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MENA ECONOMIC UPDATE APRIL 2020

How Transparency Can Help the Middle East and North Africa

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Abbreviations

BLS	United States Bureau of Labor Statistics
CAPMAS	Egypt's Central Agency for Public Mobilization and Statistics
CPI	Consumer Price Index
EAP	East Asia and the Pacific
ENCDM	National Survey on Household Consumption and Expenditure
FLFP	Female Labor Force Participation
GCC	Gulf Cooperation Council
GDP	Gross Domestic Product
GHS	Global Health Security Index
GMD	Global Micro Database
HIES	Households Income and Expenditure Survey
IEA	International Energy Agency
ILO	International Labor Organization
ILOSTAT	International Labor Organization Statistics
INSEE	France-Institut Nationale de la statistique et des etudes economiques
IMF	International Monetary Fund
MENA	Middle East and North Africa
MNACE	Middle East and North Africa Chief Economist Office
MPO	Macro and Poverty Outlook
OPEC	Organization of the Petroleum Exporting Countries
PPP	Purchasing Power Parity
SDG	Sustainable Development Goals
SOE	State-owned enterprises
SSA	Sub-Saharan Africa
UAE	United Arab Emirates

Preface

As the Coronavirus pandemic sweeps across the Middle East and North Africa (MENA), uncertainty and fear are gripping the streets. While citizens have turned to their governments to act, decades of lack of transparency has bred distrust and undermined our State credibility. People cannot be certain if daily reporting and updates are true. As someone aptly described the leadership response to the Coronavirus: "When you lose people's trust, even when you tell the truth, people won't believe you."

As if the spread of a global pandemic during a time of social unrest were not enough, more than any other region of the world, MENA is confronting two distinct but related shocks. Alongside the spread of the virus, oil prices collapsed, putting pressure on incomes and fiscal accounts of oil exporters, and indirectly but heavily affecting the developing economies of the region that rely on worker remittances, foreign direct investment, and transfers from their high-income neighbors of the Gulf Cooperation Council.

The World Bank Group is committed to helping governments weather the dual shocks with the intention of leaving no one behind. We have put together a Covid-19 emergency financing facility of 14 billion dollars, and we are working tirelessly to ramp up our operations in a time of rising financing needs. On March 25, the World Bank Group committed 160 billion dollars when David Malpass presented our plans to our Board of Directors. This will finance support operations over the next 15 months tailored to the needs of each country, but with a strong poverty focus and an emphasis on policy-based financing and protecting the poorest households and the environment. In addition, on March 24 the World Bank and the International Monetary Fund asked for debt relief for the poorest countries, a plea that was repeated in President Malpass's statement delivered to the Group of 20 on March 26.

As we fight the spread of the novel virus across the world, policies designed to contain the spread and mitigate its impact on public health systems, such as the closing of large swaths of the economy, are clearly having at least short term recessionary consequences with potentially grave social costs beyond the deterioration of public health. We are committed to help by offering financing and technical expertise.

Yet soon, together with our partners in MENA, we will come out of emergency mode. The question is whether we will come out stronger than ever, with a hopeful vision for a brighter future for MENA. To bring a new hope to our citizens, we must learn and change. After all, when the virus arrived in the region, and I mean all of it – its leaders, its entrepreneurs, its educated youth, the broader civil society – all of the region, was already engaged in difficult debates about the past and future development of their countries. All aspects of society seemed to be at stake, from the nature of political systems to technical aspects of social and macroeconomic policies.

With this report, a product of our regional Chief Economist Office, we aim to contribute to an emerging constructive yet candid public discourse about what we can do better together after the immediate recessionary impacts of the shocks wither away. I cannot think of anything more important in terms of its scope and reach, than to begin immediately to discuss the transparency with which public sectors operate. After all, if there is a single lesson to draw from the pandemic, it is that transparency in the provision of public information can save lives and improve economic outcomes, partly by enhancing societal trust in the state. It is unfortunate that the region has under-performed for years if not decades in the transparency department.

In fact, as shown in this report, since the beginning of the 21st century, growth of output per capita across MENA has been lower than what is typical for economies with the same levels of development. The authors argue that if the region had grown at the typical rate observed in the rest of the world, the region would be at least 20 percent richer than it is today.

The lack of data and transparency in the region could be at least partly responsible for the region's chronic low-growth syndrome. Indeed, as this report demonstrates, MENA stands out as the only region of the world to experience an absolute decline in their index of data transparency (the "statistical capacity index") between 2005 and 2018. Many MENA countries have either lagged in their capacity to generate data or have prevented access to data. But reliable data and transparency not only help improve public policies over time but also enhance people's trust in the state. Lack of transparency hurts even more when systems are under stress by potent threats such as the ongoing pandemic. The authors argue that the region's declining data transparency has resulted in losses of income per person ranging between 7% and 14%. It is thus plausible that the lion's share of income losses accumulated during the 21st century relative to the typical growth rates of the rest of the world were due to lack of transparency. Although there is no ironclad econometric model, and as a trained lawyer I cannot opine about such technical matters, the evidence in this report deserves serious attention.

Lack of data and transparency hinders credible analyses of many important issues, including the performance of state-owned enterprises, public procurement, the allocation of precious assets such as land, the attraction of private foreign investment, and even obfuscate the maladies affecting the macroeconomies and labor markets of our countries. Since economic policies will only be as good as the information they are based on, logic dictates that lack of transparency in MENA deters effective policy making. I, for one, firmly believe that evidence-based policy debates can accelerate the pace of long-term economic development.

This report makes a valiant effort to both raise issues of lack of transparency and to show how key pieces of information are missing in the regional policy dialogue. It is difficult to think of more important long-term challenges for the region than raising the pace of economic growth, solving fiscal vulnerabilities, and improving the performance of labor markets across MENA. Yet, the authors argue, in these areas we see either missing information or ambiguity in the published indicators. In short, this report sheds light in dark corners of crucial ongoing economic policy debates.

The grievances that sparked protests across the region can only be addressed by rebuilding trust. The Coronavirus pandemic has put in stark relief what is at stake: Nothing less than human lives and prosperity. Now more than ever, a new social contract is needed, and the process of healing starts with transparency and accountability. The report makes a compelling case that transparency can, in turn, lead to growth and prosperity across MENA in the years and decades to come.

I invite you to study this report and decide for yourselves if more sunlight is needed to bring a prosperous future to MENA with enhanced societal trust in the state.

Ferid Belhaj
Vice President
Middle East and North Africa Region
The World Bank Group

Overview: How Transparency Can Help the Middle East and North Africa

The Middle East and North Africa (MENA) region is, once again, consumed by social unrest. The inability of many governments to deliver quality, affordable public services – from healthcare and education to water and electricity – erodes the possibility of improvement. Corruption and mismanagement are twin culprits, and the public perception that the state cannot improve things has created an urge to impose a new system of accountability.

People are taking to the streets to express their frustration and demand change. In the words of one protester criticizing the ruling elites: "It's been the same people for 30 years. The main point of this revolution is to do something for the poor—jobs, services, education."[1]

Perhaps the most important word is "revolution." The surge of societal frustration is not surprising. After all, MENA has struggled with low growth, macroeconomic fragility, and stagnant labor markets for decades.

This report brings attention to one of the root causes of that frustration—the lack of transparency in the region, defined as the paucity of published data that meets the minimum accepted international standards regarding definitions of key economic and social indicators. The report provides technical analyses of the region's notable lack of transparency and how it relates to the challenges of low growth, macroeconomic fragility, and stagnant labor markets.

Lack of transparency hurts even more when systems are under stress by potent threats such as the ongoing Covid-19 pandemic. The ramifications of the lack of trust, forged by limited transparency, come into stark relief when citizens are confused about what to believe. And as we have seen several times over many decades, regaining credibility is not easy. As one citizen in the region aptly described the leadership response to Covid-19: "When you lose people's trust, even when you tell the truth, people won't believe you."[2]

Losing credibility during a crisis such as a pandemic can be deadly. The lack of transparency across MENA has taken several forms—from a dearth of overall data, to a lack of accessibility and questionable accuracy of data that does exist. The situation has been allowed to fester and become deeply embedded in various institutions within the region. Now, it may have severe consequences.

One area where we will likely see the effects of Covid-19 is economic growth, at least in the near future. Due to the dual shocks of the spread of the virus and lower oil prices, World Bank economists expect output of MENA to decline in 2020. This is in sharp contrast to the growth forecast of 2.6 percent published in October 2019. The growth downgrade of 3.7 percentage points is arguably a measure for the costs associated with the dual shocks of Covid-19 and the oil price collapse. Moreover, such estimates of the costs are highly uncertain and likely to change over the course of the year as new information comes to light. The report provides an analysis of recent growth forecasts by both private-sector and World Bank economists.

Perhaps more importantly, since the beginning of the 21st century, growth of output per capita across MENA has been lower than typical growth for economies with the same levels of development. Had MENA's growth of output per capita

1 Reuters, 2019. "Lebanon a 'beautiful idea' in need of a reboot, say protesters" (November 7, 2019).
2 https://www.pbs.org/newshour/show/in-iran-government-distrust-rises-amid-deadly-outbreak-of-novel-coronavirus

been the same as that of a typical (median) peer economy over the past two decades, the region's real output per capita would be at least 20 percent higher than what it is today. And this benchmark is, by definition, mediocre.

A large part of MENA's low growth is arguably due to a lack of data and transparency. Many MENA countries have either lagged in their capacity to generate data or have prevented access to data, both of which lead to poor policies. Just as lack of data about the spread of a virus hampers public policy and societal responses, lack of data and imprecise indicators of public debt and unemployment hamper policy actions to deal with these long-standing development challenges.

This report argues that reliable data and transparency can help improve public policies over time and enhance people's trust in the state. In fact, since 2005, the report finds a strong empirical association between statistical capacity – including the regular publication of microeconomic and macroeconomic information – and economic growth. That effect appears to be at least as large (if not larger) than the empirical association between education and growth. Moreover, the evidence from five models suggests that an observed decline in MENA's transparency between 2005 and 2018 is associated with an expected loss of the region's income per capita ranging from 7 to 14%.

MENA's macroeconomic fragility has also come to the forefront during recent years. The report presents a battery of tests on current account and fiscal account vulnerabilities in the region and the rest of the world; however, the credibility of these analyses critically depends on data transparency. MENA countries generally do not report net public debt, a crucial metric to assess debt sustainability. Even for gross public debt, MENA countries vary greatly in their reporting standards. World Bank economists and other external analysts do not have access to vital information about many types of public debt. Thus, any assessment of the sustainability of the region's public debt needs to be interpreted with a grain of salt.

With that in mind, considering the lack of transparency in debt indicators, the analyses presented in this report suggest that MENA countries continue to face notable macroeconomic challenges. First, three developing MENA economies appear to have unsustainable current account deficits, which in turn are due to low GDP per working age population. In other words, low growth has brought external macroeconomic fragility to some MENA economies. Second, in 2019, 11 MENA countries appeared to be on unsustainable fiscal paths—that is, the primary fiscal balances were insufficient to stabilize their reported gross debt-to-GDP ratios. On the other hand, we did find some encouraging evidence (also imperfect, due to data constraints) that suggests that MENA's developing countries, as a group, have been on a more sustainable fiscal path than the rest of the world, on average, in recent years. Either way, for good or for bad, the lack of transparency of debt indicators in MENA limits our ability to reach firm conclusions about the region's fiscal vulnerabilities.

The labor market is another area where MENA faces both notable challenges and constraints imposed by lack of transparency in the form of imprecise indicators of labor-market outcomes. Among the challenges are persistently high reported unemployment rates and low rates of female labor force participation. These issues are related to countries' unsustainable current account imbalances and fiscal paths because the low employment of the working age population is associated with both external imbalances and inadequate revenue bases.

One of the chief constraints regarding labor markets is the lack of uniformity in the definition of "employment". A review of MENA's standards and definitions of labor-market outcomes shows that countries rely on varying and often uncertain definitions of employment, which in turn affect indicators of unemployment and informality – with little harmonization – either across the region, or with respect to international standards. In fact, for countries with independent sources of

nationally representative labor-force data for recent years (Egypt. 2018; Jordan, 2016; and Tunisia, 2014), the authors were not able to replicate the official reported unemployment rates. This report argues that the differences are not innocuous because the discrepancies disproportionately distort the role of women and rural areas in national labor markets. It suffices to say that it would be desirable to have access to all countries' official labor force surveys in order to have an informed dialogue about definitions and methods.

In turn, the report assesses the key challenge of raising MENA's female labor force participation, which is critical to increasing GDP per working age people. The evidence (relying on internationally accepted definitions of employment and unemployment) suggests that female labor force participation might be a generational issue, as young women tend to have high rates of labor market participation. A large part of the difference is due to education. Because younger women are increasingly more educated than previous generations, they are more likely to join the labor force. In our analyses, education explains between 5 and 12 percentage points of the difference in labor force participation across generations, while we found that family structure (such as marriage and children) is less important. These findings are good news for MENA's future. It is noteworthy that these findings are not due to imprecise indicators, since the analyses rely on internationally accepted and harmonized definitions of female employment and unemployment. The question is whether the region can afford to wait for the national rate of female labor force participation to rise with the advent of new generations of educated young women.

Likewise, historical evidence from an advanced economy and recent evidence from Yemen indicate that female labor force participation tends to rise during periods of armed conflict, when fewer men are in the labor force. It is plausible that the increase in female labor force participation might be a thin silver lining in conflict economies; however, it remains to be seen whether female labor force participation will remain high after peace arrives, as it did in the United States after World War II.

The grievances that sparked protests across the region can only be addressed by rebuilding trust. A new social contract starts with transparency and accountability, which could, in turn, lead to growth, more robust analyses of fiscal sustainability, and improved policies for tackling the macroeconomic and employment challenges that have been allowed to fester for years—if not decades. Through transparency, prosperity with societal trust can be achieved across MENA in the years and decades to come.

CHAPTER I: THE DUAL SHOCKS OF THE NOVEL CORONAVIRUS AND THE OIL PRICE COLLAPSE

Chapter I takeaways:

- Economies in the Middle East and North Africa face unprecedented dual shocks from the spread of the novel coronavirus (Covid-19) and the collapse of oil prices.
- The spread of Covid-19 causes severe negative demand and supply shocks.
- The fall in oil prices depresses income in the MENA region. It is directly felt by oil exporters and indirectly by oil importers through reduced remittances, foreign investment, and sovereign lending.
- A preliminary estimate of the crisis' economic costs in 2020 is 3.7% of regional output.
- The estimate remains tentative because the costs will depend on both policy and societal responses to the dual shocks.
- But MENA has suffered from a low-growth syndrome for decades when compared to the rest of the world in terms of GDP per capita growth rates.
- The region's low long-term growth rates are partly attributable to the region's declining data transparency.

Economies in the Middle East and North Africa (MENA) face unprecedented dual shocks from the spread of Covid-19 and the collapse in oil prices. As the world struggles with an emerging recession, MENA was already facing social discontent manifested in street protests. The dual shocks bring negative supply, demand and income shocks, further aggravating pre-existing economic and social challenges.

I.1 The spread of Covid-19

Chinese authorities first alerted the World Health Organization (WHO) of a new coronavirus infection on December 31, 2019. This new virus, Covid-19, can produce flu-like symptoms that sometimes are more severe with a higher chance of death than the flu.

Besides the human toll, the virus affects MENA economies via four channels: the deterioration of public health, falling global demand for the region's goods and services, declines in MENA's domestic supply and demand, and importantly, falling oil prices.

The Deterioration of Health

The virus has spread to more than 177 countries and territories—with over 360,000 cases and more than 15,000 deaths as of March 23, 2020[3] . The pandemic has caused severe disruptions of economic activity across the globe. The virus has already spread to MENA countries, of which Iran, has been hardest hit with more than 23,000 reported cases and 1,400 deaths as of March 23. Other MENA countries have also reported infections. Governments are closing schools and imposing restrictions on businesses and public gatherings. These efforts, while believed necessary to slow the spread

3 https://www.worldometers.info/coronavirus/

of the virus—especially because of limited real-time information on its magnitude and spread—will undoubtedly hurt economic activity.

The ability to contain the virus depends on the strength of the public health systems of the MENA countries and their health policy responses. Public health policy responses, in turn, depend on the number of infections and where they are spreading. The outbreak can be in clusters, with some places becoming hot spots. Transparency of data and sharing of information are vital as governments and citizens must work together to change social behaviours to flatten the infection curve. Otherwise public health systems could be overwhelmed. Consequently, societies subject to opaque information-sharing by the state are also among the most vulnerable to a pandemic. This is evident in the relative success of South Korea in containing the virus. As South Korea's Foreign Minister Kang Kyung-wha put it in an interview: "The basic principle is openness, transparency, and fully keeping the public informed" (BBC, 2020).

The MENA region is particularly vulnerable. MENA scores second-lowest among all regions in the overall Global Health Security Index[4], while ranking last in both "epidemiology workforce" and "emergency preparedness and response planning". The situation is more dire in conflict-affected environments. Wars in Syria and Yemen will almost certainly impede the proper functioning of their health systems.

Falling Global Demand

Global economic difficulties and the disruption of global value chains will reduce demand for the region's goods and services, most notably oil and tourism. The implications of collapsing oil prices are discussed in section I.2.

The tourism sector in MENA is affected in two ways. First, many MENA countries and many other nations are imposing travel restrictions. Second, the global economic slowdown and social distancing efforts imply fewer tourists travelling to other countries, including within the MENA region. Moreover, the sharp drop of global travel will further depress already tanking oil prices.

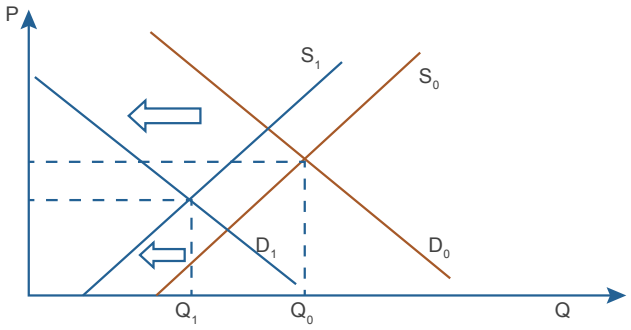
Declines in MENA's Domestic Supply and Demand

The spread of Covid-19 also generates a negative demand shock from the abrupt reduction in regional business activities and travel due to concerns about the spread of the virus. In addition, uncertainty associated with the spread of the virus and aggregate demand could further dampen the region's investment and consumption. Collapsing oil prices further depress demand in MENA; the oil and gas sector is the most important one in many of the region's economies. Finally, potential financial market volatility could have real effects and further disrupt aggregate demand in the region.

Similar effects were observed in the 1918 Spanish Flu pandemic in the United States. Correia and others (2020) find that the Spanish Flu pandemic also created both negative supply and demand shocks. Localities in the United States that had higher mortality rates also had larger declines in manufacturing activity, bank assets and spending on durable goods. Perhaps more importantly from a policy perspective, the evidence from 1918 indicates that localities that implemented

4 https://www.ghsindex.org/

Figure I.1 Negative Supply and Demand Shocks in MENA



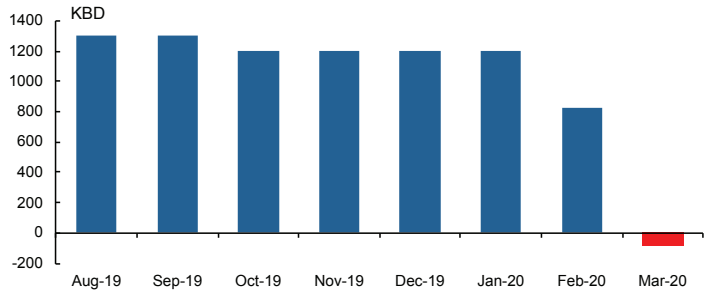
tougher containment and mitigation policies such as social distancing and limitations on social interactions were also the localities that experienced the fastest economic recoveries afterwards. The related issue of the sequencing of policy responses is explored further in section I.3.

The negative demand and supply shocks are illustrated in Figure I.1. Original demand and supply curves are D_0 and S_0 and the original output is Q_0. Because of the spread of the virus to the region, both curves shift left, generating a new equilibrium output Q_1, which implies a reduction of output and income even though the net impact on price inflation is ambiguous (Figure I.1 is drawn to reflect a scenario in which prices fall). The extent of the declines in supply and demand is uncertain. The drop-offs depend on the disclosure of information about the spread of the virus and the health policy responses by the countries. Consequently, any forecasts or estimates of future economic activity must be treated with great caution and are likely to change as new information comes to light.

I.2 The Collapse of Oil Prices

The oil price collapse exacerbates the impact of Covid-19 and brings severe negative income shocks to many MENA economies. After tallies of death rates in China were reported, oil prices declined sharply. Because of China's increasingly important role in global commodity markets, any setbacks to its economy are expected to significantly reduce global demand. In addition, the global fear and uncertainty regarding the spread of virus is likely to hurt investment decisions in China and in other countries, further weighing on demand prospects and lowering oil prices. The March 2020 report from the International Energy Agency (IEA) projected that in 2020 global oil demand growth would fall for the first time since 2009 (see Figure I.2). The IEA in March forecasts a 0.09 million barrel per day (mbd) decline daily demand in 2020, 1.1 mbd lower than its forecast a month earlier.

Figure I.2 Global Oil Demand Forecasts for 2020

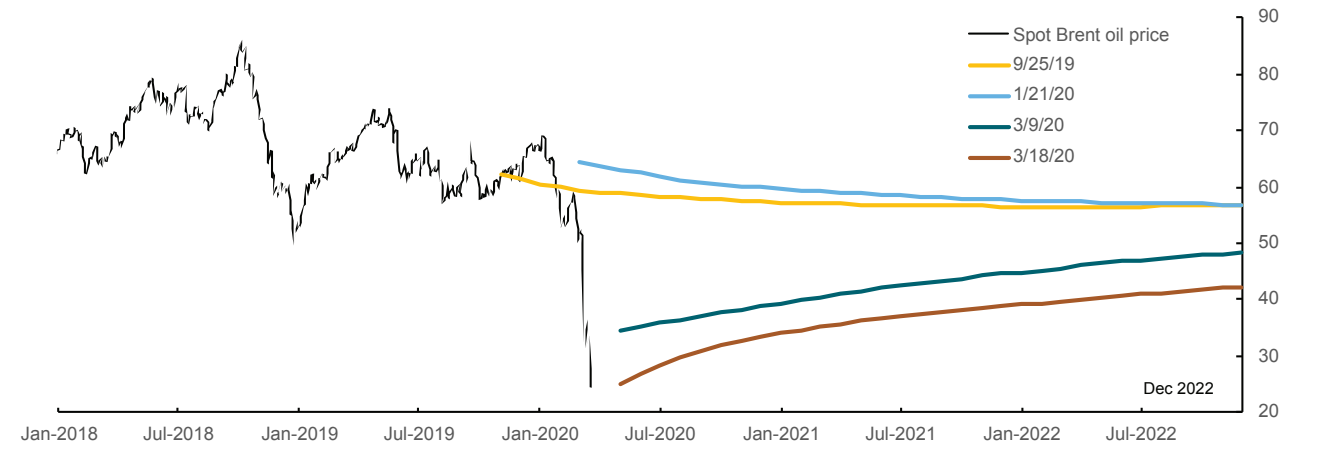


Source: International Energy Agency
Note: Horizontal axis indicates different vintages of IEA's 2020 global demand forecasts.

In response to falling demand for oil, the Organization of the Petroleum Exporting Countries (OPEC) on March 5 proposed a 1.5 mb/d production cut for the second quarter of 2020—of which 1 mb/d would come from OPEC countries and 0.5 mb/d from non-OPEC but aligned producers, most prominently Russia. The following day, Russia rejected the proposal, prompting Saudi Arabia—the world's largest oil exporter—to boost production to 12.3 mb/d, its full capacity. Saudi Arabia also announced unprecedented discounts of almost 20 percent in key markets (Arezki and Fan, 2020). The boost in supply, coupled with falling demand, resulted in a collapse in oil prices, to as low as $31.1 a barrel on the following

Figure I.3 Brent Oil Price and Futures

(U.S. dollars a barrel; expiration dates on x-axis)

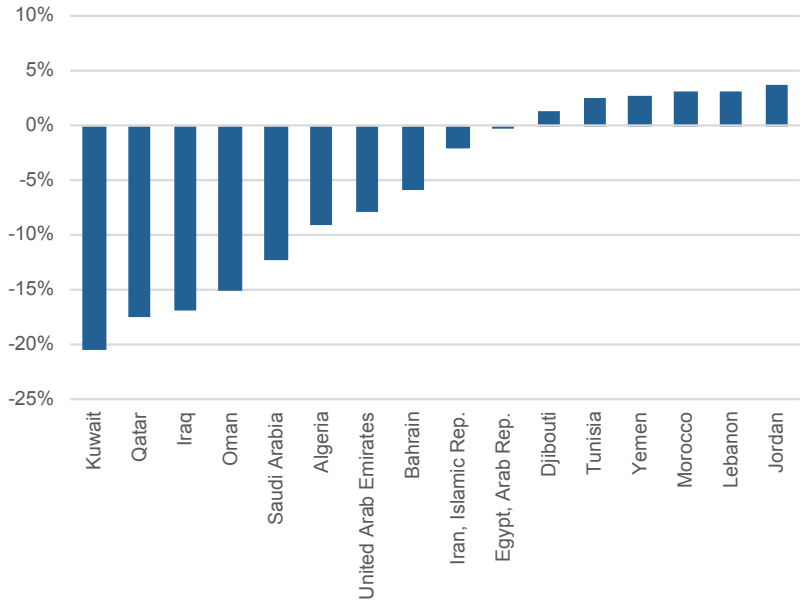


Source: Bloomberg, L.P.
Note: The black line indicates the spot price of Brent crude oil. The colored lines illustrate the futures prices of Brent crude oil on, respectively, September 25, 2019; January 21, 2020; March 9, 2020, after the disintegration of the OPEC+ alliance; and March 18, 2020.

Monday, March 9, and to about $25 a barrel as of March 18 (see Figure I.3). The upward pointing futures curve suggests the market still expects oil prices to recover, but slowly—reaching about $43 per barrel by the end of 2022. But, of course, such forecasts are uncertain.

The oil price collapse produced a massive direct negative income effect for MENA oil exporters. It also hurt oil importers, even though as a general rule, lower prices are good for oil-importing economies and bad for oil exporters. A simple way to get a sense of the size of the real income effect is to multiply the difference between production and consumption (net oil exports) as a share of GDP by the percentage point decrease in the oil price (see Figure I.4). Based on a hypothetical scenario in which oil prices stay 48 percent below their 2019 level, Kuwait, whose net oil exports account for 43 percent of GDP, would experience a decline in real income of about 20 percent of GDP, while oil-importer Morocco would experience an increase in real income equivalent to 3 percent of GDP.

Figure I.4 Rough Calculations of the Income Effect of the Oil-Price Collapse across MENA Economies



Source: Authors' calculations based on data from the World Economic Outlook database.
Note: Oil prices are from March 13, 2020 with a forecast of $33.4 per barrel for 2020, 48% lower than the price of 2019 ($64 per barrel).

However, in MENA it is likely that lower oil prices will also indirectly hurt oil

importers through reduced foreign direct investment, remittances, and grants from the region high-income exporters. The economic fortunes of MENA's oil importers and exporters are connected.

The two shocks of Covid-19 and oil price collapse are intertwined, yet distinct. On one hand, the demand component of the oil shock is linked to the sharp reduction in oil consumption stemming from the negative supply and demand shocks associated with the spread of Covid-19. The speed of that recovery will depend on how swiftly and decisively governments take measures to mitigate the economic and financial dislocations from the health crisis. On the other hand, the supply component of the oil shock is likely to persist and keep downward pressure on oil prices for some time.

I.3 Toward a Sequencing of Policy Responses to the Dual Shocks

To deal with the dual shocks, a two-pronged approach can be pursued. One is immediate and related to the health emergency. The other concerns forward looking policy reforms. Authorities could sequence and tailor their responses to the severity of the shocks. That is, it might be desirable to focus first on responding to the health emergency and the associated economic contraction. Fiscal consolidation and structural reforms associated with the persistent drop in oil prices and pre-existing challenges are also very important, but with proper external support, can wait until the health emergency subsides. After the crisis, budget-neutral reforms such as debt transparency and reforms of state-owned enterprises will also come to the fore.

In responding to Covid-19, fiscal authorities could prioritize health spending—including producing or acquiring test kits, mobilizing and paying health workers, adding health-care infrastructure, and preparing for vaccination campaigns. The authorities could use target cash transfers on vulnerable households and support the private sector, including informal firms (see Arezki and Nguyen, 2020).

During this time, it is paramount to reach the large number of workers in the informal sector, which provides no safety net. Chapter III provides estimates of the informal labor force in MENA, which can be as high as 70 percent of the labor force. Many of them work hand-to-mouth. Given the large number of informal workers and borrowing constraints in many developing countries in MENA, targeted assistance is vital and should be larger relative to the economy than similar efforts in advanced economies. Successful models of quickly deploying technology to fight Covid-19 and target assistance can be analyzed and replicated[5]. Freeing information flows, increasing transparency, and data disclosure to reduce leakages, are crucial elements in targeted cash transfers—which are essential to ensuring a flattening of the spread of the virus, hastening the economic recovery, and limiting the rise in poverty. To reduce the risk of financial instability, the relevant policy authorities in the MENA region can reduce interest rates and inject liquidity into the banking system. Where inflation is low, liquidity injection and targeted cash transfers could even be financed by "helicopter money," that is, essentially, money printed by central banks (Gali, 2020).

The battle against the spread of the novel coronavirus and its economic and social consequences will be made more difficult by empty government coffers. Many MENA countries are facing large balance of payments and fiscal deficits. Many also carry high sovereign-risk premiums. For those countries, additional foreign borrowing on private markets will be difficult. Moreover, countries with fixed exchange rates will find it difficult to use helicopter money because of the tension between money-printing and maintenance of a peg. The region will need much international support to help it navigate an extremely rough patch.

5 See Foreign Affairs (2020) for the experience of Taiwan.

I.4 Quantifying the Effects of the Dual Shocks

One key indicator of the expected costs of the dual shocks is arguably the change in growth expectations relative to previous growth forecasts prior to the the dual shocks. However, while it is relatively straightforward to predict that MENA's growth will decline, it is much more difficult to forecast future growth precisely. For one thing, economists generally have difficulties forecasting severe economic downturns (An and others 2018). For another, rare and large negative shocks, so-called "black swan" events, are even harder to predict than run-of-the-mill recessions (Vegh and others 2018). During crisis periods, the variance across different forecasts tends to grow larger, reflecting economists' diverging thinking about future economic developments in situations where anything can seem plausible. Table I.1 shows the standard deviation of private sector forecasts for a set of MENA countries' output growth in 2020—made in March 2020, after the pandemic and the collapse of oil prices, and in December 2019, before the pandemic. For most countries, projected 2020 GDP growth rates were revised downward while the standard deviation (an indicator of forecast uncertainty) increased.

Table I.1. Standard Deviation of Private-Sector Forecasts for 2020 GDP Growth across MENA Economies

	Consensus Forecasts			*Standard Deviation*		
	March forecasts	*December forecasts*	*Difference*	*March forecasts*	*December forecasts*	*Difference*
Algeria	1.5	1.7	-0.23	0.7	0.6	0.07
Egypt	5.5	5.6	-0.05	0.3	0.4	-0.02
Iraq	3.4	3.8	-0.39	2.1	1.7	0.39
Jordan	2.3	2.3	-0.05	0.2	0.3	-0.01
Lebanon	-1.2	1.1	-2.27	3.1	1.0	2.09
Morocco	3.0	3.0	-0.05	0.5	0.5	-0.01
Tunisia	2.3	2.1	0.17	0.7	0.9	-0.13
Bahrain	1.7	2.0	-0.26	0.5	0.7	-0.17
Kuwait	1.9	2.2	-0.31	0.8	0.7	0.13
Oman	2.0	2.4	-0.43	1.1	1.5	-0.42
Qatar	2.0	2.5	-0.45	0.6	0.4	0.14
Saudi Arabia	1.6	2.0	-0.43	0.5	0.4	0.13
UAE	2.0	2.4	-0.40	0.6	0.4	0.23

Source: Authors' calculations based on data from Focus Economics (2020).

Given the dual shocks to the region, World Bank economists downgraded the growth forecast for MENA in 2020 by 3.7 percentage points relative to our forecast published in October 2019 (see Tables I.2 and I.3). The growth downgrade of 3.7 percentage points is arguably a rough measure of the expected costs of the dual shocks, because they are the dominant developments since October 2019.

Nevertheless, it cannot be overstated that the forecasts remain fluid. To illustrate the uncertainty surrounding the forecasts, Table I.3 shows the differences between two recent rounds of World Bank's forecasts separated by less than two weeks (in March 19, 2020 and April 1, 2020 respectively) with the October 2019 forecasts. For most countries, the new forecasts in April 1, 2020 are substantially lower than those done in March 19, 2020, reflecting adjustments due to newly available information.

Table I.2. Uncertain Forecasts: World Bank's Growth, Current Account and Fiscal Balance Forecasts

	Real GDP Growth (percent)					*Real GDP per capita Growth (percent)*					*Current Account Balance (percent of GDP)*					*Fiscal Balance (percent of GDP)*				
	2018	*2019e*	*2020f*	*2021f*	*2022f*	*2018*	*2019e*	*2020f*	*2021f*	*2022f*	*2018*	*2019e*	*2020f*	*2021f*	*2022f*	*2018*	*2019e*	*2020f*	*2021f*	*2022f*
MENA	**1.1**	**0.3**	**-1.1**	**2.1**	**2.8**	**-0.6**	**-1.1**	**-2.6**	**0.4**	**1.5**	**4.1**	**1.2**	**-7.2**	**-4.6**	**-3.4**	**-3.0**	**-4.7**	**-9.7**	**-8.0**	**-7.0**
Developing MENA	**0.2**	**-0.2**	**-1.8**	**2.3**	**3.1**	**-1.3**	**-1.5**	**-3.4**	**0.7**	**1.6**	**-0.8**	**-3.1**	**-6.8**	**-5.2**	**-4.9**	**-2.8**	**-5.4**	**-10.0**	**-8.6**	**-8.0**
Oil Exporters	**0.4**	**-0.5**	**-1.6**	**1.7**	**2.3**	**-1.4**	**-2.0**	**-3.2**	**0.0**	**1.0**	**6.3**	**2.6**	**-7.8**	**-4.8**	**-3.3**	**-2.1**	**-4.2**	**-10.3**	**-8.4**	**-7.3**
GCC	**2.0**	**0.9**	**-0.4**	**1.8**	**2.5**	**0.1**	**-0.8**	**-1.9**	**0.1**	**1.4**	**8.5**	**5.1**	**-7.6**	**-4.0**	**-1.7**	**-3.2**	**-4.0**	**-9.3**	**-7.4**	**-5.9**
Bahrain	1.8	1.8	-2.5	3.0	2.3	1.3	1.8	-2.5	-3.4	2.3	-5.9	-3.0	-9.2	-7.3	-5.3	-11.9	-10.6	-16.6	-12.5	-10.2
Kuwait	1.2	0.7	0.0	1.6	2.2	-0.2	-0.5	-1.2	0.2	0.8	15.1	8.1	-6.4	-5.2	-3.0	-3.0	-13.6	-25.6	-19.8	-14.7
Oman	1.8	0.5	-3.5	2.7	2.5	-2.3	-3.0	-6.3	0.4	2.5	-5.5	-5.2	-15.2	-11.4	-7.7	-7.9	-6.9	-17.9	-14.5	-12.0
Qatar	1.5	1.4	0.4	1.5	2.4	-0.6	-0.4	-1.3	-0.2	0.7	8.7	2.6	0.0	1.9	2.8	2.2	1.3	-3.0	-1.0	0.0
Saudi Arabia	2.4	0.3	0.2	2.1	2.6	0.6	-1.4	-1.4	0.5	1.1	9.0	5.4	-10.3	-5.4	-5.3	-5.9	-4.2	-7.5	-6.4	-6.4
United Arab Emirates	1.7	1.7	-1.1	1.2	2.3	0.2	0.3	-2.4	0.0	2.3	9.1	7.5	-5.7	-2.5	3.9	1.2	-1.6	-7.0	-5.5	-3.0
Developing Oil Exporters	**-2.4**	**-3.1**	**-3.9**	**1.4**	**1.9**	**-4.0**	**-4.2**	**-5.5**	**-0.3**	**0.2**	**2.4**	**-1.9**	**-8.3**	**-6.1**	**-5.9**	**-0.2**	**-4.5**	**-11.9**	**-10.2**	**-9.8**
Algeria	1.4	0.9	-3.0	1.1	1.8	-0.3	-0.7	-4.5	-0.3	0.3	-9.8	-10.2	-18.8	-17.0	-17.0	-9.6	-11.5	-16.3	-16.5	-14.8
Iran	-4.7	-8.2	-3.7	1.3	1.5	-5.7	-9.1	-4.6	0.4	0.7	5.3	-0.4	-2.5	-2.1	-1.9	-1.4	-5.1	-6.5	-6.8	-7.1
Iraq	-0.6	4.4	-5.0	1.9	2.7	-3.3	3.5	-8.3	-1.6	-0.8	6.9	2.5	-12.1	-5.9	-5.7	11.2	3.0	-19.4	-12.3	-11.4
Developing Oil Importers	**3.8**	**3.5**	**0.6**	**3.3**	**4.5**	**2.2**	**1.9**	**-0.8**	**1.9**	**3.2**	**-6.6**	**-5.0**	**-4.8**	**-4.0**	**-3.7**	**-7.4**	**-6.7**	**-7.6**	**-6.4**	**-5.9**
Djibouti	8.4	7.5	1.3	9.2	8.2	6.8	5.9	-0.1	7.7	6.7	13.4	18.5	16.5	18.4	18.4	-2.5	-0.5	-2.9	-2.1	-2.0
Egypt	5.3	5.6	3.7	3.8	5.8	3.4	3.7	1.9	2.1	4.1	-2.4	-3.6	-3.7	-3.4	-3.3	-9.7	-8.1	-8.2	-7.3	-6.5
Jordan	1.9	2.0	-3.5	2.0	2.2	0.1	0.5	-4.5	1.3	1.9	-7.0	-2.9	-3.9	-3.7	-3.3	-3.4	-4.7	-4.4	-4.1	-3.4
Lebanon	-1.9	-5.6	-10.9	-6.3	-3.4	-2.5	-6.1	-11.4	-6.8	-2.1	-24.3	-12.5	-7.0	-6.5	-7.5	-11.0	-10.6	-12.1	-11.4	-12.0
Morocco	3.0	2.3	-1.7	5.5	4.2	1.9	1.2	-2.7	4.4	3.1	-5.5	-4.6	-7.5	-4.2	-3.2	-3.7	-3.6	-6.0	-3.3	-3.1
Tunisia	2.7	1.0	-4.0	4.2	2.2	1.6	-0.4	-4.8	3.2	1.3	-11.2	-8.8	-7.2	-7.0	-6.8	-4.8	-4.1	-5.0	-3.8	-2.9
West Bank & Gaza	1.2	0.9	-2.5	2.1	2.4	-1.4	-1.7	-5.0	-0.5	-0.3	-10.2	-9.9	-7.3	-6.3	-6.0	-2.5	-4.4	-6.1	-3.9	-3.8
Memorandum																				
Libya	15.1	2.5	-19.4	NP	1.4	13.4	1.0	-20.5	20.7	0.3	21.4	11.6	-29.3	-9.0	-8.2	-7.0	1.7	-36.7	-2.6	-2.5

Sources: Authors' calculations based on data from World Bank Macro and Poverty Outlook. Data are as of April 1, 2020.
Note: e=estimate, f=forecast and NP=not presented. Data are rounded up to a single digit. Data for Egypt correspond to its fiscal year (July-June). Libya, Syria and Yemen are not included in the regional and sub-regional averages due to lack of reliable data.

Table I.3. Changing Estimates of the Costs of the Crisis: World Bank Growth Forecasts Relative to October 2019

Percentage points

Real GDP Growth, percent	*October Forecast*			*Difference (March 19, 2020 - October 2019)*			*Difference (April 1, 2020 - October 2019)*		
	2019e	*2020f*	*2021f*	*2019e*	*2020f*	*2021f*	*2019e*	*2020f*	*2021f*
MENA	**0.6**	**2.6**	**2.9**	**-0.3**	**-2.1**	**-0.3**	**-0.2**	**-3.7**	**-0.8**
Developing MENA	**0.0**	**3.0**	**3.1**	**-0.2**	**-2.8**	**-0.5**	**-0.2**	**-4.8**	**-0.7**
Oil Exporters	**-0.4**	**2.1**	**2.3**	**-0.2**	**-2.4**	**-0.3**	**-0.1**	**-3.7**	**-0.7**
GCC	**1.1**	**2.2**	**2.7**	**-0.3**	**-1.4**	**-0.2**	**-0.2**	**-2.6**	**-0.9**
Bahrain	1.8	2.1	2.3	-0.1	-1.3	-0.7	0.0	-4.6	0.7
Kuwait	1.5	2.5	2.8	-0.8	-2.5	-1.2	-0.8	-2.5	-1.2
Oman	0.3	3.5	4.0	0.2	-3.3	-3.0	0.2	-7.0	-1.3
Qatar	2.0	3.0	3.2	-0.6	-1.6	-0.9	-0.6	-2.6	-1.7
Saudi Arabia	0.5	1.6	2.2	-0.2	-0.8	1.3	-0.2	-1.4	-0.1
United Arab Emirates	1.8	2.6	3.0	-0.3	-1.8	-1.7	-0.1	-3.7	-1.8
Developing Oil Exporters	**-3.3**	**1.8**	**1.7**	**0.1**	**-4.1**	**-0.4**	**0.1**	**-5.7**	**-0.3**
Algeria	1.3	1.9	2.2	-0.4	-3.2	-0.9	-0.4	-4.9	-1.1
Iran	-8.7	0.1	1.0	0.5	-1.9	0.1	0.5	-3.8	0.3
Iraq	4.8	5.1	2.7	-0.4	-9.0	-0.8	-0.4	-10.1	-0.8
Developing Oil Importers	**4.1**	**4.4**	**4.6**	**-0.6**	**-1.2**	**-0.6**	**-0.6**	**-3.8**	**-1.3**
Djibouti	7.2	7.5	8.0	0.3	-0.5	0.2	0.3	-6.2	1.1
Egypt	5.6	5.8	6.0	-0.1	-0.3	-0.4	-0.1	-2.1	-2.2
Jordan	2.2	2.3	2.5	-0.2	-0.4	-0.3	-0.2	-5.8	-0.5
Lebanon	-0.2	0.3	0.4	-5.4	-8.1	-6.1	-5.4	-11.2	-6.8
Morocco	2.7	3.5	3.6	-0.4	-1.8	0.0	-0.4	-5.2	1.9
Tunisia	1.6	2.2	2.6	-0.6	-1.4	-0.8	-0.6	-6.2	1.6
West Bank & Gaza	1.3	-1.1	-0.4	-0.4	0.0	2.5	-0.4	-1.4	2.5

Source: Authors' calculations based on data from World Bank Macro and Poverty Outlook and Arezki et al. (2020).
Note: Libya, Syria and Yemen are not included in the regional and sub-regional averages due to lack of reliable data.

As with any economic forecasts during periods of unexpected and large negative shocks, these forecasts have large margins of error. This speaks to the possibility of different future states of the world – "multiple equilibria" in technical jargon. Depending on the future spread of the virus, the health policy responses, societal responses, and future developments in global oil markets, several plausible scenarios could emerge for any or all MENA economies. The actual growth rates could reflect different equilibria than the ones presented here. The uncertainty about the future is further exacerbated by incomplete current information about the spread of the novel coronavirus—which could be due to lack of testing, lack of disclosure, or both.

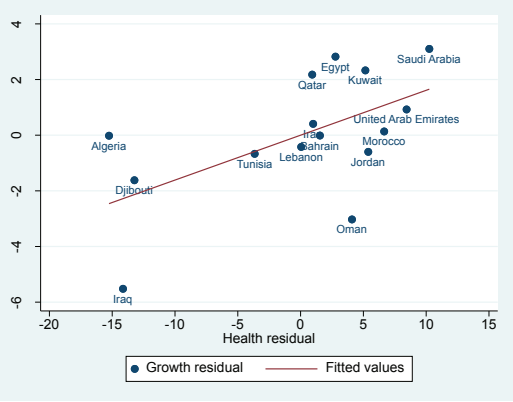
With this caveat, we examine whether the World Bank's growth downgrades correlate with a country's exposure to oil exports—measured as net crude oil exports as a fraction of GDP in 2019—and a country's Global Health Security (GHS) index—which captures its capability to prevent and mitigate epidemics and pandemics, including compliance with international norms and the reporting of health information[6].

6 The index was jointly developed by the Nuclear Threat Initiative, the Johns Hopkins Center for Health Security, and the Economist Intelligence Unit. Data were released in 2019. The index consists of six categories: prevention; detection and reporting; rapid response; health system; compliance with international norms; and risk environment (see https://www.ghsindex.org/).

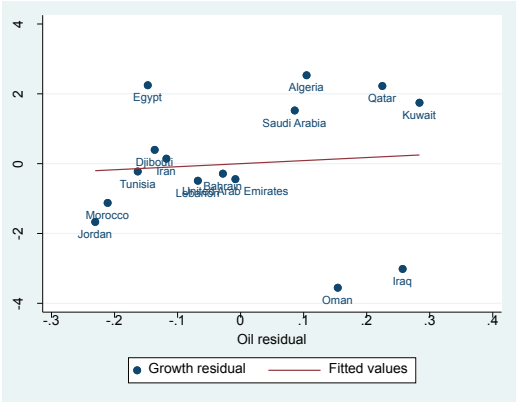
Fifteen countries are included. [7] Overall, growth downgrades between April 1, 2020 and October 2019 are positively correlated with the GHS Index and not significantly correlated with oil export exposure. In other words, for countries with a stronger capability to prevent and mitigate pandemics, economic growth is expected to fall relatively less than for countries not so well situated (see the partial correlation scatterplots in Figure I.5). The fact that the downgrades are not significantly correlated with oil export exposure could reflect the fact that even oil importers in MENA can suffer from the decline in oil prices, as mentioned above. However, a similar exercise conducted with the March 19 forecasts showed a negative relationship between the growth downgrades and oil export exposure. This relationship disappeared with the April 1 forecasts.

Figure I.5. Correlates of the Costs of the Crisis: Growth Downgrades, Oil Export Exposure and Health Security

Panel A: Growth Downgrades and Health Security Index



Panel B: Growth Downgrades and Oil Export Exposure



Source: Authors' calculations based on data from World Bank Macro and Poverty Outlook.

The evidence suggests that the changes in the World Bank's forecasts are systematically related to initial pre-existing conditions, particularly each economy's health system. It cannot be overstated, however, that all economic forecasts from any source are highly uncertain. This said, the challenge of low growth was not brought to MENA by the dual shocks. The region has been suffering from low-growth syndrome for decades.

An important and related question is whether the growth slowdown will be transitory or permanent. In general, a transitory economic shock that does not permanently affect other economic variables will imply a transient growth downgrade, leading to a fast recovery afterwards. This would be a "V-shaped" pattern. If instead, the shocks are permanent or if transitory shocks interact with domestic conditions to make the impact permanent, then the over-time path of growth could follow an "L" shape.

In the current context, as mentioned above, the spread of the virus could have potentially catastrophic, but transitory, effects on public health . However, it could have more durable effects on the economy if it interacts with existing economic vulnerabilities. On the other hand, the oil price collapse might be more long-lasting if it reflects permanent structural changes in the global oil market due to technological progress (e.g., shale and renewables) and consequent changes in the market power of OPEC+.

7 The Global Health Security Index is not available for West Bank and Gaza. Oil export data are not reliable for Libya.

A close inspection of the changes in the World Bank's growth forecasts can shed light on the World Bank economists' belief about the nature of the dual shocks' impacts on our growth expectations for MENA in 2020-2021. Panel A of Figure I.6 shows the changes in the growth forecasts between those conducted in April 1, 2020 and those published in October 2019, for MENA as a whole, the GCC, developing oil exporters, and developing oil importers as per the classification in Table I.2 above. The sharpest drop in 2020 growth forecasts corresponds to the developing oil exporters, followed by the developing oil importers and then by the GCC countries. Despite the oil price collapse, significant growth downgrades of oil importers indicate the economic fortunes of the region's oil exporters and oil importers are connected. The new forecasts assume that the price of oil will be around $30 dollars per barrel in 2020 and rise to about $40 in 2021. Both are notably below the price forecasts in October 2019. In addition, a part of the recovery of growth forecasts for 2021 relative to those in October is due to the expected recovery in oil price between 2020 and 2021.

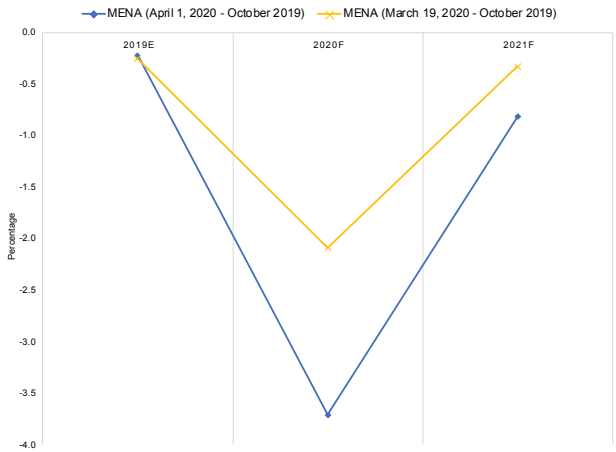
Nevertheless, the World Bank expects MENA growth rates in 2021 to be below the forecasts in October 2019. That is, our 2021 growth forecasts have by and large been revised downward. And this is true for both oil exporters and oil importers (Panel A of Figure I.6). A decomposition analysis suggests that once we remove the direct positive effect of the expected oil price recovery, the 2021 growth for oil exporters would be even lower. This implies that our economists expect somewhat durable effects of the dual shocks, above and beyond the direct income effect of oil price changes.

Note that the forecasts are fluid and subject to change when new data become available. Panel B of Figure I.6 illustrates this. Between March 19 and April 1, 2020, World Bank economists sharply increased their estimates of the cost of the dual shocks. Growth downgrades for 2020 and 2021 for MENA, the approximate costs of the dual shocks, went from -2.1 to -3.7 percentage points for 2020, and from -0.3 to -0.8 percentage points for 2021. To the extent that the full repercussions of the dual shocks have not been fully captured in economic forecasts, it is safe to conclude that our estimates of the costs of the crisis are conservative; they can be interpreted as lower-bound estimates of the costs..

Figure I.6 Fluid Estimates of the Costs of the Crisis — Changes in World Bank Growth Forecasts

Panel A: Changes in Forecasts (April 1, 2020 - October 2019) across MENA Country Groups, 2019-2021

Panel B: Changes in Forecasts (April 1, 2020 - October 2019) and (March 19, 2020 – October 2019)

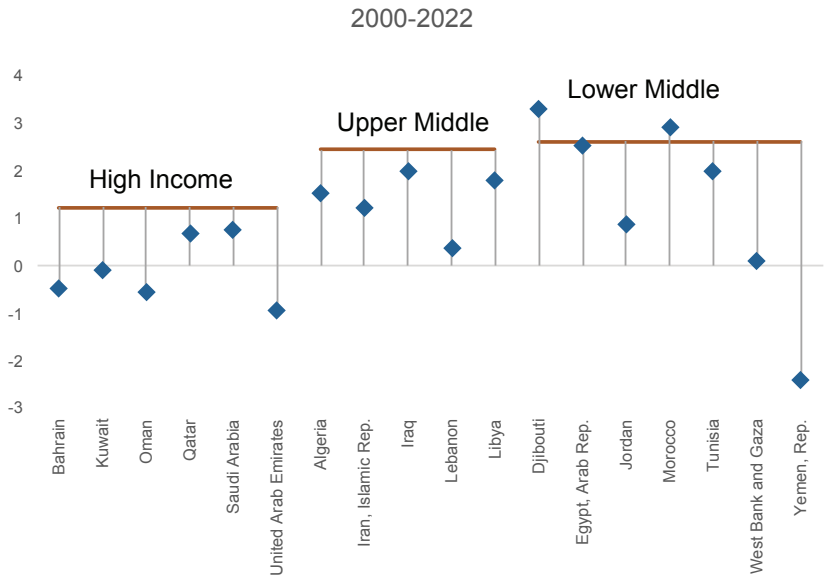


Source: Authors' calculations based on data from World Bank Macro and Poverty Outlook and Arezki et al. (2020). Note: Libya, Syria and Yemen are not included in the regional and sub-regional averages due to lack of reliable data.

I.5 MENA's Chronic Low-Growth Syndrome

The analysis of current challenges and risks underscores a sobering fact: The region has suffered from chronic low-growth syndrome for decades. In fact, MENA's per-capita growth has been low even relative to the mediocre benchmark of the typical (median) growth rate in the rest of the world. When each country's growth performance since the beginning of the 21st century into our forecast horizon is compared to the median (or typical) economy in their corresponding income groups, the evidence indicates that most MENA economies underperformed relative to that mediocre benchmark.

Figure I.7 MENA's Chronic Low-Growth Syndrome



Sources: World Bank, Macro and Poverty Outlook and World Development Indicators; International Monetary Fund, World Economic Outlook; and World Bank staff calculations. Data are as of October 2019.

Figure I.7 shows average growth rates in per capita GDP for each MENA economy (represented by blue diamonds) as well as the median growth rates of their corresponding income groups (represented by red horizontal lines) over the period 2000–2022. All Gulf Cooperation Council (GCC) countries and upper-middle-income MENA countries have grown more slowly than the typical high-income and upper-middle income country during this period. Among lower-middle-income countries, only in Djibouti and Morocco does long-term growth outperform that of a typical peer.

The long-standing underperformance of economic growth in the region is not only notable but large. A rough calculation suggests that if all MENA economies had grown at the median rate of their respective income groups, the region would be, on average, at least 20 percent richer than it is today.

These findings raise the question of what factors underlie this low-growth syndrome, which has been accompanied by outbursts of social unrest. This report argues that lack of transparency is a strong candidate. The following section discusses the relationship between lack of transparency and long-term growth.

I.6 Enhancing MENA's Transparency Can Accelerate Growth

There is a widening data gap between MENA and advanced economies: while advanced economies characteristically have modern and well-coordinated data collection systems that are accessible to the research community, many economies in the MENA region have either lagged in their capacity to generate data or have prevented the research community, the independent media, and civil society from accessing its data. While concerns over privacy are real, little attention has been paid to the costs of opaque data systems that hamper external knowledge generation.

But some of these costs are becoming apparent. Lack of transparency hurts even more when systems are under stress by potent threats, such as the ongoing Covid-19 pandemic. An optimal societal response requires open and direct communication across several actors in society—the government, health care systems, civil society, and various institutions. Information needs to be collected in real time to enable governments and public health officials to take timely, decisive actions. Citizens need to report cases and respond to behavioral changes requested by the government. The flow of data is the oil of the engine of this system of interactions and responses. When data is not made public or is misused, the engine can fail. The ramifications of the lack of trust, forged by limited transparency, comes into stark relief when citizens are confused about what to believe. And as we have seen several times over many decades, regaining credibility is not easy. As one citizen in the region aptly described the leadership response to Covid-19: "When you lose people's trust, even when you tell the truth, people won't believe you."

The responsibilities of countries in the data agenda has been well established. At their core, the U.N.'s Sustainable Development Goals (SDGs) emphasize the need for countries to generate socioeconomic indicators within the limits of each country's capacity. The costs of such efforts are not trivial, and the tradeoffs between investing in data capacity and systems and other pressing needs are difficult for developing country governments to ascertain. The long-run benefits of transparency, however, are considerable. It is uncontroversial that economies in the MENA region need to make substantial investments, while adopting best practices to catch up in terms of data transparency.

Box I.1. Transparency and the Statistical Capacity Index

The evolution and widespread use of the word "transparency" in terms of governance can be largely attributed to supranational and non-governmental organizations. In the early 1990s, Peter Eigen, a former World Bank manager established Transparency International as an alternative way to address corruption. The organization's mission is to study the effects of corruption on citizens and advocate policy reforms in global institutions to address corrupt practices. "Integrity International" and "Honesty International" were considered as names for the organization, but "transparency" won out as it was understood to convey the term "openness" (Ball, 2009).

Consequently, the term "transparency" spread across the World Bank, the OECD, and congressional directives to the International Monetary Fund. Academicians adopted the term "transparency" and formalized its meaning, especially in the field of International Studies. Finel and Lord (1999) defined transparency as comprising *"the legal, political, and institutional structures that make information about the internal characteristics of a government and society available to actors both inside and outside the domestic political system. Transparency is increased by any mechanism that leads to the public disclosure of information, whether a free press, open government, hearings, or the existence of nongovernmental organizations with an incentive to release objective information about the government."* Mitchell (1998) used the definition: *"Transparency constitutes the demand for information, the ability of citizens to obtain information, and the supply and actual release of information by government and NGOs."*

The World Bank's statistical capacity index goes beyond its name by capturing many of the elements of transparency consistent with the definitions above (see table A2 for detailed definition of the statistical capacity index and its components). The availability and regular publication of micro and macro data as well as whether production of such data adheres to international standards goes to the heart of "openness," the ability of citizens to obtain information, and actual release of information by the government. The measure goes beyond statistical capacity—highly competent statistical offices can be penalized if they do not publish statistics. The statistical capacity index captures transparency by using data-centric, objective, and verifiable measures—and is unique in that it is not dependent on perceptions of transparency by survey respondents as is typically the case in many transparency indicators. The statistical capacity index can be re-interpreted as a statistical or data transparency index.

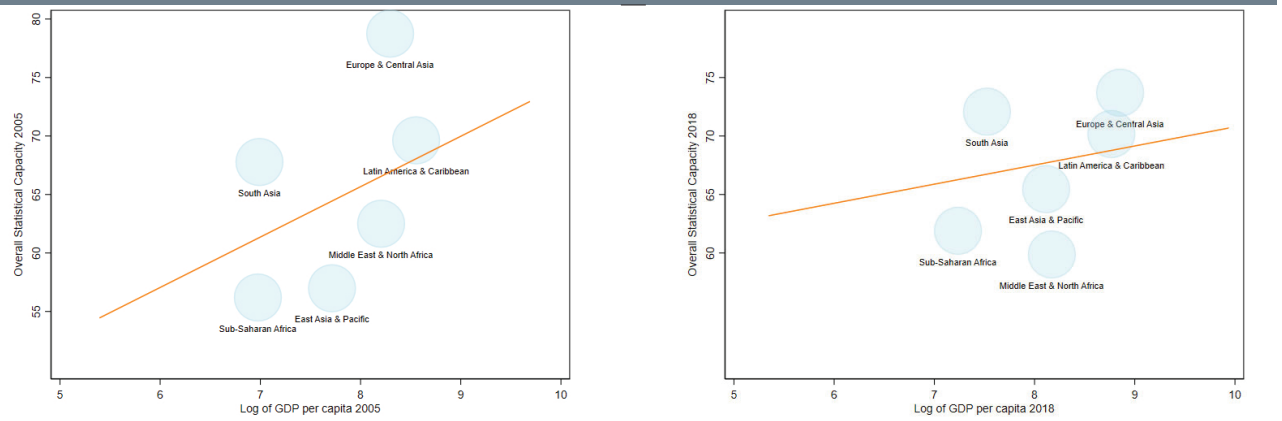
Figure I.8 shows a fitted line between overall statistical capacity and the level of development for 149 mostly developing economies in 2005 (see left panel) and in 2018 (see right panel). Note that the positive relationship between statistical capacity and GDP per capita would likely be stronger were advanced economies included in the sample. The circles in figure I.8 shows the regional averages. While the MENA region (excluding the GCC countries) was already underperforming in 2005 relative to its level of development, it became the region with the lowest statistical capacity in 2018. The weakening relationship between statistical capacity and development between 2005 and 2018 could be because poorer economies succeeded in developing statistical capacity or richer economies restricted data access, perhaps due to privacy concerns.

In theory, there are at least three channels through which data transparency affects development.

First, credible and timely data serve as the basis for policy formulation and reforms. Policies can only be as good as the empirical evidence on which they are based. At a fundamental level, data are about records. Take the example of a business. A manager has the primary goal of raising profits. To achieve this, performance must be benchmarked historically and compared with that of competitors. Collateral must be evaluated and leveraged to obtain financing to pursue new ventures. Risk and reward must be balanced. Investors need to be enticed. Without record-keeping, many

of these goals could not be achieved. A similar set of challenges face governments in the MENA region. Countries need to grow, and, to expand options, data must be reliably transparent to provide guidance. Countries with high quality and broadly accessible information can make better decisions. Through data and evaluation, existing policies may be reformed and refined, while new policies may be experimentally evaluated.

Figure I.8. Regional Development and Statistical Capacity



Note: The overall statistical capacity measure captures availability of data (micro and administrative), adherence to international standards in terms of methodology, and periodicity and timeliness of statistical capacity (see Appendix Table A2 and Box I.1). The fitted line is based on 149 economies, although only regional averages are displayed. The MENA sample excludes GCC economies. The West Bank and Gaza is included only in the 2018 graph due to lack of data for 2005. Since the West Bank and Gaza has better statistical capacity than most economies in the region, its omission in 2005 may indicate that MENA was performing worse in terms of statistical capacity than the 2005 graph indicates.

Second, data that are accessible to the broader civil society can generate better policies and reforms. Substantial expansions in the frontier of knowledge occur when data are available to a large base of analysts. Researchers test hypotheses, debate and dispute findings, establish robust facts and relationships to facilitate the emergence of the best ideas for addressing challenges. It is not surprising that richer economies are researched more than poorer economies. Publications in top-ranking journals in the economics profession are skewed towards wealthier economies—a fact that could be partly explained by lack of data accessibility in lower income economies (see the evidence presented by Das and others 2013)[8]. Chapter II of the report shows that the lack of transparency concerning public debt stocks in MENA could hamper credible analyses on debt sustainability, an important topic as stimulus measures are being adopted to respond to the Covid-19 and oil price dual shocks. After the crisis, it would be good to have a clear understanding of the debt situation in the region.

Third, when data are of questionable quality or unavailable, the gap between perceptions and reality may grow. Important reforms may lead to real welfare improvements yet have little impact on public perceptions because there is limited data tracking such improvements. These perceptions may foster a narrative that results in frustrations that manifest themselves in social protests and unrest. Similarly, if data are of dubious quality, the public may lose confidence in such information and may not alter their perceptions despite positive findings from the data. More important, once a government walks down the path of unreliable or limited data accessibility, it may be difficult to regain credibility. The public may be less willing to trust information from the government, which makes it difficult for a changed government to change public perceptions. The result is economies that are more prone to social upheavals. In fact, for MENA, there has been a long-standing mystery of why social unrest is so prevalent in societies with relatively little income inequality. Recent research suggests that this might be due to other factors, perhaps lack of transparency, which create a wedge

8 It is not surprising that richer economies are researched more than poorer economies. Publications in top-ranking journals in the economics profession are skewed towards wealthier economies—a fact that could be partly explained by lack of data accessibility in lower income economies (see the evidence presented by Das and others 2013).

between people's perceptions of their relative socioeconomic standing in society and their actual position. Clementi and others (2019) studied Morocco before and after the Arab Spring and found evidence of such skewed perceptions.

However, to inform policy, availability and accessibility of good quality (credible) data are necessary, but not enough. Think tanks, the media and policymakers play an important role in facilitating debate fostered by data to ensure that policy is an outcome of the process and the public takes ownership of the debate.

The process typically goes as follows: As produced, data are not easily digestible by the public, so academics generate knowledge from the data that fosters debate among themselves. Think tanks and policymakers join in. Media institutions communicate the information to the public who then participate and take ownership of the debate. The outcome of this process hopefully is an optimal set of policies that promotes overall welfare. Each of the institutions in the process is critical to fostering and galvanizing public debate. Failure of the media to inform the public or the absence of think tanks would limit the value of information in guiding policy and diminish the returns of investing in data. All parts must move together for the data ecosystem to be effective. That is, transparency requires not only the production and publication of reliable data on a regular basis, but it also requires that key stakeholders are empowered to express their voice openly.

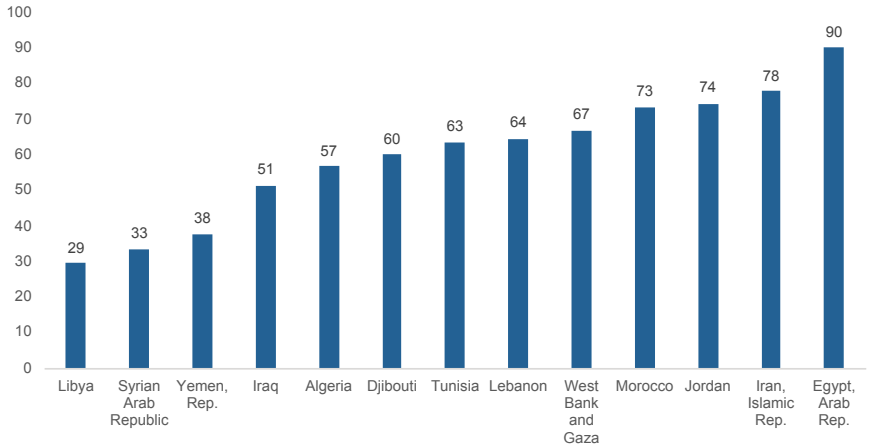
Data Transparency in MENA

In 2005, the MENA region exceeded the East Asia and the Pacific (EAP) and the sub-Saharan Africa (SSA) regions in terms of overall "statistical capacity," a term that includes aspects of data quality as well as accessibility—two important ingredients of transparency. Since then, both the EAP and SSA countries have overtaken the MENA region. By 2018, the MENA score was the lowest of all regions (see Figure I.8). MENA was also the sole region to experience a decline in statistical capacity between 2005 and 2018. Conflicts might have played a role in the decline.

There are considerable differences in statistical capacity among the countries in the MENA region (see Figure I.9). Egypt is the best performer, followed by Iran and Jordan. Statistical capacity has been steadily increasing since 2005 in these economies. At the other end are Libya, Syria, and Yemen. All three economies are overwhelmed by conflict and their data systems have drastically deteriorated since 2005. Nonetheless, even in the seemingly high performers, deterioration in freedom of expression has probably become an impediment to harnessing the upside from the production of reliable data. Furthermore, as discussed in following chapters,

Figure I.9 Statistical Capacity Index across MENA

Statistical Capacity score (overall average), 2018



Source: The World Bank, http://datatopics.worldbank.org/statisticalcapacity/.

even in Egypt there are issues concerning the lack of availability of key information on public debt, as well as issues concerning the precision of the definitions used to compute labor-market indicators.

Low statistical capacity in the MENA region is also reflective of a lack of micro data, especially regarding enterprises and prices. For instance, the lack of micro business statistics in the region implies that the structure of the economy in terms of the types of firms in each sector is unknown. That inhibits the advancement of discussion and policies framed around firm dynamics, particularly market concentration and competition policy. Perhaps more important, business statistics are also crucial inputs for private sector firms and potential investors.

The Empirical Link between Data Transparency and Economic Growth

There is a positive correlation between data statistical capacity and subsequent economic growth during 2005–18, a sample of 146 economies shows. The relationship between growth and statistical capacity holds across various econometric models after accounting for several confounding factors such as level of development, sectoral composition, human capital, and political institutions (see Appendix A for details on the econometric models). The magnitude of the association between statistical capacity and growth is at least as large (if not larger) than the association between education and growth[9,10]. The statistical capacity index decline experienced in the MENA region between 2005 and 2018 may have resulted in a loss of GDP per capita between 7 and 14 percent, depending on the econometric model employed (see Appendix Table A1). The results suggest that the availability and frequency of compilation of the administrative and micro data is a key predictor of economic growth, although the findings are somewhat susceptible to the empirical methodology. These findings complement other studies that have found positive correlation between the statistical capacity indicator and a wide variety of governance and service provision outcomes (Hollyer and others, 2011; Hoogeveen, 2018; Islam 2006; Williams 2009). This is a first step in the analysis of the relationship between data transparency and economic growth. Several caveats apply to the findings. Issues of endogeneity such as simultaneity between data capacity and growth are not completely obviated and there is always the challenge of omitted variable bias driven by conflict and resource dependency of economies. In future research, these issues might be addressed with more sophisticated analytical tools.

What Next?

Bridging the MENA data-transparency gap requires a multipronged approach to developing sustainable data ecosystems. The ongoing pandemic has put this issue at the forefront. Where governments lack the capacity to generate data, investments are needed to build that capacity. Where governments are unwilling to share data, agreements need to be developed in concert with a clear agenda that highlights the benchmarks of good data ecosystems and the crucial role of data in generating good policies and social harmony. And when important topics are under-researched in the region and require specific data, investments should be made in data collection activities to set up a baseline of knowledge. The immediate goal is to bring the data transparency challenge to the table. Future initiatives will dig deeper into these issues, acknowledging country-specific contexts. The following chapters turn to the role played by specific data and transparency issues that afflict MENA in two other areas where they hurt—macroeconomic fragility and labor markets.

9 Magnitudes are derived by looking the effects of increasing the variables by 1 standard deviation. The endogeneity concerns regarding statistical capacity also apply for education.

10 Other studies examined the mechanisms why greater data transparency could help growth. For example, greater data transparency could lower the costs of external borrowing (Cady, 2015 and Kubota and Zeufack, 2020).

CHAPTER II: EXTERNAL IMBALANCES, FISCAL SUSTAINABILITY, AND DATA TRANSPARENCY IN MENA

Chapter II takeaways:

- Current account deficits of several MENA economies are not explained by fundamentals; transparency issues do not affect these estimates.
- In 2019, 11 MENA countries seemed to be on unsustainable fiscal paths: their reported primary fiscal balances were insufficient to stabilize their gross-debt-to-GDP ratios.
- Fiscal sustainability assessments are hampered by lack of transparency concerning public debt stocks.

This chapter assesses the sustainability of current account and fiscal deficits across MENA countries. It relies on the best available data that are comparable across countries. We begin with a discussion of the current account and then move on to a battery of tests assessing fiscal sustainability—hampered by a lack of transparency concerning stocks of public debt.

II.1 Current Account Sustainability

In April 2019, the MENA Chief Economist's office presented a model to determine whether current account imbalances in some MENA countries are sustainable (see Appendix B). The model determines how a country's current account balance is related to fundamental determinants drawn from academic literature—demography (dependency ratios, which measure pressure on the working age population, and aging speed), expected changes in economic growth, GDP per working-age population, and exposure to commodity price fluctuations. The determinants can be connected to current account imbalances in a variety of ways:[11]

- ***Demography and savings.*** As dependency ratios fall, national savings rise and improve the current account. Because 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 those younger than 15 to the working-age population (15-64 years of age). Old-age dependency captures the ratio of those older than 64 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 with a rapidly aging population relative to the rest of the world.

  Demographic statistics, including the projections, account for refugees, who make up a large share of population in such countries as Lebanon and Jordan. The United Nations Population Division's total

11 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.

population estimates and forecasts incorporate migration data. 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 of expected growth acceleration which relies on historical data from International Monetary Fund (IMF) forecasts.

- ***GDP per working-age population 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 because inflows raise domestic investment and consumption. Consequently, the effect 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 and deteriorate for net importers. In turn, when the trade balances change, so do the current account balances. As a result, the model takes commodity prices and commodity-trade balances into account.[12] 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, the current account positions of food-importing countries can be expected to deteriorate. For example, the widening of the 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 reflect the extent to which the regimes affect the response of current accounts to changes in labor productivity.

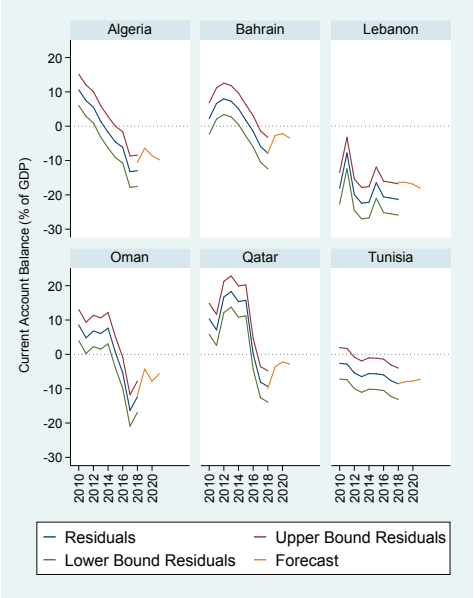
The results from the MNACE model are broadly consistent with the predictions. In addition, results from an auxiliary model on national savings rates suggest that the selected explanatory variables affect the current account through their influence on national savings. The key issue, however, is whether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

12 See Appendix B for details concerning the construction of the index.

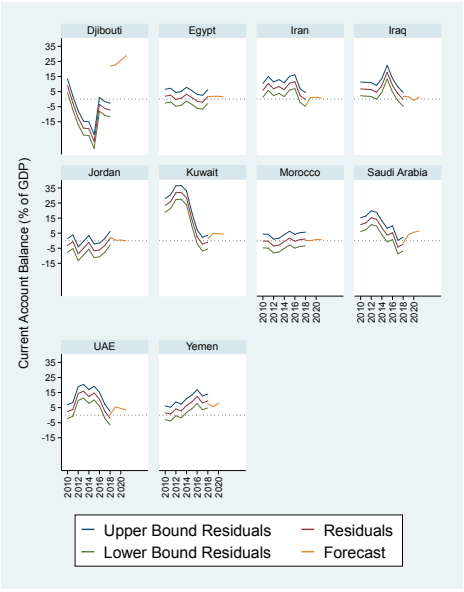
There are six MENA economies that have current account balances significantly lower than the model's predictions. These unexplained current accounts are the residuals (that is, the difference between the predicted value and the observed value) of the MNACE model. The residuals are computed by subtracting the predicted current account balance from the actual current account balance. Figure II.1 represents the 95 percent confidence interval of the residuals and groups the economies based on whether or not their current account balance is significantly lower than the model's predicted current account balance. Panel A consists of countries whose reported current account balances are statistically significantly lower than what was predicted by the model—Algeria, Bahrain, Lebanon, Oman, Qatar, and Tunisia. Panel B consists of those whose current account balances are not statistically significantly lower than the model's predictions—Djibouti, Egypt, Iran, Iraq, Jordan, Kuwait, Morocco, Saudi Arabia, the UAE, and Yemen.

Figure II.1. Unexplained Current Account Balances for MENA countries

Panel A: Countries with CA balances lower than what predicted by fundamentals



Panel B: Countries with CA balances in line or larger than what predicted by fundamentals



Source: Authors' calculations based on the MNACE's current account model (see Appendix B). Libya, Syria and West Bank & Gaza are not included because of the lack of data. Forecasts of current account are as of October 2019

Countries can reduce their large unexplained external imbalances by increasing their GDP per working-age population (Arezki and others, 2019). This is the only path that could help reduce external imbalances and improve fiscal sustainability while reducing the need for socially painful fiscal austerity. Improvements in aggregate labor productivity are associated with increased domestic savings. Barring a concurrent increase in labor productivity and domestic consumption, improvements in labor productivity should reduce current account deficits. (Arezki and others 2019 discuss these issues in more detail). In addition, because output per working-age population is likely to enlarge the public-sector's revenue base, there will be some alleviation of fiscal challenges. Raising GDP per working-age population can only be achieved by putting working-age adults to work, or by raising private investment, because governments are facing severe fiscal constraints. Below we discuss methods and data that can help assess the fiscal situation of MENA economies.

II.2 Fiscal Sustainability: Lack of Transparency Obfuscates Existing Methods of Analysis

In this section, we adopt three approaches to examining fiscal sustainability in MENA countries:

- **Method 1:** We calculate the required primary fiscal balance that stabilizes the public debt-to-GDP ratio in a given year and compare it to the observed balance.
- **Method 2:** We construct and evaluate the structural fiscal balance by removing the components of revenues and expenditures that are automatically connected the business cycle, which is then compared to the observed and required balances mentioned above.
- **Method 3:** We estimate a relationship between the primary fiscal balance and public debt in the previous year across a global sample of countries.

Required primary balance for debt stabilization

The first approach is commonly used by academics and multilateral institutions such as the IMF and the World Bank to conduct debt sustainability analyses (see, for example, Debrun and others, 2019). The higher a country's debt, or the higher the interest rate on the debt, the larger then is the primary balance required to stabilize the debt. Conversely, if a country has higher growth, it can afford a smaller required primary balance.

In mathematical terms (details of which can be found in Appendix C1), the required primary balance to stabilize debt relative to output is

$$pb_t = \left[\frac{1+r_t}{1+g_t} - 1\right] d_{t-1} \qquad (1)$$

where pb_t is the required primary balance (as a share of output) for year t; d_{t-1} is debt-to-output ratio of the previous year. g_t is nominal output growth and r_t is nominal interest rate in local currency.

Estimating structural fiscal primary balances

In the second approach, we determine each country's structural primary fiscal balance—what remains after removing the components of revenues and expenditures that are connected to the inevitable ups and downs of the economy, such as additional tax revenue that comes from increased output (see Appendix C2). It is arguably more precise to assess solely the structural fiscal balance because it captures the fundamental (structural) fiscal condition of a country. IMF (2011) provide a step by step summary of the methodology used for calculating structural balances.

Table II.1. Primary and Structural Fiscal Balances versus Debt-Stabilizing Primary Fiscal Balances in MENA, 2018 and 2019

Panel A: 2018	*Primary Fiscal Balance in 2018 (% of GDP)*		
Country	*Observed*	*Required*	*Structural*
Algeria	-4.92	-1.65	-4.67
Iran, Islamic Rep.	-5.13	-9.71	-5.58
Iraq	9.44	-6.00	10.50
Yemen, Rep.	-6.27	-27.27	-6.11
Bahrain	-7.36	-2.29	-7.39
Kuwait	-2.79	-2.93	-2.30
Oman	-5.87	-2.96	-5.75
Qatar	4.35	-4.13	4.63
Saudi Arabia	-5.65	-1.90	-5.66
United Arab Emirates	2.19	-0.75	2.36
Djibouti	-1.61	-1.60	-1.54
Egypt, Arab Rep.	0.11	-13.71	0.14
Jordan	0.01	-0.05	0.05
Lebanon	-1.13	1.02	-1.11
Morocco	-1.19	-0.01	-1.21
Tunisia	-2.13	-3.53	-2.21

Panel B: 2019	*Primary Fiscal Balance in 2019 (% of GDP)*		
Country	*Observed*	*Required*	*Structural*
Algeria	-5.32	0.11	-5.24
Iran, Islamic Rep.	-4.98	-4.14	-4.49
Iraq	-3.32	-1.00	-2.63
Yemen, Rep.	-5.84	-11.67	-5.71
Bahrain	-3.69	3.06	-3.64
Kuwait	-6.14	0.13	-5.48
Oman	-5.06	3.19	-4.26
Qatar	3.56	5.84	3.86
Saudi Arabia	-5.86	1.16	-5.49
United Arab Emirates	-0.97	0.47	-0.69
Djibouti	0.61	-3.50	0.65
Egypt, Arab Rep.	1.94	-5.81	1.89
Jordan	0.85	-0.72	0.91
Lebanon	0.26	0.71	0.40
Morocco	-1.20	0.22	-1.06
Tunisia	-1.23	-2.41	-1.26

Source: World Bank, *Macro* and *Poverty Outlook*; real GDP data, World *Economic Outlook*.
Note: The observed primary balance and our calculated required and structural primary balances in 2018 and 2019 are all presented as a percentage of GDP. The required primary balance is one that stabilizes the debt-to-output ratio. The structural balance is the fiscal balance after the components connected to economic fluctuations are removed. For most countries, structural primary balances were close to observed primary balances because their output was close to potential.

Panel A of Table II.1 shows that in 2018, the observed primary balances of Algeria, Bahrain, Lebanon, Morocco, Oman and Saudi Arabia were lower than the balances required for debt stabilization. These findings remain true even after accounting for business cycle drivers of the primary balance. For these six countries, the structural primary balance is also lower than the required primary balance. Panel B of Table 2.2.1 presents the structural and required primary balances for 2019. Fiscal sustainability worsened for MENA relative to 2018—11 of 16 MENA countries in our sample had a required primary balance that was larger than their observed primary balance.

Table II.1 requires some qualification related to debt data transparency, however. First, d_{t-1} in equation (1) should be net public debt. But because data is lacking on net public debt, we use gross public debt to estimate the primary balances. This substitution might have inflated the required primary balance for countries with substantial public assets (such as sovereign wealth funds), because their net debt could be substantially smaller than their gross debt.

Moreover, gross public debt is not reported consistently across MENA countries. As Table II.2 shows, MENA countries do not report many components of public debt. Although the reporting of all sources of public debt might result in higher debt-to-GDP ratios, it is not obvious that debt sustainability analyses would also deteriorate, because what is at stake is the stabilization of the debt-to-GDP ratio over time, even if it is higher than in the reported data. It should be clear by now that macroeconomic data issues in MENA hinder efforts to understand the region's macroeconomic fragility.

Second, Table II.1 shows the required primary balance for 2018 and 2019 after the fact, when data on debt, interest rates and growth are all realized. Estimating the expected future required primary balances, while more meaningful for policy discussions, is more challenging and subject to greater uncertainty. To illustrate the point, we take an example in Appendix C1 where there are two types of public debt: foreign debt (denominated in U.S. dollars) and domestic debt. The expected required primary balance depends on the weighted average of the expected nominal interest rates (in domestic currency) of both the foreign debt and the domestic debt. Without data on the composition of public debt, it would be impossible to calculate the weights of each debt component and hence the expected weighted average nominal interest rate. Furthermore, the expected nominal interest rate of the foreign debt equals the interest rate in dollars multiplied by the expected depreciation of the exchange rate. A larger unexpected depreciation implies larger interest payments in domestic currency terms and hence a larger required primary balance. For example, Alnashar (2019) shows that Egypt's public debt dynamics are not only driven by fiscal policies, but also exchange rate fluctuations. In sum, lack of debt data transparency impedes meaningful analyses of future fiscal sustainability.

Third, even for countries whose required fiscal balance is smaller than the observed balance in 2018 (such as Egypt), the finding should be treated with cautious optimism. As discussed above, current sustainability does not guarantee future sustainability. Interest rates, growth rates, and exchange rates could change and complicate fiscal sustainability.

The relationship between debt and the primary fiscal balance

In the third approach, fiscal balance sustainability is assessed by estimating the relationship between the primary fiscal balance and debt-to-GDP ratios in previous years (that is, lagged debt). Following Mendoza and Ostry (2008), when the partial correlation between the primary fiscal balance and the previous year's debt-over-GDP ratio is positive, the fiscal path is interpreted as being "sustainable."[13] Appendix C3 presents the analytical framework in detail and contrasts MENA—including the GCC and developing countries in MENA—with the rest of the world.

Figure II.2 shows that for the rest of the world, the primary balance has a negative and statistically significant relationship with lagged debt on average; this suggests that when lagged debt increases, the primary balance deteriorates (see Appendix Table C1).[14] This is clearly not a sign of fiscal sustainability, but the trend in recent years points toward greater sustainability compared to the situation at the beginning of the 21st century.[15] The primary balance for the GCC

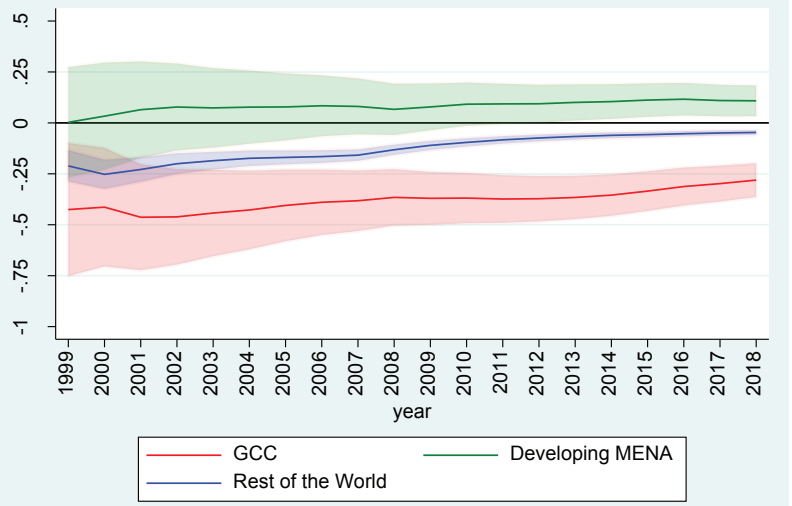
13 This is by no means a guarantee of fiscal sustainability. Rather, this is one of several exercises to examine fiscal sustainability.

14 Figure II.2 corresponds to Appendix Table C1

15 This finding is concerning given the buildup of debt in emerging economies, but it paints a more favorable picture of debt sustainability around the world and particularly for the developing economies of MENA than recent analyses such as Kose and others (2020). Still, it remains to be seen whether the picture would change if we had access to data required to compute the total gross and net debt of the public sector across countries.

countries has an even more negative relationship with lagged debt than the rest of the world, although the relationship is becoming less negative for the GCC (see the red line in Figure II.2). The good news is that the primary balance for developing MENA has a positive relationship with the lagged debt, suggesting that their situation is fiscally sustainable.

Figure II.2 The Relationship between Primary Fiscal Balances and Past Debt – MENA and the Rest of the World since 1990



Note: The vertical axis of the figure shows recursive estimates of econometric regressions between primary and lagged debt with other controls (please see Appendix C3 for details). The estimating windows are gradually expanded. For example, the point estimate for 1999 is the result of the estimation with the sample from 1990 until 1999. Similarly, the point estimate for 2018 is the result of the estimation with the sample from 1990 until 2018. But the changes over time in the estimated coefficients are the result of the inclusion of data from the last year in the sample. The bands indicate 10 percent confidence intervals.

Finally, it cannot be overstated that the findings regarding MENA's debt sustainability should be interpreted with caution given the incomplete reporting of debt data. For good or bad, they might change when more complete data become available. As with lack of data during a pandemic, obfuscation of debt information hampers open policy debates in search of solutions. The following chapter turns our attention to labor markets, where inconsistencies in definitions substantially distort labor market indicators and thus might lead to ineffective policies.

Table II.2 Debt Reporting in MENA Countries

	Subsectors of the public sector	Bahrain	Oman	Kuwait	Qatar	Saudi Arabia	Algeria	Egypt	Djibouti	Iran	Iraq	Jordan	Libya	Lebanon	Morocco	West Bank & Gaza	Syria	Tunisia	UAE	Yemen
1	Central government	✔	✔	✔	✔	✔	✔	✔	✔	✖	✔	✔	✔	✔	✔	✔		✔	✔	
2	State and local government		n/a	n/a	n/a	n/a	n/a	✔	✔	✖	✔	✖			✔			n/a	✔	✖
3	Other elements in the general government	✔		✖			✖	✔	✖							✖		✔	✖	
4	o/w: Social security fund	✔		✖			n/a	✔	✖			✖				✖		✖	✖	
5	o/w: Extra budgetary funds	✔		✖		✖	✖	✖	✖							n/a		✔	✖	✖
6	Guarantees (to other entities in the public and private sector, including to SOEs)	✖	✖		✖	✖	✖	✖	✔		✔	✔	✔		✔	✖		✔	✔	n/a
7	Central bank (borrowed on behalf of the government)			✔		n/a	n/a		n/a	n/a	✔	✖	n/a		✔	n/a		✔		
8	Non-guaranteed SOE debt	✖	✖		✖	✖	✖	✖	✖	✖					✖	n/a		✖	✖	n/a

Source: MENA country World Bank.
Note: Table II.2 follows the public debt reporting template of World Bank-IMF's Debt Sustainability Framework (see IMF, 2017). ✔ indicates the country reports the type of debt (for both domestic and external debts); ✖ indicates the country has the type of debt but does not report it; **n/a = not applicable** and indicates that the country might not have this type of debt; **blank cells** indicate that World Bank economists do not have information regarding whether the country has the type of debt but does not report it, or that the country does not have the type of debt, or that the debt might be included in total government debt. Debt reporting is as of 2019.

CHAPTER III: DATA GAPS, DEFINITIONS, AND THE MEASUREMENT OF LABOR MARKET OUTCOMES

Chapter III takeaways:

- MENA countries rely on imprecise definitions of employment, which blur the lines between unemployment and informality.
- For countries with independent sources of nationally representative historical labor-force data, the authors were unable to replicate the official reported unemployment rates.
- The discrepancies distort the role of women and rural areas in national labor markets.
- Using precise definitions of employment and unemployment, statistical evidence suggests that female labor force participation might be a generational issue, because it is high among educated young women.
- Historical evidence from an advanced economy and recent evidence from Yemen indicate that female labor force participation tends to rise during periods of armed conflict

This chapter studies the role of transparency in the measurement of aggregate labor market outcomes in MENA. It analyzes unemployment rates, female labor force participation rates, and, to a lesser extent, informality.

III.1 The Measurement of Unemployment in MENA

The labor market is another area in which data gaps and measurement inconsistencies could pose problems to policymaking. Countries around the world usually follow the ILO's definitions of employment and unemployment, which are considered the gold standard, and are consistent with definitions adopted by other developed countries, such as the United States (see Table III.1). In MENA, official employment and unemployment rates are inconsistently reported across countries. Many MENA countries do not follow the ILO's definition of employment or unemployment—or do not clearly specify whether they do (see Table III.2).

Table III.1. Definitions of Employment and Unemployment from the U.S. BLS, the French INSEE and the ILO

Definitions	*Employment*	*Unemployment*	*Source*
United States -Bureau of Labor Statistics (BLS)	Someone, aged 16 or over, who has either (1) worked at least 1 hour as a paid employee or (2) in their own business, profession, trade, or farm, or (3) was not temporarily absent from their job, business, or farm, whether or not they were paid for the time off, or (4) worked without pay for a minimum of 15 hours in a business or farm owned by a member of their family.	Someone, aged 16 or over, who (1) does not have a job, (2) has actively looked for one in the past 4 weeks, and (3) is available for work.	https://www.bls.gov/cps/definitions.htm
France- Institut Nationale de la statistique et des etudes economiques (INSEE)	Individuals who worked for any amount of time, even if only for an hour in the course of the reference week. Only individuals in the working-age population (between 15 and 64 years of age) are considered.	All people aged 15 and older who do not have a job and are looking for one.	https://www.insee.fr/en/metadonnees/definitions
International Labor Organization (ILO) Other Stakeholders	All those of working age (15 years and over) who, during a short reference period, were engaged in any activity to produce goods or provide services for pay or profit. They comprise employed persons "at work", that is, who worked in a job for at least one hour; and employed persons "not at work" due to temporary absence from a job, or to working-time arrangements (such as shift work, flextime and compensatory leave for overtime).	All those of working age (15 years and over) who were not in employment, carried out activities to seek employment during a specified recent period, and were available to take up employment given a job opportunity.	https://www.ilo.org/ilostat-files/Documents/Statistical%20Glossary.pdf

Table III.2. Consistency of Employment and Unemployment Definitions across MENA

Country	*Follow ILO unemployment definition*	*Follow ILO employment definition*	*Age of working population*
Morocco	YES	unspecified	15 and above
Algeria	YES	YES	unspecified
Tunisia	YES	unspecified	unspecified
Libya	YES	unspecified	15 and above
Egypt	YES	YES	15 and above
Lebanon	YES	unspecified	YES
West Bank and Gaza	YES	unspecified	15 and above
Jordan	YES	unspecified	15 and above
Saudi Arabia	NO	unspecified	15 and above
Oman	Unspecified	unspecified	unspecified
UAE	YES	unspecified	YES
Qatar	YES	unspecified	15 and above
Bahrain	YES	YES	unspecified
Kuwait	YES	unspecified	YES
Iran	YES	YES	NO
Djibouti	NO	NO	unspecified
Iraq	unspecified	unspecified	unspecified
Syria and Yemen	unavailable	unavailable	unavailable

Source: Authors' summary based on information from national statistics websites.

This section exploits the availability of Labor Market Panel Surveys (which gather data for the same subject over a period of time) for Egypt, Jordan, and Tunisia. It uses them to recompute unemployment rates following the ILO's definitions and compares the recomputed figures with the national estimates of unemployment reported by the three countries. The results are reported in Tables III.4 to III.6. The analysis relies on the most recent Labor Market Panel Survey in each country. For Egypt, the analysis is for 2018; for Jordan, 2016; and for Tunisia, 2014. The difference between the various computed unemployment rates in these tables relies on the definitions of "employment" and "unemployment." Employment can be defined according to the market definition, which considers as employed only individuals engaged in market economic activities or to the extended definition, which considers as employed individuals who engage in market and subsistence economic activity. On the other hand, the standard definition of unemployment requires individuals to be actively searching for a job to be considered as unemployed, while the broad definition of unemployment does not require active job search for the individual to be counted as unemployed. According to the broad definition, an individual is unemployed if he or she did not work in the reference period, wanted to work and was not attached to a job (whether or not the individual was actively searching for employment). Table III.3 summarizes the definitions.

Table III.3. Definitions of Employment and Unemployment

	Definitions
Market definition of employment	only considers individuals who are employed in market economic activities as employed
Extended definition of employment	considers individuals who engage in market and subsistence economic activities as employed
Standard definition of unemployment	requires an individual to be actively searching for employment
Broad definition of unemployment	does not require an individual to be actively searching for employment

Panel A of Table III.4 indicates that in Egypt there is a gap of 5.2 percentage points between the total unemployment rate relying on the market definition and the extended definition. To determine the extent to which this gap is due to a change in female or male unemployment rates, the gender disaggregated unemployment rates are computed relative to the total labor force rather than each gender's unemployment rate (see Panel B and Panel C).[16] The results suggest that 3.8 percentage points, or 73 percent of the gap, is due to definition-based changes in female labor force participation rates, while 1.4 percentage points, or 27 percent of the gap, is due to changes in male unemployment rates. Interestingly, Panel C indicates a great variability in female unemployment rates that stems from the large proportion of Egyptian women who engage in subsistence work. It is no surprise then that a market definition of employment (which excludes subsistence work) suggests that that female unemployment rates in Egypt are very large (ranging between 20 and 30 percent). Furthermore, relative to the various estimated unemployment rates relying on the Egypt Labor Market Panel Survey (ELMPS) data, the official 6.8 percent male unemployment rate published by Egypt's statistical office, the Central Agency for Public Mobilization and Statistics (CAPMAS), is inflated.

In Jordan, Panel A of Table III.5 shows that the gap between the largest computed total unemployment rate according to the market definition (search not required) and the smallest computed total unemployment rate according to the extended definition (search required) is 2.5 percentage points. Unlike in Egypt, where most of this gap was due to changes in female unemployment rates, in Jordan changes in male and female unemployment rates equally contribute to this gap. Under these two definitions, female and male unemployment rates change by 1.2 percentage points and 1.3 percentage points, respectively. Jordan's male and female unemployment rates are much higher than Egypt's: while female unemployment rates in Egypt were subject to very large variability depending on the definition of employment (market versus extended), female unemployment rates change only slightly in Jordan, which suggests that Jordanian women do not engage in subsistence work or do so only marginally. It is also important to note that the official unemployment rates derived from the ILO's ILOSTAT database are consistently lower than those estimated using the Jordan Labor Market Panel Survey (JLMPS).

16 The computed male and female unemployment rates relative to the total labor force are available upon request

Table III.4. Unemployment Rates in Egypt in 2018

Panel A: Total Unemployment Rates

		Definition of employment	
		Market definition	*Extended definition*
Actively searching requirement	No	11.4	8.2
	Yes	8.2	6.2
National estimate		9.9	

Panel B: Male Unemployment Rates

		Definition of employment	
		Market definition	*Extended definition*
Actively searching requirement	No	5.8	5.5
	Yes	4.9	4.7
National estimate		6.8	

Panel C: Female Unemployment Rates

		Definition of employment	
		Market definition	*Extended definition*
Actively searching requirement	No	30.0	13.4
	Yes	20.6	9.2
National estimate		21.4	

Note: This table presents unemployment rates in Egypt according to four definitions using the 2018 Egypt Labor Market Panel Survey (2018), which is a nationally representative survey. The computed unemployment rates are weighted. National estimates refer to official unemployment rates and come from Egypt's statistical office, the Central Agency for Public Mobilization and Statistics.

Table III.5. Unemployment Rates in Jordan in 2016

Panel A: Total Unemployment Rates

		Definition of employment	
		Market definition	*Extended definition*
Actively searching requirement	No	21.3	20.9
	Yes	19.2	18.8
National estimate		15.3	

Panel B: Male Unemployment Rates

		Definition of employment	
		Market definition	*Extended definition*
Actively searching requirement	No	15.7	15.5
	Yes	14.2	14.1
National estimate		13.3	

Panel C: Female Unemployment Rates

		Definition of employment	
		Market definition	*Extended definition*
Actively searching requirement	No	41.2	39.2
	Yes	37.6	35.7
National estimate		24.1	

Note: This table presents unemployment rates in Jordan according to four definitions using the 2016 Jordan Labor Market Panel Survey (2016), which is a nationally representative survey. The computed unemployment rates are weighted. National estimates refer to official unemployment rates and come from International Labor Organization's ILOSTAT database.

Table III.6. Unemployment Rates in Tunisia in 2014

Panel A: Total Unemployment Rates

		Definition of employment	
		Market definition	*Extended definition*
Actively searching requirement	No	15.8	13.5
	Yes	12.7	10.9
National estimate		15.0	

Panel B: Male Unemployment Rates

		Definition of employment	
		Market definition	*Extended definition*
Actively searching requirement	No	12.6	11.8
	Yes	10.3	9.7
National estimate		12.3	

Panel C: Female Unemployment Rates

		Definition of employment	
		Market definition	*Extended definition*
Actively searching requirement	No	24.5	17.0
	Yes	19.5	13.6
National estimate		21.6	

Note: This table presents unemployment rates in Tunisia according to four definitions using the 2014 Tunisia Labor Market Panel Survey, which is a nationally representative survey. The computed unemployment rates are weighted. National estimates refer to official unemployment rates in 2014 and come from Tunisia's statistical office, the National Institute of Statistics.

For Tunisia, Panel A of Table III.6 indicates that the gap in total unemployment rates between the unemployment rates relying on the market and the extended definition is 4.9 percentage points. An estimation of the gender disaggregated unemployment rates relative to the total labor force reveals that 53 percent of the gap, or 2.6 percentage points, is due to changes in the male unemployment rate and 47 percent, or 2.3 percentage points, is due to changes in the female unemployment rates.

While in Egypt the gap between these two estimated unemployment rates was mostly driven by changes in female unemployment rates, in Jordan and Tunisia, differences in male and female unemployment rates contribute equally to this gap. These results are surprising because female labor force participation rates (LFPR) are much lower than that of men, according to both official and our own estimates. That is, since the unemployment rate is computed relative to the sum of employed and unemployed individuals, women are under-represented in the denominator of unemployment rates. As such, an equal contribution to differences in the total unemployment rate belies are much larger impact of the definitions of employment.

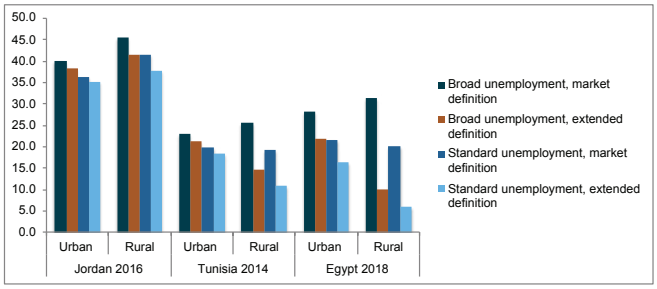
Indeed, female unemployment rates vary depending on the employment definition we use. This finding therefore suggests that, as in Egypt, women in Tunisia largely engage in non-market economic activities. Official male unemployment rates in Egypt are inflated relative to those estimated using the ELMPS. In Jordan, unemployment rates are consistently lower than official figures. In Tunisia, official unemployment rates are the closest to those computed using the Tunisia Labor Market Panel Survey. It is notable that male unemployment rates are much larger in both Jordan and Tunisia relative

to Egypt, where male unemployment rates range between 5 and 7 percent. This difference might be the result of unemployment benefits being available in Jordan and Tunisia, while there are none in Egypt.[17]

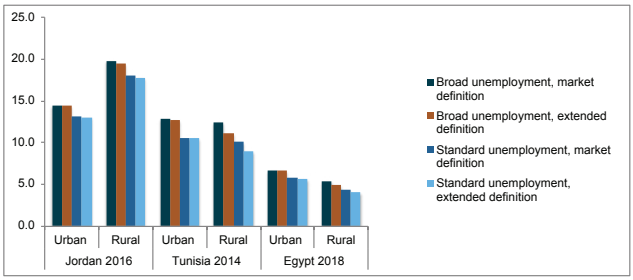
Disaggregating unemployment rates across urban and rural areas in Jordan, Tunisia, and Egypt reveals diverse patterns (Figure III.1). In Tunisia and Egypt, male unemployment rates are higher in urban areas; in Jordan, male unemployment rates are higher in rural areas. In Jordan, rural areas consistently have higher unemployment rates. Tunisia and in Egypt have high female unemployment rates in rural areas, which are even larger when the market definition of employment, which excludes subsistence work, is used. The large variability in female unemployment rates in Tunisia and Egypt and the large increase in unemployment rates in rural areas when relying on the market definition of employment are due to the wider prevalence of subsistence work in rural areas.

Figure III.1. Unemployment Rates by Urban and Rural Locations

Female Unemployment



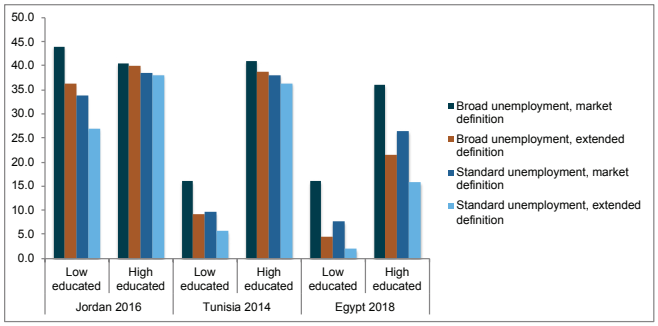
Male Unemployment



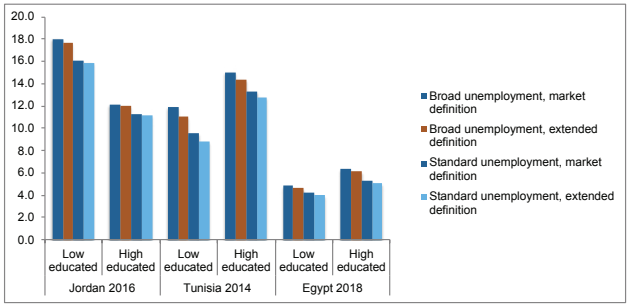
Source: Egypt Labor Market Panel Survey 2018, Jordan Labor Market Panel 2016, Tunisia Labor Market Panel 2014.
Note: The analysis is restricted to working age individuals (15 to 64 years of age). The computed unemployment rates are weighted.

Figure III.2. Unemployment Rates by Education

Female Unemployment



Male Unemployment



Source: Egypt Labor Market Panel Survey 2018, Jordan Labor Market Panel 2016, Tunisia Labor Market Panel 2014.
Note: The analysis is restricted to working age men (15 to 64 years of age). The low-educated are those with less than secondary education, while the high-educated are those with secondary education or more. The computed unemployment rates are weighted.

Figure III.2 presents disaggregated male and female unemployment rates by educational attainment: low-educated individuals (who have less than a secondary education) and high-educated individuals (who have a secondary education or more). In Tunisia and Egypt, unemployment rates rise as educational attainment rises; in Jordan, unemployment rates are higher for individuals with low educational attainment. Combining this finding with the results from the urban-rural disaggregated data reveals that male unemployment rates in Jordan are higher in rural areas and among the less

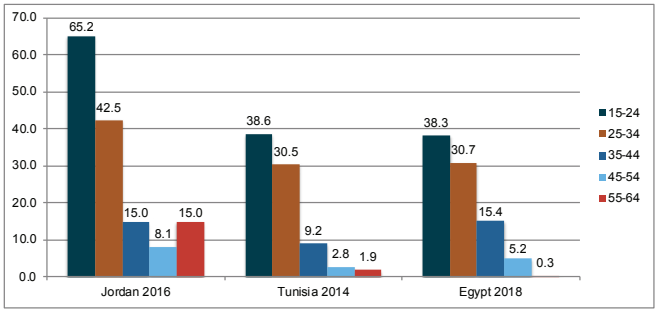
17 Across the three countries, using the search-required definition, we find that sons or daughters of the household head accounted for the greatest proportion of unemployed individuals (42 percent in Egypt in 2018, 59 percent in Jordan in 2016, and 74 percent in Tunisia in 2014). On the other hand, 24 percent of unemployed individuals in Egypt, 19 percent in Jordan and 14 percent in Tunisia are household heads, while 31 percent of the unemployed in Egypt are listed as spouses, 19 percent in Jordan, and 9 percent in Tunisia.

educated, whereas in Egypt and Tunisia male unemployment rates are higher in urban areas and among the highly educated individuals. As for women, the data suggest that female unemployment rates in the three countries are higher among highly educated women.[18]

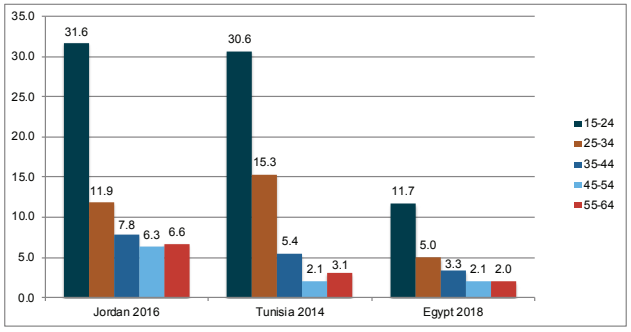
More importantly, there is high variability of female unemployment rates across the definitions of unemployment. This large variance demonstrates how vague definitions of employment can distort the picture of the labor market, particularly for women.

Figure III.3. Unemployment Rates by Age Groups

Female Unemployment



Male Unemployment



Source: Egypt Labor Market Panel Survey 2018, Jordan Labor Market Panel 2016, Tunisia Labor Market Panel 2014.
Note: The analysis is restricted to working age men (between 15 and 64 years of age). Unemployment rates are reported using the market definition of employment (search required). The market definition only considers as employed individuals who engage in market economic activities and excludes subsistence workers. The standard definition of unemployment requires active job search. The computed unemployment rates are weighted.

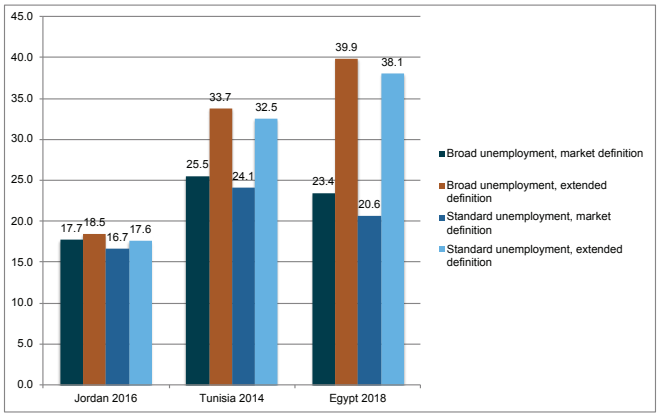
Disaggregating male and female unemployment rates by age groups in Figure III.3 shows that unemployment rates are particularly high among younger cohorts (between 15 and 35 years of age). This is true for both men and women across the three countries. It is important to highlight that in all three countries few of the unemployed individuals between 15 and 24 years of age were students at the time of the survey. In Egypt, only 4.2 percent of unemployed men and 1.5 percent of unemployed women in the 15-24 age bracket were studying. In Jordan, it was 0.8 percent of unemployed men and 1.3 percent of unemployed women. In Tunisia it was 1.9 percent of unemployed men and none of the unemployed women.

III.2 Female Labor-Force Participation: A Generational Issue

Female labor force participation (FLFP) rates are generally very low across the three countries.[19] Figure III.4 indicates that FLFP rates are lowest in Jordan, where they range between 17 percent and 19 percent,

Figure III.4 Female labor force participation rates

Female Labor Force Participation Rates



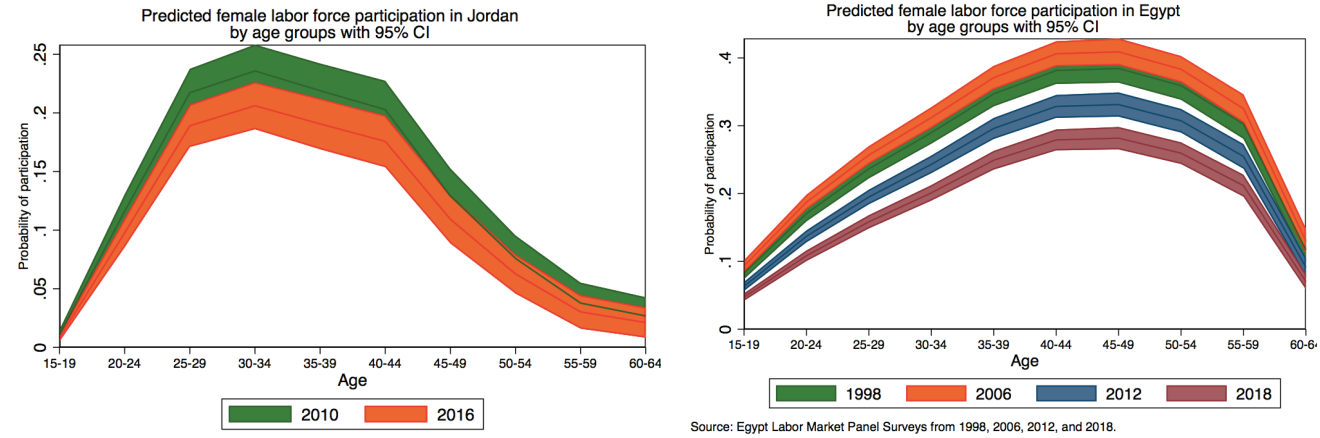
Sournce: Egypt Labor Market Panel Survey 2018, Jordan Labor Market Panel 2016, Tunisia Labor Market Panel 2014.
Note: The analysis is restricted to working age women (between 15 and 64 years of age). The computed unemployment rates are weighted.

18 There is no systematic correlation between being highly educated and the wealth score in Egypt, Jordan, or Tunisia. The correlation coefficient between being highly educated (with secondary education and above) and the household wealth score is of 0.31 (P-value=0.00).

19 Generally, due to many economic and cultural reasons, female labor force participation in MENA is low (see World Bank, 2013).

depending on the definition of employment. Because the incidence of subsistence work among women is particularly high in Tunisia and Egypt, a recalculation of FLFP rates relying on the extended definition of employment shows that FLFP rates are much higher than the official estimates (about 34 percent in Tunisia and 40 percent in Egypt when using the broad unemployment definition).

Figure III.5. Predicted Female Labor Force Participation in Egypt by Age Groups



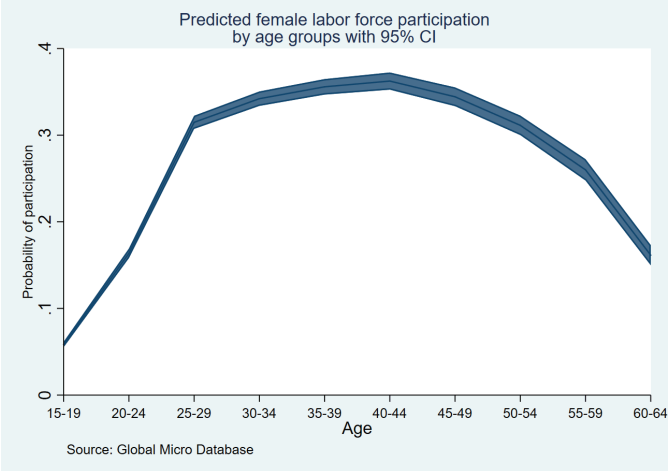
Source: Jordan Labor Market Panel Surveys from 2010 and 2016.

Source: Egypt Labor Market Panel Surveys from 1998, 2006, 2012, and 2018.

Note: The analysis is restricted to working age women (between 15 and 64 years of age). Labor force participation is defined according to the market definition of employment and the standard definition of unemployment. The following variables are used to predict female labor force participation rates: year fixed effects; age-group dummies; three dummies for an individual's highest level of educational attainment (less than secondary, secondary, and higher than secondary education); a dummy for being married; rural dummy, region fixed effects, three dummies for a father's highest level of educational attainment, three dummies for a mother's highest level of educational attainment (less than intermediate, intermediate and above intermediate) and wealth quintile dummies.

Figure III.5 shows that Egypt's and Jordan's FLFP rates follow an inverted U-shape curve with respect to age, peaking at around 40–45 years in Egypt and around 30–35 in Jordan. These results are in line with Blagrave and Santoro (2017), who use data from Chile and find that labor force participation is low for youth, increases during prime age, and decreases again as retirement approaches. They find that both male and female labor force participation rates follow these patterns in Chile; however, they find a gender gap that persists along the entire life cycle. Using an alternative definition of FLFP (following the extended definition of employment and broad definition of unemployment) does not change the inverted U-shape relationship between FLFP and age.

Figure III.6 Predicted Female Labor Force Participation Rates by Age Groups (GMD)



Note: The analysis is restricted to working-age women (between 15 and 64 years of age). An individual is considered a member of the labor force whether or not she is employed. The following variables are used to predict female labor force participation rates: country fixed effects, age groups, level of educational attainment, marital status, a rural dummy, the number of children in a household, and electricity and water access.

It is interesting to highlight the evolution of these predictions in both countries over time. In Egypt, FLFP rates were the highest for each age group in 2006, when Egypt witnessed very high GDP per capita growth rates (approximately 5 percent). Similar patterns are also observed in Jordan where predicted FLFP rates are found to be higher in 2010 and lower in 2016. The average annual growth rate of GDP per capita in Jordan in the 5 years preceding the survey in 2010 was 3 percent, while it was –2 percent in the period between 2011 and 2015 (preceding the 2016 survey). The procyclicality of labor force participation with respect to the business cycle is in line with Blagrave and Santoro's results on Chile.

Box III.1. The World Bank's Global Micro Database and household data for seven MENA countries

TThe World Bank's Global Micro Database (GMD) provides access to harmonized microdata from around the world. Its main objective is to improve access to socioeconomic statistics that are comparable over time and across countries. The harmonization of this data facilitates statistical research across various years and different countries, permitting us to draw comparable conclusions for the MENA region. This internal World Bank database covers more than 150 countries—representing most of the developing world. Furthermore, GMD's focus on household survey data on poverty, health, and education is relevant and applicable to labor market research being conducted within the Office of the Chief Economist of MENA.

MENA, as a region, faces a significant challenge because of a lack of statistical capacity and data transparency. As a result, some countries' microdata are publicly unavailable, resulting in a smaller sample of countries from the region. Seven MENA countries are included in the GMD: Djibouti, Egypt, Jordan, Morocco, Tunisia, West Bank & Gaza, and Yemen. For the seven countries there are multiple years' worth of data, which allows for a more thorough picture through the evolution of households. To paint the most accurate current picture, this analysis is restricted to the most recent data available for each country in the database (Djibouti, 2017; Egypt, 2015; Jordan, 2010; Morocco, 2013; Tunisia, 2015, West Bank & Gaza, 2016; and Yemen, 2014).

In Djibouti, a household expenditure survey—Enquête Djiboutienne Auprès des Ménages (EDAM 2017)—was designed and implemented, with fieldwork, concluding in December 2017. In Egypt, the Household Income, Expenditure, and Consumption Survey (HIECS) is a multi-topic survey done every two years, which covers households, demographics, education, employment, consumption of food, ownership of assets, and disability. In Jordan, the Households Income and Expenditure Survey (HIES) covers average income and expenditure for urban and rural households at both the provincial and country level. Similarly, in Morocco, the National Survey on Household Consumption and Expenditure (ENCDM in French) provides a detailed description of living standards and consumption expenditures across different socioeconomic groups. The same can be said for the remaining surveys from Palestine, Tunisia, and Yemen, each of whose objective is to collect accurate socioeconomic data on a consistent basis. The GMD's role in harmonizing these surveys into a single master dataset facilitates the amount of research done on labor markets and labor conditions in the developing world.

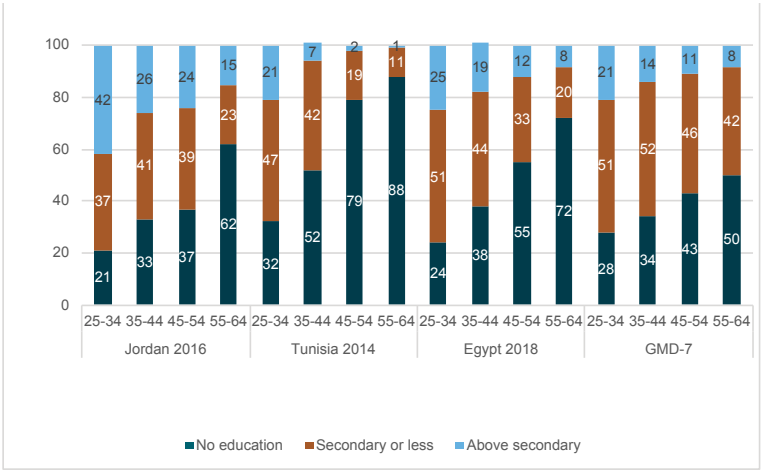
Country	*Years*	*Survey Name*	*Number of female observations in the latest year of survey*	*Percentage*
Djibouti	2012, 2013, **2017**	EDAM	15886	7.61
Egypt	2004, 2008, 2010, 2012, **2015**	HIECS	25982	12.44
Jordan	2006, 2008, **2010**	HEIS	30521	14.61
Morocco	2000, 2006, **2013**	ENCDM, ENNVM	38917	18.63
West Bank & Gaza	2011, **2016**	PECS	9998	4.79
Tunisia	2005, 2010, **2015**	NSHBCSL	53530	25.63
Yemen	2004, **2014**	HBS	34028	16.29
Total			208862	100.00

The finding is robust to a broader set of countries. Figure III.6 shows the results of a similar analysis using the World Bank's Global Micro Database (GMD) that compiles household survey data from official sources. The database includes seven MENA countries—Djibouti, Egypt, Jordan, Morocco, Tunisia, West Bank & Gaza, and Yemen – for which World Bank teams have been granted access (see Box III.1). In these surveys, female labor force participation peaks at the 40–44 year-old cohort. The GMD database does not contain sufficient information, however, to allow for the calculation of different definitions of FLFP, rendering impossible the robustness checks of the relationship between FLFP and age for alternative definitions of FLFP. Once again it is abundantly clear that data obfuscation hampers proper analyses of one of the most important policy challenges facing MENA, namely low reported rates of FLFP

Women in MENA are becoming more educated, as illustrated in Figure III.7, which shows the highest level of educational attainment for each age group in Egypt, Jordan, and Tunisia. In all three countries, the dark blue bar, which represents the share of women with no educational degree, is the smallest among those between ages 25 and 34 of age and is larger among the older age groups. This suggests that lack of education is particularly high among older women. For instance, in Tunisia, 88 percent of women between 55 and 64 years of age have no educational degree, while 32 percent of women between 25 and 34 years of age report having no education. On the other hand, the share of women with secondary education or less and the share of women with post-secondary education are found to be the highest among younger women. We also observe similar phenomenon using the GMD.

The Roles of Education and Family: Results from Blinder-Oaxaca Decompositions.

Figure III.7 Women's Educational Attainment by Age Cohorts



Source: Jordan Labor Market Panel Survey 2016; Tunisia Labor Market Panel Survey 2014; Egypt Labor Market Panel Survey 2018; World Bank Global Micro Database.
Note: The GMD–7 are Djibouti, Egypt, Jordan, Morocco, Tunisia, West Bank & Gaza, and Yemen.

To systematically examine the differences in female labor force participation rates, the gap in female labor force participation rates between younger cohorts (25–35 years of age) and older cohorts (36– 64 years of age) is decomposed using a technique based on ones proposed separately by Blinder (1973) and Oaxaca (1973). It decomposes differences in labor force participation between two groups, based on linear regression models, into those "explained" by observable characteristics and those "unexplained" by them. This section assesses whether the low female labor force participation rates in the region are a generational issue, because women's education in the MENA region has been on the rise. That is, as women become more educated, will female labor force participation rates increase?

The explained differences between younger and older women fall into three areas: education, family (which includes a woman's marital status as well as the number of children below 19 years old in a household), and "other factors," such as wealth, region of residence, urban or rural area of residence, and parental education.

Columns (1) and (2) of Table III.7 report the results for Egypt in 2018. FLFP rates are comparable between the two groups—approximately 25 percent. By contrast, in Jordan, the difference in FLFP rates between younger and older cohorts is 16 percentage points—29.1 percent for younger women, 13.3 percent for older women. The decomposition results show that 9 percentage points of this gap is due to observed differences between the two groups, while 7 percentage points are unexplained. Interestingly, roughly half, of the gap is the result of educational differences between the two groups.

The results for Tunisia are more striking. The FLFP rate for the younger cohort is 34.8 percent compared with 21.4 percent for the older cohort. The gap in female labor force participation rates between the younger and older age cohort is approximately 13 percentage points. The Blinder-Oaxaca decomposition results show that the entire gap is due to observed differences in the two groups' characteristics. More important, the gap is almost solely explained by education differences between younger and older women (12 percentage points).

Finally, data from the GMD for the seven MENA countries present a similar story. The FLFP rate for the younger cohort is 35 percent compared to 27 percent for the older cohort. A large part of this gap is explained by education (5.3 percentage points) and family factors (4.7 percentage points).

Table III.7. Decomposing the Gap in FLFP Rates between Younger and Older Cohorts

	Egypt 2018		*Jordan 2016*		*Tunisia 2014*		*GMD–7*	
Variables	*Overall*	*Explained*	*Overall*	*Explained*	*Overall*	*Explained*	*Overall*	*Explained*
Old cohort	0.251***		0.133***		0.214***		0.274***	
	[0.005]		[0.006]		[0.008]		[0.002]	
Young cohort	0.244***		0.291***		0.348***		0.349***	
	[0.006]		[0.009]		[0.015]		[0.003]	
Difference	0.007		-0.158***		-0.134***		-0.075***	
	[0.008]		[0.010]		[0.017]		[0.003]	
Explained	-0.041***		-0.085***		-0.133***		-0.096***	
	[0.005]		[0.007]		[0.011]		[0.002]	
Unexplained	0.048***		-0.073***		-0.001		0.020***	
	[0.009]		[0.010]		[0.018]		[0.003]	
Education		-0.056***		-0.070***		-0.123***		-0.053***
		[0.004]		[0.005]		[0.010]		[0.001]
Family		0.023***		-0.001		-0.016***		-0.047***
		[0.003]		[0.003]		[0.005]		[0.001]
Other factors		-0.008***		-0.014***		0.007*		0.005***
		[0.002]		[0.004]		[0.004]		[0.001]
Number of Observations	12,864	12,864	6,359	6,359	3,466	3,466	85,350	85,350

Source: Jordan Labor Market Panel Survey 2016; Tunisia Labor Market Panel Survey 2014; Egypt Labor Market Panel Survey 2018; World Bank Global Micro Database.
Note. This table relies on the Blinder-Oaxaca technique to decompose the gap in female labor force participation rates between younger women (between 25 and 35 years of age) and older women (between 36 and 64 years of age) The GMD–7 are Djibouti, Egypt, Jordan, Morocco, Tunisia, West Bank & Gaza, and Yemen. The regressions include the following variables: a dummy variable for being married, the number of children aged less than 19 years old, three dummies for an individual's educational attainment (no educational degree, secondary education or less and above secondary education), a rural dummy, region fixed effects, three dummies for a mother's highest level of educational attainment, three dummies for a father's highest level of educational attainment (less than intermediate, intermediate and above intermediate) and wealth quintile dummies. The education vector therefore includes three dummies for the individual's highest level of educational attainment and a family vector includes a married dummy and the number of children at the household level.

III.3 The Missing Piece: Measuring Informality in MENA

Table III.8. Informal Employment in Egypt, Jordan and Tunisia

	EGYPT 2018	*JORDAN 2016*	*TUNISIA 2014*	*Definition*
Male informal employment (% of total employment)	79.4	64.8	71.5	No work contract or no social security
Female informal employment (% of total employment)	62.8	43.7	68.4	No work contract or no social security
Male informal employment (% of total employment)	62.8	29.0	44.3	No work contract and no social security
Female informal employment (% of total employment)	30.0	13.5	33.9	No work contract and no social security
Male informal employment (% of total employment)	67.3	46.5	57.4	No work contract
Female informal employment (% of total employment)	32.2	32.1	39.0	No work contract
Male informal employment (% of total employment)	69.3	41.6	50.3	No social security
Female informal employment (% of total employment)	41.1	22.8	48.2	No social security

Sources: The Egypt Labor Market Panel Survey in 2018, the Jordan Labor Market Panel Survey in 2016, and the Tunisia Labor Market Panel Survey in 2014.

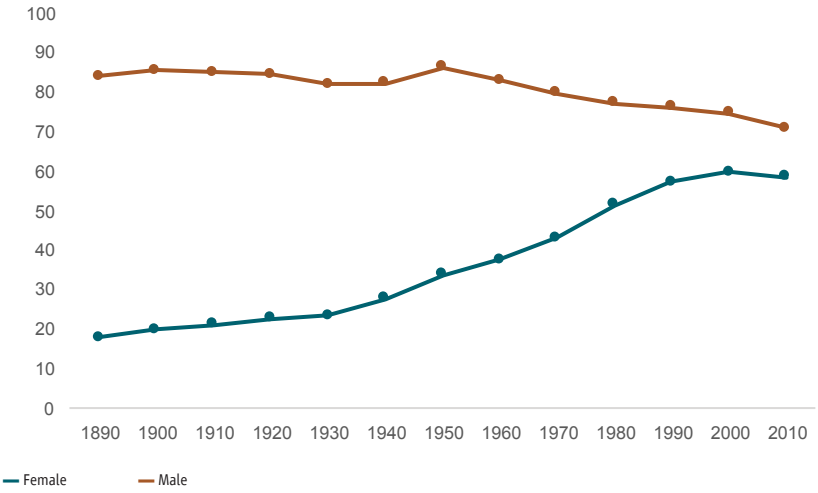
Informal employment in MENA is a challenging issue. Table III.8 shows informal employment as percent of total employment for both women and men in Egypt, Jordan, and Tunisia. Four definitions of informality are explored. An individual is considered informal if he or she has:

- no work contract or no social security
- no work contract and no social security
- no work contract
- no social security.

Informality rates are the highest when relying on the first definition—no work contract or no social security. The second definition, no work contract and no social security, yields the smallest estimated informality rates. Under the second definition, male informality rates are the highest in Egypt (63 percent), followed by Tunisia (44 percent) and Jordan (30 percent). The highest female informality rates are observed in Tunisia (34 percent), followed by Egypt (30 percent), while the lowest female informality rates (13.5 percent) are observed in Jordan. Using the third or the fourth definitions which define informality based on having a work contract or based on having social security, respectively, yields informality rates that are somewhat in the middle range between those estimated using the most restrictive and least restrictive definitions.

III.4 Conflict and Female Labor Force Participation

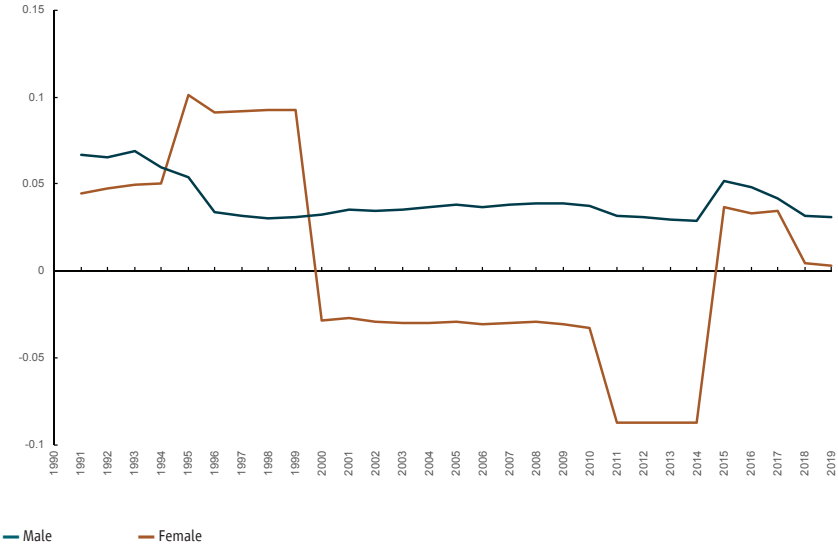
Figure III.8. Labor Force Participation Rates in the United States since 1890



Sources: Acemoglu and Auto (2004) until 1990 and World Development Indicators for 2000 and 2010.
Note: Data include individuals over 14 years of age prior to 1950; over 16 from 1950–1990 and over 15 since 2000

Figure III.9. Labor Force Participation in Yemen, 1990-2019

Year on Year Changes in Labor Force Participation in Yemen



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

One of modern feminism's most recognizable images is that of Rosie the Riveter, Howard Miller's 1942 poster of a confident female worker sporting a polka-dotted red bandana, sleeve rolled up to showcase a flexed bicep while encouraging women to work, saying "We can Do It!" Given the low levels of female labor force participation in the early 20th century, this image is a reminder of the ways in which war may distort the composition of a country's labor force. Of the 16 million American men who joined the Armed Forces during World War II, 73 percent were deployed overseas (Acemoglu and Autor, 2004). Given the concurrence of a shortage of male labor driven by military conscription and heightened demand for military equipment driven by war, employers turned to women to fill industrial vacancies (Milkman 1982). As a result, female labor force participation increased by about 50 percent—with an estimated 6.7 million women entering the labor market during the war (Rose, 2018 and Figure III.8). For those reasons, World War II is largely considered to have created a sea change in female labor force participation in the United States. On a paradigmatic and societal level, the decrease in male labor supply led to the overturn of "marriage bars." Prior to the 1940's, and particularly during Depression, employers did not hire married women and fired single women who married (Goldin, 1991). While many of the women who entered the labor force due to the war eventually dropped out of the labor force by the 1950s, the largest proportional increase in female labor force participation is attributable to the 1940s, according to Acemoglu and Autor. The positive shift in female labor supply occurred for a variety of reasons, some circumstantial. For married women, the income effect of a conscripted husband, as well as the reduction of housekeeping duties, increased their

probability of entering the labor market. Patriotism could have also played a role in women's decision to work and support the war effort. Acemoglu and Auto study women's labor supply by exploiting differences in WWII mobilization rates across different states. They find that in 1950 female labor force participation rates were higher in states with higher rates of working-age male conscription in 1940.

J. Howard Miller/War Production Co-Coordinating Committee, ""We Can Do It!" HERB: Resources for Teachers, accessed February 4, 2020, https://herb.ashp.cuny.edu/items/show/1192.

The impact of conflict on female labor force participation in MENA is probably diverse and country specific. In Yemen, some evidence suggests that conflict has led to an increase in female labor force participation. Historically, female labor force participation in Yemen has been low relative both to male labor force participation and to female labor force participation rates in countries with similar levels of income per capita. The income effect of men's imprisonment or participation in active military combat during the wars of 1994 and 2015 in Yemen led to an increase in the number of female-headed households, as is illustrated by the increases in the annual growth rates of female labor force participation during these years (see Figure III.9). A deeper analysis of the impact of the war on labor composition in the country is required; however, the lack of comprehensive official labor statistics, including sectoral data, makes this difficult. The most accessible sources of labor statistics in Yemen are the ILO's ILOSTAT database and the World Bank's World Development Indicators, both of which are based on modeled estimates and projections.

Prior to the 2011 Syrian conflict, female labor force participation in Syria was about 13 percent. A study by the RAND Corporation suggests that female Syrian refugees significantly increased their labor force participation rates after leaving Syria, with rates as high as 25 percent in Turkey and Lebanon and 50 percent in Jordan (Constant and others, 2019). While this increase happened outside the conflict zone, it was arguably triggered by changing socioeconomic conditions that arose from the conflict. Women and men surveyed in Constant and others suggested that female work opportunities were empowering and more socially accepted.

Iraq is an interesting example of the ways in which conflict can affect female labor force participation in diverse ways. Before the 1991 Gulf War, female labor force participation in Iraq was increasing— especially during the Iran-Iraq war (1980-88), when a shortage of working-age men led to an increase in female participation in the labor market and in civil service (Human Rights Watch, 2003). Following the Gulf War, a combination of economic, legal, and political factors reversed the advancement of women in Iraq. For instance, UN sanctions on Iraq disproportionately affected women and children, especially young girls, because when faced with economic difficulties, families sent their boys to school and kept their girls at home, according to Human Rights Watch. This suggests that while conflict may induce women to join the labor force, the ultimate effect of conflict on female labor force participation in MENA can be hard to predict.

CHAPTER IV. SUMMARY OF FINDINGS

World Bank economists expect output of MENA to decline in 2020. This is in sharp contrast to the forecast in October 2019 when the regional economies were expected to grow at 2.6 percent this year. The 3.7 percentage point growth downgrade reflects the costs associated with the Covid-19 and oil price collapse dual shocks.

The growth forecasts do not change the picture of the region's struggle with the triplet challenges of lackluster long-term growth of GDP per capita, macroeconomic fragility and poor labor market outcomes. The report argues that the region's lack of data and transparency contributed to these long-term outcomes. Many MENA countries are lagging in their data generation capacity or have prevented access to data. Reliable, accessible data combined with clear definitions of key indicators, the essential ingredients of transparency, not only helps improve policymaking over time but also reduce distrust and social unrest. Indeed, the report finds a strong and positive empirical association between a country's statistical transparency and its subsequent long-run economic growth.

The report highlights two areas– macroeconomic fragility and labor market measures - where the lack of data and transparency in MENA countries weakens credibility and hampers good policymaking. First, the report presents a battery of tests on current account and fiscal account vulnerabilities in MENA and the rest of the world. Whereas the analyses of the sustainability of external imbalances is plausibly immune to lack of transparency, the credibility of any debt-sustainability analyses critically depends on data transparency. MENA countries vary greatly in their public debt reporting. For many types of public debt, World Bank economists and other external analysts do not have access to relevant information. Consequently, analytical results about MENA's macroeconomic fragility have to be taken with a grain of salt given that disclosure of relevant data can considerably change the findings, both good and bad.

Second, current analyses of labor market outcomes in MENA are subject to data and definition inconsistencies. MENA countries rely on various definitions of employment, which affect unemployment and informality indicators, with little harmonization within the MENA as well as with international standards. It was not possible to replicate officially reported unemployment rates using independent sources of nationally representative historical labor-force data in three countries where they are available. In the meantime, gaining access to official labor force surveys, upon which official reported unemployment rates rest, remains a daunting task for the World Bank, needless to say to MENA's broader civil society.

Better data and transparency is needed in MENA countries to enable credible economic analyses and informed public discourse, which arguably lead to better policymaking, enhanced societal trust and faster economic development in the long run. Data for development is a priority agenda for the World Bank as evidenced by the upcoming World Development Report 2021 that will be dedicated to the role of data in development. The World Bank can serve as a catalyst for better data in MENA. It can provide arguments and evidence about how data transparency can aidpolicymaking. Benchmarking countries' statistical capacity could provide a powerful incentive for countries to improve their data ecosystem. The World Bank has and can continue to provide technical assistance to improve countries' statistical capacity, such as helping with conducting firm and household level surveys, or digitizing data for public access while also anonymizing micro data to protect citizen and enterprise privacy. The World Bank also benefits directly from better statistical capacity, as better data enables more accurate economic analyses and consequently improves the quality of policy recommendations. The evidence presented in this report and future collaboration can help us to make transform MENA into a more transparent, prosperous and peaceful society in the hopefully near future.

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Appendix

Appendix A: Estimating the Relationship between Statistical Capacity and Economic Growth

The relationship between the statistical capacity index is explored using several estimation models. The sample consists of 146 economies between 2005 and 2018. Data for West Bank and Gaza are available only from 2009 to 2018. A cross-sectional model is estimated using the log difference of GDP per capita between 2005 and 2018 as the outcome variable regressed on the 2005 levels of the statistical capacity index and other covariates (Model: OLS - Cross-section) as presented in in equation (A1).

$$Grwth_{i,05-18} = \alpha + \beta_1 Data_{i,05} + \beta_2 GDPpc_{i,05} + \beta_1 MFG_{i,05} + \beta_1 AG_{i,05} + \beta_1 Sch_{i,05} + \beta_1 Trade_{i,05} + \beta_p Polnst_{i,05} + \varepsilon_i \quad (A1)$$

where Grwth is GDP per capita growth (log difference) for economy i between 2005 and 2018. Data represents the overall statistical capacity of economy i in 2005. All explanatory variables are for the year 2005. These include the level of GDP per capita (GDPpc), the sectoral composition of the economy—share of manufacturing value added over GDP (MFG) and share of agricultural value added over GDP (AG), primary school enrollment (Sch), and trade as a share of GDP (Trade). Polnst is a vector of political institutions obtained from the World Governance Indicators that include political stability, voice and accountability, rule of law, and control of corruption. Finally, ε is the error term.

An alternate estimation can be obtained by employing panel estimations using random country effects and year fixed effects (equation A2).

$$\mathrm{Grwth}_{it} = \alpha + \beta_1 \mathrm{Data}_{i,t} + \beta_2 \mathrm{GDPpc}_{i,t-1} + \beta_3 \mathrm{MFG}_{i,t} + \beta_4 \mathrm{AG}_{i,t} + \beta_5 \mathrm{Sch}_{i,t} + \beta_6 \mathrm{Trade}_{i,t} + \beta_p \mathrm{Polnst}_{i,t} + \nu_i + \tau_t + \varepsilon_{it} \quad (A2)$$

Grwth is the log difference in GDP per capita for economy i between time t and $t-1$. Data is the overall statistical capacity of economy i at time t. $\mathrm{GDPpc}_{i,t-1}$ is the log GDP per capita in time $t-1$. All the other covariates are the same as in equation A1 at time t. Finally, ν_i is the random country effect, τ_t is the year fixed effect, and ε_{it} is the error term (Model: Country RE & Year FE).

Alternatively, we estimate equation A2 with lagged statistical capacity and other covariates as presented in equation A3 (Model: Country RE & Year FE– (all covariates lagged)).

$$\mathrm{Grwth}_{it} = \alpha + \beta_1 \mathrm{Data}_{i,t-1} + \beta_2 \mathrm{GDPpc}_{i,t-1} + \beta_3 \mathrm{MFG}_{i,t-1} + \beta_4 \mathrm{AG}_{i,t-1} + \beta_5 \mathrm{Sch}_{i,t-1} + \beta_6 \mathrm{Trade}_{i,t-1} + \beta_p \mathrm{Polnst}_{i,t-1} + \nu_i + \tau_t + \varepsilon_{it} \quad (A3)$$

Furthermore, given that the country-level effects are likely to be correlated with the lagged GDP per capita resulting in inconsistent estimates, we estimate systems GMM dynamic panel estimators with specifications where the statistical capacity index and other covariates are either included concurrently (Model: Systems GMM) or lagged (Model: Systems GMM - (all covariates lagged)).

Across all models and specifications, the results show a positive relationship between statistical capacity and economic growth. Regression results are available upon request. The macro-economic loss due to the decline in the statistical capacity index in MENA is reported for all the models in Table A1.

Table A1. Macro-economic Loss in GDP due to Statistical Capacity Index Decline in MENA (2005-2018)

Model	*Loss in GDP per Capita (%)*
Country RE & Year FE	7.4
Country RE & Year FE – (all covariates lagged)	9.2
Systems GMM	10.6
Systems GMM– (all covariates lagged)	9.9
OLS - Cross-section	13.8

**Regression results and calculations are available upon request from authors. Model details explained in Appendix A.*

Table A2. Definitions of the Statistical Capacity Measure

Statistical Capacity Measure (2005-2018)	*Definitions*
Overall Statistical capacity (0 – 100)	Average of three sub-indicators: Source data, Methodology , and Periodicity and timeliness of socioeconomic indicators
Source data (micro data availability and periodicity) (scale 0 - 100)	Called "Source data assessment of statistical capacity" in the statistical capacity dataset. Source data reflects whether a country conducts data collection activity in line with internationally recommended periodicity, and whether data from administrative systems are available and reliable for statistical estimation purposes. Specifically, the criteria used are the periodicity of population and agricultural censuses, the periodicity of poverty and health related surveys, and completeness of vital registration system coverage.
Methodology (international standards) (scale 0 - 100)	Called "Methodology assessment of statistical capacity" in the statistical capacity dataset. Statistical methodology measures a country's ability to adhere to internationally recommended standards and methods. This aspect is captured by assessing guidelines and procedures used to compile macroeconomic statistics and social data reporting and estimation practices. Countries are evaluated against a set of criteria such as use of an updated national accounts base year, use of the latest balance of payments manual, external debt reporting status, subscription to International Monetary Fund's Special Data Dissemination Standard, and enrollment data reporting to the United Nations Educational, Scientific, and Cultural Organization.
Periodicity and timeliness of key socioeconomic indicators (scale 0 - 100)	Called "Periodicity and timeliness assessment of statistical capacity" in the statistical capacity dataset. Periodicity and timeliness looks at the availability and periodicity of key socioeconomic indicators, of which nine are MDG indicators. This dimension attempts to measure the extent to which data are made accessible to users through transformation of source data into timely statistical outputs. Criteria used include indicators on income poverty, child and maternal health, HIV/AIDS, primary completion, gender equality, access to water and GDP growth.

Appendix B: 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.[19]

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

$$\begin{aligned} CA_{i,t} = \beta_0 + YoungDep_{i,t} + OldDep_{i,t} + AgingSpeed_{i,t} + EGrowth_{i,t} + RelativeGDP_{i,t-1} \\ + RelativeGDP_{i,t-1} * ChinnIto_{i,t} + ChinnIto_{i,t} + \Delta NetComPI_{i,t-1} + \Delta NetComPI_{i,t} + fe_i \\ + fe_t + \varepsilon_{i,t} \qquad (B1) \end{aligned}$$

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 dependents (less than 15 years of age) to the working population (15–64 years of age). The regression also includes old-age dependency, $OldDep_{i,t}$ which captures the percentage of dependents aged 64 years or older 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 the following year and the growth forecast for the current year. Data for the growth forecast are from the historical forecasts of the WEO.

$RelativeGDP_{i,t-1}$ is a country's real GDP per worker (in purchasing power parity, or PPP) 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 WEO.

The Chinn-Ito Index is a measure of capital account openness (Chinn and Ito 2006).

$\Delta NetComPI_{i,t}$ and $\Delta NetComPI_{i,t-1}$ are the log change in the commodity price index and its first lag. 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, again following Bruckner and Arezki, we generate the change in the commodity price index as $\Delta \log (ComPI)_t = \log(ComPI_t) - \log (ComPI_{t-1})$. Commodity prices are from the IMF; trade data are from UN Comtrade; and nominal GDP data are from World Development Indicators.

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 (2019). 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 B1 for the summary statistics.

[19] We retrieved the data from the following sources: the World Economic Forum, the World Development Indicators, the Penn World Table, Chinn and Ito (2006) and the U.S. Federal Reserve.

Table B1. Summary Statistics

World

	Number of countries	*N*	*Mean*	*Mediam*	*Min*	*Max*
Young Age Dependency %	189	11083	62.062	65.791	14.898	113.702
Old Age Dependency %	188	11083	10.186	7.513	.874	37.5
Aging Speed %	188	10897	.095	.046	-1.154	1.563
Predicted Changes in Growth	188	5203	.457	.213	-230.834	151.992
GDP/worker relative to USA (t-1)	181	6619	.354	.2	.011	6.452
Chinn Ito Index	175	7319	.452	.416	0	1
Log Change in net commodity price (t)	188	6470	0	0	-.357	.28
Managed Float Exchange Rate	183	10430	.356	0	0	1
Float Exchange Rate	183	10430	.075	0	0	1

MENA

	Number of countries	*N*	*Mean*	*Mediam*	*Min*	*Max*
Young Age Dependency %	19	1199	65.64	69.678	15.237	113.702
Old Age Dependency %	19	1199	6.013	6.043	.874	15.748
Aging Speed %	19	1180	.024	.015	-.653	.602
Predicted Changes in Growth	18	561	.145	.198	-230.834	151.992
GDP/worker relative to USA (t-1)	18	689	.719	.313	.04	6.452
Chinn Ito Index	19	934	.561	.656	0	1
Log Change in net commodity price (t)	18	782	.001	0	-.315	.236
Managed Float Exchange Rate	19	1172	.397	0	0	1
Float Exchange Rate	19	1172	.015	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 B2), the fundamentals have the expected signs. The coefficients of young age and old age dependencies are negative. The coefficient of –0.148 implies that a 1 percent increase in old age dependency is associated with a 0.15 percentage point decrease in the current account balance, measured as a percent of GDP . To put this in perspective, MENA's (simple average) old-age dependency ratio 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 than does young-age dependency. A 1 percentage increase in aging speed is associated with a 4.4 percent increase in the current account balance. A 1 percentage point growth acceleration is associated with a 0.3 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 1 percentage 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 past 10 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 percentage points compared to a completely closed capital account, because capital inflows are expected to be higher. A 1 percent increase in the net commodity index in the current year is associated with a 59 percentage point increase in the current account balance, and a 1 percent increase in the net commodity index in the previous year is associated with a 38 percentage 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 the other specifications (columns 2 and 3 of Table B2), 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 larger growth acceleration, it tends to sustain a larger current account balance.

To ascertain whether the model's results reflect the influence of fundamentals on national savings rates, we estimated an auxiliary model on national savings rates. The effects of the fundamentals on saving rates are broadly similar to those on current account balances.[20] Old-age and young-age dependencies are significantly correlated with 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.

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

Table B2. MNACE Model Estimates of the Fundamental Drivers of Current Account Balances

VARIABLES	*(1) Pooled*	*(2) Within*	*(3) Between*
Young Age Dependency %	-0.0223*	-0.0509	-0.0771*
	(0.0117)	(0.0351)	(0.0435)
Old Age Dependency %	-0.148***	0.166	-0.420***
	(0.0510)	(0.114)	(0.138)
Aging Speed %	4.425***	1.912***	7.943
	(0.767)	(0.700)	(5.107)
Predicted Changes in Growth	-0.293	-0.361	1.572**
	(0.289)	(0.295)	(0.748)
Relative Productivity (t-1)	15.75***	39.70***	
	(2.437)	(11.50)	
Chinn Ito Index	0.129	5.992***	-1.000
	(0.602)	(1.603)	(2.060)
Chinn Ito x Relative Productivity (t-1)	-7.005***	-28.74***	3.423
	(2.443)	(7.267)	(3.944)
Net Commodity Price Index, (t)	59.67***	56.97***	1,964***
	(8.015)	(7.407)	(601.0)
Net Commodity Price Index, (t-1)	38.38***	36.13***	-2,080***
	(6.958)	(5.991)	(709.0)
Managed Float Exchange Rate	0.326	-1.129	1.662
	(0.520)	(0.796)	(1.530)
Float Exchange Rate	0.279	-0.828	-2.023
	(1.108)	(1.263)	(3.534)
Managed Float Exchange Rate x Relative Productivity (t-1)	2.366	-4.170	3.895
	(1.515)	(2.784)	(2.466)
Float Exchange Rate x Relative Productivity (t-1)	-2.141	-3.571	-0.116
	(1.796)	(3.094)	(3.673)
Relative Productivity (t-1)			4.481
			(3.957)
Constant	-5.200***	-1.884	1.532
	(1.640)	(3.498)	(4.560)
Observations	4,254	4,254	168
R-squared	0.236	0.469	0.505
Time Fixed Effects	Yes	Yes	No
Country Fixed Effects	No	Yes	Yes
Number of Countries	162	162	163

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Note: Data are for 163 countries. To ensure change in the 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 is not included because it lacks sufficient GDP, predicted changes in growth, and Chinn-Ito data. The Chin-Ito index for Iraq is assumed to gradually converge to MENA's average in 2018.

Appendix C: Fiscal Sustainability

C1. Debt Arithmetic: Primary Balance Required to Stabilize Debt

- **One type of debt**: First, we consider the baseline scenario with one type of debt. We start with a government's budget constraint:

$$(1 + r_t)D_{t-1} - PB_t = D_t \qquad (C1)$$

which means that new debt (D_t) equals old debt plus interest, $(1 + r_t)D_{t-1}$, minus new primary balance, PB_t. All are denominated in domestic currency. Dividing the equation by the country's nominal output is equivalent to:

$$\frac{D_t}{Y_t} = (1 + r_t)\frac{D_{t-1}}{Y_{t-1}}\frac{Y_{t-1}}{Y_t} - \frac{PB_t}{Y_t} \qquad (C2)$$

$$\text{or, } d_t = \frac{1+r_t}{1+g_t}d_{t-1} - pb_t \qquad (C3)$$

where d_t is debt-to-GDP ratio, r_t is nominal interest rate, g_t is nominal GDP growth.

For debt-to-GDP ratio to stabilize, namely $d_t = d_{t-1}$, (C3) implies

$$pb_t = \left[\frac{1 + r_t}{1 + g_t} - 1\right]d_{t-1} \qquad (C4)$$

Similarly, for future debt-to-GDP ratio to stabilize, namely, $d_{t+1} = d_t$, (C4) implies that the future primary balance depends on the expected future interest rate and expected future output growth.

$$pb_{t+1} = \left[\frac{E(1 + r_{t+1})}{1 + Eg_{t+1}} - 1\right]d_t \qquad (C5)$$

- **Multiple types of debt**: Multiple types of debt can be collapsed to total debt and weighted average interest rate. We start with an accounting identity

$$(1 + r_t^1)D_{t-1}^1 + (1 + r_t^2)D_{t-1}^2 - PB_t = D_t \qquad (C6)$$

where D_{t-1}^1 and D_{t-1}^2 are two different types of debts (such as domestic debt and foreign debt). (C6) is equivalent to:

$d_t = \frac{1}{1+g_t}\left[(1 + r_t^1)\frac{D_{t-1}^1}{D_{t-1}^1+D_{t-1}^2} + (1 + r_t^2)\frac{D_{t-1}^2}{D_{t-1}^1+D_{t-1}^2}\right]d_{t-1} - pb_t$, or $d_t = \frac{1+r_t}{1+g_t}d_{t-1} - pb_t$, where r_t is the weighted average interest rate, that is, $1 + r_t = \left[(1 + r_t^1)\frac{D_{t-1}^1}{D_{t-1}^1+D_{t-1}^2} + (1 + r_t^2)\frac{D_{t-1}^2}{D_{t-1}^1+D_{t-1}^2}\right]$.

Similarly, if future debt-to-GDP ratio is to stabilize, the accounting identity (C6) implies a required future primary balance:

$$pb_{t+1} = \left[\frac{(1 + Er_{t+1}^1)\omega_t^1 + (1 + Er_{t+1}^2)\omega_t^2}{1 + Eg_{t+1}} - 1\right]d_t \qquad (C7)$$

where ω_t^1 and ω_t^2 are weights of the two types of debts, that is, $\omega_t^i = \frac{D_t^i}{D_t^1+D_t^2}$.

(C7) implies that the required future primary balance will rise with expected interest rates and decline with a higher growth rate. This means if the interest payments are expected to rise, the country must run a bigger fiscal surplus to finance the interest payment.

Take an example where one type of debt, for example, D_t^1, is foreign debt. The expected nominal interest rate equals the interest rate in foreign currency times the expected depreciation of the exchange rate, that is, $(1 + Er_{t+1}^1) = (1 + r_{t+1}^*) \times E(\Delta E_{t+1})$. (C7) becomes

$$pb_{t+1} = \left\{ \frac{(1 + r_{t+1}^*) \times E(\Delta E_{t+1})\omega_t^1 + (1 + Er_{t+1}^2)\omega_t^2}{1 + Eg_{t+1}} - 1 \right\} d_t \qquad (C8)$$

C2- Calculating Structural Primary Fiscal Balance

Calculating the structural primary fiscal balance is based on the following two equations:
$\log\left(\frac{R}{R^*}\right) = \theta^R \log\left(\frac{Y}{Y^*}\right)$ and $\log\left(\frac{G}{G^*}\right) = \theta^G \log\left(\frac{Y}{Y^*}\right)$,

where Y and $Y^*$are real output and the Hodrick-Prescott -filtered trend component of output; R and G are real primary revenue and expenditure (excluding interest revenue and interest payments), R^* and G^* are real structural revenue and expenditure (IMF, 2011). Following the literature and IMF (2011), we set $\theta^R = 1$ and $\theta^G = 0$ to calculate R^* and G^*. The argument for $\theta^R = 1$ is that to the extent that tax rates remain unchanged, revenue is a constant share of output. On the contrary, it is difficult to think of a component of government expenditure that is automatically connected to the business cycle, so $\theta^G = 0$. Structural fiscal balance PB^* equals $R^* - G^*$.

C3. Relationship between Debt and Primary Balance

Following Mendoza and Ostry (2008), we examine how the primary fiscal balance reacts to debt in the previous period. The specification is as follows:

$$pb_{it} = \beta_0 + fe_i + \beta_1 \widetilde{g_{it}} + \beta_2 \widetilde{y_{it}} + \rho d_{i,t-1} + fe_t + fe_i + \epsilon_{it} \qquad (C9)$$

pb_{it} is primary fiscal balance (as a share of output); $\widetilde{g_{it}}$ and $\widetilde{y_{it}}$ are temporary fluctuations in government expenditure and GDP. Specifically, $\widetilde{g_{it}} = \log\left(\frac{G_{c,t}}{G_{c,t}^*}\right)$ and $\widetilde{y_{it}} = \log\left(\frac{Y_{c,t}}{Y_{c,t}^*}\right)$ are the HP-filtered cylical components of real government expenditure and real output. $d_{i,t-1}$ is debt as a share of output in the previous period. fe_t and fe_c are time and country fixed effects. A positive ρ shows signs of fiscal sustainability, because primary balance improves when debt increases.

To compare MENA and the rest of the world, we apply the following regression:

$$pb_{it} = \beta_0 + fe_i + \beta_1 \widetilde{g_{it}} + \beta_2 \widetilde{y_{it}} + \rho d_{i,t-1} + \rho_2 MENA \times d_{i,t-1} + fe_t + fe_i + \epsilon_{it} \qquad (C10)$$

Table C1. The Relationship between Primary Balance and Debt

VARIABLES	*Primary Balance/GDP*	
Output gap	54.93***	56.23***
	(8.346)	(8.324)
Expenditure gap	-54.41***	-54.51***
	(2.654)	(2.646)
Debt/GDP (t-1)	-0.0471***	-0.0471***
	(0.00735)	(0.00733)
MENA x Debt/GDP (t-1)	0.0301	
	(0.0230)	
GCC x Debt/GDP (t-1)		-0.135***
		(0.0409)
Developing MENA x Debt/GDP (t-1)		0.0971***
		(0.0267)
Constant	-4.768	-5.213
	(3.662)	(3.651)
Observations	3854	3854
r2	0.258	0.263
Country FE	Y	Y
Year FE	Y	Y

Note: Standard errors in parentheses, * p<0.10 ** p<0.05 *** p<0.01

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