Regional Economic Outlook for MENA, Inflation Dynamics, and Spillovers from U.S. Monetary Policy Normalization

CENTER FOR ECONOMICS AND FINANCE

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Presented by: Mohamed Belkhir and Filippo Gori
Regional Analytics and Strategy Division
Middle East and Central Asia Department
Outline

MENA Regional Economic Outlook for 2022

Spillovers from U.S Monetary Policy Normalization

Inflation Dynamics and Drivers
MENA Regional Economic Outlook for 2022:
Amplified Divergences In Recoveries amid Extraordinary Uncertainty with Numerous Risks
Multifaceted spillovers from the war and sanctions are shaping the outlook

**Direct channels**
- Energy import dependence
- Wheat and fertilizer import dependence
- Tourism

**TRANSMISSION CHANNELS**
- MENA Emerging Markets
- MENA LICs
- MENA OEs

**Global channels**
- Oil and gas prices
- Food and agriculture input prices
- Supply chain disruptions
- Investor sentiment: Risk-off events
- Secondary spillovers due to weaker global demand
- Aid diversion

**Transmission**
- Negative spillovers
- Positive spillovers

**Regions**
- Most affected region
- Least affected region
Leading to divergent recovery prospects in 2022

Slower recovery for oil-importers while oil exporters recover faster

MENA: Real GDP Growth, 2022
(Year-over-year percent change)

Source: IMF, WEO; and IMF staff calculations.

Steep upward revision for inflation

MENA: Headline Inflation
(Year-over-year percent change, average)

Source: IMF, WEO; and IMF staff calculations.

Diverging external accounts triggered by higher commodity prices

MENA: Current Account Balance
(Percent of GDP)

Source: IMF, WEO; and IMF staff calculations.
Emerging markets’ fiscal and financing vulnerabilities increased, while oil exporters are benefiting from sizeable windfall

MENA emerging markets’ financing needs increased due to the war and faster monetary policy normalization...

...amid large pandemic-induced revenue losses over the medium term...

...while MENA OEs are building sizeable buffers from the oil recovery

**MENA EM&MiS: Public Gross Financing Needs**
(Percent of fiscal revenues, simple average)

<table>
<thead>
<tr>
<th>Year</th>
<th>October 2021 WEO</th>
<th>April 2022 WEO</th>
</tr>
</thead>
<tbody>
<tr>
<td>2022</td>
<td>108</td>
<td>115</td>
</tr>
<tr>
<td>2023</td>
<td>110</td>
<td>96</td>
</tr>
</tbody>
</table>

Sources: National authorities; and IMF staff calculations.
Note: Tunisia is excluded due to lack of projections because of ongoing technical discussions pending potential program negotiations.

**MENA EMMI: Output and Revenue Losses**
(Percent of 2019 GDP, percentage point changes from pre-COVID-19 projections)

<table>
<thead>
<tr>
<th>Year</th>
<th>Revenue excl. grants</th>
<th>Output losses</th>
</tr>
</thead>
<tbody>
<tr>
<td>2020</td>
<td>0</td>
<td>-8</td>
</tr>
<tr>
<td>2021</td>
<td>0</td>
<td>-7</td>
</tr>
<tr>
<td>2022</td>
<td>0</td>
<td>-6</td>
</tr>
<tr>
<td>2023</td>
<td>0</td>
<td>-5</td>
</tr>
<tr>
<td>2024</td>
<td>0</td>
<td>-4</td>
</tr>
</tbody>
</table>

Sources: IMF, WEO, and IMF staff calculations.

**MENA OE: Oil Revenues**
(Billion of US dollars)

USD 1,131 billion cumulative gain from increased oil revenues

Source: National authorities; IMF, WEO; and IMF staff calculations.
Uncertainty remains very high, and risks are tilted to the downside

- Prolonged war and sanctions could imperil growth
- Spillovers from tighter-than-expected global financial conditions
- Higher-than expected inflation could de-anchor expectations
- Fiscal risks due to elevated debt burden, limited buffers, and delivering adjustment in a difficult socio-economic environment
- Knock-on impact from sharper-than-expected slowdown in China
- Food insecurity and social unrest
- Local outbreaks and new variants

Higher oil-prices could feed into non-oil GDP growth for OEs, creating positive spillovers for the rest of the region through remittances
Spillovers from U.S. Monetary Policy Normalization
Global financial conditions reversed on news of an imminent normalization of monetary policy in advanced economies, particularly in the U.S.

Sovereign yields and spreads have been on an upward trajectory...

...while global equity markets have been in a sell-off mode since 2021

The dollar appreciated while EMs’ currencies depreciated

Sources: Bloomberg Finance L.P, IMF Staff Calculations
The Middle East and Central Asia has been accumulating large amounts of cross-border capital, but is prone to ebbs

Countries in ME&CA have received increased amounts of cross-border portfolio flows and loans over the past decade

Fund flows to ME&CA ebb upon changes in global financial conditions

Panel 1: Cumulative Fund Flows to ME&CA
(Millions of US dollars)

Source: Emerging Portfolio Fund Research, Haver Analytics; and IMF Staff Calculations
Tightening global financial conditions adversely affect the region’s economies, with vulnerable ones being most impacted.

Vulnerabilities exacerbate outflows from ME&CA countries during global shocks.

The region’s countries’ sovereign spreads increase upon MP tightening announcements by the Federal Reserve.

Equity prices started declining as discussions of monetary policy normalization intensified, except in MENA OEs.

Fund Flows in ME&CA during Global Shocks
(Millions of US dollars)

<table>
<thead>
<tr>
<th>Year</th>
<th>2021-22</th>
<th>COVID-19</th>
<th>2018</th>
<th>Taper Tantrum</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less Vulnerable</td>
<td>-4,500</td>
<td>-4,000</td>
<td>-3,500</td>
<td>-3,000</td>
</tr>
<tr>
<td>Vulnerable</td>
<td>-2,500</td>
<td>-2,000</td>
<td>-1,500</td>
<td>-1,000</td>
</tr>
</tbody>
</table>

Sources: Emerging Portfolio Fund Research, Haver Analytics, IMF Staff Calculations


Countries whose FX reserves to GDP ratio is below (above) the sample’s median are (less) vulnerable. Bars in panel 2 represent cumulative fund flows during the episode. Countries included in the analysis of fund flows are: Azerbaijan, Bahrain, Egypt, Georgia, Iraq, Jordan, Kazakhstan, Kuwait, Lebanon, Morocco, Oman, Pakistan, Qatar, Saudi Arabia, Tunisia, and United Arab Emirates.

EMBIG Sovereign Spread Change
(in ppt)

<table>
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<th>Year</th>
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</table>

Sources: Bloomberg Finance L.P, JP Morgan Chase, IMF Staff Calculations


ME&CA Equity Markets: 2021-22 Episode (Jan. 2021 = 100)

Source: Bloomberg Finance L.P, and IMF staff calculations
Note: MENA OE = Middle East and North Africa Oil Exporters. MENA OI = Middle East and North Africa Oil Importers.
Portfolio inflows to ME&CA could decline substantially, particularly under a scenario of aggressive tightening by the Fed and heightened global risk aversion.

Portfolio inflows to ME&CA are more sensitive to changes in global financial conditions relative to other EMs.

ME&CA countries could, on average, see a significant drop in their portfolio inflows...

...and the region, as a whole, could lose up to $31 billion under a scenario of aggressive tightening and heightened global volatility.

### Portfolio Inflows Stress Tests (US Tightening and Global Uncertainty)

<table>
<thead>
<tr>
<th>Scenario</th>
<th>2022 Losses (Billion US Dollars)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Baseline</td>
<td>0</td>
</tr>
<tr>
<td>Scenario 2</td>
<td>-30</td>
</tr>
<tr>
<td>Scenario 3</td>
<td>-35</td>
</tr>
</tbody>
</table>

**Source:** IMF staff calculation

*Note:* Baseline (scenario 1): a 100 bps increase in the U.S. 10-year Treasury yield. Scenario 2: a 200 bps increase in the U.S. 10-year Treasury yield. Scenario 3: a 200 bps increase in the U.S. 10-year Treasury yield and a two standard deviations increase in VIX in 2022 relative to 2021. bps = basis points. VIX = Chicago Board Options Volatility Index.
Tighter monetary conditions in the U.S. result in adverse spillovers to ME&CA economies

A rise in U.S. interest rates results in adverse spillovers to equity markets, exchange rates, sovereign yields, and the real economy...

... but countries with stronger fundamentals suffer a lower rise in their sovereign yields.

Source: IMF Staff Calculations.

Note: Bars represent average response over 6 months.
Strong economic fundamentals mitigate the adverse effect of U.S. monetary policy tightening and reversal in global risk sentiment on ME&CA portfolio flows

ME&CA countries with stronger fundamentals face lower declines in portfolio flows after a rise in U.S. interest rates

Strong fundamentals also mitigate the adverse impact of a rise in global risk aversion on ME&CA countries' portfolio flows

Impact of a 100 bps Increase in the U.S. 10-year Treasury Yield on ME&CA Countries’ Portfolio Inflows (percent of GDP)

Impact of a One Standard Deviation Increase in VIX on ME&CA Countries’ Portfolio Inflows (percent of GDP)

Source: IMF staff calculation.
Note: Low (high) reserves represents countries with FX reserves-to-GDP ratio below (above) 50 percent (three months of imports, on average). All Gulf Cooperation Council countries are included in the group of high reserves coverage, reflecting extensive accumulated buffers in their sovereign wealth funds. Low (High) public debt represents countries with debt to GDP ratio below (above) 70 percent (upper 25th percentile). Low (High) deficit represents countries with primary fiscal balance to GDP ratio above (below) -4 percent (bottom 25th percentile). Low (high) oil prices for oil exporting countries represents periods with oil prices below (above) $45 per barrel (bottom 25th percentile). Bars represent the average response over six months. bps = basis points; FX = foreign exchange; ME&CA = Middle East and Central Asia; OE = oil exporter; OI = oil importer.
Spillovers from tightening global financial conditions may be more severe this time around given the deterioration in fundamentals of many of the region’s countries.

Public debt-to-GDP ratios have increased in most countries compared to 2012.

Reliance on foreign currency debt has also increased.

International reserves are, however, more ample.

Public Debt (percent of GDP)

Share of Foreign Currency Public Debt (percent of total public debt)

FX Reserves (percent of GDP)

Sources: IMF World Economic Outlook Database; and IMF staff calculations.
Note: Public debt for Egypt refers to Fiscal Years. Country abbreviations are International Organization for Standardization country codes. FX = foreign exchange.
Inflation Dynamics and Drivers in the Middle East and Central Asia
Inflation levels since 2021 have been significantly higher than in previous years

Sources: Haver Analytics; National Authorities; IMF, CPI database; and IMF staff calculations.

Note: MENA = Middle East and North Africa. MENA includes ALG, BHR, EGY, IRN, IRQ, JOR, KWT, MAR, OMN, QAT, SAU, SOM, TUN, UAE, and WBG. GCC includes BHR, KWT, OMN, QAT, SAU, UAE.

Latest data: Dec 2021.
Inflation sub-components differ across MENA

Diverse inflation drivers across sub-regions

Inflation components vary depending on different factors

- Oil and food subsidies or price controls
- Relative weight of food and energy products in CPI
- Relative weight of service sector in the economy
- Other country specific factors

Food CPI weight and import share differ across sub-regions

Sources: Haver Analytics; National Authorities; IMF, CPI database; and IMF staff calculations.
Notes: MENA = Middle East and North Africa. MENA includes ALG, BHR, EGY, IRN, IRQ, JOR, KWT, MAR, OMN, QAT, SAU, SOM, TUN, UAE, and WBG. GCC includes BHR, KWT, OMN, QAT, SAU, UAE. Energy prices are approximated by Housing, Water, Electricity, Gas and Other Fuels. Latest data: Dec 2021.
Estimating (an augmented) Phillips Curve

\[ \pi_{i,t} = \alpha + \beta_1 \pi_{i,t}^e + \beta_2 y_{i,t}^{domestic} + \beta_3 y_{i,t}^{foreign} + \beta_4 \Delta P_{i,t-1} + \beta_5 Z_{i,t-1} + \varepsilon_{i,t} \]

Q-o-q core (headline) inflation \( \pi_{i,t} \) is regressed in a panel FE on:

- \( \pi_{i,t}^e \) is inflation expectations, measured by the 5-year ahead forecast for CPI inflation in the IMF WEO,
- \( \pi_{i,t-1} \) is lagged core or headline inflation,
- \( y_{i,t}^{domestic} \) is the domestic output gap,
- \( y_{i,t}^{foreign} \) is the foreign output gap,
- \( \Delta P_{i,t-1} \) captures a measure of external price pressures in the previous period,
- \( Z_{i,t-1} \) is the lag of the dependent variable, of energy, and of food price inflation.
Inflation expectations and external price pressures matter

<table>
<thead>
<tr>
<th></th>
<th>Core inflation</th>
<th>Core inflation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inflation expectations 5 year ahead</td>
<td>0.226***</td>
<td>0.209***</td>
</tr>
<tr>
<td></td>
<td>(0.061)</td>
<td>(0.078)</td>
</tr>
<tr>
<td>Lag of core (headline) price inflation</td>
<td>0.270**</td>
<td>0.0574</td>
</tr>
<tr>
<td></td>
<td>(0.113)</td>
<td>(0.087)</td>
</tr>
<tr>
<td>Output Gap</td>
<td>-0.000383</td>
<td>0.00717</td>
</tr>
<tr>
<td></td>
<td>(0.001)</td>
<td>(0.032)</td>
</tr>
<tr>
<td>Lag of external price pressure</td>
<td>0.0320***</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.009)</td>
<td></td>
</tr>
<tr>
<td>Foreign Output Gap</td>
<td>-0.448</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.423)</td>
<td></td>
</tr>
<tr>
<td>Lag of energy inflation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lag of food inflation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Observations</td>
<td>348</td>
<td>139</td>
</tr>
<tr>
<td>R-Squared overall</td>
<td>0.53</td>
<td>0.58</td>
</tr>
<tr>
<td>R-Squared Adjusted</td>
<td>0.46</td>
<td>0.48</td>
</tr>
<tr>
<td>R-Squared within</td>
<td>0.24</td>
<td>0.29</td>
</tr>
</tbody>
</table>

Notes: Robust standard errors in parentheses. ***, p<0.01, ** p<0.05, * p<0.1. All regression include country and time fixed effects. Countries include: Egypt, Georgia, Iran, Jordan, Kazakhstan, Kuwait, Morocco, Qatar, Tunisia, Saudi Arabia.

Sources: IMF, World Economic Outlook (2021), Haver; and IMF Staff estimations.
No role for demand factors?

<table>
<thead>
<tr>
<th>Some Caveats about limited role of domestic demand in the Phillips Curve</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Uncertainty and measurement errors in output gap measurement</td>
</tr>
<tr>
<td>• Output gap a poor proxy for labor slack?</td>
</tr>
<tr>
<td>• Estimation during the low inflation era</td>
</tr>
</tbody>
</table>

Post-pandemic inflation and growth surprises are highly correlated

Countries where fiscal policy was more supportive also experienced higher inflation

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Sources: World Economic Outlook databases; and IMF staff calculations.
Note: Inflation and growth surprise values computed as the difference between 2021 actual values and projections from the October 2020 World Economic Outlook report. Country abbreviations are International Organization country codes.
The role of global factors in driving domestic inflation dynamics

\[ \pi_{i,t+k} = \alpha_i^k + \sum_{j=1}^{l} \gamma_j \pi_{i,t-j} + \beta_k x_t + \sum_{j=1}^{k} \theta_j x_{i,t+j} + \sum_{j=1}^{l} \theta_j x_{i,t-j} + \delta z_t + \varepsilon_{i,t} \]  

Where:

- \( \pi \) represents domestic CPI inflation of country \( i \) at time \( t \).
- \( x_t \) is the change the global factor in month \( t \).
- \( \alpha_i \) are country-fixed effects while \( \beta_k \) measures the impact of changes in the (shocked) global factor on domestic inflation for each future period \( k \).
- \( \gamma_{jk} \) captures the persistence of domestic CPI inflation.
- \( z_{i,t} \) contains a list of control variables including month-fixed effects (to account for seasonality in the dependent variable), the world output gap to control for global demand pressures, the exchange rate of the domestic currency against the US dollar, and global factors not included in \( x_t \).
International food prices have increased dramatically since 2021...

Food prices (Index, 2016=100)

Source: IMF

International food prices pass-through to domestic prices

...affecting domestic inflation

Share of food in CPI affects the transmission

International food prices have increased dramatically since 2021...

Source: IMF staff calculations.

Note: The chart shows the cumulative Impulse Response Function (IRFs) for domestic inflation and 95% confidence interval bands following a 1 percent increase in international food prices. CPI = consumer price index.

Source: IMF staff calculations.

Note: The chart shows the cumulative Impulse Response Function (IRFs) for domestic inflation and 95% confidence interval bands following a 1 percent increase in international food prices. CPI = consumer price index.
Global supply chain constraints affect inflation

Supply chain constraints rose to new maxima in 2021

Global Supply Chain Pressure Index (GSCPI)

Source: Beningno et al. 2022

Supply chain constraints affect domestic inflation with a lag

Response of CPI to one std. shock in GSCPI

Source: IMF staff calculations

Note: CPI = consumer price index; GSCPI = Global Supply Chain Pressure Index. The chart shows the cumulative Impulse Response Function (IRF) for domestic inflation and 95% confidence bands following a 1 standard deviation in the GSCPI.
International oil prices affect domestic energy prices

Oil prices increased since mid-2020

Brent oil price (USD, spot price)

Source: IMF staff calculations.

Oil price subsidies reduce pass-through to domestic inflation

Pass-through of oil prices to domestic inflation (response to CPI to 1% price shock)

1. Subsidies above the ME&CA Median

2. Subsidies below the ME&CA Median

Source: IMF staff calculations.

Note: The charts show the cumulative Impulse Response Function (IRFs) for domestic inflation and 95% confidence interval bands following a 1 percent increase in oil prices. CPI = consumer price index; ME&CA = Middle East and Central Asia.

Oil price pass-through to domestic inflation with low or no subsidies

Pass-through of oil prices to domestic inflation (response to CPI to 1% price shock)

Impulse response function
95% confidence band
95% confidence band

Brent oil price subsidies reduce pass-through to domestic inflation with low or no subsidies

Oil price pass-through to domestic inflation with low or no subsidies

Brent oil price
Policy Challenges
React in a targeted manner

**Emerging Markets:**
- Allow food and energy prices to adjust gradually while protecting the most vulnerable (targeted, transparent, temporary support)
- Make fiscal consolidation inclusive, spending more efficient and improve revenue mobilization to support social spending

**LICs/FCS:**
- Decisive support from the international community is paramount to address food security due the lack of fiscal space

**Oil exporters:**
- Avoid procyclical spending and build fiscal buffers. Where recovery is weak, use fiscal space for social and productive investment

**Fight inflation but avoid derailing the recovery**
- Tighten if inflation becomes broad-based or risks of de-anchoring expectations emerge
- Allow exchange rate flexibility to absorb shocks, alternative liquidity management for peggers where recovery is fragile

**Prepare for the future**
- Strengthen regional and multilateral cooperation and secure fair access to a comprehensive COVID toolkit
- Enable private sector growth and youth employment; reduce bloated public administration (i.e., reform SOEs); leverage digitalization
- Invest in climate resilience; devise and implement a comprehensive climate strategy with adaptation, mitigation, and transition goals
Thank you!