Egypt is working on reforming its income tax law to simplify the legal framework and stream-line exemptions.

- *Removing inefficient corporate tax incentives and improving corporate tax design.* The proliferation of tax incentives in the region is to some extent a manifestation of international corporate tax competition, which the recent global corporate tax agreement can help mitigate (IMF 2022b). Tax systems—including the appropriate levels of statutory tax rates—should be carefully evaluated and ineffective incentives removed, especially as countries move toward implementing the global minimum corporate tax. Some countries are already taking steps in this direction. For example, the United Arab Emirates recently announced plans to introduce a 9 percent federal corporate income tax rate in 2023.[26]

- *Increasing low PIT rates and accelerating the introduction of PIT and VAT in some countries.* In a few countries, the PIT may be progressive, but rates are too low to raise revenue materially and achieve a meaningful redistributive capacity. In such cases, equity gains from a higher PIT rate are likely to outweigh

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[26] In 2022, the United Arab Emirates announced the introduction of a federal corporate income tax (CIT) effective for financial years starting on or after June 1, 2023. CIT will apply to all businesses and commercial activities alike, except for those in the extractive sectors. The standard statutory CIT rate of 9 percent will apply only to firms with income exceeding AED 375,000. Multinationals will be subject to a 15 percent CIT rate, which constitutes the United Arab Emirates' implementation of the global minimum corporate tax. Further details on the CIT remain to be published.

the efficiency loss from allocative distortion, leading to a net welfare gain. Countries without a PIT can consider introducing one to increase tax revenue and reduce income inequality.[27] Experience with the introduction of a VAT in Bahrain, Oman, Saudi Arabia, and United Arab Emirates has been positive. Following Saudi Arabia, Bahrain also recently raised its VAT rate. Countries (for example, Kuwait, Qatar) could accelerate their plans to introduce a VAT.

▪ *Improving the design of the VAT*. Exemptions are often granted on basic goods and services, including foodstuffs and medication, to lower the tax burden on vulnerable households. This is costly, since a large share of the benefit tends to accrue to high-income households and can lead to inefficient allocations of resources by distorting relative prices. These exemptions can be replaced by better-targeted cash transfers, which may be financed using consumption tax revenues (Warwick and others 2022). More generally, VAT progressivity can be improved if the additional revenues finance spending on social programs, education, health, and infrastructure (IMF 2020b). Armenia has plans to gradually remove inefficient VAT exemptions.

▪ *Further developing taxation of wealth*. Most countries in the region have some form of property tax, though the revenue collection has been limited—ranging between zero and 2 percent of GDP in 2019. There seems to be scope to mobilize more revenue by raising property tax rates, aligning property values with market prices, improving cadasters, and scaling up administrative capacity. Raising property taxes, however, may generate issues of intergovernmental fiscal design and fiscal decentralization (Norregaard 2013), given that they are often administered at a subnational level.[28] Currently levied only in a handful of countries in the region, inheritance taxes could be made more effective on estates that pass to future generations within the same family, or introduced where they do not exist. Net wealth taxes could also be considered (IMF 2020b).

Second, revenue administrations could be strengthened to improve compliance by:

▪ *Implementing organizational reforms*. Structuring tax administrations on a functional basis and granting them a degree of autonomy (with effective governance and accountability) would help build modern and efficient tax services with stable funding, skilled staff, and limited political interference. Segmenting the coverage of taxpayers through dedicated units, starting with large taxpayers and high-net-worth individuals, would enhance the efficiency of enforcement. Cooperation between tax and customs administrations is critical as improved data sharing allows for better compliance management by facilitating revenue identification, improving recoveries and increasing the effectiveness of tax and customs administrative processes. Several countries are making progress in this area. Examples include ongoing efforts to expand capacity of the Large Taxpayer Department in Iraq.

▪ *Developing taxpayer services through a collaborative approach*. Governments in the region should continue to work towards streamlining administrative processes to reduce the cost of compliance for taxpayers. Providing assistance and advice on tax and accounting matters to taxpayers, particularly to small firms, would facilitate better compliance. Timely repayment of tax refunds would contribute to enhance the perception of procedural fairness. Campaigns to raise public awareness of VAT ahead of their introductions in Bahrain, Saudi Arabia, and United Arab Emirates have likely contributed to the relatively high compliance rates.

▪ *Implementing adequate controls and enforcement*. Strong controls and enforcement are crucial for deterrence and the credibility of the tax system. In this regard, consideration should be given to widening the coverage and increasing the frequency of audits and field visits and legislative reforms to enhance

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[27] See, for example, Mansour and Zolt (2022) for a discussion of design issues and other considerations in introducing a PIT in the Middle East and North Africa.

[28] There is empirical evidence that fiscal decentralization in itself may incentivize increased revenue mobilization from property taxation (Bahl and Martinez-Vazquez 2008).

sanctions against major offenses. Revenue administrations could also implement comprehensive compliance risk management (CRM) approaches to optimize revenue collection by identifying and focusing their resources on the identification, assessment and mitigation of the highest risks to the tax base in a systematic and analysis-based manner.

- *Enhancing domestic cooperation.* Revenue administrations could benefit from coordination and sharing of information with other relevant domestic agencies. For instance, financial intelligence units in charge of combating money laundering and tax crimes have a wide range of administrative, financial, and law enforcement information that could be useful for revenue administrations in their pursuit of tax evasion cases. Enforcement for tax evasion and related money laundering activities could also be a strong deterrence against tax evaders (both natural and legal persons). Business and property registries and financial institutions can also provide tax administrations with information on taxable income.

- *Leveraging digital technologies and expanding electronic taxpayer services.* Automating routine tasks would free administrative resources that could be better deployed to core functions such as audit and control. Computerized data processing and exchange and cross-checking of information supports risk profiling. Electronic platforms for the filing and payment of taxes and communication between taxpayers and the administration reduces compliance and collections costs and minimizes opportunities for corruption and evasion. Many countries in the region (for example, Algeria, Azerbaijan, Iran, and Pakistan) are already using electronic tax filing.

- *Strengthening international cooperation.* Participation in global initiatives on taxation supports administrative capacity through better access to information on taxable income of taxpayers, cooperation on policy design and enforcement and access to technical support. Countries should consider enhancing cooperation with external partners on tax matters. The global minimum corporate tax agreement is a positive step in this direction (IMF 2022b).

- *Ensuring tax legislation is clear, well-organized, effectively designed and appropriately integrated* into the wider legal framework is vital in ensuring a law is understandable to taxpayers and can be consistently administered.

Third, structural reforms would improve incentives for tax compliance, formalization, and economic diversification by:

- *Broadening financial inclusion and limiting the use of cash.* Promoting financial inclusion requires a wide range of financial, judicial, and administrative reforms. In parallel, a host of measures can be considered to limit the use of cash, for example, for the settlement of large transactions. Regulatory measures and stronger competition in the financial sector would reduce the costs of digital payments while tax measures (for example, limits on the deductibility of expenses settled in cash) could provide incentives for the use of bank-based instruments. Caps on payments in cash and mandatory requirements for the installation of electronic fiscal devices at points of sales could also help. More broadly, tax administrations should formulate specific compliance strategies to guide enforcement and control actions targeting sectors that tend to operate on a cash basis.

- *Fighting corruption, improving governance, and enhancing transparency and communication.* At the level of revenue administrations, payroll management measures and competitive salaries could reduce the incentives for tax officials to seek payouts. More broadly, establishing professional career systems with robust and transparent recruitment, promotion, compensation, and training policies is key for addressing corruption risks in revenue administrations. In tandem, administrative safeguards, such as codes of ethics, internal investigation units, external oversight, and asset declaration mechanisms, would help promote integrity. Publicizing high-profile prosecutions of tax offenders could enhance deterrence, while public communication and education campaigns would raise taxpayer awareness. Effective and independent

judiciaries and dispute resolution mechanisms would foster confidence in the fairness of the tax system and the credibility of enforcement. Promoting transparency, particularly on public expenditures and exemptions, supports the perception of reciprocity and enhances trust. Regular reporting on tax spending as part of the budget information process would enhance transparency and raise public awareness on the cost of tax exemptions. Enhancing engagement with the public and advancing taxpayer education are key to promote tax morale.

- *Factoring in the interplay between taxation and informality in the design of tax system reforms*. Reforms to promote tax compliance and formalization policies can be mutually reinforcing. Formalization benefits tax collection through wider coverage of the tax base and improved tax morale. At the same time, building an effective tax system with minimal distortions from tax policies and an efficient administration is key for formalization, along with labor and product market and institutional reforms. Governments should factor in this interplay in the design of tax reforms, for example, by avoiding adding layers of complexity or cumbersome procedures to the tax system. They should also leverage formalization efforts to promote tax compliance, for instance, by making benefits offered as incentives to formalize conditional on proof of tax compliance.

To be successful, efforts to raise revenues in an efficient and equitable manner must be sustained. An important lesson from countries in the region that have achieved significant and lasting improvements in their tax ratios is that reform efforts are needed over relatively long time periods. More generally, political feasibility is often the biggest obstacle to reforms. In the short term, the distributional impact of reforms can dwarf the expected gains, making them politically costly (Ciminelli and others 2019; Chen and others 2019). Reducing political barriers requires careful timing—balancing the state of the economy with revenue needs—and design of reforms as well as clear and transparent communication. Furthermore, political commitment is key to facilitate coordination by relevant agencies and encourage implementation of tax reforms. This is especially important for FCSs (Akitoby, Honda, and Primus 2020).

While there is no one-size-fits-all approach, a medium-term revenue strategy (MTRS) can provide a useful guide to policymakers. The MTRS, which can be broadly conceptualized as the sustained process of implementation of a tax system reform over several years, is based on four related components:[29]

- *Estimating spending needs for economic and social development*. This an essential first step to foster a common understanding among all stakeholders (that is, government, legislators, civil society, and taxpayers) and to build a tax policy reform package that is aligned with spending needs. By generating broad support, it can also overcome common political economy obstacles to tax reform.

- *Elaborating a tax system reform roadmap covering tax policy, revenue administration, and the legal framework*. A comprehensive view recognizes the linkages among policy, administration, and a country's laws and can also identify areas where synergies break down. In particular, ensuring tax legislation is clear, well-organized, effectively designed, and appropriately integrated into the wider legal framework is vital in making the law understandable to taxpayers and capable of being consistently administered.

- *Committing to a sustained medium-term government reform*. Clear signals of government commitments to reform are necessary to help sustain the reform momentum. This often requires a whole-of-government approach to support the Ministry of Finance and revenue agencies in the implementation of measures. Reform governance, and accountability, are also key.

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[29] Gaspar (2019).

▪ *Coordinating external support to the government-led tax system reform.* In some cases, the resources needed to implement reforms may need to come from both domestic and external sources, for example, through technical assistance. Ensuring reform success balancing leadership and ownership the national authorities alongside careful coordination with development partners.

Box 5. Revenue Mobilization Challenges in Fragile and Conflict-Affected States

The FCS experience over the last decades offers valuable insights about tax reform options for these countries.[1] First, revenue mobilization will often take precedence over considerations of how taxes alter the behavior of agents in the short-term. Ease of administration is critical, implying a small number of taxes, easy-to-access tax bases, a focus on large taxpayers and easy collection points, wide recourse to presumptive taxation, and as few exemptions as possible. For FCSs endowed with abundant hydrocarbon resources, this inevitably translates into a focus on taxing those resources, including reforms to better tax rents in the extractive sector. Focusing on large enterprises in other sectors similarly offering high returns to capital (for instance, banking and telecoms) is also advisable, including through turnover-based presumptive taxation when profit-based taxation and/or VAT are not feasible. In non-resource FCSs, which in the region tend to have more developed tax systems, the best reform efforts will typically imply simplification; cutting harmful exemptions in the VAT, CIT, and PIT; consolidating multiple rates; and eliminating small taxes. Additionally, a focus on large enterprises is normally good policy, with a focus on rent-generating sectors. Institution building is equally important.

Administration reforms will depend on the stage of fragility of the respective countries. For FCSs coming out of conflict, administrative reforms could include reestablishment of basic tax administration infrastructure; modernization of a few selected offices collecting the bulk of revenue; identification and appointment of key staff; identification and registration of taxpayer; and establishment of basic administrative procedures for registration, filing, and payment in tax and customs administrations. For more stable, but still vulnerable FCSs, administrative reforms should focus on establishment of effective headquarters functions, human resource capacity development, establishment of a large and medium taxpayer unit, collection of arrears, the development of IT support system, and the establishment of basic compliance improvement strategies.[2]

Equity considerations also have special relevance in FCS countries. While effective progressive taxation based on the PIT or wealth taxes may not be easily implementable in many FCSs, an easy-to-tax, clear and legitimate tax base is perceived as more equitable than one plagued by exemptions and difficult to tax. Nine FCSs out of 10 in the region have a PIT, although often with limited redistributive capacity (Box 2, Annex I). Improving the progressivity of the PIT can be a valid policy objective in those FCSs in the medium term as administration strengthens, including by raising top PIT rates. Further, when a cadaster is available, property taxes can be relatively easy to administer and are also progressive. Finally, excise taxes on luxury goods are also both an effective way of raising revenue and a contribution to progressivity.

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[1] Mansour and Schneider (2019).

[2] IMF (2017b).

Annex 1. Progressive and Redistributive Capacities of the PIT in the ME&CA

Indicative measures of the progressivity and redistributive capacity of the tax system are informative, albeit imperfect. In what follows, the analysis relies on a measure of redistributive capacity defined as the difference between the Gini coefficients of respectively pre- and post-tax income. Importantly, this measure is made comparable across countries by controlling for differences in pre-tax income distributions. It is also decomposed into the progressivity component and the size of the PIT (the latter measured as the ratio of total tax liabilities over total pre-tax income, the average tax rate), breaking down how countries or country groups achieve the observed PIT redistributive capacities.

The standard measurement of the redistributive effect of taxation, as developed by Musgrave and Thin (1948) and Reynolds and Smolensky (1977), is the difference between the Gini coefficients of respectively pre- and post-tax income. In the same spirit, the progressivity index proposed by Kakwani (1977) is defined as the difference between the Gini coefficients of respectively pre-tax incomes and tax liabilities—the more concentrated on higher incomes tax liabilities are, the more progressive the PIT is.

A critical contribution of Kakwani was to decompose the total redistributive effects of taxation into its progressivity and its "size." measured as the ratio of total tax liabilities over total pre-tax income. The intuition behind this decomposition is that progressivity is a necessary but not a sufficient condition of effective redistribution. For example, a PIT generating a total revenue of 0.001 percent of GDP can be made extremely progressive—that is, strongly concentrated on high incomes—but it would always achieve little income redistribution, simply because it is too small.

However, like the Reynolds-Smolensky index, a limitation of the Kakwani index (and the related decomposition) is that it is a function of the pre-tax distribution—therefore confusing the measurement of the intrinsic progressivity of each tax regime with any given initial conditions in the economy. The literature has proposed procedures that make redistribution indices comparable across countries and years, controlling for differences in pre-tax distributions.

The analysis in this paper computes intrinsic progressive and redistributive *capacities* of the PIT in ME&CA countries, corrected for pre-tax distributions. To do so, it uses a methodology that "transplants" tax regimes to be compared into a common base with an identical pre-tax distribution (as proposed by Dardanoni and Lambert (2002) and implemented in Benítez and Vellutini (2021). The calculations use simulated microdata based on Gini coefficients of pre-tax income (Benítez and Vellutini 2021).

Country-level results on progressive and redistributive capacities can help inform changes to the design of PIT to help make tax systems more inclusive. Notably, they show that in some countries, redistributive capacity can be improved by increasing the size of PIT revenue, rather than the progressivity of PIT (Annex Figure 1.1, Annex Table 1.1). This is the case of Iran, Lebanon, and Pakistan, for example. By contrast, in the case of Georgia, the Kyrgyz Republic, Uzbekistan, and Turkmenistan (which all have a flat PIT rate), improving the progressivity of the PIT, rather than its size, would increase redistributive capacity.

The tax treatment of capital income is also key for redistributive capacities. As shown in Annex Figure 1.3, tax rates applying to dividends, interest income and capital gains are consistently lower in the region than in other country groups. Because capital income typically accrues to middle and high-income households, this further lessens the progressive and redistributive capacities of tax systems in the region. For example, the non-taxation of capital gains as in Armenia and the GCC countries significantly limits the ability of the tax system to redistribute income (Annex 3, Annex Table 3.2).

Annex Figure 1.1. Individual Measures of Progress and Redistributive Capacities
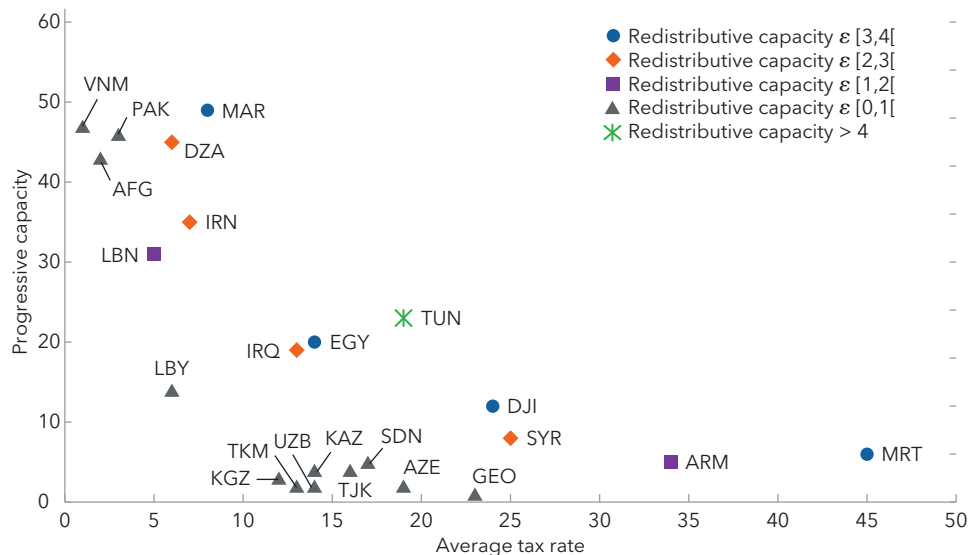
Sources: IBFD; Ernst & Young; SWIID 9.1; and authors' computations.
Note: Latest year available in each country.

Annex Figure 1.2. Top PIT Rates and Redistributive Capacity

1. AEs

2. EMDEs

3. ME&CA Hydrocarbon Importers

4. ME&CA Hydrocarbon Exporters
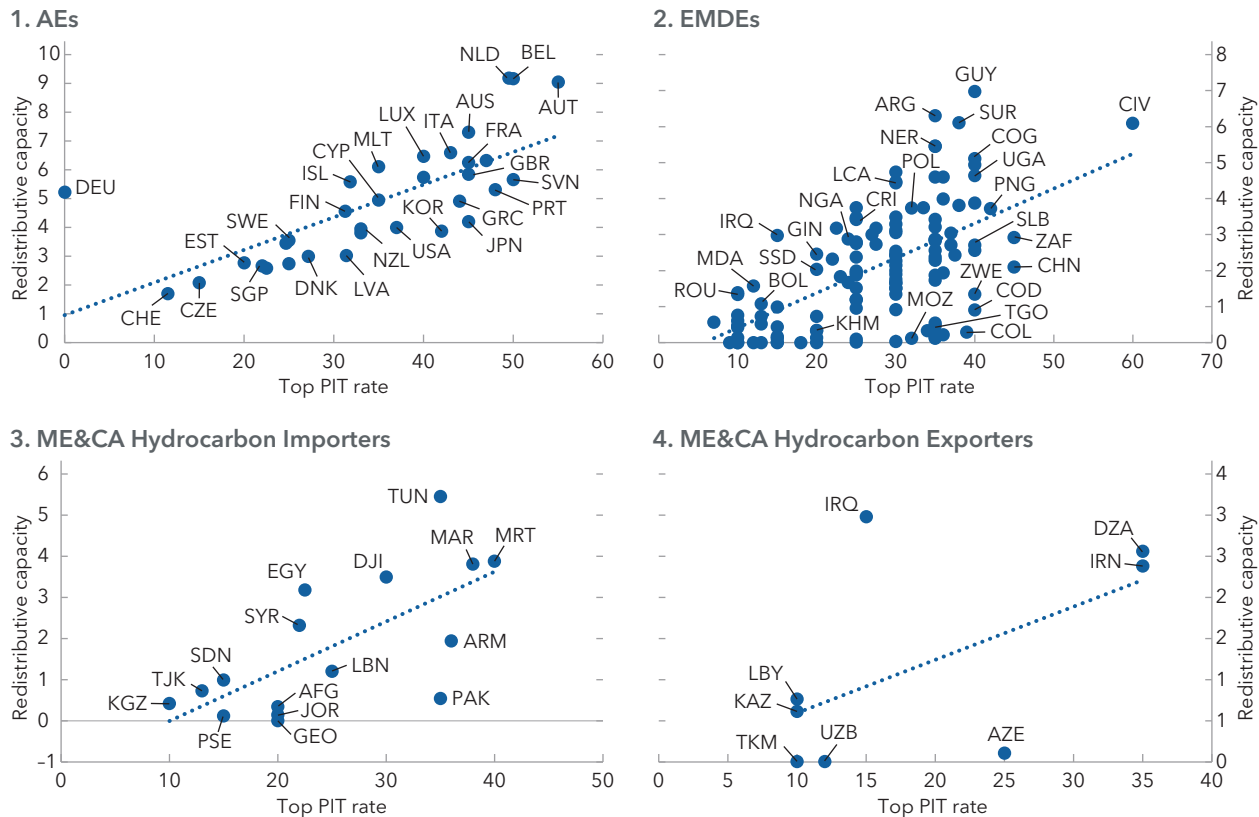
Sources: IBFD; Ernst & Young; SWIID 9.1; and authors' computations.
[1]Latest year available in each country.
[2]Countries with a flat rate have been excluded.
[3]Blue lines are fitted values.

Annex Table 1.1 PIT Top Rates, Progressive, and Redistributive Capacities

Country	Year	Top Rate	Flat Rate	Progressive Capacity	Average Tax Rate	Redistributive Capacity
Afghanistan	2018	20		42.3	0.8	0.3
Algeria	2020	35		44.4	5.4	2.6
Armenia	2020	36		3.9	33.2	1.9
Azerbaijan	2020	25		0.4	19.6	0.1
Djibouti	2020	30		11.7	22.9	3.5
Egypt	2020	22.5		20.3	13.5	3.2
Georgia	2020	20	Yes	0.0	21.7	0.0
Iran	2020	35		34.6	6.4	2.4
Iraq	2020	15		19.7	13.2	3.0
Jordan	2018	20		47.7	0.3	0.1
Kazakhstan	2020	10	Yes	3.8	14.0	0.6
Kyrgyz Republic	2020	10	Yes	2.9	12.5	0.4
Lebanon	2020	25		31.1	3.7	1.2
Libya	2020	10		13.2	5.4	0.8
Mauritania	2020	40		5.0	43.7	3.9
Morocco	2020	38		39.0	8.9	3.8
Pakistan	2020	35		45.6	1.2	0.5
Sudan	2019	15		5.0	16.5	1.0
Syria	2011	22		7.4	23.8	2.3
Tajikistan	2020	13		3.8	16.2	0.7
Tunisia	2020	35		22.3	19.6	5.5
Turkmenistan	2020	10	Yes	0.0	12.9	0.0
Uzbekistan	2020	12	Yes	0.0	15.3	0.0
West Bank and Gaza	2020	15		47.6	0.3	0.1
Yemen	2020	15	Yes			
Bahrain		No PIT				
Kuwait		No PIT				
Oman		No PIT				
Qatar		No PIT				
Saudi Arabia		No PIT				
Somalia		No PIT				
United Arab Emirates		No PIT				

Sources: IBFD; Ernst & Young; SWIID 9.1; and authors' computations.

Annex Figure 1.3. Tax Rates on Capital Income

1. Dividends

2. Interest Income

3. Capital Gains
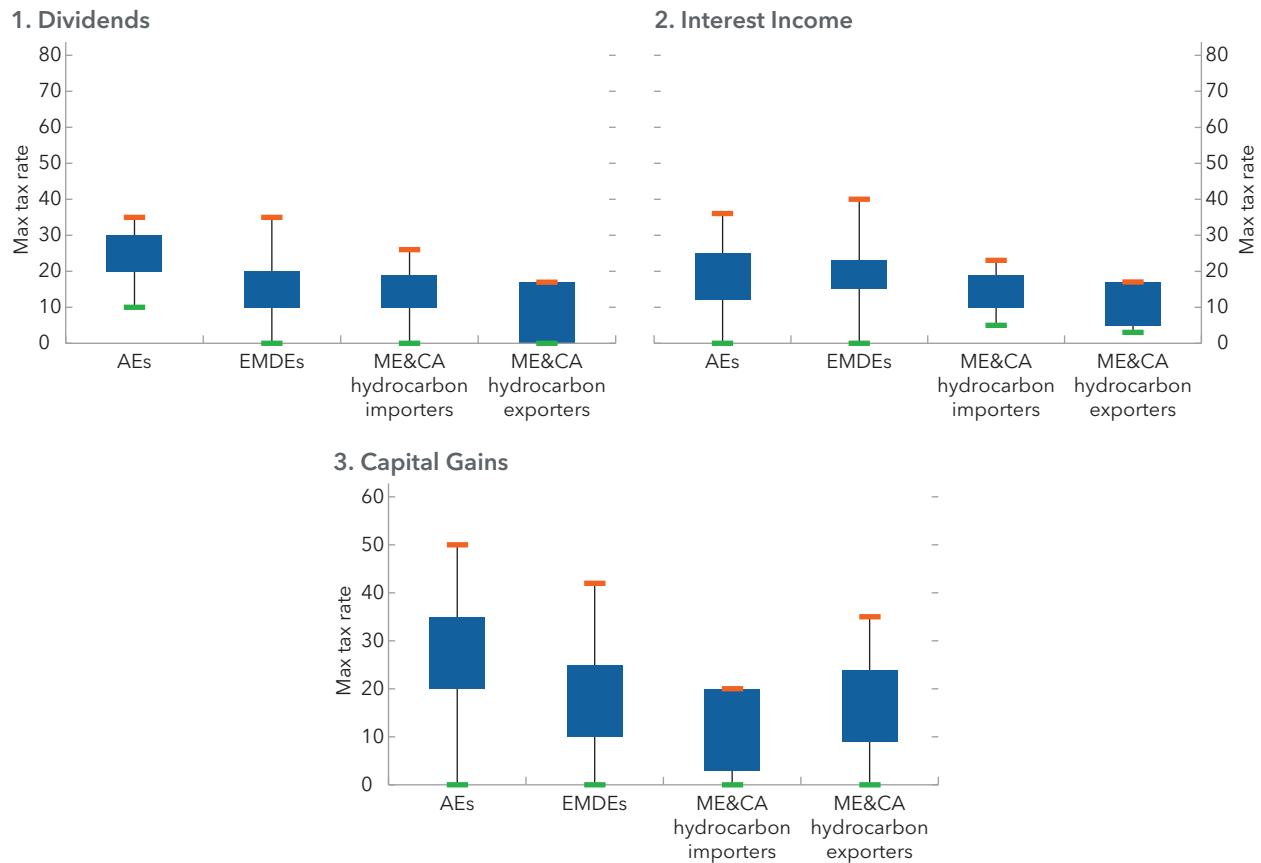
Source: IBFD.
[1]Latest year available in each country.
[2]This is for income accruing to resident taxpayers.

Overall, the PIT has a vital role in enhancing the redistributive capacity of the tax system but is underutilized in the region. Policy improvements suggested by this analysis include: First, GCC countries, with some of the highest income inequality in the region, should consider implementing a PIT. Second, in other countries, the redistributive capacity of the PIT could be made stronger (particularly, but not limited to, countries with a flat PIT rate) by increasing progressivity through raising the average tax rate of the PIT at the top (for instance, by raising the top PIT rate) and by reviewing exemptions and specific deductions, which typically benefit top earners, and the taxation of capital income.

Some caveats are in order, however, regarding the limitations of the analysis. First, exemptions and deductions are imperfectly captured in the measure of redistributive capacity. Although general allowances are accounted for, specific exemptions and deductions (for example, deductions of educational expenses) are not reflected. Not including them in the analysis tends to overestimate progressivity, as the value of deductions normally increases with taxable income. Second, we use simulated, not actual, microdata. While this makes the analysis possible in many countries in the region where actual microdata is otherwise not available, it implies some degree of imprecision. Third, dividends, interest income, capital gains and other types of capital income are often not treated as ordinary income. Since capital income is typically more concentrated than labor income, our progressivity and redistribution indices will be biased upwardly in those countries—years where it is taxed at lower rates than ordinary income. Lastly, the analysis does not account for the degree of compliance, or lack thereof, of the PIT in each country. It only measures the policy intentions, or capacities, of each respective PIT regime.

Annex 2. Estimating Revenue Gaps Using Stochastic Frontier Analysis (SFA)

A. Econometric Model and Data

The tax capacity, tax revenue gap and tax effort are estimated using a tax frontier analysis with time-variant efficiency. Building on the work by Fenochietto and Pessino (2013), the authors construct a stochastic tax frontier using panel data for 146 countries covering the period 2000–19. The model is given by:

$$y_{it} = \alpha + \beta' X_{it} + v_{it} - u_{it}$$

where:

- y_{it} = ln (tax revenue) for country i at period t

- X_{it} = [ln (real GDP per Capita), ln (real GDP per Capita)^2, Inflation, Agriculture, Trade openness, net FDI inflows, Oil, Control of Corruption, LIC, non-LIC EMDE] for country i at period t

- β = vector of unknown parameters

- v_{it}= the statistical error. It follows a standard normal distribution.

- $\beta' X_{it}$ = the optimal stochastic frontier (tax capacity), where $\beta' X$ and v are the deterministic and stochastic components, respectively.

- u_{it} > 0, the time-variant inefficiency. It reflects the country-specific factors that prevented country i from achieving its tax capacity at time t. u_{it} follows a truncated-normal distribution.

- v_i and u_i are statistically independent of each other.

Tax Effort (TE_{it}): is defined as the ratio between actual tax revenue and the corresponding stochastic frontier tax revenue:

$$TE_{it} = \frac{\exp(\alpha + \beta' X_{it} + v_{it} - u_{it})}{\exp(\alpha + \beta' X_{it} + v_{it})} = \exp(-u_{it})$$

The model specification relies on the following set of variables:

- *Ln (Tax revenue)*: the sum of all direct and indirect taxes collected by the central government as percent of GDP. For hydrocarbon-exporting countries, only taxes collected on nonhydrocarbon activities are considered. Hence, the ratio transforms into nonhydrocarbon taxes as percent of nonhydrocarbon GDP—a better measure of taxation efficiency as hydrocarbon companies are usually owned by the government and taxes on hydrocarbon sales are efficiently collected. Hydrocarbon-exporting countries which are not in the Middle East and Central Asia were dropped form the sample due to data limitations.

- *Ln (Real GDP per capita)*: based on the purchasing power parity (constant 2017). This variable is a proxy for the level of a country's development. It is expected to be positively correlated with the tax collection since higher level of development raises government capacity to collect taxes and facilitates payment by taxpayers.

Annex Table 2.1. Descriptive Statistics

	Mean	Std. Dev.	Minimum	Maximum
Variable	*All Countries*			
Tax Revenue as percent of GDP	17	7.5	0.6	48.4
GDP per capita (PPP, 2017)	19,308	21,276	630	162,915
Inflation	5.5	13.5	−18.1	513.9
Agriculture as percent of GDP	12.1	11.7	0.01	79.1
Trade Openness	90.0	59.8	0.15	457
FDI as percent of GDP	5.9	17.5	−58.2	449.1
Control of Corruption Index	0.003	0.9	-1.9	2.5
	Middle East and Central Asia Countries (ME&CA)			
Tax Revenue as percent of GDP	11.5	6.8	0.7	26.8
GDP per capita (PPP, 2017)	19,856	23,909	1,189	102,494
Inflation	6.3	7.8	−10.1	63.3
Agriculture as percent of GDP	11.2	9.5	0.1	41.2
Trade Openness	72.3	34.1	0.15	194.2
FDI as percent of GDP	4.3	5.6	−11.6	55.1
Control of Corruption Index	−0.5	0.7	−1.8	1.5

Source: Authors' calculations.

- *Ln (Real GDP per capita)²* is introduced to capture the non-linear elasticity between the tax revenue and the tax base.

- *Inflation*: An increase of consumer prices could lead to a "bracket creep" where taxpayers should theoretically pay more taxes as tax brackets usually fail to adjust for changes in consumer purchasing power, which reduces payment incentive. In addition, Fenochietto and Pessino (2013) consider that inflationary pressures generated by fiscal deficit monetization indicate a deficiency in the country's capacity to collect taxes. Therefore, the sign of the coefficient associated with inflation is expected to be negative.

- *Agriculture*: the share of the value-added of the agriculture sector in the GDP. This sector is hard to control and tax, for administrative and political economy reasons, especially when the sector is dominated by small farmers. In addition, it is highly subsidized and benefits from large tax exemptions in many countries. The sign of the coefficient associated with this variable is expected to be negative.

- *Trade openness*: the sum of exports and imports as percent of GDP. For consistency, hydrocarbon exports were subtracted in the case of hydrocarbon-exporting countries. Baunsgaard and Keen (2010) and Gnangnon and Brun (2019) found that more trade openness generates more economic activity and hence, more tax revenue for the government. Davoodi and Grigorian (2007) argued that foreign trade is easier to tax than domestic activities, generating higher tax revenues. Thus, the sign of the coefficient associated with trade openness is expected to be positive.

- *Net FDI inflows*: as percent of GDP. For a given tax system, higher FDI inflows are expected to boost economic activity and generate higher tax revenue. Bayar and Ozturk (2018) found that FDI inflows affect the economic growth positively through increasing the capital stock, improving the human capital and technology transfer, and raising competitiveness in the host country, which leads to higher tax revenue. Therefore, the sign of the coefficient associated with Net FDI inflows is expected to be positive.

- *Control of corruption index*. A higher level of the index reflects higher capacity of the government to control corruption, including limiting tax evasion. Hence, the sign of the associated coefficient is expected to be positive.

- *Oil, LIC and non-LIC EMDE*. Dummy variables to control for economic diversification and income level. Countries with abundant oil reserves have less incentive to tax nonhydrocarbon activities as oil exports generate the needed fiscal revenue. In addition, low-income countries (LICs) and non-LIC emerging market economies tend to collect fewer taxes than advanced economies due, mainly, to lower institutional quality, larger shadow economy and smaller tax base. The sign of the coefficient associated with each of the variables in expected to be negative.

B. Estimation Results

Regression results are robust across specifications and have the expected signs (Annex Table 2.2). Three specifications of the model have been considered: the first one accounts for standard economic indicators such as GDP per capita, inflation and oil dependency. The second specification adds a governance indicator (control of Corruption) to the first one, to control institutional quality. Dummies for the income group were added in the third specification which constitutes the baseline for the analysis. All coefficients for the three specifications are statistically significant at the 99 percent confidence level, except the net FDI inflows (90 to 95 percent level).

Annex Table 2.2. Stochastic Frontier Analysis: Determinants of Tax Revenue

	Tax Revenue as Percent of GDP		
	(1)	(2)	(3)
Ln (GDP per capita)	2.006*** (13.98)	2.005*** (13.57)	2.257*** (14.62)
Ln (GDP per capita)^2	−0.110*** (−14.34)	−0.112*** (−14.22)	−0.127*** (−15.18)
Inflation	−0.003*** (-17.17)	−0.004*** (−17.37)	−0.004*** (−17.56)
Agriculture	−0.007*** (−7.09)	−0.007*** (−6.66)	−0.007*** (−6.44)
Trade Openness	0.001*** (8.93)	0.002*** (9.25)	0.001*** (9.11)
Net FDI Inflows	0.0003** (2.10)	0.0003* (1.93)	0.0003* (1.79)
Oil	−1.014*** (−11.94)	−0.842*** (−12.50)	−0.562*** (−5.73)
Control of Corruption		0.077*** (5.29)	0.063*** (4.38)
LIC			−0.454*** (−4.96)
Non-LIC EMDEs			−0.444*** (−5.70)
Intercept	−5.136*** (−7.60)	−5.103*** (−7.30)	−5.951*** (−8.26)
μ (u)	1.026*** (18.24)	0.908*** (15. 40)	0.667*** (7.14)
η	0.008*** (14.53)	0.010*** (13.18)	0.013*** (12.27)
Number of observations	2397	2297	2,297
Number of countries	146	146	146
σ^2	0.184	0.175	0.168
γ	0.923	0.921	0.918

Source: Authors' estimations.

Note: t statistics in parentheses; *p<0.05; **p<0.01; ***p<0.001; η is the parameter for time varying inefficiency; μ is the mean of the truncated normal distribution for u_{it}.

Annex Table 2.3. Stochastic Frontier Analysis: Tax Effort, Tax Potential, and Tax Revenue Gap

Country	Year	Tax Revenue	Tax Effort	Tax Potential	Tax Gap
		Hydrocarbon-Exporting Countries			
Iraq	2019	2.1	0.1	17.4	15.3
United Arab Emirates	2019	2.7	0.2	14.1	11.4
Kuwait	2019	3.1	0.2	14.3	11.2
Bahrain	2019	3.3	0.1	34.1	30.8
Qatar	2019	4.1	0.3	15.1	11.1
Oman	2019	6.8	0.3	20.5	13.7
Iran	2019	7.7	0.5	16.8	9.0
Saudi Arabia	2019	11.4	0.4	25.5	14.1
Kazakhstan	2019	13.2	0.9	14.0	0.8
Algeria	2019	17.3	0.9	20.3	3.0
Azerbaijan	2019	18.7	1.0	19.1	0.4
		Hydrocarbon-Importing Countries			
Sudan	2019	5.4	0.3	19.6	14.2
Afghanistan	2018	8.4	0.3	25.9	17.4
Djibouti	2019	12	0.4	33.3	21.2
Pakistan	2018	12.9	0.4	31.6	18.7
Egypt	2019	13.8	0.5	30.3	16.4
Mauritania	2018	15.3	0.4	39.5	24.1
Jordan	2019	15.5	0.4	35.1	19.6
Tajikistan	2016	18.2	0.6	29.0	10.8
Kyrgyz Republic	2018	20.2	0.6	34.9	14.7
Armenia	2018	20.6	0.6	34.6	14.0
Morocco	2019	21.6	0.6	33.8	12.1
Tunisia	2018	23.3	0.6	41.0	17.7
Georgia	2018	23.4	0.6	41.4	18.0

Source: Country authorities; and authors' calculations.

Note: For hydrocarbon-exporting countries, tax revenue, tax potential, and tax gap exclude hydrocarbon-related taxes and are expressed as percent of nonhydrocarbon GDP. For hydrocarbon-importing countries tax revenue, tax potential and tax gap are reported as percent of GDP. Tax gaps are computed for the latest year in which data are available for all the variables in the model.

The results are based on stochastic frontier analysis. The frontier defines a theoretical maximum attainable level of tax revenue given a country's characteristics. The estimated tax potential does not necessarily correspond to a desirable level of tax revenue. In practice, the efficient amount of tax revenue to GDP that a country can raise could be different from that defined by the frontier.

Tax effort is the ratio of tax revenue to tax potential.

Annex 3. Tax Exemptions and Organizational Features of Revenue Administrations in the Middle East and Central Asia

Annex Table 3.1. Examples of Corporate Income Tax Exemptions and Incentives in 2021

		Tax Incentives Outside Special Economic Zone				
	Special Economic Zones[1]	On capital investment	Firms in certain strategic sectors	Export-oriented companies	Small, and medium companies	Firms with domestic ownership
CCA						
Armenia	X		X	X	X	
Azerbaijan	X		X			
Georgia	X	X		X		
Kazakhstan	X	X	X			
Kyrgyz Republic	X	X	X			
Tajikistan	X	X	X		X	
Turkmenistan					X	
MENA						
Algeria		X	X			
Djibouti	X					
Egypt	X				X	
Iraq			X			
Jordan	X		X			
Kuwait	X	X				X
Lebanon	X	X	X		X	
Morocco	X		X	X		
Oman			X		X	
Pakistan	X	X	X		X	
Qatar	X		X			X
Saudi Arabia		X				X
Tunisia	X	X	X	X		
United Arab Emirates[2]	X					

Source: Country authorities; and PricewaterhouseCoopers.

[1] Special economic zones usually provide tax holidays to firms.

[2] In 2022, the United Arab Emirates announced the introduction of a federal corporate income tax (CIT) effective for financial years starting on or after June 1, 2023. CIT will apply to all businesses and commercial activities alike, except for those in the extractive sectors. The standard statutory CIT rate of 9 percent will only apply to corporates with income exceeding AED375,000. Multinationals will be subject to a 15 percent CIT rate, which constitutes the United Arab Emirates' implementation of the global minimum corporate tax. Further details on the CIT remain to be published.

Annex Table 3.2. Examples of Personal Income Tax Exemptions in 2021

	Capital Gains[1]	Dividend	Interest Income	Inheritance and Gift
CCA				
Azerbaijan	X			X
Kazakhstan	X			
Kyrgyz Republic	X	X		X
Tajikistan	X			X
Turkmenistan	X		X	
Uzbekistan	X		X	X
MENA				
Egypt			X	X
Jordan	X	X		X
Lebanon				
Libya				
Mauritania				X
Morocco				
Pakistan	X			
Tunisia			X	
West Bank	X	X		X

Source: Country authorities; and PricewaterhouseCoopers.
[1] Capital gains including those from sales of real properties.

Annex Table 3.3. Organizational Features of Tax Administrations

Country	Functional Organization	Large Taxpayer Unit	Customs are a Single, Integrated Organization	Autonomy Semi-Autonomy of the Tax Administration	E-filing
AFG	1	1	0	0	0
DZA	1	1	0	0	1
ARM	1	1	1	1	1
AZE	1	1	1	1	1
BHR	0	0	0	0	1
DJI	1	1	0	0	0
EGY	0	1	0	0	n.a.
GEO	1	1	1	0	0
IRN	1	1	0	1	1
IRQ	0	1	0	0	n.a.
JOR	1	1	0	0	0
KAZ	1	0	1	0	0
KWT	0	0	0	0	0
KGZ	1	1	0	1	1
LBN	1	1	0	0	0
LBY	n.a.	n.a.	0	n.a.	n.a.
MRT	1	1	0	0	0
MAR	1	1	0	0	0
OMN	1	0	0	1	1
PAK	1	1	1	1	1
QAT	n.a.	n.a.	0	0	n.a.
SAU	1	1	0	0	1
SOM	0	n.a.	0	0	0
SDN	n.a.	1	1	0	0
SYR	1	1	0	0	0
TJK	1	1	0	0	0
TUN	1	1	0	0	n.a.
TKM	0	n.a.	0	0	0
ARE	n.a.	n.a	0	0	n.a.
UZB	n.a	1	0	0	1
WBG	0	n.a.	0	0	n.a.
YEM	n.a.	1	0	n.a.	n.a.

0 = No, 1 = Yes
Sources: USAID (2017); and IMF staff.
Note: Oman is not assessed as having a full Large Taxpayer Unit (LTU) as its LTU covers only audits, not all stages of taxation of large taxpayers Oman Tax Authority.

Annex 4. Participation of Countries in the Middle East and Central Asia in International Initiatives for Cooperation on Taxation

Country	Convention on Mutual Administrative Assistance in Tax Matters[1]	OECD/G20 Inclusive Framework on Base Erosion and Profit Shifting[2]	Global Forum on Transparency and Exchange of Information for Tax Purposes[3]
Afghanistan			
Algeria			X
Armenia	X	X	X
Azerbaijan	X		X
Bahrain	X	X	X
Djibouti		X	X
Egypt		X	X
Georgia	X	X	X
Iran			
Iraq			
Jordan	X	X	X
Kazakhstan	X	X	X
Kuwait	X		X
Kyrgyz Republic			
Lebanon	X		X
Libya			
Mauritania	X	X	X
Morocco	X	X	X
Oman	X	X	X
Pakistan	X	X	X
Qatar	X	X	X
Saudi Arabia	X	X	X
Somalia			
Sudan			
Syria			
Tajikistan			
Tunisia	X	X	X
Turkmenistan			
United Arab Emirates	X	X	X
Uzbekistan			
Yemen			

Sources: OECD; and IMF staff.
X indicates membership.
[1] As of September 20, 2021.
[2] As of November 2021.
[3] As of November 2021.

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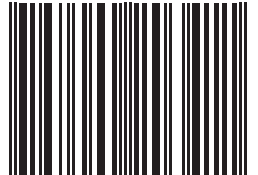
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