WORLD BANK MIDDLE EAST AND NORTH AFRICA REGION

MENA ECONOMIC UPDATE

REFORMS AND EXTERNAL IMBALANCES

THE LABOR-PRODUCTIVITY CONNECTION IN THE MIDDLE EAST AND NORTH AFRICA

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MENA Economic Update

Reforms and External Imbalances: The Labor-Productivity Connection in the Middle East and North Africa

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Contents

Figures

Tables

Box

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Abbreviations

CA	Current Account Balance
EMBI	Emerging Market Bond Index
FDI	Foreign Direct Investment
GCC	Gulf Cooperation Council
GDP	Gross Domestic Product
GVC	Global Value Chain
ILO	International Labour Organization
IMF	International Monetary Fund
MIGA	Multilateral Investment Guarantee Agency
MENA	Middle East and North Africa
MNACE	Middle East and North Africa Office of the Chief Economist
MPO	World Bank's Macro and Poverty Outlook
OEC	MENA oil-exporting countries excluding the GCC
OIC	MENA oil-importing countries
PPP	Purchasing Power Parity
SOE	State Owned Enterprise
UAE	United Arab Emirates
UNWPP	United Nations World Population Prospects
VAT	Value Added Tax
WEO	World Economic Outlook

Overview: Low Growth and External Imbalances – The Labor-Productivity Connection

World Bank economists expect economic growth in the Middle East and North Africa (MENA) to continue at a modest pace of about 1.5 to 3.5 percent during 2019-2021, with some laggards and a few emerging growth stars. In late 2018, The World Bank called on the leaders of the Middle East and North Africa (MENA) to aim high. We called for a set of aspirational, but attainable, goals in the digital-economy space (Arezki and Belhaj 2018). If the economies of MENA achieve those goals, they will not only have leapfrogged many advanced economies in terms of coverage and quality of cellular and broadband services, they will register notable advancements in digital payments.[1] This installment of the Middle East Economic Update series, published every six months by the MENA Office of the Chief Economist, makes a more subtle point about a slow-moving emerging challenge for the region's economies: Reducing macroeconomic vulnerabilities in some economies is inextricably linked to an all-out effort to create an advanced digital economy (the so-called Digital Moonshot) and other structural reforms. The link, surprisingly, is aggregate labor productivity.[2]

This report argues that the economics are clear and the evidence strong for such a link. While some MENA economies have maintained what this Update calls "unexplained" current account balances for several years, fiscal policy has lost some of its historical role as a driver of the current account. In addition, the region's capacity to recirculate savings from one country to another also seems to have weakened, most notably since 2014, when the global restructuring of the oil market became abundantly apparent (see Arezki and others, 2018a). The declining movement of savings across borders suggests that regional economies that tended to finance trade and current account deficits of other economies now face declining current accounts themselves. In the medium- to long-run, therefore, existing excess current account deficits must shrink gradually rather than wait until souring capital flows force current account deficit reversals upon MENA economies.

The closing of external imbalances can be accomplished gradually, but only if structural reforms are implemented quickly, because a fundamental driver of the deficits appears to be historically low growth and low aggregate labor productivity. The Moonshot can help; it is about setting ambitious but attainable goals that require structural reforms that can garner broad support from MENA's decision makers and civil society alike. This report thus also discusses additional, perhaps more difficult structural reforms, that complement the digital Moonshot.

The rest of this report is organized as follows. Chapter 1 summarizes the World Bank's latest growth forecasts for MENA during 2019-2021. It also puts these projections in perspective by

[1] See Arezki and Belhaj (2018).

[2] Aggregate labor productivity is defined here as the ratio of GDP over the working age population. This ratio tends to rise when unemployed labor finds work, when total factor productivity rises, or when aggregate investment rises. Hence any reforms, including those associated with the Digital Moonshot, that aim to create jobs, raise productivity or stimulate private investment are likely to raise GDP per worker. This report argues, based on empirical evidence, that improvements in aggregate labor productivity help reduce current account deficits.

comparing the implied Gross Domestic Product (GDP) per capita growth rates to the region's performance since 2011 and relative to the typical growth rates of economies with similar levels of development. In turn, the chapter assesses the role of external factors as determinants of the region's growth rates, arguing that the key risks are associated with a global growth slowdown that could cause declining growth in the demand for the region's exports. Oil prices are unlikely to play a major role, although oil-price forecasts remain uncertain. From a long-term perspective, however, evidence from MNACE's new model of potential growth driven by external factors suggests that external factors explain less than 30 percent of MENA's (average) growth performance, although in some oil economies this share rises to 60 percent. Consequently, growth needs to come from within the region in the years ahead. Structural reforms are needed.

Chapter 2 turns to the fundamental drivers of current account deficits around the world and in MENA. The international evidence from another new MNACE model indicates that both demographic changes and (relative) aggregate labor productivity are fundamental drivers of an economy's current account balance. However, current forecasts of aggregate labor productivity growth and demographic changes are unlikely to help close excess current account deficits in affected MENA economies when the region's capacity to recirculate savings across regional borders is being tested. Thus, structural reforms capable of raising aggregate labor productivity in MENA are urgent, along with the Digital Moonshot.

Chapter 3 concludes by discussing an agenda of structural reforms in the context of the Moonshot challenge. It covers areas of economic policy associated with potential gains in growth and productivity, but in which MENA's experience and current circumstances are unique from an international perspective. More specifically, the chapter discusses reforms in fiscal policies, trade-related policies, social protection and labor markets, and state-owned enterprises (SOEs) in network industries. The time for structural reforms in MENA has arrived.

Chapter 1 : MENA's Growth Prospects

Chapter 1's takeaways

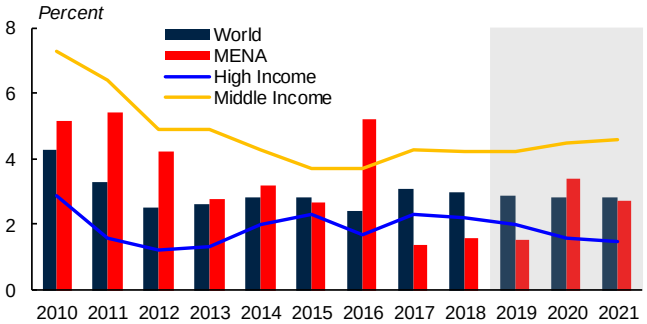
- World Bank economists expect the Middle East and North Africa Region (MENA) to grow at a modest rate of 1.5-3.5 percent during 2019 to 2021.
- Emerging growth stars include Egypt, Djibouti, and, potentially, Iraq.
- The main risk to growth emanating from the global economy is the expected growth slowdown of MENA's largest export markets, including the European Union and the United States.
- The modest expected pickup in growth does not change the long-term picture of lackluster growth of GDP per capita and persistent current account deficits in several developing economies of MENA.

This chapter reviews the latest World Bank growth forecasts for MENA and first focuses on the growth prospects for 2019, followed by discussions of the forecasts for 2020-21. The analysis provides details concerning the various economies of the region, which are grouped by levels of development and the extent of their dependence on oil. The role of external factors as drivers of MENA growth rates is highlighted. Finally, the chapter argues that low growth rates of GDP per capita appear to be a long-standing challenge for the region, and the expected modest increase in GDP growth rates in the years covered by the forecasts do not alter this conclusion.

Growth Prospects in 2019

Growth Prospects of the Middle East and North Africa

Figure 1.1 Growth in MENA and the World



Source: World Bank.
Note: Middle income countries include upper middle income countries and lower middle income countries. Shaded area indicates forecasts. Data for 2018 are estimates. Aggregate growth rates are calculated using constant 2010 U.S. dollar GDP weights.

Real GDP growth in the MENA region is expected to continue at a modest pace of 1.5 percent in 2019 on average (see Figure 1.1 and Table 1.1), down from an estimated growth of 1.6 percent in 2018, under the clouds of weaker global growth and global financial-market volatility. The expected growth is led by developing oil importers, such as Egypt, which accounts for roughly 8 percent of MENA's GDP. Gulf Cooperation Council (GCC) countries' growth is expected to be stable while Iran's economy is expected to contract further.

Table 1.1 Growth, Current Account and Fiscal Deficit Forecasts

	Real GDP Growth *percent*					Real GDP per capita Growth *percent*					Current Account Balance *percent of GDP*					Fiscal Balance *percent of GDP*				
	2017	2018e	2019f	2020f	2021f	2017	2018e	2019f	2020f	2021f	2017	2018e	2019f	2020f	2021f	2017	2018e	2019f	2020f	2021f
MENA	**1.4**	**1.6**	**1.5**	**3.4**	**2.7**	**-0.6**	**-0.2**	**-0.1**	**1.8**	**1.3**	**-0.1**	**2.4**	**1.1**	**1.3**	**1.2**	**-6.2**	**-3.7**	**-4.8**	**-3.7**	**-3.3**
Developing MENA	**2.9**	**1.2**	**0.9**	**3.6**	**2.7**	**1.2**	**-0.4**	**-0.6**	**2.1**	**1.3**	**-2.8**	**-2.1**	**-4.0**	**-3.2**	**-3.0**	**-5.2**	**-4.3**	**-6.3**	**-5.2**	**-5.0**
Oil Exporters	**0.9**	**1.1**	**0.9**	**3.1**	**2.3**	**-1.1**	**-0.7**	**-0.8**	**1.5**	**0.8**	**1.5**	**4.2**	**2.5**	**2.8**	**2.6**	**-5.8**	**-2.8**	**-4.3**	**-3.1**	**-2.7**
GCC	**-0.2**	**2.0**	**2.1**	**3.2**	**2.7**	**-2.4**	**0.0**	**0.3**	**1.5**	**1.2**	**2.6**	**7.1**	**6.2**	**5.9**	**5.4**	**-7.1**	**-3.1**	**-3.2**	**-2.1**	**-1.6**
Bahrain	3.8	2.0	2.0	2.2	2.8	-0.9	-3.0	-2.5	-1.5	0.1	-4.5	-5.8	-3.9	-3.6	-3.4	-14.2	-11.7	-8.4	-7.7	-7.4
Kuwait	-3.5	1.5	1.6	3.0	2.9	-5.6	0.1	0.4	1.7	1.5	5.9	10.4	7.6	6.1	5.7	-9.0	-1.6	-3.4	-1.6	-2.6
Oman	-0.9	2.1	1.2	6.0	2.8	-5.7	-2.1	-2.3	3.0	0.4	-15.3	-5.7	-10.3	-6.1	-4.9	-12.9	-7.7	-12.2	-8.6	-6.4
Qatar	1.6	2.1	3.0	3.2	3.4	-1.1	0.0	1.2	1.5	1.7	3.8	7.5	7.5	7.8	7.7	-5.8	2.0	1.3	2.0	2.3
Saudi Arabia	-0.7	2.2	1.7	3.1	2.3	-2.8	0.3	0.0	1.4	0.7	1.5	8.4	6.9	6.8	6.2	-9.2	-4.6	-5.2	-4.1	-3.3
United Arab Emirates	0.8	1.6	2.6	3.0	3.2	-0.6	0.1	1.1	1.6	1.9	6.9	7.2	7.8	6.4	5.6	-1.6	-1.6	0.6	1.0	1.3
Developing Oil Exporters	**2.5**	**-0.3**	**-0.9**	**3.0**	**1.6**	**0.9**	**-1.8**	**-2.4**	**1.6**	**0.1**	**-0.2**	**-0.2**	**-3.3**	**-2.1**	**-1.9**	**-3.9**	**-2.5**	**-6.0**	**-4.7**	**-4.4**
Algeria	1.4	1.5	1.9	1.7	1.4	-0.4	-0.2	0.3	0.2	-0.1	-13.6	-7.6	-8.1	-6.8	-6.7	-8.7	-6.0	-8.5	-5.1	-4.0
Iran	3.8	-1.6	-3.8	0.9	1.0	2.7	-2.6	-4.8	0.0	0.1	3.5	0.5	0.0	0.5	0.9	-1.8	-4.8	-5.4	-5.5	-5.4
Iraq	-1.7	0.6	2.8	8.1	2.3	-4.6	-2.2	0.1	5.4	-0.3	2.1	4.9	-6.9	-3.6	-3.6	-1.7	6.2	-5.4	-2.6	-2.9
Libya	26.7	7.8	4.0	6.0	1.3	25.4	6.3	2.5	4.6	0.0	2.5	1.7	-3.9	-3.6	-5.6	-34.5	3.9	-4.2	-1.5	-2.9
Yemen, Rep.	-5.9	-2.7	2.1	10.0	8.5	-8.4	-5.1	-0.2	7.8	6.3	-0.1	0.0	0.7	-1.9	-3.0	-4.9	-4.4	-5.1	-5.5	-3.2
Developing Oil Importers	**3.5**	**3.8**	**4.0**	**4.5**	**4.7**	**1.8**	**2.2**	**2.6**	**3.1**	**3.4**	**-7.7**	**-5.7**	**-5.3**	**-5.0**	**-4.7**	**-7.8**	**-7.5**	**-6.9**	**-6.2**	**-5.9**
Djibouti	4.1	6.0	7.0	7.5	8.0	2.5	4.5	5.5	6.1	6.6	-17.5	-15.4	-11.1	-8.0	-4.5	-4.9	-4.3	-2.0	-1.0	0.5
Egypt	4.2	5.3	5.5	5.8	6.0	2.2	3.4	3.7	4.0	4.3	-6.1	-2.4	-2.5	-2.6	-2.5	-10.9	-9.7	-8.6	-7.5	-7.0
Jordan	2.1	2.0	2.2	2.4	2.6	-0.5	-0.1	0.5	1.0	1.5	-10.6	-7.4	-8.2	-8.0	-7.7	-2.2	-3.3	-3.1	-3.2	-3.2
Lebanon	0.6	0.2	0.9	1.3	1.5	-0.7	0.0	1.4	2.1	2.5	-22.7	-20.6	-18.6	-17.7	-17.7	-7.0	-11.5	-12.4	-13.2	-13.3
Morocco	4.1	3.0	2.9	3.5	3.6	2.8	1.7	1.7	2.3	2.4	-3.6	-4.3	-4.0	-4.0	-3.8	-3.6	-3.6	-3.7	-3.2	-3.0
Tunisia	2.0	2.5	2.7	3.2	3.5	0.9	1.4	1.6	2.2	2.5	-10.6	-11.2	-10.0	-8.3	-7.9	-5.9	-4.6	-3.6	-3.0	-2.5
West Bank & Gaza	3.1	0.0	0.5	1.0	1.6	0.4	-2.7	-2.2	-1.6	-1.0	-10.6	-12.2	-10.3	-9.1	-8.4	-3.2	-5.2	-6.5	-6.5	-6.5

Source: World Bank, Macro and Poverty Outlook, and authors' calculations. Note: e = estimate, and f=forecast.
Data are rounded up to one digit. Data for Egypt correspond to the fiscal year (July-June). Syria is not included in the regional and sub-regional averages because of lack of data.

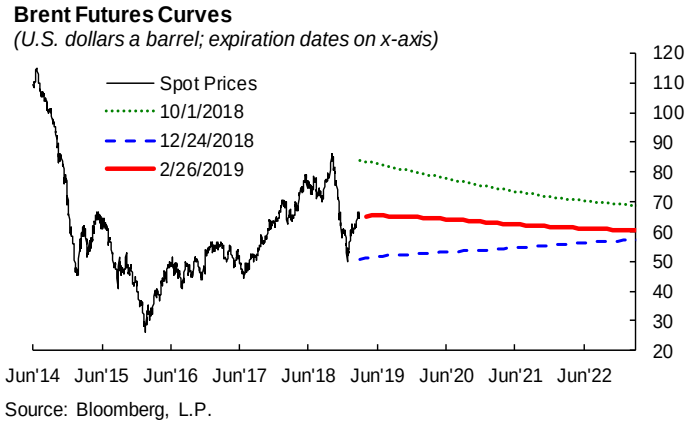
Compared with the World Bank's October forecasts, growth in 2019 for the MENA region on average is down by 0.8 percentage points, due partly to a downward revision of -3.4 percentage points for Iraq, in line with deferred growth related to the slow pace in reconstruction (see Table 1.2).

Table 1.2 Changes in Growth Forecasts

Real GDP Growth, percent	October Forecast			Difference (April 2019 - October 2018)		
	2018e	2019f	2020f	2018e	2019f	2020f
MENA	**2.0**	**2.3**	**2.8**	**-0.4**	**-0.8**	**0.6**
Developing MENA	**1.9**	**2.0**	**2.8**	**-0.7**	**-1.1**	**0.7**
Oil Exporters	**1.6**	**1.9**	**2.4**	**-0.5**	**-1.0**	**0.7**
GCC	**2.0**	**2.5**	**2.7**	**0.0**	**-0.4**	**0.5**
Bahrain	3.2	2.6	2.8	-1.2	-0.6	-0.6
Kuwait	1.5	3.1	3.1	0.0	-1.4	-0.2
Oman	1.9	3.4	2.8	0.2	-2.2	3.1
Qatar	2.3	2.7	3.0	-0.2	0.3	0.2
Saudi Arabia	2.0	2.1	2.2	0.2	-0.3	0.9
United Arab Emirates	2.0	3.0	3.2	-0.4	-0.4	-0.2
Developing Oil Exporters	**0.7**	**0.7**	**1.9**	**-1.0**	**-1.6**	**1.2**
Algeria	2.5	2.3	1.8	-1.0	-0.4	-0.1
Iran	-1.5	-3.6	1.1	0.0	-0.2	-0.2
Iraq	1.9	6.2	2.9	-1.3	-3.4	5.3
Libya	7.2	6.8	2.5	0.6	-2.8	3.5
Yemen, Rep.	-2.6	14.7	13.0	-0.1	-12.7	-3.0
Developing Oil Importers	**3.7**	**3.9**	**4.3**	**0.1**	**0.2**	**0.2**
Djibouti	6.7	7.3	7.5	-0.7	-0.3	0.0
Egypt	5.3	5.6	5.8	0.0	-0.1	0.0
Jordan	2.1	2.3	2.4	-0.1	-0.1	0.0
Lebanon	1.0	1.3	1.5	-0.8	-0.4	-0.2
Morocco	3.2	2.9	3.5	-0.2	0.0	0.0
Tunisia	2.4	2.9	3.4	0.1	-0.2	-0.2
West Bank & Gaza	1.7	1.9	1.9	-1.7	-1.4	-0.9

Note: Syria is not included in regional and sub-regional aggregates because of lack of data. All data are rounded up to one digit.

Figure 1.2 Spot and Forecasted Oil Prices, 2014-2023



Growth Prospects of Oil Exporters

The Brent oil price averaged $71 per barrel in 2018, up 31 percent from the previous year (see Figure 1.2). Most of the increase took place in the first three quarters of the year. Robust global demand for oil coupled with the resumption of U.S. sanctions on Iranian oil and disrupted production in Venezuela, contributed to the price recovery, which ended abruptly toward the end of 2018. With record-high production by both the United States and Saudi Arabia, plus U.S. waivers on Iran's oil exports to large oil consumers such as China and India, the Brent oil price dropped by 37 percent in the final 12 weeks of 2018. At the beginning of 2019, the price was around $53 per barrel, much lower than the average price in 2018.

In January 2019, voluntary supply cuts led by the Organization of the Petroleum Exporting Countries and Russia took effect. This round of reductions in oil production mitigated pressures from rising U.S. output and propped the oil price to $65 per barrel as of March 5, up 23 percent from January 1. The market expects the oil price to remain at roughly $65 per barrel for the rest of 2019.

With oil and gas dominating their exports, MENA oil exporters are expected to grow modestly at 0.9 percent in 2019, dragged down by the expected contraction in Iran on the back of U.S. sanctions. Improvements in both GCC economies and those of developing-country oil exporters should more than offset the expected contraction in Iran. The momentum in the growth forecast for oil exporters is partly the result of a mobilization of non-oil revenues following the oil-price slump. For example, the implementation of value-added taxes (VAT) in GCC countries, the rollout of expatriate levies by Saudi Arabia and the UAE, and the reduction of energy subsidy in Iran, Oman, and Saudi Arabia improved fiscal space enough to allow countries to increase capital expenditures in non-oil activities, mainly construction. Construction activities are expected to continue after the oil-price recovery, particularly in the GCC. On the other hand, oil revenue is not guaranteed to rise with the production cuts. If any increase in the price due to the production cuts does not exceed the cut in production volumes, revenue might not increase. Compared to the October forecast, the growth rate for oil exporters on average is revised downward by 1.0 percentage point, led by the downward revision to Iraq.

The GCC

Growth in GCC economies is expected to reach 2.1 percent in 2019, up by 0.1 percent from 2018—when growth rebounded from a 0.2 percent contraction in 2017 that was caused by production cuts and sluggish oil prices. The revival of growth is partly and indirectly the result of policies that reduced the GCC's reliance on oil revenues. Capital expenditure plans have been adopted by GCC

countries that can afford it. The UAE is pushing infrastructure investment to prepare for Expo 2020. Similarly, Qatar will continue construction activities in preparation for the 2022 soccer World Cup. Saudi Arabia's Vision 2030, embodied in its recently announced expansionary budget for 2019, aims to boost non-oil activity and enhance economic diversification partly by increasing capital expenditures. Earlier fiscal reforms are paying off in the form of fiscal space, which will support capital expenditures that are likely to boost growth in the short term.

Developing Oil Exporters

On average, the GDP of developing oil exporters in MENA is expected to decline by 0.9 percent in 2019, following a contraction of 0.3 percent in 2018. Growth forecasts, however, vary across economies in this group. While Iran is expected to contract sharply, notable expansions are expected in Iraq and Yemen. Real GDP in Iran is expected to have another recessionary year with -3.8 percent growth in 2019, after a 1.6 percent contraction in 2018, as oil output falls in part due to the U.S. sanctions. Meanwhile, following the end of war and the formation of a new government, Iraq is expected to grow at 2.8 percent in 2019, after a contraction of 1.7 percent in 2017 and a modest recovery of 0.6 percent in 2018. Spending on reconstruction could potentially boost the economy in the years ahead. World Bank economists expect a rapid recovery in Yemen in a potential scenario of contained violence, although the risks remain high.

Growth Prospects of Oil Importers

Oil importers, as a group, are expected to grow 4.0 percent in 2019, slightly up from a 3.8 percent growth in 2018, when tourists flocked back to the region, especially to Egypt and Tunisia. The uptick in tourism helped to modestly reduce trade imbalances and current account deficits. The expected economic performance of the region's oil importers is tightly linked to developments in oil-rich neighboring economies, particularly in the GCC. Capital inflows from rebounding oil exporters in the region as well as exports, FDI and remittances have had positive impacts. While these spillovers are subject to the oil-related uncertainty increased reliance on finance from international institutions such as the International Monetary Fund might help alleviate this vulnerability in the short run (The Economist Intelligence Unit 2018).

The World Bank anticipates that Egypt will be one of the top performers among MENA oil importers, with a growth rate forecast at 5.5 percent for 2019, the strongest since 2008. It has been driven by rising natural gas production, revitalized tourism, and higher government investment spending. Because rising revenues from VAT and income taxes have outpaced expenditures and subsidies have been cut several times, the fiscal deficit in Egypt has been narrowing for the past two years. Its primary fiscal balance is expected to reach a surplus of 1.8 percent of GDP in 2019. The improvement in the fiscal accounts, however, has also been aided by the improvement in growth itself. This synergy between growth and fiscal reforms is expected to continue in the near term.

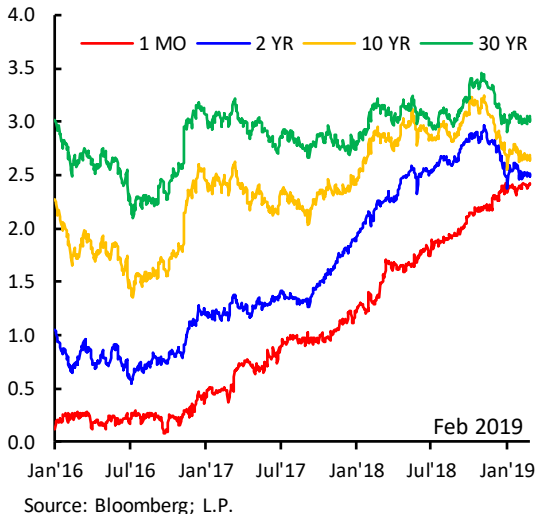
Lebanon faces economic challenges stemming from its debt burden—its debt-to-GDP ratio is expected to be around 151 percent in 2019. Lebanon's overall fiscal deficit is expected to rise to 12.4 percent of GDP in 2019, compared with 11.5 percent in 2018. About one-third of total spending is to service debt, which is expected to remain burdensome in the near future. On a

positive note, sovereign yields fell after Qatar's pledge to buy $500 million in Lebanese bonds.[3] The announcement of a new cabinet could further boost market sentiment after recent economic jitters, partly because of expectations that a new fiscal reform package will be forthcoming.

Growth in GDP-per-capita is lower than overall GDP growth in MENA. This is because MENA's population growth is among the highest in the world. More specifically, the region's weighted average per capita income is expected to contract by 0.1 percent in 2019, following a contraction of 0.2 percent in 2018 (see Table 1.1). In terms of GDP per capita, we expect GCC economies to post a modest recovery in 2019. However, Oman and Bahrain, both with positive real GDP growth forecasts for 2019, will experience negative growth in GDP per capita, owing to a 4 and 5 percent annual growth in population, caused by increases in the expatriate community. Developing oil importers are expected to grow 2.6 percent in per capital income while developing oil exporters are expected to face a 2.4 percent decline, largely because of an expected 4.8 percent reduction in GDP per capita in Iran.

Outlook and Risks for 2020-2021

Figure 1.3 U.S. Yield Curves



Source: Bloomberg; L.P.

In the medium term, the World Bank expects real GDP in the MENA region to grow at 3.4 percent and 2.7 percent in 2020 and 2021, respectively. The expected upswing from previous growth is partially driven by ongoing policy reforms to diversify the economy and strengthen the business environment (World Bank, Doing Business 2019). Oil-importing countries are leading growth with an expected 4.7 percent increase in real GDP by the end of 2021. Among them, Djibouti is expecting strong growth through the forecast horizon, reaching 8.0 percent in 2021, boosted by government investments aimed at establishing the country as a regional trade, logistics, and digital hub. In terms of GDP per capita, the MENA region is expected to recover by 1.8 percent in 2020 and 1.3 percent in 2021 (Table 1.1).

However, MENA's modest recovery will be insufficient to change its long-standing low growth in per-capita GDP. External factors by themselves are unlikely to be able to pull the region out of its growth doldrums.

The forecast of the Brent oil price is hovering around $60-$65 per barrel for the next five years (see the red line in Figure 1.2), subject to downward risks such as slowdowns in China and the European Union and continued expansion in U.S. oil production, which reached a record-high 12 million

[3] Lebanon's 10-year Eurobond yield fell from a peak of 11.7 percent in early January to 9.5 percent on March 1, 2019.

barrels-per-day in January 2019 (according to the U.S Energy Information Administration). Upward risks for the price of oil are US sanctions on Iran and Venezuela that will restrict their access to the international market, and potential supply disruptions in other major oil producers, such as Libya. These risks could dampen global oil supply and raise oil prices, if demand does not change.

There has been volatility in spot prices and market expectations for crude-oil prices. High uncertainty remains, as reflected in the fluctuations of recent oil-price forecasts (see Figure 1.2). While MENA's growth rates may change accordingly, given the best information available at the time of writing, oil prices are expected to remain flat, thus exerting little impact on 2020-21 growth forecasts for of the region.

Tightening global financial markets: A tightening U.S. monetary policy has been pushing up yields on U.S. treasury securities (see Figure 1.3), against which MENA sovereign bonds are priced. This could raise the costs of external borrowing for the region, although the upward pressure on interest rates had abated by January 2019.

This represents a downward risk for MENA economies because bond issuances across the region have increased since the start of 2016, especially among oil exporters—as large financial needs emerged during the oil price slump. The bond issuances gradually slowed on rebounding oil prices but have remained robust for both the GCC and oil importers. By 2021, as the gross external debt to GDP ratio is expected to reach 30 percent for the MENA region on average and 40 percent for GCC economies (Focus Economics, 2019), economic growth of both oil exporters and oil importers will be more vulnerable to external shocks on their financial conditions.

On the other hand, the inclusion of five MENA economies in JP Morgan's Emerging Market Bond Index (EMBI) is expected to attract capital inflows from international bond investors. Over the nine months starting January 2019, sovereign and quasi-sovereign issuers from Saudi Arabia, Qatar, the UAE, Bahrain and Kuwait will gradually enter the EMBI Global Diversified and EMBI Global (J.P. Morgan, 2019). These five economies together will eventually represent approximately 12 percent of both indices. This would significantly increase the demand for GCC sovereign bonds, as they become more tradable instruments, especially through investment from index-tracking funds (IMF, 2018b). Increased transparency could also boost investor's confidence, further easing the countries' access to global financial markets.

The slowdown in the European Union, the United States and China: The economies of MENA's key trading partners are expected to slow. The causes of the slowdown are a mixed bag of uncertainty brought by international trade tensions involving the EU, the US and China; withering of fiscal stimulus in the United States; and macroeconomic policy tightening in the U.S. (see World Bank 2019b).

The Euro area is MENA's most important trading partner, especially for the Maghreb (see Table 1.3). Based on 2016 trade statistics, gross exports to the Euro area were as large as 26 percent of GDP for Tunisia, and 16 percent for Morocco. The real growth rate in the European Union is expected to continue declining until 2021 (World Bank, 2019b). Moreover, the U.S. GDP growth rate is also expected to decline from 2.9 percent in 2018 to 1.6 percent in 2021. Despite supportive fiscal and monetary policies to offset the demand-dampening effects of higher tariffs, growth in China is expected to slow from an estimated 6.5 percent in 2018 to a still robust 6.2 percent in 2019, and to an average of 6.1 percent during 2020-2021.

Table 1.3 MENA's Export Shares to Major Markets in 2016 *(percent)*

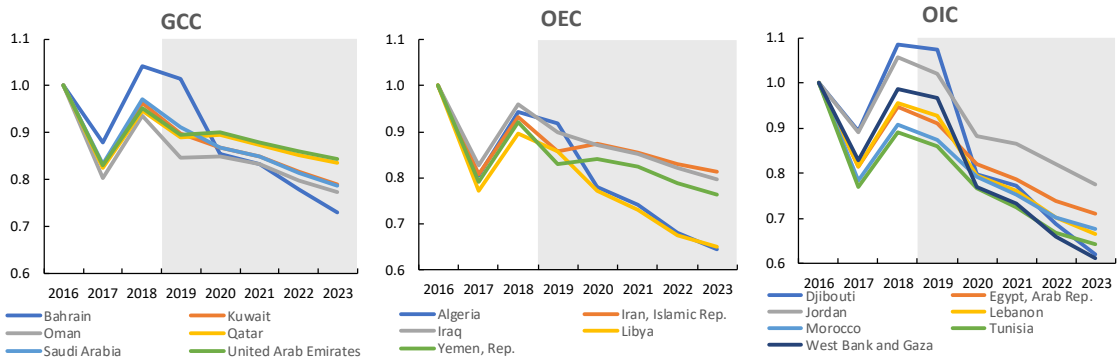
Country	Export Share in GDP				Export Share in Total Exports			
	USA	China	EU	India	USA	China	EU	India
Algeria	2	0	11	0	12	1	61	2
Iran	0	3	1	1	0	31	12	17
Iraq	4	6	7	6	13	22	22	20
Libya	0	0	7	0	3	4	53	0
Yemen	0	0	0	0	0	17	2	1
Bahrain	3	0	2	1	10	1	9	4
Kuwait	3	6	3	4	8	15	8	9
Oman	2	18	1	2	4	45	2	5
Qatar	1	3	4	5	2	7	10	13
Saudi Arabia	3	4	3	3	11	14	11	11
United Arab Emirates	1	3	3	5	2	6	6	12
Djibouti	3	0	3	0	25	0	25	2
Egypt	0	0	2	0	7	2	32	4
Jordan	4	1	1	2	24	3	6	13
Lebanon	0	0	1	0	4	1	18	1
Morocco	1	1	16	1	4	2	62	3
Tunisia	1	0	26	0	3	1	79	1
West Bank and Gaza	0	0	0	0	6	0	17	0

Source: Authors' calculations based on data from World Development Indicators and UN Comtrade.
Note: Due to data limitations, all export data are sourced from reports of imports from MENA countries' trading partners, namely the United States, China, the European Union, and India. "Export Share in GDP" displays MENA's country exports to the partner as in percentage of each MENA country's GDP. "Export Share in Total Exports" displays MENA's country exports to the partner as a percentage of the country's total exports in 2016. The weights for European Union are UN Comtrade's gross export between MENA countries and Europe (EU27).

As the economies of MENA's large trading partners slow, the growth in demand for exports from MENA economies will likely contract. A new index of external demand computed by MNACE shows declining trends in the growth of expected demand over the coming five years.[4] Figure 1.4 shows MNACE's index for the GCC, OEC and OIC economies. During the forecast horizon, OIC countries, especially for those in the Maghreb, will be hit hardest with trade closely tied to the slowing EU economy. For example, the annual growth of demand for Tunisia's exports is expected to drop from 1.9 percent in 2018 to 1.5 percent in 2021, and further to 1.4 percent by 2023, due to the expected contraction of the EU economy.

[4] The expected growth in demand for each MENA country is proxied by the weighted average of expected growth in its trading partners' domestic demand based on WEO projections, where the weight is the share of the MENA's country exports to the partner as a fraction of the country's total exports in 2016. The major trading partners are US, China, EU, and India. The index is then normalized to 2016 level to accentuate movements since then.

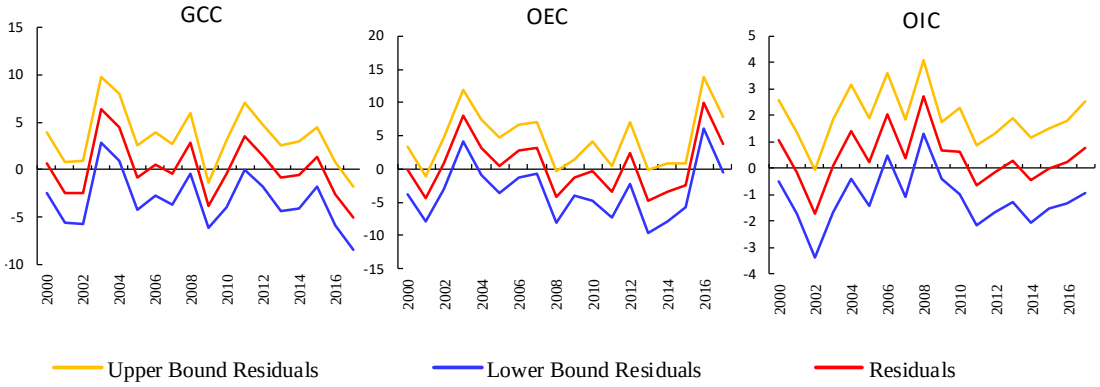
Figure 1.4 Expected Growth in Export Demand for MENA



Source: Authors' calculation based on data from World Economic Outlook and UN Comtrade.

More broadly, results of our potential-growth models indicate that historically (relying on national time series since the 1990s) external factors explain on average 28 percent of MENA's growth, ranging from 4.3 percent for Morocco to 61 percent for the UAE.[5] Figure 1.5 shows the differences between the growth rates predicted by five external factors and the actual growth rates, as well as their upper and lower bound estimates for the three MENA country groups. The evidence indicates that only the GCC as a group appears to be underperforming relative to the external drivers of growth in the last few years. The other oil exporters as a group appear to be performing above potential, while the oil importers are performing according the models' predictions.

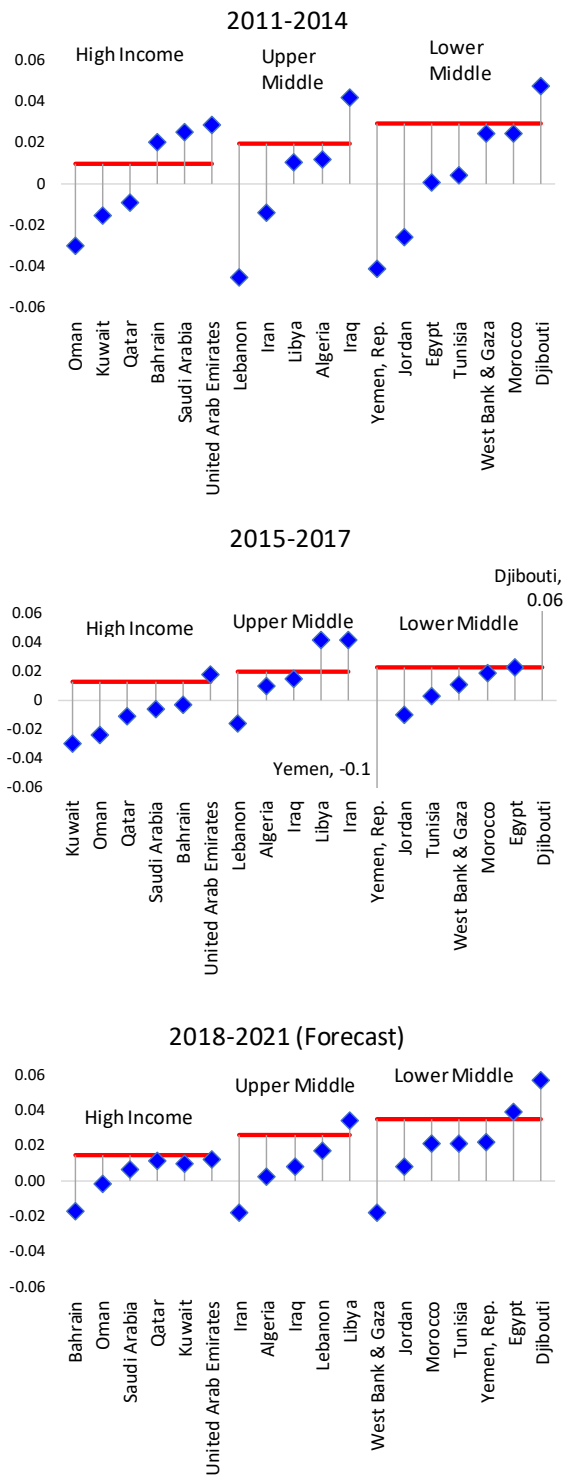
Figure 1.5 MENA's Growth Relative to Potential Growth Driven by External Factors (percent)



Source: External-factors growth model, MENA Chief Economist Office, based on data from World Development Indicators and World Economic Outlook, 1990-2017.

[5] The model regresses each MENA country's growth against the five selected global factors: changes in commodity prices (weighted by each country's net exports of commodities), the growth rates of the United States. European Union, and China, and the change in U.S. interest rates.

Figure 1.6 MENA's Search for Growth



Source: World Bank, Macro and Poverty Outlook, World Development Indicators, and Global Economic Prospects; International Monetary Fund, World Economic Outlook; and World Bank staff calculations.

Despite the expected modest uptick in regional growth expected for 2019-2021, MENA's growth rate will remain comparatively low. This is true not only relative to the rest of the world, but also when each country's growth performance is compared to the median (or typical) economy in their corresponding income-level groups. This is particularly true for the region's oil-importing developing countries.

Figure 1.6 shows average growth rates in per capita GDP for each MENA economy (represented by blue diamonds). It also shows the median growth rate of their corresponding income group (represented by red horizontal lines). While half of the GCC economies grew faster than their peers during 2011-2014—when oil prices were still high—all of them are projected to grow at a slower pace than a typical high-income country during 2018-2021. All upper middle-income countries in the region, except Libya, are also projected to underperform relative to the typical (median) upper-middle income economy. Most lower-middle-income countries in the region have been underperforming since 2011, with only Egypt and Djibouti expected to surpass the median of the country group in the near future. The following chapter explores the relationship between this historically lackluster growth performance and the persistence of external imbalances among MENA economies.

Chapter 2 : MENA's Current Account Balances and Aggregate Labor Productivity

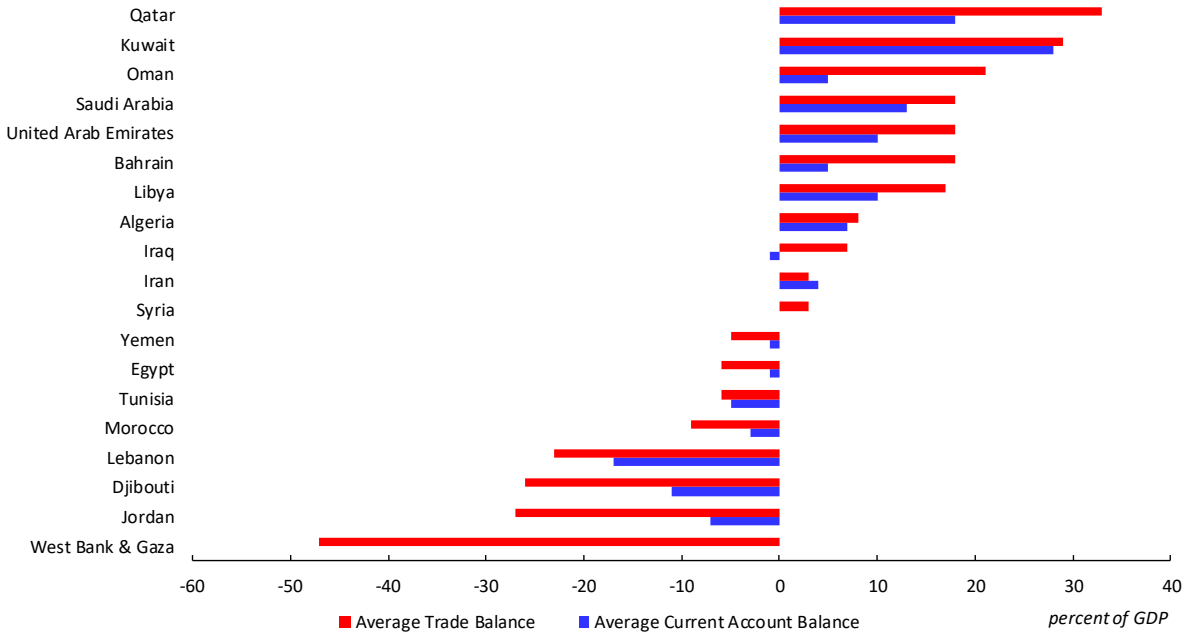
Chapter 2's takeaways

- Current account balances across MENA deteriorated during 2015-2017 to a greater extent than in any other region.
- The across-the-board deterioration in external balances has limited the ability of the region to recirculate savings from high-income oil exporters to developing economies with persistent current account deficits.
- The current account deficits of several economies are not explained by fundamentals.
- Fiscal policy is not a strong instrument for reducing external imbalances in certain economies; structural reforms capable of raising aggregate labor productivity are urgently needed although the region has a low risk of experiencing sudden reversals in capital inflows.

In addition to comparatively low economic growth, many MENA economies have persistent trade and current account deficits.[6] Many oil-importing countries—such as Lebanon, Djibouti, Morocco, Jordan, Tunisia, and Egypt—have been running large and persistent trade and current account deficits for more than a decade (Figure 2.1). Because of remittances and grants, current account deficits tend to be larger than trade deficits. In contrast, MENA's oil exporters have historically large current account surpluses, but that has changed in recent years.

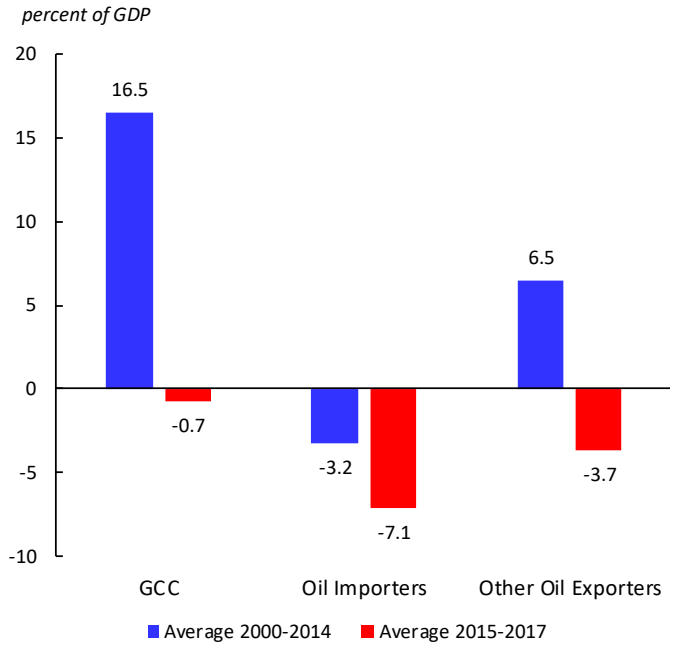
[6] The current account of the balance of payments is defined as the sum of the trade balance (goods and services exports minus imports), net income from abroad, and net current transfers. Remittances and grants are often reported as elements of the current account, which accounts for large differences between the current accounts and trade balances reported by economies that receive substantial inflows of remittances and grants. On reporting standards for the balance of payments, see IMF (2010).

Figure 2.1 Average Trade and Current Account Balances across MENA, 2000-2017



Source: Authors' calculations based on data from the World Economic Outlook and World Development Indicators

Figure 2.2 The Decline of MENA's Current Account Balances



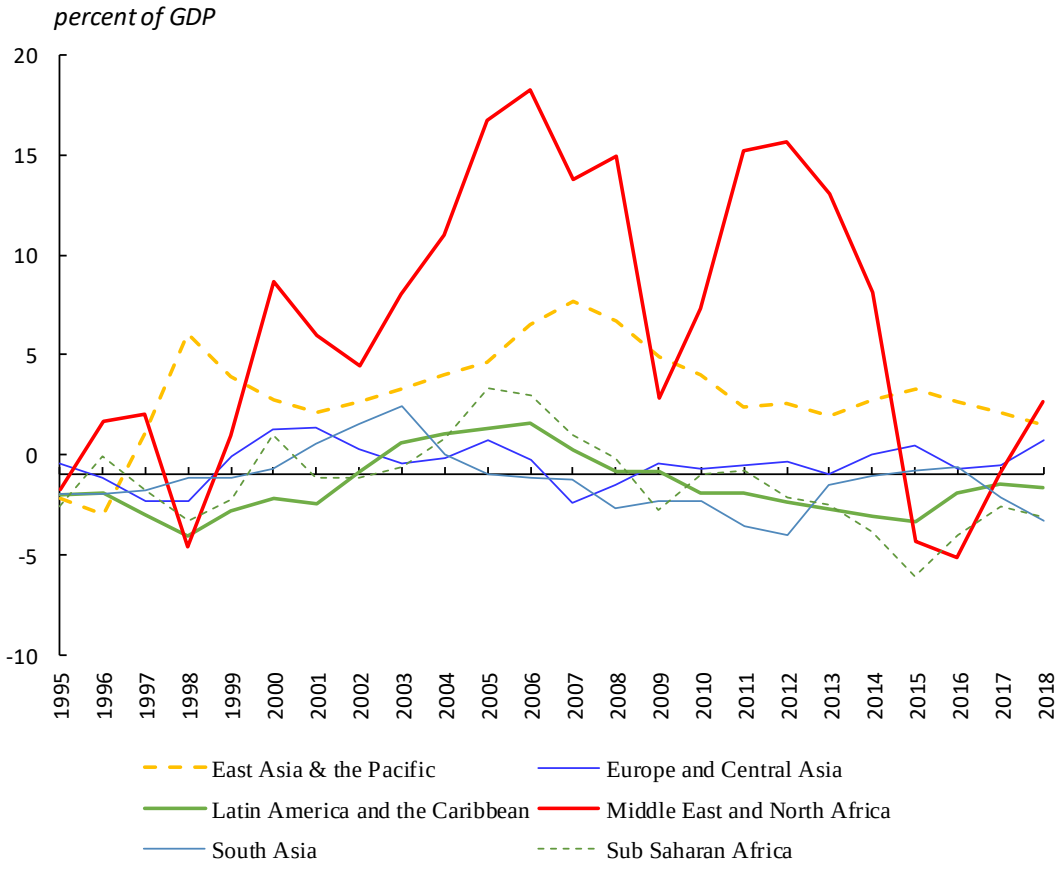
Source: Authors' calculations based on data from the IMF's World Economic Outlook database.

MENA's current account balances are declining. The declines are broad-based across country groups (see Figure 2.2) but are most noticeable for the GCC. Average current account balances for the GCC dropped from a large surplus of 16.5 percent of GDP between 2000 and 2014 to a small deficit of 0.7 percent of GDP during 2015-2017. These developments could have implications for the future financing of other MENA economies' current account deficits (and public-sector financing needs).

Furthermore, among all of the world's regions, the decline in current account balances in MENA in the last few years is the most dramatic. Figure 2.3 shows total current account balances as a percentage of output for six regions. The MENA region's current account

balance dropped from a surplus of around 15 percent of GDP in 2011 to a deficit of close to 5 percent of GDP in 2015 and 2016—although the current account balance improved in 2017. And World Bank forecasts predict that the region's current account balance will continue to improve during 2018-2021, but only modestly (see Table 1.1).

Figure 2.3 The Decline in MENA's Current Account Balance in Comparative Perspective, 1995-2017



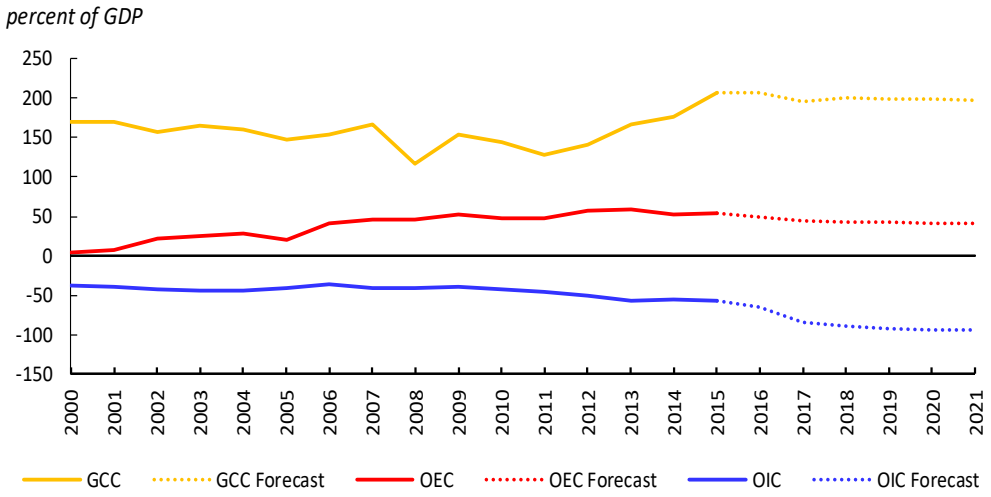
Source: Authors' calculation based on data from the World Economic Outlook.
Note: The lines capture average current account for country groups weighted by GDP.

Persistent current account deficits can be unsustainable in the long run. A closely related concept, an economy's Net Foreign Asset (NFA) position, represents the accumulation of assets from investments abroad minus the value of foreign-owned assets in the domestic economy. When an economy has a negative NFA, foreigners own more domestic assets than the value of the economy's assets abroad. In principle, an economy cannot accumulate negative NFA forever; a downward trajectory in NFAs might not be sustainable.

NFA data, first introduced by Lane and Milesi-Ferretti (2007) and available through 2015, show oil importers' NFA steadily declining. These are the countries with large, persistent current account deficits. On the other hand, NFA positions of the GCC and other oil exporters, until 2015, improved, thanks to the accumulated current account surpluses of previous years. Although later data are unavailable, it is likely that the NFA position of the GCC and other oil exporters experienced a downward shift during the oil-price decline after 2015. In fact, Figure 2.4 shows that

under the assumption that the market valuation of foreign assets remains constant after 2015, the NFA trend of the GCC flattens out in positive territory, while that of other oil exporters turns downward but remains in positive territory. But the trend for oil importers remains in the red and dips further downward and continues in a downward trajectory well into the forecast period up to 2021. It is worth asking, therefore, whether fiscal policy alone can improve current account balances and change the trajectory of NFAs in MENA.

Figure 2.4 Net Foreign Asset Positions of MENA

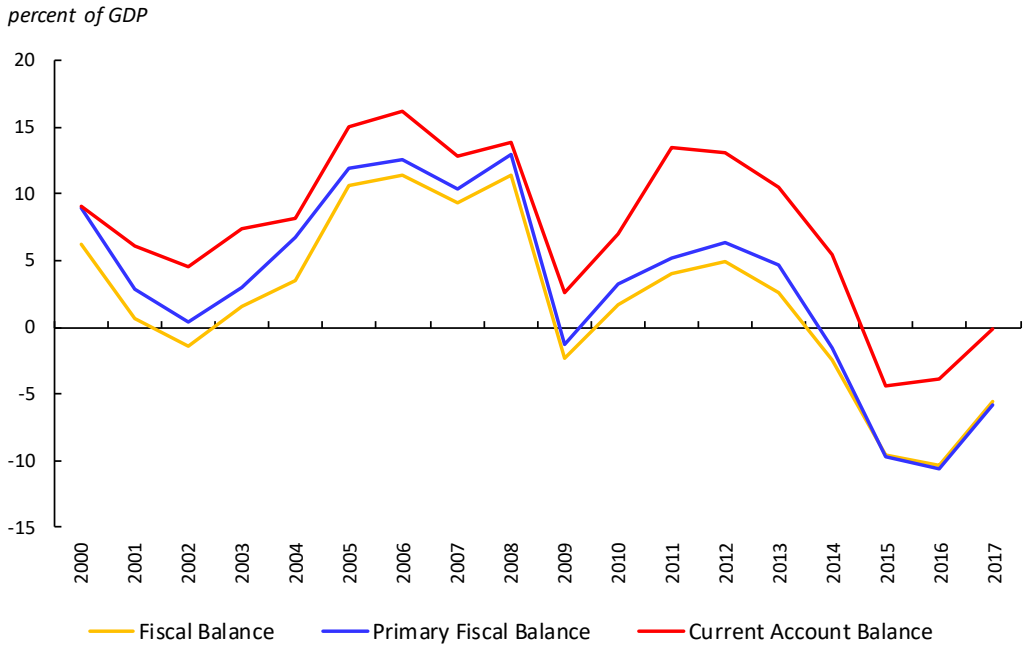


Source: Lane and Milesi-Ferretti (2007); Forecasts are based on authors' calculcations.

Fiscal and Current Account Balances in MENA

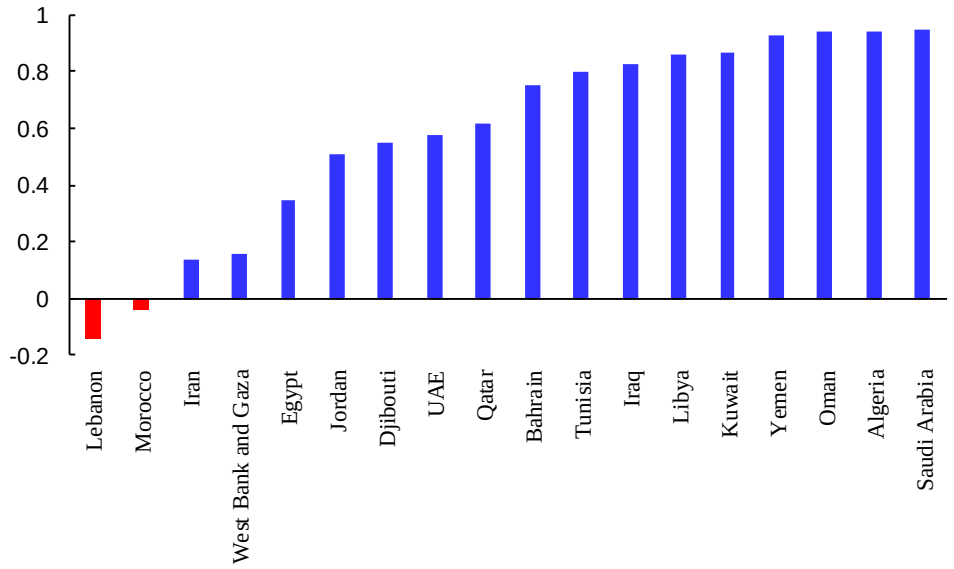
The MENA region has experienced continuous deficits in both current account and fiscal balances at least since 2015 (see Figure 2.5). However, the co-movement of current account and fiscal balances is weaker in some MENA countries than in others (see Figure 2.6). The extreme case is Lebanon, where fiscal and current account balances were negatively correlated during 2000-2017, with a correlation coefficient of -0.14. For Morocco, this coefficient was -0.04. At the other end of the spectrum, the current account and fiscal balance moved almost in lockstep for some, with a correlation of 0.95 for Saudi Arabia, and 0.94 for Algeria and Oman. It is noteworthy that the correlation between fiscal and current account balances tends to be higher among oil exporters than among oil importers. The more fundamental issue concerns the economics of the co-movement between the fiscal and current accounts.

Figure 2.5 MENA's Twin Deficits, 2000-2017



Sources: World Bank, World Development Indicators; International Monetary Fund, Fiscal Monitor Database and MCDREO database, and World Bank staff calculations.
Note: Lines indicate constant 2010 USD GDP weighted average. All MNA countries except for West Bank and Gaza are included in calculation of fiscal and current account balance. Due to data limitation, only Algeria, Egypt, Iran, Kuwait, Libya, Morocco, Oman, Qatar, Saudi Arabia, United Arab Emirates, and Yemen are included in the calculation of weighted average of MNA primary fiscal balance.

Figure 2.6 Correlations between Current Account and Fiscal Balances across MENA, 2000-2017



Sources: World Bank, World Development Indicators; International Monetary Fund, Fiscal Monitor Database and MCDREO database, and World Bank staff calculations.

Conceptually, fiscal balances reflect the *net* savings rate of the public sector, while current account balances reflect the *net* saving rate of the whole economy, encompassing both the public and private sectors. A positive correlation between the current account and fiscal balances implies one of three scenarios:

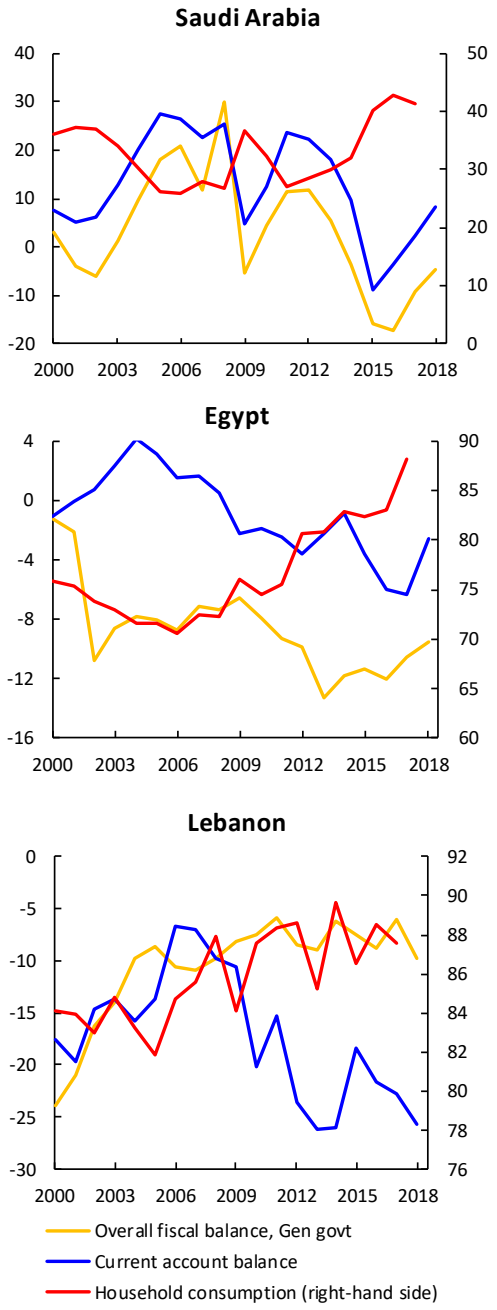
- A relatively small private sector, so that public savings drives aggregate savings, producing a very high and positive correlation;
- Public and private savings move independently so that improvements in fiscal balances improve current account balances but by a small proportion;
- Private and public saving rates move together so that the resulting correlation is both positive and close to one. The latter is likely the case in situations where fiscal policies have strong multiplier effects; that is, when improvements in the fiscal balance lead to less private consumption (or higher public deficits lead to higher private consumption).

When the correlation is high, fiscal consolidation efforts are likely to also help reduce external imbalances.

In contrast, a negative correlation or even low positive correlations could be the result of systematic co-movement between public sector savings or fiscal balances and private-sector consumption or dissaving. In cases where current account and fiscal balances do not move together closely—as is the case in Lebanon, Morocco, Jordan, and Djibouti—policymakers might have to rely more on boosting aggregate labor productivity to gradually reduce their current account deficits.

The key point is that private consumption fluctuations relative to fiscal balances will determine the effect of fiscal policies on the current account. There might be non-economic reasons for observing a given correlation between fiscal and external balances. More specifically, there might be low correlation between the central government's fiscal and account balances in economies with large SOEs and/or sub-national public sectors with balance sheets that are not reflected in and do not move in tandem with the central government's fiscal accounts. In the following examples, we assume that reporting and accounting issues are not a factor.

Figure 2.7 Fiscal Balances, Current Account Balances and Household Consumption in Lebanon, Egypt and Saudi Arabia, 2000-2018, percent of GDP



Source: World Bank, World Development Indicators

To illustrate how trends in private consumption affect the co-movements between fiscal and current account balances, we examine three countries in MENA: Lebanon (where the current account-fiscal balance correlation is the lowest), Saudi Arabia (the highest) and Egypt (just below the median). In the case of Lebanon, fiscal and current account balances started to diverge around 2008 (see Figure 2.7). Although the fiscal balance has improved slightly since then, private consumption continued its rise, thus pushing the current account balance into deeper deficits. At the other extreme, in Saudi Arabia, fiscal and current account balances have moved in lockstep because public and private consumption rise and fall together. In Egypt, fiscal and current account balances moved in opposite directions in some periods and in the same direction in other periods. What stands out from the Egyptian case is that household consumption largely moves consistently with the current account balance. When household consumption fell from 2000 to 2004, the current account improved. When consumption rose from 2006 to 2018, the current account fell into deficit. Indeed, the current account kept falling even after the fiscal deficit began to improve, precisely because private consumption more than offset the turnaround in the fiscal accounts. In sum, due to the diverse experiences associated with trends in private consumption and fiscal outcomes, MENA has a wide range of correlations between the fiscal and current accounts. In the medium term, therefore, we are likely to continue to see the region's economies in which fiscal retrenchment might have only modest effects on the current account, particularly in the oil-importing economies (see Figure 2.6). Consequently, gradual adjustments of the current account deficits in these countries might require urgent structural reforms capable of raising aggregate labor productivity.

Determinants of the Current Account

As mentioned above, a key question remains unanswered: What are the fundamental drivers of the current account? Are commodities, particularly oil, prices the main driver? This sub-section examines the extent to which MENA's current account positions are driven by its countries' long-term fundamentals and external factors, such as commodity prices and the policy implications that result. If a large part of MENA's current account deficits is explained by long-term fundamentals and external factors, a policy response would largely be unnecessary because the deficits themselves could be viewed as being sustainable. On the other hand, if a large portion of MENA's current account deficits is not explained by these long-term fundamentals and external factors, then policy actions might be needed to reduce excess deficits to bring them closer to what might be justified by long-term fundamentals.

The Office of the Chief Economist for MENA (MNACE) developed a model of the relationship between the current account and a country's fundamentals. In general, fundamentals can affect an economy's current account by influencing national savings or the difference between the value of output and domestic consumption (so-called domestic absorption). Any factor that raises output more than consumption is likely to improve the current account. In line with the academic literature, the selected fundamentals included in the model are demography (dependency ratios and aging speed), expected changes in economic growth, relative productivity and exposure to commodity price fluctuations:[7]

- ***Demography and savings***. The composition of an economy's population can affect the balance between national income and consumption, or savings, and thus the current account. More specifically, national savings rise as dependency ratios fall, thus improving the current account. Since the savings associated with fewer children or fewer older dependents are likely to be of different magnitudes, the model includes two dependency ratios. Young-age dependency captures the ratio of children (younger than 15 years old) to the working-age population (15-64 years old). Old-age dependency captures the ratio of the elderly (those older than 64 years old) to the working-age population. The third proxy for demography is aging speed, which is the annual change in the old-age dependency ratio. When this ratio changes rapidly, family savings can rise in anticipation of future expenditures associated with the elderly. Hence it is plausible that current accounts can improve in economies where the population is aging fast (relative to the rest of the world).

  Demographic statistics, including the projections, account for refugees, who make up a large share of population in countries like Lebanon and Jordan. The United Nations Population Division's total population estimates incorporates migration data to its population estimates and forecasts. These estimates include refugee inflows and outflows (United Nations 2017).

- ***Forecast growth and domestic savings.*** If an economy's growth is expected to accelerate, it would likely run a current account deficit because it could use future resources derived from faster expected growth to pay for today's investment or consumption. The model includes a proxy for expected growth acceleration, which relies on historical data from IMF forecasts.

[7] Other research in this area, such as IMF (2013), has a longer list of fundamentals. This report considers fundamentals that are likely unaffected by an economy's short-term economic performance.

- ***Aggregate labor productivity and net savings***. Aggregate labor productivity is simply the ratio of GDP to the working-age population. Economies with high labor productivity relative to other countries are likely to have higher domestic savings. Thus, unless improvements in output per worker are accompanied by disproportionate increases in domestic consumption, improvements in aggregate labor productivity are associated with improvements in the current account. The model utilizes the lagged ratio of an economy's output (measured in terms of Purchasing Power Parity, or PPP) to the size of its working age population relative to the United States (the economy assumed to be at the "frontier" of highest productivity). However, if capital flows into less productive economies, it is possible that that such inflows can be associated with declines in the current account as inflows raise domestic investment and consumption. Consequently, the impact of productivity on the current account might itself depend on the openness of the capital account. The model thus includes the interaction between the openness of the capital account and relative labor productivity.
- ***Commodity prices and the trade balance***. The trade balance of an economy can be determined by fluctuations in commodity prices. When prices rise, trade balances improve for net exporters of commodities while net importers experience a decline. In turn, when the trade balances change, so do the current account balances. Hence the model takes commodity prices and commodity-trade balances into account. This variable is particularly relevant for MENA countries, because many are major oil exporters and significant food importers. By the same token, if food prices increase, food-importing countries' current account positions are expected to deteriorate. For example, the widening of current account deficit in Tunisia in 2007 and 2008 caused by food imports should be captured by the index.
- ***Exchange rate regimes***. Fixed exchange rate regimes could be subject to real exchange rate misalignments, which affect the current account. For example, the real exchange rate could become undervalued in good times and overvalued in bad times because of the inability of the nominal exchange rate to adjust when domestic prices do not respond quickly to changes in demand. The MNACE model controls for three types of exchange-rate regimes: fixed exchange rate regimes, crawling pegs or managed floats, and free floats. In addition, the exchange rate regime variables interact with relative labor productivity to assess the extent to which the regimes affect the response of current accounts to changes in labor productivity.

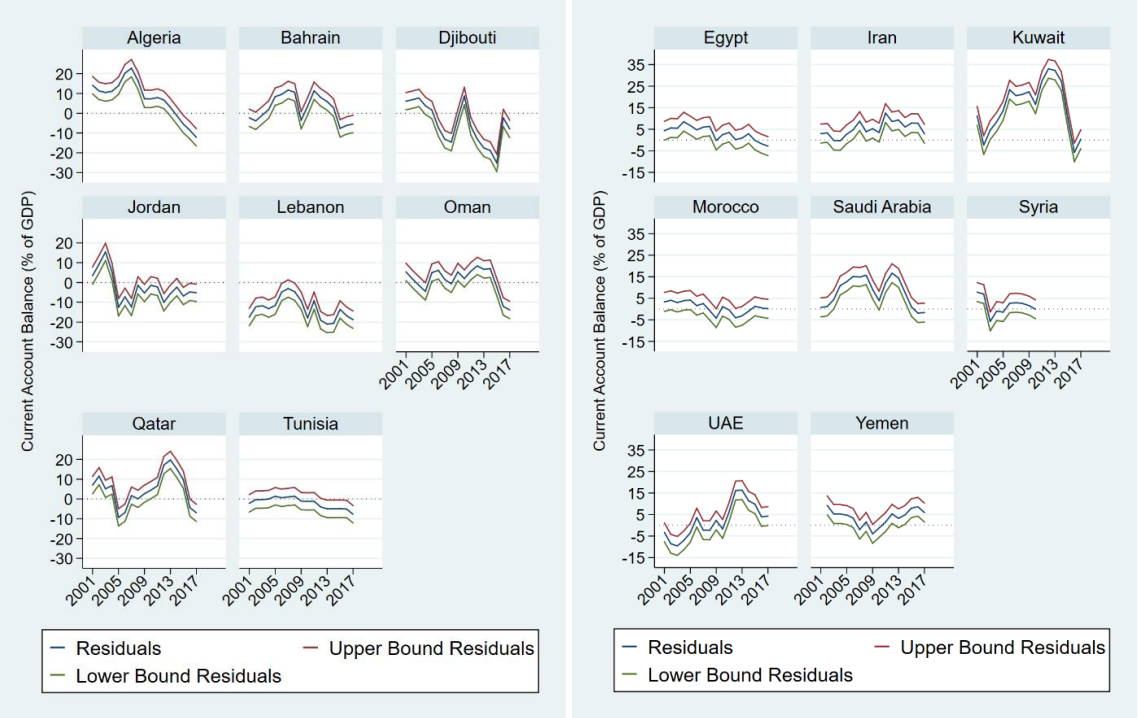
The MNACE model has three specifications (see the Appendix). The results are broadly consistent with the predictions discussed above. In addition, results from an auxiliary model on national savings rates suggest that the selected explanatory variables affect the current account through their influence on national savings. The key issue, however, is whether MENA's observed current account balances are fully explained by the fundamentals.

MENA's Unexplained Current Account Balances

Eight MENA economies have negative current account balances that cannot be explained—that is, the predicted current account balances are larger than the actual current account balances. The unexplained component is calculated as the residuals from the main specification of the MNACE model, which is the difference between the actual current account balance and the predicted current

account balance. We also calculate the upper and lower bounds of the unexplained current account balance (that is, of the residuals) for all MENA countries.

Figure 2.8 Eight MENA Economies Have "Unexplained" Deficits that Are Not Driven by Fundamentals



Source: Authors' calculations based on the MNACE's current account model.

MENA countries can be divided into two groups, depending on their unexplained deficits. Eight economies— Algeria, Bahrain, Djibouti, Jordan, Lebanon, Oman, Qatar and Tunisia—had current account balances statistically significantly *lower* than their predicted current account balances (see left-hand side of Figure 2.8). In other words, their upper bound residuals were lower than zero in 2017. The second group— Egypt, Iran, Kuwait, Morocco, Qatar, Saudi Arabia, UAE and Yemen—had actual current account balances that were *not* statistically *lower* than their predicted current account balances (see right-hand side of Figure 2.8).[8] Table 2.1 shows the actual and predicted CA balances in 2017.

[8] GDP estimates for Yemen begin in 2008. Unexplained current account data for Libya and Iraq are not available because the Chinn-Ito index (of capital openness) does not include them. Unexplained current account data for Syria has not been available in recent years because of the lack of PPP GDP data.

Table 2.1 Actual and predicted current account for 2017

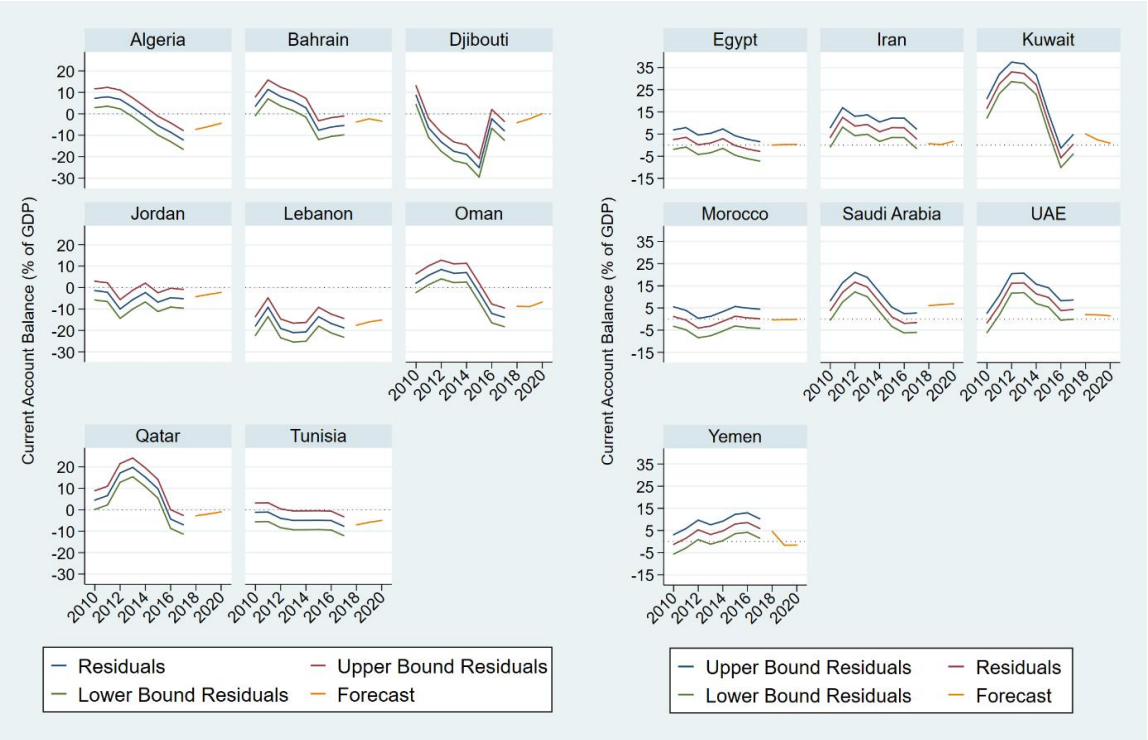
Country	Year	Actual CA Balance (percent of GDP)	Predicted CA Balance (percent of GDP)
Algeria	2017	-13.19	-0.99
Bahrain	2017	-4.53	0.91
Djibouti	2017	-13.80	-5.86
Egypt	2017	-6.31	-3.48
Iran	2017	2.20	-0.66
Jordan	2017	-10.61	-5.37
Kuwait	2017	5.91	5.54
Lebanon	2017	-22.83	-4.02
Morocco	2017	-3.59	-3.72
Oman	2017	-15.20	-1.30
Qatar	2017	3.85	10.85
Saudi Arabia	2017	2.22	3.85
Tunisia	2017	-10.49	-2.79
United Arab Emirates	2017	6.92	2.65
Yemen	2017	-3.95	-9.85

Source: Authors' calculation based on data from World Economic Outlook and the MNACE's current account model.

Forecasts of the unexplained current account for 2018-2020 are based on projected economic growth (from the World Bank's October 2018 edition of the Macro and Poverty Outlook) and demographics (from the United Nation's World Population Prospects). For the forecasts, we assume that other fundamentals, such as capital account openness (the Chinn-Ito Index), and the commodity price index would remain unchanged. The latter is consistent with the aforementioned forecasts for the price of oil. Figure 2.9 shows the forecasts until 2020.

For the first group, expected changes in growth and demographics will not close the current account gaps. The model predicts that the excess unexplained current account deficits will shrink during 2018-2020 (see Figure 2.9, left panel) but, except for Djibouti, will remain negative. In other words, in the short run, excess current account deficits will not be sufficiently reduced by demographic changes and the currently expected growth rates in aggregate labor productivity. Moreover, in countries where the correlation between fiscal balances and current account balances is low (see Chapter 1), steps to reduce deficits and debt loads (so-called fiscal consolidation) might not suffice either. Structural reforms might be needed soon to ensure that that labor productivity can rise faster than currently expected. The elements of the structural-reform agenda are explored in Chapter 3.

Figure 2.9 Forecasts of Unexplained Current Account Balances



Source: Authors' calculations based on results from MNACE's current account model.

MENA Countries are not at Risk of Costly Current Account Reversals in the Short Term

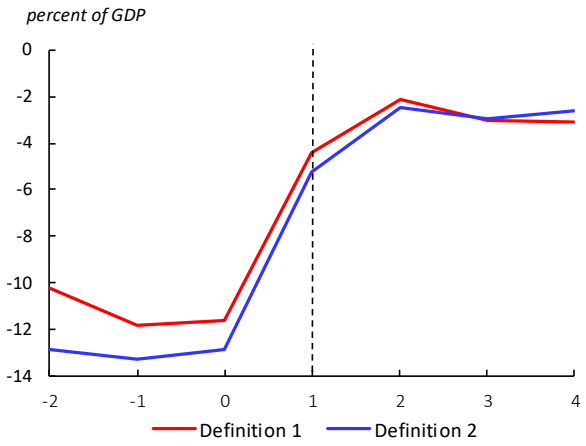
Even if the current account deficits are sustainable, are they subject to, and at risk of, costly reversals? We answer this question by first identifying current account reversals and examining their associated output costs.

To identify countries and times of current account reversals in our data, we follow the definition of a current account reversal proposed by Milesi-Ferretti and Razin (1998), which we call Definition 1. For a country to have experienced a current account reversal, the following conditions must be met:

- The average current account deficit three years prior to the event exceeds 4 percent of GDP.
- The average current account deficit over the next three years is reduced by at least one third.
- The largest deficit after the reversal must be no larger than the smallest deficit in the three years preceding the reversal.

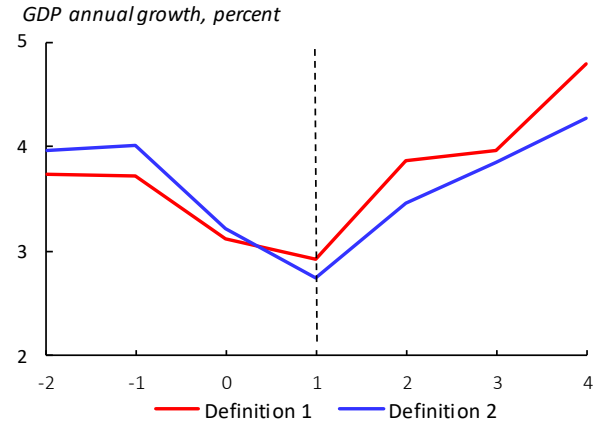
Reversals associated with giant oil discoveries are not considered because such finds improve current account positions (Arezki and others, 2017). Moreover, reversals that coincide with large changes in commodity prices are also dropped from the analysis. Based on this definition, we identified 198 current account reversals between 1984 and 2015, of which 10 occurred in the MENA region.

Figure 2.10 Anatomy of Current Account Reversals – Current Account Balances



Source: Authors' calculation based on data from the IMF's World Economic Outlook database.
Note: Reversal happens at t=1

Figure 2.11 Growth Slowdowns during Current Account Reversals



Source: Authors' calculation based on data from the IMF's World Economic Outlook database.
Note: Reversal happens at t=1

An alternative definition of current account reversal is considered, which we call Definition 2. In this definition, the first and third conditions are the same, while the second condition requires that the average reduction in the current account deficit is at least 3 percent of GDP. Based on this definition, there were 187 incidents of current account reversals, 15 in the MENA region, between 1984 and 2015.

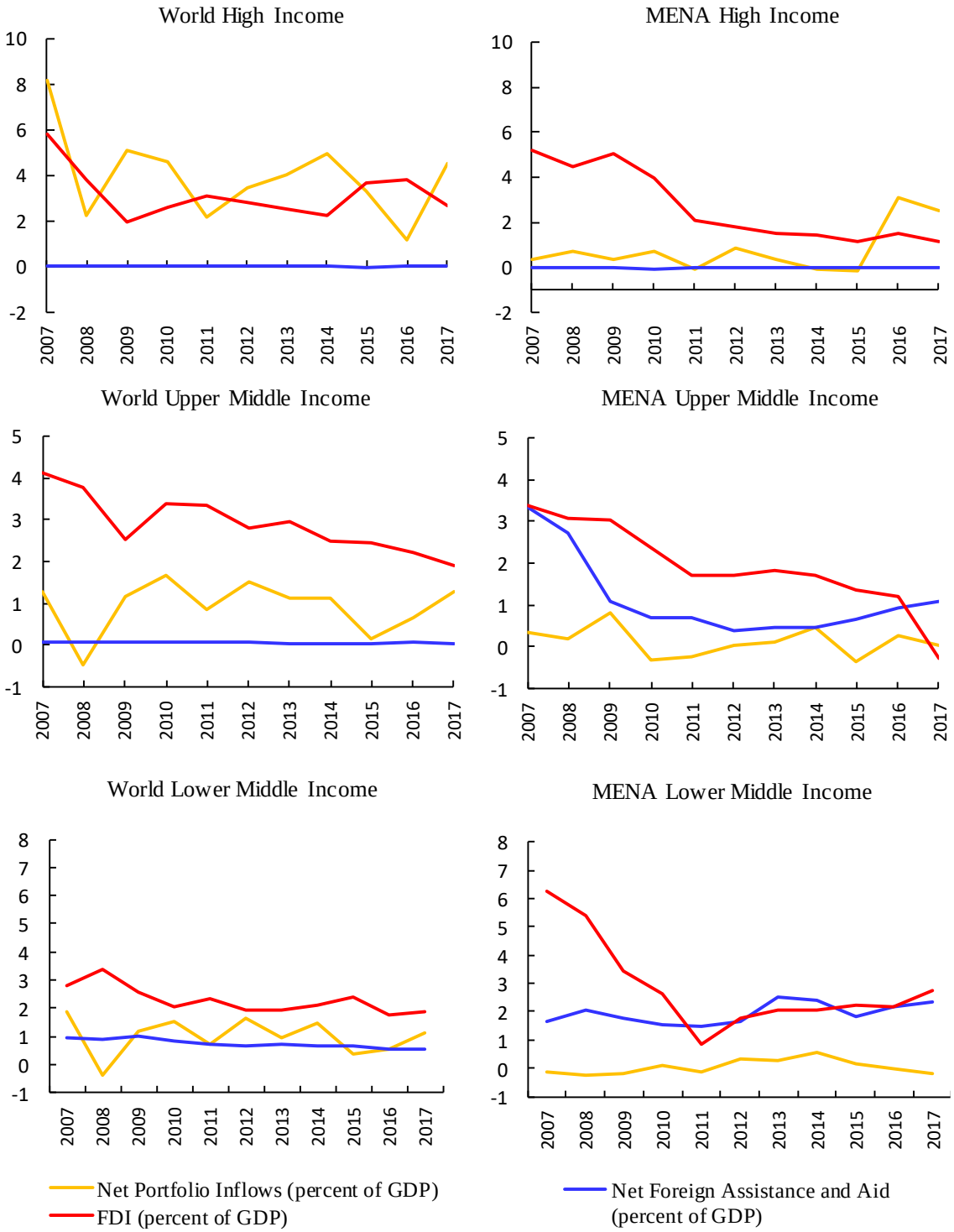
Under both definitions, the current account balance follows a similar path of adjustment (see Figure 2.10). Current account deficits were on average at 12 percent of GDP before the reversals. They narrowed to 4 to 5 percent at the time of the reversals and further narrowed to 2 to 3 percent of GDP in subsequent years.

A current account reversal can be costly. It is usually accompanied by changes in the direction of capital flows after a period of large current-account deficits. A reduction in external funding forces adjustment measures. For example, governments must cut public investment and essential social programs. Similarly, private sectors, facing less external financing, must reduce investment and employment. This can hurt growth and cause social unrest.

Data reveal a significant output cost at the time of the reversals. Figure 2.11 shows that average output growth started to plummet two years before a reversal. The time of a reversal marks the lowest growth (of around 3 percent under Definition 1 and 2.8 percent Definition 2). Growth, on average, only begins to recover after the reversal[9].

[9] To ascertain that these growth declines associated with episodes of current-account reversals are due to the reversals and not common trends affecting all economies, not just those experiencing reversals, additional analyses compare output growth around the time of the reversals to economies that did not experience current-account reversals in those years. The evidence suggests that GDP growth at the time of reversals are statistically significantly lower than non-reversal periods by about 0.73 percent (for Definition 1) and 0.91 percent (for Definition 2).

Figure 2.12 MENA Has More Official Assistance and Aid than Other Countries with the Same Income



Source: Authors' calculations based on data from the World Development Indicators.

Note that the current account reversals include episodes driven by external triggers (such as the "sudden stops" in external financing described by Calvo. 1998), which are growth-hampering, and those driven by internal reforms, which are growth-enhancing. Hence, we would expect the output cost of an externally driven current account reversal would be larger than those estimated here.

Statistically, the MENA region seems less vulnerable to current account reversals than the rest of the world. Under Definition 1, the historical likelihood of a reversal for MENA is 2.0 percent, which is smaller than the 4.44 percent for the rest of the world. Under Definition 2, the likelihood is 3.03 percent for MENA and 4.02 percent for the rest of the world. In another crisis dataset that covers the period from 1970-2011 (Valencia and Laeven, 2012), the historical likelihood of a MENA country experiencing a currency crisis, sovereign debt crisis or sovereign debt restructuring is 4.7 percent, while for the rest of the world it is 5.5 percent.

MENA's capital account composition seems less susceptible to sudden stops because it consists largely of the more stable FDI and official assistance loan inflows and less portfolio investment inflows when compared to countries from corresponding income groups. Figure 2.12 presents *net inflows* (that is, from foreigners) of FDI, official assistance, and portfolio investment as a percentage of GDP for MENA and the rest of the world, by income groups. While MENA countries have FDI inflow patterns similar to those in the rest of the world, lower middle-income and higher middle-income MENA countries have significantly higher official assistance inflows (represented by the blue lines) and less portfolio investment inflows (the yellow lines). Because official assistance inflows are less volatile and more counter-cyclical (arriving in greater amounts in bad times) than portfolio investment, poorer MENA countries are less vulnerable to sudden stops. On the other hand, they rely on a steady inflow of official assistance, which in the long run might not continue. Therefore, there is a need to implement productivity-enhancing reforms now so that over time, as the reforms take effect, productivity will accelerate its rise, and current accounts can gradually come into balance. The next chapter explores various elements of this structural reform agenda.

Chapter 3 : Structural Reforms in Search of Aggregate Labor Productivity

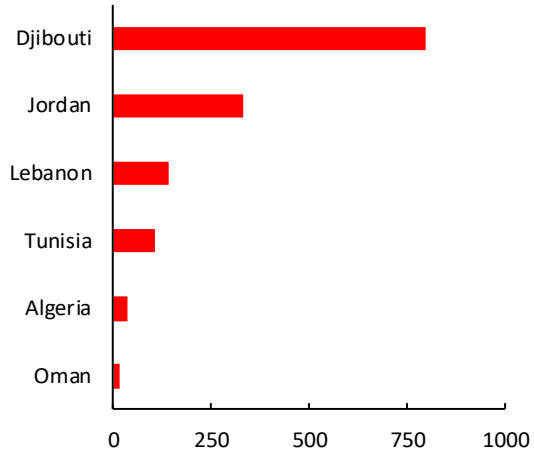
Chapter 3's takeaways

- The improvements in labor productivity needed to close external imbalances are large in oil importing economies.
- The digital moonshot approach is helpful, but other complementary reforms can help.
- Fiscal-expenditure reforms can help by both increasing fiscal savings and enhancing labor productivity when subsidies prevent market contestability.
- Trade reforms aimed at lowering trade costs beyond tariffs can help integrate MENA in global value chains in a time of uncertainty.
- Reforms in labor markets can enhance labor productivity while also providing a safety net for displaced workers.
- Smart SOE reforms in network industries, such as energy (and telecoms in the case of the Moonshot) can help improve the efficiency of the firms as well as raise aggregate labor productivity.

In 2018, the World Bank challenged MENA to aim high, to pursue a moonshot—an all-out effort to achieve an ambitious target—in digital connectivity. By 2021, those countries that achieve the ambitious but attainable targets will have offered access to broadband and 5G cellular data connections to most of their populations, as well as digital payments systems (see Arezki and Belhaj 2019; Arezki and others, 2018b). These are key building blocks for unleashing a new economy capable of accelerating growth and offering dignified job opportunities to the region's growing population of educated young people, particularly women. Perhaps more important, the moonshot approach has the potential of galvanizing civil society's support for change in areas well beyond digital technologies and communications—precisely because its ambitious goals are likely to gain broad public support. Indeed, meeting the moonshot goals will require urgent reforms in the areas of communications infrastructure and regulatory reforms in communications and the payments system. The needed reforms should enhance competition by ensuring that companies can easily enter and exit markets in telecommunications, cellular data, and payments.

Alongside the aspirational digital moonshot, there are other areas of economic policy that offer opportunities for reforms that can raise labor productivity, which in turn can help reduce external imbalances. With the intention of offering a brief primer on this broader, albeit less inspiring agenda than the digital moonshot, we provide an overview of reforms covering fiscal policies, international trade, labor markets and social protection, and SOEs in network industries.

Figure 3.1 Required Productivity Changes (Percent) to Bring Predicted Current Account Deficits in 2017 to Zero



Source: Authors' calculation based on the MNACE's current account model.

First, though, it is worthwhile to assess the magnitude of the labor productivity gains that would be required to eliminate excess current account deficits in the MENA economies that have deficits that are not justified by the economic fundamentals discussed in the previous chapter.

Based on the model in Chapter II, Figure 3.1 presents the required increases in labor productivity for MENA countries to reduce to zero their predicted current account deficits in 2017. The numbers are large for Djibouti and Jordan, because both countries have big deficits and are relatively much poorer than others in the region.

How Fiscal Reforms Can Reduce External Deficits and Raise Labor Productivity

Fiscal reforms can have direct impacts on the current account, especially for countries with a high correlation between current account and fiscal balances. Reforms that produce fiscal savings and improve the primary fiscal balance can help reduce external deficits. So in economies that have both fiscal deficits and current account deficits and a high correlation between the two, smart fiscal reforms can help on both fronts. Based on the findings in chapters I and II, countries that are good candidates for this approach include Algeria and Tunisia. However, for other economies in which the correlation between the twin deficits is low, smart fiscal reforms can help close excess current account deficits by raising labor productivity (in addition to increasing public savings). Economies that are strong candidates for this approach include Jordan, and Lebanon.

This smart fiscal-reform agenda can be divided into two components. One concerns the revenue-side of the fiscal accounts, the other is about composition of expenditures.

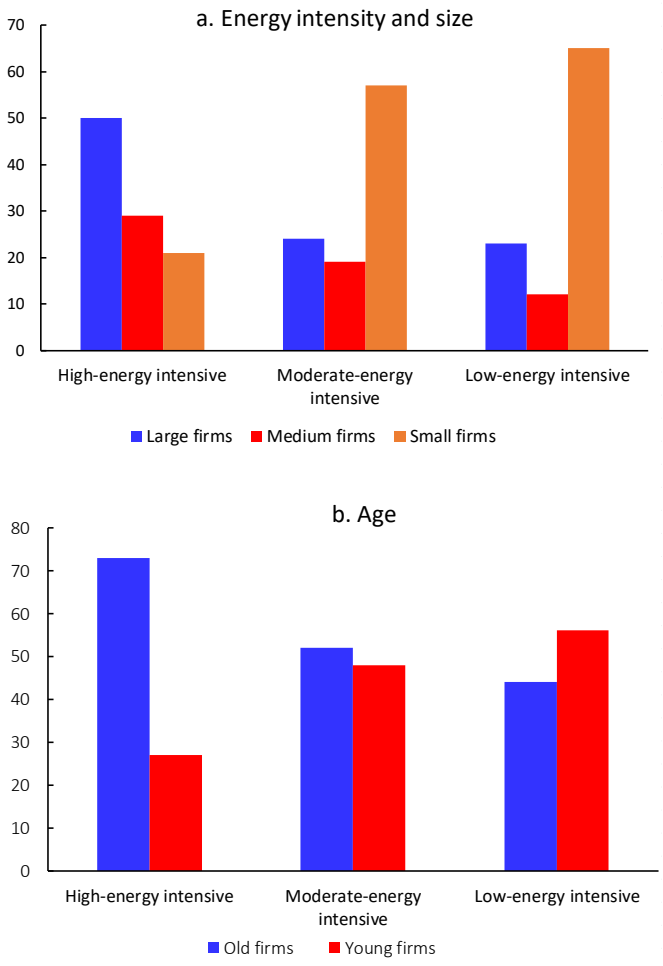
On the revenue side, fiscal reforms can broaden the tax base to boost revenue. In January 2019, Bahrain implemented a value-added tax (VAT) that had a standard rate of 5 percent, with limited exceptions. Chapter 1 of this report described similar tax reforms in GCC economies, which are worth studying. Another example is Egypt, which in 2016 implemented a 13 percent VAT that resulted in a 30 percent increase in general government tax revenue the next year. The new VAT helped government revenue grow faster than expenditures and narrowed fiscal deficit-to-GDP ratio steadily in each year since. Although reforms that essentially raise consumption taxes via a VAT can have distributional consequences, they are efficient in the sense that taxing consumption (while likely painful for poor families) is less distortionary than taxes on investment or employment. Investment and employment levies can affect decisions on the production side of the economy while the distributional consequences can be ameliorated by reforms to the social protection system, which we outline below. Nevertheless, in many national settings, tax reforms focused on

consumption taxes might not be feasible. The point is that there might be tradeoffs between the distributional consequences and the beneficial effects on both external deficits and labor productivity (which itself contributes to closing external vulnerabilities).

On the expenditure side, reducing government spending can help shrink fiscal deficits—and current account deficits in countries in which the twin deficits tend to move together. Nonetheless, it is not clear that expenditure reforms can also help raise labor productivity.

Energy subsidy reforms can produce both fiscal savings and productivity gains. To the extent that energy subsidies disproportionately help large (and potentially politically connected firms), reforms can help raise aggregate labor productivity. The reason is such subsidies to large firms distort the price of labor relative to capital, and discourage labor-intensive economic activities. In other words, the subsidies induce large firms to adopt sub-optimal production technologies that can even reduce employment opportunities, as well as aggregate productivity. Perhaps more important, subsidies that disproportionately benefit large incumbent firms make it difficult for new firms to enter energy-intensive industries, which sustains potentially less productive incumbents.

Figure 3.2 Distribution of Employment, by Energy Intensity and Size and Age



Source: Schiffbauer, et al. (2015).

In Egypt, for example, energy subsidies to energy-intensive industries—which in 2010 were equivalent to US$7.4 billion, or 2.9 percent of GDP—were found to significantly distort labor market outcomes. According to the 2006 Census, large companies were estimated to account for half of the employment in energy-intensive industries but accounted for only 23 percent of employment in low-energy-intensive industries and 24 percent in moderate-energy-intensive industries. Small firms were the largest provider of employment among low-energy-intensive and moderate-energy-intensive industries, providing 63 and 57 percent of total employment, respectively. Furthermore, data on employment based on the age of the firm indicate that among high-energy-intensive industries, 73 percent of employment was provided by old firms compared to

only 27 percent of employment for young firms (see Figure 3.2). These data suggest that a high cost of labor relative to capital because of energy subsidies explains why old and large establishments failed to contribute significantly to job creation.

International Trade Reforms beyond Tariffs

Taxes on international trade can also dampen aggregate labor productivity, but also have a direct effect on the current account. However, because the average tariff in MENA already is relatively low, the efficiency gains associated import and export tax reforms might already have been realized. With the exception of Tunisia, Algeria and Egypt, the average applied tariff in MENA countries is low compared to other countries in the same income group (see Figure 3.3, left panel).

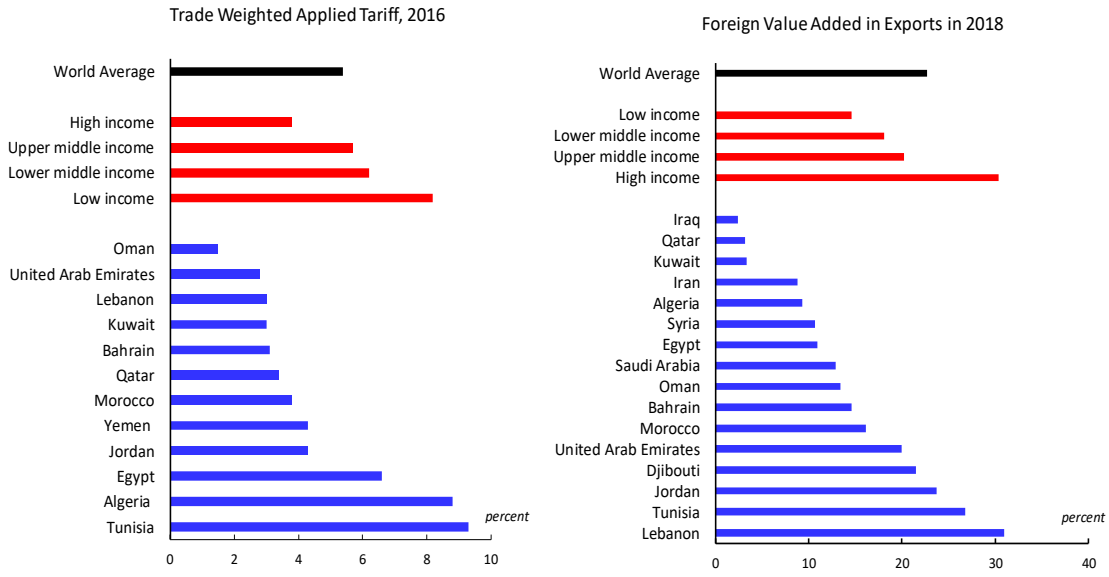
Despite low average tariffs, MENA's participation in the global value chain (GVC) is weak. The right panel of Figure 3.3 shows that the foreign value added in exports for many MENA countries is smaller than for other countries with the same level of development.

MENA's low GVC participation is a result of MENA's weak logistic environment, non-tariff barriers, and bad budget transparency. MENA's logistic environment could be improved. Logistic Performance Indicators reveal that from customs efficiency to tracking capabilities or timeliness of border crossing, many MENA countries have much to improve. The non-tariff barriers in MENA both segment markets and raise the domestic prices of affected products.[10] Moreover, the growing literature on trade highlights the link between transparency and performance related to trade and investment.[11] This issue is particularly acute in MENA, which had the lowest regional score in terms of budget transparency and accountability according to the Open Budget Survey 2017.

MENA can create opportunities for firms and workers by increasing its participation in global production. By disentangling complex production chains, the most recent phase of globalization has enabled developing countries to participate in value chains that are not contingent upon the development of comprehensive production capacities across multiple sectors. GVCs can spread value-added and employment across the globe and help change the organization of production—allowing firms to grow and learn and workers to seek new opportunities in other locations or sectors. Integration into global production changes the landscape of many countries by altering the mix and nature of their firms. While domestic firms might benefit from gains associated with exporting (through sales opportunities and learning effects), additional capital inflow and firm creation via FDI affects developing countries even more directly.

[10] See Augier, Cadot, Gourdon and Malouche (2012).
[11] See Peridy and Ghoneim (2013)

Figure 3.3 MENA Import Tariffs and Value-Added in Exports



Source: World Bank Data: World Integrated Trade Solution, EORA database, Author's computations.
Note: The left panel shows the trade weighted applied tariff. The right panel shows the foreign value added embodied in gross exports.

For domestic firms in developing countries, accessing foreign markets brings many benefits. Studying rug producers in Egypt, Atkin and others (2017) found that firms that have been offered export opportunities experienced a profit increase between 16 percent and 26 percent and exhibited large improvements in quality relative to control firms. These findings do not simply reflect firms being offered higher margins to manufacture high-quality products that take longer to produce. Instead, evidence points towards learning-by-exporting, whereby exporting improves technical efficiency. Moreover, firms that export to richer countries experienced an increase in the price of their outputs and inputs, suggesting that quality improvements of production can spread upstream through the value chain within developing countries.[12]

In response to those changes in the organization of production both *within* and *between* countries, workers often need to move across sectors, space, and occupations if an economy is to maintain full employment. However, such mobility is difficult and costly because of regulatory barriers, information asymmetries, and the need to relocate. Moreover, experience in one sector is imperfectly transferable to others, making mobility more difficult. These potentially large costs can inhibit a country from fully exploiting external market opportunities. It is well understood that these sorts of frictions in labor markets can raise inequality and reduce the gains from trade (see Hollweg and others, 2014; Artuc, Lederman and Porto, 2015).

To reap the benefits of international production integration while protecting workers from trade-induced displacement, MENA countries can adapt their social safety nets with the goal of creating a flexible and safe environment for all workers.

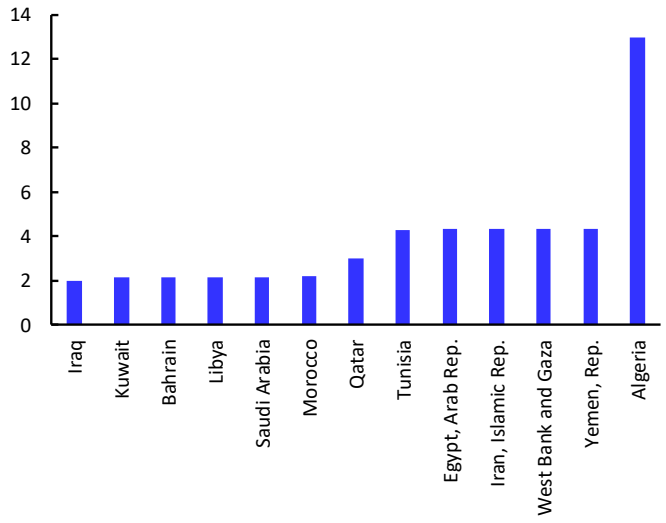
[12] Bastos and others (2018)

Social Protection and Labor Market Reforms

Labor regulations, such as employment protection, directly impose costs on firms and can affect resource allocation and, therefore, productivity (Acharya, Baghai and Subramanian, 2013; Almeida and Aterido, 2008). Several studies show how stringent employment protection legislation hinders the effectiveness of labor market flows and the allocation of labor to the most productive jobs, harming productivity and growth. Stringent layoff regulations increase the cost of firing workers, thereby reducing the productivity threshold at which firms are willing to lay off workers. Firms find it optimal not to hire workers whose short-term marginal product exceeds their market wage and will choose to retain unproductive workers whose wage exceeds their productivity (Blanchard and Portugal, 2001). These distortions in production choices unambiguously reduce worker flows. They are also likely to cause firms to substitute capital for labor and have the potential to reduce firm-level productivity (Autor, Kerr and Kugler, 2007).

Stringent regulations also make it costlier for firms to adjust the composition of their workforce, an important condition for adopting new technologies and increasing productivity (Adhvaryu and others, 2013). Indeed, hiring and dismissal costs are associated with longer unemployment spells and fewer moves between different types of work (Betcherman, 2012). Technology adoption is hurt in proportion to the strictness of labor regulations, specifically those that have burdensome dismissal procedures (Packard and Montenegro, 2017). Technology-intensive sectors are smaller in countries with stricter labor regulations (Bartelsman, Gautier and De Wind, 2016). More stringent regulations are also associated with reduced entry and exit of firms—especially small ones— in industries with higher worker reallocation (Botasso and others, 2017). Within countries, similar evidence is also emerging (see for example Brambilla and Tortarolo, 2018).

Figure 3.4 Severance Pay for Redundancy Dismissal
(for a worker with one year of tenure, in weeks of salary)



Source: World Bank (2019a)
Note: For Djibouti, Jordan, Lebanon, Syria and UAE severance pay is zero.

Onerous labor market regulations can also act as a barrier to formal job creation, imposing a high cost not only on firms but on society by excluding many, especially the young and the low-skilled, from the formal labor market (World Bank, 2012). In the informal sector, productivity is low. In emerging economies informal workers are, on average, only 15 percent as productive as formal workers (La Porta and Shleifer, 2014). Typically, informal businesses have no or few paid staff, perform low-productivity jobs, and tend to be barely profitable. It is unlikely that these businesses will lift productivity growth. In the

MENA region, more than 60 percent of the labor force is informal.

Labor regulations in MENA are relatively rigid, with much room for improvement. For example, firing costs for many countries in MENA are high. It is highest in Algeria (see Figure 3.4) where the severance pay for redundancy dismissal for a worker with one year of tenure is 13 weeks of salary. By contrast, severance pay for the same worker in the United States, the country with an arguably flexible labor market, is zero. The severance pay for the same worker in France, a country known for a stringent labor market rules, is 1.1 weeks of salary (Doing Business, 2019).

Beyond labor regulations, labor costs (such as payroll taxes) can also affect firms' competitiveness and raise labor costs. Payroll taxes, in the form of mandatory contributions by employers, are used in most developed and developing countries to finance the provision of pensions, healthcare benefits for disability and maternity, and compensation for employee work injuries. Overtime pay, hiring subsidies and the minimum wage are other examples of policies that affect labor costs.

Higher labor costs can reduce companies' profits, the number of jobs, and a firm's labor productivity. The minimum wage, for example, applies uniformly to firms with very different levels of productivity, across regions and sectors, and can affect, depending on the level, formal job creation. The minimum wage can also have important distributional impacts, adversely impacting youth, for example. This is an important issue as several countries set minimum wages at high levels: in low-income countries, minimum wages are, on average, 85 percent of the value added per worker; in middle-income and high-income countries, they are around 53 and 30 percent of the value added per worker, respectively (Kuddo, 2018).

Jordan and Lebanon could consider reducing their payroll taxes. Currently, the payroll tax rates are imposed at progressive rates ranging from 7 percent to 20 percent in Jordan. Similarly, the payroll taxes are levied at progressive rates between 2 percent and 20 percent in Lebanon (PwC, 2018). To the extent that such reforms will also reduce public revenues, they would have to be accompanied by other fiscal reforms, such as those discussed earlier.

Strengthened social assistance and insurance can be central to increasing productivity of the most vulnerable, allowing them to take on more risk, better manage that risk, and make productive investments that can payoff in terms of more shared prosperity. More balanced labor regulations ought to be supplemented by increased protections outside of the work contract and active policy measures to meet the needs of people who work in the informal sector.

Raising informal sector productivity is crucial to improve human capital and boost growth—many in the informal sector are low-skill workers trapped in low-productivity jobs. Safety nets can contribute by promoting better allocation and participation of labor and adaptability to labor market challenges. In MENA between 40 and 70 percent of workers receive no social or legal protection in the informal sector.

Enhanced social protection systems are also important to incorporate workers into non-standard jobs and help people adapt to the more flexible labor markets created by digital technology. Indeed, non-wage employment and self-employment, characteristic of the so-called gig economy also do not fall under the traditional social insurance schemes that dominate in the MENA region. Improving the flexibility of social protection systems is important if countries are to take advantage of globalization and succeed in the new world of work.

Social assistance can loosen other constraints on economic growth, such as limited human capital, skills, or behavioral issues of the poor in the labor market. Social assistance has helped by building human capital (especially through access to social services), providing accompanying measures, and enlarging the temporal decision-making timeframe of poor people, who now, rationally, often make decisions on a day-by-day basis. Similarly, when the main problem is lack of capital, limited jobs, or major shocks, social assistance can help by providing small capital injections, generating temporary labor-intensive jobs, or ensuring that households do not have to deplete their assets to deal with a shock, such as illness (Gentilini, 2018).

For workers, especially youth, who require additional support to be productively engaged in the labor market, active labor market programs can also be an important policy tool to boost productivity. Given the changing nature of work, as well as the need to improve worker productivity, especially among the poor and informal workers, active labor market programs become even more central to policymakers' toolkits. Governments should ensure that first time job-seekers, workers who lose their jobs, or those who are working in low-productivity jobs have access to proper counseling, training, information about job opportunities, job search assistance, and migration support. However, most low- and middle-income countries spend little on active labor measures: about 0.5 percent of GDP. Only a fraction of the unemployed and inactive population has access to these services, particularly in rural areas.

While the impact of these interventions tends to be small in the short-run, beneficial effects often increase with time as workers raise their productivity or join the labor force. A recent analysis found that programs that emphasize human capital accumulation are particularly promising. So also are programs that focus on women or participants that come from long-term unemployment (Card and others, 2015). In judging their effectiveness, however, it is important to keep in mind what these programs can be reasonably expected to achieve, especially because they often target low-skilled workers in environments of limited labor demand.

For active labor market programs to be effective, countries must consider moving from ad hoc, independent interventions, to an integrated package of services that can be adapted to particular needs. For example, the evidence suggests that in-classroom technical training for young people is more effective if combined with such work experience as internships and apprenticeships (Kluve and others 2016). The Jovenes programs in Latin America and similar initiatives in sub-Saharan Africa follow this model. Similarly, the combination of technical training and socio-emotional skills training also seems to pay off, including among entrepreneurs. Given the changing skills demands in the labor market, these programs are likely to become increasingly relevant. Finally, there is also a growing role for private non- and for-profit organizations to provide active labor services, depending on an assessment of needs. Private providers, paid for employment results, can provide the required support.

Social protection and labor reforms have different budget implications. In contrast to other regions, in MENA there can be significant scope for reallocating social spending. Historically, major reforms of job protection for regular workers, on average, had a limited impact on public finances over the medium term, mostly because up-front fiscal costs for these reforms are minimal. Other types of labor market reforms such as streamlining unemployment benefits, raising spending on active labor market policies, and cuts in labor taxes have direct fiscal costs. The fiscal reforms discussed at the beginning of the chapter, if successful, could help provide some of the fiscal resources. For example, average spending on energy subsidies in MENA is three times higher than on social assistance.

Productivity-enhancing SOE Reforms in Network Industries: The Case of Energy

SOEs in the MENA region are an important part of the economy. In key network sectors—including electricity, air transport, oil and gas, water, and telecommunications—they dominate. In addition, they are often overseen and supported by powerful line ministries, which makes reforms difficult to design and implement (Akoum, 2012). Yet reforming network-sector SOEs can help raise aggregate productivity precisely because they affect most other sectors of economic activity—that is, their efficiency has positive spillover effects. Smart reforms of SOEs in network industries are likely to succeed when they attract some private sector investments (see Box 3.1), but transforming the business models of the sectors is often the guiding light for successful reforms. In this respect, digital transformation can have a deep impact on the SOE sector in MENA.

Box 3.1 MIGA -- Supporting Private Investment in the Electricity Sector in Lebanon

The Multilateral Investment Guarantee Agency (MIGA) recently extended its guarantees in support of the design, upgrade, maintenance, and operation of the Butec Utility Services (BUS) electricity distribution network in northern Lebanon. Since its creation five years ago, BUS has expanded operations to cover 30 percent of the country. The initial project planned to reach 1.3 million people, but reached some 2 million by 2017 and the distribution network spanned twice the planned 10,000 square kilometers. The project is part of a World Bank Group effort to help reform Lebanon's power sector, improve service delivery, and rationalize public spending through private investments.

Source: Multilateral Investment Guarantee Agency.

In the oil and gas sector, digital transformation can offer new opportunities for growth and profit, aligning the corporate objectives towards the twin objectives of better performance and reducing carbon output (Arezki, 2018). Optimization of the oil and gas processes using Industry 4.0 technologies[13] offers great opportunities to monetize data, creating ecosystems of private sector firms, linking with both local firms and foreign companies interested in creating high value applications and services, and not only to sell large scale, pre-packaged IT systems and solutions. Consistent with the global experiences of digital transformation, the oil and gas sector will have to invest in intangibles, including comprehensive management change programs (Arezki, 2018).

First, the development of the internet of things (IoT) in energy led to the quick development of smart grids and smart meters, providing an intelligent infrastructure capable of accurate monitoring of consumer behavior, integrating the contribution of intermittent energy sources, and collecting a large amount of energy consumption data at the local level. In addition, smart grid and smart meter infrastructure allow for a reduction of electricity fraud, and better integration of renewables.

The second important technology development is the growth of cloud-based applications and services, which seem to have a deep-reaching potential impact on the energy sector. The contribution of renewables is by nature intermittent and requires active management. Moreover,

[13] Industry 4.0 refers to the current trend of automation and data exchange in manufacturing technologies. It includes cyber-physical systems, the Internet of things, cloud computing and cognitive computing. Industry 4.0 is commonly referred to as the fourth industrial revolution.

the contribution of independent power providers—who generate electricity for their own use and contribute any excess to the grid— requires active data management, which can be achieved in a cloud-based infrastructure. In addition, the power sector is developing new battery backup technology to foster electricity exchange. A large amount of complementary data can also be assessed and provide additional information relevant to the energy sector. The joint contribution of the IoT, cloud-based grid management and battery technology enables the development of a new business model, the "Energy-as-a-Service" business model. In this context, the cloud-based, data management of the IoT-enabled interconnected elements of smart infrastructure can reduce the need for peak load management and optimize the contribution of renewables to the grid. Connected oil and gas platforms, connected factories, and the quantity of data generated by the user from mobile phone use and, in the future, connected cars, offers billions of additional data points.

SOEs in MENA can leverage these technological developments, leading to the emergence of a customer-centric "energy cloud" platform, integrating building-to-grid, transportation-to-grid, and Smart Cities into the broader set of players of the traditional energy business. The impact on the economies in MENA has far-reaching potential. According to a recent industry report, "Energy carriers will become increasingly interconnected. For example, excess renewable power can be converted to heat or hydrogen that can be transported and stored; hydrogen can be converted back into electricity and used directly as fuel for industries or transportation. Enabling greater integration across energy carriers (including electricity, liquid and gas fuels, and heat), the impact of the energy cloud transformation will be felt well beyond the power grid and the power industry" (Navigant, 2018).

If SOEs in MENA adopt this model, the effect of these disruptive technologies will be compounded by two new technology drivers: artificial intelligence and 5G communications. Artificial intelligence can increase profitability by an average of 38 percent by 2035 and lead to an economic boost of $14 trillion across 16 industries in 12 economies. The drivers of the additional growth are intelligent automation, capital and labor augmentation, and innovation diffusion (Accenture, 2018). The commercial launch of 5G networks— whose standards are expected to be finalized in 2019, building on vertical industry cases, such as oil and gas, energy and transport—will further accelerate this process. Besides sharply enhancing mobile broadband, 5G will allow for massive machine-type communications as an enabler for IoT. Expert opinion indicates that adopting a new smart business model for oil and gas SOEs in MENA (and perhaps in other network industries) are likely to pay off handsomely in the long run in terms of aggregate productivity gains, which can have the additional salutary effect of helping to reduce external macroeconomic vulnerabilities.

In sum, accompanying the digital moonshot reforms with other smart reforms can help reduce excess current account deficits by both raising fiscal savings and, more important, by raising aggregate labor productivity. The hope is that the socially unifying effects of the moonshot can also raise public support for other smart reforms. While there is time for gradual adjustments of the current accounts in some MENA economies, this report argues that structural reforms that raise labor productivity are urgent. The existing external imbalances might not be sustainable forever, particularly because traditional sources of external financing of the deficits seem to be slowly drying up. But MENA is well positioned to implement pro-growth structural reforms that will not only raise the region's collective standard of living but will also gradually reduce external vulnerabilities created by persistent current account deficits in the past. We are confident that MENA can grow out of its twin challenges of low growth and current account deficits.

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Appendix : MNACE's Current Account Model

The framework of this part is based on the IMF's External Balance Assessment (2013). Using data from various sources, we assembled a panel dataset of major economic indicators for the world's economies.[14]

Specifically, we set out to identify current account imbalances that cannot be explained by a country's fundamental indicators. In order to do so, we ran the following regression:

$$CA_{i,t} = \beta_0 + YoungDep_{i,t} + OldDep_{i,t} + AgingSpeed_{i,t} + EGrowth_{i,t} + RelativeGDP_{i,t-1} + RelativeGDP_{i,t-1} * ChinnIto_{i,t} + ChinnIto_{i,t} + \Delta ComPI_{i,t-1} + fe_i + fe_t + \varepsilon_{i,t}$$

The dependent variable, $CA_{i,t}$, is the current account balance as a percentage of GDP. Data are from the World Economic Outlook (WEO).

$YoungDep_{i,t}$ captures the percentage of young-age dependents (younger than 15 years old) to the working population (15-64 years old). The regression also includes old-age dependency, $OldDep_{i,t}$ which captures the percentage of old age dependents (older than 64 years old) to the working population. It also includes an aging speed variable which measures the annual change in the old-age dependency. Data are from the United Nations (2017)

$EGrowth_{i,t}$ captures a country's expected growth acceleration, by taking the difference between the growth forecast for next year and the growth forecast for this year. Data for Growth Forecast are from the historical forecasts of World Economic Outlook.

$RelativeGDP_{i,t-1}$ is a country's real PPP GDP per worker relative to that of the United States at time t-1. It captures relative productivity. $RelativeGDP_{i,t-1} * ChinnIto_{i,t}$ captures the idea is that capital flows to poor countries also depend on a country's financial openness. Data of real PPP GDP are from the World Economic Outlook.

Chinn-Ito Index is a measure of capital account openness. It is first introduced by Chinn, Menzie D. and Hiro Ito (2006).

$\Delta ComPI_{i,t-1}$ is the lag of the log change in the commodity price index. The variable is constructed as follows. First, following Bruckner and Arezki (2012), a commodity price index is calculated as $ComPI_t = \prod_C Price_{c,t}^{\theta_c}$ where θ_c is the long-run exposure of the country to commodity *c*. θ_c is calculated as the average share of the country's *net* exports of commodity *c* over country GDP. $Price_{c,t}$ is the world price of commodity *c* at time t. Next, also following Bruckner and Arezki (2012), we generate change of commodity price index as $\Delta\log(ComPI)_t = \log(ComPI_t) - \log(ComPI_{t-1})$. Bruckner and Arezki (2012) find that as $\Delta\log(ComPI)_{t-1}$ has a large and

[14] We retrieved the data from the following sources: the World Economic Forum, the World Development Indicators, the Penn World Table, Chinn, Menzie D. and Hiro Ito (2006) and the United States' Federal Reserve.

significant effect on economic growth at time t. Commodity prices are from IMF; trade data are from UN Comtrade; and nominal GDP data are from WDI.

fe_i are country fixed effects; fe_t are time fixed effects. $\varepsilon_{i,t}$ is the residual of the regression, which is the "unexplained" component of the current account.

Exchange rate regime data are from Ilzetzki and others (forthcoming). We recode their classification of 1 as "fixed exchange rate regimes," 2 and 3 as "managed floats" and 4 and 5 as "free floats." See Table A1 for the summary statistics.

Table A1 Summary Statistics

World

	N	Number of countries	Mean	Median	Min	max
Young Age Dependency %	11294	194	61.749	65.178	14.898	113.702
Old Age Dependency %	11294	194	10.258	7.53	.874	38.112
Aging Speed %	11100	186	.099	.047	-1.154	1.563
Predicted Changes in Growth	5388	187	.425	.2	-230.834	151.992
GDP/worker relative to USA	6319	181	.356	.199	.011	6.452
Chinn Ito Index	7008	160	.456	.416	0	1
Change in Commodity Price Index	7479	226	0	0	-.351	.402
Fixed Exchange Rate	12374	184	.608	1	0	1
Managed Float Exchange Rate	12374	184	.326	0	0	1
Float Exchange Rate	12374	184	.067	0	0	1

MENA

	N	Number of countries	Mean	Median	Min	max
Young Age Dependency %	1129	19	67.354	72.095	15.237	113.702
Old Age Dependency %	1129	19	5.908	6.033	.874	13.34
Aging Speed %	1110	19	.008	.009	-.653	.469
Predicted Changes in Growth	544	18	.101	.175	-230.834	151.992
GDP/worker relative to USA	689	18	.718	.313	.039	6.452
Chinn Ito Index	781	17	.582	.699	0	1
Change in Commodity Price Index	724	19	.001	0	-.275	.402
Fixed Exchange Rate	1262	19	.607	1	0	1
Managed Float Exchange Rate	1262	19	.38	0	0	1
Float Exchange Rate	1262	19	.013	0	0	1

The MNACE current-account determinants model has three specifications. The "*within specification*" has both time and country fixed effects. The time fixed effects capture the effects of common world factors in a given year on all countries' current account positions. The country fixed

effects capture the effects of unobservable country-specific time-variant factors (such as consumption preferences) on each country's current account position. This specification considers the effects of the fundamentals within a country. The "*pooled specification*" has only time fixed effects and no country fixed effects. This allows us to examine the effects of fundamentals on current account positions across countries as well as over time. The *"between specification"* takes the average of the current account position and the fundamentals across years within a country, and then examines the effect of the average fundamentals on the average current account across countries. The residuals of the regressions reflect the portion of the the current accounts that are unexplained by the fundamentals.

In the pooled specification (the first column of table A2), the fundamentals have the expected signs. The coefficients of young age and old age dependencies are negative. The coefficient of -0.159 implies that a 1 percent increase in old age dependency is associated with a 0.16 percentage point decrease in the current account balance, measured as a percent of GDP . To put this in perspective, in the last ten years, MENA's (simple average) old-age dependency went from 5.82 percent in 2007 to 6.29 percent in 2017. Note that old-age dependency has a larger negative association with the current account balance compared to that of the young-age dependency. A 1 percent increase in aging speed is associated with a 3.7 percent increase in the current account balance. A 1percentage point growth acceleration is associated with a 0.4 percent decrease in of the current account balance . When the capital account is completely closed (the Chinn-Ito Index takes the value of 0), a 1percentage point decrease in relative productivity compared to the United States is associated with a 0.16 percentage point decline in the current account balance. Note that in the last ten years, MENA's simple average labor productivity relative to the United States has been declining, from about 56 percent in 2007 to about 46 percent in 2017. Given the same level of relative productivity, a completely open capital account (that is, Chinn-Ito takes the value of 1) is associated with a lower current balance of 7.4 percentage points compared to a completely closed capital account, as capital inflows are expected to be higher. A 1 percent increase in the commodity index is associated with a 0.56 ercentage point increase in the current account balance. Interestingly, none of the exchange rate regime variables are statistically significant, implying no systematic differential impact of exchange-rate regimes on the current account.

In other specifications (columns 2 and 3 of Table A2), the fundamentals have largely similar impacts, with one exception. In the "*between specification*", forecast future growth has a positive assocation with the current account. This means that when a country has on average a higher growth acceleration, it tends to sustain a higher current account balance.

To ascertain whether the model's results are due to the impact of the fundamentals on national savings rates, we estimated an auxiliary model on national savings rates. The impacts of the fundamentals on saving rates are broadly similar to those on current account balances.[15] Old-age and young-age dependencies are significantly correlated with a lower saving rates. Higher relative aggregate labor productivity is associated with a higher saving rate, and given the same relative productivity level, an open capital account is associated with lower saving rate (thanks to capital inflows). Similarly, an increase in the commodity index is associated with a large increase in saving rates. Thus the evidence suggests that the fundamental drivers of the current account probably work through the national savings rate.

[15] The results of the model on national savings rates are available upon request.

Table A2 MNACE Model Estimates of the Fundamental Drivers of Current Account Balances

	Pooled	Within Countries	Between Countries
VARIABLES	Current Account Balance % GDP	Current Account Balance % GDP	Current Account Balance % GDP
Young Age Dependency %	-0.0221*	-0.0584	-0.0447
	(0.0118)	(0.0357)	(0.0472)
Old Age Dependency %	-0.159***	0.185	-0.319**
	(0.0530)	(0.126)	(0.138)
Aging Speed %	3.708***	1.453**	3.834
	(0.804)	(0.721)	(6.384)
Predicted Growth Acceleration	-0.413	-0.430	1.645**
	(0.361)	(0.371)	(0.737)
Relative Productivity (t-1)	16.38***	29.79**	10.15*
	(2.275)	(12.99)	(6.013)
Chinn Ito Index	0.0856	4.077***	-2.041
	(0.612)	(1.557)	(2.164)
Chinn Ito x Relative Productivity (t-1)	-7.461***	-21.54***	0.986
	(2.265)	(7.527)	(6.044)
Change in Commodity Price Index	57.95***	55.40***	352.8
	(6.702)	(6.154)	(323.2)
Managed Floats	-0.0403	-0.929	1.006
	(0.492)	(0.819)	(1.668)
Free Floats	-0.271	-0.752	0.311
	(1.130)	(1.307)	(4.724)
Managed Floats x Relative Productivity (t-1)	2.243	-4.182	3.634
	(1.499)	(2.621)	(2.740)
Free Floats x Relative Productivity (t-1)	-1.803	-3.519	-4.634
	(1.815)	(3.044)	(5.287)
Constant	-4.522***	1.993	-1.871
	(1.641)	(4.037)	(4.776)
Observations	3,896	3,896	155
R-squared	0.248	0.473	0.492
Time Fixed Effects	Yes	Yes	No
Country Fixed Effects	No	Yes	No
Number of countries	154	154	155

Note: Data are for 155 countries. To ensure change in t.he commodity index is exogenous, we drop large countries—the United States, China, India, Japan, and Russia which are important commodity consumers and whose economic activity could sway world commodity prices. The period of consideration is from 1990-2017. Eighteen MENA countries are included in our analysis. West Bank and Gaza lacks sufficient GDP, predicted changes in growth and Chinn Ito data and is therefore not included in the regressions.


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