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AND CENTRAL ASIA DEPARTMENTS

# Managing Fiscal Risks in the Middle East and North Africa

Prepared by Racheeda Boukezia, Jacques Charaoui,  
Jonas Frank, Mahmoud Harb, Maximilien Queyranne,  
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Tieman

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# Acronyms and Abbreviations

ARC	Africa Risk Capacity
CAPBs	Cyclically Adjusted Primary Balances
CASNOS	Caisse Nationale de Sécurité Sociale des Non-Salariés
CCRIF	Catastrophe Risk Insurance Facility
CNR	Caisse Nationale des Retraites
CPB	Cyclical Primary Balance
EDL	Electricity du Liban
IDPs	Internally Displaced Persons
GCC	Gulf Cooperation Council
GFC	Global Financial Crisis
GG	General Government
FCCL	Fiscal Commitments and Contingent Liability Unit
FCS	Fragile and Conflict-Affected States
FRU	Fiscal Risk Management Units
MFU	Macro-Fiscal Units
MENAPEG	Middle East, North Africa and Pakistan excluding the Gulf Cooperation Council
METAC	Middle East Regional Technical Assistance Center
NEPCO	National Electric Power Company
NFPE	Nonfinancial Public Enterprise
PCRAFI	Pacific Catastrophe Risk Assessment and Financing Initiative
PFRAM	PPP Fiscal Risk Assessment Model
PIM	Public Investment Management
PIMA	Public Investment Management Assessment
PPAs	Power Purchasing Agreements
PPPs	Public-Private Partnerships
SCM	Synthetic Control Method
SMP	Staff-Monitored Program
SOBs	State-Owned Banks
SOEs	State-Owned Enterprises
WAJ	The Water Authority of Jordan



# Executive Summary

Countries in the Middle East and North Africa (MENAPEG, including Pakistan but excluding the Gulf Cooperation Council members) are exposed to significant fiscal risks. On average, small fiscal risks materialize in countries every year, while a large macroeconomic shock that causes debt to increase by an average of 12 percent of GDP occurs once every eight years. Some of these risks stem from macroeconomic shocks, such as growth volatility—to which the region is more vulnerable than other parts of the world—fluctuations in commodity prices and movements in exchange and interest rates. Others are associated with contingent liabilities from the public and private sectors, including explicit government guarantees on loans, support to loss-making state-owned enterprises (SOEs), or troubled banks and obligations under public-private partnerships (PPPs) and power purchasing agreements (PPAs). Lastly, fiscal risks also stem from tail-risk events such as natural and climate disasters and health crises such as the COVID-19 pandemic.

When risks materialize, they often have major and lasting implications on fiscal deficits and debt as well as the conduct of fiscal policy going forward. Yet countries and policymakers are often caught off guard, forcing them to adopt ad hoc measures, including cuts to development and other priority expenditure, and more broadly, running out of room for countercyclical policy response. It is therefore important for countries to develop and adopt adequate procedures and institutional setups to manage exposures to these risks and help ensure sound public finances, protect investment in development, and, ultimately, safeguard macroeconomic stability.

Fiscal risk management remains under development across the MENAPEG region, despite substantial efforts. This paper discusses avenues for reforms to support these efforts. It presents precedents where progress is made and provides a broad analytical framework for policymakers to build upon to fully embrace fiscal risk management in all of its dimensions. Key recommendations include:

- Country authorities should first and foremost intensify efforts to build up their capacity to identify and assess risk factors and their budget's exposure to them. This includes seeking out relevant information that may not currently be systematically collected and/or aggregated to inform a systematic and transparent recording and assessment of fiscal risks, such as exposure to various economic shocks (for example, by building up fiscal stress testing capacity), financial information on guarantees and SOEs (for example, establishing a guarantee register and a central SOE monitoring function), and information on the likelihood and impact of natural and climate disasters.
- Based on a thorough assessment of fiscal risks, policy decisions should be taken on ways to mitigate these risks, including by direct controls to limit fiscal exposure (for example, limiting engagement in certain commercial activities or setting limits on guarantees), indirect measures (such as regulatory measures to discourage excessive risk taking), or transferring risks to other parties (for example, offloading certain risky commercial activities or issuing state-contingent financial instruments). Policymakers should also consider strengthening firewalls between different fiscal risks, to increase the chance that risks can be contained when they materialize.
- However, not all risks can be mitigated or explicitly be provisioned for ex-ante. To this end, countries should consider adopting appropriate medium-term fiscal frameworks to build up buffers or contingency reserves. Such an approach would lessen the budgetary impact of risks when they materialize and generate fewer budgetary surprises, in turn facilitating medium-term fiscal and economic planning and improving resilience to future shocks.



# 1. Introduction

Fiscal risks are factors that may cause fiscal outcomes to deviate significantly from plans or forecasts. They are frequently large and materialize regularly, directly affecting deficits and debt, often with lasting consequences for government balance sheets and the conduct of fiscal policy. Across the region studied in this paper, on average, a large macroeconomic shock occurs once every eight years and causes government revenue to drop by 2.8 percent of GDP while debt increases by almost 12 percent of GDP.

Fiscal risks can arise from macroeconomic shocks or other unexpected events that affect a government's fiscal position. Macroeconomic shocks often directly impact public finances by leading to lower revenue or higher spending and affecting the value of government assets and liabilities. For instance, recessions are likely to weigh on firm and household income resulting in lower tax collections and increased spending on social and unemployment benefits. Commodity price swings drive fluctuations in fiscal revenue in resource-rich countries and spending on food and fuel subsidies almost everywhere. Movements in exchange and interest rates can impact debt and debt service. Besides macroeconomic shocks, the second source of fiscal risks are contingent liabilities—obligations that remain off-balance sheet until triggered, when they become on-balance sheet liabilities (IMF 2016a). Contingent liabilities can be either explicit (that is, legally grounded, such as government loan guarantees) or implicit, where there is a public expectation of government responsibility not established in law (for example, bailing out troubled subnational governments or state-owned enterprises). Fiscal risks can also stem from tail-risk events such as natural disasters—that may, in turn, be linked to climate change—as well as pandemics and conflict.

Fiscal risks often materialize together. For instance, macroeconomic downturns are likely to affect government revenue but can also precipitate financial troubles for SOEs, local governments, or banks, prompting the materialization of contingent liabilities. Conversely, banking sector problems can trigger government bailouts but also affect credit supply and weigh on growth and hence fiscal revenue. Exchange and interest rate shocks affect government debt service but can also lead to deterioration in public and private balance sheets which may, in turn, require fiscal stimulus or outright government assistance to affected entities. The recent COVID-19 pandemic provided an extreme example of the correlation between fiscal risks, as budget revenue were put under pressure by the collapse in economic activity, while at the same time governments had to ramp up spending to address the health crisis and roll out financial support packages to firms and households.

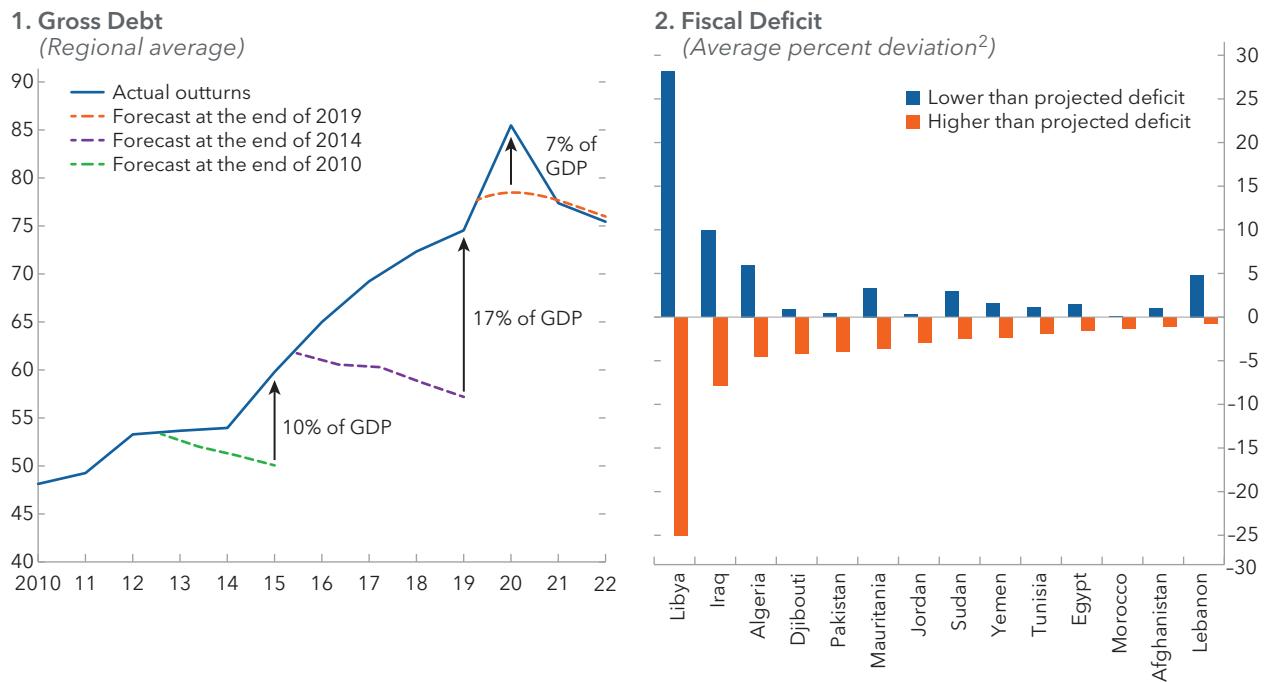
This paper analyzes the sources of fiscal risks in 17 countries in the Middle East and North Africa and Pakistan. It focuses specifically on low and middle-income countries in the region.<sup>1,2</sup> High-income Gulf Cooperation Council (GCC) countries are not included in the analysis given their different characteristics in the region in terms of institutional and technical capacity, financial development, and large government asset holdings, although some of the analysis and recommendations in this paper may also be applicable to them. The sample of countries considered in this paper is labeled as MENAPEG, that is, the Middle East and North Africa, including Pakistan but excluding members of the GCC.

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<sup>1</sup> The country sample covered in the paper includes the Islamic Republic of Afghanistan (AFG), Algeria (DZA), Djibouti (DJI), Arab Republic of Egypt (EGY), Iraq (IRQ), Jordan (JOR), Lebanon (LBN), Libya (LBY), Islamic Republic of Mauritania (MRT), Morocco (MAR), Pakistan (PAK), Somalia (SOM), Sudan (SDN), Syrian Arab Republic (SYR), Tunisia (TUN), West Bank and Gaza (WBG), and the Republic of Yemen (YEM). These countries are the members of the IMF Middle East Technical Assistance Center (METAC).

<sup>2</sup> Due to data availability, some countries are excluded from parts of the analysis. The IMF's engagement with Afghanistan is on pause due to a lack of clarity within the international community regarding the recognition of a government. Information pertaining to Afghanistan in this paper is from before the Taliban takeover in August 2021. Similarly, engagement with Syria and Libya has not occurred for a prolonged period of time; hence, very limited recent information is available.

**Figure 1. MENAPEG: Materialization of Fiscal Risks, 2011-21<sup>1</sup>**  
(Percent of GDP)



Sources: World Economic Outlook, October vintages from 2010 to 2022; and IMF staff calculations.

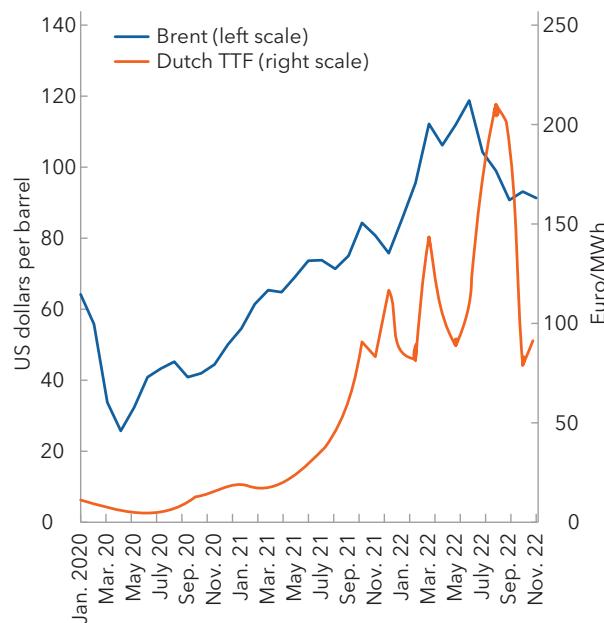
<sup>1</sup>The sample of countries in both panels excludes Somalia, Syria, and West Bank and Gaza due to lack of data for the timeframe of analysis. The sample of countries in panel 1 also excludes Afghanistan and Libya due to lack of data for the timeframe of analysis.

<sup>2</sup>Average deviation between end year t - 1 and end year t + 1 for a shock occurring in year t, calculated over the years in which a negative/positive deviation occurred.

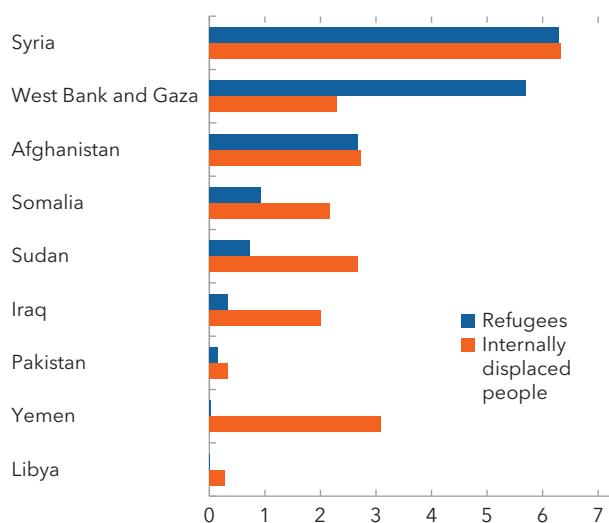
Over the last decade, the MENAPEG region has experienced large deviations in fiscal outturns relative to projections, reflecting to a substantial extent the materialization of fiscal risks (Figure 1). Between 2011 and 2021, absolute actual debt realizations have deviated from the previous year's forecast by a median of 3.8 percent of GDP, while government deficits have deviated by a median of 1.3 percent of GDP. In two-thirds of instances, fiscal deficits were wider and debt ratios were higher than forecast a year earlier.

Many of the factors associated with the materialization of fiscal risks in the MENAPEG region are likely to remain sources of vulnerability going forward. The MENAPEG region has a track record of comparatively volatile economic growth and sharp exchange rate movements. High dependence on hydrocarbon revenue among the region's oil and gas exporters and pervasive universal subsidies generate considerable vulnerability to swings in hydrocarbon and other commodity prices (Figure 2). Relatively high government involvement in the economy and large state ownership of firms and banks mean that contingent liabilities from SOEs and the financial sector tend to be particularly sizeable in some MENAPEG countries. Lastly, a number of countries across the region have a history of social unrest or conflict that remain an important source of extreme fiscal risks, as they lead to disruptions to economic activity, asset destruction, weakening of institutional capacity, and displacement of populations (Figure 3).

Stronger fiscal risk management is therefore essential to bolster the ability of policymakers across the region to respond to future shocks. Building understanding of these risks and managing them is all the more important in the current uncertain global macroeconomic environment after a succession of shocks in recent years has increased government debt and constrained fiscal space in many MENAPEG countries.

**Figure 2. Oil and Gas Prices**

Sources: Bloomberg Finance L.P.; and IMF staff calculations.  
Note: TTF = Title Transfer Facility.

**Figure 3. Internally Displaced People and Refugees by Country of Origin**  
(Millions, average 2015–22)

Sources: UNHCR; UNRWA; and IMF staff calculations.

Note: Internal displacement due to conflict and violence and refugees under UNHCR and UNRWA mandate.

Efforts are ongoing across the MENAPEG to improve fiscal risk data collection, analysis, and management capacity. Chapter 2 documents these efforts and describes the sources of fiscal risks in the region, subdividing them by risks stemming from macroeconomic factors, contingent liabilities, and other sources. Still, fiscal risk management remains a work in progress in much of the region. In Chapter 3 the paper discusses avenues for reforms and highlights the importance of building appropriate institutional frameworks for fiscal risk management, enhancing transparency on fiscal risks and deploying a wide range of mitigation measures, drawing on the IMF's fiscal risk management framework and international best practice. Finally, Chapter 4 offers some concluding remarks.

## 2. Sources of Fiscal Risks

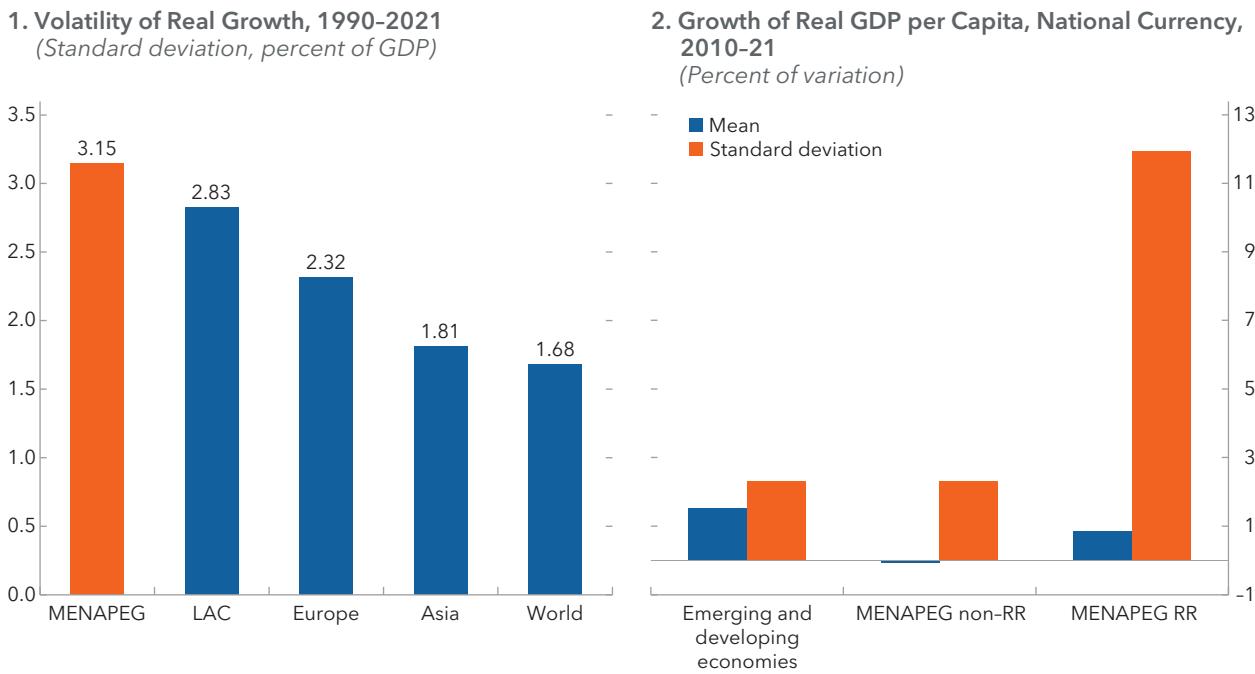
MENAPEG countries have long been subject to myriad fiscal shocks and risks. This section discusses the main sources of fiscal risks in MENAPEG, subdivided by macroeconomic risks, contingent liabilities, and other risks and their budgetary implications.

### A. Macroeconomic Risks

#### Growth Volatility

Economic growth shocks and growth volatility are important sources of fiscal risks, as they directly affect government revenue and debt ratios and may trigger the materialization of contingent liabilities. Government revenue is often hit quickly by a downturn, whereas countries typically do not fully offset a reduction in revenues with a decrease in expenditures (IMF 2016a) due to rigidities (for example, public sector wage bills) or the need to protect or expand certain expenditure categories, (for example, social protection schemes, and health and education outlays). The MENAPEG region has experienced significant growth volatility between 1990 and 2021 (Figure 4, panel 1). Hydrocarbon-exporting MENAPEG countries experienced much larger output growth volatility than the average emerging and developing economy, while non-hydrocarbon-exporting countries saw similar output volatility to emerging and developing economies (Figure 4, panel 2). On average, because of the various shocks, the MENAPEG region saw virtually no real per capita growth over the decade to 2021. Such an environment complicates decisions by governments which in

**Figure 4. Macroeconomic Risks in the Middle East and North Africa**



Sources: IMF, October 2022 *World Economic Outlook*; and IMF staff calculations.

Note: Panel 2 excludes Syria and Somalia due to lack of data. LAC = Latin America and the Caribbean; RR = resource rich countries (that is, hydrocarbon exporters).

turn affects long-term economic performance. The recent COVID-19 pandemic and the 2021–22 commodity price shock illustrate this point (Box 1).

The cumulative impact of macroeconomic shocks on government debt illustrates the fiscal impact of GDP volatility in the region. We identified 61 macroeconomic shock episodes across the 17 MENAPEG countries between 1990 and 2021, with some countries experiencing as many as six shocks over the period (Annex 1).<sup>3</sup> Some of the most extreme shocks coincided with oil price declines and conflict. Across MENAPEG, a shock occurred on average once every eight years and caused government revenue to drop by 2.8 percent of GDP while debt increased by almost 12 percent of GDP. This compares to advanced economies, where the average shock had a debt impact of 4.5 percent of GDP and occurred once every 14 years on average.<sup>4</sup>

## Commodity Price Volatility and Subsidies

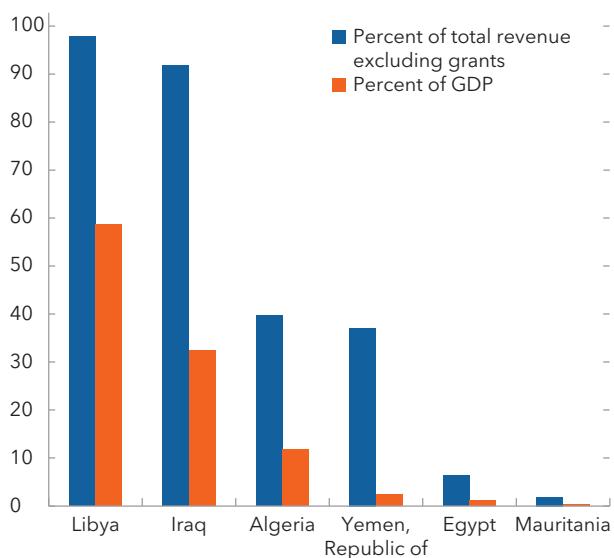
Fluctuations in commodity prices typically generate unforeseen significant deviations in fiscal outcomes in the MENAPEG region. First, commodity prices directly affect the fiscal revenue of commodity exporting countries. Second, universal food and energy subsidies that keep retail below market prices are pervasive in the region.

Hydrocarbon production represents a significant share of fiscal revenue and exports in some MENAPEG countries (Figure 5). In Libya and Iraq almost all revenue is from hydrocarbon exploitation, while in Algeria and Yemen the share is close to 40 percent. As a result, these countries and their government budgets are particularly sensitive to oil price variations (Figure 6) and fiscal risks from commodity price volatility are high.

Universal food and energy subsidies tend to constitute a major pillar of social assistance systems in the MENAPEG region (IMF 2022a). Subsidies are prevalent and cover many basic goods, most prominently food and energy. Basic food products such as wheat or flour, milk, and cooking oil are frequently subsidized through transfers from the general budget to producers or intermediaries to keep the retail price at a fixed low level (for example, in Egypt). In hydrocarbon importers such as Tunisia and West Bank and Gaza, energy prices are maintained at levels below cost-recovery through budget transfers, while in hydrocarbon exporting countries such as Algeria (and Egypt for natural gas) energy subsidies tend to be implicit and result in foregone income at state-owned hydrocarbon producers that sell at below market price. These subsidies are often provided in the form of a fixed retail price, implying that subsidy outlays rise with the market price of oil and other inputs, hence constituting important sources of fiscal risks.

Explicit (that is, on-budget) energy subsidies in MENAPEG far surpass other regions (Figure 7, panel 1, IMF 2019). Fuel and electricity subsidies constitute almost 90 percent of this total (Figure 7, panel 2). Still, in a period of declining oil prices in 2014–16, some oil-importing countries (for example, Morocco and Tunisia) initiated energy subsidy reforms. Through the establishment of automatic pricing mechanisms for fuel

**Figure 5. Oil Revenue, 2021**



Source: IMF, October 2022 *Regional Economic Outlook: Middle East and Central Asia*.

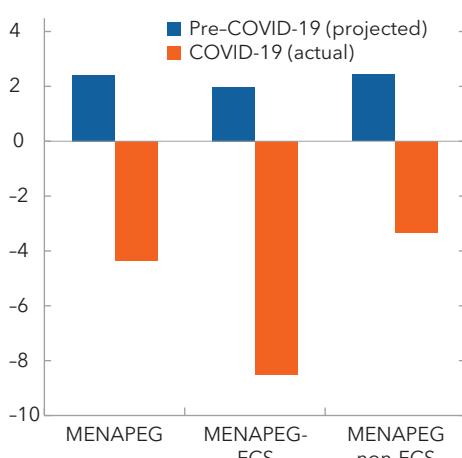
<sup>3</sup> A shock is defined as a drop in GDP growth by more than one standard deviation from the average. The impact on revenue and debt for a shock in year  $t$  are calculated by comparing values at the end of year  $t + 1$  to those at the end of year  $t - 1$ .

<sup>4</sup> Excluding the 2008–09 global financial crisis.

### Box 1. The Macroeconomic Impact of the Pandemic and Commodity Price Shock

The 2020 global macroeconomic shock caused by the COVID-19 pandemic was exceptional in its suddenness, magnitude, and synchronicity, and it hit MENAPEG countries hard. On the eve of the crisis, a steady median growth rate of 2.4 percent was forecast for 2020 for the region (Box Figure 1.1), with GDP projected to grow in all countries but Libya and Sudan.<sup>1</sup> MENAPEG eventually recorded a steep median GDP contraction of 4.3 percent. About half of the countries recorded their worse growth performance in over three decades (Box Figure 1.2).

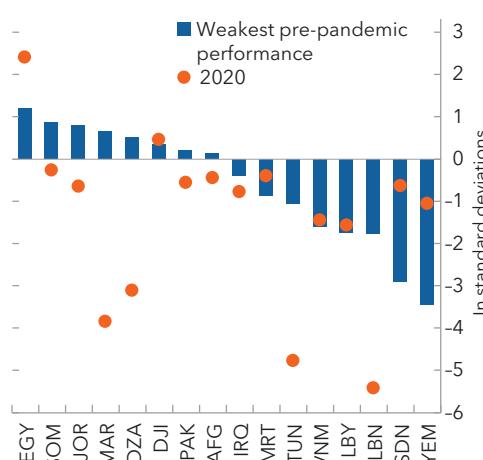
**Box Figure 1.1. Estimated Growth Losses, 2020**  
(Median, percent)



Sources: IMF, October 2019 and April 2022 *World Economic Outlook*.

Note: Syria is excluded due to lack of data.  
FCS = fragile and conflict-affected state.

**Box Figure 1.2. Countries' Worst Growth Performance**  
(Standard deviations)



Source: IMF, April 2022 *World Economic Outlook*.

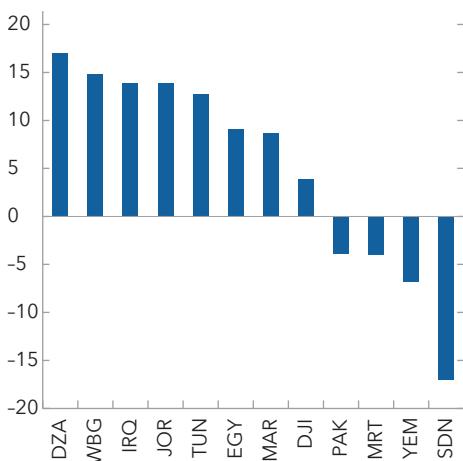
Note: The weakest pre-pandemic performance expressed as the standard deviation of growth between 2000–19. Syria is excluded due to lack of data. Country abbreviations are International Organization for Standardization country codes.

The fiscal impact of the COVID-19 shock has also been sizeable. Primary deficits widened significantly in most countries in 2020, and the deterioration was not fully reversed in 2021. This reflected cyclical factors, mainly from the mechanical impact of the economic slump on tax revenue and discretionary fiscal measures in response to the health emergency and economic crisis (Annex 3). The median 2020 deterioration in primary balances was around 1.2 percent of trend GDP, with wide disparities among countries.<sup>2</sup>

The pandemic exerted a particularly hefty economic toll on the region's fragile and conflict-affected states (FCSs) as well as on hydrocarbon exporters and tourism-dependent countries. Fiscal deficits contributed to large increases in public debt. In late 2019, the region's debt-to-GDP ratios were projected to fall by a median of about 1 percent of GDP between 2019 and 2021. The debt burden

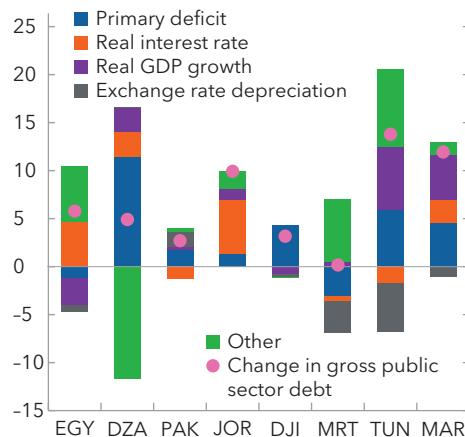
<sup>1</sup> All pre-pandemic projections quoted in this section are from the October 2019 *World Economic Outlook* (WEO). In Libya, oil production was significantly disrupted due to political instability and the blockade of oil production facilities and export terminals.

<sup>2</sup> The primary balances are expressed in percentage points of trend GDP to control for the dominator effect arising from the exceptional shock to actual nominal GDP. Nonhydrocarbon revenue and balances are considered for hydrocarbon exporters. In 2020, the ratio of the primary balance to trend GDP improved in Egypt, where growth was uninterrupted, as well as in Pakistan on fiscal consolidation efforts and in a few FCS countries (Lebanon, Sudan, Yemen), where an upsurge in inflation boosted nominal growth.

**Box 1. (continued)****Box Figure 1.3. Gross Debt**  
(Percent of GDP, change 2019-21)

Source: IMF, October 2022 World Economic Outlook.

Note: Afghanistan, Lebanon, Libya, Somalia, and Syria are excluded due to lack of data. Country abbreviations are International Organization for Standardization country codes.

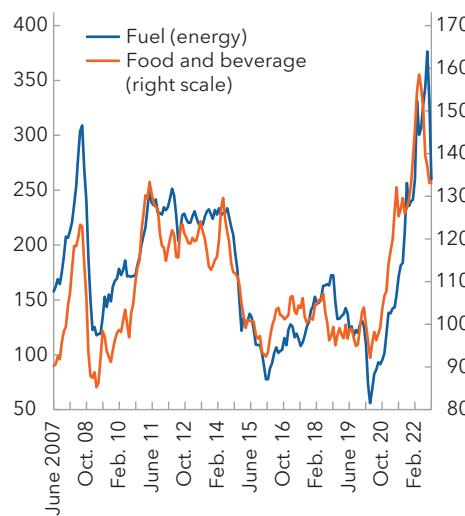
**Box Figure 1.4. Contribution to Changes in Public Debt, 2020**  
(Percent of GDP)

Sources: Country authorities; IMF, Debt Sustainability Analysis database; IMF, Strategy, Policy, and Review database; and IMF staff calculations.

Note: Others include stock flow adjustments, contingent liabilities, privatizations, and residuals. Country abbreviations are International Organization for Standardization country codes.

was forecast to inch down in 8 of the 14 MENAPEG countries for which debt data are available. Debt ratios eventually rose in all but four countries, recording a median increase of nearly 9 percent of GDP (Box Figure 1.3). In addition to the deterioration in primary balances, currency depreciation, and other factors, including the materialization of explicit and implicit contingent liabilities on governments' balance sheets, all contributed to the debt build-up (Box Figure 1.4).

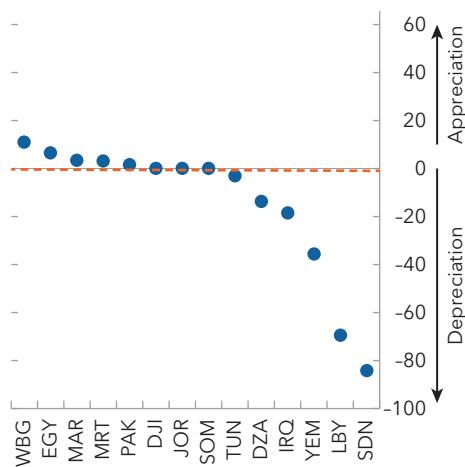
On the heels of the strain induced by the pandemic, in 2021-22 MENAPEG countries were confronted with the third large commodity price shock since 2008. Commodity prices, particularly energy, started to rise in mid-2020 and accelerated in 2021-22 due to Russia's war in Ukraine and a sequence of weather disasters (Box Figure 1.5). The sharp appreciation of the US dollar in 2021 magnified the rise in commodity prices expressed in MENAPEG local currencies (Box Figure 1.6). In addition to the upsurge in prices, disruptions to global supply chains put FCS countries, like Lebanon and Somalia, at acute risk of food and fertilizer shortages.

**Box Figure 1.5. Commodity Price Index**  
(2016 = 100)

Source: IMF.

### Box 1. (continued)

**Box Figure 1.6. Exchange Rates**  
(US\$/LCU, percent change 2021–19, EOP)



Source: IMF, October 2022 *World Economic Outlook*.

Note: Afghanistan, Lebanon, and Syria are excluded due to lack of data. Country abbreviations are International Organization for Standardization country codes.

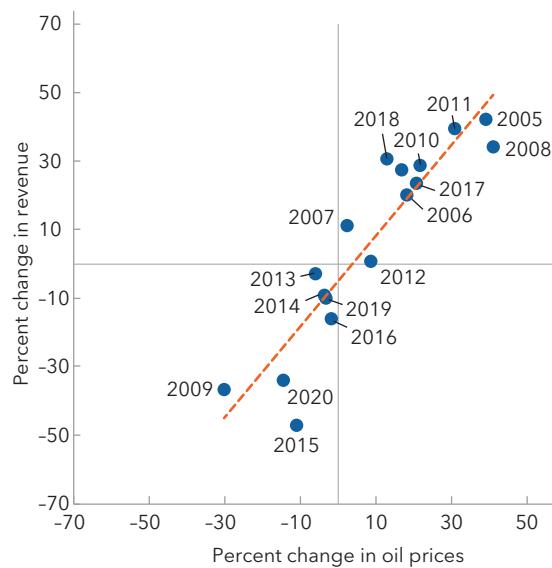
The commodity price shock is estimated to have resulted in significant deterioration in fiscal balances, particularly in hydrocarbon importers. In the three MENAPEG net hydrocarbon exporters as well as in commodity producers Yemen and Sudan, windfall gains from higher commodity prices are projected to be offset by increased spending, resulting in a slight median deterioration in projected primary balances by 0.7 percent of GDP relative to pre-shock forecasts.<sup>3</sup> Conversely, among hydrocarbon importers,<sup>4</sup> a 1.5 percent median deterioration in primary balances is projected.

<sup>3</sup> Pre-shock projections refer to the forecasts included in the October 2021 WEO. Current projections are those presented in the October 2022 WEO.

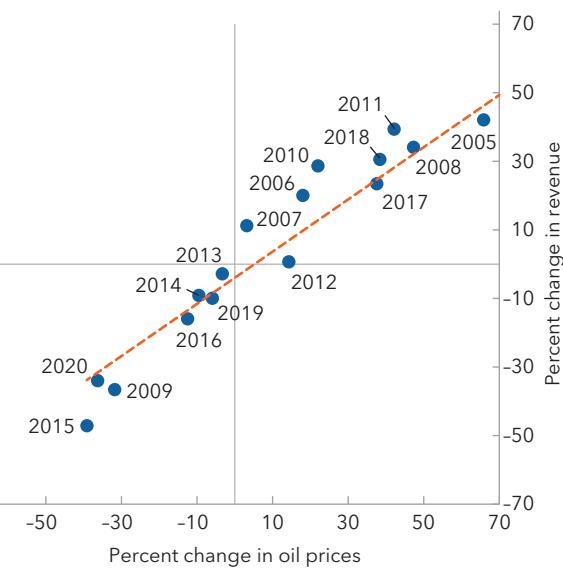
<sup>4</sup> Excluding Yemen and Sudan.

**Figure 6. Oil Dependence in Algeria and Iraq**  
(Percent change in revenue and oil price)

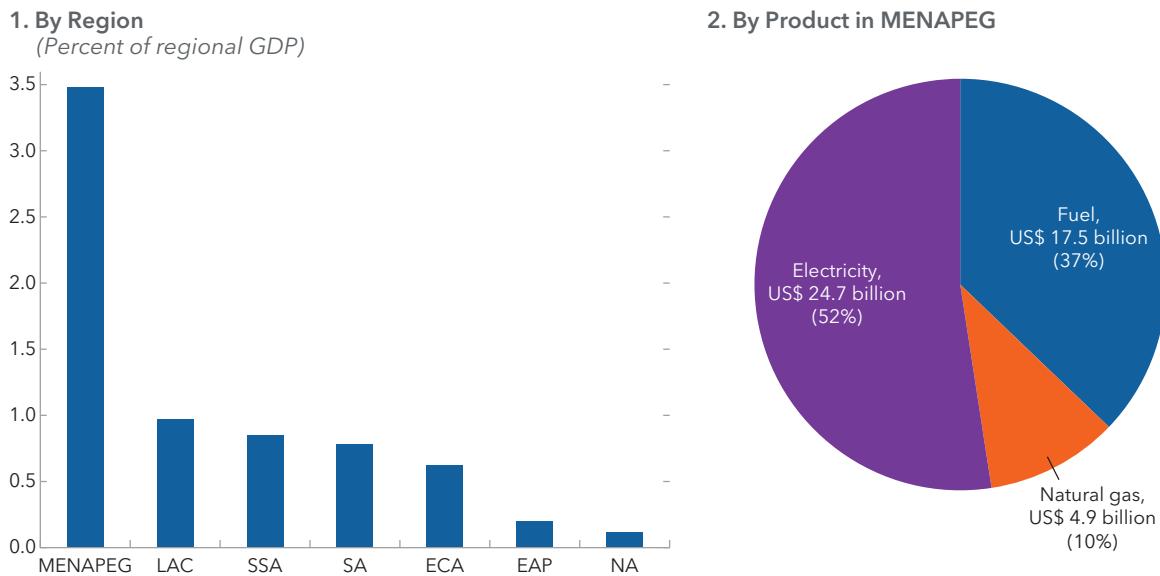
1. Algeria



2. Iraq



Sources: IMF, Primary Commodity Price System; IMF October 2022 *World Economic Outlook*; and IMF staff calculations.

**Figure 7. Total Explicit Energy Subsidies, 2020**

Source: IMF Country-Level Subsidy Estimates Database, 2020.

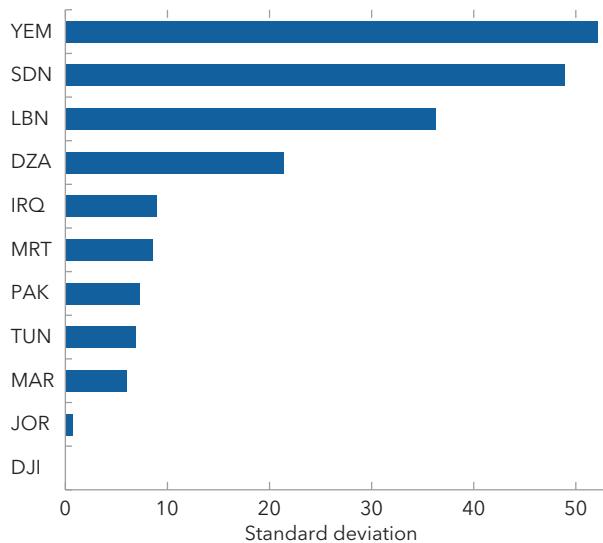
Note: Explicit subsidies occur when the retail price is below supply cost. EAP = East Asia & Pacific; ECA = Europe & Central Asia; LAC = Latin America and the Caribbean; MENAPEG = Middle East, North Africa, and Pakistan excluding the Gulf Cooperation Council; NA = North America; SA = South Asia; SSA = sub-Saharan Africa.

derivatives these reforms aimed to lower subsidy outlays and avoid their reemergence when oil prices were to rebound. However, in several countries, reform implementation has been uneven and spending on subsidies has therefore remained elevated or was reduced only gradually (IMF 2022a).

## Exchange and Interest Rate Volatility

Exchange rate volatility has also been a source of fiscal risks in the region. It may affect revenue collection, particularly customs revenue and other taxes on imported goods, but also spending linked to items denominated in foreign currency, such as servicing foreign debt. To the extent that exchange rate depreciations feed to domestic inflation, they may generate pressures on the budget to protect citizens' purchasing power. In addition, exchange rate depreciations increase foreign exchange debt as a share of the economy—which stood at 48 percent of GDP on average over the period 1990–2021.

Exchange rate volatility has been comparatively high in a number of countries in the MENAPEG region, often reflecting sharp one-off adjustments of their exchange rates or floating previously fixed currencies (Figure 8). In view of this, some countries have recently included analysis of exchange rate risks explicitly in their fiscal risk management frameworks (Box 2).

**Figure 8. Exchange Rate Volatility, 1990–2021**

Sources: IMF, October 2022 *World Economic Outlook*; and IMF staff calculations.

Note: Exchange rate volatility is calculated as the standard deviation of the change in the year-over-year change in the LCU/US\$ exchange rate over the period. The Lebanese Pound was pegged to the US dollar at an unchanged rate between 1997–2019. Country abbreviations are International Organization for Standardization country codes.

### Box 2. Fiscal Risks from Currency Depreciation in Egypt

The Egyptian authorities' Fiscal Risks Statement discusses the impact of currency depreciation. It presents an analysis of the fiscal effects of an average exchange rate depreciation by one Egyptian pound (about 3 percent) vis-à-vis the US dollar. The overall negative effect on the state budget's primary surplus comprises about 0.1% of GDP. The analysis details the following contributing factors: revenue increases on Suez Canal revenues, which are levied in US dollar (~ +0.07% of GDP), VAT collection on imported goods (~+0.07% of GDP), customs taxes (~+0.05% of GDP), Egyptian General Petroleum Corporation (~+0.01% of GDP), and expenditure increases on the petroleum products subsidy bill (~-0.2% of GDP), other commodities subsidy (~-0.03% of GDP), as well as electricity subsidies, interest payments, and other items (~-0.03% of GDP).

Source: [Financial Statement of the 2020-21 Budget](#), Egyptian Ministry of Finance.

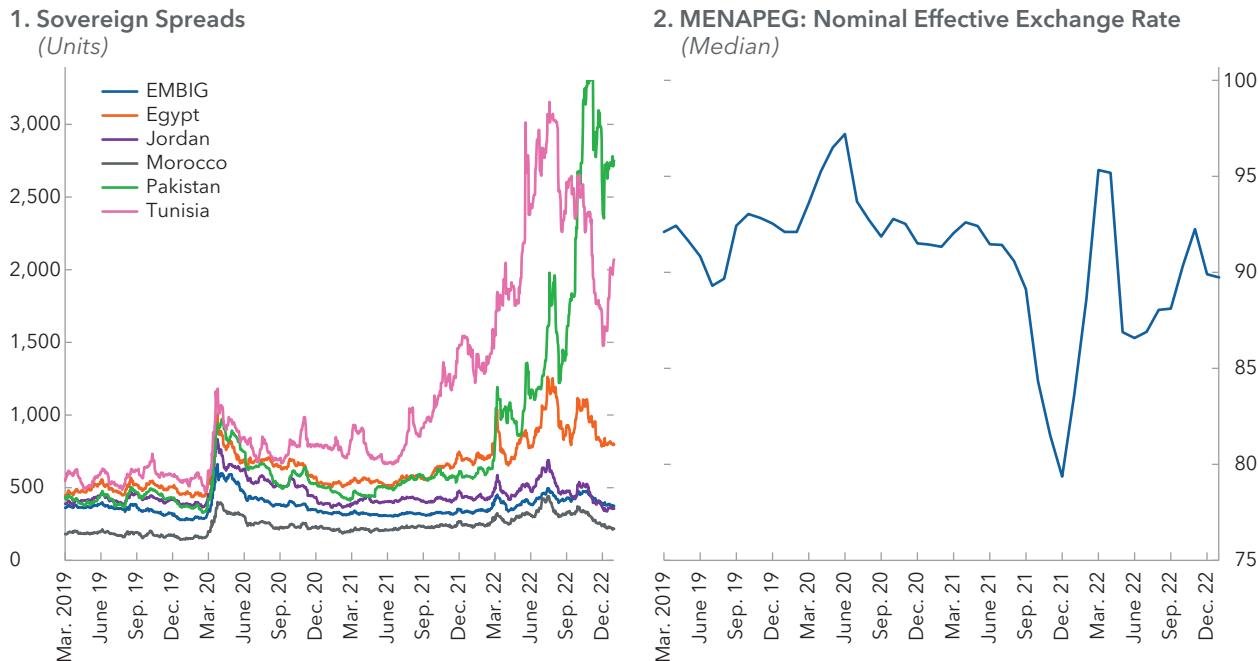
Interest rate volatility presents another fiscal risk, increasing the cost of borrowing and servicing debt, reducing economic activity, and thereby government revenue. This is exemplified by economic developments since 2022, when global financing conditions deteriorated significantly amid tightening of monetary policies by systemic central banks and an increase in investor risk aversion (*October 2022 Regional Economic Outlook: Middle East and Central Asia*), after a prolonged period of ultra-low global interest rates. These developments have resulted in widening spreads for MENAPEG countries that borrow on international markets (for example, Egypt, Jordan, Morocco, Pakistan, and Tunisia) and a depreciation of the region's currencies against the US dollar (Figure 9). Persistent inflationary pressures have also led to considerable tightening of policy rates, which have translated to higher cost of borrowing in local currency.

## B. Contingent Liability Risks

Fiscal risks arising from contingent liabilities are sizeable in the region. These mainly emanate from explicit and implicit government guarantees, including those to state-owned enterprises, the financial sector, pensions systems, and public-private partnerships (PPPs). Explicit government guarantees are legal arrangements in which the government undertakes payment of a debt or performance of an obligation in the event of a default by the primary debtor or when other contractually specified conditions are met. While they do not involve any immediate cash outflows or explicit on-balance sheet liabilities, government guarantees facilitate the debtor's access to (cheaper) credit. They are extended to support projects that are deemed to have large economic or social benefits, and which without the guarantees will often not be undertaken. Still, the guarantees expose the government to the risk of uncertain future cash outflows should they be called (IMF 2017, Box 3).<sup>5</sup>

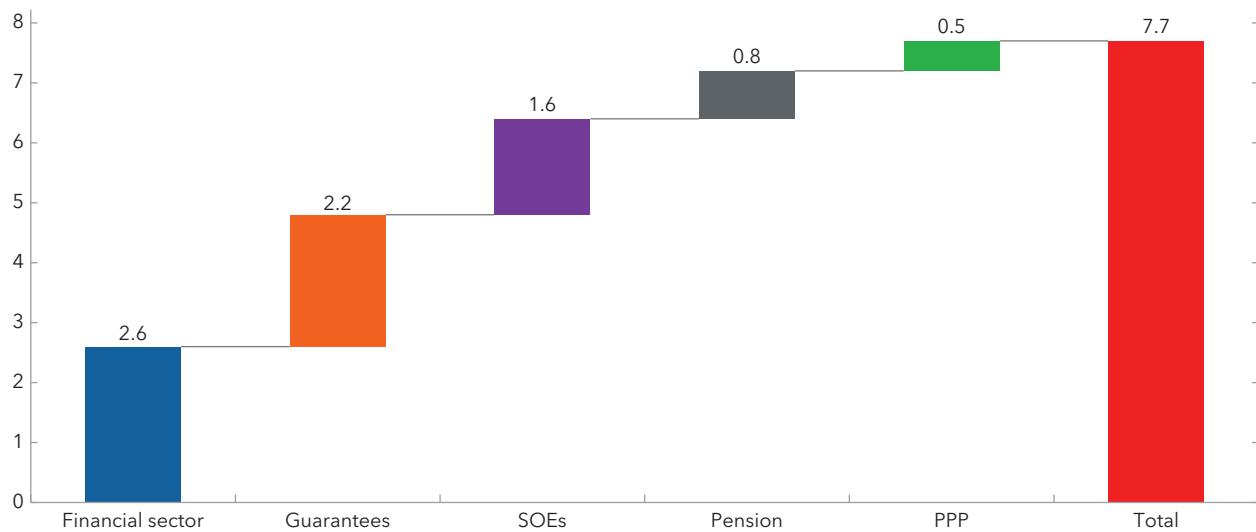
In contrast, implicit government guarantees are not established in law but hinge on a public expectation of government support to crucial companies or sectors in trouble. Realizations of different contingent liabilities frequently occur in tandem, either because they are caused by the same underlying shock, for example a slump in economic activity or sharp exchange rate adjustment, or as the realization of one risk triggers that of another, for instance if the financial troubles of an SOE put its lenders into difficulty. The budgetary impact from the materialization of such contingent liabilities were to the tune of almost 8 percent of 2018 GDP in past years (Figure 10).

<sup>5</sup> The total stock of government guarantees in the region is unknown. This limited data availability is mainly due to scant and scattered reporting.

**Figure 9. Sovereign Spreads and NEER**

Sources: Bloomberg Finance L.P.; JPMorgan EMBIG Diversified Index; and IMF, Information Notice System.

Note: In panel 2, the sample of countries excludes Libya, Somalia, and West Bank and Gaza. EMBIG = Emerging Market Bond Index Global; MENAPEG = Middle East, North Africa, and Pakistan excluding the Gulf Cooperation Council; NEER = nominal effective exchange rate.

**Figure 10. Budgetary Impact of Contingent Liabilities**  
(Cumulative 1990–2018, percent of 2018 GDP)

Sources: October 2020 IMF, *World Economic Outlook*; and authors' calculations.

Note: Contingent liability realizations pertaining to state-owned enterprises include on-budget support measures and exclude off-budget subsidies. The impact of contingent liability realizations refers to the gross payout associated with a contingent liability realization, which captures immediate budgetary pressures and excludes any asset recoveries which are associated with the realization. PPP = public-private partnership; SOEs = state-owned enterprises.

### Box 3. Examples of Government Guarantees in the MENAPEG Region

#### Algeria

In Algeria government guarantees that primarily benefit SOEs rose from 8 percent of GDP in 2014 to 19 percent of GDP in 2020. This amid a decline in oil revenue and continued spending pressures for social transfers and investment (IMF 2018). The stock is estimated to have declined to 4 percent of GDP in 2022, following the purchase by the Treasury of bank loans to SOEs in an amount of 9.3 percent of GDP, part of which were formally guaranteed by the government (see Box 4).

#### Djibouti

State-guaranteed debt of SOEs has risen sharply in Djibouti over the past decade, from about \$ 200 million in 2013 (10 percent of GDP) to \$ 1.9 billion in 2021 (55 percent of GDP). Of this, the state has assumed debt service responsibilities on about 25 percent of GDP in SOE borrowing, mostly associated with underperforming railway and water projects. The increased debt service burden associated with these projects were a key factor in pushing the government into debt distress in 2022, and the authorities are currently negotiating a restructuring of these loans while continuing to service other debts. To reduce the fiscal risks associated with state guarantees to SOEs, the authorities are finalizing a public debt law that would require government approval of all new SOE borrowing through an interagency debt committee chaired by the Finance Ministry. The authorities are also pursuing broader reforms to SOE governance to place their operations under clear government supervision, including through a professionalization of SOE Boards of Directors and by requiring performance contracts with firm management.

#### Iraq

Iraq is substantially exposed to fiscal risks related to government guarantees. In 2016, in the context of the shocks resulting from the conflict with ISIS and the drop in oil prices, the government significantly expanded the issuance of guarantees, mostly to support investment in the electricity sector. The guarantees also supported military purchases and direct lending by state-owned banks to private sector infrastructure, agricultural projects, and the repair of the Mosul Dam. In 2017, the debt directorate of the Ministry of Finance completed a survey of guarantees issued by the central government. At end-June 2017, the stock of guarantees related to foreign currency service payments and debt amounted to \$ 21.7 billion (12 percent of GDP)—\$ 19.4 billion for service payments to independent power producers and \$ 2.3 billion for debt. In 2017, the Council of Ministers approved a set of procedures to tighten controls for the approval of state guarantees. Key measures included a formal assessment process of guarantee requests by the executive and improved disclosure of new guarantees in the annual budget. In 2019, a new public financial management law was adopted to require all government guarantees to be issued by the Ministry of Finance. Furthermore, in 2020, the government approved an enhanced framework for vetting and issuing government guarantees.

#### Jordan

The Jordanian government operates a formal process for issuing guarantees. According to Article 18 of Public Debt Management Law (2001), new guarantees must be approved by the council of ministers upon a recommendation from the finance minister. Public guarantees are intended only for exceptional cases related to national economic interests. There is a high concentration risk of guarantees as 60 percent of total guarantees are to just one company, the National Electric Power Company

### Box 3. (continued)

(NEPCO, 2020 data). Remaining challenges for guarantee risk management are to further define guarantees (in some cases, guarantees appear to be on-lending by government); inconsistencies across data sets (debt management system vis-à-vis other records, for instance a state-owned enterprise's financial records) which reduce fiscal transparency; and the comprehensiveness of coverage of guarantees, as some government guarantees are outside the official records.

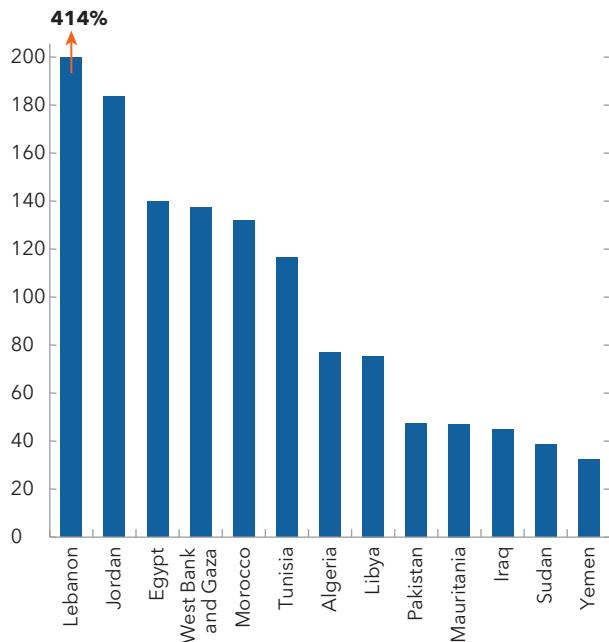
## The Financial Sector

Banks and the broader financial sector could constitute an important source of contingent liabilities in the MENAPEG region (Figure 11). Financial sector contingent liabilities stem from *explicit* government commitments, such as deposit insurance schemes or guarantees on bank debt, and *implicit* commitments, as governments often opt to support institutions under stress to safeguard macroeconomic and financial stability without being bound by legal commitments to do so. Such interventions can take various forms, including liquidity support, asset purchases, bank restructurings, fulfilling explicit government guarantees and, ultimately, nationalization.

Around the world, implicit fiscal risks stemming from the financial sector are often scantily reported, even as they can result in much larger-than-expected shocks to public finances (Irwin 2015). In general, the fiscal costs associated with government interventions to support troubled banking institution has been large, at 3.3 percent of GDP (in high-income countries) and 9.6 percent of GDP (low- and middle-income countries) over the period 1970–2017 (Laeven and Valencia 2018).

Banks may require government support for a variety of reasons. Growth shocks and other adverse external developments can affect asset quality, profitability, and liquidity. For instance, in Tunisia, the slump in tourism in 2015–16 contributed to a sharp rise in banks' nonperforming loans. Exchange rate volatility could also affect a bank's balance sheet both directly, when significant liabilities are denominated in foreign currencies (for example, deposit dollarization in Egypt and Jordan), or indirectly when borrowers are unable to repay foreign currency loans. In hydrocarbon exporters (Algeria, Iraq, Libya), banks are exposed to fluctuations in oil prices as, on the liability side, they are often funded by large deposits from the hydrocarbon sector while, on the asset side, they tend to be highly exposed to SOEs and government contractors whose financial performance often depends on oil revenue.

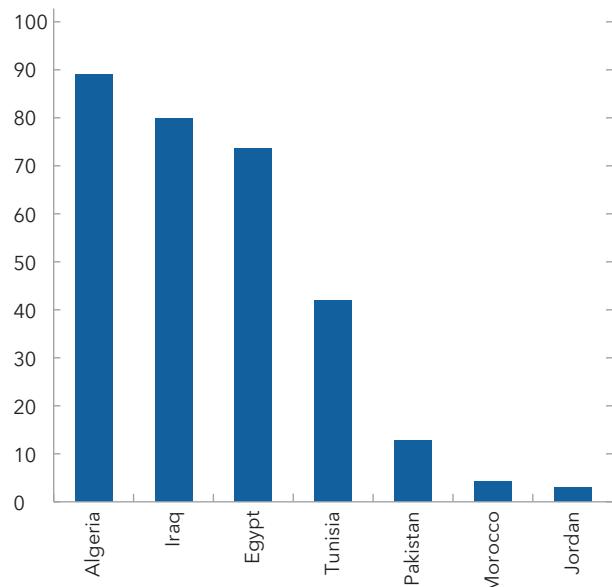
**Figure 11. Total Banking Assets**  
(Percent of GDP, 2022)



Sources: Fitch Solutions Connect; national authorities; and IMF staff calculations.

Note: Data for Lebanon are from 2017.

**Figure 12. Share of State-Owned Banks in Total Bank Assets, 2022  
(Percent)**



Sources: Fitch Connect; IMF country reports; and IMF staff calculations.

Large government ownership and public sector balance sheet interlinkages further contribute to fiscal risks from banks in the region. State-owned banks (SOBs) account for a large share of banking sectors in several MENAPEG countries, including Algeria (89 percent), Egypt (74 percent), Iraq (80 percent), and Tunisia (42 percent, Figure 12). SOBs in the region tend to have weaker asset quality than the rest of the sector (Algeria, Iraq, Tunisia), are often involved in quasi-fiscal activities and lending on noncommercial basis (Algeria) or suffer from governance challenges (Iraq). Moreover, SOBs are usually highly exposed to SOEs and the public sector (around half of the total bank assets in Algeria and Egypt), resulting in increased loan concentration and public sector balance sheet interlinkages which amplify fiscal risks.

The MENAPEG's region has experienced significant banking crises in the past, with major macroeconomic and fiscal implications. Laeven and Valencia (2018) document eight such crises in MENAPEG countries, mostly in the 1980s and

early 1990s. More recently, Lebanon has been in the throes of an acute sovereign and banking crisis since late 2019. However, fiscal risks from the banking sector need not always materialize through full-fledged crises. Specifically, several MENAPEG countries have a track record of providing financial assistance to banks outside of acute crises. For example, over the last three decades the Algerian government has regularly extended support to banks through capital injections, repurchase of guaranteed loans to SOEs (Box 4) and assumption of exchange rate losses on external debt or interest differentials, while Tunisia injected 867 million dinars (about 1 percent of GDP) to recapitalize two SOBs in 2015.

Meanwhile, the government debt built-up since 2019 has reinforced the sovereign-bank nexus and amplified the associated fiscal risks. Domestic banking sectors played an instrumental role in covering government funding needs during the pandemic. As a result, since 2019, the share of bank assets invested in government debt has risen significantly, in particular in Algeria, Egypt, Morocco, Tunisia, Pakistan, and the West Bank and Gaza (Figure 13). The stronger interconnectedness between sovereign and bank balance sheets exposes banking sectors to fluctuations in sovereign risk and funding conditions, in turn amplifying contingent liability risks for governments.

## Nonfinancial State-Owned Enterprises

Where SOEs are prevalent and represent a large share of economic activity, they can pose significant risks to public finances. Troubled SOEs can impose fiscal costs from budgetary transfers to compensate loss-making activities, poor dividend performance, nonrepayment of loans, calls on government guarantees, recapitalizations, or assets sales below book value. Furthermore, they frequently receive government support through the tax system, either through formal tax exemptions or by lax tax enforcement practices. Institutional weaknesses often exacerbate these risks via financial burdens stemming from uncompensated quasi-fiscal activities and poor governance and accountability.

#### Box 4. Financial Sector Fiscal Risk in Algeria

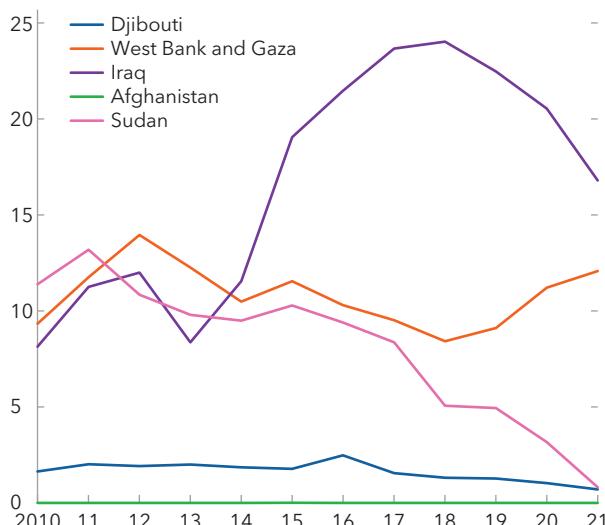
The Algerian banking system had total assets of about 93 percent of GDP at the end of 2021. It is dominated by state-owned banks (SOBs), which accounted for 89 percent of total assets and 88 percent of total deposits. Lending to the government and SOEs comprised 52 percent of the banking sector's total assets in August 2022, a high level relative both to Algeria's past track record and peer economies. Furthermore, SOBs are involved in subsidized loan programs rolled out by the government in pursuance of economic and social development objectives. High state ownership and a focus of bank lending on the public sector have resulted in increasingly tight interlinkages between the balance sheets of the government, SOEs, and SOBs.

These balance sheet interlinkages act as an amplifier of fiscal risks. This is particularly so in light of the deterioration in bank asset quality in recent years, following a succession of external and domestic economic shocks. The ratio of nonperforming loans nearly doubled over six years to 19.3 percent in 2021. It is higher still in SOBs at 20.7 percent. Over the last two decades, the government has repeatedly intervened to support these SOBs, including through loan guarantees, recapitalizations, and coverage of exchange rate losses on external public debt. Most recently, in 2021-22 the government swapped 2,600 billion dinars (9.3 percent of the estimated 2022 GDP) in SOB loans to SOEs with long maturities and grace periods (parts of which were government guaranteed) for long-term treasury bonds issued above market prices that the SOBs can post as collateral at the central bank.<sup>1</sup>

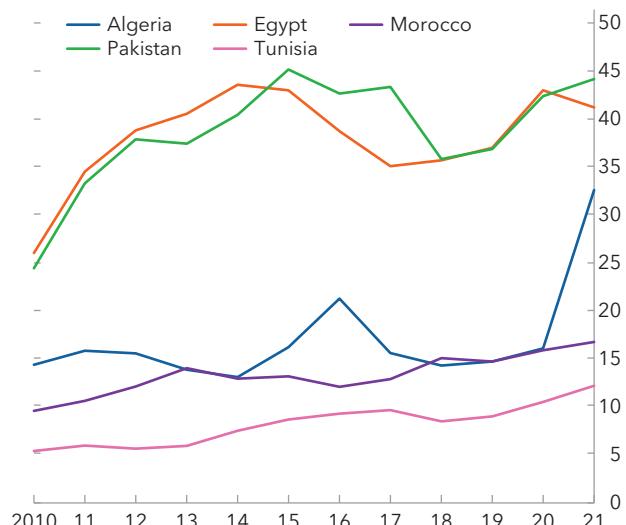
<sup>1</sup> See Algeria: 2021 Article IV Consultation Staff Report (CR No. 21/253) for further discussion of the financing operation.

**Figure 13. Claims on Central Government per Total Assets  
(Percent)**

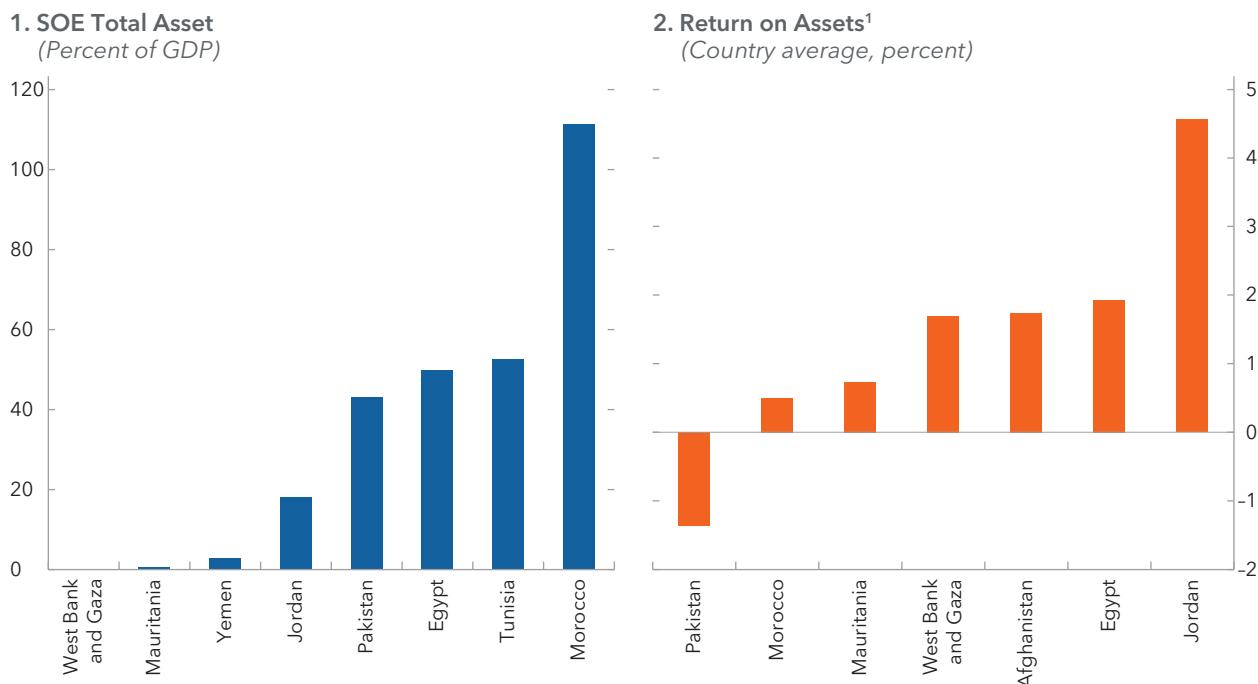
**1. MENAPEG-FCS**



**2. MENAPEG non-FCS**



Source: IMF.

**Figure 14. MENAPEG: SOE Sector Size and Profitability**

Sources: IMF, Public Sector Balance Sheet; national authorities; and IMF staff calculations.

Note: Data are for 2019 or latest available.

<sup>1</sup>The positive aggregate return on assets masks an uneven picture. For example, subsidies to Jordan's electricity company, NEPCO, cost close to 6 percent of GDP in 2014 (IMF 2020a).

The size of the nonfinancial SOE sector in MENAPEG is comparatively large with 118 SOEs per country on average, more than twice the OECD average (IMF 2021).<sup>6</sup> There is a large heterogeneity across MENAPEG countries though, from just one SOE in the West Bank and Gaza to more than 300 in Egypt. Their total assets represent about a third of GDP on average, and they are particularly large in Egypt, Morocco, Pakistan, and Tunisia (Figure 14). The average return on assets is positive in most MENAPEG countries where data are available, but many individual SOEs are in a poor financial position, and financial performance may be skewed by government support. The nonfinancial SOE sector plays a crucial role in sectors usually dominated by natural monopolies, such as the provision of gas and electricity, water supply, waste management, and other network sectors providing essential services to households and firms. In some countries, they are also present in the extractive sector (oil and gas in Algeria, phosphate in Morocco) and the manufacturing sector (Algeria, Iraq).

The fiscal costs and risks associated with nonfinancial SOEs in MENAPEG are often sizable (Box 5). For example, in 2019 alone, MENAPEG countries provided 2.1 percent of GDP in direct budget support to SOEs through transfers, direct loans, and on-lending (Figure 15). In addition, SOEs have received significant guaranteed government loans, either directly or through SOBs (Figure 16), some of which have been called over the years.<sup>7</sup> Also, SOEs are often engaged in risky projects on behalf of governments or charge below cost recovery for their services without being properly compensated from the budget. While these types of activities may improve the fiscal deficit, they often result in SOEs facing difficulties meeting their payment obligations to the government, social security funds, other SOEs, or private companies. They also lead to complex crossclaims between government and SOEs, hindering fiscal management. For example, in

<sup>6</sup> Excluding Djibouti, Libya, Somalia, Sudan, and Syria.

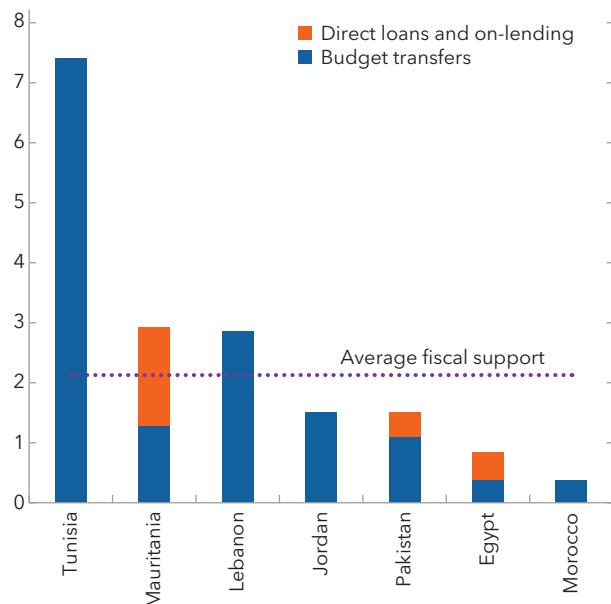
<sup>7</sup> Egypt's 2018–19 fiscal risk statement noted that SOE debt guaranteed by the Treasury (both domestic and external debt) stood at about 20 percent of GDP at the end of 2017. The energy (electricity companies and Egypt General Petroleum Corporation) and transport (Suez Canal Authority) sectors constituted the bulk of outstanding guarantees at the end of 2017.

Tunisia, SOEs owed more than 5.5 percent of GDP in arrears to the government in 2020, while the government owed about 7.9 percent of GDP to SOEs, and arrears between SOEs are estimated at about 2.5 percent of GDP (IMF 2021a).

## Public-Private Partnerships and Power Purchase Agreements

Public-private partnerships (PPPs) and Power Purchasing Agreements (PPAs) present off-balance sheet obligations of the government. While there is no standard definition of PPPs, they constitute long-term arrangements between the government and the private sector to provide a public asset or service, often infrastructure projects. Typically, they involve private capital financing public sector projects and services upfront, generating revenue from users or directly from the budget over the course of the PPP contract. Power Purchasing Agreements typically refer to long-term electricity supply agreement between a power producer and its customer (that may also include building infrastructure), in MENAPEG often the government or state-owned electricity distribution company. Both PPPs and PPAs can create debt-like obligations on the government, as they commit the budget to regular payments far into the future.

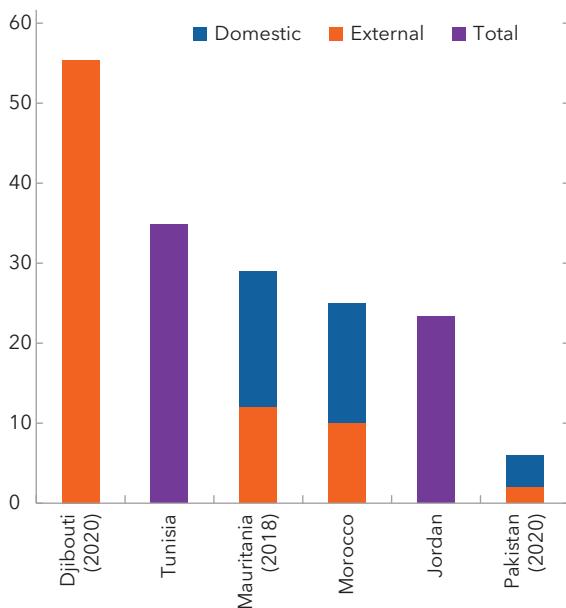
**Figure 15. Direct Fiscal Support to SOEs**  
(Percent of GDP, 2019)



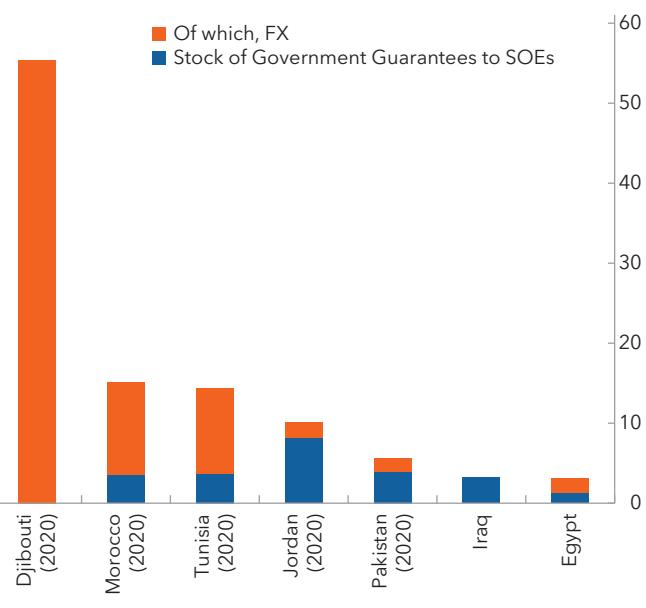
Sources: National authorities; and IMF staff calculations.

**Figure 16. SOE Debt**  
(Percent of GDP, 2019)

### 1. Stock of SOE Debt



### 2. Stock of Government Guarantees to SOEs



Sources: IMF, October 2022 Regional Economic Outlook: Middle East and Central Asia; World Bank, International Debt Statistics 2021; and authors' calculations.

Note: FX = foreign exchange; SOEs = state-owned enterprises.

## Box 5. Nonfinancial State-Owned Enterprises in Jordan, Lebanon, and Sudan

### Jordan

In Jordan, the National Electric Power Company (NEPCO) had accumulated losses of 16 percent of GDP as of the end of 2019. This exceeded the limit of 75 percent of the paid-in capital that would require the liquidation of the company (absent a capital increase) according to the Jordanian company law. For NEPCO to continue operating, the government provided extensive support through loan guarantees (7.6 percent of GDP) and Treasury advances (8 percent of GDP). Since then, NEPCO's financial situation has broadly improved but remains difficult, with a projected deficit of 0.4 percent of GDP in 2022. The Water Authority of Jordan (WAJ) also generated significant fiscal risks. The onset of the Syrian refugee crisis, and the fact that Jordan is one of the most water-scarce countries in the world, challenged the success of the Jordanian authorities' 2013 medium-term strategy in reducing losses in the water sector. Despite progress on its action plan, WAJ continues to book sizeable losses (0.9 percent of GDP in 2021) and relies on government interventions (with 0.7 percent of GDP in budget transfers in 2021 and a stock of 4.3 percent of GDP in central government advances in 2021).

### Lebanon

Even before the current crisis, in Lebanon SOEs comprised a significant source of budgetary expenditure. Public transfers to SOEs amounted to 5.2 percent of GDP in 2018, including from the central government, local governments, and public funds. The largest budget transfer in 2018 was to Electricity du Liban (EDL; 3.1 percent of GDP), followed by municipalities (1 percent of GDP) and the Council for Development and Reconstruction (0.5 percent of GDP). In fact, EDL, the only public provider of electricity, has received transfers averaging more than 2 percent of GDP since 1992, while the government has also repaid part of EDL's debt.

### Sudan

SOEs play an important role in the economy and public finances in Sudan. They are active in diverse economic sectors and are divided into two types "Government parastatals and institutions" and "Governmental companies," operating under different laws. In practice, the application of these laws is weak. While oversight for companies is centralized at the Ministry of Finance and Economic Planning (MoFEP), line ministries have often circumvented this oversight. The Government extends several types of financial support to SOEs to cover losses, while the profitability of SOEs is not closely monitored and the MoFEP has limited power to steer SOEs financially. In 2021, as a first effort to achieve further fiscal transparency, the MoFEP has compiled an inventory of all SOEs.

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Sources: Authors' calculations; company financial statements; IMF (2017a, 2019c, 2020, 2022); Jordan (2019); Lebanon Institute of Finance (2021); National Electric Power Company; and METAC (regarding Sudan).

PPPs and PPAs often present fiscal risks similar to government guarantees. Specifically, these contracts may commit the government to a range of contingent obligations for protection against changes in policy and force majeure events. These can include minimum revenue or usage guarantees to support private financing of the project; subsidies to compensate producers when market electricity tariffs fall below an agreed threshold; or ad hoc transfers to cover unexpected operational losses related to PPPs or PPAs. While the rationale for PPPs and PPAs is the realization of efficiency gains from private sector involvement and risk transfer to the private partner, contracts are often complex and may include renegotiation clauses that lead to unexpected fiscal costs in the future. Similarly, when faced with a possible bankruptcy of a PPP or PPA operator of critical infrastructure, the government may have little choice but to organize and financially support a bailout.

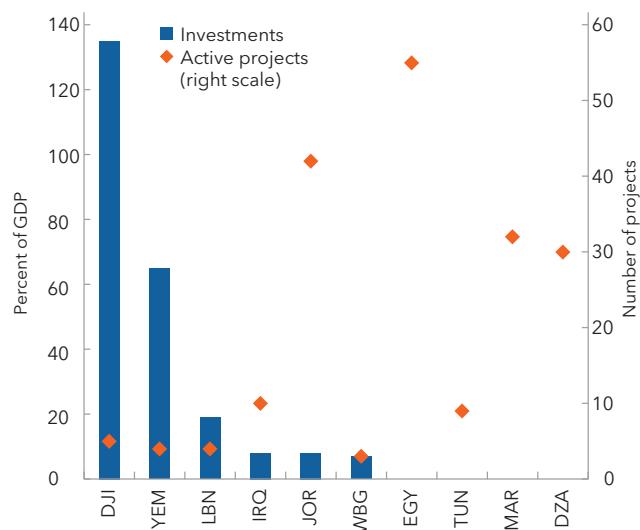
The MENAPEG region has a significant share of PPP investments. Within the region, the number of PPPs varies greatly (Figure 17). In many countries, the contingent liabilities associated with these PPP investments are not known and reported. Iraq and Jordan provide examples from the region of potential fiscal risks arising from PPPs and PPAs (Box 6).

## Pension Systems

From the budget perspective, the unexpected materialization of pension outlays appears very similar to the materialization of fiscal risks discussed above.<sup>8</sup> The gap between actual public pension contributions and contributions required to fully finance the public pensions on an actuarial basis are large and persistent in many MENAPEG countries. These actuarial pension shortfalls are often not properly recorded in government finances and ignored at peril. Claims on the budget to cover shortfalls can therefore materialize in unexpected ways at unexpected times.

Pension schemes in the MENAPEG region are characterized by relatively low contribution rates and retirement ages. Even after adjusting for life expectancy, countries in the region, on average, have more generous pensions than OECD countries (Figure 18, panel 1). Pension schemes with low retirement ages can be difficult to sustain. This is particularly true when younger generations are not able to contribute sufficiently to the system, as appears to be the case in the MENAPEG region due to its high youth unemployment (Figure 18, panel 2). In recent years, unexpected fiscal outlays stemming from unsustainable pension schemes materialized in several countries in the region; they translated into budget transfers from the general budget to the pension funds, highlighting the urgency to initiate pension reforms (Box 7).

**Figure 17. Portfolio of Active PPP Projects in MENAPEG, 2019**



Source: World Bank, Private Participation in Infrastructure Database.

Note: Projects include PPPs granted at all levels of government in the sectors of energy, transport, water, and sewerage; information, communication technologies backbone; and municipal solid waste. Country abbreviations are International Organization for Standardization country codes. MENAPEG = Middle East, North Africa, and Pakistan excluding the Gulf Cooperation Council; PPP = public-private partnership.

<sup>8</sup> As the shortfalls are knowable in principle, strictly speaking they should be part of baseline projections rather than treated as fiscal risks.

## Box 6. Examples of PPPs and PPAs

### Iraq

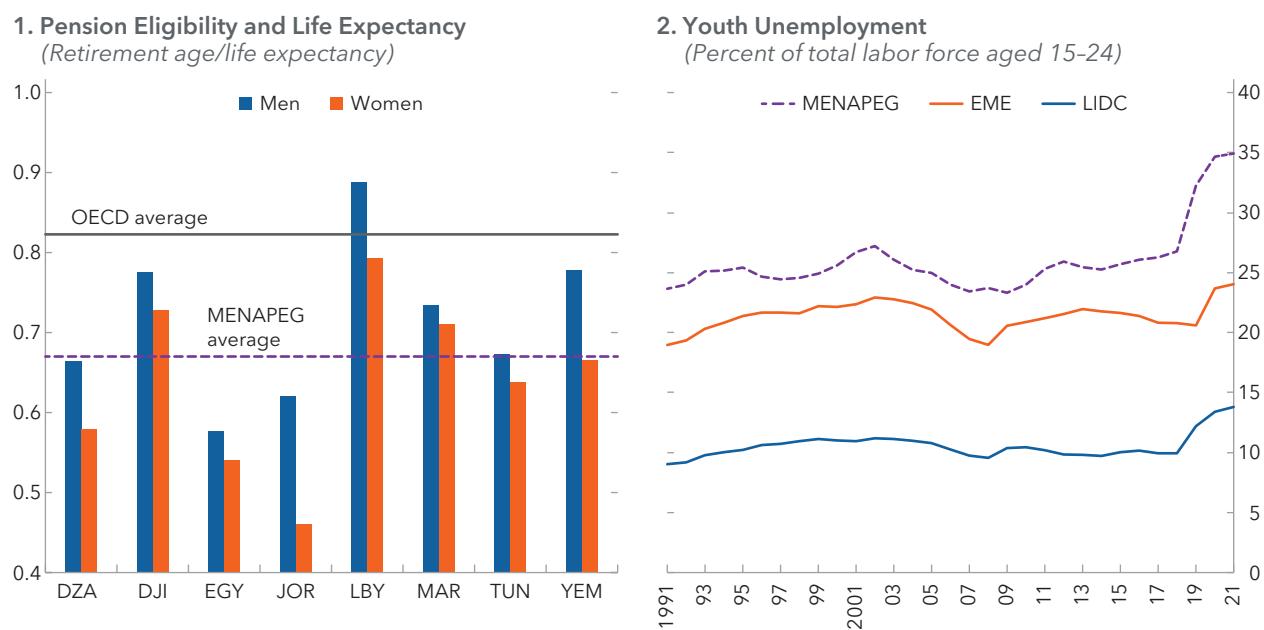
In 2016 Iraq suffered from a large gap in electricity production, coupled with a difficult budgetary situation. The government saw PPAs as a way to fill the infrastructure gap and overcome budgetary restrictions. It signed three PPAs and constituted a pipeline of 14 projects with minimum revenue guarantees at different stages of development. At the time, the Ministry of Finance issued \$ 46 billion worth of guarantees to cover the next 14 years of the Ministry of Electricity's purchase of electricity. In addition, the issuance of direct debt guarantees, mostly for electricity sector projects, accounted for 2.3 percent of GDP at the end of 2016. The estimated annual payment by the government to private power producers during the operation period is around \$ 1.5–2 billion, excluding the government's costs of providing fuel for electricity production. Partly in response to these developments, the authorities have worked to improve the regulatory framework for guarantees since 2017 (see Box 3).

### Jordan

Jordan makes extensive use of PPP contracts to fulfill its development needs. About 40 percent of total public investment is provided by the general government (GG) and 30 percent by public corporations (SOEs). The IMF's public investment management assessment (PIMA) in 2017 estimated that 25 percent of the public sector's investment portfolio was procured through PPPs, compared to a 6 percent emerging economy average. The share of public investment in total GG expenditures decreased from about 20 percent in 2009 to about 10 percent in 2013–15. As a result, public entities, strongly encouraged by the central government and supported by international development partners, relied more on PPP projects. This practice has been most prominent in the energy sector through the National Electric Power Company (NEPCO, Box 5). Debt guarantees almost doubled between 2010 and 2017; a considerable portion was directed to NEPCO and the Water Authority of Jordan. By 2020, government liabilities regarding PPPs totaled 21 percent GDP. More recently, Jordan concluded PPAs for two oil shale operations, the first of which came online in late 2022.

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Sources: IMF (2017b, 2017c).

**Figure 18. MENAPEG Pension Scheme and Youth Unemployment Characteristics**

Sources: International Labour Organization, ILOSTAT database; and authors' calculations.

Note: Panel 1 plots data for earliest pension eligibility age as a share of life expectancy; the lower the ratio, the more generous the pension scheme. Country abbreviations are International Organization for Standardization country codes. EM = emerging market economy; LIDC = low-income developing country; MENAPEG = Middle East, North Africa, and Pakistan excluding the Gulf Cooperation Council; OECD = Organisation for Economic Co-operation and Development.

### Box 7. Pension Scheme Pressures on the Budget: Country Examples

#### Algeria

Algeria has a pay-as-you-go public pension system. The system features two schemes, one for employees administered by the “Caisse Nationale des Retraites” (CNR) and one for the self-employed administered by the “Caisse Nationale de Sécurité Sociale des Non-Salariés” (CASNOS). With its high replacement rate and wide benefit eligibility, the pension system has been facing financial difficulties in recent years. CNR, the largest of the two schemes, is already insolvent, as it only finances 45 percent of its benefit expenses from contributions. It thus requires subsidies, transfers and loans from the treasury and various extrabudgetary entities, including from the main social security fund. The CNR also benefits from an earmarked ad valorem solidarity tax of 2 percent of imports of consumer goods, which is projected to yield about 0.2 percent of GDP in revenue in 2023. Annual average budget transfers to the CNR are estimated to have amounted to about 3.1 percent of GDP over the period 2018–21 and are expected to continue apace. Absent parametric pension reform, the ratio of pension spending to GDP will double and the pension system’s deficit is projected to widen to more than 9 percent of GDP by 2050.

#### Tunisia

In 2014 Tunisia’s pension fund recorded a deficit of about 0.3 percent of GDP, which has since continued to grow. The Pension System is composed of three funds—Caisse Nationale de Retraite et de Prévoyance Sociale (CNRPS) for the public sector; Caisse Nationale de Sécurité Sociale (CNSS) for

<sup>1</sup> Sources: IMF (2016b, 2018b); and IMF staff estimates.

**Box 7. (continued)**

the private sector; and Caisse Nationale d'Assurance Maladie (CNAM) the health care fund for both the private and public sectors. All three funds have suffered from systemic deficits since at least 2012, and none of them is financially sustainable. The funds are financially interconnected. In particular, the CNSS and CNRPS are responsible for recovering the health sector contributions and transferring them to CNAM. However, due to their increasing financial difficulties, the CNRPS and the CNSS have stopped these transfers. By 2019/2020, their arrears to CNAM amounted to 4.1 percent of GDP, leading CNAM to run arrears to its creditors, which include the SOE responsible for importing and commercializing pharmaceutical products.

**Iraq**

The pension system for public sector employees is on a fiscally unsustainable trajectory due to permissive eligibility criteria and generous benefits. The statutory retirement age of 50 is low, and the replacement rate is high with the minimum full-career pension obtained after 15 years of service. Survivor pensions are expansive, generating multiple, potentially life-long benefits, based on a single contributor's primary entitlement. Reflecting the unique political history of the country, eligibility extends to non-contributors such as survivors of martyrs and victims of political persecution and their survivors, where the definition for eligible survivor has been stretched to include a large group of family members. In 2020, pension expenditures grew by 28 percent compared to 2019, despite the absence of an approved budget that should have limited expenditure to the 2019 baseline.

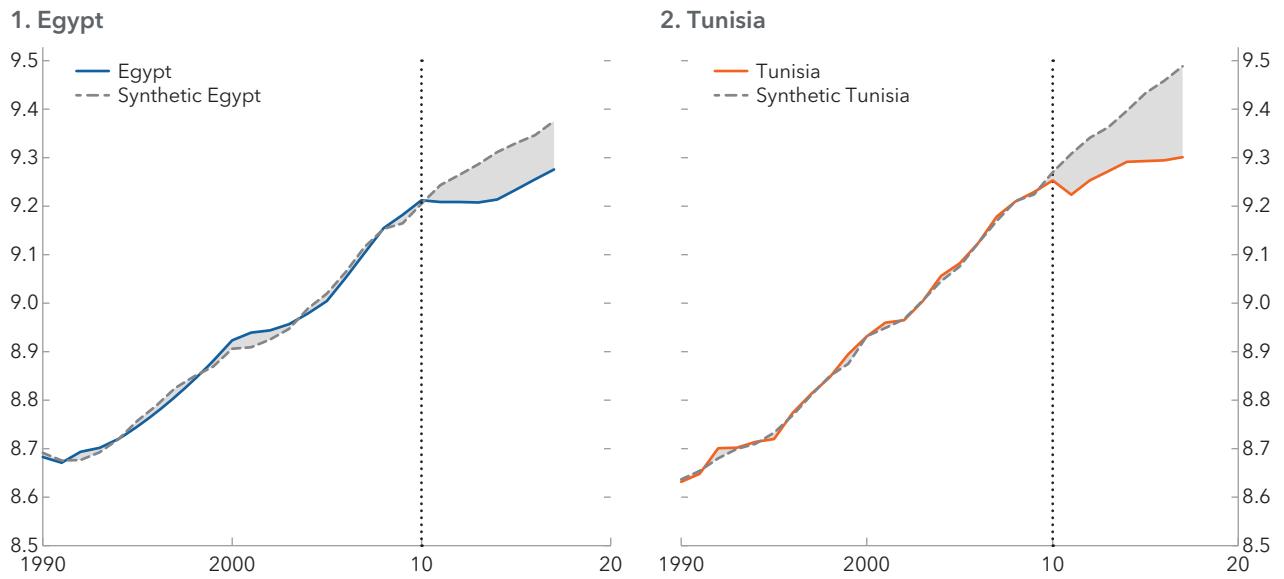
**West Bank and Gaza**

West Bank and Gaza nominally features a funded public pension system. However, for many years the government has not paid its full contributions, leading to government arrears to the pension fund amounting to an estimated 13 percent of 2022 GDP. In part to alleviate pressure on the pension fund, the government has been paying some pensions directly from the budget, in effect treating the system as pay-as-you-go. This has resulted in a complicated web of crossclaims between the pension fund and the Ministry of Finance. Under acute liquidity pressure, in November 2021 the authorities resorted to the partial payment of public sector pensions (as well as wages). Ever since, public sector pensioners and employees (with the exception of the lowest earners) have received 80 percent of their normal payment, with the rest recorded as arrears. Pension system reform is needed to alleviate pressure on the budget. This should entail a combination of longer contribution periods (that is, retiring later), increased contributions, and lower benefits.

## C. Other Fiscal Risks

Besides macroeconomic and contingent liability risks, MENAPEG countries are also vulnerable to other fiscal risks. Some, like instability, conflict, and social unrest are more common in the region than in many other parts of the world. Other risks, such as climate change, natural disasters, and tail risks are just as common elsewhere. Still, MENAPEG remains vulnerable to these often substantial risks. Lastly, some MENAPEG countries are subject to fiscal risks stemming from actions taken by other countries and wholly outside their control—which are not discussed further in this paper. These include changes in the value of their large external asset portfolios or the fiscal effects from direct and secondary sanctions, which could influence economic activity as well as grants and other bilateral financing.

**Figure 19. Estimated Post Arab Spring Cumulative Output Losses in Egypt and Tunisia**  
*(Natural logarithm, GDP per capita PPP, constant 2011 US dollars)*



Sources: World Bank, World Development Indicators 2019; and authors' calculations.

Note: Output losses estimated by creating a synthetic GDP following the methodology of Matta, Appleton, and Bleaney (2019). For details see Annex 2.

## Instability, Conflict, and Social Unrest

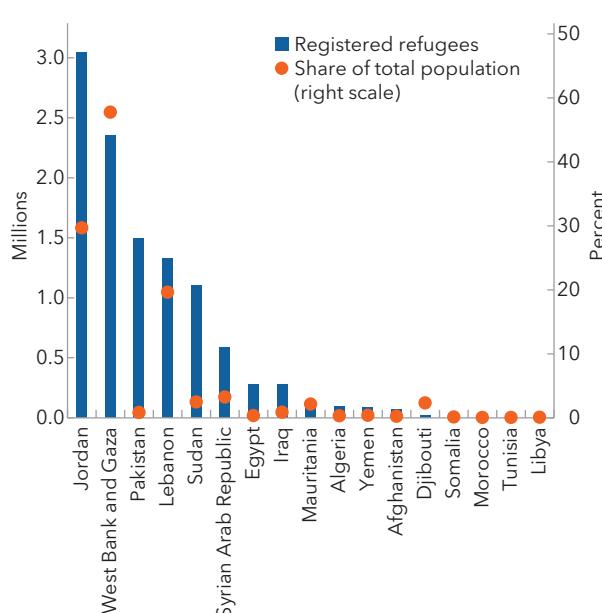
Conflict, political, and social instability have had important unforeseen macroeconomic and fiscal implications in the region since at least the mid-20th century. A well-known recent example is the Arab Spring period when countries such as Egypt and Tunisia faced significant social unrest leading to severe disruptions and large cumulative loss of economic activity (Figures 19, Annex 2). Fragile and conflict-affected states (FCSs) in the region have witnessed even more severe shocks. Afghanistan, Iraq, Libya, Syria, Yemen, and West Bank and Gaza have all been affected by wars and conflicts, leading to large loss of life and human tragedies. They also resulted in massive output losses, asset destruction, weakening of institutions, and loss of tax capacity. For instance, in Syria the cumulative cost of the first five years of the civil war may have amounted the equivalent of the country's entire 2007 GDP.

The various conflicts and episodes of instability have led to large numbers of refugees and internally displaced persons (IDPs) in the region. For example, the Syrian civil war has led to more than 5 million Syrian international refugees and more than 6 million IDPs—in total representing more than half the country's pre-2011 population—while the number of longstanding registered Palestinian refugees is significantly more than 5 million (UNRWA 2021), some 2.3 million of whom reside in the West Bank and Gaza. In the region, Jordan and West Bank and Gaza host the largest number of refugees (Figure 20).

Refugee inflows are likely to generate fiscal outlays akin to the materialization of fiscal risks. Even as the associated cost is frequently mitigated by foreign grants and in-kind support, and increased economic activity from refugees generates some additional tax revenue, the additional net fiscal spending needs are often larger. They consist of contributions to the direct upkeep of the refugees, including their consumption of utilities, as well as the costs of education and health care. For instance, refugee flows from Syria into Lebanon are estimated to have had a fiscal impact of \$ 2.6 billion (about 6 percent of 2013 GDP) between 2012 and 2014 (IMF 2014). At the same time, the Lebanese government supported the additional electricity consumption brought about by Syrian refugees with more than 1 percent of 2014 GDP in subsidies cumulatively during 2012-14 (World Bank 2013). Likewise, in Jordan the refugee crisis has had a direct impact on the budget, with a surge in subsidies and outlays on social benefits. In 2013 and 2014, fiscal costs from

### Figure 20. Refugee Population Residing in MENAPEG

(By country or territory of asylum, 2021)



Sources: World Development Indicators, World Bank; UNHCR; UNRWA; and IMF staff calculations.

global efforts to move away from the use of fossil fuels.

Like climate change-related events, natural disasters entail considerable physical and economic costs. Natural disasters often occur suddenly (earthquakes, floodings) or over a relatively short period of time (heat waves). These events are normally followed by post-disaster relief and recovery efforts, with attendant adverse implications for external and fiscal balances (Cevik and Huang 2018 and the references therein). Natural disasters and climate change are related, as global warming has increased both the frequency and severity of natural hazards and extreme weather events, raising the associated economic and fiscal costs. Between 1950 and 2022, all MENAPEG countries were hit by natural disasters, many of which caused damages in excess of 5 percent of GDP, while Algeria, Mauritania, Pakistan, Somalia, and Yemen suffered damages more than double that number (Figure 21). The damage of the recent February 2023 earthquake in Syria and Turkey may yet come close to these numbers.

Tail risks are events that are rare but not wholly implausible. Even as such risks, by their nature, do not materialize often, they are worth considering if their expected potential impact is very large. Natural disasters can be seen as tail risks in countries normally not prone to them. But perhaps the best example of a tail risk realization is the recent COVID-19 pandemic. Not only did the pandemic have a large macroeconomic and fiscal impact (Box 1), but, in addition, it and the commodity price shocks that followed also led to a durable increase in fiscal risk going forward. This as temporary fiscal support measures lasted longer than initially envisaged, existing contingent liabilities increased, and new contingent liabilities emerged (Box 8).

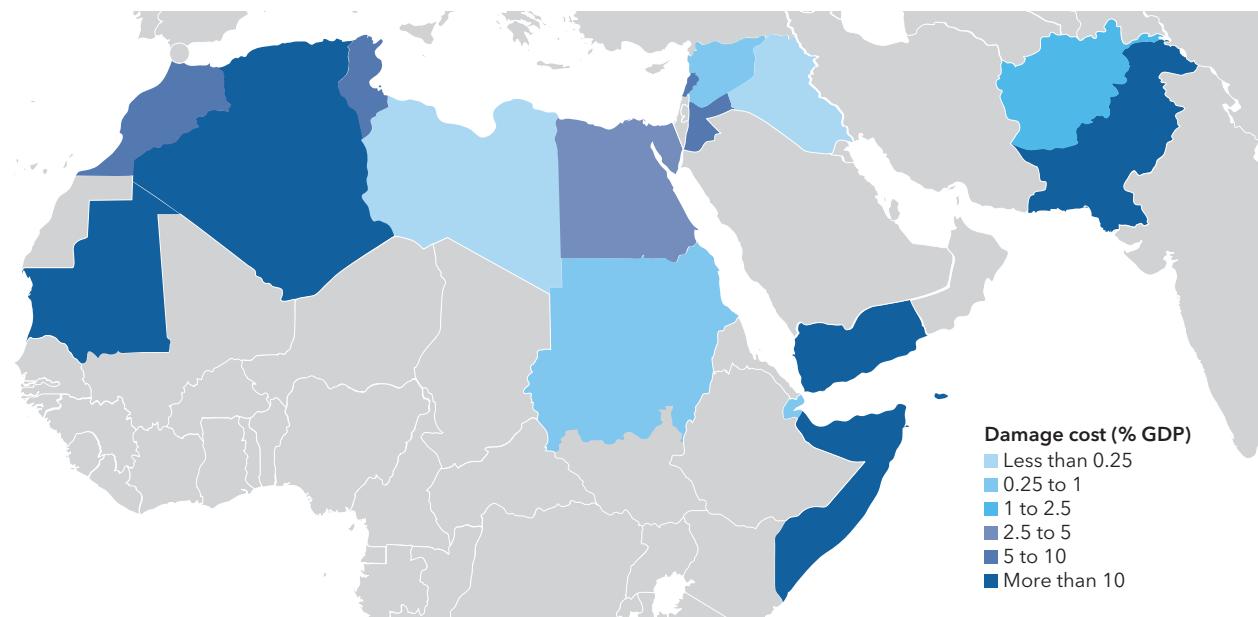
the crisis were estimated to be 1.8 percent of GDP and 2.4 percent of GDP, respectively (Nasser and Symansky 2014).

### Climate Change, Natural Disasters, and Tail Risk Events

Climate change presents a macroeconomically critical adaptation challenge for the MENAPEG region and is the cause of significant fiscal risks. Temperatures are rising twice as fast as the global average, precipitation is more erratic than in any other region, and climate disasters have become more frequent. Since 2000, this has resulted in average direct damage of \$ 2 billion annually, 7 million affected people, and 2,600 deaths (IMF 2022b). It has also resulted in significant fiscal shocks, decreasing revenue and increasing public debt by an estimated 3 percent of GDP, mainly due to the realization of contingent liabilities. To deal with these risks, countries in the region need to invest in both climate adaptation and mitigation, as discussed in two recent IMF papers (IMF 2022b, 2022c).<sup>9</sup> In addition, over the long run, hydrocarbon-producing countries will need to adapt to

<sup>9</sup> Given the in-depth discussion on both impact and policy recommendations in these two papers, this paper will not discuss fiscal risks stemming from climate change in more detail.

**Figure 21. Natural Disasters in MENAPEG**  
(Maximum impact 1950–2021, percent of GDP)



Sources: Emergency Events database; and World Bank, World Development Indicators.

## Box 8. COVID-19 and Commodity Prices: A Durable Increase in Fiscal Risks

### Long-Lasting Spending Measures...

While most COVID-19-related fiscal easing measures were one-offs or time-bound and had expired at the end of 2021, some continued well beyond the first stages of the pandemic, raising risks of durable budget costs. For instance, in Algeria, exceptional allowances to healthcare workers were renewed in 2022. Cash transfers continued beyond the end of 2021 in Morocco and Somalia, as did subsidies to factories and exporters in Egypt, the pandemic-related increase in social protection and education in Mauritania, employment programs in Jordan, and various other tax relief measures in Egypt and Jordan. While a premature phasing-out of support measures risks stifling the recovery, their continuation for an extended period generates fiscal risks as their withdrawal might become increasingly difficult with time. This could lead to permanently higher spending rigidity and narrower tax bases.

Similar effects ensued from the response to the sharp spike in commodity prices, as MENAPEG countries implemented a range of targeted fiscal measures that could add to fiscal risks. While these measures served to buffer pressures on purchasing power and guarantee food security, they may lead to unexpected future budgetary outlays, when, for example, the measures cannot be rescinded as planned or there is pressure to expand them. Some measures may also have added to spending rigidity. Examples include the increase in transfers in Jordan and higher payroll spending in Algeria and Iraq. Delays to universal subsidy reforms, contemplated in some countries before the shock, may have similar effects.

### ...And More Contingent Liabilities.

Both the pandemic and the commodity price shock have led to an increase in explicit and implicit contingent liabilities. During the pandemic, some support measures were conducted below-the-line or off-budget, that is, they did not entail immediate direct budgetary costs. Examples include loans and guarantees to firms (including SOEs) and households. For instance, the government of Tunisia authorized the provision of new guarantees to SOEs to 5.3 percent of GDP in 2021 versus 4.2 percent of GDP in 2020, while guarantees extended under various government schemes amounted to 5.2 percent of GDP at the end of 2020 in Morocco. In Egypt, the magnitude of new direct guarantees offered by the government appears to be small. However, indirect risks for the Treasury stems from guarantees of about 1.6 percent of GDP extended by the central bank, in addition to its stock purchases amounting to some 0.3 percent of GDP. Since the pandemic's onset, new guarantees have added to a large pre-existing stock of guarantees to SOEs in several MENAPEG countries.

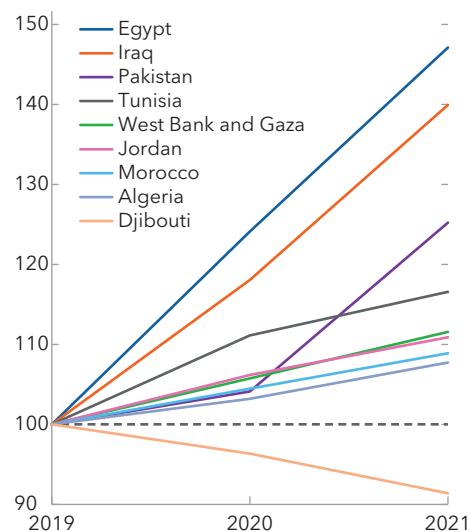
SOEs were also called upon to support governments or conduct quasi-fiscal activities as part of the state's response to the crises. This aggravated their preexisting financial weaknesses and increased risks of calling upon fiscal support in the future (IMF 2021). For example, in some countries, SOEs extended higher dividend payments and other payouts to help fund the government (Djibouti and Morocco). Others were instructed to produce hygiene goods (Egypt) or procure and distribute medical supplies (Mauritania and Tunisia). SOEs were also used as automatic stabilizers to protect employment and support economic activity. For example, in Algeria SOEs bore the cost of extended paid holidays for their employees as part of preventive social restrictions measures, while in Tunisia, the Caisse des Dépôts et des Consignations set up funds to support companies in strategic sectors. In many countries across the region, the rise in the cost of imported hydrocarbons and other commodities was not reflected in higher prices charged to end-consumers. Without (full) compensation from

### Box 8. (continued)

the budget, limited pass-through strains the balance sheets of utilities, possibly also affecting their suppliers. This is illustrated, for instance, by the accumulation of extra-budgetary arrears of about 0.8 percent of GDP in the power sector in Pakistan in the fiscal year ending in June 2022.

The economic impact of the pandemic and commodity price shock on public and private balance sheets raises government implicit contingent liabilities more generally. Both shocks have affected revenue generation and profitability of both public and private enterprises, particularly in sectors such as transport, retail, and tourism. Weaker enterprise financial health could raise the likelihood of business calling for fiscal resources to bail them out, in addition to weighing on economic activity and tax revenue. Private debt rose significantly between 2019 and 2021 in several countries including, Egypt, Iraq, Morocco, and Pakistan (Box Figure 8.1), while bank claims on SOEs increased dramatically in Djibouti and Sudan and continued to rise in Jordan and Pakistan.<sup>1</sup> Strong debt growth amid low revenue growth compounds solvency risks, with some indications that 15–25 percent of firms in the broad Middle East and North Africa region might need some form of restructuring in the medium term (IMF 2021b). This would entail fiscal costs if governments have provided explicit guarantees to troubled enterprises, if they were to decide to inject capital or forego tax claims on these entities, or if they were to spend additional funds on social assistance and labor policies to support their employees. And while banking sectors have generally remained stable in most of the region, governments may need to step in to support banks affected by broader enterprise restructurings. All the more so as even before the pandemic, some countries were already contending with underlying bank vulnerabilities (Tunisia) or full-fledged banking crises (Lebanon), and nonperforming loan ratios have crept up in several countries (Algeria, Afghanistan, Iraq, Lebanon, Mauritania, Sudan).

**Box Figure 8.1. Commercial Banks, Claims on Private Sector  
(Index 2019 = 100)**



Source: IMF.

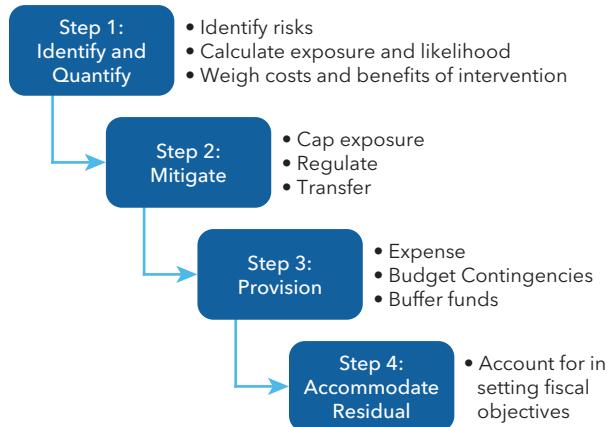
Note: Sudan excluded from the figure. Sudan reached 178.8 in 2020 and 493.8 in 2021 (index 2019 = 100).

<sup>1</sup> Weak transparency on the financial situation of SOEs and data gaps complicate the picture.

### 3. Managing Fiscal Risks in the Region

The fiscal risks discussed above and their increased incidence suggest a need for countries to consider strengthening their risk management going forward. This section takes a comprehensive view on fiscal risk management in MENAPEG countries and suggests improvements.

**Figure 22. Fiscal Risk Management Strategy**



Source: IMF (2016a).

The current confluence of fiscal risks in MENAPEG calls for country-specific but wide-ranging risk management strategies. This would typically require a triage approach encompassing a comprehensive analysis of risks to inform policy decisions on their management (Figure 22).

- First, country authorities need to identify and quantify possible risks. This starts with ensuring the necessary data is collected and available to policy makers, allowing the nature of the risks (endogenous to government activity or exogenous), their magnitude, and the likelihood they will materialize are assessed. In many countries, this assessment is supported by setting up a macro-fiscal unit in the ministry of finance (Box 9).

- Second, a strategy should be developed to mitigate these risks to the extent possible. This includes actions in prevention and preparedness, as well as direct control on risk exposure.
- Third, authorities need to consider (partially) provisioning for the potential fiscal costs if the risks were to materialize. Such measures could include increasing budget contingencies and other fiscal buffers.
- Finally, sufficient fiscal room should be ensured in normal times (for example, by containing public debt and deepening market access) to allow policy flexibility should the risk materialize.

#### A. Identifying and Quantifying Fiscal Risks

Understanding fiscal risks and the potential impact from their realization requires developing quantitative estimation techniques. This includes collecting and aggregating available data on specific risk factors and undertaking an assessment of the likelihood of the risk materializing and the maximum possible loss. When exact probabilistic quantification is not feasible, a judgement-based assessment into broad probabilistic categories (for example, probable, possible, remote) could be made. In cases where a risk probability can be assessed, the expected fiscal impact or maximum loss at a specific confidence interval can be calculated. In some cases, sophisticated models can be used, for instance to assess the economic and fiscal impact of natural disasters (Cevik and Huang 2018).

To support the identification, quantification, and analysis of fiscal risks, the IMF has developed a fiscal risk toolkit (Box 10). The toolkit consists of a suite of analytical tools and guidance notes on common sources of fiscal risks, ranging from assessment tools (for example, SOE health, guarantees, PPPs) to forward-looking

### **Box 9. Institutional Setup for Fiscal Risk Management in the Region**

Countries across the globe employ different institutional setups to facilitate fiscal risk management. These range from centralized models where a central government entity (normally the Ministry of Finance) is in charge of risk assessment and analysis to more decentralized approaches where different entities are all responsible for risk assessment and analysis in their own respective areas and report these findings as contributions to fiscal risk reports. Independent of which approach is taken, it is essential to start out by establishing a clear risk management policy. The policy should outline the preconditions under which the government is prepared to take on specific fiscal risks. An example would be to ask a public entity asking for a government guarantee to demonstrate that private financing without a government guarantee is not available on reasonable terms.

Other important elements of the institutional setup include defining clear lines of accountability and establishing a central risk oversight body and central control over the approval process of contracts that expose the government to fiscal risks. In general, individual public entities (government departments, SOEs) should be accountable for identifying, quantifying, analyzing, and monitoring specific fiscal risks that fall within their function, as they possess the specialist knowledge it requires. However, there may be some areas where central responsibility and accountability can generate economies of scale. An example is the oversight of PPPs or SOEs, where a dedicated team or unit (normally at the Ministry of Finance) can build up the expertise required and exert independence. Centralizing the oversight of fiscal risks allows for the assessment of the aggregate risk the government has taken as well as an assessment of the interconnectedness between different risks. A central authority to approve the assumption of risks (for example, the approval of guarantees) allows control of the aggregate risk. Such authority is normally vested in the Ministry of Finance or a cabinet committee building on MoF analysis. Such aggregate monitoring is also key to establishing “firewalls”—an approach to decrease the spread of risks that are closely correlated.

The institutional set up for fiscal risk management remains very much a work in progress in the MENAPEG region.<sup>1</sup> Still, many countries are taking initial steps to discharge responsibilities in fiscal risk management. In practice, the institutional arrangements for overall fiscal risk management are increasingly performed by macro-fiscal units (MFUs). MFUs tasked with fiscal risk management (among other tasks) are being put in place in several other MENA countries, including Afghanistan (2018), Egypt (2005), Lebanon (2012), Libya (2021), Jordan (2022), Sudan (2016), and West Bank and Gaza (2018), with some of the cases discussed below.<sup>2</sup> Specific Fiscal Risk Management Units (FRUs), such as the one established in Sudan in 2016, remain the exception in the region.

While building up their functions, MFUs face several constraints. Given their often limited leverage (which can be linked to the fact that they do not always report directly to Ministry of Finance leadership), MFUs often find it challenging to coordinate with multiple internal MoF units who play a role in fiscal risk management. These normally include the debt management office (responsible for debt operations and maintaining a guarantee registry); state-owned enterprise units (monitoring financial performance and fiscal risk, which can also be placed in a line ministry); and PPP units (overseeing the portfolio of PPPs which are under responsibilities of line ministries), in parallel to units tasked with investment promotion.

<sup>1</sup> <https://www2.internationalbudget.org/>.

<sup>2</sup> A recent analysis of the role of MFUs in the region is contained in the [METAC Regional Note No. 5](#).

**Box 9. (continued)****Egypt**

The government established a macro-fiscal policy unit in 2005 as part of the technical office of the Minister of Finance. Besides providing macro-fiscal analysis, the office is also in charge of managing fiscal risks and preparing fiscal risk reports. It is composed of 12 staff and reports to the Deputy Minister of Finance for Fiscal Policies (who in turn reports to the Minister of Finance). In 2017, the Egyptian authorities established a sovereign guarantee committee responsible for considering requests for guarantees, reviewing the financial stability of the beneficiaries, and developing a policy for issuing sovereign guarantees. At the same time, they started to prepare a statement of fiscal risks, which includes a review of the sovereign guarantee exposures to individual public corporations.

**Sudan**

The authorities created a fiscal risk management unit in 2016. The unit reports directly to the Undersecretary of Finance of the Ministry of Finance and Economic Planning (MoFEP) and consists of 15 staff. It drafts internal fiscal risk statements, which include a comparison of macroeconomic projections used for budget preparation and actuals. Among fiscal risks analyzed are those arising from guarantees and public corporations (SOEs). The current approach is to initiate and strengthen regular (quarterly) reporting from different administrative divisions inside and outside of the MoFEP, establish briefings to manage key fiscal risks, and further improve the internal draft fiscal risk statement for publication at a subsequent stage.

fiscal stress testing tools (for example, SOE stress testing, the impact of the COVID-19 pandemic). Country authorities can use these tools to integrate analysis of macroeconomic shocks and the realization of contingent liabilities in their fiscal risk management frameworks.

A fiscal stress test (FST) can help policymakers gauge major fiscal vulnerabilities (IMF 2016a). It employs historical data to model the fiscal effects of large macroeconomic shocks to GDP, inflation, exchange, and interest rates or commodity prices and the realization of contingent liabilities. It assesses the impact of these adverse developments on fiscal flow variables such as government revenue, expenditure and financing needs and fiscal stock variables such as debt and government assets, and hence fiscal solvency and net worth. Fiscal stress tests should normally be undertaken within macro-fiscal units at the Ministry of Finance but could also be performed at specialized economic analysis agencies or units within the government (Box 9).

FSTs can also provide the basis for better-targeted and more effective management of fiscal exposures by simulating what-if scenarios. These allow fiscal authorities to gauge the effects of policy changes on outcomes under stress, bringing out the benefits of risk mitigation measures to reduce the vulnerability of public finances to macroeconomic shocks. Periodically undertaking FSTs and reporting on their outcomes would, over time, build up valuable expertise and a better understanding of which policy measures are most effective.

FSTs can be employed in virtually all countries. Ideally, an FST requires information on public assets and liabilities, including contingent liabilities and a detailed macro-fiscal model. But even in cases where such information is incomplete, stress tests can still be undertaken using reasonable simplifying assumptions.

## Box 10. The IMF Fiscal Risk Toolkit

**Fiscal Risk Assessment Tool:** A high-level portfolio tool to quickly build a picture of the scope and scale of fiscal risks and chart a course of actions to mitigate and manage those risks, drawing on Pillar III of the Fiscal Transparency Code (IMF 2019a).

**Public Sector Balance Sheet Assessment:** This framework provides a deeper understanding of a country's total public sector assets and liabilities and hence its overall public sector balance sheet position, aggregate risk exposures, and crossholdings within the government.

**SOE Health Check Tool:** SOE health checks are used to assess the financial vulnerabilities for SOEs and to identify those that might be considered at higher risk of generating fiscal costs. Those SOEs may require closer monitoring or remedial actions to strengthen financial performance.

**SOE Stress Test:** This tool tests the resilience of SOE cash flows under different economic scenarios to examine the impacts on their liquidity and their ability to service debts and (net) transactions with the government.

**Discrete Guarantees and Loans Assessment Tool:** This tool helps assess the expected fiscal costs and risks from one-off loans or guarantees to inform decision-making and ongoing monitoring of risks.

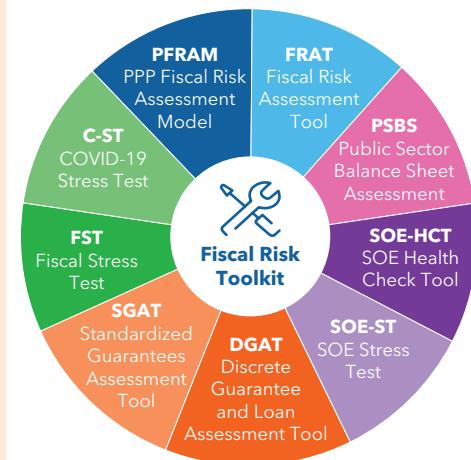
**Standardized Guarantees Assessment Tool:** This tool assesses the fiscal costs and risks stemming from standardized guarantee schemes by using a cash-flow based portfolio approach to quantify expected losses under various stress scenarios.

**Fiscal Stress Test:** Stress tests can be used to understand the full scope of a large-scale shock's impact on overall public finances, as well as to assess how future policy measures may impact the budget deficit, public debt, and the government's balance sheet.

**COVID-19 Stress Test:** This is a template to help understand the impact of the COVID-19 shock under alternative duration and health policy stringency scenarios and fiscal support measures on public finances (budgets, public debt, and the public sector balance sheet).

**PPP Fiscal Risk Assessment Model (PFRAM):** This analytical tool, developed by the IMF and the World Bank, was designed to assess the fiscal costs and risks arising from PPP projects. Its purpose is to assist governments in assessing the fiscal implications of PPPs, as well as help managing these projects in a proactive manner.

**Box Figure 10.1. IMF Fiscal Risk Toolkit**



Source: IMF, The Fiscal Transparency Code.

The results of the stress tests should be reported in fiscal risk statements—which can initially be kept internal while country authorities are building up their analytical capacity. The design of stress tests can be adapted to country capacity and circumstances (IMF 2016a):

- Countries with limited disclosure of risks should focus on (1) developing macro-fiscal sensitivity analysis to understand the fiscal implication of major shocks, (2) building a basic financial balance sheet, and (3) improving understanding and disclosure of main explicit contingent liabilities such as guarantees and PPPs.
- As countries have or collect more information on sources of risk and build up their analytical capacity, they should (1) begin to construct alternative macro-fiscal scenarios incorporating shocks to key macroeconomic variables underpinning their forecasts; (1) where relevant, integrate significant natural resource assets and public pension liabilities into their balance sheets; (3) develop forecasts for changes in government financial assets, liabilities, liquidity and net worth; and (4) prepare comprehensive and quantified fiscal risk statements disclosing both explicit and implicit contingent liabilities.
- Countries that have more comprehensive information available and stronger modelling capacity should prioritize a closer integration of fiscal risk analysis into policymaking by (1) disclosing confidence intervals (or “fan charts”) around forecasts for key macroeconomic and fiscal variables, (2); establishing comprehensive balance sheets incorporating all public sector assets and liabilities, and (3) undertaking periodic stress tests of public finances that combine stochastic shocks to key macro-economic variables with realizations of related contingent liabilities.

Developing a fiscal risk statement is a key step for the management of fiscal risks.<sup>10</sup> A fiscal risk statement highlights specific fiscal risks that can have a major impact on fiscal balances as well as broader macroeconomic aggregates such as GDP growth. Some MENAPEG countries have made considerable progress in incorporating fiscal risks statements in fiscal policy documents. For example, Egypt has developed a fiscal risk statement and used it to strengthen fiscal risk management (Box 11). Several other MENAPEG countries undertook important steps in mapping the specific fiscal risks they face (for example, Sudan in 2020, Afghanistan in 2021 and Jordan in 2022), often in the context of working toward drafting a comprehensive fiscal risk statement. Some countries report on fiscal risks in other key policy documents beyond the budget (Table 1). For instance, until recently, Afghanistan included fiscal risk analysis in its annual fiscal strategy paper while West Bank and Gaza mentions fiscal risks in its quarterly macroeconomic updates issued by the MFU.<sup>11</sup>

**Table 1. Fiscal Risk Statements as Part of Fiscal Policy Documents**

	Egypt	Libya	Afghanistan
Fiscal strategy	Yearly	Yearly	Yearly
Medium-term fiscal framework or medium-term fiscal scenarios	Yearly	Yearly	Yearly
Fiscal risk statement	Yearly	N.A.	Quarterly <sup>1</sup>
In-year reporting	Yearly (mid-year review)	Monthly	Quarterly
Other	Fiscal policy analyses	N.A.	Fiscal and Policy Analysis

Sources: METAC Regional Note No. 5 (2021), based on a specific survey and countries' responses as well as webpages of ministries of finance.

<sup>10</sup> Annex 4 provides a general template that can be used to draft a fiscal risk statement.

<sup>11</sup> Afghanistan's 2021 version can be found [here](#).

### Box 11. Management of Fiscal Risks in Egypt

Since 2015, the Egyptian authorities have taken various steps to strengthen the monitoring, management, and reporting of fiscal risks:

- Assigning the responsibility of overall coordination, aggregate analysis, and reporting on fiscal risks to a single unit in the Ministry of Finance
- Developing a semiannual reporting of main fiscal risks ("Budget Highlights and Main Fiscal Risks"), which serves as a key decision-making tool for the Minister of Finance and the Prime Minister to evaluate risks on yearly fiscal target implementation and decide on adequate remedial measures;
- Preparing a report on public corporations. This was first produced in 2018 and last updated in 2019. The report, which is available on the Ministry of Finance's website, contains summarized financial data on SOEs and outlines the sector reforms being implemented by the government
- Developing a strategy to manage and reduce guarantees. In this regard, the Ministry of Finance established an internal audit unit in 2018 to monitor risks and propose mitigation measures
- Strengthening the Ministry of Finance's institutional capacity to manage fiscal risks, and most importantly contingent liabilities
- Adding a specific section on fiscal risks to the Financial Statement by the Minister of Finance at the time of submission of the annual draft budget in April. This section discusses the main macroeconomic assumptions (growth rate, global trade trends, exchange rate, inflation, and global oil prices). It briefly presents contingent liabilities linked to state guarantees and arbitration cases, as well as the overall approach of the Ministry of Finance to addressing fiscal risks.

In addition, in the context of the 2022 Extended Fund Facility program, the Egyptian authorities published a comprehensive state ownership policy endorsed by the President that articulate the overall objectives, rationale, and principles of state involvement in the marketplace. Under the policy, the authorities defined sectors that are strategic and developed a governance framework through which the state will gradually withdraw from non-strategic sectors. The authorities also committed to compile and publish an annual report on payment arrears, including those owed to key SOEs, to monitor fiscal risks going forward.

Still, several elements of fiscal risk identification and quantification remain work in progress in MENAPEG. In particular:

- Central databases on SOE finances, if they exist, often suffer from significant delays in obtaining financial statements, which may also be unaudited. Even in cases where the data are available, there remains significant room to improve and consolidate efforts on SOE fiscal risk management. Tunisia has made considerable progress recently and now publishes reports on the financial performance of SOEs. Supported by a Staff-Monitored Program (SMP), Sudan has finalized an inventory of SOEs, drawing information from the company registry.
- Similarly, the basic practice of establishing and regularly updating guarantees registries is largely absent. Some countries are looking to establish a guarantee registry, which would be very helpful in this respect.
- While there is a growing awareness of PPP fiscal risks, the institutional frameworks regulating PPPs presents challenges for fiscal risk management. A lack of analysis of long-term implications of PPPs on the budget can hide the true cost and perpetuate a vision of infrastructure being free or very cheap. Strong arguments highlighting the lower short-term costs of PPPs are often made by investment promotion agencies in charge of mobilizing private sector investment, with authorities keen on public investment in an environment of limited resources tempted to agree. In a few countries (for example, Jordan) PPPs are managed under a public investment management (PIM) overall framework, with the objective of inducing efficient decisions on whether to invest through standard procurement or PPPs. But even in these countries, the Ministry of Finance often struggles to get the necessary responsibility to be able to assess fiscal risk at the early (pre-feasibility) stages of project planning and then assess again at the feasibility stage. Still, Jordan, for instance, has usefully granted the newly created Fiscal Commitments and Contingent Liability Unit (FCCL) powers to access contractual information on PPP projects.

It is important to note that risks cannot and should not be analyzed in isolation. Instead, they should be understood, assessed, and measured within a country's own macroeconomic as well as regional contexts. This would allow to gauge the interconnectedness of shocks and risk materialization. In some cases, it would be important to assess the regional circumstances, including awareness of the economic, political, and social contexts of neighboring countries and trade partners. Specifically, exposure to common shocks and cross-border interconnectedness in the MENAPEG region could imply that fiscal risks materialize in a synchronized manner across country borders or that fiscal risks that materialize in one country increase risks in others (see Box 12 for an illustrative example). Policymakers should take note that risk spillovers could increase the probability of risks materializing and amplify their magnitude.<sup>12</sup>

## B. Mitigating Risks

After having identified and assessed the exposure to various risks, mitigation measures should be considered. In general, these should be tailored to each country's circumstances and will depend on the nature of risks, the tradeoffs between mitigating and accommodating risks,<sup>13</sup> and institutional capacities. The mitigation instruments can be grouped into three broad categories (Table 2, IMF 2016a):

- *Direct controls to limit fiscal exposure.* For example, policymakers can avoid risks by deciding not to engage in certain commercial activities or limiting the extent of state ownership of commercial entities, or imposing caps on the liabilities that public entities can accumulate. Examples of such direct controls

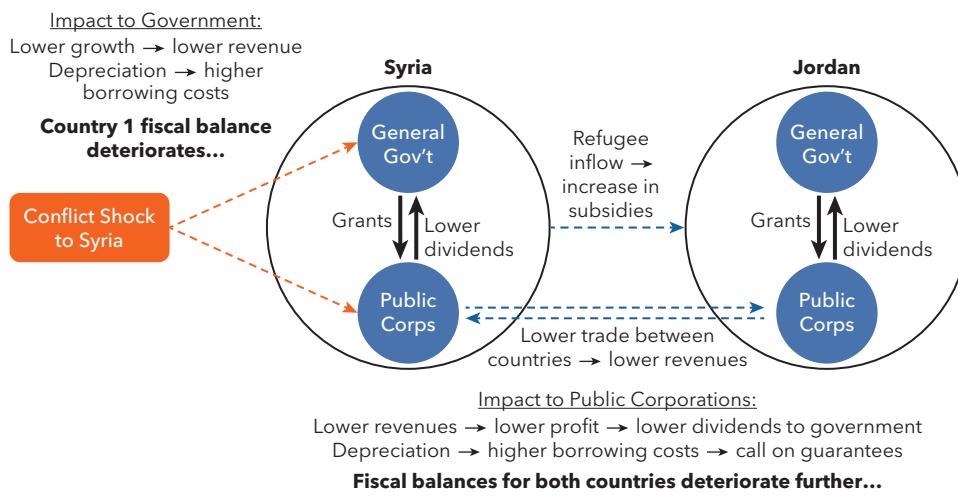
<sup>12</sup> Such spillovers tend to be larger in the presence of economic slack (that is, negative output gaps) and accommodative policy (Blagrove and others 2017). Moreover, preliminary evidence from Blagrove and others (2018) also suggests that spillovers can be stronger in countries with fixed exchange rate regimes.

<sup>13</sup> After careful cost-benefit analysis, risk that provide substantial benefits and/or modest potential costs when they materialize may be judged to be worth running.

### Box 12. Illustrative Example of Spillovers between Jordan and Syria

A simplified model of transmission channels between Jordan and Syria is considered to understand the different forms that spillover channels can take. The channels identified are informed by the economic and social outcomes of recent years. In this example the conflict in Syria impacts economic growth directly, leading to lower fiscal revenue and to exchange rate depreciation that increases the government's borrowing costs. Public corporations (SOEs) are also affected, leading to increased government support for the SOEs and lower dividend streams to the government. The conflict also spilled over to Jordan (and other neighboring countries, primarily Lebanon and Turkey) through large refugee streams. These had an impact on Jordan's fiscal outcomes as the Jordanian government incurred both direct (for example, accommodating some of the immediate humanitarian needs of the refugees) and indirect (for example, an increase in subsidies on basic goods and utilities due to the increased number of people) costs. In addition, Jordanian SOEs that trade with Syria saw their revenues decline and in some instances costs increase. This lowered SOE profitability and hence may affect dividend payments to the Jordanian treasury. In cases where SOE financial health deteriorates significantly, government guarantees may be called, further impacting fiscal balances.

#### Box Figure 12.1. An Illustration of Spillovers between Jordan and Syria



**Table 2. Fiscal Risk Management Toolkit**

Risk	1. Identify & Quantify		2. Mitigate		3. Provision		4. Accommodate
	Direct controls	Indirect tools (regulation and changes)	Risk transfer instruments	Expense	Contingencies	Buffer funds	
Financial Sector	Quantify contingent exposures, monitor financial soundness and risk indicators, incorporate financial sector stress test into debt sustainability analysis	Reduce state participation in banks	Increase bank loss absorbing capacity (capital adequacy standards), macroprudential tools to reduce procyclicality, reduce debt bias in the tax system	Require banks to fund deposits, insurance schemes, resolution mechanisms (for example, living wills)	Maintain cash buffers	Pre-fund deposit guarantee schemes	Adopt an appropriate medium-term fiscal framework to ensure fiscal headroom for residual risk
Natural disasters and environmental risk	Early warning systems	Planning to reduce footprint in risky areas	Tax premiums in high-risk areas, environmental standards, building codes, disaster preparedness strategies	Reinsurance, catastrophe bonds, cap payouts and require deductibles for govt. schemes, mandate insurance in high-risk areas	Appropriate expended payments	Disaster contingency	Natural disaster funds
Macro shock: for example, commodity prices	Sensitivity analysis, alternative scenarios, probabilistic fan charts	Privatization of commodity producers	Commodity market regulation, tax base diversification, reduce debt bias in the tax system	Hedging instruments (options, commodity futures)	Resource-based fiscal rules	Prudent price assumptions	Stabilization funds

Risk	1. Identify & Quantify		2. Mitigate		3. Provision		4. Accommodate
	Direct controls	Indirect tools (regulation and changes)	Risk transfer instruments	Expense	Contingencies	Buffer funds	
<b>Guarantees</b>	Maintain a central registry of guarantees and assess risks of at time issue and over their life	Central authorizing entity, ceiling on liabilities, standard criteria for issuing conditions on access	Charge risk-related fees	Partial guarantees, require collateral, reinsurance if feasible	Appropriate expected cash flows	Provision for expected calls	Guarantee funds
<b>Public private partnership</b>	Maintain central registry PPP commitments subject to sensitivity analysis	Central authorizing entity Ministry of Finance gatekeeper role, ceilings on PPP commitments	Cost-benefit assessments and value for money checks, charge guarantee fees	Risk sharing allocation framework, cap payment linked to demand, insure retained contract risk where feasible	Appropriate expected cash flows	Provision for expected calls on guarantees	Guarantee funds
<b>State-owned enterprises</b>	Quantify explicit exposures, monitor financial performance scenario analysis, or stress testing	Reduce size of the SOE sector	Hold boards accountable for performance reporting requirements	Explicit no-bail-out clauses	Appropriate expected subsidies	Provision for cost in case of restructuring	
<b>Subnational government</b>	Monitor financial performance against benchmarks	Fiscal rules and limits on borrowing	Link degree of financial autonomy to performance reporting requirements	Establish credible no-bail out clauses, retain authority to liquidate assets/ appoint administrator		Rainy day funds	

Source: IMF (2016a).

include decisions in divesting state holdings in SOEs and SOBs—which would make fiscal outcomes less sensitive to macroeconomic shocks—annual or multi-annual ceilings on the issuance of government guarantees, limits on subnational borrowing, and limits on PPPs, which would reduce contingent liabilities. In the region, many countries have amended their legal frameworks to introduce an annual ceiling for the issuance of government guarantees. Iraq, for instance, amended its organic budget law in 2019 and introduced a two-stage approach to issuing guarantees and thereby the risks embedded in them.<sup>14</sup> Jordan has endeavored to mitigate risks through establishing limits on new PPPs in its 2020 PPP law.

- *Indirect measures to reduce risky activities.* These consist of regulations, incentives, or charges for risk on entities that are potential sources of fiscal risks. Examples of such regulation to reduce fiscal risks stemming from macroeconomic shocks include the requirement for banks to hold capital (and more generally ensuring adequate banking system regulation, supervision and resolution frameworks), the issuance and enforcement of building codes in areas prone to natural disasters, and, for hydrocarbon exporters, diversifying the tax base from excessive reliance on commodities. To reduce contingent liability risks authorities can mandate certain environmental standards to reduce the potential costs of future clean ups and improve SOE accountability. Policymakers can also discourage excessive risk-taking through incentives, for example, by eliminating the debt bias in the tax system (IMF 2016)<sup>15</sup> or by charging risk-related guarantee fees or insurance premiums to those that benefit from government underwriting. In Iraq, the new regulation for the issuance of guarantees stipulates that the Ministry of Finance sets guarantee fees based on the tenor of the guarantee and the creditworthiness of the beneficiary, with entities with lower creditworthiness or those seeking guarantees for longer periods paying more.
- *Transferring, sharing, or insuring risks.* Policymakers can transfer risks to other parties. Examples include requiring banks to fund a deposit insurance fund or putting in place a clear risk-sharing framework for PPPs and PPAs, possibly including caps on the state's liability. They can also transfer risks using international capital markets or purchase insurance or hedging instruments. Examples include selling hydrocarbons and other resource commodity through long-term supply agreements or hedging exposure to commodity price volatility through market instruments such as forwards and options. Risks can also be transferred by securitizing and selling financial assets, or through the issuance of state-contingent financial instruments (for example, catastrophe bonds or weather-related derivatives). Of course, states can also directly purchase (re)insurance for certain risks in the market. In this regard, authorities could explore pooling risks across borders (Box 13).

These mitigation instruments can also be deployed to decrease the spread of risks. Creating or enhancing such “firewalls” between different fiscal risks is important to contain problems when they occur. Examples include divesting from commercial SOEs activity, which would lower the probability that problems at these companies would lead to banking sector problems that would necessitate fiscal support. Other examples of such firewalls would be negotiating proper risk transfer clauses in PPPs and PPAs and ensuring SOEs are properly compensated for activities they undertake on behalf of the state—that is, identifying quasi-fiscal activities and funding them against clearly defined service delivery outputs within a sound SOE oversight arrangement and strong financial governance. Both of these measures would lower the likelihood of macroeconomic shocks spreading to SOEs and triggering PPP/PPA risk transfers to the budget.

Mitigating fiscal risk requires clear legal frameworks. These should create and provide for the organization of institutional arrangements, including on SOE governance. They should grant policymakers an appropriate mandate, including the power issue regulation and collect information from other government entities and

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<sup>14</sup> First, during the budget process, Iraq set a limit on the total amount of guarantees that can be issued during the budget year. Second, it put in place a regulation specifying the procedures that must be followed to apply for and issue government guarantees.

<sup>15</sup> Debt bias refers to the tax deductibility of interest payments. Such deductibility favors financing with debt rather than equity, thus incentivizing leverage. Excessive leverage in turn presents risks and may in some cases lead to guarantees being called or, in extremis, bail outs.

### Box 13. Approaches to Natural Disaster Risk Reduction and Risk Transfer

Despite the high rates of return on investment, studies point to underinvestment in risk reduction when it comes to natural disasters.<sup>1</sup> In addition to information campaigns for increasing preparedness, early-warning systems and contingency planning should be developed to lay out risk reduction steps and encourage private sector investment in risk reduction. Ex ante fiscal policies can reduce losses from natural disasters by promoting mitigation and risk reduction. In designing fiscal risk reduction and prevention strategies, governments should focus on potential failure points, as building complete resilience would be prohibitively expensive for most countries, taking the following elements into consideration:

- **Infrastructure programs:** A stronger infrastructure could offer better protection against disasters. Examples include maintenance or reinforcement of bridges to improve their resistance to floods, earthquakes, and hurricanes and investment in earthquake- and flood-resilient construction. Taking account of natural disaster and climate risk in public investment management strategies is crucial in this regard.
- **Access to information:** Accurate, adequate information about risks can influence decisions relating to the locations and construction of commercial and residential properties. For example, risk maps outlining flood zones, areas at risk from coastal erosion, and landslide areas can provide valuable information to property investors and policymakers.
- **Land use and other regulations:** Land use and zoning rules can reduce a property's exposure to disasters (for example, by limiting building in flood plains), and building codes should require properties to be strong enough to withstand disasters of prespecified magnitudes.
- **Fiscal incentives:** Targeted subsidies can strengthen resilience by encouraging the retrofitting of existing properties, supporting drought-resilient crops, protecting and expanding forest coverage, and preserving scarce water resources.

Governments can transfer some of their natural disaster risks through traditional or parametric insurance and state-contingent debt instruments. However, since risk transfer instruments are costly, this strategy is most appropriate for remote events or in cases in which access to financing may be disrupted. The Caribbean Catastrophe Risk Insurance Facility (CCRIF), Pacific Catastrophe Risk Assessment and Financing Initiative (PCRAFI), and Africa Risk Capacity (ARC) are innovative examples of risk assessments and transfers. These programs build on regional coordination among small Caribbean and Pacific island states and African countries and provide both risk information and disaster risk-management tools at the regional level, as well as financing when a natural disaster strikes (World Bank 2013). In the case of PCRAFI, country risk profiles have been developed for each of the 15 participants based on geospatial information, allowing for improved catastrophe risk modeling and more accurate estimations of the monetary damages caused by natural disasters. To compensate for lower costs and underdeveloped insurance markets in the region, the disaster risk financing segments of CRRIF, PCRAFI, and ARC pool risks. These regional pools buy insurance on the private market to enhance countries' disaster response capacities.

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Source: Adapted from Cevik and Huang (2018).

<sup>1</sup> Healy and Malhotra (2009), for example, estimate that one dollar of investment in disaster preparedness in the United States yields a damage reduction of about \$ 15 dollars.

SOEs. The legal framework should also specify transparency and reporting requirements and effective enforcement mechanisms, such as sanctions. Lastly, it should support and guide renegotiations of contracts when they are needed.

## C. Provisioning Against and Accommodating Risks

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After mitigation efforts, countries can provide for remaining fiscal risks by directly expensing expected costs, establishing contingencies for specific risks, or setting aside financial assets. This practice includes, for example, mandating provisioning for the expected costs of guarantee calls in the budget, establishing a stabilization fund as a buffer against lower commodity prices or a catastrophe reserve fund for natural disasters, or requiring a funded deposit insurance scheme to guard against the risk of bank runs.

These strategies can be especially useful to deal with macroeconomic and tail risks. In particular, contingency reserves can be used for unforeseen expenditures that can cover the costs of moderate risks that are expected to materialize relatively frequently (Box 14). Many countries have annual contingency reserves in their budgets that provide flexibility to respond quickly to the materialization of risks. However, country practices vary regarding the purposes for which these funds can be used and the triggers required to access the funds.

For larger risks that are expected to occur more infrequently, government can consider creating fiscal risk funds. Such funds can help establish a fiscal buffer to cover the potential cost of a catastrophic event (for example, a large macroeconomic shock or natural disaster) in a timely manner without endangering long-term fiscal sustainability and are generally an effective way to accumulate dedicated reserves during periods that are free of catastrophic events. However, many of these funds are kept outside the usual budget process and follow different allocation rules. Thus, outlays for these funds do not compete on a level playing field with other priority expenditures. If the financial management and governance procedures of these funds are not carefully designed, catastrophe reserve funds can undermine fiscal discipline and transparency. In addition, authorities should take account of the carry cost of fiscal risk funds.

Finally, countries should seek to plan for remaining residual fiscal risks. These include risks that are too large to provision for, too costly to mitigate, or simply not known with a sufficient degree of precision. The primary tool for dealing with these fiscal risks is to adopt a proper medium-term fiscal framework that provides sufficient fiscal space to bear materialization of the risk without threatening economic stability. This could include keeping government debt relatively low, possibly facilitated by the introduction of appropriately calibrated fiscal rules and ensuring market access through regular debt operations. It may also include an assessment of public sector assets that can be brought to bear part of the risk should it materialize. Such assessment can be broadened into a public sector balance sheet approach that looks at assets, liabilities, and public sector net worth—the broadest possible view of a government’s solvency—while taking account of liquidity (IMF 2018a, Box 10). Thus far such practices are not well developed in the MENAPEG region. As fiscal management techniques and practices improve, they should gradually be integrated in the fiscal risk management frameworks of the countries in the region.

### Box 14. Establishing Contingency Reserves and Fiscal Risk Funds

In establishing contingency reserves, a government should stipulate clear and stringent conditions for the use of such funds to increase transparency and avoid abuse:

- Amount: The general contingency reserve should be set at a small fraction of total expenditure. This will suffice for immediate liquidity needs after risks materialize. With too large a reserve, a line ministry could try to access the funds to implement a policy that has not been approved by the legislature.
- Authorization: Various modalities for authorization can be used. In some countries, requests to use contingency funds must be submitted to the legislature for approval; in others, the legislature approves a standing authorization to use the funds, and the executive branch decides when and how the funds are used.
- Transparency: An official declaration should be required before the contingency reserve can be used. Afterward, the ministry of finance should disclose expenditures taken from the reserve in budget reports and classify them according to their purposes and economic natures.

When establishing a fiscal risk fund, governments should operate a well-designed framework:

- The fund should be consolidated with budget information to allow for a proper assessment of the overall fiscal situation. At a minimum, the fund balance should appear in financial statements, and drawdowns from the fund should appear in budget execution reports.
- There should be a standing appropriation that allows for spending immediately after certain trigger events, such as an executive declaration of a disaster emergency.
- The fund should generally apply best practice PFM rules to promote transparency. Specifically, it should have clear rules governing the use of resources, follow normal government accounting standards, prepare and publish audited financial statements, and define its governance rules. However, procurement rules should be adjusted to allow for immediate access to the resources.
- Drawdowns should be authorized only above a minimum level of fiscal cost, as use of the fund should be limited to responding to risk materialization with large fiscal impacts. Budget contingencies should cover smaller expenditure needs.
- The size of the fund should be based on a calibration of the fiscal impact of the realization of the macroeconomic and tail risks considered. The fund needs to cover only some of the expected medium- to long-term fiscal costs, as additional longer-term financing can often be arranged after the event. In addition, too much cash accumulated in a fund might tempt policymakers to use it for other purposes.
- The fund's financial investment strategy should aim to maintain a high degree of liquidity, given the potential urgency of accessing it. In some cases, the fund might best invest in liquid foreign assets because of the risk of stress in domestic financial markets when fiscal risks materialize. Such repatriation of offshore investments would also strengthen the balance of payments at a time of economic weakness. Only a small portion of the fund should be kept as a domestic bank deposit. Since these deposits are likely to be withdrawn during times of economic distress, large withdrawals could put additional strain on the domestic banking system precisely when the system is already facing heightened stress.

## 4. Concluding Remarks

Fiscal risks are prevalent in low- and middle-income countries in the Middle East and North Africa. They include risks that materialize relatively frequently, such as those associated with macroeconomic shocks including commodity price volatility, guarantees, SOEs, PPPs, and PPA, as well as risks linked to less frequent events such as financial crises, natural disasters, pandemics, and social unrest and conflict. When risks materialize, the impact on deficits and debt is often significant. This regularly surprises policymakers, forcing them to adopt ad hoc measures and restricting their options for a countercyclical fiscal response.

Country authorities should therefore develop and expand fiscal risk management frameworks and procedures. This would allow them to be better aware of risks, take ex-ante measures to reduce them and build buffers to better deal with remaining risks. It would help ensure the soundness of public finances, protect investment in development during downturns when risks tend to materialize, and more broadly improve macroeconomic stability.

A first priority is to build up capacity to identify and assess sources of fiscal risk. This would allow an appraisal of the possible budgetary impact. In this regard, country authorities should start by seeking out information on the likelihood and severity of possible economic shocks, including from natural disasters, climate change, and contingent liabilities, such as guarantees, support to SOEs, and PPPs. Much of this information is often available but needs to be systematically collected, aggregated, and analyzed. More generally, it is important to ensure the collection of regular, timely, and comprehensive fiscal data covering the entire public sector, as well as other macroeconomic data as the foundation for analysis.

The second step should be consideration of measures to mitigate or transfer the identified risks. A central guiding question in this regard is whether a specific risk is worth running (for example, when a project that creates risks supports an important policy priority). Risk mitigation measures may include direct ones, such as limiting the stock of guarantees the government issues, or indirect measures, such as imposing regulation that decreases the probability and severity of risks. It may also include decisions to stop certain commercial activities or sell them and their associated risks to the private sector. For the risks remaining after mitigation measures, policymakers should consider transferring risks by insuring against them or issuing state-contingent financial instruments that would provide additional fiscal space when risks materialize.

Lastly, countries should adopt appropriate medium-term fiscal frameworks to build buffers to deal with the remaining risks. These include risks that cannot easily be mitigated or that, after careful consideration, have been found worth taking. Fiscal buffers support macroeconomic stabilization, as they allow country authorities the option to use the available policy space when risks materialize and prevent them being forced into fiscal belt-tightening. In turn, this would facilitate more predictable execution of public investment in development, helping boost long-term economic prospects.

## Annex 1. Macroeconomic Shocks in MENAPEG

A shock is defined as any year in which the growth of a country has dropped by more than one standard deviation below the average real GDP growth rate over the period 1990–2021.

**Annex Table 1.1. Years of Macroeconomic Shocks**

Country	Years of Shock
Afghanistan	2020
Algeria	1991, 1993, 1994, 2020
Djibouti	1991, 1993, 1994, 1995, 1996, 1997
Egypt	1990, 1991, 1992, 2011, 2012
Iraq	2020
Jordan	1990, 1996, 2020
Lebanon	1990, 2019, 2020
Libya	2011, 2014, 2020
Mauritania	1994, 1997, 2000, 2007, 2020
Morocco	1992, 1993, 1995, 1997, 2020
Pakistan	1993, 1997, 2001, 2009, 2020
Somalia <sup>1</sup>	2012, 2020
Sudan	2009, 2011, 2012, 2018, 2019, 2020
Syria <sup>2</sup>	1997, 1999, 2003
Tunisia	2011, 2020
West Bank and Gaza <sup>3</sup>	2000, 2001, 2002, 2020
Yemen	2011, 2015, 2016, 2020

<sup>1</sup>No data before 2013.

<sup>2</sup>No data after 2010.

<sup>3</sup>No data before 1995.

Source: IMF, *World Economic Outlook*.

## Annex 2. Impact of the Arab Spring

To assess the economic impact of the Arab Spring on the economies of Egypt and Tunisia, we adopt the methodology used in Matta, Appleton, and Bleaney (2019) by applying the Synthetic Control Method (SCM) developed by Abadie and Gardeazabal (2003) and Abadie, Diamond, and Hainmueller (2010). This involves the construction of a counterfactual (the synthetic control) based on weighted averages of economies that were not affected by the shock being assessed. By employing statistical estimation techniques, the synthetic control method selects a country sample and weights in such a way that it closely followed actual outcomes in the pre-shock period—that is, it present a good approximation of the pre-shock reality. Post-shock the actual outcome data (which were subject to the shock) diverge from the synthetic control (which is not affected by the shock). Thus, the difference between the two comprises an estimate of the effect of the shock.

For our purposes, the outcome variable of interest is GDP per capita (in constant 2010 US dollars), and the shock of interest is the occurrence of the Arab Spring in 2011. To create our counterfactual, we use a set of countries ( $R$ ) and construct a matrix of covariates ( $X$ ) for every country  $r \in R$ . We then consider a vector of weights  $W = (w_1, \dots, w_R)$  subject to  $w_{r \in R} \geq 0$  and  $\sum_{r=1}^R w_r = 1$ . The vector of weights used for our analysis is then estimated by minimizing the difference between the covariates and variable of interest of the country of interest (in our case, Egypt and Tunisia) and the set of control countries before the shock (that is, before 2011). Abadie and others(2010) proves that the synthetic control is unbiased and produces an estimate of causal impact when choosing  $w^*_{r \in R}$  which satisfies the following two conditions:

$$\sum_{r=1}^R w^* \times GDP_{r,t} = GDP_{Tun/Egy,t} \quad \text{for } t = 1990, \dots, 2010$$

$$\sum_{r=1}^R w^* \times X_{r,t} = X_{Tun/Egy,t} \quad \text{for } t = 1990, \dots, 2010$$

After these conditions are met, calculating the impact is straightforward:

$$Impact_t = GDP_{Tun/Egy,t} - GDP_{Synth,t} \quad \text{for } t = 2011, \dots, 2017$$

**Annex Table 2.1. Country Weights**

Tunisia		Egypt	
Country	Weight (%)	Country	Weight (%)
Ireland	1.6	Mauritius, Islamic Republic of	1.2
Peru	2.1	Portugal	2.1
Sri Lanka	6.2	North Macedonia	2.8
Belarus	6.4	Kyrgyz Republic	5.6
Congo, Republic of	8.7	Burkina Faso	10.5
Costa Rica	11.1	Sri Lanka	12.9
Nicaragua	13.4	Brazil	15.1
Bangladesh	17.4	Pakistan	15.7
Mauritius, Islamic Rep. of	33.1	Bolivia	17
		Poland	17.1

The synthetic control weight for Egypt and Tunisia, respectively, are shown in Annex Table 2.1. The averages for the Economic and Social covariates used in the SCM estimates for Egypt, Tunisia, and their synthetic counterparts are shown in Annex Table 2.2.

**Annex Table 2.2. Economic and Social Covariates\***

	Tunisia		Egypt	
	Treated	Synthetic	Treated	Synthetic
Gross capital formation (1990–2000)	25.0	23.4	23.2	19.8
Gross capital formation (2001–10)	23.5	23.5	18.6	18.8
Consumption (1990–2000)	5.6	6.4	5.4	6.3
Consumption (2001–10)	6.4	6.0	6.8	5.1
Imports (1990–2000)	45.1	46.6	28.0	27.5
Imports (2001–10)	48.7	48.4	29.5	30.7
Exports (1990–2000)	41.0	41.4	21.3	21.3
Exports (2001–10)	45.8	44.0	25.6	25.8
Agriculture, value added (1990–2000)	13.0	14.9	16.1	16.7
Agriculture, value added (2001–10)	8.8	9.9	14.0	13.8
Services, value added (1990–2000)	46.8	48.8	47.8	48.0
Services, value added (2001–10)	54.6	52.8	46.0	51.8
Life expectancy (years)	72.7	69.1	68.1	66.2
Secondary school enrollment (%)	70.7	67.8	73.6	72.7
GDP per capita, USD (1990–94)	5,884.5	5,889.6	5,965.2	5,950.0
GDP per capita, USD (1995–99)	6,711.5	6,714.8	6,707.9	6,758.8
GDP per capita, USD (2000–04)	7,977.4	7,982.4	7,695.5	7,598.3
GDP per capita, USD (2005–10)	9,715.9	9,750.6	9,144.1	9,159.1
Net fuel (1990–2000)	3.2	-0.9	38.2	-8.3
Net fuel (2001–10)	0.3	-5.1	32.3	-6.0
Metal exports (1990–2000)	1.4	1.4	5.6	9.8
Metal exports (2001–10)	1.4	1.7	4.4	7.2

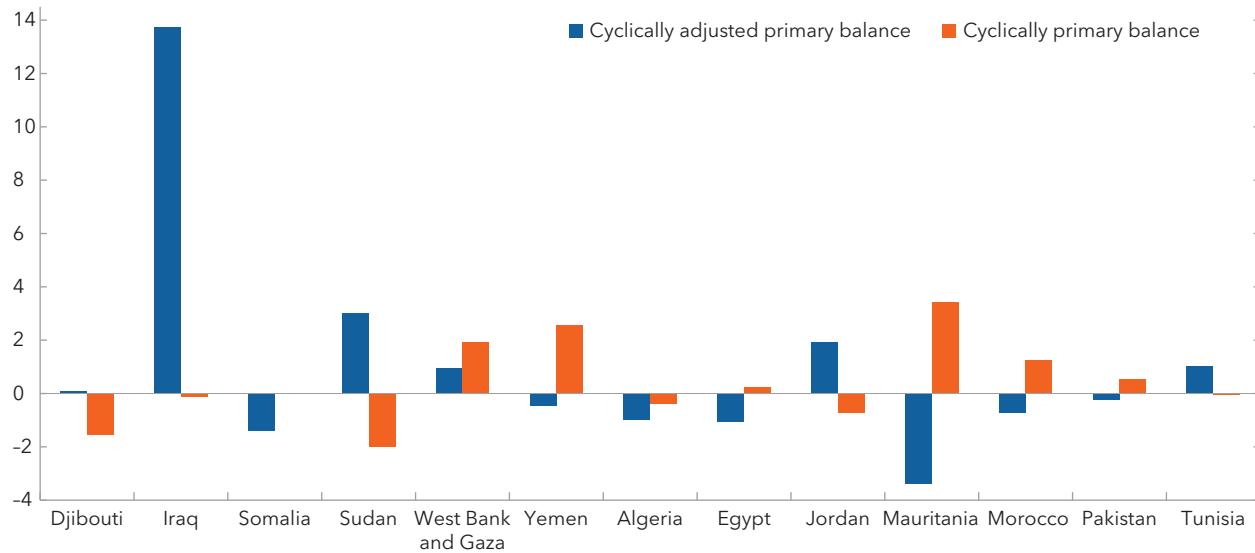
Sources: World Bank, World Development Indicators (2019); and authors' calculations.

Note: \*All variables are in percent of GDP unless noted otherwise.

## Annex 3. Cyclical and Discretionary Fiscal Response

Cyclical factors were the main drivers of the deterioration in primary balances following the pandemic shock. For 2020, we estimate the median cyclical hit to public finances from lower revenue and higher spending at about 1.0 percent of trend GDP. Cyclical factors accounted for most of the widening in primary balances relative to trend GDP in 40 percent of the country sample, and in another fifth about half of the deterioration in primary deficits was cyclical (Annex Figure 3.1). This excludes hefty revenue losses for hydrocarbon exporters from the collapse in international oil and gas prices: Algeria, Iraq, and Libya recorded declines in their budget hydrocarbon revenue of 9, 28, and 26 percent of their trend GDPs, respectively. The cyclical component of fiscal balances tended to improve in 2021, but the magnitude of the recovery was insufficient to reverse the losses recorded in 2020 in about two-thirds of MENAPEG's economies. The pandemic-related shock to revenue and profitability in a large number of sectors such as transport, retail and tourism could have an enduring impact on tax revenue, for example if losses made by enterprises in 2020 and 2021 are carried forward or their income durably affected by the shock.

**Annex Figure 3.1. Primary Balance**  
(Percent of potential GDP, change 2020-21)



Sources: April 2022 *World Economic Outlook*; and IMF staff calculations.

Note: Data for Algeria and Iraq exclude hydrocarbon revenue and hydrocarbon GDP. Syria and Libya are excluded due to lack of data. Afghanistan and Lebanon are excluded due to lack of data for 2021.

Fiscal easing measures (Annex Table 3.1.) also contributed to the deterioration in fiscal balances, but their overall scope was modest (Annex Table 3.2.). Cyclically adjusted primary balances (CAPBs)—which reflect discretionary changes in the fiscal policy stance—widened in more than half the country sample in 2020 and 2021, pointing to fiscal policy loosening. However, while the crisis was unprecedented in modern times, the magnitude of the fiscal response in the MENAPEG region was by no means exceptional. We estimate the median deterioration in MENAPEG's CAPBs at 0.8 percent of trend GDP in 2020 and another 0.2 percent in 2021, resulting in a median cumulative fiscal easing of about 1 percent of trend GDP over two years.

**Annex Table 3.1. Discretionary Fiscal Response Measures to the COVID-19 Pandemic Shock**

<b>Category</b>	<b>Policy Measure</b>	<b>Country</b>
<b>Budget measures</b> (Fiscal cost reflected in deficit and balance sheet)	Spending (for example, health services and unemployment benefits)	Algeria, Djibouti, Egypt, Iraq, Jordan, Lebanon, Mauritania, Morocco, Pakistan, Somalia, Sudan, Tunisia,
	Capital grants and targeted transfers (for example, wage subsidies or direct transfer)	
	Tax measures (cut or deferrals)	
<b>Below-the-line or "off budgets" measures</b> (Fiscal costs reflected in increased debt and financing)	Equity injections to SOEs	Jordan, Morocco, Tunisia
	Loans to firms or households	
	Assets purchases (non-performing)	
	Debt assumption	
	Off-budget operations	
<b>Government guarantees</b> (No upfront cash flows but exposure to risk and potential future cost)	Umbrella guarantees to financial sector and other sectors	Egypt, Tunisia
	One-off guarantees to specific institutions/entities	
<b>Other contingent liabilities</b>	Quasi-fiscal operations	Egypt, Jordan

Sources: Category table from Balibek and others (2020); and country data from country authorities.

**Annex Table 3.2. Cyclically Adjusted Primary Balances**

	<b>Country</b>	<b>Cyclically Adjusted Primary Balance (Percent Change)</b>		<b>Cyclically Primary Balance (Percent Change)</b>	
		<b>2019-20</b>	<b>2020-21</b>	<b>2019-20</b>	<b>2020-21</b>
MENAPEG FSC	Djibouti	-0.8	0.1	-1.0	-1.6
	Iraq	-6.6	13.7	-9.9	-0.1
	Somalia	0.2	-1.4	-0.1	0.0
	Sudan	-2.8	3.0	3.0	-2.0
	West Bank and Gaza	1.5	1.0	-3.3	1.9
	Yemen	2.1	-0.5	0.8	2.6
MENAPEG non-FSC	Algeria	-1.4	-1.0	-3.2	-0.4
	Egypt	0.5	-1.1	0.2	0.2
	Jordan	-2.5	1.9	1.3	-0.7
	Mauritania	1.2	-3.4	-1.0	3.4
	Morocco	-1.5	-0.7	-1.6	1.3
	Pakistan	2.0	-0.2	-0.6	0.6
	Tunisia	-2.5	1.0	-2.0	-0.1

Source: IMF staff calculations.

Note: FSC = fragile and conflict affected state.

This is less than the median single-year fiscal easing of 1.2 percent of trend GDP at the onset of the global financial crisis (GFC) in 2007. The discretionary fiscal response to the Arab spring was even larger, comprising 1.3 percent of trend GDP in 2011, and a cumulative 3 percent of GDP over the first three years following it.

Large debt burdens and wide pre-pandemic deficits likely constrained the discretionary fiscal response. MENAPEG faced the pandemic crisis with its public finances significantly weakened by previous shocks, including the GFC, repeated episodes of social unrest, and large fluctuations in commodity prices. Regional debt burdens and deficits stood at a median 67 percent and 10.3 percent of GDP, respectively, in 2019, versus 48 percent and 0.7 percent in 2006, just before the onset of the GFC. Amid constrained fiscal spaces, many governments strove to offset the cost of discretionary fiscal measures through spending reallocations, resulting in only a small effective fiscal impulse. Illustrating efforts to contain the fiscal cost of the COVID-19 crisis, nominal budget spending fell or stabilized relative to pre-pandemic projections almost in all countries (excluding Libya, Morocco, Sudan, and Tunisia).

## Methodology

The calculation of the cyclical primary balance (CPB) and cyclically adjusted primary balance (CAPB) follows the approach presented in Fedelino, Ivanova, and Horton (2009). This decomposition of the overall fiscal balance aims to distinguish between the deficit impact of discretionary policy actions, reflected in the change in the CAPB, and that of macroeconomic developments, as reflected in the change in the CPB.

The CAPB is calculated as:

$$CAPB_t = R_t \left( \frac{Y_t^P}{Y_t} \right)^{\varepsilon_R} - G_t \left( \frac{Y_t^P}{Y_t} \right)^{\varepsilon_G} \quad (A1)$$

where  $R_t$  is nominal primary budget revenue in year  $t$ , defined as government revenue minus interest income;  $G_t$  is nominal primary expenditure, defined as government expenditure minus interest payments;  $Y_t^P$  is the potential output;  $Y_t$  is actual output;  $\varepsilon^R$  is the elasticity of revenue with respect to the output gap and  $\varepsilon^G$  is the elasticity of expenditure with respect to the output gap.

We follow the common assumption in the literature and Fedelino and others (2009) by setting the elasticity of revenue to the output gap to one and assuming that expenditures are not affected by the cycle, with an elasticity equal to zero. Substituting for the numerical values of elasticities in equation (A1), the CAPB is defined as:

$$CAPB_t = R_t \left( \frac{Y_t^P}{Y_t} \right) - G_t \quad (A2)$$

Similarly, the CPB is calculated as:

$$CPB_t = OB_t - CAPB_t + INT_t \quad (A3)$$

where  $OB_t$  is the overall fiscal balance and  $INT_t$  is the net interest payment in year  $t$ .

Both the CAPB and the CPB are expressed in percent of potential output.

For Algeria and Iraq, as hydrocarbon exporting countries, government revenue excludes hydrocarbon revenue, and nominal GDP excludes hydrocarbon GDP. Country data on government revenue, government oil revenue, expenditure, interest revenue, interest expenditure, nominal GDP, nominal non-oil gross domestic product, and potential output (when available) are based on the April 2022 *World Economic Outlook* (WEO). Data on the government overall balance are based on the April 2022 *Regional Economic Outlook: Middle East and Central Asia*.

The potential output is not available in the WEO database for Djibouti, Mauritania, Pakistan, Somalia, Sudan, and the West Bank and Gaza. For these countries, potential output is proxied by the trend component of GDP extracted by applying a Hodrick-Prescott (HP) filter to GDP data.

## Annex 4. Template for Statement of Fiscal Risks

### Macroeconomic Risks

This section should:

Provide a brief qualitative discussion of the key macroeconomic risks, both upside and downside;

Present sensitivity analysis of the impact on the main fiscal aggregates (revenue, expenditure, deficit, and debt) of changes in key economic assumptions (for example, oil price, wheat price, interest rates, inflation, GDP, and possibly the exchange rate);<sup>1</sup>

Include a discussion of how macroeconomic and fiscal outcomes have different from forecasts in recent years, and set out the main reasons for these differences.

### Nonfinancial Public Enterprises

This section should provide:

An overview of the financial performance and the position of the nonfinancial public enterprise (NFPE) sector and of the largest entities;

Details of government support or explicit contingent liabilities to the sector (including subsidies, capital transfers, or guarantees (cross-referencing section on loan guarantees);

A description of the policy framework for NFPEs (dividend policy, pricing policy, and any noncommercial obligations).

**Annex Table 4.1. Financial Performance Indicators of the Largest NFPEs**

	Cost Recovery Ratio (Op. Rev./Op. Exp.)	Net Operating Profits (% of GDP)	Solvency Ratio (Total Assets/Total Liability)	Liquidity Ratio (Current Assets/Current Liabilities)	Total Liabilities (% of GDP)
Entity					
Entity					
Entity					
.....					

Source: IMF staff.

### Financial Sector

This section should:<sup>2</sup>

<sup>1</sup> For an example of macroeconomic analysis of fiscal risk, see the UK Office for Budget Responsibility's "Economic and Fiscal Outlook," July 2015.

<sup>2</sup> For an example of the discussion of the fiscal risks created by the financial sector, see the Finnish Ministry of Finance's Overview of Central Government Risks and Liabilities 2015 (publication 11b/2015).

Provide a discussion of the soundness of the financial system (with reference to some key financial indicators, such as capital adequacy ratios and proportion of nonperforming loans) drawing on and referencing the Central Bank or Monetary Authority's financial stability report;

Provide a reference to any explicit guarantees provided to the banking system, including for deposits;

Provide an overview of the liabilities of the financial sector, broken into SOEs and private entities;

Outline mitigating measures to protect the soundness of the financial system, including prudential regulations and reference any stress test results.

**Annex Table 4.2. Liabilities and Summary Indicators of the Financial Sector**

	2020	2019	2018
<b>Liabilities</b>			
Total liabilities of the financial sector (percent of GDP)			
Deposits of government-owned institutions			
Deposits of other institutions			
<b>Soundness and risk indicators</b>			
Regulatory capital to risk weighted assets			
Return on average equity			
Liquidity ratio			
Nonperforming loans as percentage of total			
Loans to deposits			
Growth in credit to private sector (%)			

Source: IMF staff

## Public-Private Partnership and Power Purchasing Contracts

This section should:

Provide a summary of the PPP and PPA programs, including the policy and management framework;

Provide a list of PPP and PPA projects and discussion of new contracts;

Provide the cumulative overall multiyear fiscal commitments of the PPP and PPA programs and gross exposure from guarantees and other contingent commitments attached to PPP and PPA contracts.

This section could also provide an estimate of what government liabilities would be under current PPP contracts if the government were to report on a basis consistent with IPSAS 32, International Public Sector Accounting Standard on service-concession arrangements.

## Debt Management

This section should:

Outline the policy and institutional arrangements for government borrowing, and provide headline figures on the composition of the debt portfolio and projected issuance and maturities;

Discuss the key risks to the debt portfolio (including sensitivity analysis of key parameters, such as interest rates);

Provide an overview of the government's strategy for managing public debt, and refer to the Medium-Term Debt Management Strategy for a more detailed discussion.

#### Local Authorities

This section should note (and quantify if possible) to what extent the spending and debts of local governments are included in the main forecast. It should also discuss limits on and procedures for local government debt issuance, for example, whether central government or MoF permission is needed in order to borrow.

#### Explicit Contingent Liabilities

##### Loan Guarantees

This section should:

Provide details on the value of outstanding loan guarantees, as well as details of guarantees above a certain threshold, including their features and the beneficiaries.

Describe the recent performance of existing guarantees, including any payments made by the government to service guaranteed loans, recoveries, or revenue from any guarantee fees.

**Annex Table 4.3. Loan Guarantees**

	2022 (est.)	2021	2020	2019	2018
Outstanding stock of guarantees					
Payments (calls)					
Budgeted					
Actual					
Revenues (fees and recoveries)					
Budgeted					
Actual					

#### Other Contingent Liabilities

This section should provide an overview of other contingent liabilities, such as legal proceedings against the state, indemnities, and letters of comfort.<sup>3</sup>

#### Any Other Material Fiscal Risks

Other material fiscal risks may constitute events that are not captured in the budget because their timing or magnitude is not known. Material fiscal risks are those risks that, if omitted or misstated, could influence the decisions or assessments made on the basis of this statement.

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<sup>3</sup> For an example of the reporting of legal cases, callable capital, and indemnities and warranties, see the Australian Commonwealth Government's Statement of Risks, Statement 8 in Budget Paper 1 for the 2015–16 Budget.

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