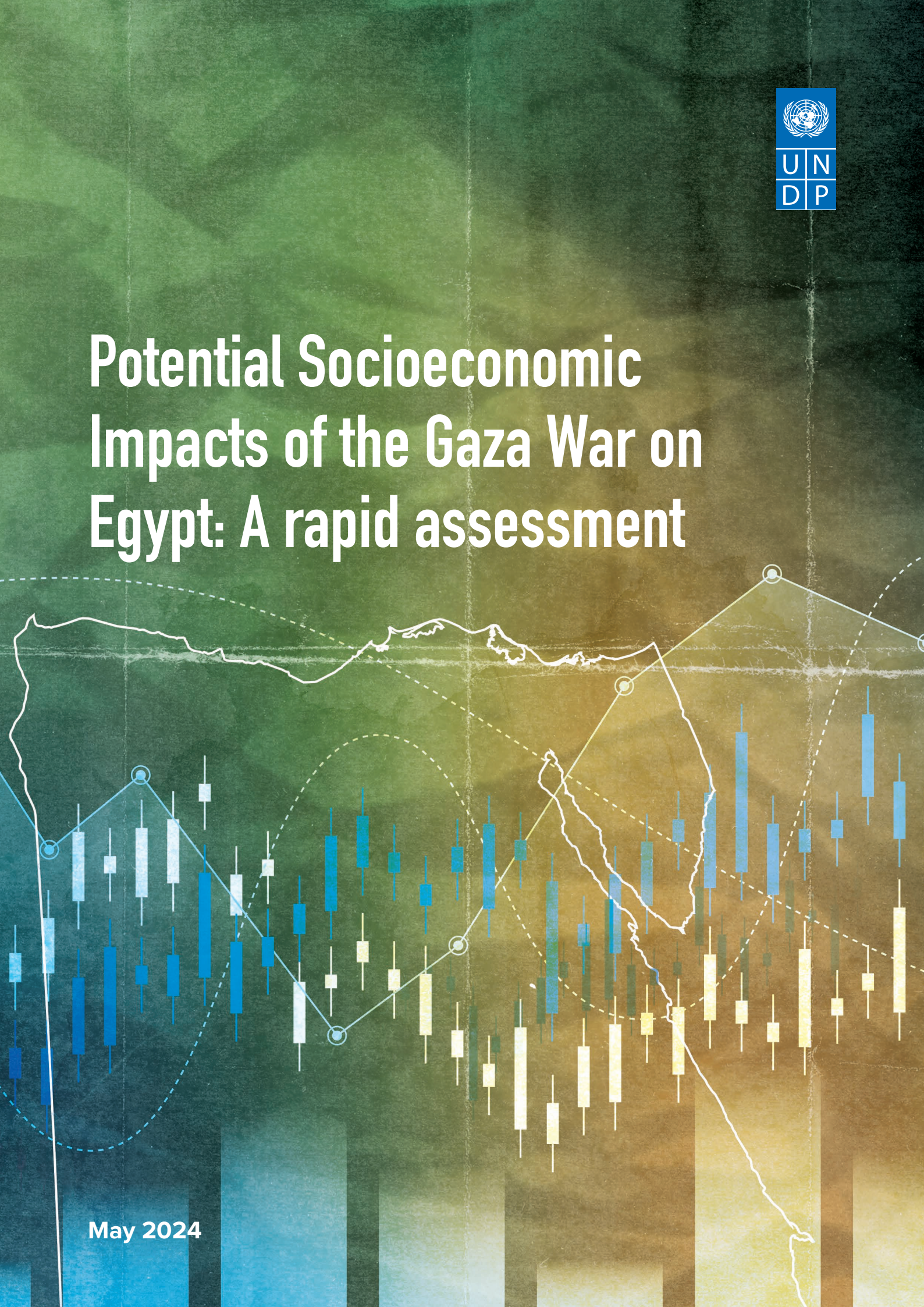
Potential Socioeconomic Impacts of the Gaza War on Egypt: A rapid assessment



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Disclaimer:

The analysis in this report was performed between January and March 2024, and assumptions and data used for the modeling are based on the limited data available as of March 15, 2024. The rapidly changing geopolitical and Egyptian contexts may necessitate periodic updates to the analysis as more data becomes available.

The analysis and policy recommendations of this Report do not necessarily reflect the views of the United Nations Development Programme or its Executive Board.

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Executive Summary

The Gaza war that started in October 2023 is unprecedented in terms of the scale of death and destruction, and its regional ramifications. It had a catastrophic impact on the Palestinian economy and significant negative effects on neighbouring countries, especially, Egypt, Jordan and Lebanon. Before the Gaza war, Egypt's economy was facing significant fragilities and mounting socioeconomic difficulties following the severe setbacks caused by the COVID-19 pandemic and the war in Ukraine. Egypt's reliance on fluctuating foreign earnings such as revenues from tourism, Suez Canal tolls and remittances makes it highly vulnerable to external shocks. The Gaza war has amplified these challenges and put additional pressure on the country's limited resources.

This study sheds light on the ongoing and potential additional socioeconomic impact of the Gaza war on the Egyptian economy, which was estimated using both a Keynesian multiplier approach and a dynamic Computable General Equilibrium (CGE) model.

To date, the key transmission channels of the Gaza war on Egypt's economy are primarily manifested in the decline in tourism revenues, which accounted for around 8.3 percent of GDP in mid-2023 (taking into consideration indirect linkages to the economy), and the decline in Suez Canal revenues. Combined, these account for around 20 percent of the country's foreign currency receipts. The decline in these revenues has multiplier effects on all sectors and on the overall GDP. In addition to these direct impacts, there are other secondary transmission channels of the conflict such as a deterioration in economic expectations, an increase in transportation costs for imports, and potential trade disruptions. Finally, while not yet fully realized, another potential risk looms in the form of an increase in energy prices in international markets.

While the socioeconomic impact of the war on Egypt is contingent upon its duration, intensity, geographical scale (reflected in various assumptions and scenarios utilized in this analysis), and responses from national authorities and the international community, the consequences may entail significant economic costs arising from the above, multiple transmission channels and ultimately reflected in lower growth rates, higher unemployment, and an increase in poverty.

Three conflict scenarios based on the available news and information as of February 2024 are considered in this analysis, reflecting the increasing intensity and scope of regional conflict: contained confrontations (a low-intensity scenario assuming that the

war lasts six months); limited regional conflict escalation (a medium-intensity scenario assuming that the war lasts nine months); and widespread regional military escalation (a high-intensity scenario assuming that the war lasts one year).

According to UNDP estimates, the total decline in tourism and Suez Canal revenues over the course of the two fiscal years 2023–2024 and 2024–2025 could reach approximately $3.7 billion under the low-intensity scenario, $9.9 billion under the medium-intensity scenario, and $13.7 billion under the high-intensity scenario, which assumes an intensification of the war. The preliminary simplified analysis suggests that the total economic cost of the war to Egypt's economy including the multiplier impacts over the course of the two fiscal years may reach $5.6 billion under the low intensity-scenario, $14.6 billion under the medium-intensity scenario, and $19.8 billion under the high-intensity scenario. These costs correspond to a loss of 1.6 percent of the annual average baseline GDP under the low-intensity scenario, 3.9 percent under the medium-intensity scenario, and 5.2 percent under the high-intensity scenario.

A more comprehensive dynamic CGE model shows similar negative impacts. GDP would fall by 1.6 percent of the baseline GDP in the 2023–2024 fiscal year under the low-intensity scenario; by 2.6 percent in the 2023–2024 fiscal year and 1.3 percent in the 2024–2025 fiscal year under the medium-intensity scenario; and by 3.0 percent in the 2023–2024 fiscal year and 2.6 percent in the 2024–2025 fiscal year under the high-intensity scenario.

The decline in GDP growth would also imply a potential notable increase in unemployment and a decline in household consumption, and hence an increase in the poverty rate. The unemployment rate is expected to increase by 0.5 percentage points under the low-intensity scenario, 0.9 percentage points under the medium-intensity scenario, and 1.3 percentage points under the high-intensity scenario in the 2023–2024 fiscal year.

Moreover, households' real disposable income and consumption would decline below the business-as-usual levels by 1.3 percent under the low-intensity scenario, by 2.1 percent under the medium-intensity scenario and by 2.5 percent under the high-intensity scenario in 2023–2024 fiscal year. Additionally, the negative impacts of the Gaza war would persist in the 2024–2025 fiscal year under the medium- and high-intensity scenarios.

The HDI and MPI figures are also expected to be negatively affected by the war. The simulation exercise conducted in this report indicates that in the low and medium intensity scenarios, the HDI would decline from 0.728 in 2022 to 0.726, while in the high intensity scenario, it would decrease to 0.720. This would bring human development in Egypt back to the 2021 level in the first two scenarios and to the level observed in 2018 in the third scenario. Furthermore, a microsimulation exercise has been conducted to simulate the impact of the war on MPI. While we don't expect any significant impact on MPI in the low-intensity scenario, the medium and high-intensity scenarios indicate that MPI would increase to 0.031 and 0.046, respectively, up from 0.024 in the no-war/baseline scenario.

To restore macro-financial stability, Egypt's Government has recently signed a new agreement with the International Monetary Fund (IMF), an ambitious investment agreement partnership with the United Arab Emirates (UAE), as well as the Egypt-European Union (EU) Strategic Partnership Agreement. The inflow of foreign currency and capital through these agreements together with the implementation of prudent macroeconomic policies and recovery actions recommended here will likely help the Government mitigate the problems and smooth-out the negative impacts of the Gaza war.

Based on the analysis in this study, a package of "Prepare, Respond and Recover" policy recommendations is proposed to mitigate the impact of the current compounding challenges on Egypt's social and economic outlook following an inclusive, people-centred approach.

Policy recommendations pertaining to preparing and responding to the impact of the Gaza war in Egypt and breaking the cycle of fragility include: (i) supporting an immediate and permanent ceasefire while ensuring sufficient international humanitarian support to Gaza; (ii) strengthening area-based basic service delivery and infrastructure to address the immediate needs of the most vulnerable or directly affected individuals and communities; (iii) formulating a robust crisis-response cooperation platform that includes development partners, civil society, the private sector and relevant local-level stakeholders to ensure a timely response to the evolving context, and rapid mobilization of resources based on evolving, prioritized needs; (iv) facilitating access to shock-responsive social protection schemes; (v) supporting the tourism value chain and considering shifting to sustainable tourism as an alternative model to enhance resilience, prioritizing local communities; (vi) strengthening the resilience of sectors most impacted by the crisis while promoting the growth of sectors such as textiles and agriculture that continue to positively contribute to outputs amid the crisis; and (vii) investing in responsive institutions and multi-dimensional risk assessment to inform development and contingency planning.

In addition to immediate preparedness for and response to the impact of the Gaza war on Egypt, investing in recovery and prevention measures will also be important. Some of the recommendations are based on the need to address structural issues that prevailed even before the Gaza war but that have become even-more pressing as a result of the ramifications on Egypt of the war, and the opportunities for transformational change that have emerged. Enhancing the longer-term resilience of the Egyptian economy and paving the path for a sustainable recovery will largely depend on necessary structural reform measures that: (i) carefully track and analyze the social implications and extensively communicate policies as a basis for reform; (ii) strengthen adaptative social protection and reduce inequalities; (iii) advance an ambitious programme of labour market reforms that tackles unemployment and informality; (iv) promote widespread insurance to guarantee protection or compensation against shocks resulting from uncertainty; and (v) promote innovative development financing solutions.

Therefore, the challenges arising from the impact of the Gaza war also present an opportunity for Egypt to transform its growth model, which has primarily relied on private consumption without a commensurate increase in productive investment.

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Acronyms and abbreviations

BAU	Business as usual
BOP	Balance of payments
CAD	Current account deficit
CAPMAS	Central Agency for Public Mobilization and Statistics
CBE	Central Bank of Egypt
CGE	Computable General Equilibrium
EFF	Extended Fund Facility
EU	European Union
FDI	Foreign direct investment
GDP	Gross domestic product
GNIPC	Gross national income per capita
GRI	Geopolitical Risk Index
HDI	Human Development Index
IMF	International Monetary Fund
MPI	Multidimensional Poverty Index
PMI	Purchasing Managers' Index
SAM	Social Accounting Matrix
UAE	United Arab Emirates
UNDP	United Nations Development Programme
WCI	World Container Index
YoY	Year on year

Introduction

The Gaza war that started in October 2023 is unprecedented in terms of the scale of death and destruction, and its potential regional ramifications. Egypt's geographic proximity, traditional role of mediator between Israel and the occupied Palestinian territory (oPt), as well as its reliance on tourism and the Suez Canal for foreign receipts make it particularly vulnerable to these ramifications. As of this writing of the report, Egypt' Rafah crossing is the sole remaining means of entry to Gaza, and Egypt has been playing a critical role in facilitating and delivering humanitarian aid to Gaza since 21 October 2023.[1] Egypt's tourism and Suez Canal receipts have already been negatively affected, with accounts from tour operators reporting tourism falling by more than 20 percent since October 2023, compared to expectations for the last quarter of 2023, and despite reporting increases in tourist influx in the first quarter of 2024 compared to 2023 figures, according to some sources.[2,3] Suez Canal transit volume fell by almost 60 percent by early March 2024, with a reported 46 percent decrease in revenues by the end of January 2024[4] compared to the same period in 2023,[5] as a result of the escalation of attacks in the Red Sea.

Prior to the war, Egypt was facing socioeconomic difficulties. Multiple global shocks including the COVID-19 pandemic and the Russian Federation-Ukraine war have compounded Egypt's long-standing economic challenges, heightening the risk of a foreign exchange and debt crisis amid high levels of inflation and limited fiscal space. Egypt has also been dealing with the challenges of hosting a significant number of refugees from neighbouring countries, including Sudan. According to the Government of Egypt, following the outbreak of armed conflict in Sudan since April 2023, more than 450,000 Sudanese sought refuge in Egypt, as of January 2024,[6] becoming the largest group hosted in the country, followed by Syrians, South Sudanese, Eritreans, Ethiopians, Yemenis, Somalis and Iraqis.[7] The growing number of refugees and immigrants in Egypt – estimated at a total of around 9 million, 480,000 of which are registered refugees and asylum seekers[8] – is putting increasing pressure on public services.[9]

Egypt currently faces heightened security concerns due to the Gaza war, putting additional pressure on the country's limited resources. The number of displaced Palestinians, currently in south Gaza and near the Rafah border, is estimated at 1.7 million.[10] Tensions have already risen between Egypt and Israel after 7 October, including accidental Israeli shells hitting an Egyptian watchtower and Israeli bombardment of the Gaza side of Egypt's Rafah crossing. Egypt's security concerns intensify with Israel's plans to close the 14-km buffer zone (the Philadelphi corridor) between Gaza and Egypt, potentially impacting the 1979 Egyptian-Israeli Peace Treaty.[11]

On the social front, a recent opinion poll conducted by the Arab Center for Research and Policy Studies surveyed 8,000 respondents (both men and women) from 16 Arab countries, including Egypt, from 12 December 2023, to 5 January 2024, and revealed that 92 percent of Egyptians expressed solidarity with Palestinians, and 94 percent believed that the Palestinian issue concerned all Arabs, not just the Palestinians. This sentiment has prompted many to engage in boycotting Western companies known to support Israel, particularly among the younger generations. Moreover, 97 percent of respondents experienced varying degrees of psychological stress due to the Gaza war.

The social impact of these actions are challenging to quantify and may have economic ramifications in the future. For example, the boycott has fuelled the emergence of local brands as substitutes for various products. While questions remain regarding the quality, sustainability, and competitiveness of these substitutes, they may contribute positively to the country's localization and industrialization efforts.[12] It is reported that the boycott campaign in Egypt has benefited around 100 local companies, especially in the food and beverages sector.[13] However, it is also important to note that the boycott movement may have an adverse impact on employment in Egypt depending on the reaction of the boycotted companies workers' rights frameworks.[14]

Given this context, it is crucial to understand the ramifications of the Gaza war on the Egyptian economy to anticipate potential economic challenges and undertake the necessary mitigation measures effectively. Hence, this study aims to analyse the potential socioeconomic impact of the Gaza war on the Egyptian economy, utilizing both a Keynesian multiplier approach and a dynamic Computable General Equilibrium (CGE) model. The socioeconomic consequences of the Gaza war on Egypt will depend on various factors such as its duration, intensity, geographic scope, and responses from national authorities and the international community. These ramifications encompass significant economic costs stemming from multiple transmission channels, ultimately leading to decreased growth rates, heightened unemployment, and perhaps an upsurge in poverty levels.

This report is structured in three chapters. The first chapter provides a background and overview of the key transmission channels of the war on Egypt's economy. The second chapter estimates the socioeconomic impacts of the war on the economy based on several possible scenarios, using different macroeconomic estimation methodologies. The final chapter puts forward conclusions and proposes recommendations to help inform policy responses to mitigate the impact of the ongoing war and make the Egyptian economy less vulnerable and more resilient to shocks.

Chapter 1:

Background and overview of the main transmission channels of the war

1.1 Background

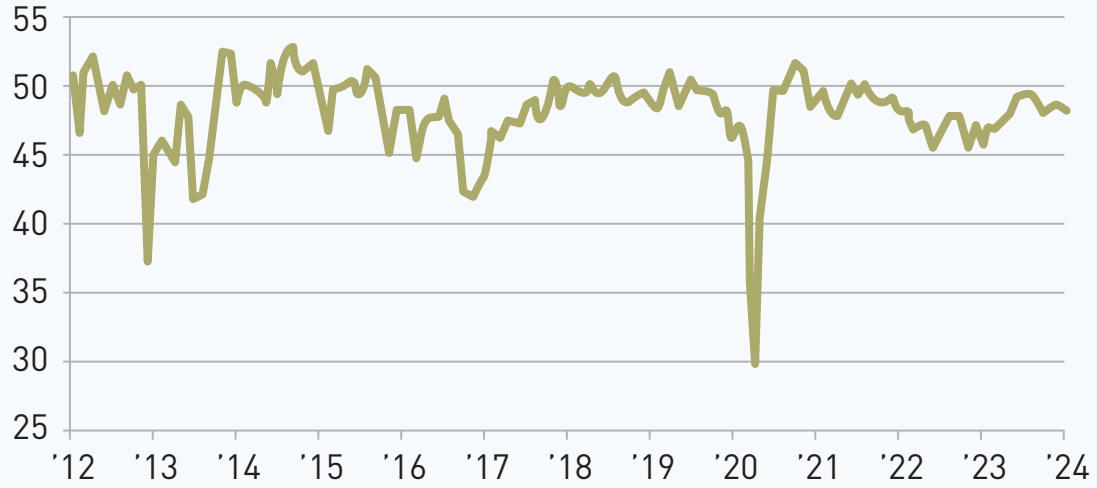
Egypt's growing macroeconomic imbalances reflect long-standing domestic issues that have been exacerbated by overlapping global and regional shocks. A tight fiscal space, weak foreign direct investment (FDI) and exports, restricted activity of the private sector (with business confidence stagnating at low levels since 2021),[15] and limited decent employment opportunities, particularly for women and youth, are all major concerns for the over 105 million Egyptians, at least a third of whom are estimated to live below the national poverty line.[16,17] These concerns have magnified over the last two years with rapidly rising prices, severe shortage of foreign currency, and a rapidly rising debt burden. Total public debt reached 92.7 percent of GDP in FY2023,[18] and the external portion of this debt more than tripled between 2016 and 2023,[19] with total interest payments reaching 54.2 percent of total government expenditures in July – December 2023, more than double their level during the same period in 2022.[20] As the largest importer of wheat in the world, 80 percent of which was imported from the Russian Federation before the war, Egypt was severely impacted by the Russian Federation-Ukraine war. Together with a steep debt service bill, this resulted in a sharp drop in Egypt's foreign exchange resources, exacerbated by large capital outflows, amounting to US$20 billion (4.7 percent of GDP) as investor confidence significantly declined,[21] pushing Egypt in December 2022 to commit to a 46-month $3 billion Extended Fund Facility (EFF) with the International Monetary Fund.[22]

Egypt's annual growth rate in 2023 declined amidst an evolving depreciation-inflation spiral. The estimated GDP growth declined to 3.8 percent during FY23 (July 2022 – June 2023) from a reported 6.7 percent growth rate the year before. Inflation started to rise in March 2022, recording a historic high of 40.3 percent in September 2023 year-on-year (YoY), which has since declined to 36 percent in February 2024.[23,24]

Looking at the resilience of the private sector, using high-frequency data such as the S&P's Purchasing Managers' Index (PMI),[25] it can be observed that **Egyptian businesses have not recovered from the COVID-19 pandemic**; the Index remained under 50 (the neutral mark) ever since, edging up to 48.1 in January 2024 (Figure 1).[26] It is worth noting that the PMI was below 50 for extended periods during the previous decade, reflecting longstanding challenges to non-oil private sector growth. New orders decreased since May 2023 due to the weakness of the Egyptian pound, inflation, and a slow-down in consumer spending.

Figure 1:

Egypt Purchasing Managers' Index since 2012



Source: S&P Global.

The Egyptian pound (EGP) has undergone three devaluations since March 2022, losing almost half of its value according to the official exchange rate,[27] and more than 70 percent on the black market,[28,29] despite the official exchange rate being stable at almost 30.8 against the US dollar between April 2023 and February 2024.

During fiscal year (FY) 2022/2023, Egypt experienced a notable contraction in its current account deficit (CAD). The CAD decreased to 1.2 percent of GDP, or $4.7 billion, from 3.5 percent ($16.5 billion) in FY21/22. This improvement was primarily driven by increased revenues from tourism and the Suez Canal.[30] However, a significant factor in the reduction in the CAD was a $16 billion decrease in imports, likely due to the limited availability of foreign currency.[31] This import contraction, while beneficial for the CAD, poses sustainability challenges as it may impede economic growth and export potential.

In the first quarter of FY 2023/2024, the Central Bank of Egypt reported a balance of payment (BOP) surplus of $228.8 million, a decline from the $523.5 million surplus seen in the same period of the previous year. The decrease in the CAD contributed to this surplus, improving by 12.1 percent to $2.8 billion from $3.2 billion. However, the BOP surplus masks underlying vulnerabilities in the economy, which are at risk of being aggravated by potential conflicts and disruptions in the Suez Canal. A key contributor to Egypt's BOP surplus was the improvement in the non-oil trade deficit, which narrowed by $2.4 billion to $6.6 billion.[32] This improvement

was driven by a significant decrease in non-oil merchandise imports, dropping by 12.5 percent to $13.3 billion, and an increase in exports, particularly in sectors such as the cable and appliances sectors. The services surplus also grew to $5.2 billion, buoyed by a 19.4 percent increase in Suez Canal transit receipts and a 9.3 percent rise in tourism revenues.

The Gaza war is already impacting Egypt, given its geographic proximity, with clear implications for the economy. Depending on the war's intensity, duration and geographical scale, some of the key channels of transmission of its impact on Egypt may include the following: potential reduction of international tourism, plummeting Suez Canal's revenues and increased trade diversion costs, as well as fluctuations of oil and gas prices and their potential spikes. Many current economic challenges may also worsen, and in turn magnify the impact of these external shocks through their feedback loop effects on the economy. These include further inflationary pressures, currency devaluation, slowdown of domestic and foreign investments, decline in remittances, labour market disruptions, as well as overall additional fiscal pressures, which in turn may result in raising unemployment and poverty rates.

Table 1: Selected macroeconomic indicators

Indicator	2017/2018	2018/2019	2019/2020	2020/2021	2021/2022	2022/2023	2023/2024F
GDP (constant 2015 US$, billion)***	377.1	398.1	412.2	425.8	453.8	-	-
Annual GDP growth (constant prices, %)	5.3	5.5	3.6	3.3	6.7	3.8	3.0
Budget deficit (% of GDP)	-9.1	-7.3	-6.6	-7.1	-6.0	-6.1 **	-10.1
Government net debt (% of GDP)	80.7	74.6	80.6	85.2	83.9	88.0	83.4
Gross debt (% of GDP)	87.9	80.1	86.2	89.9	88.5	92.7	88.1
Annual inflation (end of period) (%)	14.4	9.4	5.7	4.9	13.2	35.7	25.9
Average inflation (%)	20.9	13.9	5.7	4.5	8.5	23.5	32.2
Exports of goods (US$ billion)	25.8	28.5	26.4	28.7	43.9	39.6*	51.9
Exports (% of GDP)	10.3	9.4	6.9	6.8	9.2	9.8	11.9
Imports of goods (US$ billion)	-63.1	-66.5	-62.8	-70.7	-87.3	-70.7	-93.7
Imports (% of GDP)	-25.2	-22	-16.4	-16.7	-18.4	-17.4	-21.6
Energy exports (US$ billion)	8.8	11.6	8.4	8.6	18.0	10.5	2
Energy imports – oil and gas (US$ billion)	-12.5	-11.5	-8.9	-8.6	-13.5	-13.4	-14.3
Energy imports – oil and gas (% of GDP)		-3.8	-2.3	-2	-2.9	-3.3	-3.3
Current account balance (% of GDP)	-2.4	-3.6	-3.1	-4.6	-3.5	-1.2	-2.8
Tourism receipts (US$ billion)	9.8	12.6	9.9	4.9	10.7	13.6	14.2
Tourism receipts (% of GDP)	3.9	4.2	2.6	1.1	2.3	3.3	3.3
Private remittances (US$ billion)	26.3	24.8	27.5	31.2	31.7	21.9	35.9
Private remittances (% of GDP)	10.5	8.2	7.2	7.4	6.7	5.4	8.3
Suez Canal receipts (US$ billion)	5.7	5.7	5.8	5.9	7	8.7	7.6
Suez Canal receipts (% of GDP)	2.3	1.9	1.5	1.4	1.5	2.2	1.8
Total unemployment rate (15–64, %)*	9.9	7.9	7.9	7.4	7.2	7	6.3
Informal employment (proportion of total employment)	63.7	67.0	-	-	-	-	-
Employees in the accommodation and food service sector (thousand)	758.6	814.8	786.4	820.0	-	-	-
Share of informal employment in the accommodation and food service sector (%)	66.9	73.1	-	-	-	-	-

Notes: *Provisional figures from CBE, ** Figure from the Budget based on Ministry of Finance Bulletin for January 2024. 'F': Forecasted values for 2024 are International Monetary Fund (IMF) forecasts, as of October 2023, IMF World Economic Outlook Database. Labour market data are annual, from 2018 to 2022 from CAPMAS, Annual Bulletin Labour Force Survey 2022; average of quarterly rates from CAPMAS for 2023 and from International Labour Organization-(ILO) modelled estimates (ILOSTAT, November 2023) for 2024. Trade data are authors' calculations based on Central Bank of Egypt (2023) and fiscal data are from the Ministry of Finance January 2024 Monthly Bulletin, except for gross debt (% of GDP), which is from IMF Data Mapper (updated October 2023). *** Source: World Development indicators.

1.2 Key direct transmission channels on the Egyptian economy

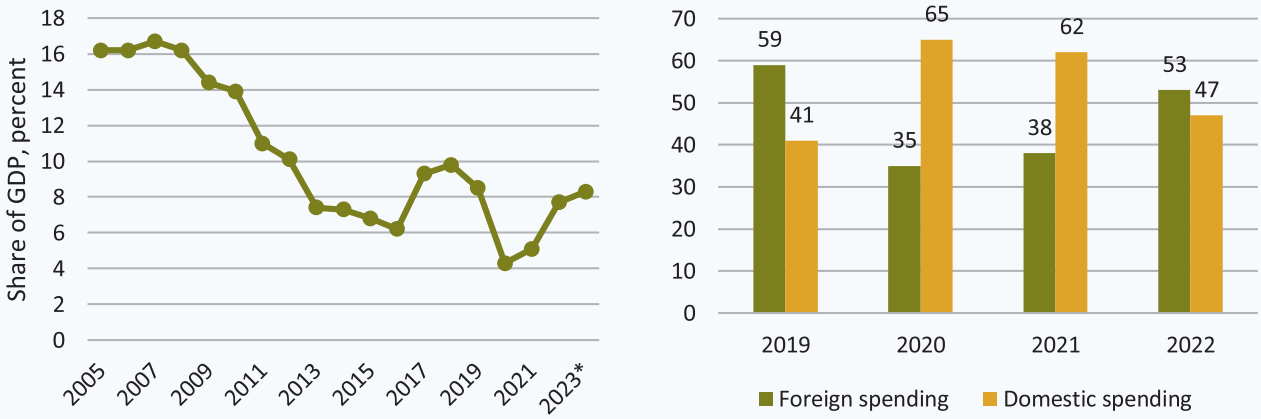
Egypt's reliance on fluctuating foreign earnings such as revenues from tourism, Suez Canal tolls and remittances makes it vulnerable to external shocks. Thus, this section describes the key direct transmission channels of the war on the Egyptian economy followed by an identification of existing vulnerabilities that could be further amplified because of the war.

1.2.1 Tourism

Egypt's tourism industry is one of the country's leading economic sectors, contributing to GDP and employment in various ways. Tourism has a direct impact through the economic activity generated by industries such as hotels, travel agents, airlines and other passenger transportation services, as well as activities of restaurants and leisure industries. It also has an indirect impact through investment, the supply chain and induced impacts. The winter season would have constituted a sizable portion of annual tourist arrivals due to more amiable weather and the holiday season. While estimates of both domestic and international tourism's contribution to the Egyptian GDP vary depending on the sources and reference years, the World Travel and Tourism Council (WTTC) estimates that the total impact of tourism on GDP (i.e. the sum of direct, indirect and induced effects of tourism) amounted to 8.3 percent of GDP in mid-2023, or EGP 612.6 billion, up from 3.8 percent in 2020 when tourism was largely impacted due to impact of COVID-19 (Figure 2).[33] Furthermore, the Council estimates that travel and tourism activities generated 2.37 million jobs in 2022 (8.5 percent of total employment)[34] in terms of direct and indirect employment.[35]

Figure 2:

Trends in contribution of travel and tourism to GDP (left) and by source of spending (right) in Egypt



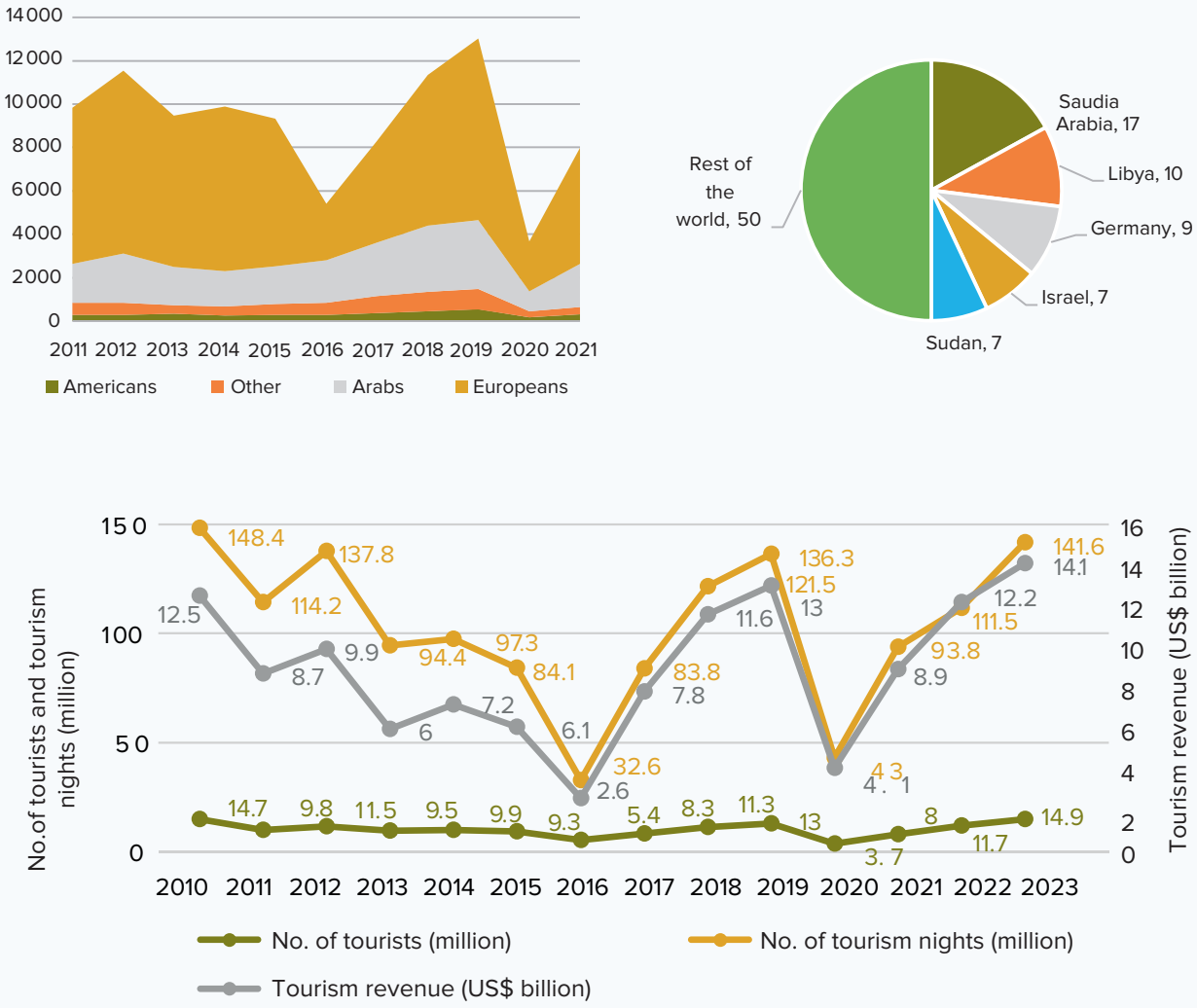
Source: World Trade and Tourism Council, June 2023. *Note*: Values for 2023 are projections as of June 2023.

Egypt experienced a prolonged period of decline in tourism due to instability, terrorism and the COVID-19 pandemic. Subsequently, Egypt recorded of 13.9 million tourists during 2022/2023.[36]

Domestic tourism has played an important role in cushioning the impact of previous crises on foreign tourism. A breakdown of tourists by country group over time shows Egypt's reliance on those from European countries, which can be volatile during periods of instability, followed by the more stable flow of tourists from Arab countries. Due to the reliance on Europe as a source of tourism, the tourism industry in Egypt is vulnerable to possible disruptions in international travel, as well as shocks in the region of destination or origin, the latest example being the Ukraine war (Figure 3). However, while a large share of the region's total spending in the tourism sector is foreign, in Egypt a significant portion relies on domestic tourism (47 percent in 2022).[37] Domestic spending could also be negatively affected in the event of a severe economic downturn with increased intensity or scope of the war, which may have an additional impact on labour markets beyond the effects of foreign tourism.

Figure 3:

Tourist inflows, by country group origin, 2011–2021 ('000 tourists) and in 2022 (in %), and trends of inbound tourism flows and revenues in Egypt, 2010–2023



Source: CAPMAS, Egypt Statistical Yearbook, March 2022, and WTTC, June 2023, and Ministry of Tourism and Antiquities, unpublished data.

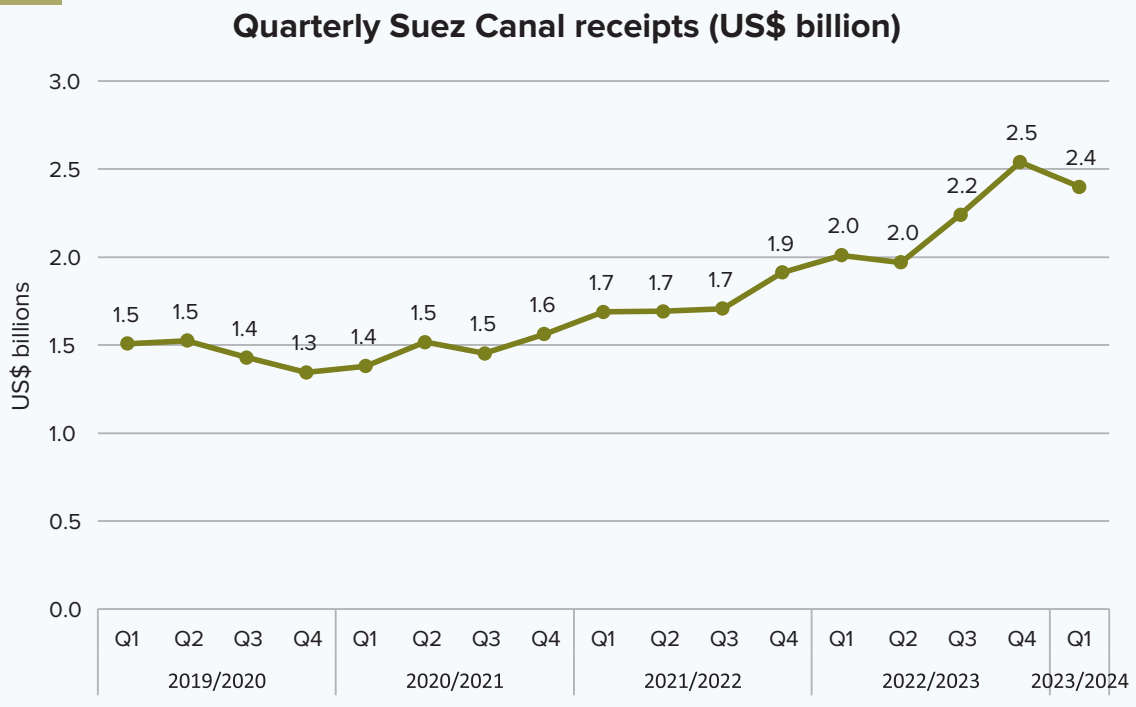
The Gaza war is expected to hurt tourism. The war has generated an overall sense of instability and fear, and heightened security concerns given Egypt's geographical proximity to Gaza, as evidenced by travel advisories and warnings issued by foreign governments against visiting Egypt. This situation might contribute to a period of reduced tourism. The travel analytics firm, ForwardKeys, estimated that the war has reduced the number of flights to and from the Middle East comparing the three weeks before 7 October with those during the same period thereafter, with international tickets to the region dropping on average by 26 percentage points, and by 35 percentage points with regard to Egypt.[38] Several airlines and cruise lines

have suspended their routes to Israel and its neighbouring countries.[39] Estimates suggest that 20–40 percent of reservations in Red Sea destinations are already being cancelled,[40] and report 30–50 percent cancellations in hotel and Nile cruise reservations in 2024.[41] This mostly includes tourism to Taba, Dahab, Nuweiba and Sharm El-Sheikh, which are some of Egypt's most popular tourist destinations. In Egypt, these effects will also be exacerbated by the fact that 7 percent of its inbound tourism was from Israel (the fourth largest source of tourists in 2022).[42] The travel and tourism sector jobs are expected to be at risk in the event of a protracted war or more intense hostilities spreading to other countries in the region.

1.2.2 Trade diversion from the Suez Canal and increases in transport and logistics costs

The Suez Canal is one of the most important sources of foreign exchange for Egypt, accounting for almost 10 percent of current account receipts in 2022/2023. The Canal generated receipts amounting to $8.8 billion in 2022/23, compared to about $7 billion the year before. Tax and dividend revenue from the Suez Canal also contribute to the state budget, projected at almost 8 percent of total revenue for 2023/24 (Figure 4).[43]

Figure 4:

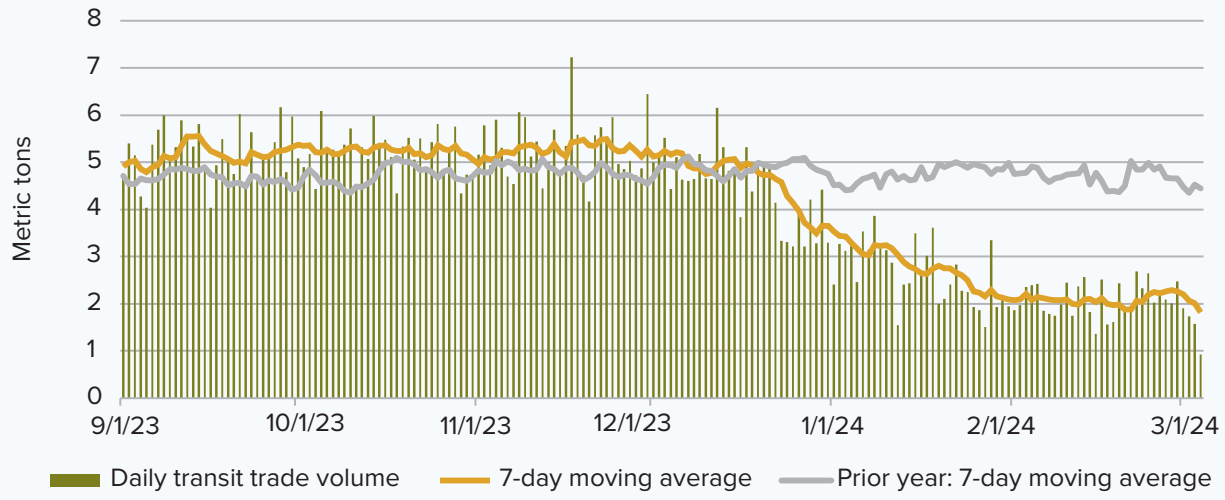


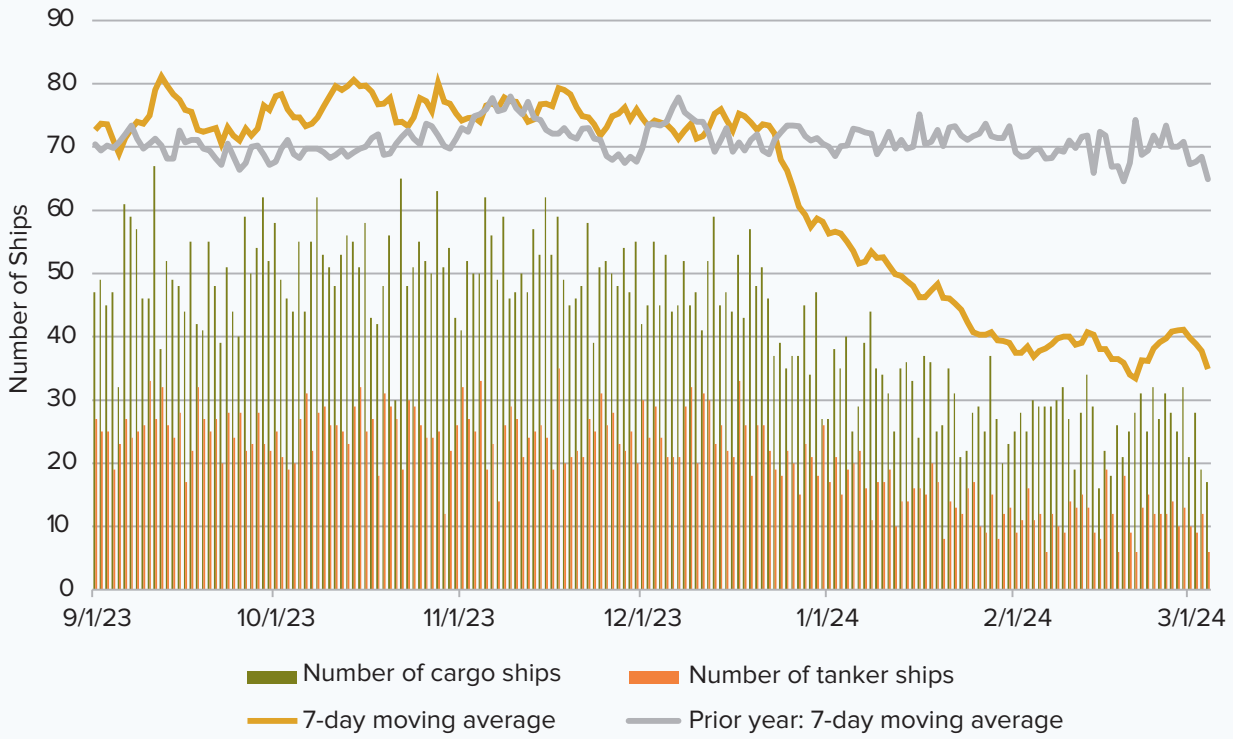
Source: Authors' compilation from CBE's Quarterly Balance of Payments Time Series.

The disruption of the movement of shipping through the Suez Canal due to attacks in the Red Sea has significantly impacted Suez Canal trade and receipts. With the increase in assaults on ships crossing the Red Sea, most of the world's biggest shipping companies have announced pausing Red Sea transit and rerouting their vessels around the Cape of Good Hope. By early March 2024, Suez Canal transit trade volume had declined by 59 percent YoY, according to the International Monetary Fund's (IMF) PortWatch platform, while the shipping volume in the Cape of Good Hope increased by 66 percent.[44] The Suez Canal authority announced that revenues were down 46 percent YoY in January 2024.[45] Trade disruptions will likely also affect the Red Sea ports of Safaga and Sokhna, which handle the import of capital goods and grains, and the export of fertilizers and minerals, all of which are crucial to the Egyptian economy. And this will also hamper the operations of the container transshipment terminal at East Port Said. Considering that, according to the PortWatch data, over one-third of the Egyptian maritime imports and over-half of the exports are through the Red Sea, the economic impact could be sizeable.[46] The Suez Canal Authority had increased transit fees by up to 15 per cent for some tankers since the start of January 2024, including those carrying crude oil and petroleum products.[47]

Figure 5:

Suez Canal daily transit trade volume and number of ships (September 2023 – March 2024)





Source: IMF PortWatch (accessed 10 March 2024).

Rerouting shipping vessels away from the Red Sea through the Cape of Good Hope may bear global economic ramifications. This rerouting will result in higher shipping costs and much longer transit times for ships, which will probably have a pass-through effect on global supply chains, potentially further affecting inflation. About 15 percent of global seaborne trade (corresponding to almost 12 percent of total trade) passes through the Red Sea, including 8 percent of global grain, 12 percent of seaborne oil, and 8 percent of the world's liquified natural gas.[48] This rerouting of ships will add over 5,000 km to the journey between Asia and Europe, and an extra 10 days for cargo arrivals, translating into an additional $1–2 million in fuel costs per ship.[49,50] It is also expected that longer distances will result in higher CO_2 emissions.

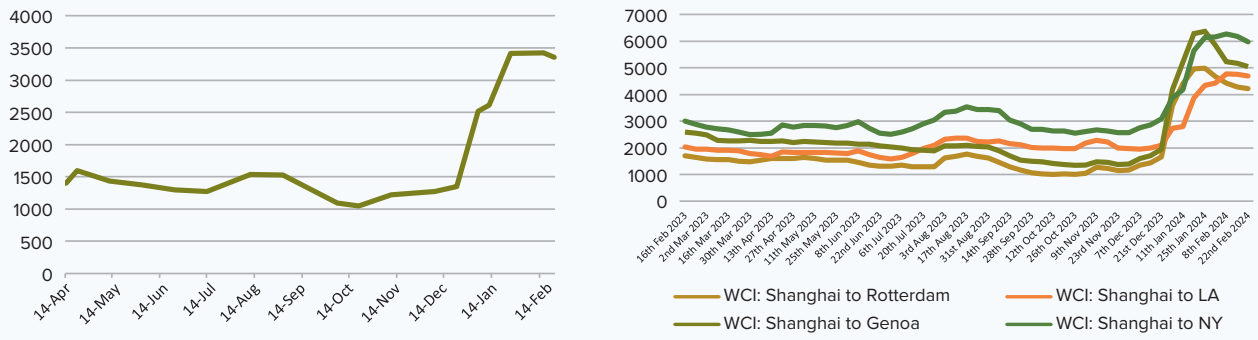
As of 12 February 2024, global shipping rates hit their highest level since late 2022, driven by disruption of trade in the Red Sea. According to the Freightos Baltic Global Container Index (FBX), global sea freight spot prices of 40-foot containers have almost tripled since 6 October 2023, accelerating since last December. The largest movements were recorded for routes transiting through the Middle East, specifically the routes connecting China/East Asia to the Mediterranean and North Europe, recording increases between 5 and 10 times since October 2023. Routes

that do not pass through the Middle East, such as those connecting China/East Asia to the North American West Coast, and the North American East Coast to North Europe, have also seen a rise in prices over the same period, indicating the shocks' global ripple effect. According to the Drewry World Container Index (WCI), the global container shipment price increased by 93 percent and the shipment from Shanghai to Rotterdam by 158 percent in the course of last year.[51] The Baltic Exchange's Dry Index, which is a composite index measuring the cost of main seaborne commodities along the main global trade routes, spiked at the end of 2023, and according to Trading Economics, despite its decline since December, it increased again in February 2024. This increase is likely due to demand for alternate routes and costs (including surcharges) associated with shipping diversions.[52]

Maritime insurance premiums for ships taking the Red Sea route have reportedly skyrocketed. The premium rate reportedly rose by between 0.75 and 1.0 percent of cargo value in mid-January 2024, with expectations of further increases. This corresponds to premiums of $1 million to $2.5 million for a very large container ship, making the longer route around the Cape of Good Hope more economically viable.[53] For comparative purposes, it should be noted that premium rates for grain export ports in Ukraine range from 2.5 to 3.0 percent of cargo value.[54]

Figure 6:

FBX (left) and decomposed Drewry WCI trends over the last year (right) (US$)



Sources: Freightos database and Drewry World Container Index accessed on 25 February 2024.

1.2.3 Oil and gas amid trade disruptions

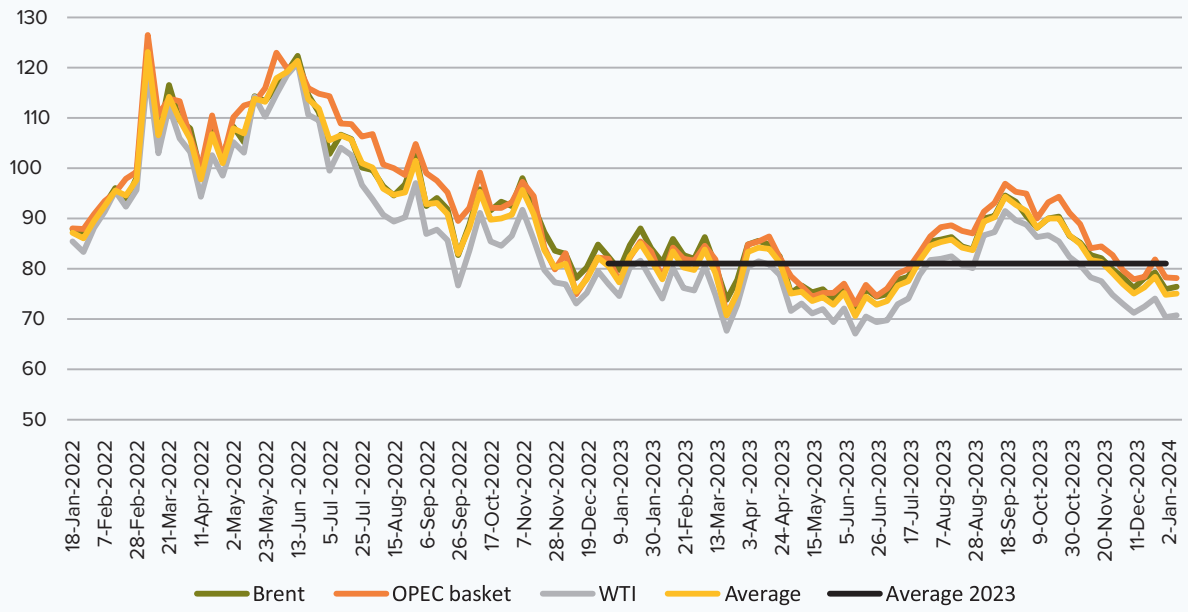
Egypt has been importing natural gas from Israel since 2020 following a decrease in its production and power outages. Plans were announced in August 2023 to increase imports for the next 11 years.[55] Israel has been exporting gas mainly to

Egypt and Jordan under long-term deals, such as the 15-year contract with Egypt, highlighting the close energy interdependence in the region. Although oil and gas prices had decreased in 2023, the Gaza war as well as the Red Sea trade disruptions have already had a pronounced effect on these dynamics. Chevron had briefly halted production from Israel's Tamar field from mid-October to mid-November due to security concerns.[56,57] This field is not only vital for Israel's domestic needs, but also for supplying gas to Egypt and its liquefied natural gas (LNG) export capabilities. However, gas exports from Israel to Egypt resumed to normal levels in December, with plans to increase gas exports to Egypt by an additional 4 billion cubic metre (bcm) starting July 2025, for the next 11 years, which is three times the current export levels. The Leviathan field, another significant source, continued operations but could not fully compensate for Tamar's absence.[58]

The US and UK naval forces' responded to the Red Sea attacks by the De Facto Authorities (DFA), causing oil prices to rise before converging to their trends. While several central banks around the world, including the US Federal Reserve, have recently halted interest rate hikes in the hope of cooling inflation, the protracted instability in the region may re-ignite the risk of spiralling global inflation through potential hikes in energy prices. The authors' back-of-the-envelope calculations suggest that the estimated negative impact of a $10 increase in Brent crude oil price on Egypt's current account balance amounts to roughly 0.3 percentage points of GDP.[59]

Figure 7:

Oil price trends, 2022–2024 (US$ pb)



Sources: Statista, based on data from OPEC; BNN Bloomberg; Intercontinental Exchange.
Note: Closing price of Brent, OPEC basket, and WTI crude oil at the beginning of each week from 10 January 2022 to 2 April 2024.

1.3 Existing vulnerabilities and secondary transmission channels

The Gaza war started at a time during which the Egyptian economy was presenting heightened vulnerabilities, amid a rapid devaluation of the pound on the parallel market, record-high inflation and a mounting debt burden, in addition to long-standing challenges such as a weak private sector, diminishing international investment, and a labour market characterized by high informality, especially for youth and women. These conditions are likely to both magnify and reinforce the external shocks due to the Gaza war and make their mitigation and policy response more challenging.

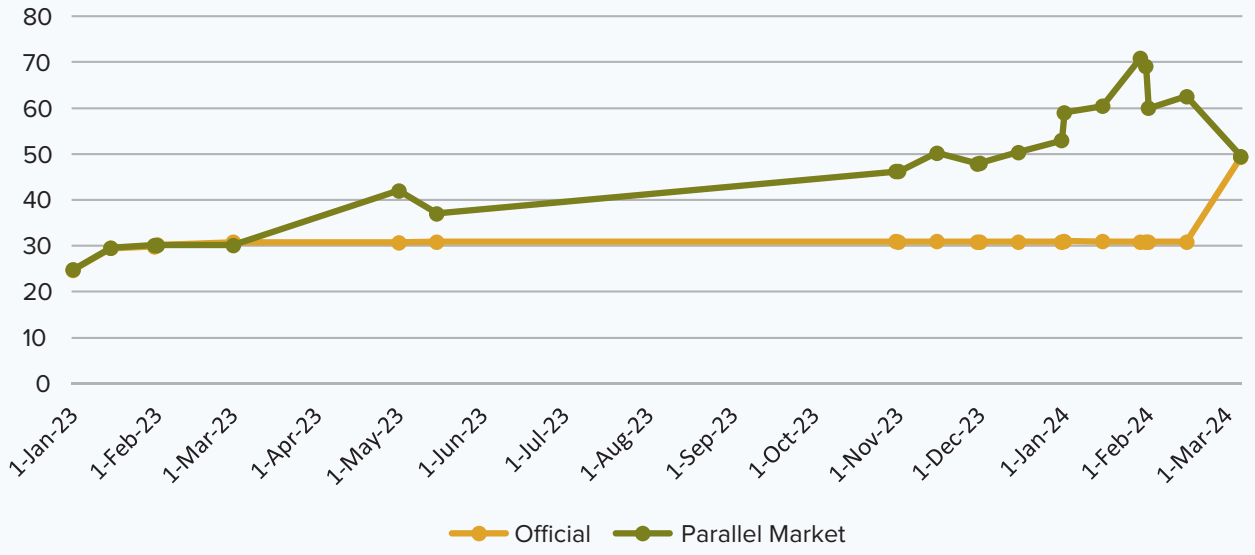
1.3.1 Currency devaluation

Egypt's economy, with its dependence on tourism, remittances, Suez Canal revenues, foreign debt and foreign capital flows, is sensitive to global economic shifts. The Egyptian pound has experienced significant instability, often exacerbated by efforts to keep it overvalued, leading to dwindling international reserves. The pound has also faced pressures from geopolitical risks, and ongoing balance of payment (BOP) problems. More specifically, there has been a persistent need to finance Egypt's budget and current account deficits, and to compensate for the flight of capital and for the volatility of portfolio investment.

The Gaza war has further weakened the Egyptian economy, with the pound reaching a record low of over EGP 70 to the US dollar in January on the parallel market.[60] This decline reflects both ongoing economic vulnerabilities and concerns about Egypt's policy framework, as well as the impact of the war. The situation had led to persistent inflation and debt servicing challenges. However, by the end of February, the pound had appreciated to EGP 50 against the US dollar, driven by the announcement of a substantial capital inflow from the United Arab Emirates (UAE) for a large-scale investment project in the North-West coast. This influx of capital, combined with the new IMF deal,[61] a fresh loan from the World Bank,[62] and the recently signed Strategic Partnership with the European Union[63] is expected to alleviate current vulnerabilities.[64,65]

Figure 8:

Exchange rate (EGP/US$) parallel and official exchange rates



Source: Ministry of Finance, *Financial Monthly Bulletin*, January 2024, and parallel market rate accessed from Al Souq Al Youm (mobile application), www.exchange-rates.org/exchange-rate-history/$-egp. The EGP was devalued on 6 March to roughly match its parallel market rate. https://abcnews.go.com/International/wireStory/cash-strapped-egypt-allows-currency-fall-sharply-dollar-107838464

1.3.2 Inflationary pressures and protracted monetary tightening

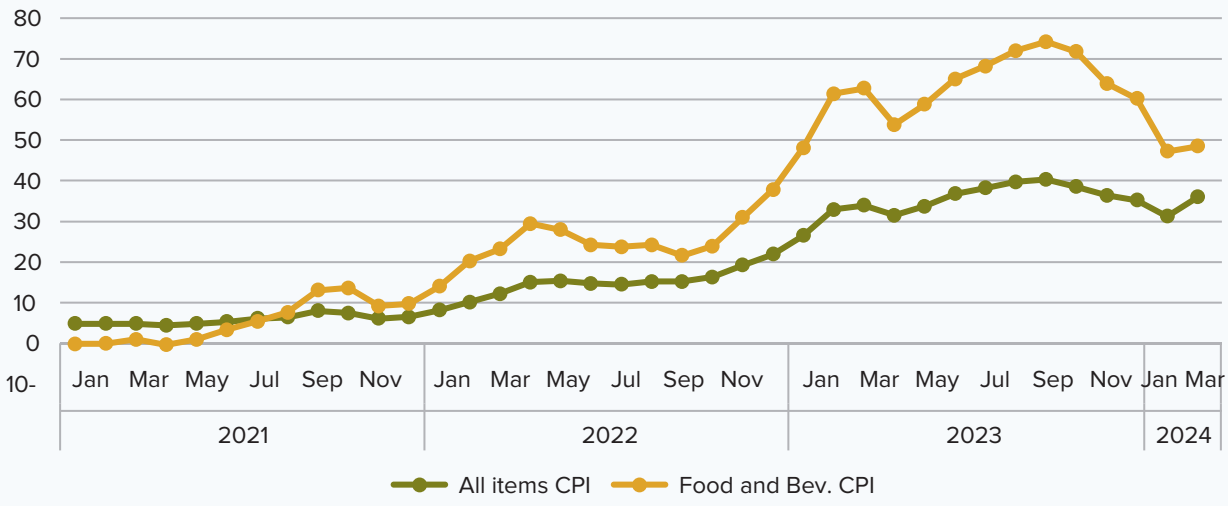
In recent years, Egypt has experienced high inflation, primarily due to expansionary fiscal policy funded through relatively low interest rate, currency devaluation and the rising global market prices of significant food imports, exacerbated by the Russian Federation-Ukraine war. Inflation in Egypt surged in September 2023, recording a historic high of 40.3 percent YoY, which declined to 31.2 percent in January 2024, together with rapidly depleting currency reserves.[66] Moreover**,** in early 2024, the Egyptian Government announced a long list of price hikes for services and utilities ranging from the Cairo Metro and train fares, to car registration fees, in a bid to shore up finances and bridge the budget deficit. It has also raised electricity prices and approved price hikes for industries from which it derives fees and tax income or has ownership stakes.[67] For instance, the National Telecom Regulatory Authority announced telecommunications, internet and mobile phone bills increased by up to 16 percent.[68]

Regional conflicts can lead to spikes in energy and food prices, intensifying the already ongoing inflation dynamics. Food inflation reached 48.5 percent in February 2024,[69] although down from its all-time high of 74.2 percent in September 2023

(Figure 9).[70] This is expected to disproportionally hit the poor and socioeconomically vulnerable population. In addition, in the medium term, the extended period of monetary tightening, a response to inflationary pressures, will likely burden businesses and households, leading to reduced consumer spending and economic activity. Moreover, although the recent fiscal and monetary policy measures will support macroeconomic stability, the decline in economic activity in the short term may have a negative impact on unemployment and poverty.

Figure 9:

Consumer Price Index inflation rates in Egypt, January 2021 to March 2024 (annual percentage change)



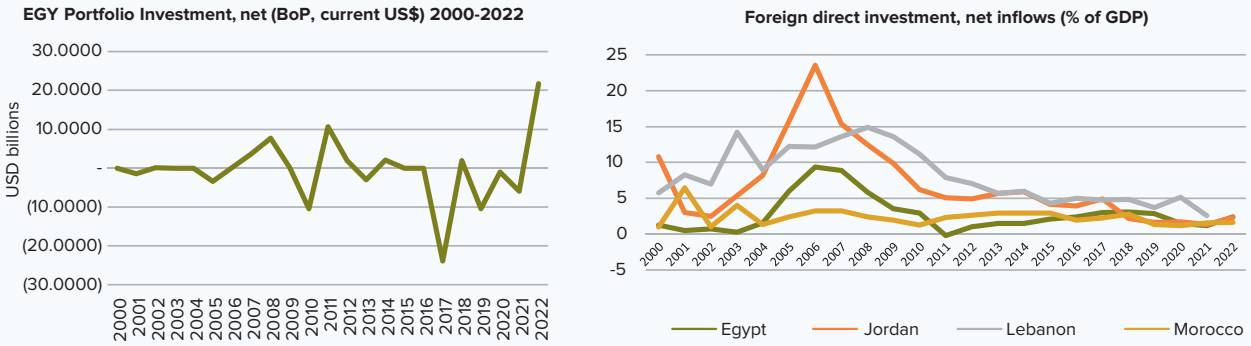
Source: CAPMAS.
Note: CPI = Consumer Price Index

1.3.3 Volatility of investments

Egypt has also been affected by a high volatility of portfolio flows and downward long-term trends in net FDI inflows. The country's need to cover its current account deficit (CAD) is growing amid constrained prospects for portfolio investments and commercial borrowing due to investor sentiment. In the current fiscal year, FDI registered a net inflow of $2.3 billion, but portfolio investments continued to see a net outflow of $523.4 million.[71] This outlook suggests a cautious investor sentiment, which might have been further strained by the uncertainties of the war in the last quarter of the year. FDI inflows are forecasted to increase to $12 billion in FY24 from $9.7 billion in FY23, buoyed by the Government's privatization plan, which aims to reach $5 billion in sales proceeds by the end of FY23/24.[72] However, there are significant execution risks associated with this plan, and its success, timing and scale remain uncertain.

Figure 10:

Egypt's portfolio flows, increased volatility (billion current US$) and net FDI inflows (% of GDP)



Source: World Bank: https://data.worldbank.org/indicator/BN.KLT.PTXL.CD?locations=EG&start=2000; https://data.worldbank.org/indicator/BX.KLT.DINV.WD.GD.ZS?locations=EG

Starting in 2022, the credit rating companies have downgraded their rating for Egypt on the back of rising risks of the sovereign's exposure to external shocks, and narrowing foreign exchange reserves to meet external debt services.[73] Moody's changed its rating from B2 Stable to Negative in May 2022, and in 2023, downgraded to B3 Stable in February and then to Caa1 Stable in October, two days before the Gaza war started. The last downgrade is attributed to the Government's worsening debt affordability trend and the persistence of foreign currency shortages due to increasing debt services payments in the next two years. This is backed by constrained policy options to boost the economy without worsening social risk.[74] Further, Moody's downgraded its outlook to negative in January 2024.[75] S&P has also revised its outlook on Egypt to Negative to Stable in April 2023 while maintaining the B rating, before downgrading to B- with a stable outlook on 20 October. These reviews are mainly attributed to slow progress on monetary and structural reforms and foreign currency shortage, weak private sector confidence and reduced remittances while also citing the Gaza war as an attributing factor in the latter.[76] Fitch also revised Egypt's outlook from Stable to Negative at B+ in November 2022,[77] followed by a downgrade to B with a negative outlook in May 2023, and then to B- with a stable outlook in November 2023. Similarly, Fitch's reviews were mainly due to increased risks to the country's external financing, macroeconomic stability and high government debt, in addition to the increasing instability and security risks as a result of the Gaza war and the potential negative spillover on tourism and investor sentiments.[78]

However, in addition to the new IMF programme, which aims to help Egypt enact prudent fiscal and monetary policies, and structural reforms, a new ambitious investment project was recently signed with the UAE sovereign wealth fund ADQ to build the city of Ras El-Hekma, in the north-west of the country, which is expected to bring new and steady investment inflows in the short and medium term. This foreign capital inflow is considered unprecedented for its expected size and scope, and may support economic recovery and improve credit ratings.[79]

Table 2: Egypt sovereign credit rating trends

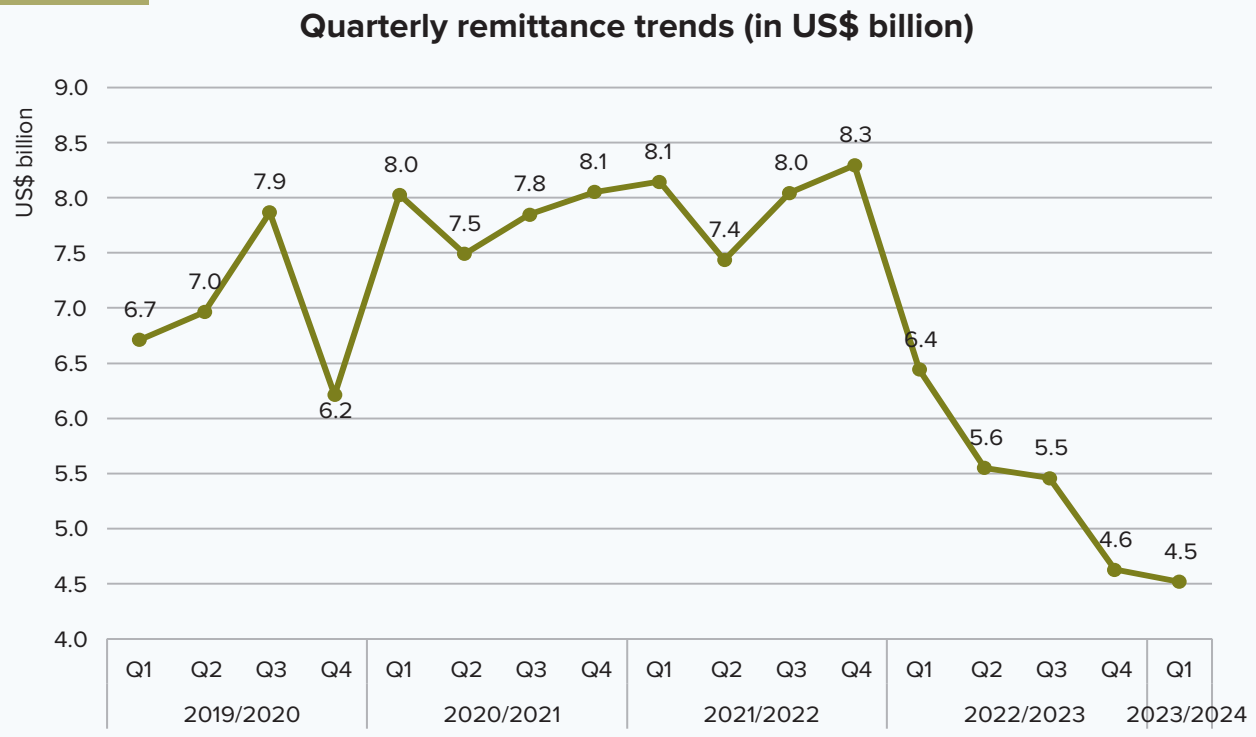
Agency	Rating	Outlook	Last Update	Action
Moody's	Caa1	Positive	7 March 24	Outlook upgrade
Fitch	B-	Stable	8 November 23	Rating downgrade
Standard & Poor's*	B-	Stable	25 October 23	Rating downgrade
Trading Economics	23			

Source: Credit rating agencies.
Notes: Trading Economics scores on a scale of 0–100, where 0 = default.
*Standard & Poor's next rating update is scheduled for for 19 April 2024, but the media reports that it "has been encouraged" by the inflow of foreign investment in the last two weeks (www.reuters.com/world/africa/sp-upbeat-egypt-rating-after-35-bln-uae-deal-2024-03-08). There were no updates to Fitch or Trading Economics ratings as of 10 March 2024.

1.3.4 Remittances

Egypt is the region's largest recipient of remittances, constituting a key source of foreign currency, and regional conflicts and crises may lower overall remittance inflows. However, due to the deviation between official and parallel market exchange rates caused by the Central Bank of Egypt's reversion to a fixed exchange rate in March 2023, and given that most remittances channelled to Egypt use informal channels, the first half of 2023 witnessed a decline of 38 percent in officially recorded remittance flows to Egypt,[80] the lowest level of remittances since 2017, which amounted to $10 billion, compared to $16.3 billion the year before. However, when the unofficial transfers are included, it is likely that remittances would show a smoother trend. The recent official devaluation is also likely to enhance remittance flows as the gap between parallel and official exchange rates has been eliminated.

Figure 11:



Source: Authors' compilation from CBE's Quarterly Balance of Payments Time Series.

1.3.5 Financial stability

The resilience of the Egyptian banks in the face of regional crises is due to the large size of the Egyptian market and the limited exposure of the banks outside of Egypt. However, the Egyptian banking system faces economic challenges, particularly from BOP pressures. These pressures stem from various sources, such as the reliance of public banks on supplying the domestic market, financing external trade and cushioning capital flight.[81] In May 2023, the credit rating agency Fitch downgraded several key Egyptian banks due to their large holdings of sovereign debt, limitations on foreign exchange availability, and the adverse effects of expected currency devaluations on their capital positions.[82]

The capitalization and the nature of the assets of the state-owned banks, which dominate the Government's borrowing activities, are only half the story. The other half is that the liabilities of these state-owned owned banks are guaranteed by the Government by law. Therefore, the impact of and the responsiveness to risks in the market are considered modest to date. The state-owned banks receive the government deposits and extend the government loans, and thus have a built-in advantage by law. Because these banks are associated with the Government, they track the sovereign stance in terms of credit standing and outlook. Indeed, it came as no surprise that the largest Egyptian banks (the three largest state-owned banks and the largest private bank in Egypt) were downgraded on 14 November 2023.[83]

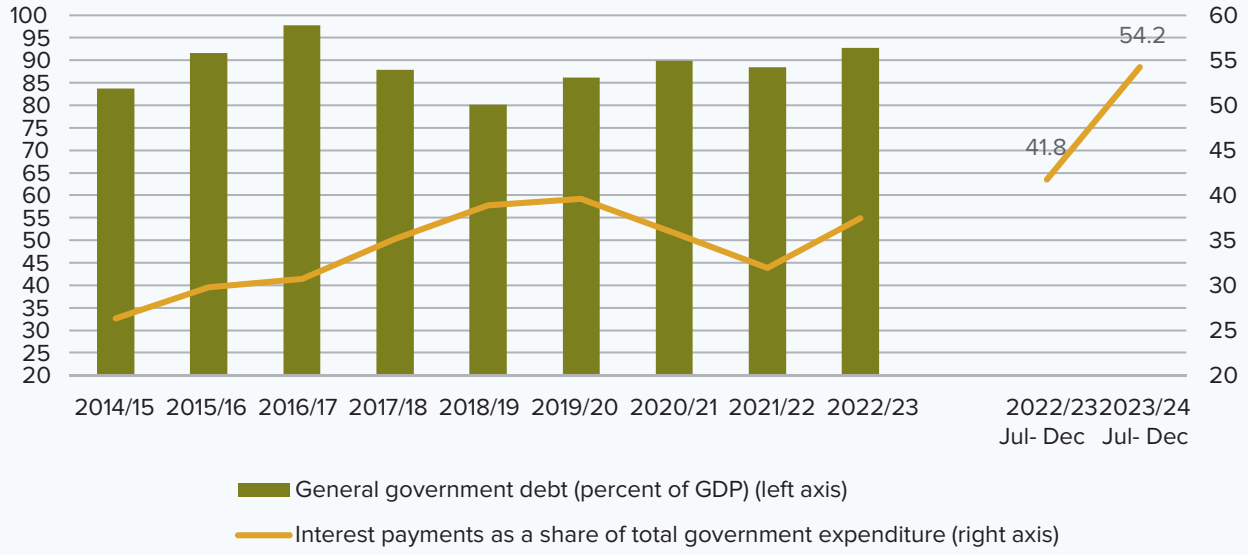
Regional conflicts can exacerbate the vulnerabilities of banking systems through direct exposure and macroeconomic impacts. Conflicts may lead to increased economic uncertainty, potentially resulting in higher risk premiums and non-performing loans, reduced credit availability, and a decrease in depositor confidence. Additionally, they can disrupt trade and investment flows, impacting banks' foreign exchange revenues and increasing the risk of loan defaults. The Egyptian banking sector's significant exposure to the public sector, constituting about 50 percent of its total assets, remains a potential concern. Authorities anticipate that the banking system can withstand a more depreciated exchange rate. To attract liquidity, banks are introducing high-yield savings products. However, vigilance is essential to detect and address any emerging signs of stress so as to maintain banking sector's stability and mitigate risks associated with ongoing economic and geopolitical challenges.

1.3.6 Fiscal pressures

Egypt's high public debt poses multiple challenges. The government debt relative to GDP surged to around 92.7 percent in FY23, up from nearly 88.5 percent in FY22, largely due to currency devaluation. Egypt's total external debt tripled between 2016 and 2023. Debt service payments increased rapidly over this period to reach $25 billion in FY23, including almost $7 billion in interest payments.

Figure 12:

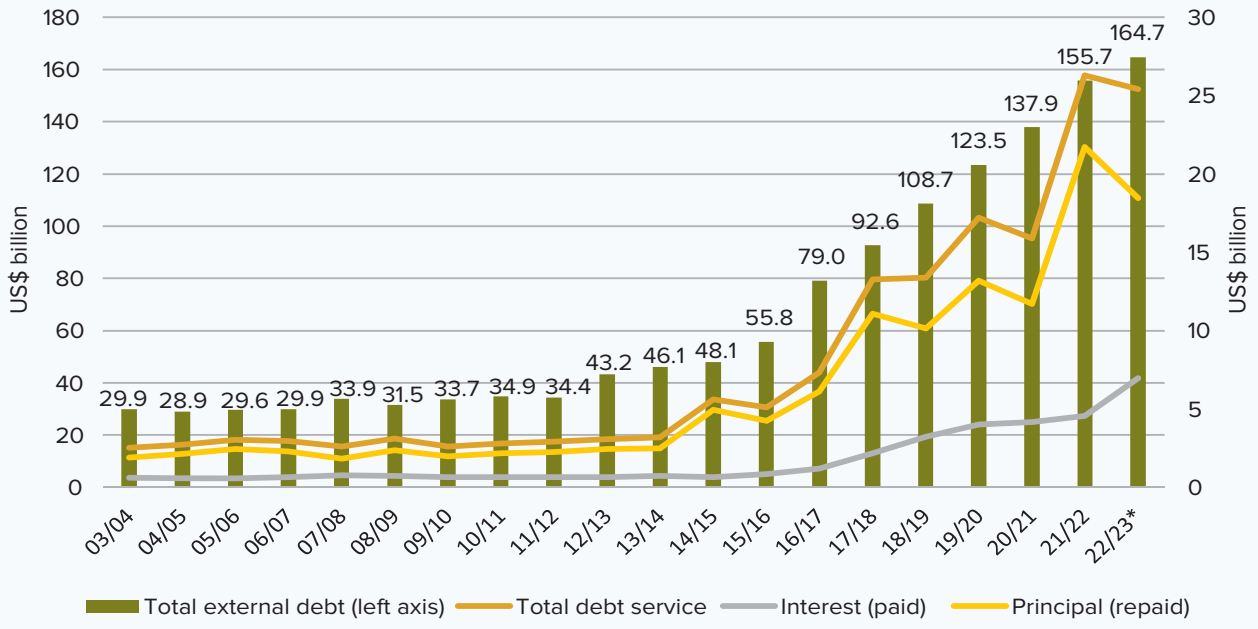
Government debt and interest payments (% of GDP and total government expenditure)



Source: Government debt as a share of GDP is taken from IMF, interest payments as a share of government expenditures are from The Financial Monthly, Vol. 19, No. 3, January 2024, Ministry of Finance. The right side of the figure shows quarterly interest payment in July to December in FY2022/2023 compared to FY2023/2024.

Figure 13:

Egypt's external debt and debt service payments, 2004–2023



Source: Central Bank of Egypt.
Note: *Data for 22/23 are provisional.

The past year also saw an increase in credit default swap (CDS) spreads, which initially rose post-October 7 but have since declined, now sitting much lower than pre-war levels.

Dollar-denominated T-Bills were a key instrument used by the Central Bank to address the looming foreign currency crisis. On the last day of 2023, the CBE auctioned $850 million worth of US dollar-denominated treasury bills to address the increasing dollar shortage. T-Bills are short-term debt instruments backed by the finance ministry, typically issued by the CBE on behalf of the ministry to help cover the budget deficit.

Figure 14:

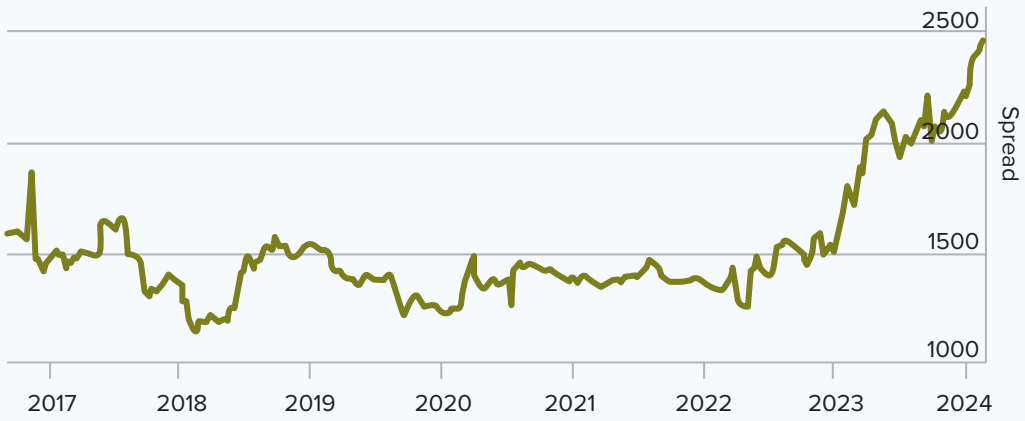
Egypt 1-year treasury bill yield, 2000–2023 (%)

Source: CBE.

Looking at the bond spreads between Egypt and the United States of America, it can be observed that: (i) Egypt shows signs of inverted yield curves whereby some of the long-term bonds have a lower yield than short-term ones (three-month and two-year);[84] and (ii) the government bond spreads are sizeable across maturities and have been widening in the recent past.

Figure 15:

Egypt vs. US country spreads based on different bond maturities and trends of 10-year bonds (bp)



Bonds yield				
Residual maturity	**Egypt (%)**		**(%) United States of America**	**Current spread**
1 month	-		5.372	-
2 months	-		5.385	-
3 months	28.090	>	5.372	2271.8 bp
4 months	-		5.367	-
6 months	27.733	>	5.233	2250.0 bp
9 months	27.801		-	-
1 year	27.320	>	4.830	2249.0 bp
2 years	28.370	>	4.384	2398.6 bp
3 years	27.917	>	4.192	2372.5 bp
5 years	27.962	>	4.070	2389.2 bp
7 years	27.895	>	4.133	2376.2 bp
10 years	27.832	>	4.166	2366.6 bp

Source: https://www.worldgovernmentbonds.com/country/egypt. accessed on 25 February 2024

The government debt trajectory will remain a key priority for Egypt amidst the ongoing Gaza war. The debt was projected to decrease to 88 percent in FY24, supported by primary surpluses, negative real interest rates, and an estimated

average GDP growth of 3.8 percent. However, even if these pre-Gaza war assumptions are realized, this level remains considerably higher than the median for 'B'-rated countries in 2023. Moreover, in the near term, the Government faces escalating external debt maturities, with projections of $8.8 billion in the fiscal year ending June 2024 (FY24) and $9.2 billion in the fiscal year ending June 2025 (FY25), a significant rise from $4.3 billion in FY23.[85] Notably, Fitch estimated that a 10 percent depreciation in currency beyond projections could further raise the debt by approximately 3 percentage points of GDP.[86]

On a positive note, Egypt was able to maintain fiscal discipline in 2023, despite the evolving regional context. Egypt's central government budget deficit was 6.0 percent of GDP in FY23, in line with budget plans, despite the pressures from higher interest rates, subsidies, social spending and currency devaluations. As per Fitch estimates, the primary surplus is expected to improve in FY24 and FY25 from 1.6 percent of GDP in FY23. However, it is anticipated that rising interest costs will likely increase the overall deficit to 7.4 percent in FY24 and 8.4 percent in FY25. The complexity and lack of transparency in the broader public sector add to the uncertainty regarding contingent liabilities and overall fiscal risk.

However, **the Gaza war, with a potential reduction in tourism and Suez revenues, and an overall potential slowdown of the economy, poses significant downside risks to the budget deficit** that may increase if the conflict protracts or intensifies as the need for social and military spending may further increase.

Box1:

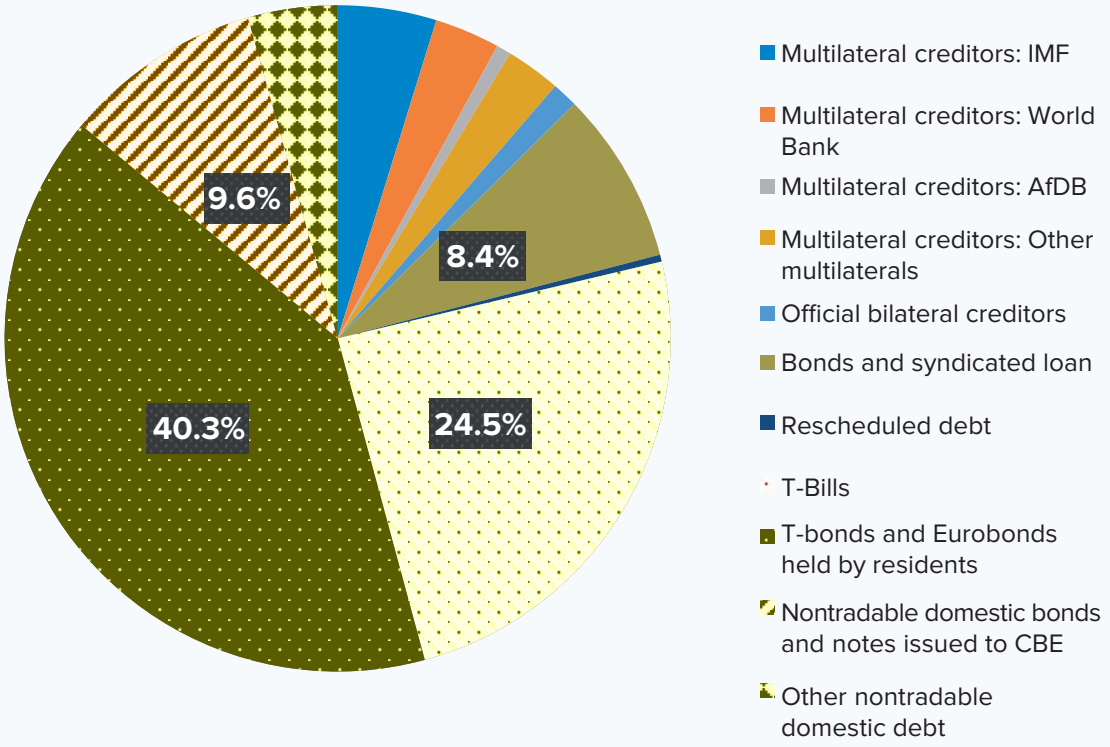
Sovereign debt composition analysis of Egypt

In FY21/22, domestic debt accounted for 79 percent of the total government debt, with external debt comprising the remaining part. This considerable portion of domestic debt underscores the Government's tendency to leverage internal funding sources, including T-Bills and T-Bonds. The majority of domestic public debt is held by domestic commercial banks and the Central Bank of Egypt. Therefore, debt service requirements are higher in local currency at a ratio of approximately 5 to 1, compared to foreign currency needs. Egypt's debt portfolio consists largely of marketable instruments, such as bonds and treasury bills, which provide liquidity but require proactive management to mitigate market volatility. A smaller portion of the debt is non-marketable, typically comprising loans and advances. The maturity profile for 2022 displays a diversified spread, with an estimated 30 percent of debt being short-term (≤1 year), 40 percent medium-term (1-5 years) and the remaining 30 percent long-term (>5 years).

Note: Debt coverage for the purposes of this box includes the budget sector, which is the perimeter of debt closely monitored in the IMF-supported programme for Egypt. This perimeter excludes official creditor deposits at the Central Bank of Egypt. The data herein are based on information provided by Egyptian authorities in the local currency and converted to the US dollar by IMF staff, as noted in their January 2023 staff report. Complete data are available only for the fiscal year ending June 2022, and all figures below correspond to the status as of the end of this fiscal period.

Figure 16:

Egypt's debt decomposition



Source: Based on IMF Staff Report, 2023.
Note: AfDB = African Development Bank; CBE = Central Bank of Egypt

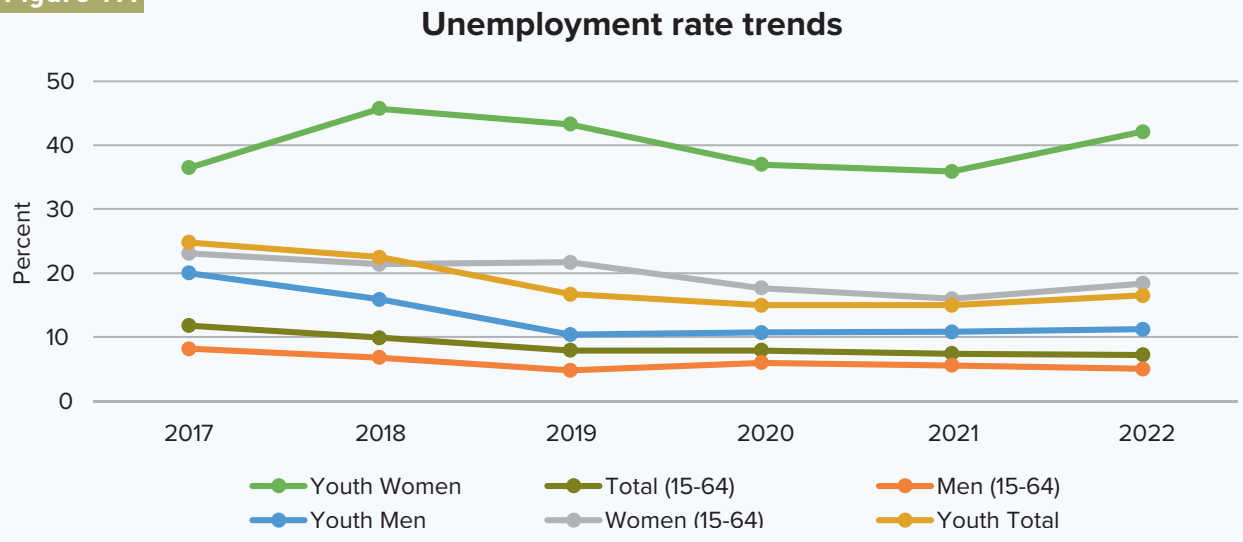
1.3.7 Potential slowdown in aggregate demand due to loss of confidence

Domestic demand is generally highly responsive to the expectations and confidence levels of consumers. This is particularly important for Egypt because private consumption accounts for a substantial share of GDP: according to World Development Indicators (WDI) data, over the 2015-2022 period, the average share of households' final consumption was consistently above 80 percent of GDP, compared to an average for low- and middle-income countries of just above 50 percent. Due to this high level of private consumption, the expectations and sentiments of consumers are a significant driver of the economy. Households and investors may increase their precautionary savings as they usually do during periods of uncertainty. Indeed, with the recent increase in interest rates and the floatation of the pound, aggregate demand is expected to be further hit. Such a response in particular by the household sector can reinforce the effects of the other negative transmission channels on the economy.

1.3.8 Labour market disruptions

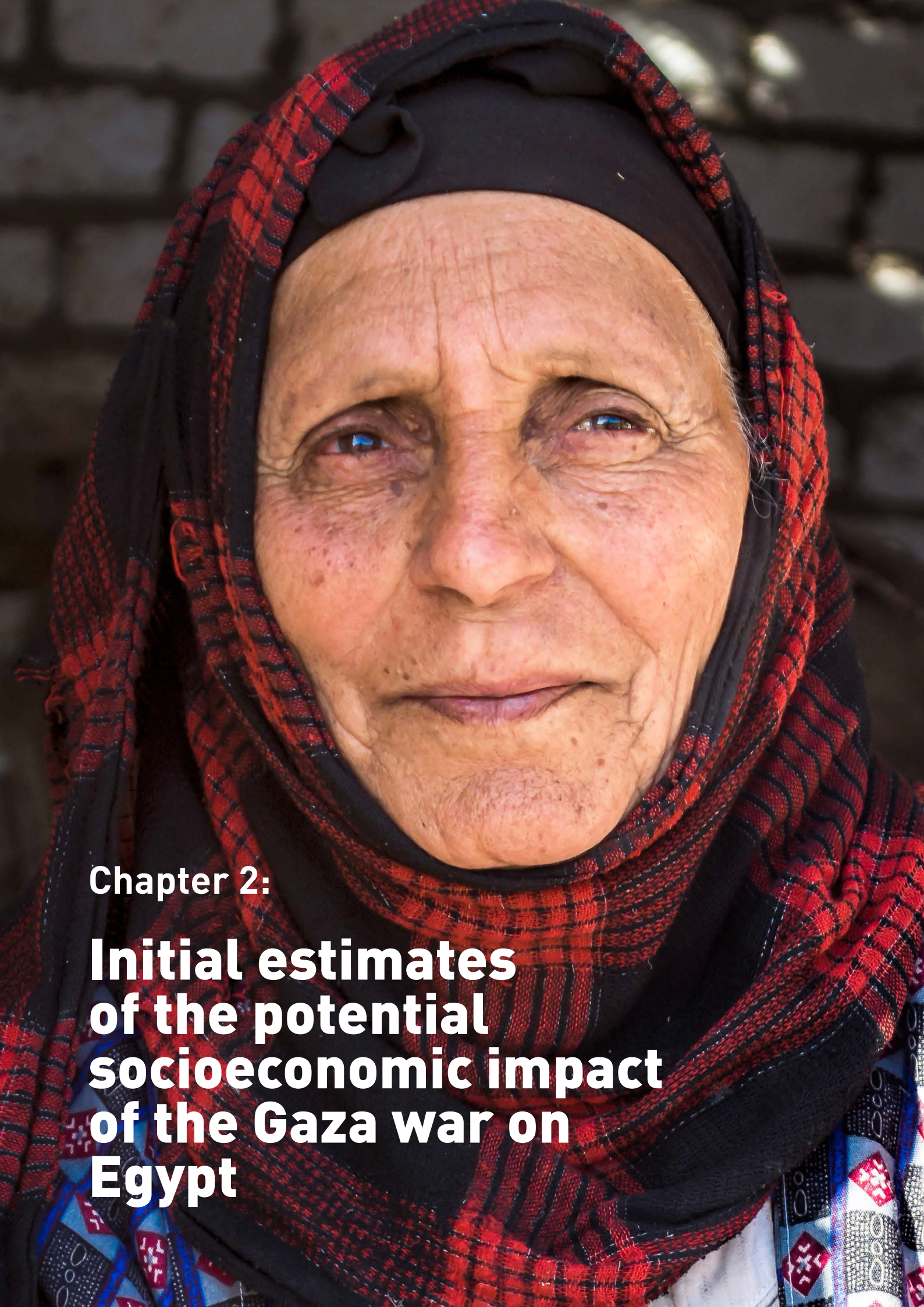
The Egyptian labour market has been characterized by a high degree of unemployment among women and youth, especially college graduates, low and declining female labour force participation rates, and high levels of informality, starting in the 1980s. The unemployment rate for individuals aged 15–64 was 7.2 percent in 2022: women's unemployment rate (18.4 percent) was more than three times higher than that of men (5 percent).[87] The youth (aged 15–29) unemployment rate was much higher, at 16.5 percent: the unemployment rate of young women (42.1 percent) was more than three times than that of young men (11.2 percent). Youth inactivity was also high at 28.7 percent on average, with similarly large gender gaps. Total labour force participation (LFP) rates have been slowly declining since 2010, from 49.5 percent in 2010 to 42.7 percent in 2022. The five-year annual average LFP rate between 2018 and 2022 was 42.5 percent, while that in the preceding five years (2013–2017) was 47 percent. Female LFP rates have also been on the decline, falling sharply from 21.9 percent in 2017 to 14.9 percent in 2022. Therefore, while unemployment rates have been falling in Egypt on average (Table 1 and Figure 18), these numbers must be interpreted within the context of the declining LFP overall, especially for women. Informality can also affect the rate of unemployment. In 2022, only 43.4 percent of workers participated in social security insurance, while only 37.7 percent had a legal contract. Informal employment (based on the ILO definition)[88] was rising steadily over the last decade, reaching 67 percent in 2019 (latest available data). It is especially high in the trade, transportation, accommodation and food services sectors (73.1 percent in 2018), which are likely to be hardest hit by the Gaza war.[89]

Figure 17:



Source: CAPMAS, Annual Bulletin Labour Force Survey, 2022.

Economic theory is ambiguous about the impact of migrants and refugees on host nation labour markets.[90] While some studies[91] highlight potential negative effects, arguing that an influx of migrants or refugees may depress wages for native workers in certain skill groups, other studies[92] emphasize positive contributions, indicating that immigrants can fill labour market gaps, boost economic growth, and even stimulate job creation. Ultimately, the net impact will depend on the skill composition of the refugees and on whether they replace or complement domestic workers,[93] and on policy responses of the host nation. In Egypt, which already has high youth and female unemployment rates, high informality and low and declining labour force participation rates, any increase in migrant inflows may further deepen the challenges in the labour market in the short term. This may entail worsening unemployment, including the 'discouraged unemployed' who are no longer looking for jobs, further reducing female and youth labour force participation rates, and raising informality, unless the impact is mitigated through effective labour market policies.



Chapter 2:

Initial estimates of the potential socioeconomic impact of the Gaza war on Egypt

The socioeconomic impact of the war will depend on its duration and intensity, which not only have direct impacts on economic sectors, but also indirect and induced costs, such as lost business and investment opportunities, shifting consumption patterns, increased uncertainties by economic agents.

2.1 Scenarios

This report uses two approaches to preliminarily estimate the impact of Gaza war on the Egyptian economy, given the prevailing economic conditions just before the war. The first approach relies on a simple Keynesian multiplier approach, which produces rough estimates, while the second uses a dynamic computable general equilibrium (CGE) model, which accounts for Egypt's economic structure in a more detailed way.

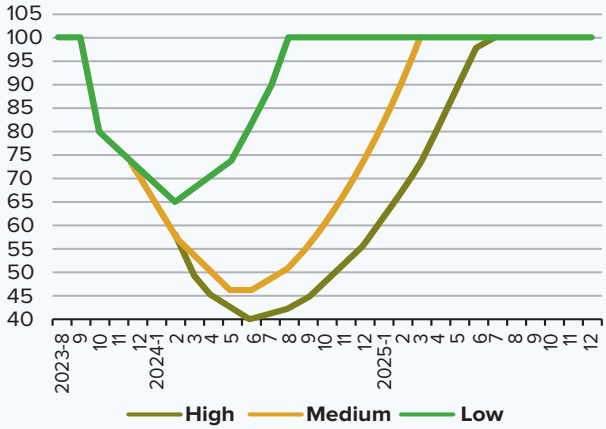
Considering available news and information on the current impact of Gaza war as of February 2024, three conflict scenarios are considered, reflecting the increasing intensity and scope of regional conflict.

1. Contained regional confrontations (low-intensity scenario)
2. Limited regional conflict escalation (medium-intensity scenario)
3. Regional military escalation (high-intensity scenario).

The main transmission channels of the conflict stem from the decline in tourism and Suez Canal revenues, and potential trade disruptions. It is assumed that while the Suez Canal revenue shock may be short-lived, the decline in tourism revenues may depend on the duration of conflict, and the recovery in tourism revenues could be more gradual even after the end of the war (Figures 18 and 19). The reported years are taken as fiscal years, which cover July to the following June period. The size of the shocks reflects the assumed annual percentage deviation of variables from the no-war baseline case levels, which are based on limited information and hence cannot be completely accurate and should be treated with caution.

Figure 18:

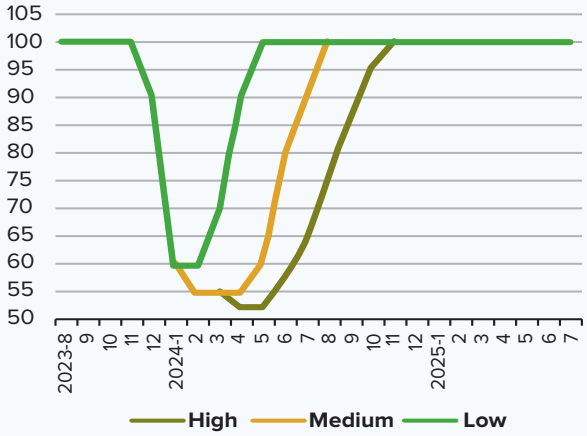
The assumed size and path of tourism revenue shock (no-war case scenario=100)



Source: UNDP assumptions.

Figure 19:

The assumed size and path of Suez Canal revenue shock (no-war case scenario=100)



Source: UNDP assumptions.

The key qualitative and quantitative assumptions under each scenario are provided in Tables 3 and 4 for ease of reference and discussed in more detail.

Table 3: Three conflict scenarios

Scenarios	Assumptions
Contained confrontation scenario	• No major escalations across neighbouring countries, with limited skirmishes between Lebanon and Syria on one side, and Israel, on the other; and continued Houthi shipping attacks and US/UK counterattacks in the Red Sea. • No marked increases in oil and gas prices from pre-war levels. • A temporary drop in the tourism sector (an average 20 percent drop). • A disruption in the Suez Canal crossings, which causes minor trade reduction, a drop in Suez Canal revenues (11 percent) and an increase in shipping costs (5 percent).
Limited regional conflict escalation scenario	• Intensified violent episodes with the involvement of Iran, Iraq, Lebanon and/or Syria in the ongoing war. • Oil and gas disruption (an average 4 percent increase in prices). • A significant reduction of tourism that lasts well into 2024/25 (a 29 percent drop in tourism in 2023/24 and 22 percent in 2024/25). • Major trade disruptions among conflicting parties, limited Suez Canal operations (a 21 percent drop in Suez Canal revenues) and an increase in shipping costs by 10 percent.
Widespread regional military escalation	• War between Iran, Iraq, Lebanon and/or Syria against Israel, and direct confrontation between Israel and Iran. • More pronounced oil and gas disruptions (13 percent average increase in prices). • A protracted significant decline in tourism revenues throughout 2025 (a 31 percent drop in 2023/24 and 37 percent in 2024/25). • Major trade disruptions across the region and beyond with shipping costs increasing by 15 percent in 2023/24 and 5 percent in 2024/2025. • A decrease in remittances by almost 5 percent as a result of the deteriorating economic and regional conditions.

Table 4: Summary table of the (annualized) quantitative assumptions by scenario

Variables			Low-intensity scenario (%) (war duration of6 months)	Medium-intensity scenario (%) (war duration of 9 months)	High-intensity scenario (%) (war duration of 12 months)
Tourism	2023–2024	World demand for exports of tourism	-20	-29	-31
	2024–2025			-22	-37
Suez Canal revenues	2023–2024	World demand for exports of Suez Canal	-11	-21	-23
	2024–2025				-7
Oil	2023–2024	1. World price of imported petroleum products 2. World price of exported petroleum products		4	13
	2024–2025				13
Gas	2023–2024			4	13
	2024–2025				13
Shipping costs	2023–2024	World price of imported transportation	5	10	15
	2024–2025				5
Remittances	2023–2024	Transfers from the rest of the world to households			-5
	2024–2025				-5

2.2 Some preliminary macroeconomic estimates

Egypt is already facing the challenges of fiscal deficit and balance of payments (BOP) issues, which may reinforce their drag on the domestic economy due to the war through three distinct but interrelated dynamics. First, the Gaza war exerts pressure on Egypt's economy through the current account deficit via potentially diminishing tourism and Suez Canal revenues. The potential decline in these revenues, combined with the worsening of the current account deficit, may diminish Egypt's foreign currency reserves, which were under strain due to severe BOP issues before the Gaza war. This decline in foreign currency reserves puts pressure on the exchange rate, subsequently contributing to inflationary pressures. Second,

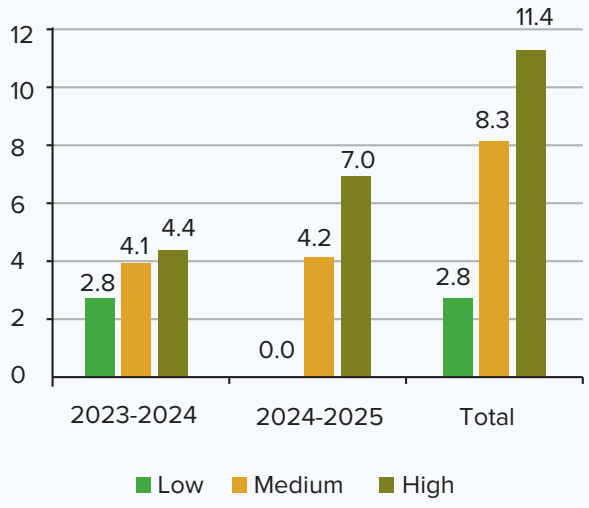
both Suez and tourism revenues constitute significant portions of service exports, contributing to the overall GDP. Any reduction in these revenues directly hampers economic activity. Moreover, the decline in these revenues has a cascading effect on the broader economic landscape by influencing expectations, consumption, investments and import capacity. Consequently, the decrease in these revenues exerts a multiplier impact on overall demand. Third, the direct impact of the decline in Suez revenues is felt through a reduction in government budget revenues. Simultaneously, a substantial decrease in tourism revenues diminishes economic activity and, in turn, tax revenues for the Government.

It is anticipated that the Gaza war will impact government budget revenues and widen the budget deficit. Moreover, any reduction in budget revenues limits the fiscal options available to the Government, hindering its ability to increase expenditures to mitigate the negative growth impacts of the war.

According to preliminary estimations by UNDP under certain assumptions, in two fiscal years, the total decline in tourism revenues may reach $2.8 billion in a low-intensity conflict case, $8.3 billion in a medium-intensity conflict case, and $11.4 billion in a high-intensity conflict case (Figure 20). These declines in tourism revenues correspond to 0.8 percent of average annual GDP in the low-intensity conflict case, 2.2 percent in the medium-intensity conflict case, and 2.9 percent in the high-intensity conflict case (Figure 21).[1]

Figure 20:

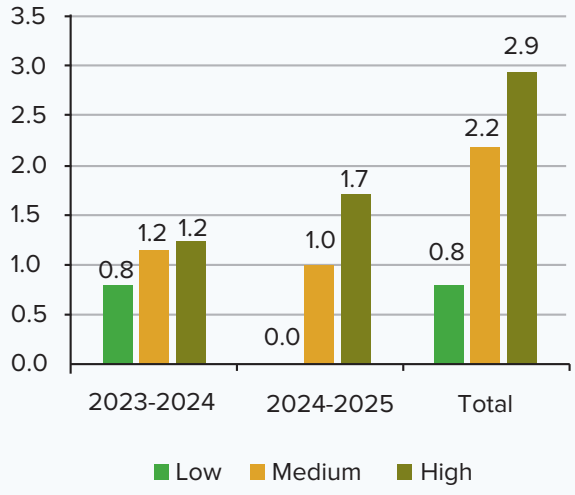
Estimated decline in tourism revenues (US$ billion)



Source: UNDP calculations.

Figure 21:

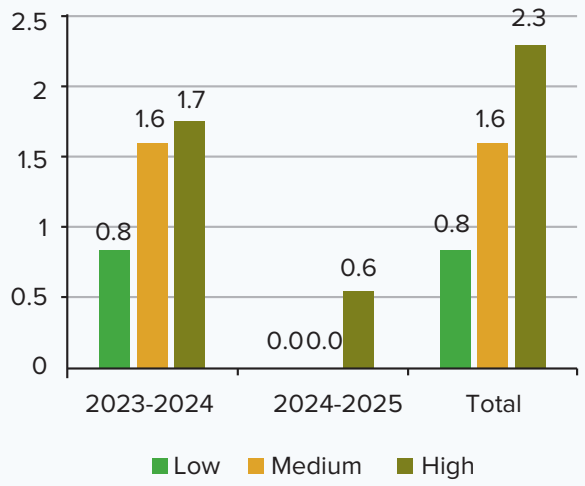
Estimated loss as a percentage of the annual GDP



The total decrease in the Suez Canal revenues in the two fiscal years may also reach significant levels, contingent upon the duration and magnitude (Figure 22 and 23).

Figure 22:

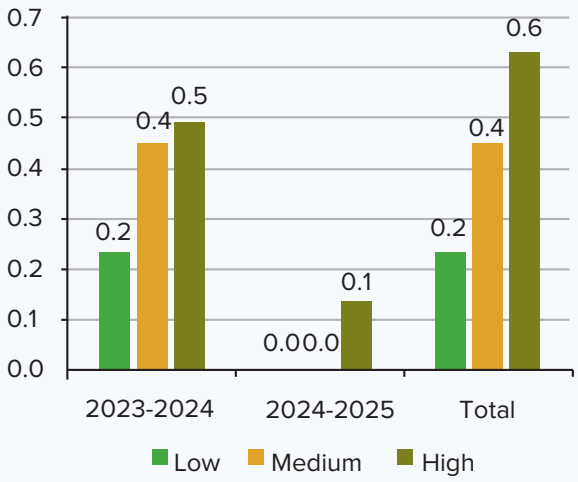
Estimated decline in Suez revenues (US$ billion)



Source: UNDP calculations.

Figure 23:

Estimated loss as percentage of the annual GDP (%)



The total direct decline in foreign currency revenues in the two years, attributed to the impact on tourism and Suez Canal revenue combined, may reach $3.7 billion in the low-intensity conflict case, $9.9 billion in the medium-intensity conflict case, and $13.7 billion in the high-intensity conflict case (Figure 24). These reductions in tourism revenues correspond to about 1.0 percent of GDP in the low-intensity conflict case, 2.6 percent in the medium-intensity conflict case, and 3.6 percent in the high-intensity conflict case (Figure 25).

Figure 24:

Estimated decline in tourism and Suez revenues (US$ billion)

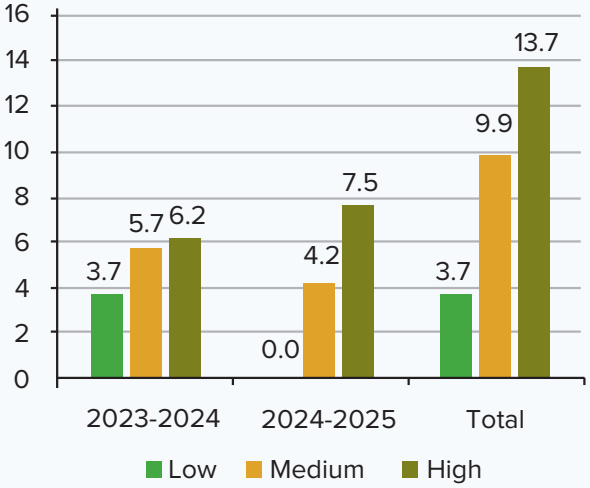
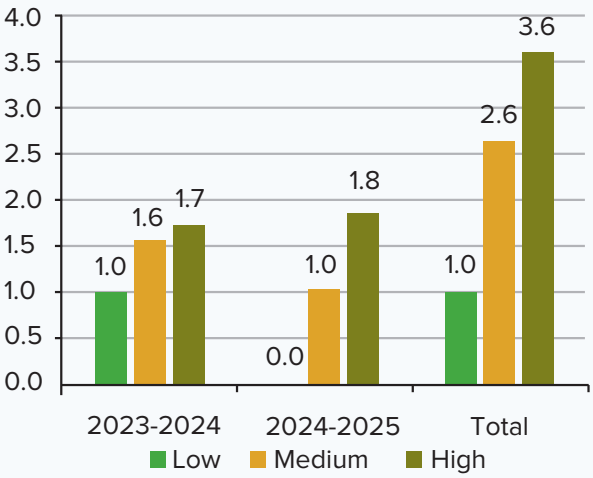


Figure 25:

Estimated loss as a percentage of annual GDP



In addition to its direct effects, the potential decline in tourism revenues has a more extensive impact on GDP, given its strong linkages with various sectors in the economy. For instance, it can influence the consumption and investment decisions of the private sector, since some portion of the tourism revenues is used for importing goods. By using a conventional Keynesian approach and considering the composition of the expenditure side of the GDP and assumptions for the marginal propensity to consume, invest and import, it is estimated that tourism revenues have GDP multiplier of around 1.9,[2] i.e. a one-unit change in tourism revenues may result in around a 1.9 unit change in GDP. Since the imports share in GDP is low, the impact of tourism revenues in domestic production is relatively higher, which explains why tourism revenues have a higher GDP multiplier. However, the calculated multiplier is sensitive to calibrated parameters for marginal propensity to consume (0.75) and marginal propensity to import (0.35). In contrast, a GDP multiplier of unity for Suez Canal revenues is assumed, because the Suez Canal revenues directly affect government revenue and have limited direct links with the private sector activities.

An additional direct impact can arise from the effect of the war on Egypt's trading partners' economic activity and their demand for Egyptian goods exports. The simple multiplier model also accounts for the decline in exports to neighbouring countries due to the negative impacts of Gaza war on these economies. Considering all these factors and ignoring the real exchange rate channel, as well as the risks associated with the decline in foreign currency revenues and their impacts on economic activity, and fiscal and monetary policy responses, the total economic cost of both shocks could reach $5.6 billion in the low-intensity conflict case, $14.6 billion in the medium-intensity conflict case, and $19.8 billion in the high-intensity conflict case (Figure 26). These economic costs in two fiscal years correspond to 1.6 percent of annual average GDP in the low-intensity conflict case, 3.9 percent in the medium-intensity conflict case, and 5.2 percent in the high-intensity conflict case (Figure 27). The costs indicate a slowdown and a decline in GDP during the shock years, with the economy operating below the no-war baseline case (Figure 28).

Figure 26:

Estimated total economic loss from the decline in tourism and Suez revenues (US$ billion)

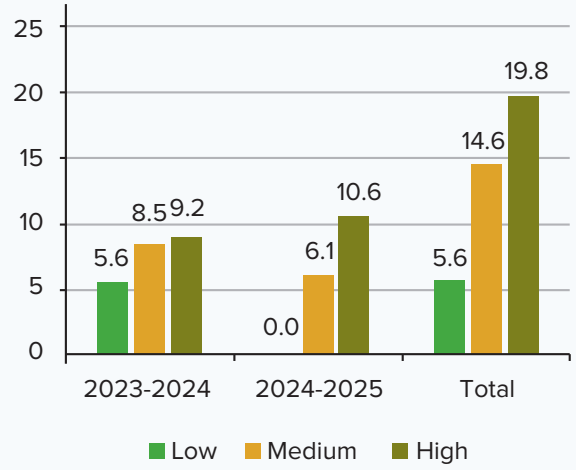


Figure 27:

Estimated total loss as a percentage of annual GDP

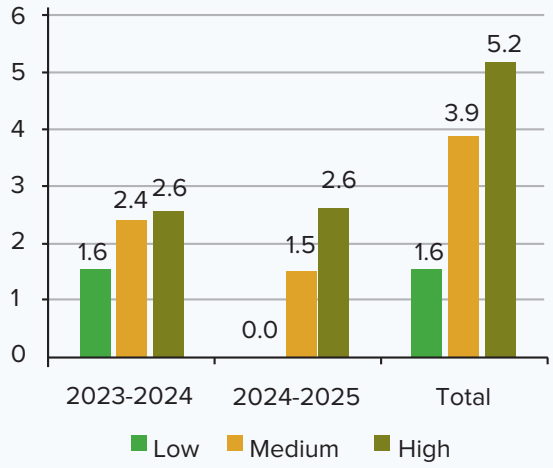
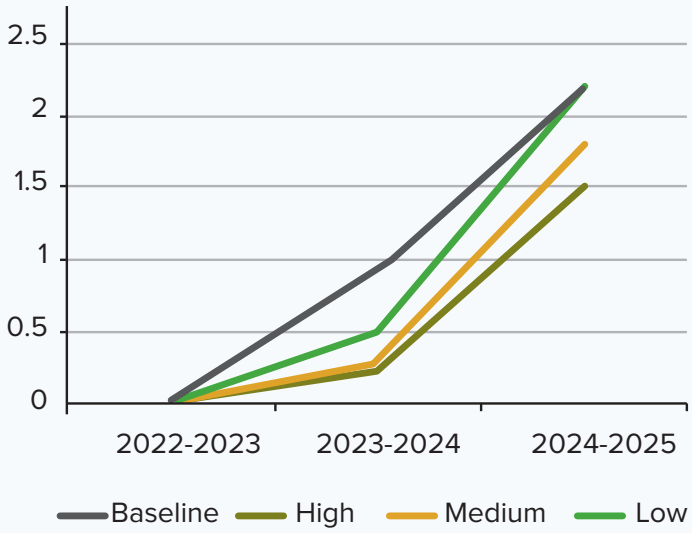


Figure 28:

The estimated growth path after war shock



Source: UNDP calculations.

The reported estimates rely on two assumptions. First, although in practice, the potential decline in economic activity and subsequent recovery may take place in a more gradual and prolonged manner than suggested by the model, the model assumes that all effects occur and are over within a year. However, the estimated costs are close to the more comprehensive dynamic CGE model estimates summarized below. Second, the above calculations assume negligible fiscal and monetary policy responses. This may not be the case, because the Central Bank of Egypt and the Government may take monetary and fiscal measures to accelerate and smoothen

the growth path such as by adjusting the interest policy rate or utilizing reserves, credit and fiscal policies. However, given the very limited monetary flexibility of the Central Bank and fiscal space of the government, the effects of such policy responses remain to be seen.

2.3 Preliminary CGE simulation results

This section provides an initial overview of the potential quantitative effects of the war on macroeconomic indicators. To assess the economy-wide impacts of the Gaza war, the authors constructed a recursive dynamic CGE model (EG_GAZA_CGE), which is a modified version of the PEP1-t single-country recursive dynamic CGE developed by Decaluwé et al. (2013). This approach allows to assess both the direct and indirect effects of one or more exogenous changes on different parts of the economy by accounting for the interlinkages between production, consumption, the rest of the world, enterprises and government sectors. To reproduce the economic benchmark equilibrium, CGE models are calibrated to social accounting matrices (SAMs). The EG_GAZA_CGE model is calibrated using an updated version of the 2018/2019 SAM, which accounts for 23 activities and 23 commodities. However, since the SAM does not include all the parameters required for our model, some parameters and elasticities (e.g. the elasticity of substitution and transformation) are taken from other sources (Lofgren, 2001; Annabi et al., 2006). Against this backdrop, the EG_GAZA_CGE model is used to simulate the three scenarios mentioned in section 2.1.

The simulation results for the low- and medium-intensity conflict scenarios indicate that the effects of these shocks are short-lived and dissipate quickly, which are mostly observed in the first two years. Under the high-intensity scenario, the shock's impact on the Egyptian economy continues at low levels in the medium term. The following three subsections analyse the potential macro, sectoral and household impacts under these three scenarios. The size of the shocks reflects the annual percentage deviation of variables from the baseline (no war) case levels.

The EG_GAZA_CGE model used for this report has three limitations. First, only the recursive dynamic mechanism was used as the primary intertemporal process of capital accumulation. This specification can be extended, however, to incorporate the fully dynamic structure, including all encoded intertemporal adjustments (Lemelin, 2014). Second, the model constructed in this report is a real model and does not consider financial and monetary aspects such as public debt and foreign direct investment.[3] Third, since the model is not linked to microsimulation analysis, it is difficult to investigate the impact of these shocks on poverty and income inequality (Emini, 2020).

a. Macroeconomic impacts

Table 5 shows how the three scenarios would affect real macroeconomic variables. **The low-intensity shock, combining drops in tourism demand, Suez Canal disruptions and an increase in shipment costs, would have a negative impact on Egypt's real GDP (-1.6 percent) relative to the business as usual (BAU) scenario**, as well as on private consumption (-1.3 percent), investment demand (-3.1 percent) and imports (-4.8 percent), while government expenditure is expected to rise (by 3.3 percent) in the first year (Figure 29). In the following fiscal years, all real GDP components are expected to converge to pre-shock period levels. Egypt is highly dependent on imports of food, fuel, capital and raw materials, which increases the vulnerability of its economy to external shocks such as increases in transport costs. In addition, potential supply chain disruptions may have a negative impact on domestic production and the competitiveness of Egyptian exports. As production in some activities declines, this affects factor employment and income, and direct and indirect tax, and hence total government revenue is expected to decline by 1.3 percent, and the fiscal deficit to increase by 1.7 percent. This shock is expected to indirectly affect household consumption due to the decline in household incomes, as factor incomes fall due to contracting production activities, as well as due to the increase in the unemployment rate by 6.2 percent (rising from the baseline of 7.8 percent to 8.3 percent).

The medium-intensity scenario would lead to higher GDP and employment losses than the low- intensity scenario, because in the former scenario, the shock to the tourism sector would be prolonged, stretching over two years, compared to the latter scenario, where it was assumed that it would end in the first year. The annualized increase in international oil and gas prices by 4 percent and shipment costs by 10 percent would increase production costs for many energy-intensive sectors and weaken their competitiveness, resulting in a larger decline in exports. Under this scenario, while the real GDP declines by 2.6 percent in the first year, it declines by 1.3 percent in the following year, relative to the baseline levels. Unemployment would be expected to increase from the baseline of 7.8 percent to 8.7 percent.

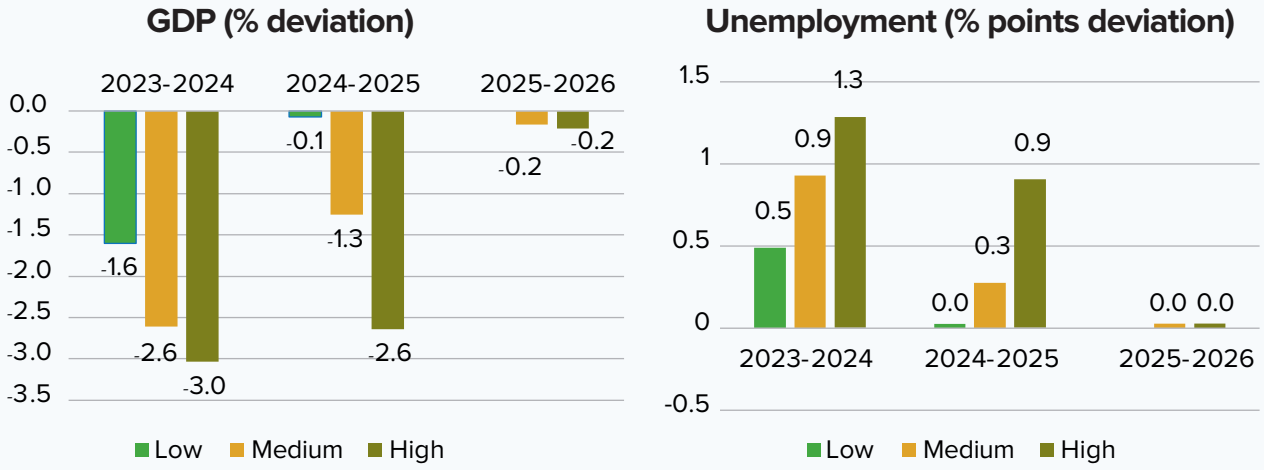
The high-intensity scenario incorporating a steeper and more prolonged decline in tourism activities, a drop in remittances and Suez Canal revenues, combined with an increase in international oil prices and shipment costs would lead to a 3 percent decrease in GDP in the short term (year 1) and a 2.6 percent decrease in GDP in year 2 (i.e. FY 24/25). Opposing forces play a role in influencing the overall price level in the high-intensity scenario. Higher assumed transport costs (15 percent) and global energy prices (13 percent) push up prices. However, the decline in domestic demand due to falling incomes and remittances, as well as the decline in global demand for Egyptian tourism and the Suez Canal leads to a fall in prices. The decrease in domestic and export demand results in a rise in unemployment to

9.1 percent compared to 7.8 percent in the BAU scenario. Consequently, direct tax, indirect tax and total government revenue is estimated to decline by 2.7 percent, and the fiscal deficit[4] increases by 3.7 percent. A decrease in real household income, a decrease in remittances, and a slowdown in domestic production and investment demand could lead to a significant decrease in total imports and trade deficit, as shown in Table 5 and Figure 29.

In a recursive dynamic model, the static equilibrium of each period determines the amount of saving and thus the total amount of investment spending (Lemelin & Decaluwé, 2007). **All scenarios lead to private and public savings losses.** These reduce total final demand for investment by 3.1 percent in the low-intensity scenario and by 5.1 percent in the high-intensity scenario. In a recursive dynamic model, the static equilibrium of each period determines the amount of saving and thus the total amount of investment spending (ibid).

Figure 29:

The estimated impacts of Gaza war on key macroeconomic variables (% change from the baseline)



Source: Authors' elaboration based on the simulation results.

Table 5: Macroeconomic impacts of the Gaza war on the Egyptian economy (% change from the BAU)

	BAU_t1 (EGP billion)	Scenarios								
		1. Low Intensity			2. Medium Intensity			3. High Intensity		
		t1	t2	t3	t1	t2	t3	t1	t2	t3
Real GDP at market prices	5 034	-1.6	-0.1	-0.1	-2.6	-1.3	-0.2	-3.0	-2.6	-0.2
Household total consumption	4 006	-1.3	-0.1	-0.1	-2.1	-1.0	-0.1	-2.5	-2.3	-0.2
Total final demand for investment (gross fixed capital formation)	918	-3.1	-0.2	-0.2	-4.8	-2.8	-0.4	-5.1	-5.3	-0.6
Total government commodity consumption	423	3.3	0.0	0.0	4.9	2.6	-0.1	4.9	4.9	-0.1
Real government revenue	645	-1.3	0.9	1.8	-2.1	-0.1	1.7	-2.7	-2.4	-0.2
Government savings (deficit)	-441	1.7	0.1	0.1	2.9	1.4	0.3	3.7	3.2	0.2
Consumer Price Index	100	-3.5	0.1	0.1	-5.1	-2.9	0.3	-4.8	-5.0	0.3
Total imports	1 364	-4.8	-0.1	0.0	-7.6	-3.8	-0.1	-8.5	-7.9	-0.3
Total exports	906	-1.4	-0.4	-0.4	-2.4	-1.8	-1.0	-2.6	-2.5	-1.2
Trade balance	-458	-11.7	0.7	0.6	-17.9	-8.0	1.6	-20.1	-18.7	1.6
Unemployment rate	7.8%	6.2	0.3	0.3	11.9	3.5	0.5	16.5	11.6	-0.5

Source: Authors' elaboration based on simulation results.

b. Sectoral Impact

Domestic production in different sectors respond differently to the low-intensity shock. The tourism-related and non-tradable sectors experience the worst impact, while export-oriented industries, such as textiles, and import-competing industries, such as chemicals and metal industries, are expanding. The sectors with the highest contraction of output under this scenario are tourism, vehicles, tobacco and

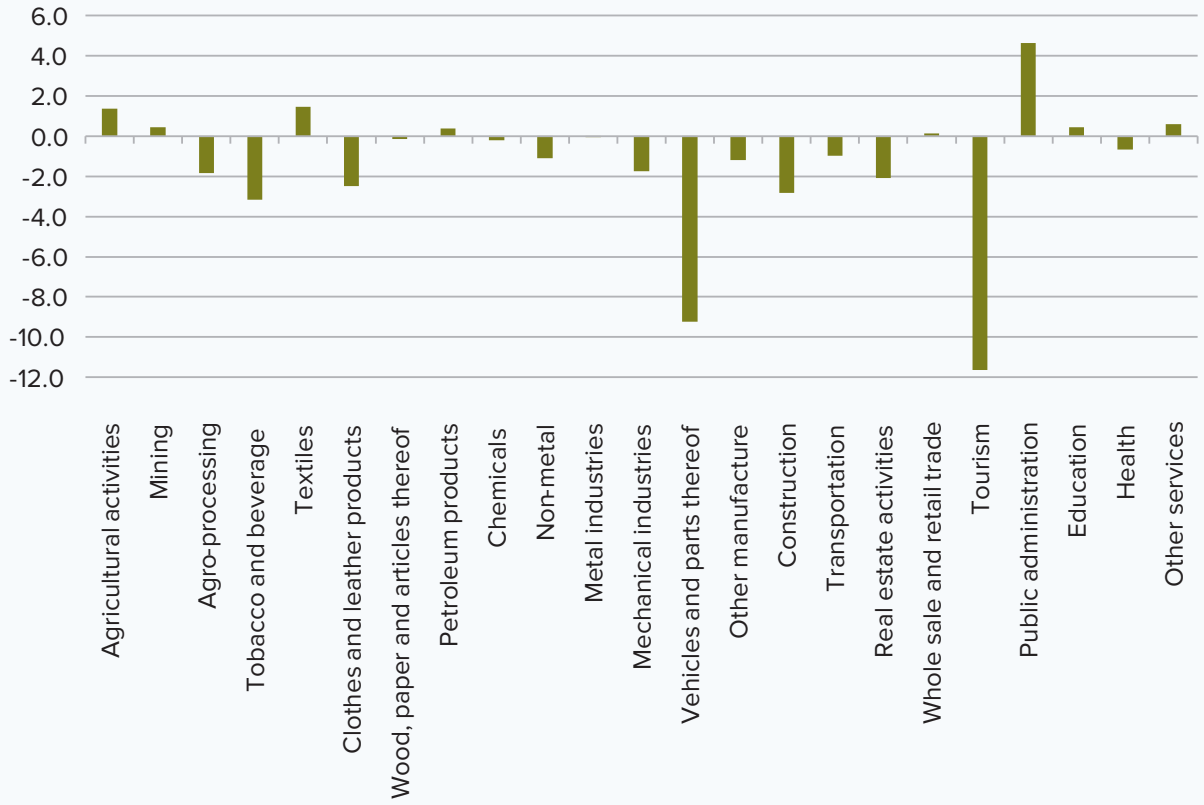
beverages, clothing and food industries. Production could expand in certain groups of activities, particularly in public administration and agricultural activities.

Simulating a 4–13 percent increase in world prices of oil and gas under the medium and high-intensity scenarios would adversely impact energy-intensive activities. According to SAM 2018/19, the construction sector accounts for 28 percent of intermediate demand for petroleum products, followed by transportation, agriculture, and chemicals, with 21 percent, 9 percent, and 8 percent, respectively. This indicates the potential for more significant impacts of increases in petroleum prices on construction, transportation and agriculture sectors due to their high dependency on petroleum to support production.

The high-intensity scenario assessed the impact of a continuation of this war over a 12-month period. This combined shock would change the terms of trade, leading to a decline in aggregate output of almost all sectors, especially tourism and vehicles. Moreover, the public administration sector may expand due to rescue operations, border protection, registration of asylum-seekers, and providing short-term food, healthcare, shelter, social housing, and education, as shown in Figure 30.

Figure 30:

Sectoral impact on aggregate output under the high-intensity scenario (% change from BAU)



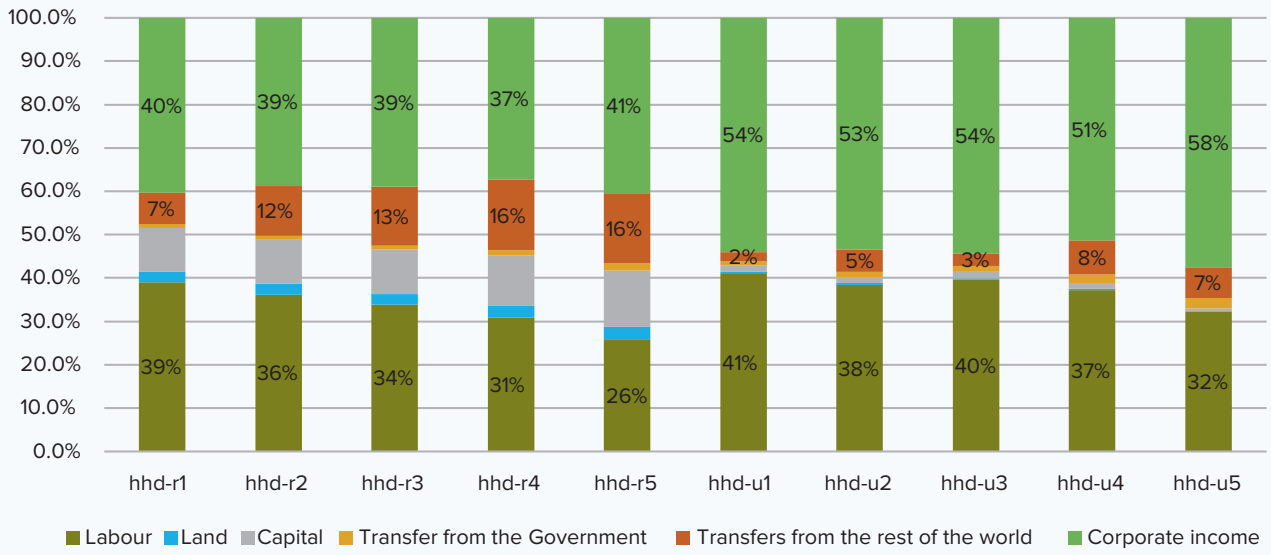
Source: Authors' elaboration based on the simulation results.

c. Household-level Impact

To assess the impact of the various shocks caused by the Gaza war at the household level, it is necessary to analyse the income sources of each household quintile based on their geographical location, as shown in Figure 31. Corporate income[5] is the primary source of income, especially for the richest quintile in urban areas, where it accounts for around 58 percent of their earnings. Labour income accounts for around 39 percent of the income of the lowest quintile in rural areas and around 41 percent of the income of the lowest quintile in urban areas. Around 16 percent of the income of the upper fourth and fifth quintiles in rural areas is attributed to remittances from abroad.

Figure 31:

Sources of household income, by region and expenditure quintile



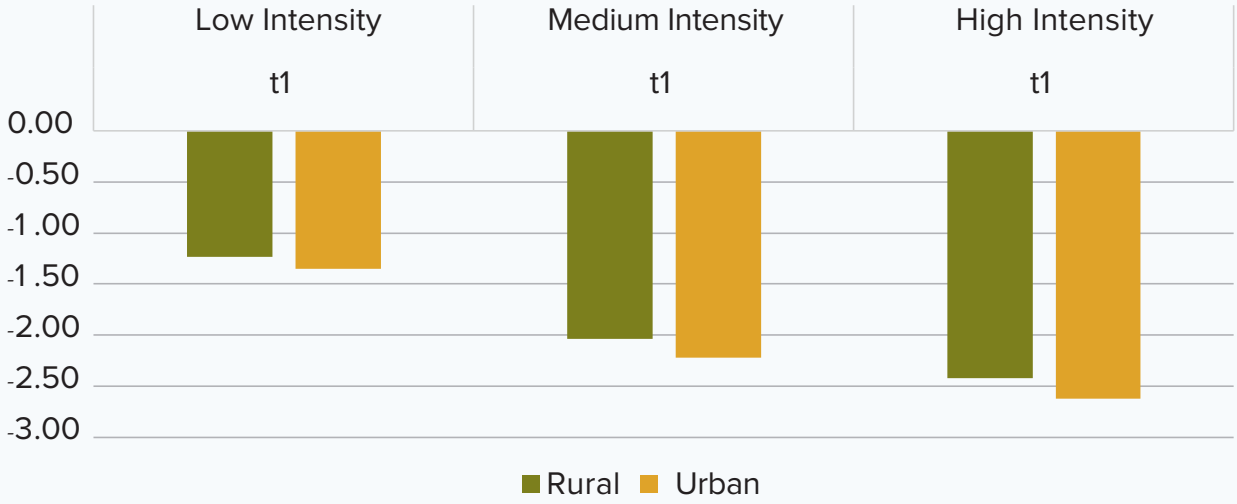
Source: Authors' elaboration based on the Egyptian SAM.
Note: hh-r1 = the poorest quintile among rural households; hh-r5 =the richest quintile; hh-u5 = the poorest quintile among urban households; hh-u5 = the richest quintile.

The Gaza war could lead to a decline in Egyptian households' factor incomes due to contracting production activities. The low-intensity scenario would cause a 4.2 percent decline in average wage (formal wage -2.9 percent, informal wage -5.3 percent). In addition, household income from enterprises would decline by about 4.9 percent. The high-intensity scenario would lead to a 6.2 percent decrease in average wages in the first year of the shock (formal wage -4.1 percent; informal wage -8.3 percent), while in the second year, the average wage would fall by 6 percent. The adverse effects on urban and rural household groups are mostly driven by increases in petroleum prices. Petroleum products are used as intermediate inputs in almost all production activities. Therefore, the increase in international prices of

oil and gas by 13 percent together with the increase in the cost of shipping implies increased production costs, especially in energy-intensive industries. This will result in a significant decrease in factor demands and incomes. The urban household will experience a greater decline in income in the high-intensity scenario because of the decline in average wages. Figure 32 illustrates how the three scenarios may affect real household income across different regions.

Figure 32:

Average impact of the three scenarios on real households' income, by region (% change from BAU)



Source: Authors' elaboration based on the simulation results.

2.4 Potential impact on poverty

2.4.1 Multidimensional Poverty Index

The aim of this section is to simulate the potential impact of the war in Gaza on Egypt's MPI[6] using the baseline scenario derived from the MICS 2013–2014 survey[7] (latest available survey) and Oxford Poverty and Human Development Initiative-(OPHI) UNDP methodology to estimate MPI for Egypt based on the global MPI methodology.[8] The methodology allows to estimate the headcount ratio (H),[9] the intensity of poverty (A)[10] and the MPI (H*A). The results of the baseline scenario shows that H=5.9 percent, the intensity of poverty A=40.5 and MPI=0.024.[11]

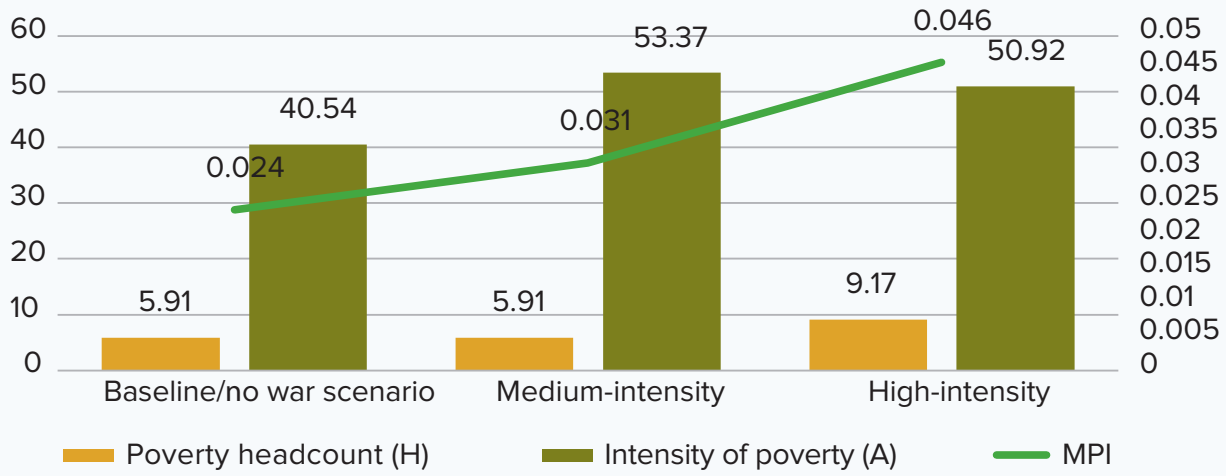
For each of the scenarios described in section 2.2, the deprivation matrix as estimated in the baseline scenario is shocked. In the medium-intensity scenario, it is assumed that the population of Egypt that was multidimensionally poor but

not deprived in education (school attendance) and sanitation will become so.[12] This will lead to an increase in the intensity of poverty to A=53.4 percent (up from 40.5 percent in the baseline scenario), and MPI will increase to 0.031 (up from 0.024 in the baseline scenario).

Under the high-intensity scenario. Hence, this high intensity scenario assumes that the vulnerable and poor (weighted deprivation score higher than 0.27) who were not deprived in education and sanitation will become so. The result of the simulation shows that H will increase to H=9.2 percent (up from 5.9 percent in the baseline scenario), A=50.9 percent (up from 40.5 percent in the baseline scenario) and MPI=0.046 (up from 0.024 in the baseline scenario). Under this scenario, there is also a high probability that an increase in food prices will affect the level of nutrition, which further aggravate the level of multidimensional poverty. The results of the above scenarios are illustrated in Figure 33.

Figure 33:

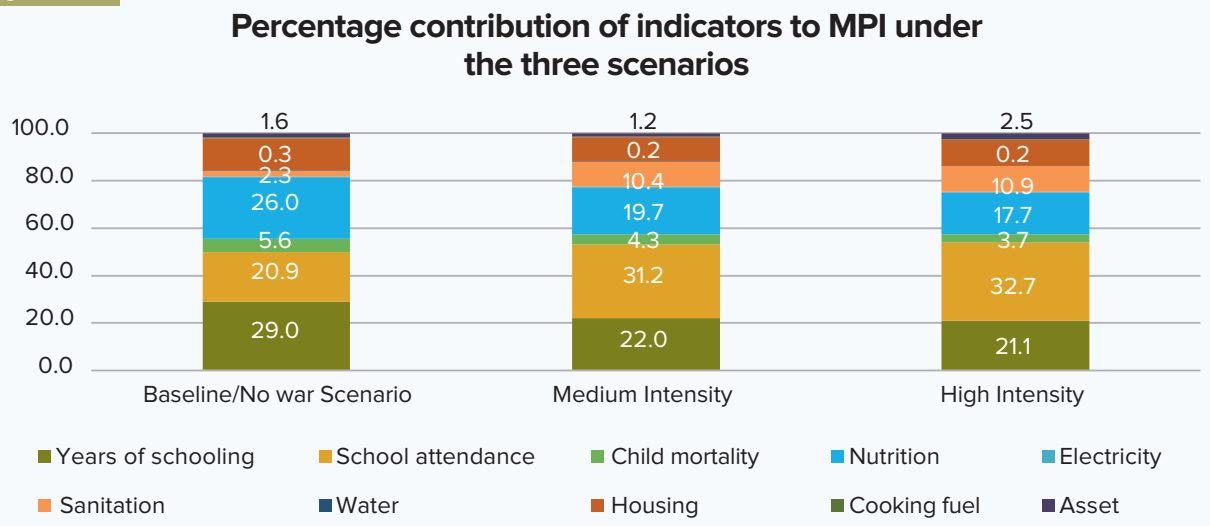
Simulations on MPI based on the three scenarios



Source: Authors based on the MICS survey 2013–2014.

Figure 34 illustrates the estimated dimensional contribution to the MPI, showcasing the evolving impact of school attendance and sanitation indicators across different scenarios.

Figure 34:

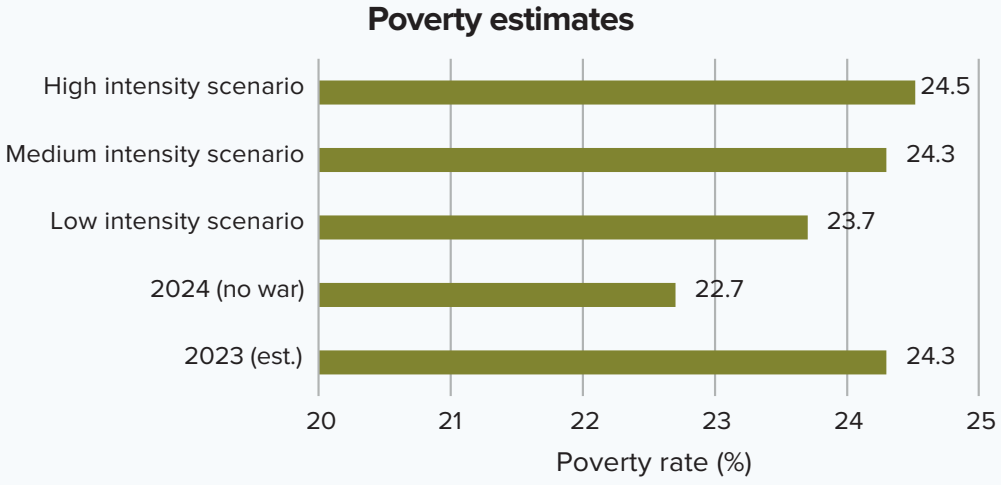


Source: Based on the MICS survey 2013–2014.

2.4.2 Monetary poverty

Without war, the estimated poverty rate at US3.65 per capita per day would have been 24.3 percent in 2023, according to World Bank Macro Poverty Outlook.[13] When applying growth elasticity of poverty of -2.49 as estimated by Ravallion (2022),[14] the poverty rate may decline to 22.7 percent in 2024. However, the war is expected to put a break on poverty reduction. Under the low-intensity scenario, the poverty rate is expected to be 23.7 percent rather than 22.7 percent (still a decline from its level in 2023, but a greater number of people could have escaped poverty had there been no war), while under the Medium intensity scenario, the poverty rate is estimated to be 24.3 percent rather than 22.7 percent (or the poverty rate will remain at the same level as in 2023). Under the high-intensity scenario, the poverty rate would be 24.9 percent (or, alternatively, the rate of poverty will increase from 24.3 percent in 2023 to 24.5 percent in 2024).

Figure 35:



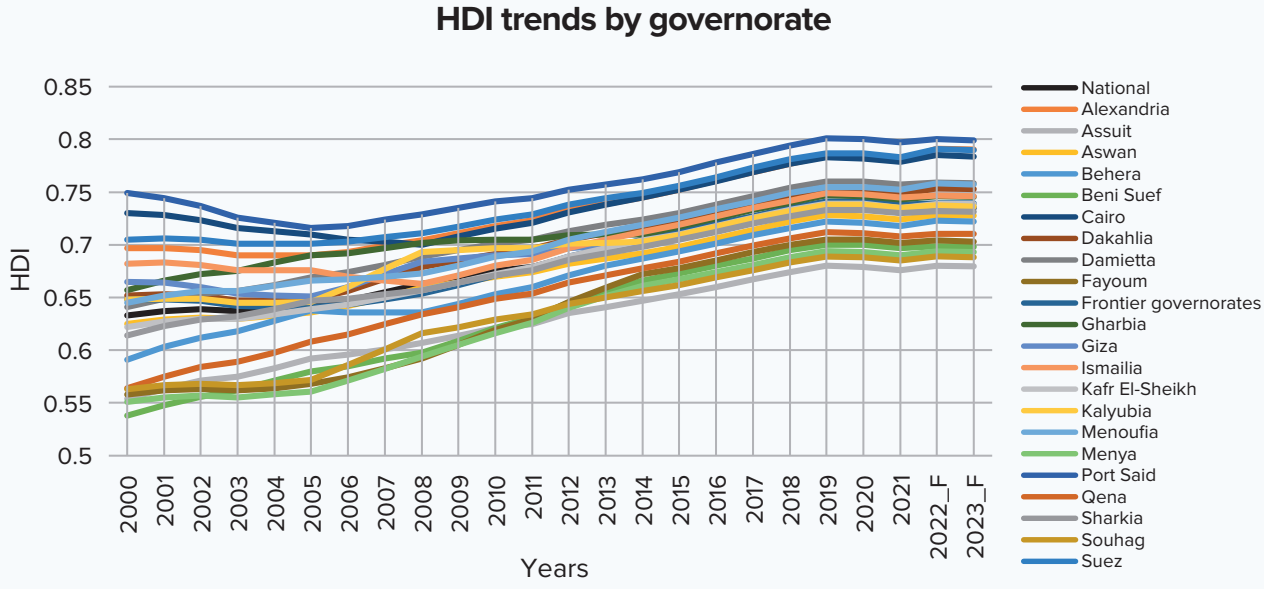
Note: Poverty is estimated according to the international poverty line of $3.65 ppp/capita/day.

Available literature shows that economic growth will result in a reduction of poverty when assuming a distribution neutral growth and no change in the poverty line. Some studies have shown, however, that compared to its peers, poverty in Egypt has increased despite growth, leading to a positive relationship between economic growth rate and poverty rate. For example, a study by the World Bank[15] shows that poverty increased from 2015 (27.8 percent) to 2017 (32.5 percent). Recently published official poverty estimates show a reduction in the poverty rate to 29.7 percent but the poverty rate remains elevated compared to the 2015 level. Based on the international poverty line of US$1.90 per day, the poverty rate increased from 1.6 percent in 2015 to 3.8 percent in 2017, and the number of people living on US$3.20 per day rose from 18.2 percent in 2015 to 28.9 percent in 2017, despite per capita GDP growth, which translates into a positive poverty-to-GDP growth elasticity of 7.5. The estimated poverty rate of US3.65 PPP/capita/day (i.e. 24.3 percent) remains higher than in 2015.[16] As a result, the poverty-to-GDP growth elasticity is positive for this period: growth occurred while poverty increased. According to Egypt's diagnostic update, the increased inequality explains the increase in the poverty rate despite economic growth. Inequality in consumption, measured by the Gini index, fell from 30.2 in 2010 to 28.3 in 2012 but rose to 31.5 in 2017.[17]

2.5 Potential Impact on the Human Development Index

This section aims to assess the potential impact of the war in Gaza on Egypt's Human Development Index (HDI) ranking. Egypt has slightly improved its ranking on the HDI over the past two decades: in 2000, it ranked 99, with an HDI value of 0.633, while in 2022, it ranked 105, with an HDI of 0.728. The data also highlight notable regional disparities within the country (Figure 36). For instance, in 2021, the HDI value ranged from 0.676 in Assiut to 0.797 in Port Said, i.e. a difference of 0.121, while the HDI range in 2000 was 0.221. The projections for 2022[18] and 2023 highlight a trend towards recovery after the pandemic, but the ongoing conflict in Gaza could impede this progress and jeopardize the gains achieved in the post-COVID-19 period.

Figure 36:



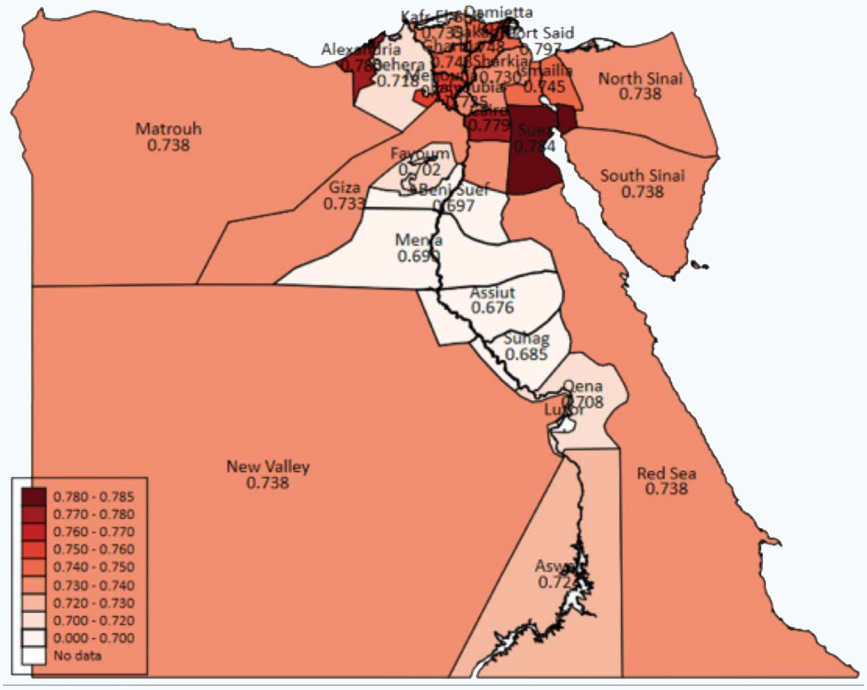
Sources: Data retrieved from the Subnational HDI Database of the Global Data Lab, https://globaldatalab.org/shdi, version v7.0; Smits, J. & Permanyer, I. The Subnational Human Development Database. Sci. Data. 6:190038 https://doi.org/10.1038/sdata.2019.38 (2019).

Note: Data for 2022 and 2023 are the authors' projections using autoregressive integrated moving average (ARIMA) models.

The HDI growth rate in Egypt governorates ranged from 6.4 percent in Port Said to 29.6 percent in Beni Suef. When focusing on the Frontier governorates (Red Sea, New Valley, Matrouh, North Sinai, South Sinai), the data show that the HDI increased from 0.648 in 2000 to 0.738 in 2021. This indicates an overall growth rate of 13.9 percent, which is lower than the national HDI growth estimated at 15.4 percent during the same period.

Figure 37:

HDI by region, 2021

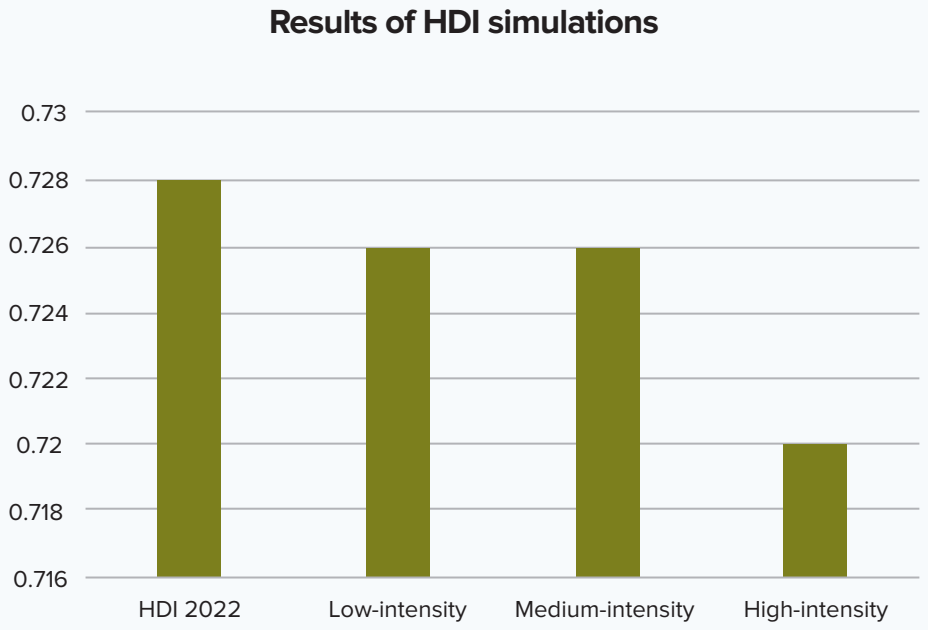


Source: Authors using Data retrieved from the Subnational HDI Database of the Global Data Lab, https://globaldatalab.org/shdi, version v7.0; Smits, J. and Permanyer, I. The Subnational Human Development Database. Sci. Data. 6:190038 https://doi.org/10.1038/sdata.2019.38 (2019). The shape file for Egypt map was retrieved from https://data.humdata.org/dataset/cod-ab-egy?

The HDI figures are expected to be negatively affected by the war. The Sinai regions are expected to be affected more than the others given their proximity to the Palestinian border; however, given the unavailability of subnational data on GNI per capita, this section will simulate the impact on HDI at the national level. Building on the results of CGE models, the authors estimate the impact of the three scenarios discussed below.

In the low-intensity scenario, it is assumed that the gross national Income per capita (GNIPC) may decrease by 3.2 percent compared to the baseline, while all other indicators are assumed to remain unchanged. In the medium-intensity scenario, it is assumed that the GNIPC may decrease by 4.2 percent from the baseline, while all other indicators are assumed to remain unchanged. In the high-intensity scenario, it is assumed that the expected years of schooling may decrease by 0.5 years. Additionally, the GNIPC is expected to decrease by 4.8 percent. All other indicators are assumed to remain unchanged. The results of the above scenarios are illustrated in Figure 38.

Figure 38:



Source: Based on data from latest Human Development composite indices tables.
https://hdr.undp.org/data-center/documentation-and-downloads

The simulations indicate that the HDI would marginally decrease from 0.728 in 2022 to 0.726 in the first and second scenarios, and to 0.720 in the third scenario. This would revert human development in Egypt to the 2021 level in the first two scenarios and to the levels seen in 2018[19] in the third scenario.

Chapter 3:
Conclusions and policy recommendations

Prior to the war, Egypt was facing mounting macro-financial and socioeconomic fragilities. The Gaza war amplified these challenges mostly through a significant decline in tourism and Suez Canal revenues. These costs may imply a potential decline in economic activity and an increase in unemployment and poverty, relative to the no-war scenario. The total estimated economic cost of Gaza war on Egypt's economy ranges from $5.6 billion to $19.8 billion, depending on the duration and intensity.

In order to reduce the mounting problems and support the macro-financial stability, the Egyptian Government recently signed a new agreement with the IMF, an ambitious investment partnership with the UAE, as well as the Egypt-EU Strategic Partnership Agreement. The foreign capital inflow through these agreements will likely help the Government mitigate problems and the negative impacts of the Gaza war. **The ongoing crisis also presents an opportunity for Egypt to invest in transformational change.** This might extend beyond policies and institutional arrangements, and includes a focus on shifting social norms, beliefs and values (culture), as iterated in UNDP's Global Human Development Report of 2022.[1] A new push for reform programmes centred on the business environment, private sector-led growth and governance systems was proposed recently.[2] Moreover, the evolving conflict bordering Egypt's North Sinai Governorate presents an opportunity to direct targeted development programming to this important area, both for immediate emergency response, but also in terms of longer-term development prospects.

Based on chapter 2, some pre-emptive stimulus measures are recommended for the short to long term, as detailed below.

In order to mitigate the impact of the current compounding problems on Egypt's social and economic outlook, and following an inclusive, people-centred approach, UNDP proposes the following recommendations, with a focus on "prepare, respond and recover".

3.1 Recommendations related to the impact of the Gaza war: prepare and respond, 'breaking the cycle of fragility'

In the very short term, Egypt can mitigate the impact of the war, and strive to avoid the worst case scenario by working towards achieving an immediate and permanent ceasefire, and urgently starting reconstruction and rehabilitation programmes in Gaza while ensuring sufficient international humanitarian support.

Key recommendations for Egypt directly related to preparing and responding to the impact of Gaza War inside Egypt, and breaking the cycle of fragility are outlined below. These interventions target the most vulnerable communities potentially impacted by negative economic implications of the crisis (decline in employment due to disruptions in key economic sectors such as trade and tourism, currency devaluation) over the short and medium term.

A. **Strengthen area-based basic service delivery and infrastructure (focus on health, WASH, social services) to address the immediate needs of the most vulnerable or directly affected individuals and communities in the relevant governorates and/or relevant geographical areas, as needed (e.g. North Sinai).** It is expected that Egypt will bear the responsibility of providing urgent care medical services and humanitarian aid to approved cases that have crossed the border from Gaza. This includes promoting location-specific measures such as:

   - strengthening public health infrastructure and increase funding to healthcare facilities in anticipation of potential caseload increases due to the conflict;
   - ensuring an adequate supply of medical supplies and pharmaceuticals, with a contingency plan for rapid procurement if stocks are depleted;
   - establishing specialized mental health programmes focused on trauma from conflict exposure, including support services for refugees and displaced persons. This entails extending Mental Health and Psychosocial Support (MHPSS) interventions for immediate response, including financial and technical assistance to the Egyptian Red Crescent and other trusted local/community-based NGOs, and the deployment of online mental health

services, as well as longer-term interventions including comprehensive training programmes for local professionals;

- deploying online health services for women, persons with disabilities and vulnerable groups, such as telehealth, medical mobile applications, support centres, and hotlines in collaboration with the private sector. Invest in improving or setting up adequate infrastructure and equipment (medical centres, GSM and high-speed internet connectivity based on agreements with telecommunication service providers, and medical equipment);

- accelerating investments in the resilience of critical infrastructure to ensure the continuity of services such as healthcare, electricity and water, particularly in the areas most likely to be affected by spillover effects of ongoing crises, and also in transportation, energy, and public utilities to ensure they can withstand regional disruptions;

- investing in infrastructure including through cash-for-work interventions that support the expansion of WASH infrastructure and services that benefits all members of the community, context-specific public awareness campaigns, etc.;

- prioritizing the repair and maintenance of infrastructure strained by any spillover effects from regional conflicts, ensuring rapid restoration;

- increasing community security, access to energy, and enhanced well-being of people in host communities through the installation of renewable energy systems for lighting and heating;

- building the capacities of frontline workers and service providers from local and host communities to act as first responders. Facilitate training and capacity building activities for humanitarian workers, healthcare providers, civil society organizations, and community-based organizations as well as other service providers operating at the local level in support of affected communities and individuals at risk of sexual and gender-based violence. This includes training on survivor-centred approaches, trauma-informed care, and conflict-sensitive approaches;

- building the capacities of the local public authorities. Support the strengthening of national and local institutions to enhance their ability to manage crises and implement effective response strategies during and after crises.

B. Formulate a robust crisis-response cooperation platform that includes development partners, the Egyptian Red Crescent, civil society, the private sector and relevant local-level stakeholders to ensure timely response to the evolving context, and rapid mobilization of resources based on evolving, prioritized needs.

C. Reinforce livelihoods, economic inclusion, social protection and food security to mitigate the socio-economic impact on most vulnerable communities in Egypt.

The focus is on interventions that build the resilience of individuals and communities directly or indirectly affected by the socio-economic impact of the crisis by:

- securing livelihoods and food security as follows:
  - identifying the most vulnerable/affected communities and ensuring the availability of and access to food in coordination with humanitarian partners that are capable of deploying food assistance programmes targeting forcibly displaced people;
  - providing grants to and build capacity of local food producers, especially smallholders and local food processors so that they may maintain and expand livelihoods, and contribute to increases in local and national food production through adequate access to seeds, fertilizers and fuel;
  - supporting the development of income-generating activities through the establishment of processing units for agricultural products for households in the targeted communities;
  - facilitating the creation of short-term employment, such as through grants and cash-for-work, to support immediate individual income and strengthen the delivery of basic services, i.e. ensuring food security and nutrition, and providing WASH facilities, and social work and care services;
  - supporting small and medium-sized enterprises (SMEs) through financial aid, training and access to markets, helping to stabilize the local economy and maintain employment levels.
- facilitating dialogue and conflict resolution initiatives to prevent the escalation of tensions and promote understanding between different community groups;
- facilitating access to shock-responsive social protection schemes by adopting measures by:
  - improving and increasing the coverage and delivery of social services by expanding the fiscal space for social expenditures on health, education,

social protection and care, and improve the systems for identifying social assistance beneficiaries;

- supporting the deployment of social protection interventions by strengthening active labour market policies, supporting microcredit programmes, microenterprises creation and vocational training.

D. Support the tourism value chain and consider shifting to sustainable tourism as an alternative model to enhance resilience, prioritizing local communities, by:

- providing immediate assistance to struggling enterprises in the tourism value chain through cash assistance and capacity building to help MSMEs better cope with the short- term impact and strengthen their resilience in the longer term;

- developing a recovery strategy for the tourism sector that re-attracts tourists and facilitate a future direction to a more sustainable model. This includes targeting new markets and diversifying types of tourism such as cultural, natural, religious, medical and leisure tourism. Any strategy should avoid the overexploitation of natural capital and bring long- term benefits to both the Government and local communities, including by providing sustainable jobs to women and youth in the value chain;

- based on the strategy, launching large-scale marketing campaigns to sustain tourist interest and attract visitors from new identified markets. Disseminate risk management advisories to assure tourists of Egypt's safety and encourage travel to the country; and

- capitalizing on the role of big data in understanding the changing trends in tourism in Egypt, which predict uncertainty and address volatility in close coordination with the private sector. This entails tracking innovative metrics that drive policy and investment decisions for more resilient options.

E. Strengthen the resilience of sectors most impacted by the crisis, especially due to trade disruption through the Suez Canal, while promoting the growth of sectors such as textiles and agriculture that continue to positively contribute to outputs amid the crisis, as follows:

- establishing a fund to promote access to finance, especially for the manufacturing sector, with the aim of restarting value chains that had been impacted in the last few months, and promote private sector engagement in key resilient sectors, with a focus on technologically advancing agricultural production chains;

- capitalizing on the opportunity and competitiveness of the manufacturing sector for exporting local products, given the most recent devaluation in March 2024, and ensure that the ecosystem for production and manufacturing is conducive. Access to finance to the manufacturing sector is a key element for a favourable outcome and for tapping into alternative sources of funding (e.g. grants from bilaterals to the private sector);

- encouraging foreign investment in key sectors by creating economic zones with benefits for businesses willing to invest in affected regions;

- developing and implementing a recovery plan specifically targeting industries that are vulnerable to disruption from regional conflicts, such as tourism and automotives;

- working with international organizations to align national policies with global best practices in crisis response and recovery.

F. **Invest in responsive institutions and pursue multi-dimensional risk assessment to inform development and contingency planning.** Capabilities, such as in governance systems, should be acquired towards promoting inclusion and building trust for sustained collective action, by:

- building capacities and systems at the national and subnational levels to collect, analyse and apply risk information in development planning and implementation at all levels while building the capacities of sectoral agencies for carrying out multi-dimensional risk assessments, and using big data to generate insights into poverty trends, risk analysis and early warning. Initiatives such as Thinking and Working Politically and Problem-Driven Iterative Adaptation can be useful when addressing issues of this complexity;

- developing institutional capacity for relevant government institutions involved in development planning to carry out macro-economic impact assessments and dynamic vulnerability assessments, and to use foresight methodologies such as horizon scanning to identify signals and trends of change. The aim is to make best use of data and analytics for risk-informed, anticipatory decision-making to inform sustainable development pathways; and

- utilizing foresight methodologies and tools to develop risk-informed policies and interventions in the short, medium and long term, and establish a plan-ahead team within the Government comprising key ministries and relevant United Nations agencies in order to anticipate and prepare for crises.

G. Strengthen policy support towards resilient socio-economic development priorities targeting policy- and decision-makers responsible for development planning, at all levels of public administration, as follows:

- developing vulnerability measures to target and monitor the evolution of vulnerability and needs, measure impacts by connecting vulnerability data and indicators with the SDGs, and capture and track the results of resilience response and interventions more specifically. The Digital Social Vulnerability Index (DSVI)[3] is a measure piloted by UNDP that can inform socio-economic development decision-making by using machine learning to better understand spatial patterns of social vulnerability.

- promoting the use of methodologies to analyse and monitor risk perception such as:
  - methodologies for data interpretation, data analysis and communicating information that combines data rigour with risk perception and risk reimagination involving local populations, academia and think-tanks; and
  - methodologies for measuring human development. Data collection for measuring human development is challenging as it is difficult to obtain accurate and high-quality information at the local level. There is a need to expand the research and measurement of social norms, including perceptions and values.

3.2 Recommendations to recover from, anticipate and prevent crises: investing in hope

Together with immediate preparedness for and response to the impact of the Gaza war on Egypt, investing in recovery and prevention measures will also be important. Some of the recommendations are based on the need to address structural issues that prevailed even before the Gaza war, but that have become even-more pressing as a result of the ramifications on Egypt of the war, and the opportunities for transformational change that have emerged.

A. Building an analysis of social implications and extensively communicate policies as a basis for reform.

This can be achieved as follows:

- assessing the immediate and long-term economic and social impacts of IMF-supported stabilization programme and structural reforms announced by the Government;
- evaluating the effects of the IMF-supported stabilization programme on the poor and other vulnerable groups (informal sector workers and socially marginalized communities, women, refugees and others) to ensure that potential negative impacts are mitigated;
- ensuring effective strategic government communication with the public at all times. Following a period ridden with uncertainty and fast developments since 2011, both internal and external, there is now a timely opportunity to reshape the Government's strategic communication with citizens by:
  - developing a communication strategy to ensure clear, credible and consistent government communication to tackle disinformation, rumours and uncertainty. There should be no institutional mixed messages and a high level of transparency and information sharing to enhance public trust in Government;
  - developing and disseminating inclusive response and recovery plans and mitigation measures, demonstrating a focus on decreasing social and economic impact of immediate risks;
  - building the capacities of key government entities for adapting the latest approaches to communicating in times of high uncertainty and for designing effective communication strategies; and

- addressing misinformation and disinformation, enhancing media literacy and ensuring timely public access to credible media information.

B. Strengthening adaptative social protection and reduce inequalities

Social insurance enhances human security and can stimulate risk taking and investment, supporting other elements of institutional change and policies. Key policies in this area relate to social protection that can shield people against shocks, achieving a dual purpose: protection and promotion. Adaptative social protection builds safety nets (e.g. savings, insurance, information) to prepare households to face unforeseen situations so that they can smooth consumption, retain assets, and reduce exposure to shocks. Hence,

- social expenditure and safety nets should be increased and improved by them shock-responsive and risk-informed, as follows:
  - improving the identification and targeting of vulnerable groups, incorporating risk and vulnerability analysis into national social protection schemes, designing flexible social protection instruments that can rapidly adapt and respond to shocks, planning for anticipatory action to reduce the impact of crisis on vulnerable groups, and preventing negative coping strategies.
  - catering to the needs of vulnerable individuals working in the informal sector, particularly women.

C. Embarking on an ambitious programme of labour market reforms

In order to help address the crisis, the country should also embark on an ambitious programme of labour market reforms that tackles unemployment and informality. These reforms range from extension and affordability of social security, to stronger active labour market policies aiming to accelerate school-to-work and informal-to-formal job transitions, and bridge the gap between labour supply and demand. Moreover, recent trends such as European companies' reshoring and near-shoring present a significant opportunity for Egypt, given its low labour costs and potential as a logistics hub. Leveraging preferential trading agreements with the EU and other Arab countries can attract third-country investors that wish to access domestic, regional and EU markets, creating more, good quality jobs in Egypt.

D. Promoting wide-spread insurance to guarantee protection or compensation against shocks resulting from uncertainty.

This entails expanding market insurance under properly regulated frameworks, where market insurance providers have the space to innovate to offer services that address the growing context of uncertainty, and expanding social insurance (as outlined above).

E. Advancing development financing solutions.

This can be achieved as follows:

- exploring various development financing opportunities and utilize the Integrated National Financing Framework to strategically mobilize financing resources in line with Egypt's development goals;
- considering approaches such as state-contingent debt instruments that can help economies quickly and predictably respond to shocks. These instruments enable countries to manage their sovereign debt payments depending on changes in their capacity to pay as a direct result of shocks. State-contingent debt instruments may act as insurance that provides countries with the space to apply countercyclical and stabilization policies that are immediately triggered after well-specified adverse events take place;
- considering and conducting feasibility studies of Refugee Development Impact Bonds or debt for refugee swap programmes, due to the growing number of refugees currently residing in Egypt as a result of the ongoing crises, especially in Sudan, and also because they both contribute to building economic resilience for refugees and host communities. This was launched in 2021 in Jordan to fund delivering vocational, entrepreneurship and resilience-building programme for refugees and host communities, supported by European private foundations;[4]
- expanding financial inclusion, which can reduce poverty and inequality through access to credit and insurance. Access to financial services can greatly contribute to Egyptians' ability to navigate changing and uncertain economic conditions. Digital banking, payments, and loan enable wider financial inclusion, especially among underserved groups;
- promoting financial literacy to enable financial inclusion, possibly by incorporating into educational curricula;
- accelerating plans to improve the business environment. Streamline licensing procedures, establish one-stop shops for investors, advance market competition regulations, provide incentives for women-run businesses, and support private sector engagement measures;

- undertaking spending efficiency reviews of public investment for efficiency gains, and prioritize infrastructure projects based on clear criteria that positively impact the economy, natural resources and vulnerable groups. Ensure that a sound cost-benefit analysis is conducted for all projects.

In terms of the policy response options, the literature on the COVID-19 pandemic responses worldwide offers some lessons showing that increasing public current consumption without sectoral targeting can have positive welfare effects but can hurt economic growth and employment due to the increase in fiscal deficit. Similarly, in terms of social policies, transfers to households and/or domestic businesses and to irregular workers can increase private consumption, but can also negatively affect economic growth and employment with a deteriorated fiscal stance. Increasing efficient public investment can increase growth, welfare and employment in the short term. The monetary stimulus package can also have growth and well-being effects in the long term compared to the fiscal stimulus package, since the latter can raise the cost of production due to the crowding-out effect, while the former can reduce it.[5] Any reform and stabilization programme will need to be designed, managed and monitored carefully bearing in mind the short- and long-term welfare implications for the population.

To conclude, the crisis presents an opportunity for Egypt to transform its growth model, which has primarily relied on private consumption without a commensurate increase in productive investment. This approach, often volatile due to political and economic uncertainties, has left the economy heavily reliant on the service sector, a few export commodities, and limited export competitiveness, rendering it highly vulnerable to external shocks like the current Gaza war. Adopting a new model demands a fresh vision and actionable strategies to address the structural causes of its prolonged economic vulnerabilities.

However, this potential should be harnessed more effectively through targeted infrastructure investments, including a more integrated maritime and land-based transportation system. Additionally, a streamlined and modernized institutional framework is necessary to facilitate private economic activity, promote regional economic integration through cross-border value chains, and instil confidence in the economy's future prospects. Furthermore, there is potential to enhance regional economic cooperation in the Red Sea to protect its valuable marine ecosystem.

Recent developments, including new loan agreements with international financial institutions, capital inflows from neighbouring countries, and the EU Partnership Agreement, offer Egypt an opportunity to further support its stability and resilience. This underscores the need for heightened prudence and foresight in navigating Egypt's economic trajectory.

Endnotes

Endnotes Chapter 1:

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Endnotes Chapter 2:

1 The total loss (as a share of annual average GDP) in Figure 22 shows the ratio of total loss in US$ to the average of expected annual GDP levels for the two fiscal years prior to the crisis. The same applies to Figures 24 and 26.

2 GDP is defined as the sum of private consumption, investment, government expenditure and net exports. Net exports encompass exports of goods and other services plus travel receipts, minus total imports of goods and services. The simple behavioural equations for each variable are calibrated to reflect economic structures. The marginal propensities to consume, invest and import are taken as 0.75, 0.12 and 0.35, respectively. The elasticities are calibrated considering Mohammed Sayed Abou Elseoud (June 2018), Keynesian Multiplier: Does it Matter to Egyptian Economy, *Journal of Islamic Financial Studies*, Loutfi M., Moscardini A.O. and Lawler K. Using System Dynamics to analyse the Economic Impact of Tourism Multipliers, and expert views.

3 The literature review introduces two types of CGE models: real and financial. The numeraire in real CGE models is a price or price index to which all other prices are relative. In single-country open economy CGE models, the numeraire is usually either the consumer price index or the nominal exchange rate. In practice, the numeraire in single-country open economy CGE models is usually either the consumer price index or the nominal exchange rate. In financial models, in contrast, the numeraire is replaced by explicit financial market equilibrium conditions, and hence monetary policy actions are explicit. However, these financial models can be data intensive (Cicowiez et al., 2020).

4 In the Partnership for Economic Policy (PEP) model, the current government budget surplus or deficit (positive or negative savings, SGt) is the difference between its revenue and its expenditures.

5 Earnings from farm and non-farm enterprises are usually reported at the household level and are assigned to individual household members based on their reported employment status and sector of employment. This includes indirect gross operating surplus paid from the earnings of household nonfarm enterprises, dividends and private pension funds.

6 The Multidimensional Poverty Index (MPI) serves as a crucial metric for assessing household deprivation and guiding social protection interventions. The global MPI evaluates deprivations in three primary dimensions: health, education, and standard of living. See https://ophi.org.uk/Publications/GMPI-2018 . The literature has shown that increased food prices can trigger an income effect, prompting households to cut back on health and education expenses. Alternatively, families may augment their income by withdrawing children from school for labour. Numerous studies have established a connection between food prices and education. For instance, Grimm (2011) found that adverse income shocks caused by high food prices led to decreased school enrolment in Burkina Faso. Singh and Vatta (2013) as well as Raihan (2009) documented the detrimental effects of high food prices on educational outcomes in Punjab and Bangladesh, respectively.
Grimm, M. (2011). Does household income matter for children's schooling? Evidence for rural sub-Saharan Africa. *Economics of*

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8 For more details on global MPI and its farmwork, see: https://www.ophi.org.uk/wp-content/uploads/OPHI_MPI_MN_52_2022.pdf

9 The headcount ratio is the share of multidimensional poor population relative to the total population.

10 The intensity of poverty refers to the average deprivation score among the poor.

11 These results are similar to the UNDP-Oxford Poverty and Human Development Initiative (OPHI) results (link), using the DHS 2014 survey. (The cooking fuel indicators were not available in DHS; hence, the MPI farmwork included 9 rather than 10 indicators).

12 It should be noted that since the multidimensionally poor only are targeted under this scenario, an increase in the headcount ratio should not be anticipated.

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19 The HDI was estimated at 0.717 in 2018 and 0.724 in 2019. Employing linear interpolation, the authors determine that a value of 0.720 (the third scenario) would have been observed around early May 2018.

Endnotes Chapter 3:

1 https://hdr.undp.org/system/files/documents/global-report-document/hdr2021-22reportenglish_0.pdf

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3 Piloted by UNDP, DSVI is an innovative tool that helps United Nations organizations, governments, and NGOs better understand the spatial patterns of social vulnerability using machine learning. While previous vulnerablity measures required conducting timely and costly surveys, the DSVI provides a higher-resolution and improved representation of a country's social vulnerability beyond administrative boundaries. Moreover, compared with previous tools, the DSVI is the first tool of its kind to incorporate a much more comprehensive social vulnerability analysis by integrating numerous indices into one index.

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