

Sectoral Analysis of the Impact of COVID-19 on the Egyptian Economy



Part 1

Edited by
Abla Abdel-Latif



Sectoral Analysis of the Impact of COVID-19 on the Egyptian Economy

Part 1

Edited by
Abla Abdel-Latif

©2020 The Egyptian Center for Economic Studies (ECES).

No part of this publication may be reproduced, stored in a retrieval system or transmitted in any form or by any means—mechanical, electronic, photocopying, recording or otherwise—without the prior written permission of the Egyptian Center for Economic Studies (ECES). All data and information provided herein are obtained from sources that we trust their credibility and integrity. We believe that the information and findings in this e-book were correct at the time of their preparation. ECES shall not be liable for any legal or investment consequences that may arise from using the information and data provided herein.

All rights reserved.

All queries on rights should be addressed to the Egyptian Center for Economic Studies (ECES), Nile City Towers. North Tower, 8th Floor, Corniche El Nil, Cairo 11221, Egypt.
Email: eces@eces.org.eg.

Acknowledgement

The Egyptian Center for Economic Studies (ECES) extends its thanks and appreciation to the group of experts in various fields who collaborated with ECES in preparing the reports included in this rich volume. Without their efforts, this volume would not have seen the light. Also, the Chairman and members of the ECES Board of Directors would like to extend their thanks and appreciation to the ECES staff for their dedication and persistence to complete this work despite the challenges faced due to COVID-19 pandemic.

Finally, we would like to thank the UK government.

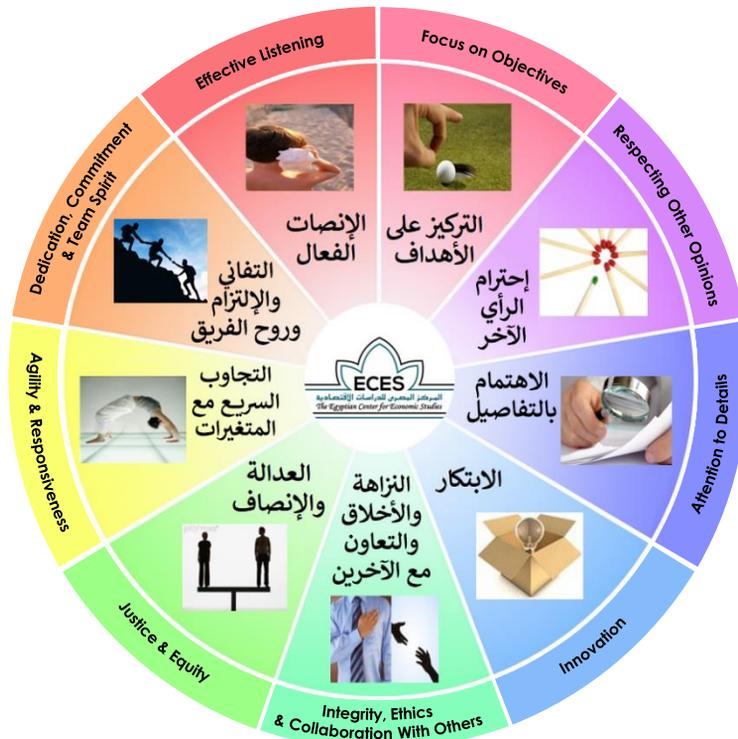


About the Egyptian Center for Economic Studies (ECES)

Our Mission

The Egyptian Center for Economic Studies (ECES) is an independent, non-profit think tank that conducts specialized economic research, drawing on international experience and constructive discussions among various stakeholders. ECES's main objective is to propose sound economic policies, and institutional and legislative reforms that contribute to sustainable development in Egypt, all based on combined economic efficiency and social justice.

Our Values are what makes us different



Our official website eces.org.eg

Our social media channels



ECES Staff who Participated in this Part

Economic Research Team

Abla Abdel Latif, PhD	Executive Director and Director of Research
Diaa Nouredin, PhD	Senior Advisor
Sahar Aboud, PhD	Principal Economist
Rama Said	Senior Economist
Racha Seif El-Dine	Senior Economist
Yara Helal	Economist
Mohamed Hosny	Economist
Salma Bahaa	Economist
Ahmed Dawoud	Research Analyst
Mohanad Mahdy	Research Analyst

Supported in Data Gathering & Preparation

Khaled Wahid	Head of Statistical Analysis Department
Ahmed Fathy	Research Assistant
Hossam Khater	Research Assistant
Mohamed Khater	Research Assistant
Rana El-Kennary	Assistant to the Executive Director
Mona Diao	Economic Reporter
Amal Nour ElDin	Former Head of Population Statistics & Census Sector, CAPMAS

Editorial, Translation & Artwork

Yasser Selim	Managing Editor
Fatema Ali	Senior Editor/ Translator
Walied El Torky	Digital Communications Manager
Ebrahim El Embaby	IT Officer

Contents

Objectives & Methodology	11
Executive Summary	12
Detailed Reports	21
1 Remittances	21
2 Tourism	28
3 Suez Canal Revenues	36
4 Manufacturing Industry	40
5 Communications and Information Technology Sector	49
6 Health	56
7 Education	72
8 Informal Economy	86
9 GDP	99
10 Servicing External Debt	104

Figures

1. Remittances

- | | | |
|-----|---|----|
| 1.1 | Evolution of Remittances Flow to Egypt, 2000 – 2009 | 21 |
| 1.2 | Main Sources of Foreign Currency in Egypt (2013/14 – 2018/19) | 21 |

3. Suez Canal Revenues

- | | | |
|-----|-------------------------------------|----|
| 3.1 | Suez Canal Revenues | 37 |
|-----|-------------------------------------|----|

6. Health

- | | | |
|------|--|----|
| 6.1 | Percentage of Government Spending on Health to Total Government Expenditure and GDP | 56 |
| 6.2 | Percentage of Government and Private Spending out of the Total Spending on Health | 57 |
| 6.3 | Percentage of Out-Of-Pocket Expenditure (% of current Health Expenditure) | 57 |
| 6.4 | Number of Doctors and Nurses | 58 |
| 6.5 | UHC Service Coverage Index | 58 |
| 6.6 | Institutional Framework of Hospitals in Egypt | 59 |
| 6.7 | Evolution of Government Health Expenditure to GDP and Total Government Expenditure in the Last 5 Years | 61 |
| 6.8 | Evolution of Government Health Expenditure over the Last 5 Years and Preliminary Budget for 2021/2022 | 61 |
| 6.9 | Number of Doctors and Nurses in Public and Private Hospitals in 2018 | 63 |
| 6.10 | Number of Visitors Per Doctor and Nurse in Public and Private Hospitals in 2018 | 63 |
| 6.11 | The Relative Distribution of the Number of Hospitals and Beds Across Governorates in 2018 | 64 |
| 6.12 | Geographical Distribution of Basic Health Care Units in 2018 | 64 |
| 6.13 | Ambulance Services in 2018 | 65 |
| 6.14 | Classification of Health Care Provided for the First 1,000 Cases | 66 |

7. Education

- | | | |
|-----|--|----|
| 7.1 | Number of Students in the Different Educational Levels according to the Geographical Region and Affiliation, 2019/2020 | 73 |
|-----|--|----|

Figures cont.

8. Informal Economy

8.1	<u>The Inverse Relationship between the Size of Informal Employment and the Per Capita GDP of the Country</u>	86
8.2	<u>Informal Employment as a Percentage of Total Employment in Egypt, 2018</u>	86
8.3	<u>The Size of the Informal Economy in Egypt as a Percent of GDP (1980-2012)</u>	87
8.4	<u>Evolution of Informal Employment in Egypt (as a Share of Non-Agricultural Employment)</u>	87
8.5	<u>Distribution of Informal Employment within the Formal and Informal Sectors</u>	89
8.6	<u>Professional Distribution of Workers in the Informal Sector</u>	89
8.7	<u>Sectoral Distribution of Informal Employment</u>	90
8.8	<u>Distribution of the Poor according to Labor Stability 2017/2018</u>	91
8.9	<u>Distribution of the Poor according to the Sector of Work, 2017-2018</u>	91
8.10	<u>The Proportion of Families living in a Single Room, Shop, Kiosk, Tent, Burial Yard or House Boat</u>	91
8.11	<u>The Proportion of Households Without a Private Bathroom or Kitchen</u>	91
8.12	<u>The Expected Impact of the Crisis on the Number of the Unemployed in Egypt (thousand)</u>	95
8.13	<u>The Expected Impact of the Crisis on the Unemployment Rate in Egypt (%)</u>	95
8.14	<u>The Proportion of Poor Workers in Egypt and the Arab Countries</u>	96

10. Servicing External Debt

10.1	<u>Balance of External Debt (million dollars)</u>	104
10.2	<u>External Debt/ GDP (%)</u>	104
10.3	<u>Channels of Supply and Demand Shocks to Foreign Exchange</u>	108

Tables

1. Remittances

- | | | |
|-----|---|----|
| 1.1 | <u>Potential Scenarios for the Impact of the Crisis on Remittances based on the Aforementioned Crisis Cycle and Assumptions</u> | 23 |
| 1.2 | <u>Interventions Required to Mitigate the Effects of the Crisis</u> | 26 |

2. Tourism

- | | | |
|------|---|----|
| 2.1 | <u>The Impact of Crises on the Tourism Sector, 2010/11-2015/16</u> | 29 |
| 2.2 | <u>Potential Scenarios for the Impact of the Crisis on Tourism Activity and Revenue, based on the Aforementioned Crisis Cycle and Assumptions</u> | 30 |
| 2.3 | <u>Institutional Imbalances Revealed by the Crisis in the Tourism Sector and Proposed Remedy Measures</u> | 33 |
| A2.1 | <u>The Most Important Official Decisions Taken to Mitigate the Repercussions of the Coronavirus, Directly and Indirectly related to the Tourism Sector (Chronologically from the Most Recent at the Time of Writing the Report)</u> | 34 |

3. Suez Canal Revenues

- | | | |
|-----|--|----|
| 3.1 | <u>Potential Scenarios for the Impact of the Crisis on Suez Canal Revenues, based on the Aforementioned Crisis Cycle and Assumptions</u> | 37 |
|-----|--|----|

4. Manufacturing Industry

- | | | |
|-----|---|----|
| 4.1 | <u>The Contribution of the Manufacturing Industries to the Egyptian Economy</u> | 40 |
| 4.2 | <u>Impact of the Global Financial Crisis of 2008 and the 25th of January Revolution on Exports and Imports</u> | 41 |
| 4.3 | <u>Potential Scenarios for the Impact of the Crisis on the Manufacturing Sector, based on the Aforementioned Crisis Cycle and Assumptions</u> | 43 |
| 4.4 | <u>Estimating Manufactured Output during the Various Stages of the Crisis as a Percentage of GDP</u> | 46 |

5. Communications and Information Technology Sector

- | | | |
|-----|---|----|
| 5.1 | <u>Egypt's Ranking in the Global Connectivity Index</u> | 50 |
| 5.2 | <u>Basic Four Stages of the COVID-19 Crisis, the Technological Means Used and Required Technological Infrastructure</u> | 51 |
| 5.3 | <u>Potential Scenarios for the Impact of the Crisis on the ICT Sector, based on the Aforementioned Crisis Cycle and Assumptions</u> | 52 |

Tables cont.

6. Health

6.1	<u>Distribution of Hospitals in Egypt for the Year 2018 to Government and Private Sectors</u>	59
6.2	<u>Evolution of the Number of Government and Private Hospitals, the Number of Beds and Visitors, 2009-2018</u>	62
6.3	<u>The Supply Capacity of Hospitals</u>	67
6.4	<u>Potential Scenarios for the Impact of the Crisis on the Health Sector, based on the Aforementioned Crisis Cycle and Assumptions</u>	67

7. Education

7.1	<u>Poverty and Dropout Rates in Selected Governorates</u>	73
7.2	<u>Potential Scenarios for the Impact of the Crisis on the Education Sector, based on the Aforementioned Crisis Cycle and Assumptions</u>	75
7.3	<u>Institutional Weaknesses and Proposed Measures to Address Them</u>	80
A7.1	<u>Ministry of Education Statements and Decrees (Chronologically from Most Recent at the Time of Writing the Report)</u>	81

8. Informal Economy

8.1	<u>The Informal Sector in Egypt: Types, Reasons, and Features</u>	87
8.2	<u>Potential Scenarios for the Impact of the Crisis on Unemployment in Egypt based on the Aforementioned Crisis Cycle and Assumptions</u>	92

9. GDP

9.1	<u>Impact of the Two Recent Shocks on the Egyptian Economy (Average Quarterly Rates of Growth)</u>	99
9.2	<u>Potential Scenarios for the Impact of the Crisis on GDP Growth, based on the Aforementioned Crisis Cycle and Assumptions</u>	100

10. Servicing External Debt

10.1	<u>External Debt Safety Indicators for Selected Years</u>	105
10.2	<u>Structure of External Debt according to Type of Debt (%)</u>	105
10.3	<u>The External Financial Position of the Egyptian Economy</u>	106
10.4	<u>Potential Scenarios for the Impact of the Crisis on Egypt's External Debt Service, based on the Aforementioned Crisis Cycle and Assumptions</u>	109

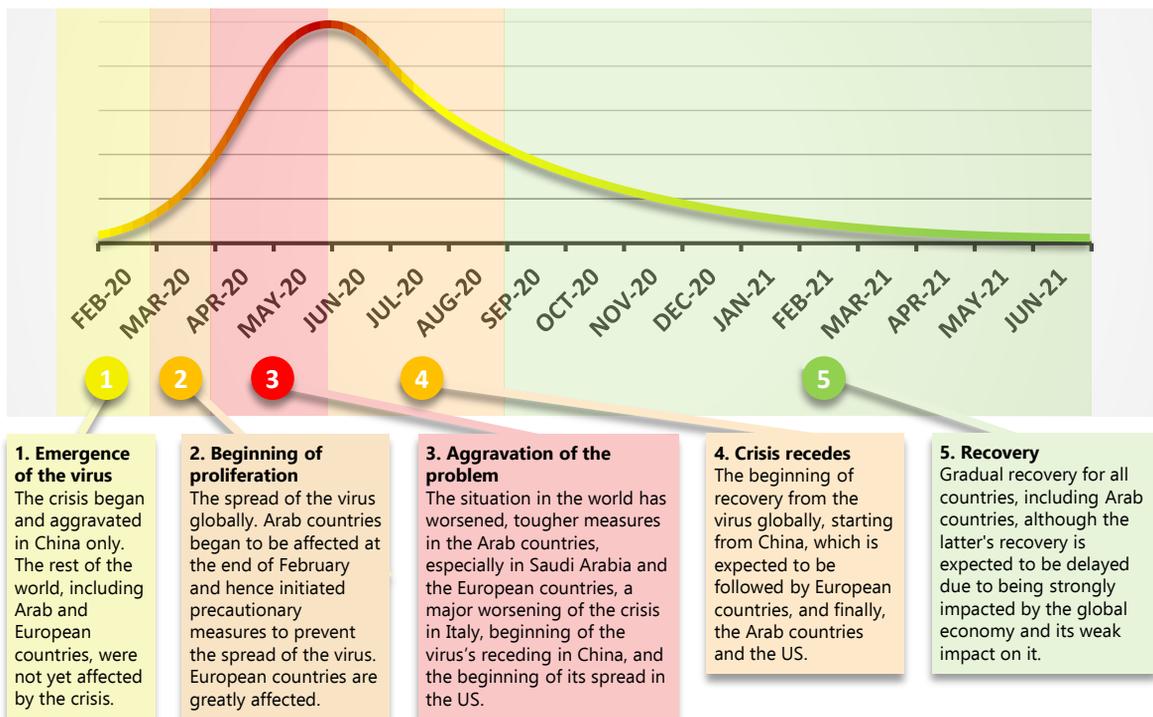
While the whole world shares the broad outlines of the economic and social repercussions of the Coronavirus (COVID-19), which are unprecedented in its recent history, the implications thereof for each country are linked to the nature of each country's economic system, its ability to withstand the entailed repercussions and the speed of its recovery.

In light of the need to study the sectoral implications of these repercussions in order to address the crisis properly, the Egyptian Center for Economic Studies (ECES), in its initiative, is producing a set of daily reports entitled "Views on Crisis". The reports aim to analyze the implications of the coronavirus crisis for Egypt in relation to a number of vital production and service sectors and to key macroeconomic variables. This ECES initiative comes from the belief that the current critical conditions require directing state's efforts towards achieving two main goals: providing a decent life for Egyptians during the crisis and in the recovery phase, preserving the existing investments especially domestic ones and helping to overcome the crisis and prepare for a rapid launch with the gradual decline of the crisis and recovery of the global economy.

The methodology used in these reports is based on an analysis of the supply and demand shocks associated with the crisis cycle in its various stages. Given the lack of detailed data on the sectoral impact of the crisis, the sectoral analysis is based on logical assumptions related to the nature of each sector and the degree of sector vulnerability to previous severe crises that were certainly less severe than the current crisis and different in nature. However, it is a starting point for the urgently required scientific diligence at this stage.

The reports attempt to provide a detailed perception of the magnitude and direction of crisis impact on each sector at present and until the end of the crisis. They aim to propose quick solutions to reduce the adverse impacts of the crisis in a balanced and integrated means that complement the serious efforts made by the state in this regard, and to offer other longer-term solutions to the existing institutional flaws, clearly revealed by the crisis. It is high time that these flaws are radically removed, which will improve post-crisis development efforts.

Figure 1. COVID-19 Pandemic Crisis Cycle Stages on Worldwide Level from Health Perspective



Executive Summary

1. Remittances

Remittances reached \$26.8 billion in 2019, representing 9-10 percent of GDP. Remittances are considered one of the most important sources of foreign exchange in Egypt, with values approximating those of exports. They represent 4-5 times the Suez Canal revenues and foreign direct investments.

Future Scenarios:

The effect on remittances begins to appear as of the second half of March. The expected impact on remittances is estimated according to three scenarios:

Scenario 1 (optimistic): This scenario assumes a decrease in total annual remittances for 2019/2020 by 10 percent to reach \$22.6 billion.

Scenario 2 (moderate): This scenario assumes annual total remittances for 2019/2020 will decrease by 12.5 percent to \$22 billion.

Scenario 3 (pessimistic): This scenario assumes that annual total remittances for 2019/2020 will decrease by 15 percent to reach \$21.4 billion, as a result of the inability of stranded Egyptian workers to return to recipient countries in light of precautionary measures and increased layoffs.

With the crisis receding during the period from mid-May up to August, demand and supply shocks and layoffs in recipient countries are expected to continue during the fourth quarter (April - June 2020.) The number of returnees from abroad to the Egyptian market will increase, which will increase both unemployment and the difficulty of employing returnees. The recovery

phase in the Arab countries begins at the end of this period.

It is expected that remittances will continue to decline during Q1 of FY 2020/2021 (July-September 2020) according to two scenarios. The first, remittances continue to decline to an estimated \$2 billion, as in the previous quarter. The second, recovery begins in Q1 by about 50 percent to about \$3 billion.

Recovery starts in September 2020 through the return of workers who were laid off during the aggravation phase without the travel of new workers and the increasing high unemployment rate in Egypt. In all cases, remittances remain limited, because countries will not be able to return to normality before a year.

Institutional weaknesses revealed by the crisis

The crisis revealed three institutional imbalances regarding remittances, namely:

- Lack of a database on Egyptian workers abroad, hence it is not possible to formulate sound policies to address this file.
- High remittances cost in Egypt, which requires reform through taking advantage of financial technology and its varied tools to reduce the cost of financial remittances that exceed those in East Asia and Latin America.
- Limited investment channels for remittances, hence the need to speed up creating different saving instruments that keep these reserves within the banking system.

2. Tourism

The global tourism sector has suffered huge losses, amounting to about \$12 billion since the emergence of the virus, in addition to about \$5.5 billion losses in the aviation sector. It is expected that global losses during the year will tentatively reach between \$30 - \$50 billion.

Future Scenarios:

There is a **single scenario** expected, with tourism revenues expected to witness a loss of 35 percent or \$6 billion, as tourism revenues during the year stopped at those achieved during the first three quarters of the year at about \$10.7 billion.

Despite recovery expectations for the global economy starting September, it is expected that the negative impact on the tourism sector will continue both in Egypt and globally until June 2021 at the least, where a "zero" tourist revenue is expected for FY 2020/2021, i.e., a loss of \$18.4 billion in tourism revenues that were expected during the year preceding the crisis. The expected delay in the recovery of the sector globally is due to the fact that recovery from the virus will be accompanied by the recovery of productive sectors mainly rather than the tourism sector because it is a luxury activity. In other words, priority will be for other activities, and aviation will return through trips related to work and shipping, rather than tourist trips.

Institutional weaknesses revealed by the crisis

The following are institutional weaknesses revealed by the crisis in the tourism sector:

- Overlapping mandates between setting policies, implementing them, and monitoring the performance of the sector, which requires undertaking institutional reform that achieves a clear separation between the three tasks.
- Multiple supervisory authorities for tourist facilities and poor coordination between them, which requires identifying one entity for oversight.
- Lack of clarity of vision of the crisis management committee, which requires clarifying the terms of reference and mechanisms of the crisis management committee between the Federation of Chambers of Tourism and the ministries of tourism, aviation, airports and other relevant authorities.
- Absence of a sustainable sectoral strategy that does not change with the change of leaders in the Ministry of Tourism, provided it is formulated in cooperation with sector experts, and lack of an accurate system for monitoring the performance of the declared strategies and issued decisions.
- Lack of a sector-specific database, or delayed data publishing.
- Weak level of many Egyptian hotels, especially four- and five- star hotels.

3. Suez Canal Revenues

During FY 2018/19, the Canal generated 3.7 percent of public budget revenues. It accounted for 7 percent of current account inflows and 23 percent of service exports during the same fiscal year.

Future Scenarios:

Annual revenue losses are expected during the third phase of the crisis cycle from mid-March to mid-May, according to two scenarios:

Scenario 1 (optimistic): expects a 10 percent

annual revenue decline, the equivalent of a loss of \$585 million.

Scenario 2 (pessimistic): expects revenue losses will increase to about \$876 million dollars, assuming the number of vessels in transit will decrease by 15 percent, similar to the global financial crisis.

The report does not expect the Suez Canal revenues to recover during the current year, because it is a channel for transporting trade. It is expected that revenues will rebound at the end of the year, approaching their pre-crisis levels.

Institutional weaknesses revealed by the crisis

- One of the major weaknesses revealed by the crisis is how the Suez Canal is subject to outside international trade, which is beyond the control of the government. This weakness was revealed during several global events such as the 2008 global financial crisis and the 2015 drop in oil prices. The demand of the Suez Canal is exogenously determined and is very vulnerable, thus the need for an industrial zone in the Canal area, and to develop the Suez Canal as a logistical zone focused on exports. The Suez Canal Area Development

Project was launched in 2014 aimed at developing the Suez Canal Region, and the first phase was completed a year later but it is far from being fully developed. More efforts to improve its attractiveness to investors and to facilitate industrial development are needed.

- Reducing the Canal fees is important, especially with the decrease in oil prices, which reduced the value of the tankers that are charged per weight. The Suez Canal authority has recently raised the fees on oil tankers, rendering it unprofitable for shipping companies.

4. Manufacturing Sector (combined)

The manufacturing industries contributed 16.2 percent to GDP in 2018/2019. The share of manufactured exports reached 57 percent of total exports in 2018, while the share of manufactured imports reached 66 percent of total imports during the same year.

Future Scenarios:

It is expected that Egypt will not recover before European countries and the United States, because they are the traditional markets for Egyptian exports, followed by Arab countries. China's recovery may result in a gradual increase in Egyptian imports from China of production requirements and final products to meet the needs of the domestic market, which the local manufacturing system cannot fully meet due to the precautionary measures related to the outbreak. However, a full recovery of the Egyptian manufacturing system is not expected before the beginning of next year at least.

There are three scenarios for the rate of decline in manufactured exports and imports during the period from April 2020 to April 2021:

Scenario 1 (optimistic): assumes a 14 percent decline in manufactured exports to \$12.5 billion, and 7 percent decrease in manufacturing imports to \$46.3 billion.

Scenario 2 (moderate): assumes manufactured exports to decline by 28 percent to \$10.5 billion,

and manufactured imports to decrease by 15 percent to \$42.3 billion during the period.

Scenario 3 (pessimistic): assumes that the rate of decline in manufactured exports during the period will increase by about 56 percent to record only \$6.4 billion, and the growth of manufactured imports to decline by 30 percent to \$34.8 billion. With the emergence of new cases in China, the most pessimistic scenario is the most likely.

Supporting the manufacturing sector in this crisis is a priority to maintain investments therein, ensure full return of its activity after the crisis ends, and to avoid layoffs.

Institutional weaknesses revealed by the crisis

The crisis is an opportunity to resolve the institutional problems that have been longstanding, many of which have clearly emerged in the context of the crisis. The following are some of the reform proposals to deal with some of these problems:

Forming a permanent crisis management committee headed by the Prime Minister to manage this and other crises centrally, with follow-up of implementation so that no confusion occurs.

Evaluating the impact of approved exceptional procedures related to import, licenses and exami-

nation to facilitate doing business, and enacting such procedures as permanent.

Accelerating the process of issuing permits, licenses, and allocating lands for industrial activity to speed up the injection of new investments. A complete and comprehensive reform of the land system is needed as it remains the biggest obstacle to industrial investment.

Activating the role of commercial representation to provide information in an organized and institutional way, which would promote new investments and avail opportunities for foreign trade and better handling of crises. This is necessary and important for small factories that constitute more than 80 percent of manufacturing plants.

5. Communications and Information Technology

Egypt's ranking in the Global Connectivity Index is 58 out of 79 countries, with a score of 37 points from 120, which is clearly a low ranking compared to other countries. The sector achieved the highest sectoral growth rate in real GDP (16.7 percent) in 2018/2019, and even exceeded the target rate for the same fiscal year by about 7 percent.

Future Scenarios:

Regarding the sector's ability to facilitate the health care needed to face the Coronavirus pandemic, expectations indicate its inability to deal with the problem during the first four phases until next August in the context of the crisis stages cycle. With the increasing rates of infection and the rapid spread of the disease, the sector is unable to play its role in helping to control the outbreak, relying only on reporting by the patient or those around him without benefiting from technological development.

Regarding supporting the sudden shift towards heavy use of the Internet for distance learning purposes, it is expected that pressure on the networks will continue and will have a negative impact on the services of the sector.

During the recovery phase from September 2020, there are two scenarios for helping the health care sector:

Scenario 1 (optimistic): expects that life will return to normal, which will result in the return of networks to their normal levels and the continued absence of information infrastructure to avoid new crises.

Scenario 2 (pessimistic): expects the spread of the virus to continue, and the technological sector to fall short of playing its role, which poses serious dangers at this stage if new investments are not injected and new applications that serve this health dimension are not developed.

Regarding **distance education and doing business**, there are also two scenarios at this stage:

In the first scenario "**optimistic**" it is expected that networks will return to normal, although some activities will continue electronically, and therefore pressure on the network will continue.

In the second scenario "**pessimistic**" unprecedented pressure on networks for long periods and throughout the year is expected, which threatens network failures, assuming no new investments are pumped in and new applications are not developed.

Institutional weaknesses revealed by the crisis

The crisis revealed institutional imbalances in the telecommunications and information technology sector in Egypt, as follows:

Lack of a strategy for digital transformation. Therefore, there is a need for a full-fledged national strategy in this respect, with the participation of all parties, along with an entity in charge of following up on its full implementation with all relevant authorities.

Lack of equitable geographical distribution in terms of connecting all governorates to the internet, especially high-speed internet. Hence, there is a need to increase investments in landline networks to absorb the amount of data that the coming period will witness.

Absence of an information technology regulator, as this sector lacks mechanisms to regulate and monitor its adherence to quality standards, and how to deal with the confidentiality of information and others.

Absence of a mechanism to collect medical data related to the current crisis and the degree of its spread, including records of cases of survival and death. This mechanism is required to be able to analyse data (data analytics) to avoid new crises.

The delay in using the latest technology in this field, which calls for the adoption of modern technologies such as cloud computing and block chains to reduce transaction costs and provide information for analysis, thus benefiting economic sectors.

6. The Health Sector

Globally, Government expenditure on health accounts for 7 percent of GDP and 20 percent of total government spending. While in Egypt spending on health does not exceed 2 percent of GDP and 5 percent of total government expenditure.

Future Scenarios:

There are three scenarios to estimate new infections and their needs in terms of health services during the period from mid-March to mid-May (the aggravation phase), namely:

Scenario 1 (optimistic): no deficit is expected in the needs of health services, but rather there is a surplus of 16,537 ordinary beds, 287 intensive care beds, and 279 intensive care beds with a respirator, assuming the number of infections rises to 8,335 in the second week of May.

Scenario 2 (moderate): the number of new patients is expected to rise to about 17,994 until the second half of May, which results in a surplus of regular hospital beds, a deficit in the intensive care beds of about 196 beds, and a deficit of 108 intensive care beds equipped with a respirator.

Scenario 3 (pessimistic): the number of new infections is expected to rise until mid-May to 66,207, exceeding the capacity of available health services, with an expected deficit of 36,127 regular beds, 2,606 intensive care beds, and 2,036 intensive care beds with respirators.

Institutional weaknesses revealed by the crisis

The crisis revealed several institutional weaknesses in the health sector, which can be fixed by significantly improving the conditions of the sector. These are:

- Weak governance of the health system, which requires a clear separation of tasks, a unified long-term vision that does not change with the change of governments, a unified legislative framework that covers the whole system, a mechanism for identifying current and future needs and qualitative and geographical gaps in manpower in the medical profession, a complete review of the wage structure of workers in the sector, and clear mechanisms for assessment and follow-up.
- Modest government spending on health, which requires increasing the health budget to the rates stated in the constitution as a minimum.
- Weak efficiency and preparedness of primary care units throughout the country, especially that they are the first line of defence to confront any crisis.
- Absence of an integrated, updated and available database on the sector, and weak opportunities availed for the sector to benefit from modern technologies.

7. The Education System

The educational system is characterized by widespread dropouts, with its intensity increasing in the countryside, and rises to more than the general average in 12 governorates, including Suhag and Matrouh, where the dropout rate rises to 5 percent from the general average in 2017.

Future Scenarios:

The crisis is expected to reach its peak during the period from mid-March to May due to the continued suspension of education, the halt of the educational system, confusion among students, the State directive to rely on distance education, along with government gradual decisions regarding dealing with the current academic year, which will result in a widening quality gap between Government, private and international institutions due to the difference in the readiness of the first in distance education, especially in rural areas and outside the major governorates. International schools are the most prepared, followed by private schools then government schools. As a result of the weak system, and with the extension of the period of suspension, a rise in dropouts is expected, with an impact on workers in the sector and the related services.

The analysis assumes two scenarios regarding dropout rates:

Scenario 1 (optimistic): expects the dropout rate to increase by 3.35 percent.

Scenario 2 (pessimistic): expects dropout rates to double at the level of the governorates to reach 3.8 percent, which is nearly twice the current rate.

Institutional weaknesses revealed by the crisis

The crisis of the Coronavirus outbreak revealed the institutional weaknesses that dominate the performance of the education system. The suspension of education revealed a clear defect in responding properly. The most important features of this weakness are as follows:

- Low budget allocated to education, which will not lead to any real development in the education system.
- Distance learning has not been properly implemented, though its adoption as a learning mechanism will become the new normal.
- Student overcrowding: The only solution for overcrowding lies in distance learning, which has already begun in the context of the crisis, which represents an opportunity to make a rapid and large transformation in the educational system in which distance learning becomes an essential part.
- Widening gap between public and private education, which requires comprehensive revisiting of government curricula to reach close levels to private education.
- Low salaries of employees in the educational system. Teachers should get financial compensation enough to do their work without being forced to go through private lessons to secure a decent standard of living.
- Weak technical education and vocational training system, which negatively affects industry.
- Weak health readiness in schools and the declining role of the Quality Assurance Authority despite its importance.

8. Informal Sector

The informal sector employs about 50 percent of non-agricultural workers in Egypt, 63 percent of the total employed in all sectors, contributing equivalent to 30-40 percent of GDP.

Future Scenarios:

Using the unemployment rate as an indicator of the impact of the crisis on workers in the informal economy, we expect a **single scenario** for each quarter of 2020, based on specific assumptions detailed in the report, as follows:

First quarter: The unemployment rate is expected to rise to 9.2 percent compared to 8 percent in the fourth quarter of 2019.

Second quarter: The unemployment rate is expected to continue to rise to 12 percent.

Third quarter: The unemployment rate is expected to continue to rise to 12.6 percent.

Fourth quarter: The unemployment rate is expected to start declining to 12 percent.

Institutional weaknesses revealed by the crisis

The most important institutional weaknesses revealed by the crisis are as follows:

- The size of the informal sector in Egypt has increased despite the Government's continuous efforts to integrate it into the formal economy.
- A clear deficiency in the country's vision and the way it deals with that sector, and the absence of a comprehensive vision for its development.

- The suffering of workers in the informal sector due to their lack of presence within the formal system of the state.
- Lack of accurate databases on the informal labour in Egypt.
- Dealing with the informal sector from a corporate rather than workers perspective. Accordingly, it is important to move in two directions:

First, setting an integrated and serious strategy to rehabilitate the informal sector and integrate it into the formal economy away from the tax perspective and dispersed roles of various government agencies, especially in light of the incentive for workers in the informal sector to join the formal system, even if it has problems, because they realized the missed opportunity during crises. This strategy should start from a developmental perspective and address the direct and indirect causes that led to the expansion of the informal sector.

Second, enhancing the ability of workers to adapt during crises. This can be achieved through the application of the so-called Universal Basic Income, which requires giving each citizen a fixed monthly salary that covers his basic needs, without any conditions related to income and wealth, nor how to spend it, and not even conditional on regular attendance by children in schools and obtaining health care.

9. GDP

It is important to note that right before the COVID-19 pandemic shock, the Egyptian economy grew at 5.4 percent during the period Q12018- Q32019 driven by a surge in public investments.

Future Scenarios:

There are three expected scenarios for the growth of the Egyptian economy based on how fast the virus is contained during the period from mid-March 2020 to the end of 2021 as follows:

Scenario 1 (optimistic): expects real GDP growth to slow to 3.5 percent in 2020 - down from an average of 5.5 percent in 2019 - and continues to recover to 4.7 percent in 2021.

Scenario 2 (moderate): expects growth to decline to 2.3 percent in 2020, then to rise to 3.1 percent in 2021. So far this scenario appears to be the most likely.

Scenario 3 (pessimistic): expects real GDP growth to drop to 0.8 percent in 2020, then rise to about 1.1 percent in 2021 as turmoil in economic activity recedes.

Institutional weaknesses revealed by the crisis:

- GDP measurement in Egypt suffers from known inaccuracies, particularly when it comes to measuring household consumption (around 80% of GDP). The official national accounts also do not capture the large informal economy, which makes it difficult to measure GDP and its sources of growth in a reliable manner. Addressing this issue requires availing more resources to the Ministry of Planning to

improve the way national accounts are prepared in Egypt.

- Apart for measurement issues, data availability is also subject to significant delays. This prohibits the ability of the government and economic agents to have access to reliable data with a short lag. In this regard, it is suggested that the Ministry of Planning works on speeding up the process of collecting and disseminating the data.

- It is important to align the efforts between the Ministry of Planning and CAPMAS to obtain consistent time series data on price developments for important series such as the GDP deflator, the producer price index, and

export and import prices. Improving the measurement of these prices will enable more accurate analysis of real versus nominal changes in the components of GDP.

- It is also important to develop local capacity at the relevant ministries to provide short- and medium-term projections for the components of GDP rather than rely entirely on those produced by international institutions.

10. Servicing External Debt

The balance of external debt recorded \$108.6 billion at the end of FY 2018/2019, representing 30.8 percent of GDP compared to 16.9 percent and 13.2 percent at the end of 2008/09 (the year of the Global Financial Crisis) and 2010/2011 (the year of the January 25th Revolution), respectively. This exceeds the safety limit defined by the International Monetary Fund.

Future Scenarios:

The scenarios of the impact of the crisis on Egypt's external debt service are as follows:

From mid-February to mid-May, external debt service obligations for the second half of the current fiscal year are estimated at \$12.9 billion, four times the actual debt service in the first half of the year, including \$4.7 billion in debt service for deposits of some Gulf countries.

In terms of **balance of payments**, the impact was estimated through the following scenarios:

Scenario 1 expects a gap in exchange (balance of payments deficit + debt service) of \$14.8 billion in the second half of 2019/2020, without accounting for the possibility of extending deposits.

Scenario 2 expects a gap of \$17.4 billion in the second half of 2019/2020, without accounting for the possibility of extending deposits.

The impact on the next two fiscal years (2020/2021 and 2021/2022) on both debt obligations and the balance of payments is estimated according to the following scenarios:

First, in the event that foreign debt obligations do not change, a gap is expected between \$25.1 and \$38.5 billion in 2020/2021, and of \$21.6 or \$34 billion in 2021/2022.

Second, in the case of partial postponement of debts from international institutions and bilateral debt by 50 percent, a gap between \$12.8 or \$25.2 billion is expected in 2020/2021, and between \$15.2 or \$27.6 billion in 2021/2022.

Third, in the event of a total postponement of debts of international institutions and bilateral debts and the renewal of deposits for two years, a gap ranging between \$8.8 or \$21.2 billion is expected in 2020/2021, and between \$10.7 or \$23.1 billion dollars in 2021/2022.

Institutional weaknesses revealed by the crisis

The beginning of exacerbation of the external debt situation transpired with resorting to it in light of an unrealistic exchange rate to finance the budget deficit as of 2015. The debt bill rose unprecedentedly, following the liberalization of the exchange rate. Attention should be paid to the exchange rate as one of the risk factors in managing external debt.

After liberalization of the exchange rate in late 2016, economic reforms focused on the financial

side rather than the real and institutional side. Therefore, most of the increase in foreign exchange resources came from foreign investments in government debt instruments. No attention was paid to raising the attractiveness of the Egyptian Stock Exchange to attract portfolio investment in parallel, which represents debt financing.

Weak net foreign assets of banks, as a result of using foreign currency to relieve the pressure on the balance of payments during previous periods, maintain the exchange rate and more recently due to investment portfolio's flight since the second half of 2018. Net foreign assets were also restructured with the resort to external borrowing as an alternative to relieve pressure.

Focusing, in achieving a commodity balance surplus or containing its deficit, on oil and gold exports without paying attention to other components.

Weak economic sectors in attracting foreign direct investment, most of which has been concentrated in extraction industries since the liberalization of the exchange rate.

1. Remittances

Lead Researcher: **Sahar Aboud**

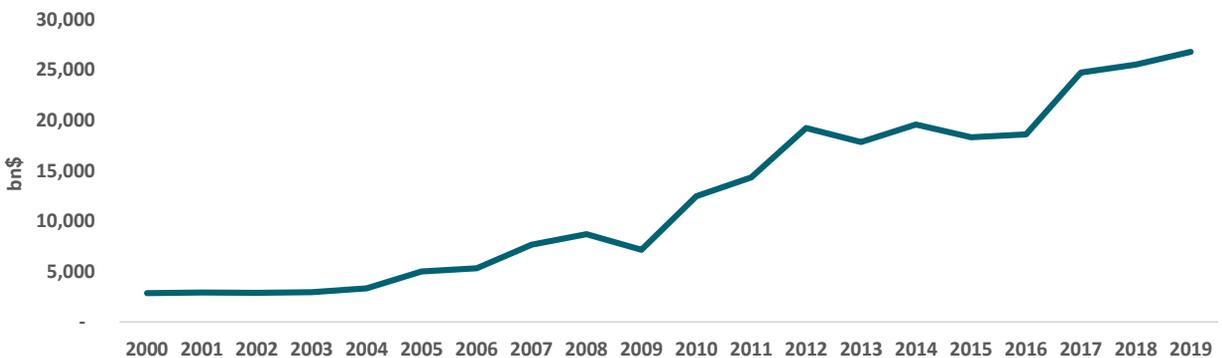
First: Brief description of the subject of the report:

- According to the World Bank, Egypt is the fifth largest recipient of remittances after India (\$82.2 billion), China (\$70 billion), Mexico (\$38.7 billion) and the Philippines (\$34 billion).
- The entire Middle East and North Africa region remains one of the least recipients of

remittances compared to East Asia and Latin America.

- Remittances witnessed a significant increase over the past decade to reach \$26.8 billion in 2019, which represents 9-10 percent of GDP, compared to \$25.5 billion in the previous year, with a growth rate of 5 percent, as shown in the following figure 1.1.:

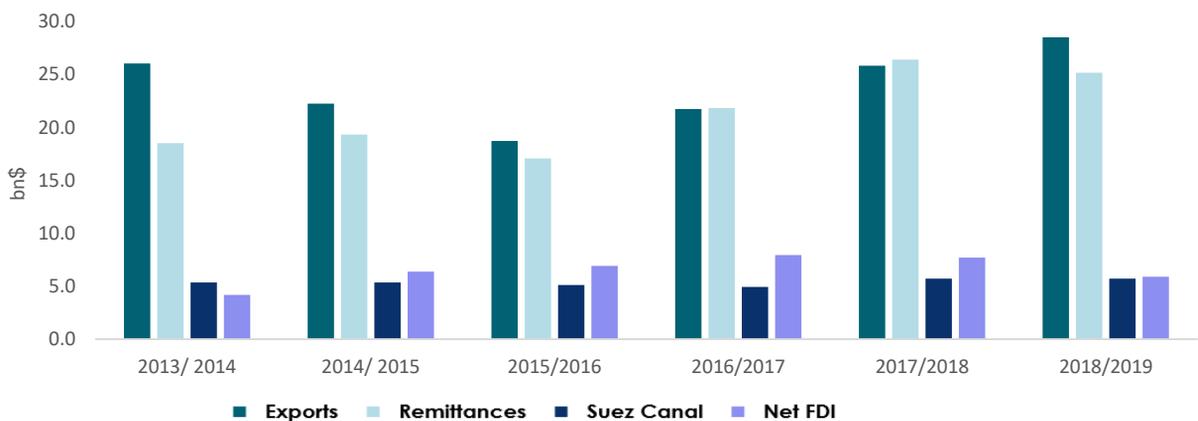
Figure 1.1. Evolution of Remittances Flow to Egypt, 2000 - 2009



Source: World Bank database.

- Remittances are considered one of the most important sources of foreign exchange in Egypt, with values approximating the value of exports. They represent 4-5 times the Suez Canal revenues and foreign direct investments, as shown in the following figure 1.2.:

Figure 1.2. Main Sources of Foreign Currency in Egypt (2013/14 – 2018/19)*



Source: Central Bank of Egypt (CBE), Monthly Statistical Bulletin, various issues.

*Excluding tourism revenues.

- According to the latest available data, the value of remittances amounted to \$13.7 billion in the first half of 2019/2020, compared to 12.1 billion in the corresponding half of the previous fiscal year, an increase of 13.5 percent.
- Remittances decreased to \$25.1 billion in 2018/2019 compared to \$26.3 billion in 2017/2018, a 5 percent decrease due to the impact on remittances of the limited decline in labor demand in the Gulf states with the beginning of the war in Yemen in 2015, as well as instability in Libya and Iraq, the decline in oil prices and the impact thereof on development projects in the Gulf states in addition to fierce competition from non-Egyptian foreign workers.
- This confirms the decline in the total work permits issued by the Ministry of Interior for Egyptians to work abroad from 1.17 million permits in 2017 to 1.08 million permits in 2018, a decline of 7.7 percent, according to the latest data issued by the Central Agency for Public Mobilization and Statistics in August.
- During the past decade, remittances were affected by the global economic crisis, as remittances decreased from \$8.377 billion dollars in 2007/08 to \$7.623 billion in 2008/2009, a decline of 9-10 percent.
- There is no accurate estimate of the number of Egyptians working abroad, whether at the aggregate level or their detailed distribution and personal data, including qualifications and professions. There are some estimates with both the Ministry of Foreign Affairs and the Ministry of Immigration, except that they are aggregates for Egyptians abroad, whether for work, study, or family, not just employees.
- The Egyptian Labor Abroad Division of the Cairo Chamber of Commerce estimates that there are approximately 5 million Egyptians working abroad in 2018.
- Employment contracts for Egyptians abroad are characterized by lack of long-term sustainability (most of them are annually), especially that the upper hand in those contracts is for the employer and there is no institutional mechanism that guarantees preserving and protecting the rights of the

worker in the contract in the event of arbitrary, material or moral damage inflicted by the employer.

- Sources of remittances flow to Egypt vary according to the distribution of Egyptian workers abroad. Arab countries account for approximately 80 percent of these remittances and are concentrated in the Gulf countries, led by Saudi Arabia, followed by European countries, led by Italy and then the United States.
- Finally, transfers are seasonal and reach their highest levels before Ramadan, during holidays, and at the start of the school year.
- The cost of remittances to Egypt is high according to the World Bank, as every \$500 sent from the United States costs 6.1 percent of the total amount for Egypt compared to the cost in India of 1.7 percent. The cost of transferring the same amount from the UAE reaches 3.3 percent for Egypt against 2.3 percent to India.
- The high cost of remittances is one of the reasons why a huge amount is being channeled away from the banking system through the movement of individuals.
- Most transfers are directed for consumption purposes or for the purchase of land or real estate as a saving instrument and few are directed to productive investment.

Second: Demand and supply shocks in the context of the crisis cycle:

The expected effect on demand and supply relates to the stage of the crisis cycle, we can trace 5 time periods during the crisis cycle. In light of the different possibilities of supply and demand shocks under the following assumptions and concepts, the table below presents possible scenarios for remittances.

- 1. Demand shock:** Decline in external demand for labor through layoffs from receiving countries and/or the non-reception of new workers.
- 2. Supply shock:** Potential increase in Egyptians returning from abroad to the domestic labor market.
- 3. The base year** on which all financial estimates rely is 2018/19.

4. Reference is made to what happened during the global financial crisis 2008/2009 to evaluate future estimates (despite the different nature of the crisis, it is used for reference in the analysis. As the nature of the crisis is different and its severity is less compared to the current crisis, the same scenario of economic crisis and decline in remittances by 10 percent will be adopted in the current crisis as the most optimistic scenario)
5. Stable relative distribution of employment abroad between the two crises is assumed.
6. The following table offers potential scenarios for remittances based on the aforementioned crisis cycle and assumptions:

Table 1.1. Potential Scenarios for the Impact of the Crisis on Remittances based on the Aforementioned Crisis Cycle and Assumptions

Stage	Demand and/or supply shock	Analysis	Impact on remittances
1. Emergence of the virus (December 2019 to January 2020)	There is no shock on the supply and demand sides.	The crisis did not emerge outside China and therefore had no effect on demand for Egyptian workers abroad.	There is no negative effect on remittances. Remittances were already made during this period. Remittances during the first half of fiscal year 2018/2019, that is, the period July – December, amounted to about \$13.7 billion, according to the Central Bank of Egypt.
2. The beginning of proliferation (February through mid-March 2020)	<ul style="list-style-type: none"> - Limited demand shock - Slight increase in supply 	The crisis reached the Gulf and inability of stranded Egyptian workers to return to recipient countries in light of precautionary measures.	There is no negative impact on remittances, as they were made during January and February 2020, while March remittances may decrease. Thus, the value of remittances in the quarter January - March is expected to be between the usual average of \$6 billion or less by one or two billion at the most.
3. Aggravation of the problem (From mid-March to mid-May 2020)	<p>Scenario 1 (optimistic):</p> <ul style="list-style-type: none"> - Limited demand shock - Slight supply shock - It is based on the slow change in supply and demand because it relates to the extent of spread of the virus and therefore linked to the first part of the period of problem aggravation. 	The inability of stranded Egyptian workers to return to recipient countries in light of precautionary measures	<ul style="list-style-type: none"> - Remittances for the year 2018/19 amounted to \$25.15 billion. - This scenario assumes a decrease in total annual remittances for the year 2019/2020 by 10 percent, as happened in the global economic crisis 2008/2009. - Remittances according to this scenario are estimated at \$22.636 billion for the year 2019/2020. - These remittances are divided in two halves, the first (July - December 2019), are remittances that have already entered the economy and amounted to \$13.7 billion, according to the Central Bank. - The remaining half (January - June 2020) according to this scenario is estimated at \$8.9 billion - The biggest impact of the decrease in remittances will appear in the fourth quarter (April - June 2020) and is estimated according to this scenario by \$2.9 billion, with estimates for the third quarter remaining at an average of \$6 billion.

Stage	Demand and/or supply shock	Analysis	Impact on remittances
3. Aggravation of the problem (From mid-March to mid-May 2020) cont.	Scenario 2 (moderate): - Demand shock - Slight supply shock	<ul style="list-style-type: none"> - Stranded workers do not return - In addition to the freezing of the new work contracts, which will be suspended as a result of the emergence of the crisis - Limited infections among workers and inability to work. 	<ul style="list-style-type: none"> - Remittances for the year 2018/19 amounted to \$25.15 billion. - This scenario assumes that annual total remittances for the year 2019/2020 will decrease by 12.5 percent. - Remittances under this scenario are estimated at \$22 billion for the year 2019/2020. - These remittances are divided into two halves: the first (July - December 2019), are transfers that have already entered the economy and amounted to \$13.7 billion, according to the Central Bank. - The remaining half (January - June 2020), according to this scenario, is estimated at \$8 billion. - It is expected that the biggest effect of the decrease in remittances will appear in the fourth quarter (April - June 2020) and is estimated, according to this scenario, at \$2.3 billion, with estimates for the third quarter remaining at an average of \$6 billion.
	Scenario 3 (most pessimistic): - Greater demand shock - Limited supply shock	<ul style="list-style-type: none"> - Stranded workers do not return. - In addition to the freezing of the new work contracts, which will be suspended as a result of the crisis - Widespread infections among workers and their inability to work, or panic over the spread of disease and the closure of workplaces, and thus a huge wave of layoffs 	<ul style="list-style-type: none"> - Remittances for the year 2018/19 amounted to \$25.15 billion - This scenario assumes that annual total remittances for the year 2019/2020 will decrease by 155 percent. - Remittances under this scenario are estimated at \$21.4 billion for the year 2019/2020. - These remittances are divided into two halves: the first (July - December 2019) is remittances that have already entered the economy and amounted to \$13.7 billion, according to the Central Bank. - The remaining half (January - June 2020), according to this scenario, is estimated at \$8 billion. - It is expected that the biggest effect of the decrease in remittances will appear in the fourth quarter (April - June 2020) and is estimated, according to this scenario, at \$1.7 billion, with estimates for the third quarter remaining at an average of \$6 billion.

Stage	Demand and/or supply shock	Analysis	Impact on remittances
4. The crisis recedes (Mid-May-August 2020)	<ul style="list-style-type: none"> - The previous demand shock continues, like in the period of aggravation of the crisis during the fourth quarter (April - June 2020) - Greater supply shock - The beginning of recovery at the end of the period in the Arab countries during the first quarter of fiscal year 2020/2021 (July - September 2020). 	<ul style="list-style-type: none"> - Same reasons as before - In addition to more layoffs - Recovery in the Arab countries will be gradual, following the global recovery, due to being strongly impact by the world economy. - High rate of unemployment in Egypt and difficulty of providing employment. 	<p>Scenario 1: Remittances continue to decline during the first quarter of fiscal year 2020/2021 (July - September 2020) to be estimated at about \$2 billion, as in the previous quarter.</p> <p>Scenario 2: It is expected that recovery of remittances will begin during the first quarter of fiscal year 2020/2021 (July - September 2020) by about 50 percent compared to the corresponding quarter of the previous year, to be estimated at about \$3 billion.</p>
5. Recovery (As of September 2020)	<ul style="list-style-type: none"> - Demand gradually returns to normal. - The supply shock still continues from the previous scenario, even if gradually declining as of January 2021. 	<ul style="list-style-type: none"> - Return of workers who were laid off during the aggravation stage without the travel of new workers. - The unemployment rate is still high. 	In all cases, remittances remain limited, because countries will not be able to return to their normal performance before a year.

Source: The Egyptian Center for Economic Studies (ECES).

These estimates should be read with caution, as expectations may require further revision based on the day by day development of the outbreak, as its duration and scope are still unknown.

- Certainly, any decrease in remittances means a decline in one of the most important foreign exchange resources, and a deficit in the balance of payments and foreign exchange reserves, assuming that the rest of the monetary resources have not changed and this is an unrealistic assumption. Therefore, the effect is expected to be more violent in the context of interlinkages among the sectors and the expected negative effects on the rest of the other foreign exchange sources. Thus, the size of the deficit in the balance of payments and in the reserves will be greater. This means that the State should direct its efforts to maintaining exports and investments in general, which will be covered in future issues of the report.
- This is apart from the expected decline in informal remittances across the stages of the crisis, not covered in the analysis given the lack of data.
- In addition, there will be a decline in tax revenues on the income of workers abroad, a decrease in work permits and social security revenues, losses in recovering the dues of workers abroad with business owners in the form of end-of-service benefits and for health and social services, in addition to high inflation rates that are expected to accompany the huge supply shock.
- Other economic and social effects include the impact on living conditions of the families of workers abroad in terms of educational and consumer activities and even productivity.
- In addition, the economic situation in Egypt will be complicated by the return of workers in large numbers that cannot be accommodated in the absence of detailed information regarding these workers, whether in terms of qualifications, skills or jobs they occupy, as happened during the Gulf War crisis 1990-1991.

Third: Interventions required to mitigate the effects of the crisis:

3.1. Intervention to support workers abroad:

- The Ministry of Immigration started advertising on its website the availability of communication with workers abroad through its page. This is commendable, but it is not sufficient.
- Intervention to support workers abroad should be permanent, so that planning to manage this file is central and engages all parties (Ministry of Foreign Affairs, Ministry of Immigration, Communications) and should not be left to each agency to manage it according to its vision.
- Implementation should be decentralized according to the role assigned to each party in

light of the central work plan prepared in advance.

- The necessity of establishing an institutional mechanism, such as the unit of workers abroad at the Ministry of Immigration with participation of other ministries, particularly, the Foreign Ministry, Communications Ministry, and the Ministry of Manpower to manage this file both efficiently and effectively.
- Stressing that any cost the State will incur in order to preserve the jobs of Egyptians abroad is much less than the cost of losing their jobs.
- The nature of the intervention required varies according to the different classifications of employment as well as the governing scenario. We have five classifications:

Table 1.2. Interventions Required to Mitigate the Effects of the Crisis

Group	Required intervention
Workers abroad whose working conditions are stable	The unit communicates immediately with Egyptians abroad, records their detailed data and identifies the required support aspects.
Workers abroad infected with the virus	The unit communicates immediately with Egyptians abroad, records their detailed data and attempts to assist them in obtaining appropriate health care. Communicates with business owners to try to keep their jobs.
Workers abroad who have been laid off	The unit communicates immediately with Egyptians abroad and records their detailed data. Negotiating with institutions or employers in recipient countries, especially that the crisis is global, and providing any incentives in exchange for Egyptians keeping their jobs Assisting Egyptians who have lost jobs in finding other jobs if possible. Trying to provide compensation/aid for a temporary period until they return or find another job (e.g., the Philippines has allocated cash amounts to help workers abroad who have lost their jobs in the Gulf)
Workers abroad on vacation in Egypt who were notified of being laid off without any obligation to return.	The unit communicates with them, registers their details and does a case study for each of them to find out their living conditions and identify aspects of assistance and the entities that can participate in this matter.
Workers abroad who are stranded and unable to return to their place of work as a result of strict precautionary measures taken by the recipient countries	The unit communicates with them and records their details. Helping them to return safely by quickly completing the required procedures. This is a trend that the Ministry of Manpower has begun implementing in cooperation with the Ministry of Immigration through organizing charter trips for those wishing to return from Saudi Arabia and Kuwait.

Source: The Egyptian Center for Economic Studies (ECES).

3.2. Intervention to support the families of workers abroad:

- The Egyptians Abroad Unit, with the participation of the Ministry of Social Solidarity and civil society and any other relevant party, will communicate with the families of workers abroad and classify the required support according to each case with the need to pay attention to any productive projects that guarantee them a decent life, especially in light of the decline in remittances and their instability at best.
- Cooperating with the banking system to provide credit facilities to the families of workers, for example: raising the credit limit, providing special soft loans to complete studying.
- Spreading awareness among the families of workers abroad about the importance of their savings being under the protection of the banking system as a safe way to transfer money so that they gain confidence later. This is especially important for the less educated groups.

Fourth: Institutional weaknesses revealed by the crisis

The crisis revealed the existence of three institutional imbalances regarding employee remittances, namely:

- **Lack of a database on Egyptians working abroad:**

We have only some aggregate statistics issued by the Ministry of Foreign Affairs. It is not possible to take any sound policies aimed at increasing remittances without having an updated, detailed database on Egyptians working abroad, their specializations and skills. Therefore, the establishment of the aforementioned permanent unit could be one of the institutional mechanisms required to achieve this, especially that the existence of the database will serve other goals in the long run.

- **High cost of remittances in Egypt: This shortcoming requires reform:**

- Take advantage of financial technology and its varied and new tools to reduce the cost of financial remittances in Egypt that exceed those in East Asia and Latin America, with the need to develop technological infrastructure to be able to do so.
- Creating new services to facilitate the transfer of remittances from the bank's nearest branch to families in remote areas. Government offices (for example, post offices) in various governorates can be used in this regard.
- Increasing the number of bank branches in the countries where Egyptian labor is concentrated and expanding bilateral agreements between domestic and foreign banks so that Egyptians abroad can transfer remittances easily and at reasonable cost.

- **Limited investment channels for remittances: This requires:**

- The speed of creating different saving instruments that keep these reserves within the banking system, especially that the declining interest may accelerate their flight to invest in gold and real estate. The Central Bank has previously issued dollar certificates with a fixed return of 4 percent to increase workers' remittances after the 25th of January Revolution.
- Designing policies that benefit from remittances in a variety of development areas, including education, health, social development, etc.
- Reviewing spending priorities, including national projects, to serve sustainable development activities, most importantly the current education and training system, so that it becomes at par with global standards that ensure high skill levels that keep pace with demand developments not only at the local, but regional and global levels.

2. Tourism

Lead Researcher: Racha Seif El-Dine

First: Brief description of the subject of the report:

- The tourism sector¹ is by its very nature a highly sensitive sector and is seriously affected by local and international events, especially negative ones. Therefore, tourism in Egypt is facing a major crisis due to the emergence and spread of the Corona virus globally. We start by presenting the most important features of the sector and then determine the likely negative repercussions of the crisis.
- European countries account for the largest share of tourists coming to Egypt, with an average share exceeding 50 percent, led by Germany (13%), Russia (12%), the UK (7%), and Italy (3%), while the Middle East region occupies the second place with about 22%, followed by African countries (7%), and Asia-Pacific countries (6.6%).
- Tourism is a labor-intensive sector, with a labor population of about 1.8 million in 2014 (the latest available data), representing about 9.5 percent of total employment in all sectors (World Travel and Tourism Council).
- Tourism contributes, on average, about 12% of GDP² (direct and indirect contribution).
- Tourism revenue reached \$12.6 billion in 2018/2019 as the highest tourism revenue in Egypt's history.
- The number of tourists coming to Egypt reached 9.8 million in 2017/2018, compared to 6.6 million tourists in the previous year, a growth rate of 49%.
- The number of tourist nights registered 102.6 million nights in 2017/2018, a significant increase from the previous year (102%).
- Hotel occupancy rates decreased during the period 2012-2016, although the general average in 2017 increased to 34% compared to the previous year (30%).

Distribution of inbound tourism to Egypt is unbalanced in favor of "tourism and entertainment," as well as in terms of access

routes where air transport accounts for a huge share.

- Beach tourism, entertainment and cultural tourism account for a share of more than 95%, with a huge differential from the rest of tourism types in Egypt.
- The level of spending³ by tourists in Egypt ranges from \$25 to \$250 or more.
- The level of spending varies according to the nationality of the tourist (with Arab countries spending the most), and the type of tourism (exhibition and conference tourism is the most profitable).
- Tourist spending (cultural tourism) is divided on average into: 40% accommodation, 35% transportation, 10% site visits, 12-15% personal expenses. As for beach tourism, about 97% of spending goes to hotels, including their services.
- Most establishments operating in the tourism sector receive their dues at the end of the month, as transactions are dealt with in terms of total operations during a certain period, often a month.
- The year 2009/2010 is the most popular in terms of incoming tourism and contribution to service exports, while 2015/2016 is the lowest during the period.
- 2019/2020 heralded more improvement compared to the previous year, as tourism revenues in the first quarter (July-September) amounted to \$4.2 billion compared to \$3.2 billion in the corresponding quarter of the previous year. Tourism revenues amounted to about \$2 billion for the months of December 2019 and January 2020, and \$2 billion for February of the same year in which a remarkable boom was observed and was expected to continue during the remainder of the fiscal year had it not been for the outbreak of the Corona crisis.
- The tourism sector is highly intertwined with other sectors (food, textiles and furnishings,

1- This report draws on the latest published data available from Egyptian sources (the monthly bulletins of the Central Bank of Egypt, the Central Agency for Public Mobilization and Statistics, and the Ministry of Tourism), global sources, as well as the Observatory of Competitiveness for the Tourism Sector and the Road Map for the Tourism Sector in Egypt published by the Egyptian Center for Economic Studies, in addition to consulting with many experts in the sector.

2- The World Travel & Tourism Council (WTTC).

3- Spending was estimated according to an approximate average level of spending per night

- handicrafts, etc.), and therefore any shocks incurred lead to both direct effects on the sector itself and indirect effects on other sectors.

- The tourism sector has been exposed to many

crises during the current decade, incurring heavy losses since the start of the negative repercussions of the January 25th, 2011 Revolution up until 2016/2017, as shown in table 2.1. :

Table 2.1. The Impact of Crises on the Tourism Sector, 2010/11-2015/16

Year	Crisis	Impact on incoming tourism (%)	Impact on tourism revenue (%)
2010/2011	The repercussions of the January 25th Revolution	-13.3	-8.6
2011/2012	The continuing repercussions of the January 25th Revolution	-8.2	-11
2013/2014	The repercussions of the June Revolution	-34.8	-48
2015/2016	Some countries banned their citizens from traveling to Egypt	-32.6	-48.9

Source: Growth rates were calculated according to data from the Monthly Statistical Bulletins published by the Central Bank of Egypt (CBE).

- These previous crises resulted in a decline in tourism movement as follows:

- The number of tourist arrivals decreased from 14 million in 2009/2010 to 6.6 million in 2016/2017.
- Tourism revenues decreased by 78% in 2016 compared to 2010, according to data from the Ministry of Tourism.
- Some foreign countries banned their citizens from traveling to Egypt in the aftermath of the crash of the Russian plane over Sinai in 2015, and the ban lasted until 2017. These countries are Germany, Norway, Belgium, Finland, Sweden, Denmark, the UK (the ban was lifted in October 2019) and Russia, which are one of the highest sources of tourists to Egypt.
- Accordingly, owners of tourist establishments were unable to fulfill many of their financial obligations, about 90% of hotels defaulted and a large number of workers were laid off.

Second: Demand and supply shocks in the context of crisis cycle

2.1. The state of tourism in the world

- Supply and demand shocks to the tourism

sector in Egypt cannot be studied in isolation from what is happening in the world. So, it is necessary to follow up on what is happening to the sector globally. Total losses of the tourism sector globally since the virus outbreak stand at around \$12 billion, in addition to the losses of the aviation sector, which were estimated at about €5 billion (\$5.5 billion).

- The World Tourism Organization estimated that the number of tourists globally may decrease in 2020 by 1% to 3%, instead of growth between 3% and 4%, as was expected for 2020 at the beginning of January this year. This is tentatively expected to result in losses in global tourism revenue between \$30 and \$50 billion. The most affected tourist destinations are the Asia-Pacific region, whose losses are estimated at about \$7 billion according to recent data issued by the Organization.

2.2. The tourism situation in Egypt

- In general, there are no accurate figures announced yet about the extent of impact on the tourism sector in Egypt. A decrease of 70-80% in new bookings of Egyptian destinations was announced during the second week of March, compared to the corresponding period last year⁴.

4- According to a statement by the president of the Chamber of Travel and Tourism Companies on the Al-Mal newspaper website.

• The expected impact on the demand and supply sides depends on the relevant stage in the crisis cycle. The table below presents possible scenarios⁵ for tourism movement and tourism revenue according to the crisis cycle and in the context of different possibilities of supply and demand shocks under the following assumptions and concepts:

1. Tourist demand shock: decrease in the number of tourists who travel or wish to travel to Egypt.
2. Tourism supply shock: low ability of the tourism sector in Egypt to provide activities, events, services, and tourism products to make the travel experience successful for tourists (accommodation, entertainment, air and road transport and employment services).
3. The analysis focuses on foreign tourism only, as it has the largest share (90%) compared to domestic tourism (10%).
4. Hajj and Umrah tourism was excluded, as the analysis is concerned with the movement

of incoming tourism to Egypt.

5. Based on data for the first quarter, direct tourism revenue for 2019/2020 was estimated at \$4.2 billion according to the most recent Monthly Statistical Bulletin of the Central Bank of Egypt, and according to monthly average revenue for the year 2018/2019 (\$1 billion), in addition to the boom during February and the expected continuation of this monthly average of \$2 billion (in the absence of the virus), with the exception of the period June to mid-July (outside the tourist peak period), which usually garner about \$700 to 800 million.
6. It is clear from the crises that the demand shock has a much greater impact than the supply shock as a result of some countries banning their citizens from traveling to Egypt.

The following table presents possible scenarios for the tourism activity and revenue in the Egyptian case, according to the above-mentioned crisis cycle and in the context of the above-mentioned assumptions:

Table 2.2. Potential Scenarios for the Impact of the Crisis on Tourism Activity and Revenue, based on the Aforementioned Crisis Cycle and Assumptions

Stage	Demand and/or supply shock	Analysis	Impact on tourism revenue
1. Emergence of the virus (December 2019 to January 2020)	There is no shock on the demand and supply sides	<ul style="list-style-type: none"> - The crisis is confined to China only. - The virus has not yet spread to European and Arab markets, being key sources of tourists to Egypt. - As for China, it is not one of the big markets for Egypt, though targeted. Therefore, it did not affect tourism during this period. 	<ul style="list-style-type: none"> - There is no negative impact on the tourism activity in Egypt during this period. - The sector posted revenues estimated at about \$2 billion, as the sector achieved an average of \$1 billion in monthly revenue for the previous fiscal year and continued at the same rate of growth during December and January.
2. Beginning of proliferation (February through mid-March 2020)	A slight shock on the demand and supply sides, started only as of the second week of March	<ul style="list-style-type: none"> - The crisis has reached European and Arab countries. - But Egypt was not affected by the crisis, and tourism activity continued normally. - February achieved the highest tourist return compared to previous years (\$2 billion). - The first week of March posted revenue that is half a 	

5- These estimates should be read with caution, as expectations may require further revision due to the evolving nature of the virus outbreak day by day, and its duration and scope are still unknown.

Stage	Demand and/or supply shock	Analysis	Impact on tourism revenue
2. Beginning of proliferation (February through mid-March 2020) cont.		<p>billion dollars less than expected, albeit close to the corresponding monthly revenue in the previous year.</p> <ul style="list-style-type: none"> - Beginning with the second week of March, panic rose, and tourism activity in Egypt began to decline. - 70-80% of future reservations were canceled and many tourist villages closed due to lack of occupancy. - Tourist companies have not obtained their dues from abroad, and consequently delayed payment to hotels. 	
The two stages of: 3. Aggravation of the problem, and 4. Crisis receding: (Mid-March-August 2020)	Violent demand and supply shocks to the point of paralysis.	<ul style="list-style-type: none"> - Panic rises worldwide and the disease spreads in countries that are key sources of tourists to Egypt (especially Italy, Spain and Germany). - Spain canceled 40% of its reservations to Egypt in March. - Suspension of flights to and from Egypt and in many countries of the world, including European and Arab countries. - Absence of any new tourist reservations. - Announcing the curfew in Egypt and in many other countries. 	<ul style="list-style-type: none"> - A significant negative impact is expected with an estimated loss of \$6 billion (as an actual revenue of about \$10.7 billion was already achieved during the first three quarters (July 2019 - March 2020)), and then the tourist movement will come to a complete stop, compared to the estimated revenue of about \$16.7 billion which was expected in the fiscal year 2019/2020. - This means a loss of 35% of the tourism revenue that was expected to be posted in 2019/2020.
5. Recovery (As of September 2020)	Tourism paralysis continues both globally and in Egypt until at least June 2021. ⁶	<ul style="list-style-type: none"> - Recovery from the virus will be mainly accompanied by recovery of the production sectors (industry, agriculture, ...) mainly, not the tourism sector, because it is an entertainment activity, and priority will be to other activities. - Aviation will return via business and cargo flights, not tourism. 	<ul style="list-style-type: none"> - The negative impact on the tourism sector continues. - Tourism revenue is zero. - The loss in tourism revenue is estimated at \$18.4 billion (the same revenue that was expected for fiscal year 2020/2021).⁷

Source: The Egyptian Center for Economic Studies (ECES).

These estimates should be read with caution, as expectations may require further revision based on the day by day development of the outbreak, as its duration and scope are still unknown.

⁶- In its report issued on March 17, 2020, the World Economic Forum expects the global tourism sector to recover and return to normal 10 months after controlling the spread of the virus.

⁷- The expected loss/revenue for the year 20/21 was calculated on the assumption of an average annual growth rate of 10% similar to the usual (outside crisis years).

Surely, any decrease in tourism revenue means a decline in one of the most important sources of foreign exchange, and a deficit in the balance of payments and foreign exchange reserves, assuming that the rest of the monetary resources have not changed and this is an unrealistic assumption. Therefore, the effect is expected to be more violent in the context of interlinkages among the sectors and the expected negative effects on other foreign exchange sources. The size of the deficit in the balance of payments and in the reserves will also be greater. This means that the State should direct its efforts to promoting exports and investments in general.

Third: Interventions required to mitigate the effects of the crisis

Immediate measures must be put in place to help the tourism sector overcome the spread of this pandemic so that the sector can quickly recover and prevent this temporary crisis from causing serious problems that may last for years such as the bankruptcy and layoffs of many workers in the sector. The most important proposed measures are as follows:

- Alleviating the burden on affected people by extending the deadlines for the payment of corporate taxes, real estate taxes and other taxes; and extending the maturities of loans and rescheduling them without interest, provided that these facilities extend for a period of at least a year after the return of tourism activity to normal.
- Availing financing incentives to rehabilitate tourist facilities:
 - Activating the Emergency Aid Fund to infuse the sector with liquidity to meet the necessary expenses of salaries, rents and utilities, provided that they are repaid interest-free one year from the return of tourism activity.
 - Activating the tourism investment fund in partnership between the Ministry of Tourism and the private sector "Papyrus"
 - Commercial mall owners to exempt tenants listed in the commercial register,

including restaurants and cafes, from the monthly rent for a period of 6 months.

- The Social Security Authority to exempt tourism establishments from paying social insurance, both employer and employee shares, in Form 2 for a period of 6 months
- Exempting tourist establishments from paying electricity, water and natural gas bills.
- Sterilization of all tourist establishments with emphasis on the application of health and hygiene standards (already announced), along with implementing a mechanism for continuous follow-up and inspection in all tourist establishments. Civil society organizations can participate so that Egypt becomes a "Hygiene Clean Destination."
- Conducting intensive training courses for workers in the sector to ensure their skills are maintained and prevent them from leaving the tourism sector to other sectors.
- Continued promotion of Egypt as an international tourist destination, especially the Grand Museum, which is scheduled to open before the end of this year.

Within the framework of efforts of the Egyptian government to reduce the negative effects of the Corona virus on the Egyptian economy, the Government has taken several appropriate decisions and measures,⁸ which are in the interest of the tourism sector in Egypt and could provide it with the needed support. However, details and mechanisms of application are still unclear, which causes concern among the tourist community about the future of the sector.

Fourth: Institutional weaknesses revealed by the crisis⁹

The crisis revealed institutional imbalances in the tourism sector in Egypt, as shown in the following table, which proposes several measures to remedy these imbalances:

8- See the end of this report for a list of these measures.

9- This report addresses the most important proposed measures to restructure the sector. There is a more comprehensive discussion of these and other measures in the report prepared by the Egyptian Center for Economic Studies in 2018 "Proposed Roadmap for the Development of Tourism in Egypt". The report can be found at the following link http://www.eces.org.eg/cms/NewsUploads/Pdf/2018_12_15-12_43_91c2e8573.pdf

Table 2.3. Institutional Imbalances Revealed by the Crisis in the Tourism Sector and Proposed Remedy Measures

Weaknesses	Proposed measures
Overlapping mandates between setting policies, implementing them, and monitoring the performance of the sector	Undertaking institutional development that achieves a clear separation between the three tasks, to ensure the relevance and quality of decisions and actions taken.
Multiple supervisory authorities for tourist facilities (about 32) and poor coordination between them.	Identify one entity for oversight that communicates and coordinates with other entities.
Lack of clarity of vision of the crisis management committee	Clarify the terms of reference and mechanisms of the crisis management committee between the Federation of Chambers of Tourism and the ministries of tourism, aviation, airports and other relevant authorities to avoid conflicting decisions and ensure their implementation.
The absence of a sustainable sectoral strategy that does not change with the change of leaders in the Ministry of Tourism, provided it is formulated in cooperation with sector experts.	An agreement has already been announced by the Federation of Tourism Chambers to prepare a long-term strategy for the development of the tourism sector, though the institutional mechanisms must be announced to ensure implementation and sustainability of this strategy.
Lack of an accurate system for monitoring the performance of the declared strategies and issued decisions.	Follow up on sector performance through the Parliament's Tourism and Culture Committees, civil society and the private sector, to ensure: <ul style="list-style-type: none"> - Achieving the quantitative, qualitative and safety objectives of the policies and measures taken by the State - Applying the decisions correctly, as there are many decisions that are intrinsically sound but face difficulties on the ground.
The lack of a sector-specific database.	Ensure the availability of updated data for the sector as a whole and its sub-sectors, given that they are available in a transparent and regular manner to the tourism business community to contribute to building the technical capabilities of the sector.
Weak level of many Egyptian hotels, especially four- and three-star hotels.	Rehabilitation of hotels in accordance with "New Norms N.N" to keep pace with international standards in competition, so that rating criteria include fixed components of the hotel along with a number of variable criteria such as the method of service provided and environmental and health standards.

Source: The Egyptian Center for Economic Studies (ECES).

Annex

Table A2.1. The Most Important Official Decisions Taken to Mitigate the Repercussions of the Coronavirus, Directly and Indirectly related to the Tourism Sector (Chronologically from the Most Recent at the Time of Writing the Report)

Date	Decision
March 22	The President's decision to launch an initiative to replace and renew tourist hotels and tourism transportation fleets and to postpone company dues.
March 22	With regard to workers in hotel establishments, the Egyptian Federation of Tourist Chambers affirmed a commitment to continue to pay salaries to employees and provide them with accommodation, in addition to donating to purchase 160,000 units to conduct a rapid medical examination for workers in the tourism sector, and reduce the daily presence of workers in Cairo and Giza hotels by 50%.
March 22	With regard to procedures for sterilizing hotel and tourist establishments, the Ministries of Tourism and Antiquities have contracted with two international companies specialized in the field of health and safety with the purpose of passing through all hotel establishments nationwide, to ensure the application of correct sterilization steps in hotels and ensure their effectiveness, as well as to prepare procedures and checklists for sterilization operations in hotel facilities, and conduct simulation models to deal with the spread of infection in hotel establishments.
March 22	The Ministries of Tourism and Antiquities shall avail health awareness measures to the various workers in hotels, in order to ensure dissemination of this health information on a large scale to workers in tourism.
March 22	The Federation shall communicate with the International Expert House to agree on preparing a long-term strategy for the development of the tourism sector.
March 19	With reference to the initiatives launched by the Central Bank of Egypt in connection with financing the manufacturing private sector (on December 12, 2019), real estate financing for middle-income groups (on December 19, 2019), and supporting the replacement and renewal of hotels, floating hotels, and tourism transportation fleets (on January 8, 2020), it was decided to amend the interest rate for the above initiatives to become 8% (calculated on a decreasing basis) instead of 10%.
March 19	Prime Minister's decision to close restaurants, cafes, cafeterias, casinos, cabarets, nightclubs and commercial centers from 7 pm to 6 am until March 31. The decision does not apply to bakeries, grocery stores, pharmacies and supermarkets, whether in or outside the commercial centers.
March 19	Stop domestic tourism for 14 days in four governorates to prevent the spread of Coronavirus.
March 18	Close all land ports in South Sinai to face Coronavirus.
March 18	Preventing the departure of any of the crews working in the tourist establishments in three governorates, namely: Luxor, Aswan and South Sinai.
March 18	Full stamp duty exemption for spot operations to stimulate daily transaction volumes.
March 18	Reducing all expenses of the stock exchange, Misr for Central Clearing, Financial Supervisory Authority, and the Investor Protection" Fund.
March 18	Reducing subscription to the Investor Protection Fund for securities trading operations on the Egyptian Stock Exchange by 50%.
March 17	Extending the period of submission of financial statements for companies whose securities are listed on the stock exchange and companies subject to supervision of the Authority for the financial period ending on December 31, 2019 to April 30, 2020 and the period ending March 31, 2020 to June 15, 2020.

Date	Decision
March 17	Suspending shows held in cinemas and theaters.
March 17	Postponing the payment of real estate tax due on factories and tourist establishments for a period of 3 months and allowing the payment of the real estate tax due on factories and tourist facilities in installments for previous periods, through monthly installments for a period of 6 months.
March 17	Lifting administrative seizure on all taxpayers who have a payable tax against payment of 10% of the tax due and re-settling the files of these taxpayers through dispute settlement committees.
March 16	The Central Bank launches a new initiative for individual clients in default: According to this initiative, all accumulated interest is waived and all lawsuits filed between the bank and client with the courts are relinquished immediately after agreeing on payment terms, in addition to lifting the ban on them and the release of guarantees and mortgages for these debts when the customer pays 50% of the net debt balance during the period up to March 31, 2021. In addition, clients who made payments before September 30, 2019 shall benefit from the same terms of the initiative in the framework of the initiatives launched by the Central Bank recently in connection with legal persons in default.
March 16	The Central Bank's decision to postpone the payment of all liabilities and loan installments, even personal ones, for a period of 6 months.
March 16	The suspension of air traffic in all Egyptian airports from 19 to 31 March.
March 16	The meeting of the Ministers of Tourism and Antiquities and the Minister of Civil Aviation and affirming that the Egyptian airspace will not be closed during the period of suspension and that Egyptian airports will continue to receive charter and regular flights (without passengers) in order to allow tourist delegations present in Egypt to complete their tourism programs and return to their countries on their scheduled travel dates, without bringing in any new delegations during the flight suspension period.
March 16	The Central Bank's decision to reduce its policy rate by 300 basis points, so that the overnight deposit and lending rate and the rate of the main operation will be 9.25%, 10.25%, and 9.75%, respectively, and the discount rate will be 9.75%.
March 16	The Prime Minister issues guidance to sterilize all hotels and tourist facilities during the period of suspension of tourist trips.

Source: Various media sources.

3. Suez Canal Revenues

Lead Researcher: **Mohamed Hosny**

First: Brief description of the subject of the report

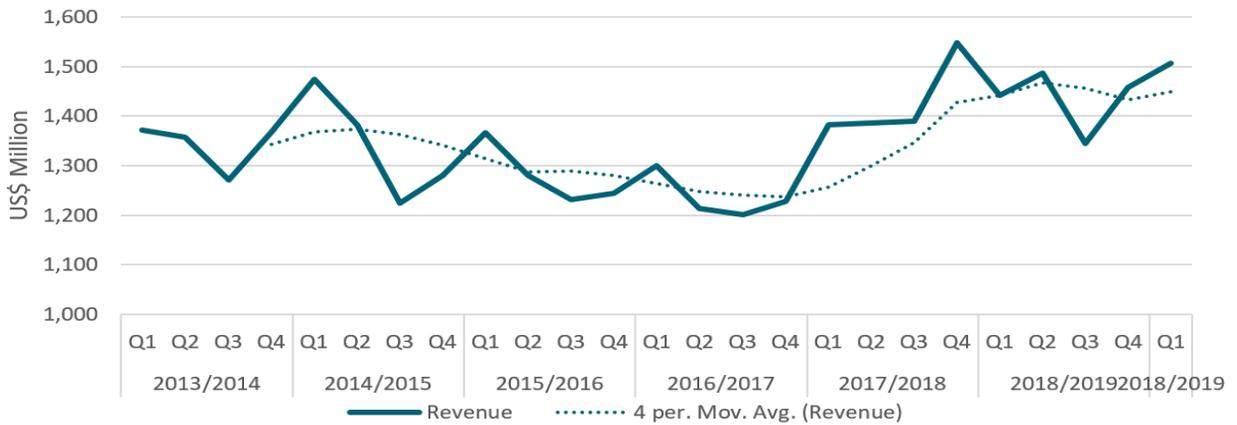
- The Suez Canal is one of the most important pillars of the Egyptian economy. During Fiscal Year (FY) 2018/19, the Canal generated 3.7 percent of public budget revenues. It is also important in stabilizing the Egyptian pound, accounting for 7 percent of current account inflows and 23 percent of service exports during the same fiscal year. In addition to being used as a transit waterway, it also employs 14,000 Egyptian workers and creates several indirect jobs in the trade industry. It is also used as a port, with Egyptian flagged ships are the 6th largest exporters and 10th largest importers.
- While there are several waterways in the world, the Panama Canal in Central America is the only other waterway that is of equal strategic and geographic importance, with significant shipment volumes.
- During FY 2018/19, 18,576 ships passed through the Suez Canal with a total weight of 294 million tons, generating transit revenue of \$5.85 billion. In contrast, the Panama Canal had a lower number of ships and cargo at 13,785 ships and 253 million tons of cargo. Transit figures by tons are more revealing as the pricing is based on cargo weight rather than number of ships.
- We can see there is a clear seasonality in the transit revenues of the Suez Canal. Peak shipping revenues occur during Q1 of each fiscal year while the low season is Q3 of the fiscal year.
- Suez Canal transit fees are higher compared to the Panama Canal. For lighter ships with less than 5000 tons of cargo, the Suez Canal

charges between \$7-9 per ton depending on the type of ship while pricing for the Panama Canal is significantly lower and ranges between \$4-6 per ton. Larger cargo above 40,000 tons is between \$2-4 per ton for the Suez Canal and \$1-3 for the Panama Canal, with the range also depending on the type of ship. The Suez Canal being more expensive is justified by the fact that it is wider and can accommodate larger ships, which are more fuel efficient. This makes using the Suez Canal more profitable for shipping companies as they can send one large fuel-efficient ship through the Suez Canal at a lower cost compared to the price of sending a smaller ship through the Panama Canal.¹

- There was a significant annual drop by 9 percent in Canal traffic during FY 2015/16 from \$1.47 to \$1.33 billion the previous year as seen in the graph below. This was due to contraction in international trade and oil prices falling significantly during that time.
- Construction of the second branch of the Suez Canal was completed by the end of 2016, and full operations started a few months later. During that time oil prices and international trade rebounded. This was reflected by Q4 2017/18 revenues significantly increasing by 25 percent from \$1.2 billion to US\$ 1.5 billion. The new branch also led to a reduction of transit waiting times from 18 hours to 11 hours.
- During the global financial crisis in 2008, monthly revenue in the Canal fell from \$1.23 billion in Q32007/2008 to 960 million the following year in Q32008/2009, a drop in revenue of 22 percent, which did not recover until years later.

¹ <https://www.etcinternational.com/blog/suez-or-panama-canal-which-route-lowers-your-ocean-shipping-costs/>

Figure 3.1. Suez Canal Revenues



Source: Central Bank of Egypt (CBE).

Second: Demand and supply shocks in the context of crisis cycle

The table below presents possible scenarios that affect Suez Canal revenues at each stage of the crisis cycle and the different scenarios that lead to supply and demand shocks. We will see the effects on Suez Canal revenue for the year starting Q32019/20 by comparing it to the previous year. The table below is based on the latest monthly figure of US\$458 million in revenue in February 2020, and annual revenue of US\$5.8 billion.

- The **supply shock** is the possible decrease in the quality of services offered to passing ships due to the decrease of workers. The reduction in the number of workers was dictated by the Suez Canal Authority as a response to the crisis. Since we do not have access to this information, we cannot provide an assessment in this respect.

- The **demand shock** is the number of tons of cargos flowing through the canal. This volume of cargo will change at each stage of the crisis that we are going through.
- The Coronavirus crisis is unprecedented, making it difficult to estimate the drop in Suez Canal revenues in the coming year. However, we can use the 2008 financial crisis as a benchmark in that it will be equal or greater in magnitude. Given that the Coronavirus crisis affects the real economy rather than just the financial sectors it is expected that revenue losses will be equal or even greater.
- The analysis relies on World Bank estimates for the current account deficit as a percentage of GDP at 2.5 percent, i.e., US\$7 billion deficit. Relying on World Bank forecast statistics before the outbreak of Covid-19 means the current account deficit will increase by US\$ 7 billion.

Table 3.1. Potential Scenarios for the Impact of the Crisis on Suez Canal Revenues, based on the Aforementioned Crisis Cycle and Assumptions

Stage	Demand and/or supply shock	Analysis	Impact on Suez Canal revenues
1. Emergence of the virus (December 2019 – January 2020)	Beginning of a slight demand shock and no supply shock.	The observed demand shock is due to the decrease in China’s production activity due to the spread of the disease. It is only a slight shock because the rest of the world is not yet affected. No observed supply shock because at this stage, as no measures have been taken yet to change the traffic management in the canal.	Revenues increased during Q32019/20, yet the impact of the demand shock is still observed in the lower rate of growth of this quarter’s revenue (only 3.3%) in comparison to the (7.3%) rate of growth of the equivalent quarter in the previous year 2018/2019.

Stage	Demand and/or supply shock	Analysis	Impact on tourism revenue
<p>2. The beginning of proliferation (Feb. through mid-March 2020)</p>	<p>Moderate demand shock in February and sharp demand shock during the first half of March.</p> <p>Supply shock starting from March.</p>	<p>The crisis has reached its peak in China during February, with a serious lockdown of factories. But, on the other hand, the rest of the world remained unaffected thus we perceive the demand shock facing Suez Canal as moderate.</p> <p>During the first half of March, the demand shock was more serious because the rest of world started to seriously suffer from the spreading of the virus. Different levels of lockdowns started to take place in different countries.</p> <p>The Suez Canal Authority implemented a decree issued by the cabinet to limit the number of workers in the Suez Canal to reduce worker density. This directive is expected to last until March 31st and may be renewed depending on the circumstances.</p>	<p>The latest data shows that in February 2020 total number of tons transported annually increased by 12.8% compared to February 2019, meaning that revenue will have also increased. However, this is misleading because if we look at the total weight of container ships, it decreased by 13.2 percent due to a decline in international trade. The increase in traffic was thus driven by oil tanker shipments which increased by 25.4%.</p> <p>Irrespective of the pandemic, oil consumption was expected to decline by 1% in 2020 meaning that oil shipments are not a sustainable source of revenue.</p> <p>As far as the first half of march is concerned, we anticipate a sharp drop in revenues. In March 2019, 97,796 tons were transported—an increase of 10% over previous year same time. Based on a similar drop during the 2008 financial crisis, we expect this March cargo to witness a drop in weight and revenues by almost 15%.</p>
<p>3. Aggravation of the problem (From mid-March to mid-May 2020)</p>	<p>An even higher and more severe demand shock and a moderate supply shock.</p>	<p>Although China will be showing recovery signs during this phase, this is still not likely to be translated into a tangible recovery in international trade because the rest of the world would still be badly hit by the virus.</p> <p>We predict two possible scenarios:</p> <p>Scenario 1 (optimistic): This scenario assumes that decline in transits by container ships continues at the same rate we witnessed in February.</p> <p>Scenario 2 (pessimistic): This scenario assumes the decline in transits by container ships would be as high as the financial crisis.</p>	<p>Scenario 1 (optimistic): Annual revenue losses of \$585 million estimated on the basis of a 10% fall in revenues.</p> <p>Scenario 2 (pessimistic): Annual revenue losses of \$876 million assuming annual transits fall by 15% similar to the situation during the financial crisis.</p>

Stage	Demand and/or supply shock	Analysis	Impact on tourism revenue
4. Crisis recedes (Mid-May-August 2020)	Gradual recovery of demand. Mild recovery in the supply.	Gradual recovery will take place thanks to full recovery of China and gradual recovery of Europe and North America. This means that the optimistic scenario of the previous phase will prevail. While most of the revenue losses will take place in stage 3, there will still be a tangible drop in revenue at phase 4 during Q3 FY2020/21.	We hope the optimistic scenario of phase 3 will prevail, i.e., annual revenue losses of \$585 million estimated on the basis of a 10% fall in revenues.
5. Recovery (as of September 2020)	Based on the previous scenario, after a year traffic returns to close to normal. Workers also return to work. Demand recovery and supply recovery.	Workers resume at the SCA and revenues by the end of the year rebound close to pre-crisis levels. Even after the financial crisis traffic did not recover until three years later.	According to most forecasts, international trade is going to recover, and this is not likely to take place before mid-2021. Since the Suez Canal is a channel of trade it is not expected to recover in 2020.

Source: The Egyptian Center for Economic Studies (ECES).

These estimates should be read with caution, as expectations may require further revision based on the day by day development of the outbreak, as its duration and scope are still unknown.

Revenues of the Suez Canal is one of the three components of the trade balance along with tourism and remittances, it is a vital source of foreign exchange. It will also affect the supply chain of manufacturing in Egypt due to shortages of inputs, as we will see in future reports. All these factors will lead to the size of the deficit in the balance of payments growing further.

Third: Institutional weaknesses revealed by the crisis²

One of the major weaknesses observed during the crisis is how the Suez Canal is subject to

outside international trade that is out of the control of the government. This weakness was revealed during several global events such as the 2008 financial crisis and the 2015 drop in oil prices. The demand of the Suez Canal is exogenously determined and is very vulnerable, thus the need for an industrial zone in the Canal area, and to develop the Suez Canal as a logistical zone focused on industrial exports. The Suez Canal Area Development Project was launched in 2014 aimed at developing the Suez Canal Region, and the first phase was completed a year later but it is far from being fully developed. More efforts to improve its attractiveness to investors and to facilitate industrial development are needed.

² <https://www.etcinternational.com/blog/suez-or-panama-canal-which-route-lowers-your-ocean-shipping-costs/>

This report addresses the most important proposed measures to restructure the sector. There is a more comprehensive discussion of these and other measures in the report prepared by the Egyptian Center for Economic Studies in 2018 "Proposed Roadmap for the Development of Tourism in Egypt". The report can be found at the following link http://www.eces.org.eg/cms/NewsUploads/Pdf/2018_12_15-12_43_91c2e8573.pdf

4. Manufacturing Industry

Lead Researcher: Rama Said

First: Brief description of the subject of the report

Manufacturing industries are among the economic sectors which various countries rely on as an engine of the development process, due to the high degree of forward and backward linkages between them and other economic sectors, whether production or services. Therefore, any crisis to which manufacturing industries are exposed has a direct impact on other economic activities, in addition to its contribution to employment.

This report examines the implications of the Coronavirus crisis on manufacturing industries as a whole and will be followed by four other reports over the coming weeks that address the impact of the crisis on specific industries, as follows:

1. The group of industries that meet the daily needs of the citizens, foremost among which are the food industries.
2. The group of industries related to the public health of citizens, foremost among which are the pharmaceutical industries, medical supplies, disinfectants and detergents.
3. The group of industries producing intermediate goods and production requirements.
4. The group of other industries producing luxury goods such as cars and electronic goods.

The manufacturing industries are generally considered to be one of the most affected sectors in the current crisis, for the following two main reasons:

1. Manufacturing industries are among the most tradable economic sectors, especially foreign trade.
2. As globalization in the manufacturing sector has led to the dispersal of the stages of manufacturing industry across the world (fragmentation of production), the production process in any country has been linked to global supply chains, resulting in increased sensitivity of the manufacturing sector to various crises.

The products of the manufacturing industries vary in the extent to which the consumers rely on these products in their daily, as well as in the degree of overlap in the factors of production used (labor, capital and technology), and hence their vulnerability to crises varies.

In Egypt, manufacturing industries play an important role in their contribution to GDP, employment, investment and foreign trade as shown in the following table, in addition to the contribution of the informal sector to these industries.¹ In the beginning of the second phase of the economic reform program, the State attempted to increase the contribution of the manufacturing industry to the economy, specifically the role of the private sector.

Table 4.1. The Contribution of the Manufacturing Industries to the Egyptian Economy²

Variable	Contribution (%)
Share of manufacturing industries in GDP (2018-2019)	16.2
Share of manufacturing industries in investment (2018-2019)	11.8
Share of manufacturing exports in total exports (2018)	57
Share of manufacturing imports in total imports (2018)	66
Share of manufacturing industries in employment (Q3 2019)	12.4
Female share of total workers in manufacturing (third quarter of 2019)	6.4

Sources. The latest data available from the Ministry of Planning and Economic Development, Quarterly Bulletin of Manpower Survey; Trade Map.

¹ See Chapter 8 for more details on the impact of the outbreak on the informal sector.

² The focus here is on the latest data, not Trend, because it is the starting point for a crisis.

Second: The impact of previous crises on the manufacturing sector

In general, the manufacturing industry is affected by crises through one or two channels, according to the nature of the crisis.

The first channel is the repercussions of the global economy on the local economy, which is mainly related to the movement of foreign trade in manufacturing industries, whether imports and exports, representing global supply and demand, respectively.

The second channel is the effect of any internal

events on supply and demand on manufacturing industries.

The Egyptian economy has been subject to two shocks, the first is an external shock which is the global financial crisis in the last quarter of 2008, and the second is an internal shock, which is the Revolution of January 25, 2011. Both these shocks affected all aspects of manufacturing industries. Here we focus on the impact of the two crises on foreign trade.

The following table compares the responses of total exports and imports, and manufacturing exports and imports during the two crises:

Table 4.2. Impact of the Global Financial Crisis of 2008 and the 25th of January Revolution on Exports and Imports

	2009 The impact of the financial crisis (%)	2011 January 25 revolution (%)	2012 January 25 revolution (%)
Total import growth rate	-15	18	12
Total export growth rate	-7	20	-7
Manufacturing import growth rate*	-13	12	8
Manufacturing export growth rate *	6	20	-7

Source: The Egyptian Center for Economic Studies (ECES) calculations based on Trade Map data, March 2020.

* The industry includes codes HS 04+ HS 15-99, with the exception of 25, 26, 27, 50, 52, 71.

The table shows the following:

- Regarding the external shock: Despite the similarity of the general trend, manufacturing exports were able to achieve positive rates (6 percent) at a time the rate of growth of total exports decreased, which indicates the ability of manufacturing exports to continue despite the presence of a global demand shock unlike other sources of export. This means that attention to manufacturing exports should be a priority goal for the country, as will be seen in the analysis of the situation in the current Corona crisis.
- As for the internal shock, we find that manufacturing exports were affected in the following year due to contractual obligations signed before the crisis, which also means the extension of the period of the impact of the crisis on exports. A boom is also noticed in imports at the time of the internal crisis, whether total or manufacturing imports.

We conclude from the above that previous crises to which the Egyptian economy was exposed revealed three results:

1. The ability of manufacturing exports to continue to bring in foreign currency to the country more than all other components combined.
2. The negative impact on manufacturing may occur in a later period, which means that the sector must be considered even if its figures are positive.
3. Increased imports during times of crisis.

In what follows, we will address the impact of the Coronavirus pandemic on the manufacturing sector as a whole and its relationship to the crisis cycle.

Third: Demand and supply shocks in the context of the crisis cycle

The Corona crisis differs from the previous crises because it is more severe and dangerous, combining both an internal and external shock, and therefore has an impact on the manufacturing industries through both channels.

On one hand, the Corona pandemic caused a disruption in the global supply chains, with a direct impact on the availability of production inputs for manufacturing. Given manufacturing in Egypt relies heavily on imported primary and intermediate production inputs, which together constitute nearly (44 percent) of total Egyptian imports in 2019 according to the monthly Foreign Trade Bulletin issued in December 2019, the lack of production inputs threatens to stop the production process completely or reduce the production capacity of factories. Most importantly, there is the human aspect, that is the impact on the ability of workers to produce regularly.

On the other hand, the Corona pandemic is expected to result in a decline in global demand, which is starting to be felt. The Organization for Economic Cooperation and Development (OECD) expects the Corona pandemic will lead to a decline in global GDP growth by 1.5 percent in 2020.

In addition, the spread of the pandemic and measures taken to control its spread locally will affect the supply and demand on manufacturing industries.

Below we will present possible scenarios³ for the industry-specific indicators in the context of the crisis cycle in light of the following assumptions and concepts:

- Global demand shock: low global demand for Egyptian products
- Global supply shock: low ability of different countries to supply the various products that Egypt imports
- Domestic demand shock: low domestic consumption of various products
- Domestic supply shock: Egyptian factories' production ability falls short of covering the needs of both domestic and export markets
- In the analysis, we focus mainly on foreign trade because it is the main driver. Any change in manufacturing output is related to the movement of foreign trade and global

value chains. This is in addition to the problems faced by local manufacturers at every stage of the crisis, which requires supportive intervention by the state.

- There is a lag between the shock and its impact on foreign trade in manufacturing products.
- The ability of the Egyptian industry to recover is mainly related to the world's ability to recover. Therefore, any pessimistic or optimistic scenario for recovery in Egypt is linked to recovery scenarios globally.

The estimates were built using the following methodology:

- Mirror data were relied on regarding total exports and imports due to their availability on a quarterly basis, in addition to the availability of 2019 data.⁴
- Separating the estimates of China and the rest of the world due to the difference in the timing of the emergence of the crisis. To obtain monthly foreign trade estimates for China for the years 2019 and 2020, Chinese data for actual trade with Egypt in 2018 and January-February 2020 were used, assuming a stable relationship between monthly and quarterly values.
- To estimate exports and imports in 2020, annual growth rates were assumed based on an analysis of the performance of exports and imports in 2009, 2011 and 2012, which represent the impact of the external and internal shocks that hit the Egyptian economy.
- The values of manufacturing exports and imports were estimated with reference to the share of manufacturing exports and imports in total exports and imports of 57 percent and 66 percent, respectively, as previously indicated (Table 4.1.).

The following are possible scenarios for the rate of growth of manufacturing exports and imports according to the crisis cycle and in light of the assumptions made.

3. These estimates should be read with caution, as expectations may require further revision due to the evolving nature of the outbreak day by day, and its duration and scope are still unknown.

4. Unfortunately, mirror data do not include data for all countries, foremost of which is the Kingdom of Saudi Arabia, which is a main trading partner for Egypt. To overcome this, the relationship between mirror data and direct data was studied in 2018, the most recent year for which direct data is available, and it turns out that mirror data makes up 85 percent and 80 percent of the direct data values for exports and imports, respectively. In light of this relationship, after obtaining the estimates of total exports and imports, these estimates were divided by a coefficient of 0.85 percent for exports and 0.80 for imports.

Table 4.3. Potential Scenarios for the Impact of the Crisis on the Manufacturing Sector, based on the Aforementioned Crisis Cycle and Assumptions

Stage	Demand and/or supply shock	Analysis	Quantitative impact on manufacturing
<p>1. Emergence of the virus (December 2019 to January 2020)</p>	<p>Marginal shock on both sides of supply and demand in China (global)</p>	<p>Egyptian manufacturing was slightly affected by the crisis during this stage as a result of the decline in foreign trade with China, with difficulty searching for alternative markets due to the absence of detailed information on other sources of supply in the context of time constraints and a weak role of commercial representation. This effect may be reduced by the availability of some inventory of production inputs with some manufacturers, however this cannot be generalized.</p>	<p>Chinese manufacturing imports to Egypt decreased by a limited amount of about 1 percent during the period December 2019 - January 2020 compared to the same period in the previous year, bringing Egyptian imports to \$2 billion (96 percent) of total Egyptian imports from China. As for manufacturing exports, they fell by about 56 percent during the period (December 2019 - January 2020) compared to the same period in the previous year, to reach \$27 million, which accounts for 21 percent of total exports to China.⁵</p>
<p>2. The beginning of proliferation (February through mid-March 2020)</p>	<p>Increased shock on both sides of global supply and demand, and the onset of shocks locally</p>	<p>Regarding global supply and demand, Egyptian imports and exports declined with both China and the world during that period as a result of the continuing crisis in China and its spread to various countries around the world. With regard to domestic supply and demand, with the emergence of the virus in Egypt, the effect on supply started to appear due to the employment cutback as a result of school closures, especially among women, in addition to the inability of enterprises to secure some production requirements. As for domestic demand, this period began to witness a limited decline in demand for manufacturing products in general, especially in the second week of March as a result of declining tourism activity. This decline does not apply to domestic demand on some industries, specifically food industries, disinfectants and detergents, whose demand has increased due to the spread of panic buying among citizens with the decision to suspend schooling.</p>	<p>Imports: The rate of decline in Egyptian manufacturing imports from China accelerated by about 10 percent during the period February – mid-March compared to the same period in the previous year, most of them in the first half of March, bringing imports from China to \$1.5 billion. As for imports from other countries, we assume Egyptian imports from the world will decrease by 2 percent during the first quarter of 2020 compared to the first quarter of 2019 (the same rate indicated by the UNCTAD report as a decrease in the supply of intermediate goods from China). Manufactured imports from the world are estimated at \$10.6 billion.</p>

5. The sector-level impact will be covered in the sectoral reports.

Stage	Demand and/or supply shock	Analysis	Quantitative impact on manufacturing									
<p>2. The beginning of proliferation (February through mid-March 2020) cont.</p>			<p>Exports: Egyptian exports to China continued to decline by about 29 percent during the period (February - mid-March 2020) compared to the same period in the previous year, bringing Egyptian exports to \$37 million. As for exports to the rest of the world, assuming a decrease in Egyptian manufacturing exports at the same rate of decrease in total exports as a result of the global financial crisis (-7 percent) during the first quarter of 2020 compared to the first quarter of 2019, the value of manufacturing exports is estimated at \$3.3 billion. As for the local impact, given that the change occurred in the first half of March, it is difficult to quantify the change in production. However, although a decline in production is not expected to occur, this period witnessed cancellation of some existing export contracts, which predicts a slowdown in production in the coming period.</p>									
<p>3. Aggravation of the problem (From mid-March to May 2020) To 5. Recovery (as of September 2020)</p>	<p>The beginning of the acute shock in supply and demand domestically, and continued production and trade imbalance globally</p>	<p>Together, these stages are characterized by being highly dynamic, because the recovery of the world is interlinked, and the impact on Egypt is linked to this global recovery. Therefore, we see the current situation as follows:</p> <ul style="list-style-type: none"> • From mid-March to the end of March, the Chinese economy begins to recover, while stoppage of economic activity in European countries continues and even peaks. The pandemic is expected to continue, at least until June, according to WHO reports. 	<p>This analysis translates into three year-round growth scenarios (from April 2020 to April 2021).</p> <p>Scenario 1 (optimistic) assumes:</p> <ul style="list-style-type: none"> • The rate of decline in manufactured imports is lower compared to the global financial crisis • Doubling of the rate of decline in manufacturing exports compared to the figure achieved as a result of the local crisis <table border="1" data-bbox="818 1379 1282 1616"> <thead> <tr> <th></th> <th>Growth rate (%)</th> <th>Value (bn)</th> </tr> </thead> <tbody> <tr> <td>Manufactured exports</td> <td>-14</td> <td>12.5</td> </tr> <tr> <td>Manufactured imports</td> <td>-7</td> <td>46.3</td> </tr> </tbody> </table> <p>Scenario 2 (moderate effect) assumes:</p> <ul style="list-style-type: none"> • The rate of decline in manufactured imports is higher as a result of the global economic crisis. 		Growth rate (%)	Value (bn)	Manufactured exports	-14	12.5	Manufactured imports	-7	46.3
	Growth rate (%)	Value (bn)										
Manufactured exports	-14	12.5										
Manufactured imports	-7	46.3										

Stage	Demand and/or supply shock	Analysis	Quantitative impact on manufacturing																		
3. Aggravation of the problem (From mid-March to May 2020) To 5. Recovery (as of September 2020) cont.		<p>As for the situation in Egypt, we find that the period from the second half of March witnessed a slowdown in the production system due to the partial cessation of economic activity and the closure of schools and universities.</p> <p>All of this means that Egypt will not recover before European countries and the United States because these are the traditional markets for Egyptian exports, followed by Arab countries. On the other hand, we find that China's recovery may result in a gradual increase in Egyptian imports from China in terms of production requirements as well as final products to meet the needs of the local market, which the local manufacturing system cannot fully provide in view of the precautionary measures related to the disease. A full recovery of the Egyptian manufacturing system is not expected, at least before the beginning of next year.</p>	<ul style="list-style-type: none"> Doubling of the rate of decline in manufactured exports compared to the assumed figure in scenario 1. <table border="1"> <thead> <tr> <th></th> <th>Growth rate (%)</th> <th>Value (bn)</th> </tr> </thead> <tbody> <tr> <td>Manufactured exports</td> <td>-28</td> <td>10.5</td> </tr> <tr> <td>Manufactured imports</td> <td>-15</td> <td>42.3</td> </tr> </tbody> </table> <p>Scenario 3 (pessimistic) assumes:</p> <ul style="list-style-type: none"> Higher rate of decline in manufactured imports compared to the rate assumed in scenario 2. Higher rate of decline in manufactured exports compared to the rate assumed in scenario 2. <table border="1"> <thead> <tr> <th></th> <th>Growth rate (%)</th> <th>Value (bn)</th> </tr> </thead> <tbody> <tr> <td>Manufactured exports</td> <td>-56</td> <td>6.4</td> </tr> <tr> <td>Manufactured imports</td> <td>-30</td> <td>34.8</td> </tr> </tbody> </table> <p>As new cases emerge in China, the most pessimistic scenario is most likely to happen.</p>		Growth rate (%)	Value (bn)	Manufactured exports	-28	10.5	Manufactured imports	-15	42.3		Growth rate (%)	Value (bn)	Manufactured exports	-56	6.4	Manufactured imports	-30	34.8
	Growth rate (%)	Value (bn)																			
Manufactured exports	-28	10.5																			
Manufactured imports	-15	42.3																			
	Growth rate (%)	Value (bn)																			
Manufactured exports	-56	6.4																			
Manufactured imports	-30	34.8																			

Source: The Egyptian Center for Economic Studies (ECES).

These estimates should be read with caution, as expectations may require further revision based on the day by day development of the outbreak, as its duration and scope are still unknown.

As for manufacturing output, in light of the estimates of the Egyptian Center for Economic Studies in issue No. 2 dated March 24 of the impact of the Coronavirus on the rate of GDP growth, and with an overall view of manufactured output, manufacturing output can be estimated (16 percent of GDP) in the various stages of the crisis as shown in the following table.

Table 4.4 Estimating Manufactured Output during the Various Stages of the Crisis as a Percentage of GDP

	Assumption	Estimating the value of real manufacturing output																
1-Emergence of the virus (December 2019 to January 2020)	GDP growth rate of 5.6% from the fourth quarter of 2019	EGP 161 billion																
2-The beginning of proliferation (February through mid-March 2020)	GDP growth rate of 4.9% in the first quarter of 2020 compared to the first quarter of 2019	EGP 163.8 billion																
3- Aggravation of the problem (From mid-March 2020)	<table border="1"> <thead> <tr> <th>Scenario</th> <th>Annual growth rate of GDP</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>3.5</td> </tr> <tr> <td>2</td> <td>2.3</td> </tr> <tr> <td>3</td> <td>0.8</td> </tr> </tbody> </table>	Scenario	Annual growth rate of GDP	1	3.5	2	2.3	3	0.8	<table border="1"> <thead> <tr> <th>Scenario</th> <th>Annual real manufacturing output</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>EGP 657 billion</td> </tr> <tr> <td>2</td> <td>EGP 649 billion</td> </tr> <tr> <td>3</td> <td>EGP 639.4 billion</td> </tr> </tbody> </table>	Scenario	Annual real manufacturing output	1	EGP 657 billion	2	EGP 649 billion	3	EGP 639.4 billion
	Scenario	Annual growth rate of GDP																
	1	3.5																
	2	2.3																
3	0.8																	
Scenario	Annual real manufacturing output																	
1	EGP 657 billion																	
2	EGP 649 billion																	
3	EGP 639.4 billion																	

Source: The Egyptian Center for Economic Studies (ECES) estimations.

It is important to add to this analysis three important points:

1. The negative impact of the Coronavirus on Egyptian manufacturing will automatically affect all economic activities in Egypt due to the interrelationships and interconnections with the rest of economic activities as previously mentioned.
2. With the complete deterioration of tourism and remittances of workers abroad, the manufacturing sector remains the only source capable of providing foreign currency and therefore requires special attention from the state.
3. Factories currently suffer from a severe shortage in liquidity as a result of a sharp decline in production and sales with continued obligations towards employment and the government. Below are some problems that the manufacturing sector suffers as of the beginning of mid-March:
 - Curfew measures that affected the shift system in factories.
 - The emergence of some cases in factories leading to production stoppage for a period of time, depending on the decision of each factory because as there is no clear protocol that applies to everyone for how to behave and the period of production stoppage.
 - Factory productivity declines as a result of following virus prevention measures, including reducing the number of workers.
 - Individual decisions by official bodies that impact workers' shifts or the movement of workers from one governorate to another without coordination, which disrupts the production process.
 - Increased leaves as a result of infection, female leaves or workers refusing to go to factories, especially in small factories.
 - The increasing difficulty in providing the required raw materials and intermediate goods as the crisis worsens globally.
 - There may be some cases of insufficient production capacity to meet the increasing demand for food products, disinfectants, detergents, and medical supplies.
 - Canceling many existing export contracts (under implementation), not just new ones.
 - There is a group of export products whose exports will decrease not only due to the irregularity of the production process in Egypt but also as a result of government decisions to prohibit the export of those products or imposing export fees. The decisions of the Ministry of Industry and Trade include prohibiting the export of alcohol, and imposing an export fee on cotton scraps and related products for a year, as well as requiring Egyptian companies producing and importing medical supplies to supply their products and inventory to the Unified Medical Procurement Authority for a period of 3 months.

- The sharp change in other sectors (such as tourism and others) has negatively affected the various manufacturing sectors, and this will be covered in subsequent sectoral reports.

Finally, the importance of supporting manufacturing in this crisis must be emphasized in order to maintain investments in this sector and ensure full return of its activity after the crisis, in addition to maintaining employment as an integral part of respecting the rights of Egyptians to a decent life. Other countries, specifically the UK, have supported manufacturing to maintain employment, as the UK has borne 80 percent of the wages of factories, particularly those of small businesses.

Fourth: Interventions required to mitigate the effects of the crisis⁶

4.1. Measures to avail liquidity to companies

- Exempting all companies from filing tax returns for a period of three months until June 30, 2020
- Exempting all companies from their obligations towards the government and service companies for a period of three months, foremost of which is exemption from payroll tax and social security taxes, fixed installments of electricity and gas fines.
- A 50 percent discount on toll road fees.
- Expediting the procedures of the committee formed in accordance with Prime Minister Decision No. 776 of 2020 in respect of the Emergency Workers' Benefits Fund to ensure prompt disbursement.
- Paying the companies dues with the Ministry of Finance.
- Expediting the disbursement of arrears of export subsidies due to exporters from the fiscal year 2017/2017 to 6/30/2019 and looking into the possibility of converting some items of export support to direct cash transfers, specifically the external exhibitions and technical support, as it is currently impossible to benefit from such subsidies.

- Paying companies dues in the national projects.
- Take advantage of the assistance provided by international institutions, particularly the World Bank and the International Finance Corporation (IFC), which announced a \$14 billion financing package to help countries tackle the spread of the virus, including \$8 billion directed to support private sector companies and their employees who have been negatively affected by the decline in economic activity, and to finance business activity, working capital and provide short-term financing. This funding will support the sectors most affected by the pandemic, particularly the tourism and manufacturing sectors, as well as the sectors that support the response to the pandemic, in particular the health system and related industries.

4.2. Other immediate measures to support manufacturing

- Reviewing the percentage of inward exports in free zones and increasing them temporarily to 50 percent instead of 20 percent, while studying the possibility of their continuation.
- Operating all factories suspended due to some procedural obstacles that may prevent starting the activity.
- Motivating factories to adjust production lines to suit the current needs through state tenders. For example, directing furniture and clothing factories to the manufacture of medical masks, doctors' clothes, hospital needs and protective clothing for citizens, as well as engineering and electronic industries to manufacture artificial respiration devices and similar medical devices, and allowing cosmetic companies to obtain a percentage of alcohol to enable them to produce antiseptics.
- Applying international procedures to dealing with virus cases that may appear in factories, which include isolating infected cases and stopping production at the factory for 48 hours to carry out purification and restore production activity.

6. Most of these proposals have been submitted by the Federation of Industries to the relevant authorities.

Fifth: Institutional weaknesses revealed by the crisis

The crisis is an opportunity to fix the institutional problems that have been longstanding, many of which have clearly emerged in the context of the crisis. The following are some of the reform proposals to deal with some of these problems:

- Forming a permanent crisis management committee headed by the Prime Minister to manage this and other crises centrally, with centralized oversight and follow-up of implementation so that no confusion occurs.
- Evaluating the impact of approved exceptional procedures related to import, licenses and examination to facilitate the performance of business and enacting them as permanent procedures.
- Accelerating the process of issuing permits, licenses, and allocating lands for industrial activity to speed up the injection of new investments. A complete and comprehensive reform of the land system is needed as it remains the biggest obstacle to industrial investment (refer to the study of the Egyptian Center for Economic Studies in this regard)
- Activating the role of commercial representation to provide information in an organized and institutional way, which would promote new investments and avail opportunities for foreign trade and better handling of crises. This is necessary and important for small factories that represent more than 80 percent of manufacturing plants.

5. Communications and Information Technology Sector

Lead Researcher: **Racha Seif El-Dine**

First: Brief description of the subject of the report

The institutional framework for the sector as a whole comprises of three main entities: 1) the Ministry of Communications and Information Technology; 2) the National Telecom Regulatory Authority; and 3) the Information Technology Industry Development Agency (ITIDA).

The Minister of Communications and Information Technology is the head of the National Telecom Regulatory Authority and the Information Technology Industry Development Agency (ITIDA).

1.1. ICT sector structure:

1.1.1 The telecommunications sector

The telecommunications sector has gone through four stages of development:

- The first stage (1985 to 1995): the beginning of the Egyptian government's efforts to introduce information and communications technology and engage businessmen with the government.
- The second stage (1995 to 1999): Privatization of Internet services, and the start of the mobile phone operators Mobinil and Vodafone in Egypt.
- The third stage (1999 to 2004): Most of the institutional framework for telecommunications and information technology has been established after creation of the new Ministry of Communications and Information Technology.
- The fourth stage (2004 to date): The Minister of Communications and Information Technology was replaced¹ and the introduction of new mobile operators.

The telecommunications sector consists of two blocs: The first, a small number of large companies that control the sector and work in the field of infrastructure and networks (mobile

operators and Telecom Egypt),² while the second is a large number of small companies that work primarily in the field of applications and outsourcing services, where Egypt has a comparative advantage. Telecommunications companies are required to have government licenses to conduct their activities.

The sector witnessed a remarkable boom in investments in recent years, as the value of investments in the sector increased during fiscal year 2018/2019 to EGP 35 bn from EGP 28 bn, an increase of more than 20 percent compared to the previous year.

Most investments in this sector are concentrated in major cities and decrease in rural areas.

1.1.2 The information technology sector

It contains four divisions:³ hardware, IT services, software development, and IT-enabled services.

- The hardware division consists of all related equipment (computers, printers, telephones, etc.).
- IT services division includes all types of systems integration (hardware and software services tailored to the needs of a specific project or application).
- Software development is at the heart of the IT sector.
- IT-enabled services include call centers.
- Companies operating in the information technology sector are not required to obtain licenses to conduct their business, although they must conduct a few procedures to start their activities.
- The Government accounts for about 60 percent of clients in the IT sector.

The National Telecom Regulatory Authority is responsible for managing and regulating the telecommunications sector. As for the information technology sector, it is the domain of the Information Technology Industry Development Agency (ITIDA).

¹ This period witnessed the appointment of the second ICT Minister in Egypt, succeeding the first ICT Minister who was appointed as Prime Minister.

² Telecom Egypt is a mobile operator and according to the licenses of the integrated operator that were launched in 2017, the four companies are equal in terms of the services they provide except for the establishment of infrastructure and the ownership of marine cables, which are exclusive to Telecom Egypt.

³ There is some overlap between the four divisions in terms of the activity of operating companies.

ITIDA's role is limited to developing information technology by identifying the needs of the local industry and addressing them through specially-designed highly-efficient programs, providing advice on sector policies and promoting trade in local and international markets. Therefore, the information technology sector is less regulated than the telecommunications sector.

1.2. Facts in figures about the sector:

- Egypt's ranking in the Global Connectivity Index⁴ is 58 out of 79 countries, with a score of 37 points from 120, which is clearly a low ranking compared to other countries:

Table 5.1. Egypt's Ranking in the Global Connectivity Index

Country	Egypt	Role models				Direct competitors			Neighboring countries			Other countries		
		US	UK	Canada	China	Turkey	South Africa	India	Morocco	UAE	KSA	Israel	South Korea	Brazil
Global Connectivity Index	58	1	9	14	26	45	52	65	61	24	43	NA	13	44

Source: Global Connectivity Index, 2019.

- Egypt is among countries where electronic transactions do not have widespread popularity compared to countries of the developed world.
- The sector achieved the highest sectoral growth rate in real GDP (16.7 percent) in 2018/2019, and even exceeded the target rate for the same fiscal year by about 7 percent. This is due to the State's efforts towards financial inclusion.
- The number of mobile Internet users stands at 39 million, with an annual growth rate of 11 percent.
- 4 out of 10 people use the Internet via mobile.
- The number of subscribers to mobile payment services reached 13 million, but the number of active accounts does not exceed 5 percent, or about 500 thousand accounts.⁵
- The sector's share of investment in the telecom and information technology sector was 5.44 percent in 2018/2019.⁶
- High-speed internet was introduced to 2530 public schools (general secondary school) all over the country.
- 25.8 percent is the percentage of school students using the Internet for educational purposes, and 27.4 percent is the percentage of teachers using the Internet in preparing educational content and for information search in 2018/2019.⁷
- Internet use is not widespread enough, as only 48 percent use the Internet. The Government is targeting to bring it to 50 percent by the end of the current year, which is a low figure compared to the global average estimated at 53.6 percent.
- Despite the significant increase in Internet speed in Egypt in recent years, it is still less than the global average. The average speed of fixed internet in Egypt is 27 MB (the global average is 60 MB), and the speed of mobile Internet reached 17.7 MB (global average is 30 MB).
- This is due to the lack of a complete overhaul of the network with "fiber optics" instead of the copper network and increasing number of Internet users. This was not matched by appropriate development in infrastructure, which is overburdened with these increases and pressures, besides the limited authorized frequencies.
- The number of high-speed internet users is meagre, as they represent only about 18.6 percent of total internet subscribers via mobile phone, in addition to being limited at the level of the governorates.⁸

4 The Global Connectivity Index relies on a measure of what the country has achieved in the ICT infrastructure, and how much it has achieved towards digital transformation.

5 Source: The Egyptian Center for Economic Studies, workshop series entitled "A Detailed Research Agenda to Enhance Ongoing Governmental Efforts to Digitize the Egyptian Economy: Horizontal issues", Workshop 5, March 2019.

6 Source: Egyptian Center for Economic Studies, Handbook of Economic Statistics 2020.

7 Source: Ministry of Communications and Information Technology, Communications and Information Technology Indicators Bulletin, September 2019.

8 The calculation was done according to the data of the Ministry of Communications and Information Technology, Communications and Information Technology Indicators Bulletin, September 2019 for the first quarter (July-September) 2019/2020.

- 61 percent of Egyptian companies do not have adequate information protection, and their financial losses amounted to about \$3.78 million.⁹

Second: Demand and supply shocks in the context of the crisis cycle

- This report focuses on the role of the telecommunications and information technology sector in terms of both infrastructure and available services that are supposed to contribute to two specific goals in light of the current crisis:

1. Assist in the health care needed to face COVID-19, through four basic stages, all of which rely mainly on information technology, which are: awareness of the virus, identifying where it spreads, identifying contacts (potential infections), and how to handle the isolation phase. The following is a detailed description of the above stages and potentials for using communications and information technology according to each stage as is universally followed (and was one of the reasons for bringing the virus under control in China):

Table 5.2. Basic Four Stages of the COVID-19 Crisis, the Technological Means Used and the Required Technological Infrastructure

Stage	Technological means used	Required technological infrastructure
Awareness of the virus	E-mails, SMS messages and brief videos	Strong communications infrastructure and data analytics capability
Knowing where the disease has spread	Mobile applications, Heat Maps	
Identification of contacts	Digital footprint analytics	
Procedures for isolating patients remotely	Electronic application	

Source: The Egyptian Center for Economic Studies (ECES) based on interviews with several experts.

2. Supporting the sudden shift towards intensive use of the Internet for purposes of distance learning and work from home for a large segment of the population, in addition to electronic payments. This was linked to the State imposing precautionary measures similar to most countries of the world.

The following table presents an analysis of the extent to which the above-mentioned two goals have been achieved in the context of the supply and demand shocks at the various stages of the crisis, coupled with scenarios of future expectations for the performance of the sector according to the crisis cycle, under the following assumptions and concepts:

- 1. Demand shock:** The increase in the number of users of the Internet and related programs for work, study, lectures, conducting e-meetings and electronic payments, as well as in personal tasks such as purchasing home needs through e-applications.
- 2. Supply shock:** The reduced ability of the communication and information technology

infrastructure to meet the sudden and increasing demand caused by the Corona crisis, linked mainly to network readiness.

- 3. The report is based on several **assumptions**:
 - a. The absence of a change in the infrastructure, specifically the speed of the Internet, and the extent of its spread and outages.
 - b. The following analysis focuses on the pre-university and university education sectors. Despite the extensive use of communications and information technology services by all economic sectors (banking, commercial, industrial, etc.), the pre-university and university education sectors are the most dependent on these services (in distance learning), and therefore most affected by its quality.
 - c. Using the Chinese model as a reference and advanced experience in using telecommunications and information technology services to deal with the health measures' aspect of the crisis.

⁹ Source: The Egyptian Center for Economic Studies (ECES), workshop series entitled "A Detailed Research Agenda to Enhance Ongoing Governmental Efforts to Digitize the Egyptian Economy: Horizontal issues," workshop 3, February 2019.

Table 5.3. Potential Scenarios for the Impact of the Crisis on the ICT Sector, based on the Aforementioned Crisis Cycle and Assumptions

Stage	Sector	Demand and/or supply shock	Analysis	Impact on the ICT sector
1. Emergence of the virus (December 2019 to January 2020)	Health	N/A	<ul style="list-style-type: none"> - The crisis is confined to China. - The virus has not yet spread to many countries, including Egypt. 	- There is no impact on the sector in Egypt during this period.
	Distance learning and doing business	N/A	<ul style="list-style-type: none"> - Work and study are pursued on regular norm, according to the usual use of technology. - Using the tablet in the school years where the new educational system is applied. 	
2. The beginning of proliferation (February through mid-March 2020)	Health	Slight shock on the demand side	<ul style="list-style-type: none"> - The crisis has reached the European and Arab countries. - But Egypt was not significantly affected by the crisis, especially in February. - In the first half of March, Egypt began to be affected by the emergence of the virus. - Rising need for awareness campaigns about the disease, which was already achieved through the Internet. 	- Little negative impact on the efficiency of networks in providing their services.
	Distance learning and doing business	Minor then moderate shock on the demand side and slight shock on the supply side	<ul style="list-style-type: none"> - February witnessed only a slight shock in demand as a result of increased contacts between Egyptians and their families abroad who had the disease. - In the first half of March, the virus appeared in Egypt, and voluntary isolation of many students and staff began. 	
3. Aggravation of the problem (From mid-March to mid-May 2020)	Health	Violent shocks in demand and supply	<ul style="list-style-type: none"> - The spread of panic in the world and the spread of the disease in many countries, and more spread in Egypt than previously. - Serious need to control the disease - Not taking advantage of information technology except through awareness of the dangers of the virus and prevention ways. 	<ul style="list-style-type: none"> - The sector's limited ability to contribute to containing the disease - Simple technology is used to identify and diagnose cases, although infrastructure allows for more sophisticated procedures / initiatives. - Lack of a sophisticated technological system, and therefore lack of data analytics.

Stage	Sector	Demand and/or supply shock	Analysis	Impact on the ICT sector
3. Aggravation of the problem (From mid-March to mid-May 2020) cont.	Distance learning and doing business	Violent shock in demand and moderate shock in supply	<ul style="list-style-type: none"> - With the issuance of the decision to suspend schooling, imposing a partial curfew, and expanding precautionary measures, the demand for Internet networks has increased dramatically. - Many governmental and private institutions allowed their employees to perform their duties from home via the internet. - The continuation of this shock in demand (resulting largely from distance learning) until the end of the school year. 	<ul style="list-style-type: none"> - Extensive pressure on networks, though the communication infrastructure still has sufficient capacity to deal with the boom in demand, especially with the Ministry of Communications announcing a 20 percent increase in monthly download capacities for home Internet on March 15th. - It is worth noting that the use of distance education is limited, primarily used by private and international schools and universities, and it is almost absent from public schools¹⁰. - The use of the Internet in education decreased with the decision to cancel exams (except for secondary school).
4. Crisis recedes (Mid-May-August 2020)	Health	Violent shocks in demand and persistent shortfall in supply	<ul style="list-style-type: none"> - Limited ability of the sector to contribute to containing the disease. 	<ul style="list-style-type: none"> - The sector's inability to deal with the problem of the virus in the four phases described above. - With the increasing rates of infection and the rapid spread of the disease, the sector is unable to play its role in helping to control the disease, relying only on reporting by the patient or those around him without benefiting from technological development.
	Distance learning and doing business	The demand shock continues but at a lower rate with a slight supply shock	<ul style="list-style-type: none"> - The end of the school year, and thus the demand decreases slightly, although work from home still continues. 	<ul style="list-style-type: none"> - Continued pressure on networks, but it can be sustained without a negative impact on the services of the sector.

¹⁰ Distance education is only available to first secondary students.

Stage	Sector	Demand and/or supply shock	Analysis	Impact on the ICT sector
5. Recovery (As of September 2020)	Health	Scenario 1 (optimistic): Once life returns to normal, the demand and supply sides will return to normal	Despite recovering from the virus, there is still a need for new technological means to identify patients and track disease and outbreaks if any new viruses or even natural disasters occur.	- Networks return to their normal levels with the continued absence of information infrastructure that can be analyzed to avoid new crises (data analytics)
		Scenario 2 (pessimistic): As long as the crisis persists, more violent shocks are expected on both the demand and supply sides	Continued spread of the virus and inability to contain it.	- Failure of the sector to play its role, which is extremely dangerous at this stage if new investments are not pumped and new applications are not developed that serve this health dimension.
	Distance learning and doing business	Scenario 1 (optimistic): Once life returns to normal, the demand and supply sides will return to normal.	Containment of the disease, the resumption of schools and return to work from offices, and consequently, the crisis passes without disruption in the services provided by the communications and information technology sector.	- Return of networks to their normal levels, although some electronic activities will continue. Therefore, the pressure on the network will continue.
		Scenario 2 (pessimistic): As long as the crisis persists, more violent shocks are expected on both the demand and supply sides.	The spread of the virus continues, the beginning of the school term with continued distance learning and work from home.	- Unprecedented high pressure on network for long periods and throughout the year, which threatens network failures, assuming that no new investments are pumped in and new applications are not developed.

Source: The Egyptian Center for Economic Studies (ECES).

These estimates should be read with caution, as expectations may require further revision based on the day by day development of the outbreak, as its duration and scope are still unknown.

Third: Interventions required to mitigate the effects of the crisis

Procedures must be put in place immediately to help the telecommunications and information technology sector overcome the period of this pandemic, so the sector can play its role. The Egyptian government should also capitalize on the Corona crisis in its digital transformation process, as follows:

- Organizing a multi-disciplinary digital task force to develop a detailed work plan to deal with the various scenarios of the crisis (optimistic, less optimistic and pessimistic), whether for the health aspect, remote learning or work from home, for different periods of time to ensure the communications and Information technology sector continues to meet the needs of citizens.
- Providing new frequencies that allow expanding the use of networks.
- Activate the e-signature law to facilitate conduct of business, especially government business, from home.
- Issuing indicators to monitor network performance at the time of the crisis in all parts of the country in terms of volume of Internet use in distance learning and work from home, and to extract information about the characteristics of citizens, including identifying, for example, those with chronic diseases and those vulnerable to Corona infection. This should be done through conducting periodic surveys.
- Take advantage of the data stock available in the sector to analyze its results and benefit thereof in understanding the mechanisms of disease spread by using big data, identifying disease hotbeds, areas of large gatherings or violations of curfew (heat maps), using artificial intelligence (as is currently the case in China), and directing more investments towards technological applications in the areas highlighted by the crisis, especially health with regard to identifying the virus's hotbeds and chance for spreading.
- Expanding technological solutions to continue the outsourcing industry (whose demand will increase) with a different work style that includes social distancing.

Fourth: Institutional weaknesses revealed by the crisis

The crisis revealed the existence of institutional imbalances in the telecommunications and information technology sector in Egypt, as shown in the following:

The lack of a strategy for digital transformation. Therefore, there is a need for a full-fledged national strategy in this respect, with the participation of all parties, along with a body in charge of following up on its full implementation with all relevant authorities.

- Lack of equitable geographical distribution in terms of connecting all governorates to the internet, especially high-speed internet. Hence, there is a need to increase investments in landline networks of various types, whether access networks or the central network. This would enable absorbing the amount of data that the coming period will witness, especially in rural areas to enable the sector to meet the needs of various activities, most importantly the educational system.
- The absence of an information technology regulator, as this sector lacks mechanisms to regulate and monitor its adherence to quality standards, and how to deal with the confidentiality of information and others.
- The absence of a mechanism to collect medical data related to the current crisis and the degree of its spread, including records of cases of survival and death. This mechanism is required to be able to analyze data (data analytics) to avoid new crises or at least mitigate their effects, in addition to the need to have bio informatics labs with the aim of developing medical research.
- The delay in using the latest technology in this field, which calls for the adoption of modern technologies such as cloud computing and block chains to reduce transaction costs and provide information for analysis, thus benefiting economic sectors.

6. Health

Lead Researcher: Sahar Aboud

First: Brief description of the subject of the report

The current report examines the impact of the crisis on the health sector in Egypt, which is undoubtedly the most important sector directly countering the crisis. The preparedness of this sector prior to the crisis will certainly be reflected in its ability to control the virus and contain the crisis.

In addition to its importance, the right to health care is one of the constitutional rights set in the Egyptian constitution of 2014, which dictates a percentage of public expenditure on the health sector that is not less than 3 percent of GNP. This sector is also a major pillar for achieving the national and international strategic goals of sustainable development.

In this context, the description begins with some basic indicators that reflect the health sector in Egypt compared to many countries in the world, followed by more details on the structure of hospitals in Egypt and some indicators on Egypt's health sector.

1.1. The state of the health sector in Egypt compared to selected countries

This section deals with spending on health between public and private sectors and individuals as well as indicators that reflect the various components of the system in terms of human resources and basic care units.

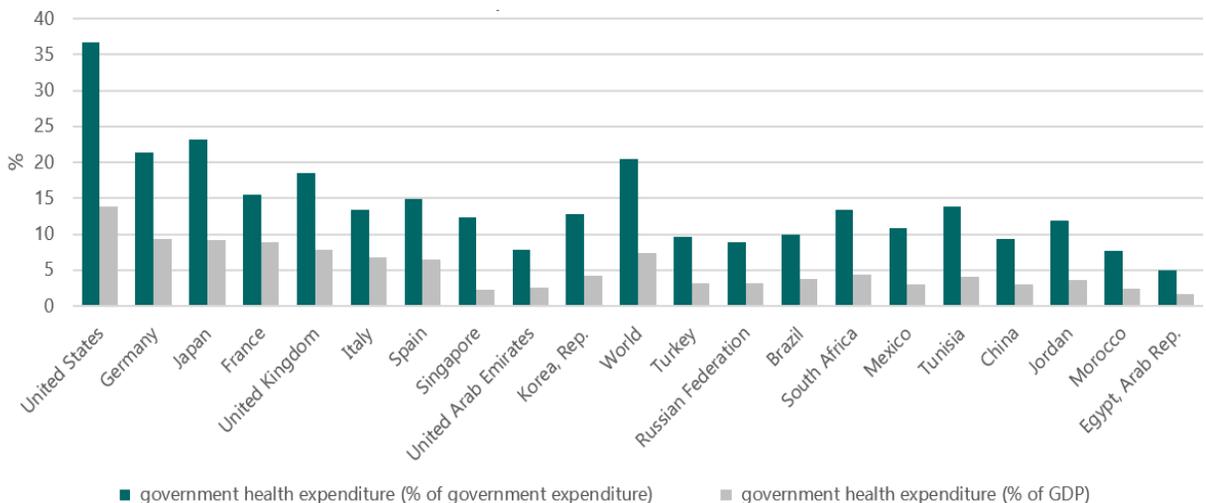
1.1.1 Health spending between the government and the private sector¹ and direct payments to individuals

- Government spending

Globally, Government expenditure on health accounts for 7 percent of GDP and 20 percent of total government spending.

While in Egypt spending on health does not exceed 2 percent of GDP and 5 percent of total government expenditure (i.e., a quarter of global rates and lower than the spending of other countries on health) whose development level is close to that of Egypt (Figure 6.1). Average per capital government expenditure on health in Egypt is one-fifth (1/5) of the global average, reaching \$176 in Egypt compared to \$904 globally.

Figure 6.1. Percentage of Government Spending on Health to Total Government Expenditure and GDP



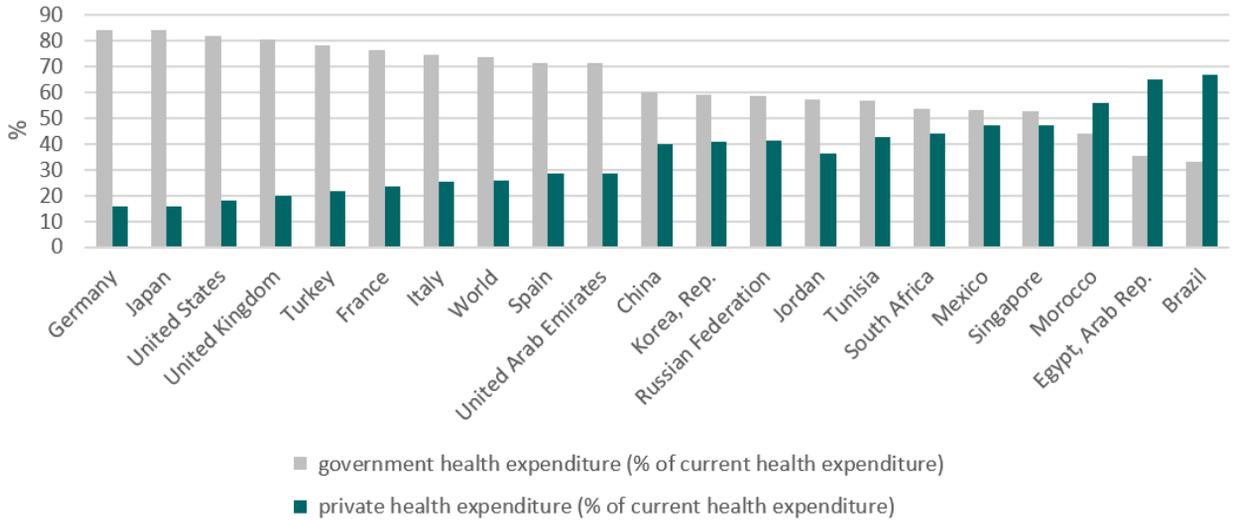
Source: World Health Organization, Global Health Observatory (GHO), 2016 (latest data).

¹ Includes funds that companies and non-profit organizations direct to cover health insurance costs for workers or individuals in the form of prepaid contracts or funds paid directly to healthcare providers.

1.1.2 Government versus private expenditure

Globally, Figure 6.2. shows the expenditure on health is distributed as follows: 74 percent government and 26 percent private sector, while in Egypt financing health expenditure runs counter to that, where government expenditure is 35 percent and private 65 percent.

Figure 6.2. Percentage of Government and Private Spending out of the Total Spending on Health

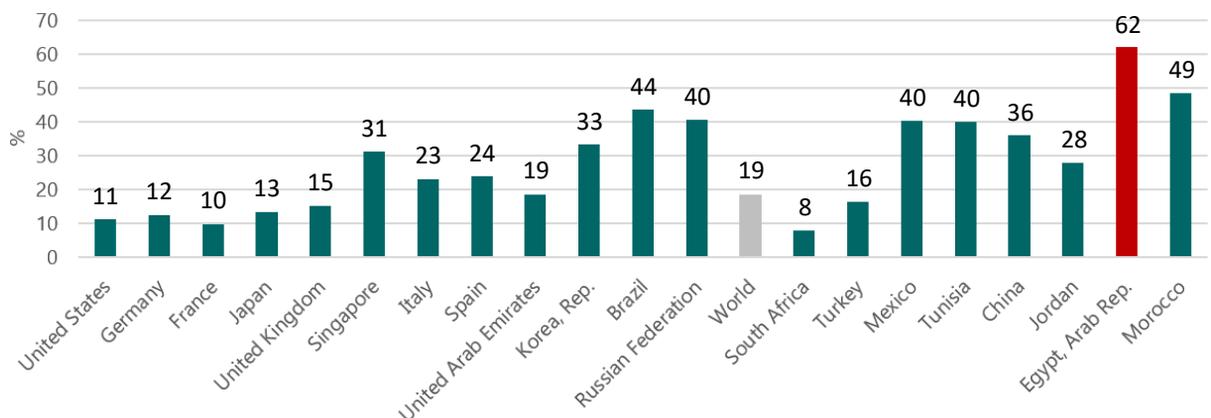


Source: World Health Organization, Global Health Observatory (GHO), 2016.

1.1.3 Direct payments (out of pocket spending):

Globally, percentage of direct payments borne by individuals does not exceed 19 percent of total spending on health, while the individual in Egypt bears direct payments of 62 percent, that is, more than three times the global average.

Figure 6.3. Percentage of Out-Of-Pocket Expenditure (% of Current Health Expenditure)



Source: World Health Organization, Global Health Observatory (GHO), 2016 (latest data).

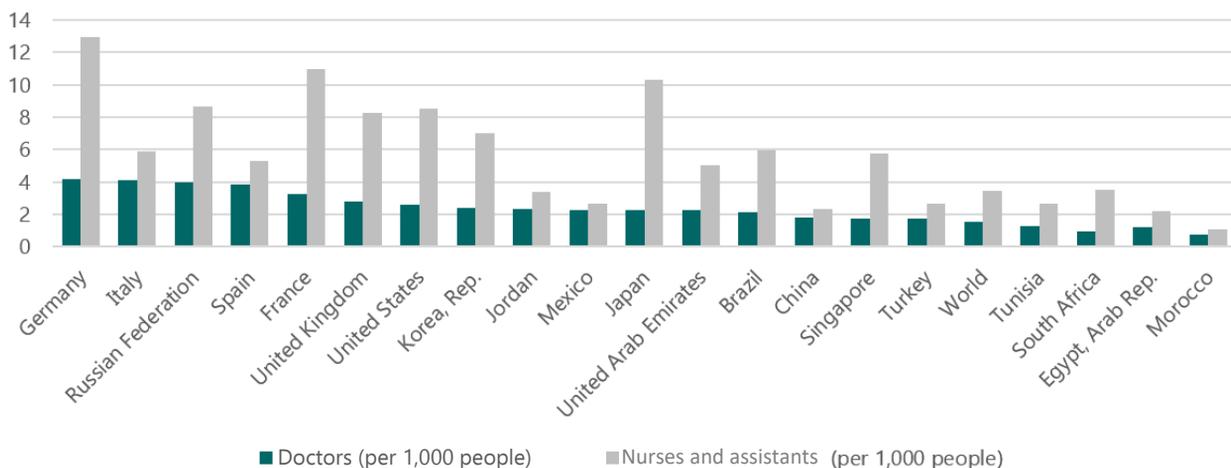
With further study of the situation of Egypt according to 2018 domestic data, clearly the situation did not improve according to the data of the World Health Organization for 2016, as we will refer later in the description of the system in Egypt.

1.1.4 Health service providers (doctors and nurses)

As shown in Figure 6.4, globally the average number of doctors was 1.5 doctors / thousand population and 3.4 nurses / thousand population. While in Egypt, the rate was 1.2 doctors / thousand population and 2.2 nurses / thousand population in 2018.

This indicates that the health sector in Egypt suffers from inadequate human resources.

Figure 6.4. Number of Doctors and Nurses

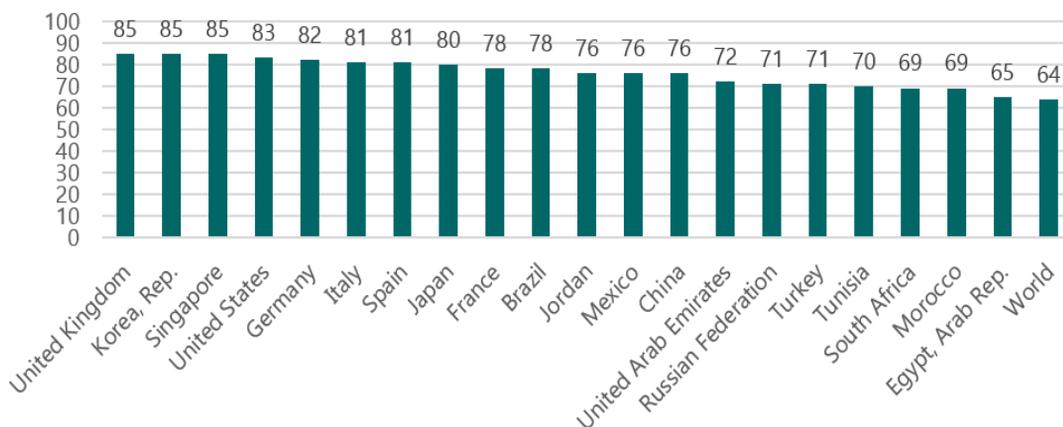


Source: World Health Organization, Global Health Observatory (GHO), 2016 (latest data).

1.1.5 The degree of coverage of basic health services

It is important to point out here the vital role of these units being the first line of defense in facing any crisis. The index measures the prevalence of primary care units and maternity and childhood centers, takes a value from 0 - 100 (full coverage), depends on the number of units and does not address the extent of their readiness and/or the quality of their services.

Figure 6.5. UHC Service Coverage Index



Source: World Health Organization, Global Health Observatory (GHO), 2016 (latest data).

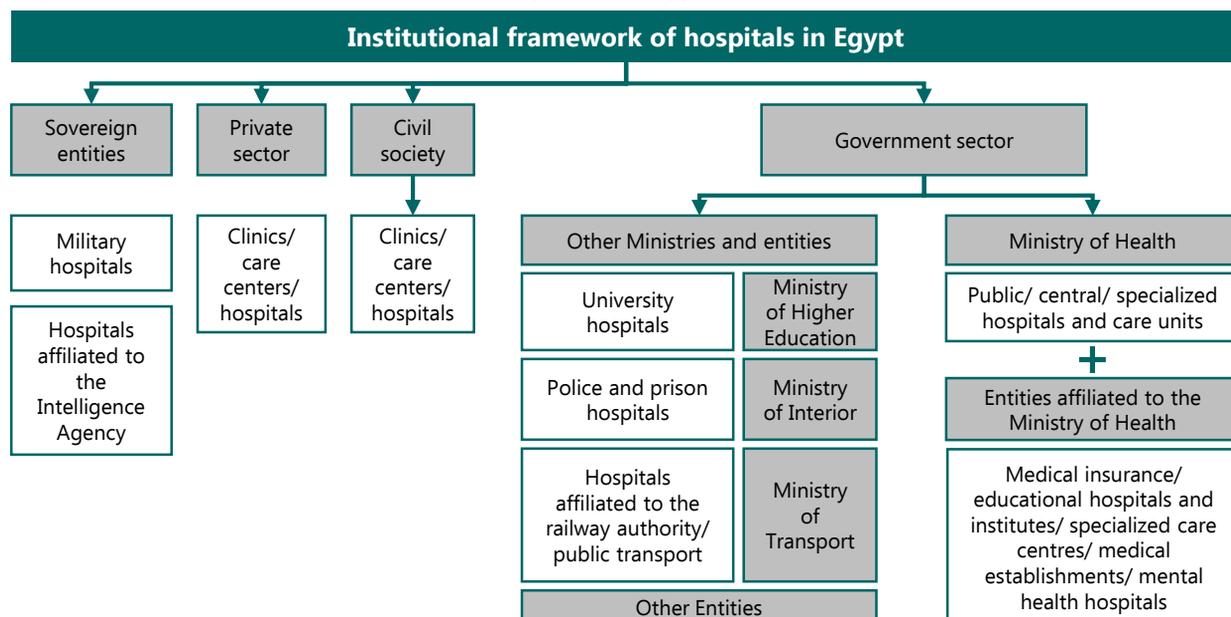
This means that although Egypt is almost equal numerically to the global average, it is not equal in quality. The number is also lower than in many countries with comparator development levels .

Second: Description of the health sector in Egypt

2.1. The current structure

Health services in Egypt involve a variety of actors, whether from the government, private sector or civil society, as shown in Figure 6.6. Consequently, health services are managed, organized, financed and provided at different quality levels and under different legislative frameworks as well.

Figure 6.6. Institutional Framework of Hospitals in Egypt



Source: The Egyptian Center for Economic Studies (ECES) based on the Annual Bulletin of Health Services Statistics for the year 2018, November 2019 issue.

In Egypt, there are about 56 hospitals and medical centers affiliated to the Armed Forces and one hospital affiliated to the intelligence service.²

- The contribution of NGOs is estimated at 30 percent of total health services provided in Egypt, including the Red Crescent.³
- In view of the absence of complete data on all service providers, the focus will be on government and private sector hospitals only.

The following table shows the distribution of hospitals in Egypt for the year 2018 between the government and private sector:

Table 6.1. Distribution of Hospitals in Egypt for the Year 2018 to Government and Private Sectors

Sector	Number	% of the total	% of total beds	Hospitals	Number	% of total government	% of total beds
Government	691	38%	96%	Total Ministry of Health	400	58%	40%
				Public hospitals	58	8%	11%
				Central hospitals	197	29%	18%
				Specialized hospitals	140	20%	18%
				Total entities affiliated with the Ministry of Health	145	21%	26%

² Armed Forces Medical Services Department.

³ General Federation of NGOs.

Sector	Number	% of the total	% of total beds	Hospitals	Number	% of total government	% of total beds
Government	691	38%	96%	Psychological health	19	3%	6%
				Health insurance	40	6%	8%
				Hospitals / educational institutes	23	3%	6%
				Specialized centers	55	8%	6%
				Therapeutic institutions	8	1%	1%
				Total ministries and other bodies	146	21%	34%
				University hospitals	89	13%	29%
				Police hospitals	26	4%	1%
				Railways hospitals	3	0.4%	0.5%
				Other authorities	28	4%	3%
Private	1107	62%	4%				
Total				1798 hospital with a capacity of 131 thousand beds An average of 138 beds / hospital for government An average of 32 beds / hospital for the private sector			

Source: The Egyptian Center for Economic Studies (ECES) based on the Annual Bulletin of Health Services Statistics for the year 2018, November 2019 issue.

We do not have precise indicators that reflect the level of quality of service. However, there is a set of facts, some of which can be deduced from the indicators mentioned in the table, and some of which are agreed by a large group of experts in the sector, namely:

- Hospitals of the Ministry of Health and their affiliates represent 80 percent of the number of hospitals and 66 percent of the beds, indicating that the extent of their financial and human resource readiness is key for judging the health system as a whole.
- Regarding the number of beds for each hospital, the average number of beds for each government hospital exceeds four times the private sector, which reflects the higher government capacity.
- In spite of the limited number of university hospitals, their bed capacity is twice their number, which means that they accommodate large numbers of patients.
- Government hospitals vary in terms of capacity,

equipment and human resource efficiency. The closer we approach capitals and major centers, the better the level is compared to the outskirts and remote locations.

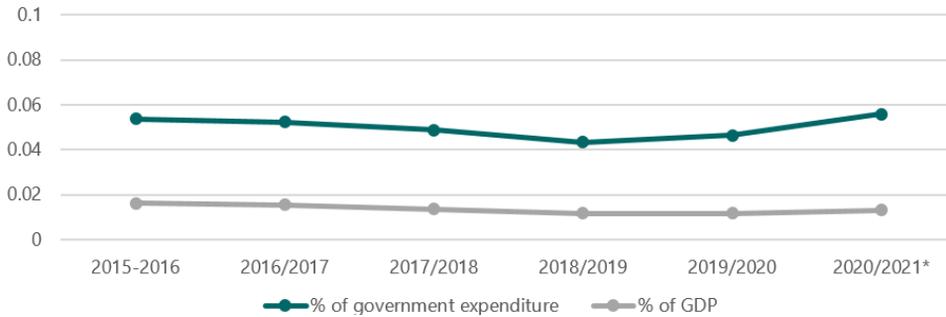
- Over 70 percent of operations that require high skills are performed in university hospitals.
- There is much pressure on educational institutes (the National Oncology Institute, the heart ...) due to their limited number nationwide—there is only one heart institute and one oncology institute.
- Specialized hospitals (47 febrile hospitals, 34 chest hospitals, ...) also suffer from severe pressure due to their limited number, and there are only two febrile hospitals in Cairo.
- The private sector includes a diverse group of clinics, centers, and hospitals, a small percentage of which are of high quality and the majority with a lower quality in addition to the disparity in prices of services.

2.2. Health spending between the government and the private sector and direct payments to individuals

2.2.1 At the level of government expenditure

- The percentage of total government allocations for health expenditure decreased from 1.6 percent of GDP for 2015/2016 and 2016/2017 to 1.2 percent in 2018/2019 and 2019/2020. Therefore, we have not yet reached the required constitutional entitlement.

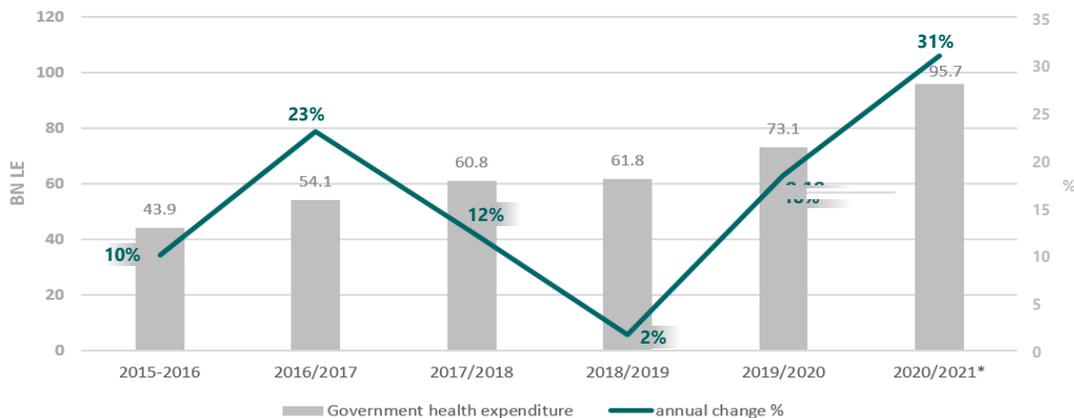
Figure 6.7. Evolution of Government Health Expenditure to GDP and Total Government Expenditure in the Last 5 Years



Source: The Egyptian Center for Economic Studies (ECES) based on Ministry of Finance data.

* A steady decline in real spending on health, as the rate of change in annual spending on health is much lower than the rate of inflation, as shown by tracking health spending over the past five years as follows.

Figure 6.8. Evolution of Government Health Expenditure over the Last 5 Years and Preliminary Budget for 2021/2022



Source: The Egyptian Center for Economic Studies (ECES) based on Ministry of Finance data.

* Targeted

2.2.2 At the level of individual spending

- According to results of the income and expenditure survey of the Central Agency for Public Mobilization and Statistics 2017/2018, spending on health at the family level comes in the third place, where spending on food and drink accounts for about 37.1 percent of total spending, followed by housing and its requirements at 18 percent, then spending on health services at about 9.9 percent.
- The average annual household spending on health care and services reached EGP 5095 in 2017/2018 compared to EGP 3680 in 2014/2015, an increase of 38 percent.
- The per capita share of total spending on health declined from EGP 800.6 in 2015 to EGP 700.7 in 2017/2018, even though the percentage of spending on health stabilized at approximately 10 percent in both years of total spending. The average annual real per capita share of family spending decreased

from EGP 8.6 thousand in 2015 to EGP 7.7 thousand in 2017/2018 at constant 2015 prices, with a decrease of 10 percent.

- Health spending is distributed as follows: 55.5 percent for medical products and devices, 28.6 percent for outpatient services, 15.9 percent for hospital services. Hence the importance of governance of the pharmaceutical system to ensure its efficacy and pricing, and to enable citizens from different groups to obtain medicine.
- Expenditure rates on health services varied between the governorates, with Kafr El Sheikh, Damietta, and Beheira having the highest spending ratios (ranging between 11-12 percent), while border governorates and Luxor having the lowest spending ratio (6-7 percent).
- Expenditure on health services is related to the standard of living, where the lowest category (the lowest spending decile) spends 8.1 percent of its income on health services with an average per capita share of EGP 386.7 compared to spending by the high category (the highest spending decile) of 10.9 percent of its income on health services with an average per capita share of EGP 3484 during the year 2017/2018.
- This means that a lower standard of living is linked to a decrease in access to appropriate health services, and that health expenditures may drive citizens to poverty.

- Hence the importance of the state providing basic health care services to all citizens with appropriate quality and free of charge so that everyone, including the lower classes, can access these services, especially in the case of Egypt where the poverty rate exceeds 30 percent of the population according to the latest statistics of the Central Agency for Public Mobilization and Statistics.

2.3. Indicators for providing health services

2.3.1 Evolution of the number of government and private hospitals over the past 10 years

Government investment in the hospital sector has declined despite increased demand due to population increase. According to Table 6.2, the number of hospitals in Egypt reached about 1798 government and private hospitals in 2018 compared to 1599 in 2009, an increase of 12 percent, mostly due to the increase in the number of private sector hospitals. It is noted that the number of beds for the government hospital decreased over the period compared to its increase in the private sector, which indicates the weak costs of replacement and renewal.

The foregoing shows weak sector's share of total implemented investments from 2.7 percent in 2016/2017 to 1.9 percent in 2017/2018 according to data of the Ministry of Planning, Follow-up and Administrative Reform.

Table 6.2. Evolution of the Number of Government and Private Hospitals, the Number of Beds, and Visitors, 2009-2018

	Number of hospitals		No. of beds/hospital		No. of visitors/hospital	
	Gov.	Private	Gov.	Private	Gov.	Private
2009	658	941	157	23	92389	1383
2010	660	927	150	28	86487	1656
2011	643	926	153	28	89220	682
2012	646	920	150	28	78130	1829
2013	657	937	150	28	95021	2520
2014	659	941	148	26	99481	2684
2015	660	1002	141	31	112970	4161
2016	662	1017	142	32	122262	3444
2017	676	1094	142	33	128838	3469
2018	691	1107	138	32	135598	3103

Source: The Egyptian Center for Economic Studies (ECES) based on Central Agency for Public Mobilization and Statistics (CAPMAS) data, the Annual Bulletin of Health Services Statistics for the year 2018, November 2019 issue.

Nevertheless, government hospitals are still the backbone of medical service provision in Egypt. The demand on health services in the government hospital is estimated to be four times that on the private sector. One government hospital serves 135,000 patients annually compared to 3.4 thousand for the private in 2018. This can be due to the limited number of beds in the private sector and its high costs. This is in addition to the number of people who resort to civil society services.

2.3.2 Health service providers

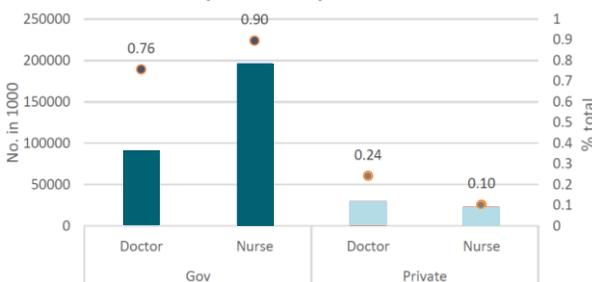
The analysis covers the number of service providers and their distribution between the government and private sector as well as some features of the work environment.

Number of health service providers and their sectoral distribution:

The number of doctors reached 120 thousand, with 219 thousand members of the nursing staff in total government and private sector

The government sector accounts for the largest share of the total number of doctors and nursing staff as shown in the following figure:

Figure 6.9. Number of Doctors and Nurses in Public and Private Hospitals in 2018



Source: The Egyptian Center for Economic Studies (ECES) based on CAPMAS data, the Annual Bulletin of Health Services Statistics for the year 2018, November 2019 issue.

Although wages accounted for an average of 53 percent of total spending on the health sector during the past five years, the increase in the number of workers in the sector and the high rate of inflation mean a decline in real employee wages.

The number of nurses to doctors in the government sector is 2.15 nurses/doctor compared to the private sector 0.7 nurses/doctor).

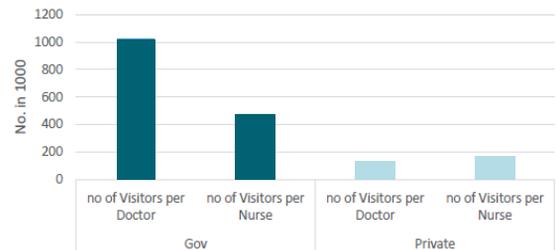
The vast majority of nursing staff are graduates of nursing high school, not nursing college. Consequently, the dearth in high skills associated with graduates of nursing colleges.

2.3.3 Features of the work environment for health service providers

The vast majority of service providers operate in an unfavorable working environment, especially the government sector, as follows:

- Increased pressure on service providers as a result of increased demand for health services, especially in the government sector, as evidenced by tracking the number of visitors to each doctor and member of the nursing staff.

Figure 6.10. Number of Visitors Per Doctor and Nurse in Public and Private Hospitals in 2018



Source: The Egyptian Center for Economic Studies (ECES) based on CAPMAS data, the Annual Bulletin of Health Services Statistics for the year 2018, November 2019 issue.

- The work environment is not favorable due to limited modern equipment, medicines, infection prevention supplies and all other requirements, as well as weak allocations for continuing education and training.
- Deteriorating financial conditions of medical professionals, especially in the government sector, as a result of low salaries, weak infection allowances, absence of a risk fund that insures their injury or death during work, and not including service providers to the Fund for Martyrs and Injuries of Military Operations established by Law No. 16 of 2018.
- This deterioration in the work environment and poor learning opportunities contributed to the increase of doctors' resignations from the government sector. Statistics confirm that there is a steady increase in the number of doctors who resigned. The number of resignations reached about 1044 resignations in 2016, while in 2018 it reached 2,600 with an increase rate of 27 percent. In 2019, it reached 3507, an increase of 35 percent over 2018. Although these percentages are high, they are less than the actual figure of the phenomenon of doctors dropping out, as it does not include leave without pay or the phenomenon of fake attendance

(i.e., attendance on paper only), which if added the figures, they would be significant.

2.4. Subscribers to health insurance

Among the indicators of availability: The number of insured persons in 2018 reached about 55.6 million citizens, half of whom are school students and nearly a quarter of them are currently in the workforce (12 million). This means that only about half of the employed (22.5 million in 2018) are covered by health insurance. A universal health coverage program was launched in Port Said as a pilot phase.

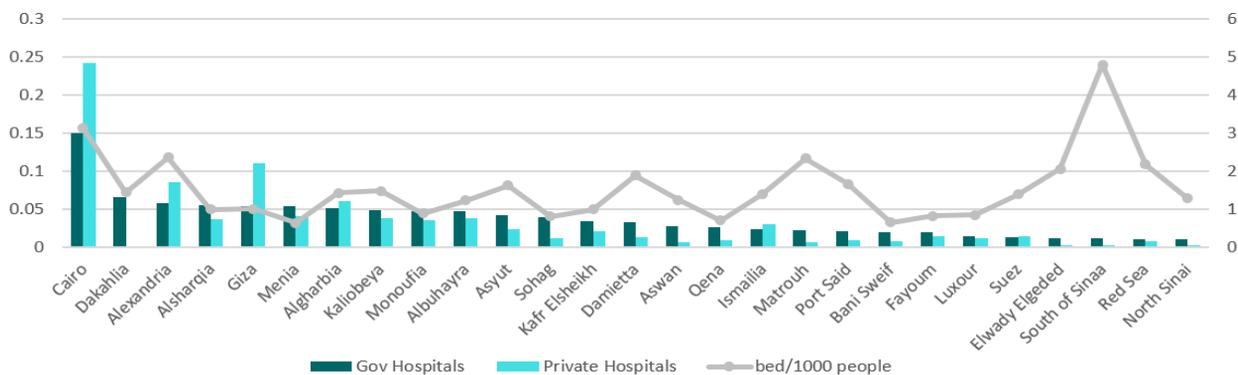
2.5. Availability indicators according to geographical distribution

2.5.1 Number of public and private hospitals:

Cairo, Giza, and Alexandria account for the largest share of government and private hospitals, and the number clearly decreases in poorer governorates, as Figure 6.11. shows.

By calculating the number of beds per 1000 population, as a better indicator to judge the availability of medical services versus the number of hospitals, given the difference between the capabilities and potentials of each hospital, the index shows that while in the governorates of Minya, Qena and Suhag it was less than one, in South Sinai, it reached 4.8 beds per thousand population.

Figure 6.11. The Relative Distribution of the Number of Hospitals and Beds Across Governorates in 2018



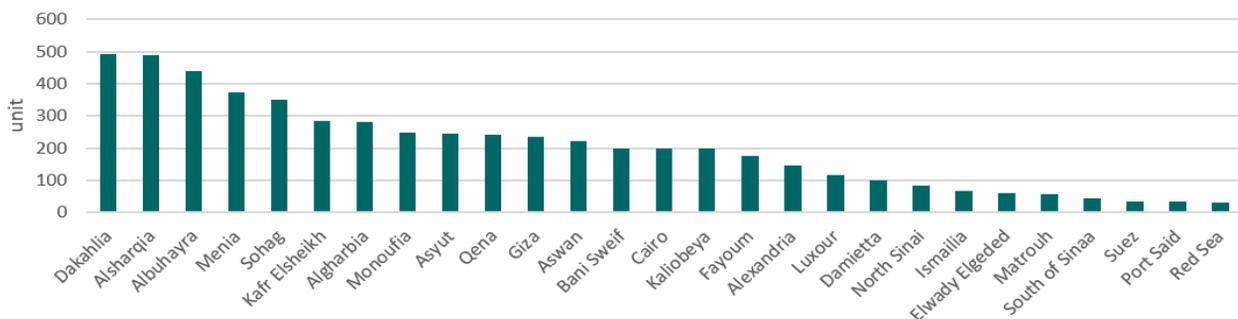
Source: The Egyptian Center for Economic Studies (ECES) based on CAPMAS data, the Annual Bulletin of Health Services Statistics for the year 2018, November 2019 issue.

2.5.2 Number of primary care units:

The number of basic health care units⁴ reached 5437 units in 2018 compared to 4839 units in 2008, an increase of only 12 percent within ten years only.

Primary care units mainly target rural areas, so the governorates of lower and upper Egypt accounted for the largest share of these units, as opposed to urban and border governorates.

Figure 6.12. Geographical Distribution of Basic Health Care Units in 2018



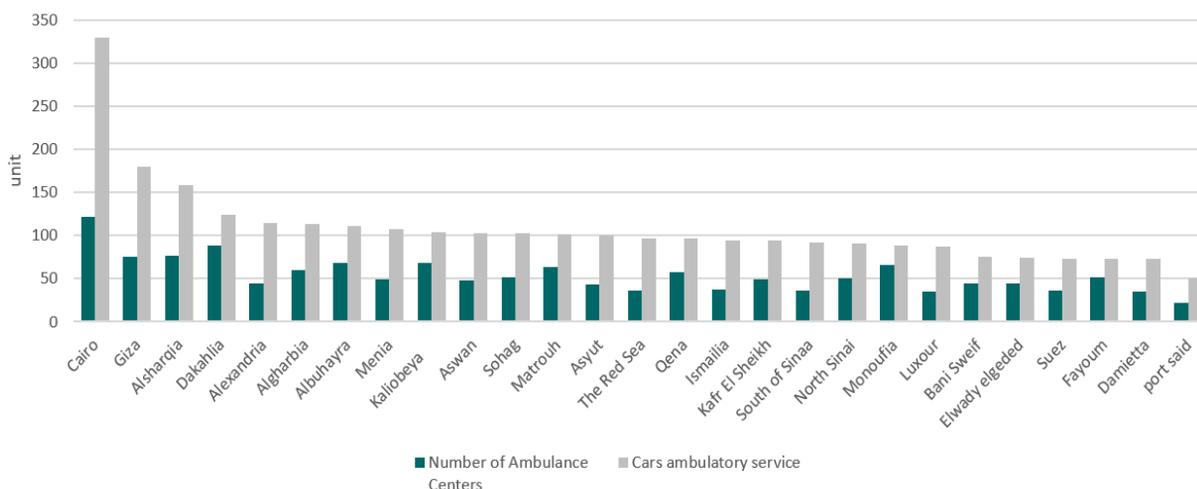
Source: The Egyptian Center for Economic Studies (ECES) based on CAPMAS data, the Annual Bulletin of Health Services Statistics for the year 2018, November 2019 issue.

⁴ Health offices include maternal and child care centers, universal clinics and neighborhood clinics, health and family medical centers, and primary care units in the countryside.

2.5.3 Ambulance services:

The number of ambulance centers nationwide reached about 1464 equipped with about 2912 vehicles distributed in various governorates of the republic commensurate with the distribution of the population.

Figure 6.13. Ambulance Services in 2018



Source: The Egyptian Center for Economic Studies (ECES) based on CAPMAS data, the Annual Bulletin of Health Services Statistics for the year 2018, November 2019 issue.

The above indicators discussed confirm that this vital sector has suffered many imbalances before the current crisis.

Third: Demand and supply shocks in the context of the crisis cycle

- The World Health Organization considers the current Coronavirus crisis (COVID 19) the worst health crisis the world has ever experienced. As of the time of writing this report, about 69,000 people have died and 1.137 million people have been infected in 206 countries and territories around the world.
- The crisis put the health sector in all countries worldwide in a fierce war to confront the virus and deal with infections, relying on its current capacity and human capabilities.
- Country efforts focused on two main goals to be achieved in parallel: the first goal focuses on slowing the spread of the virus, while the second is to increase the health systems' readiness to face an aggravated crisis.
- According to the various analyses, the success of countries and their ability to achieve the previous two goals are clearly linked on the ground to four factors:

1. Managing the crisis properly, quickly and decisively
2. The ability of health systems, mainly primary and intensive care, to provide required services
3. The extent of advancement of the communications and information technology sector in all stages of disease evolution: outreach, locating hotbeds, tracking of contacts, and electronic system for isolating patients remotely. The role of this sector was discussed in detail in a dedicated report issued by ECES.⁵
4. Varied population structure and the number of age groups most vulnerable to infection.

2.6. The plan to deal with the crisis in Egypt:

- The Egyptian government adopted a phased plan to deal with the crisis that included 3 stages: 1 - the first stage: before announcing the emergence of any infections in Egypt, 2 - the second stage: a limited emergence of infections in Egypt, and 3 - the third stage: increasing number of infections.
- Measures during the first stage were limited to conducting tests on the returnees from the affected places abroad and increasing

5 http://www.eces.org.eg/cms/NewsUploads/Pdf/2020_4_9-2_51_42%D8%A7%D9%84%D8%A7%D8%AA%D8%B5%D8%A7%D9%84%D8%A7%D8%AA%20Amended-FINAL%208-4-2020.pdf

awareness campaigns about prevention and sound community practices. The intensity of the measures rose with the increase in the number of infections during the second stage, which included suspending schools and universities, closing mosques and churches, reducing the number of employees, suspending flights, closing restaurants, clubs and malls, disinfecting government places and main streets, and introducing a partial curfew).

- According to the data of the Ministry of Health and Population, Egypt entered the third stage (exceeding one thousand cases) and the total number of infections reached 2065 on 12 April 2020, including about 126 new cases and 15 deaths.⁶
- The rate of new infections doubled, according to the latest data available for the first week of April, to reach 120 percent. The number of new infections in the first week of April reached 706, compared to 320 in the last week of March.
- The Ministry announced the allocation of about 12 equipped hospitals for isolation distributed over 12 governorates (Cairo, Qalyubia, Giza, Alexandria, Matrouh, Kafr El-Sheikh, Dakahlia, Ismailia, Minya, Gharbia, Luxor and Aswan).⁷ 27 university hospitals are being prepared for isolation. This is in addition to allocating febrile hospitals (47 hospitals) and chest hospital (35 hospitals) to examine and transfer suspected cases.
- Equipping college towns as medical areas, if necessary, to isolate minor cases in stages with a total capacity of 19825 beds: the first stage 33 buildings, the second 16 buildings and the third 8 buildings.

The danger of this stage is that all scenarios are open according to the strictness of government measures and society's commitment, and thus the ability to control and reduce infections and death rates.

2.7. The analysis of different scenarios is based on a set of concepts and assumptions as follows:

- **Demand shock:** The high demand for health services as a result of the crisis. The demand comes from a variety of groups, namely foreigners, returnees from abroad, and citizens.

- **Supply shock:** The ability of the health system with all its physical and human components.
- **Health service providers:** This includes doctors, pharmacists, nursing agencies and all administrative, technical and support staff.

As for the assumptions adopted by the analysis, they are as follows:

1. Estimating the expected demand for health services as a result of the crisis:

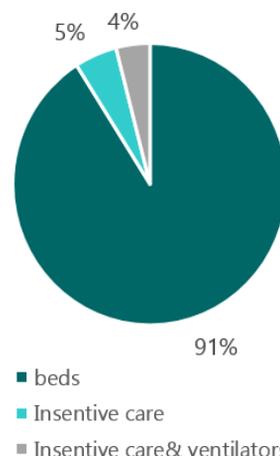
To estimate the number of new infections:

- Reference week: The number of new infections is estimated in light of latest data about development of the rate of new weekly infections in the first week of April, which reached 120 percent (704 new cases in the fourth week compared to 302 new cases in the last quarter of March).
- The analysis adopts different scenarios according to the degree of pessimism and optimism, with a similar average rate of increase from one week to the next during the next five weeks, but with a rate difference between various scenarios. The aim of this fix is to allow a margin up or down according to the development of the situation.

To estimate the demand for health services:

- The report uses the Ministry of Health classification on the nature of health needs for the first 1,000 cases, as shown in Figure 6.14.

Figure 6.14. Classification of Health Care Provided for the First 1,000 Cases



Source: Ministry of Health and Population report, the current situation of the Coronavirus, April 8, 2020.

⁶ Despite the decrease in the number of new cases on April 12 to 126 compared to 145 cases in the previous day, it cannot be counted as a continuous pattern of decline because a similar decline occurred a few days before followed by an increase, although we certainly wish this rate to decline continuously.

⁷ Hospital details are available in the Ministry of Health and Population report, on the current situation of the Coronavirus, April 8, 2020.

2. Supply capacity: The report depends on what the Ministry of Health announced in terms of preparations for the crisis, as follows:

Table 6.3. The Supply Capacity of Hospitals

	Beds	Intensive care beds	Ventilators
Ministry hospitals	2241	407	346
University hospitals	2056	297	266
College towns	19825	0	0
Total	24122	704	612

Source: Ministry of Health and Population report, the current situation of the Coronavirus, April 8, 2020; and what was announced at the joint press conference of the Ministries of Health and Higher Education on April 10, 2020.

Third: Future scenarios related to the sector's ability to cope with the crisis relate to the degree of government handling of the following elements:

- Precautionary measures by the state and strict adherence to social distancing
- Protection of service providers, and hence lower number of their infections
- Conducting tests and isolating suspects
- Dealing with densely populated and disorganized areas through social distancing to prevent spreading
- The extent of uniformity of measures of all health facilities nationwide
- Degree of civil society engagement with the government
- The extent to which bureaucratic procedures are streamlined to expand the range of non-traditional initiatives to face the crisis, including the initiative for the local manufacture of medical clothing and ventilators

The following table presents possible scenarios affecting the sector according to the above-mentioned crisis cycle and in light of the assumptions made:

Table 6.4. Potential Scenarios for the Impact of the Crisis on the Health Sector, based on the Aforementioned Crisis Cycle and Assumptions

Stage	Demand and/or supply shock	Analysis	Impact on the health sector
1. Emergence of the virus (December 2019 to January 2020)	There is no shock on both sides of supply and demand in Egypt	The crisis is confined to China and has not spread to countries around the world, including Egypt. Therefore, no effect on demand and supply of health care.	The demand on health care was concentrated in a limited category, which is Egyptian returnees from Wuhan, China, and they were quarantined in Marsa Matrouh. Thus, the crisis did not have any repercussions for the health sector. The state adopted precautionary measures by registering and monitoring arrivals from the countries in which infections appeared, raising the readiness of all quarantine departments and providing hospitals with the necessary equipment.
2. The beginning of proliferation (February through mid-March 2020)	- Limited demand shock - No supply shock	- The crisis reached European and Arab countries and precautionary measures to alleviate it in February, but Egypt is still far - As of the first of March, the virus appeared in Egypt through a foreigner and then infected 33 in a Luxor cruise ship. - A slight increase in the number of the infections until it reached 126 cases on March 15, mostly foreigners, Egyptians returning from abroad, and Egyptians in contact.	Increasing demand for central laboratory services to conduct tests, especially for Egyptians who work in the Gulf states. Increased demand for testing and treatment services as a result of infection. More support to supply by preparing places for isolation and increasing financial incentives for service providers. Supply capacity managed to cover this demand.

Stage	Demand and/or supply shock	Analysis	Impact on the health sector																																													
2. The beginning of proliferation (February through mid-March 2020) cont.		- Awareness and prevention campaigns - No infections have been reported to health service providers at this point.																																														
3. Aggravation of the problem (From mid-March to mid-May 2020)	- Greater shock in demand with diversified demand - Attempts to support supply	<p>This stage involves 3 scenarios according to the degree of pessimism or optimism, as follows:</p> <p>1. Optimistic scenario: Success in reducing the rate of weekly increase to quarter the rate of increase in the reference week, as shown in assumptions.</p>	<p>Estimating new infections and their health services * According to the optimistic scenario:</p> <table border="1"> <thead> <tr> <th></th> <th>New infections</th> <th>Beds required</th> <th>Intensive care required</th> <th>Intensive care and ventilators required</th> </tr> </thead> <tbody> <tr> <td>The second week of April</td> <td>919</td> <td>836</td> <td>46</td> <td>37</td> </tr> <tr> <td>The third week of April</td> <td>1196</td> <td>1088</td> <td>60</td> <td>48</td> </tr> <tr> <td>The fourth week of April</td> <td>1557</td> <td>1417</td> <td>78</td> <td>62</td> </tr> <tr> <td>The first week of May</td> <td>2026</td> <td>1844</td> <td>101</td> <td>81</td> </tr> <tr> <td>The second week of May</td> <td>2637</td> <td>2400</td> <td>132</td> <td>105</td> </tr> <tr> <td>Total</td> <td>8335</td> <td>7585</td> <td>417</td> <td>333</td> </tr> <tr> <td colspan="2">Available</td> <td>24122</td> <td>704</td> <td>612</td> </tr> <tr> <td colspan="2">Available - needs</td> <td>16537</td> <td>287</td> <td>279</td> </tr> </tbody> </table> <p>* According to the Ministry of Health's classification of the needs of the first 1,000 cases</p>		New infections	Beds required	Intensive care required	Intensive care and ventilators required	The second week of April	919	836	46	37	The third week of April	1196	1088	60	48	The fourth week of April	1557	1417	78	62	The first week of May	2026	1844	101	81	The second week of May	2637	2400	132	105	Total	8335	7585	417	333	Available		24122	704	612	Available - needs		16537	287	279
			New infections	Beds required	Intensive care required	Intensive care and ventilators required																																										
The second week of April	919	836	46	37																																												
The third week of April	1196	1088	60	48																																												
The fourth week of April	1557	1417	78	62																																												
The first week of May	2026	1844	101	81																																												
The second week of May	2637	2400	132	105																																												
Total	8335	7585	417	333																																												
Available		24122	704	612																																												
Available - needs		16537	287	279																																												
<p>2. Medium scenario: Success in reducing the weekly increase rate to half the average increase in the reference week.</p> <p>Pessimistic scenario: Weekly increase rate remains the same as in the reference week.</p> <p>There is also another scenario, which is that the number of new infections per week is constant, and it is unreasonable possibility because it does not correspond with the development of the virus around the world. In this case, there will be no additional need.</p>	<p>Estimating new infections and their health services* According to the medium scenario:</p> <table border="1"> <thead> <tr> <th></th> <th>New infections</th> <th>Beds required</th> <th>Intensive care required</th> <th>Intensive care and ventilators required</th> </tr> </thead> <tbody> <tr> <td>The second week of April</td> <td>1132</td> <td>1030</td> <td>57</td> <td>45</td> </tr> <tr> <td>The third week of April</td> <td>1814</td> <td>1651</td> <td>91</td> <td>73</td> </tr> <tr> <td>The fourth week of April</td> <td>2909</td> <td>2647</td> <td>145</td> <td>116</td> </tr> <tr> <td>The first week of May</td> <td>4663</td> <td>4243</td> <td>233</td> <td>187</td> </tr> <tr> <td>The second week of May</td> <td>7476</td> <td>6803</td> <td>374</td> <td>299</td> </tr> <tr> <td>Total</td> <td>17994</td> <td>16374</td> <td>900</td> <td>720</td> </tr> <tr> <td colspan="2">Available</td> <td>24122</td> <td>704</td> <td>612</td> </tr> <tr> <td colspan="2">Available - needs</td> <td>7748</td> <td>-196</td> <td>-108</td> </tr> </tbody> </table> <p>* According to the Ministry of Health's classification of the needs of the first 1,000 cases</p>		New infections	Beds required	Intensive care required	Intensive care and ventilators required	The second week of April	1132	1030	57	45	The third week of April	1814	1651	91	73	The fourth week of April	2909	2647	145	116	The first week of May	4663	4243	233	187	The second week of May	7476	6803	374	299	Total	17994	16374	900	720	Available		24122	704	612	Available - needs		7748	-196	-108		
	New infections	Beds required	Intensive care required	Intensive care and ventilators required																																												
The second week of April	1132	1030	57	45																																												
The third week of April	1814	1651	91	73																																												
The fourth week of April	2909	2647	145	116																																												
The first week of May	4663	4243	233	187																																												
The second week of May	7476	6803	374	299																																												
Total	17994	16374	900	720																																												
Available		24122	704	612																																												
Available - needs		7748	-196	-108																																												

Stage	Demand and/or supply shock	Analysis	Impact on the health sector				
3. Aggravation of the problem (From mid-March to mid-May 2020) cont.			Estimating new infections and their health services * According to the pessimistic scenario				
				New infections	Beds required	Intensive care required	Intensive care and ventilators required
			The second week of April	1558	1417	78	62
			The third week of April	3436	3127	172	137
			The fourth week of April	7582	6899	379	303
			The first week of May	16727	15222	836	669
			The second week of May	36904	33583	1875	1476
			Total	66207	60249	3310	2648
			Available		24122	704	612
			Available - needs		-36127	-2606	-2036
			* According to the Ministry of Health's classification of the needs of the first 1,000 cases				
The fourth (crisis receding) and fifth (recovery) stages from mid-May to September 2020	Continued demand shock and further supply strengthening	Continued provision of health services to infected people, with a gradual decrease in the number of new infections.	The impact on the health sector is linked to the scenarios of the stage preceding it, and a gradual recovery takes place until the crisis ends.				

Source: The Egyptian Center for Economic Studies (ECES).

These estimates should be read with caution, as expectations may require further revision based on the day by day development of the outbreak, as its duration and scope are still unknown.

Fourth: Interventions required to mitigate the effects of the crisis

Despite the serious efforts made by the government to deal with the crisis, it appears from the data that the rate of new infections doubled in the first week of April compared to the last week of March. The scenarios demonstrated how dangerous this rate is and the insufficient capacity available to face it, and more gravely the increase in the rate of new infections (catastrophic scenario). Therefore, the following interventions are required:

4.1. At the level of precautionary measures:

- Tightening the precautionary measures and not to be lenient in ensuring abidance. In this regard, the change of the curfew to 8 o'clock can be revisited, as it may signal that the situation has become reassuring.

- Additional enhancements to all health services at all levels, in preparation for worst-case scenarios.

4.2. At the level of crisis management

Include civil society and parliament to the crisis management committees to mobilize, unify and follow up on efforts nationwide.

- Including representatives of the physicians' and pharmacists' union in the specialized technical committee for crisis management, being main partners in facing it
- Circulate the protocols of the health plan in the face of the crisis, to ensure the unity of measures for all health facilities nationwide, regardless of their administrative affiliation, and not to leave room for individual actions. Among the most important of these protocols, for example:

- Dealing with suspect infections until test results are obtained
 - Dealing with facilities that report infections among health service providers
 - Dealing with service providers in facilities where infections occur
 - Dealing with health service providers and contacts
 - Infection protection measures for health service providers
 - Managing matters related to necessary supplies of disinfectants, devices and supplies and ensuring their continued flow
 - Disposal of waste, especially non-dangerous waste, because they carry infection
 - Mechanism for communicating with all parties (isolation / testing places / ...)
 - The mechanism of information exchange regarding any developments
- A sound, scientific gathering of health information of the infected and the deceased to allow analysis of data to enable prediction of any new crises
 - A typical participation of the media in facing the crisis through:
 - Providing realistic solutions based on societal participation in the challenges facing the state in confronting the virus, for example, implementing social distancing in densely populated areas
 - Shedding light on the models and initiatives that help in facing the crisis, especially from civil society
 - Continuing awareness and announcing inspection and testing locations and any developments related to the health service

4.3. Enhancing the role of health service providers in facing the crisis

- The human factor at its various levels is the most important factor in the medical system, so its protection is a priority so that supply capacity is not decreased
- The state recently presented several incentives to improve the conditions of doctors, but there is still a need for more financial and moral support, and this requires:
 - Providing the utmost protection to service providers in all health facilities nationwide
 - Increasing the infection allowance for doctors from EGP 19 pounds to 1000

pounds, which was decided by the court but the government appealed against it citing lack of jurisdiction

- Adding deceased health service providers to the Honoring Fund for Martyrs and Injured in Wars issued by Law No. 16 of 2018
- Immediately activate the Medical Professionals Risk Fund, provided that its management is independent of the Ministry of Health and its financial controls are announced, including providing exceptional financial support to any deceased health service provider as a result of contracting the virus.

Fifth: Institutional weaknesses revealed by the crisis

- Weak governance of the health system, which was clearly demonstrated in the diversity of management, regulation, financing and the level of quality of services provided by various actors who follow different administrative bodies and are governed by various legislations, which requires:
 - A clear separation of tasks: Ministry of Health plays four roles simultaneously: the planning role (through its presidency of the Supreme Council of Health), the financing role, the executive role, and the oversight role.
 - A unified long-term vision of universal health coverage that is defined by experts and civil society and does not change with change of governments
 - A unified legislative framework that covers the system with all its parties, including service providers and employees, and the pricing and quality mechanism for services
 - An independent accreditation and quality agency that establishes unified quality assurance controls that are binding on government, private and private health facilities
 - A mechanism for identifying current and future needs and qualitative and geographical gaps in manpower in the medical profession and linking educational services to these needs.
 - A complete review of the wage structure of

workers in the sector so that they are commensurate with the size of the risks to which workers in the sector are exposed and provide them with a decent life. This requires consultation with the Medical Syndicate to determine the optimal form for this.

- Increasing training allocations and constantly raising the efficiency of human resources.
- Clear and objective mechanisms for periodic review, evaluation and follow-up that are submitted to Parliament and the Prime Minister.
- Modest government spending on health compared to increasing needs and global

standards: This requires an increase in the health budget commensurate with that stated in the constitution as a minimum.

- Weak efficiency and preparedness of primary care units throughout the country, especially that they are the first line of defense to confront any crisis
- Absence of an integrated, updated and available database on the sector that allows data analysis in all areas
- Weak opportunities availed for the sector to benefit from modern technologies (including BIG Data) in analyzing data to serve the formulation of sound health policies, which is one of the pillars upon which East Asian countries relied in facing the Coronavirus crisis.

7. Education

Lead Researcher: **Salma Bahaa**

First: Brief description of the subject of the report

The incidence of new coronavirus cases accelerates day after day, entailing urgent precautionary measures to contain the outbreak of the disease. Suspending schooling and closing all educational institutions come on the top of these measures. The whole educational system stopped working for thirty days that may extend for an unknown period of time. The education sector is one of the sectors that has been severely hit through the current crisis. This report presents the most important consequences of the crisis on the educational system and dropout rates. Given the extreme complexity of the education system in Egypt, we will first review the most important facts related to the quality of the educational inputs, in which we summarize as follows:

1.1. Education inputs

- The Egyptian education system is divided into pre-university education, which includes the basic and secondary levels including different educational tracks, and higher education, which includes students of universities and higher institutes. Both systems are subject to public and private institutions across all governorates. Pre-university students represent 88 percent of the total number of students in the whole educational system in 2018/2019.¹
- The increase in the number of public schools has been twice the increase in private schools in 2019/2020 compared to the previous year, while the increase in the number of students in government schools is approximately 5 times the increase in private school students over the same period.²
- According to geographical regions, public schools are about 25 times more than the private schools in rural areas, compared to twice only in the urban areas.
- Classrooms increases are much less than needed in correspondence to increases in the number of students especially in rural areas. The percentage of increase in students to the increase in classes is much higher, reaching 162 students per class in rural areas, compared to 119 in urban areas. However, the existence of private schools in urban areas absorb some proportion of these increases in students.
- The student density in classrooms in pre-university education has tended to rise during the last five years, increasing by 11.5 percent during the period 2015/2016 - 2019/2020, while the relative increase in private education has stabilized around 3 percent during the same period.
- Basic education students are more concentrated in public schools than private ones, they are more than eight times higher in public schools compared to private schools. They are also exceeding in rural areas, where students number reaches 10.6 million compared to about 8.8 million in urban areas (see Figure 7.1. below).
- The student density in classes at the primary level is even higher, as the average size of classes in government education is about 53 students, compared to about 34.4 students for private education in 2019/2020. While, comparing to Turkey, which has a closer population figures to Egypt, the density of classes is about 21.4 students in the primary level, with 21.4 students in public institutions and about 18.5 students in private ones,³ according to latest available data.
- The Pupil-teacher ratio in rural areas is around 25.5, compared to 21.1 in urban areas, while it is only 16.5 in China and about 17 in Turkey⁴.
- A new education system has been launched last year, which canceled all exams in the early stages of education. It has also adopted distance learning for students in the first two grades of secondary level through what so called knowledge bank and e-library. While, the experience has not been yet evaluated.

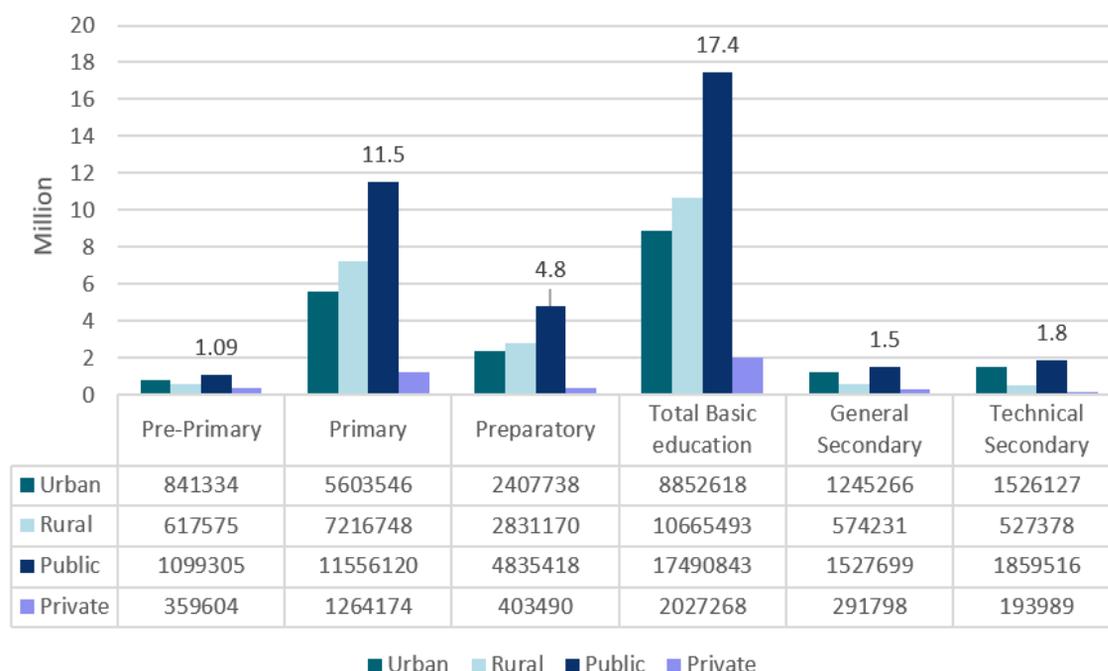
¹ https://www.capmas.gov.eg/Pages/IndicatorsPage.aspx?page_id=6142&ind_id=1082

² <http://emis.gov.eg/Site%20Content/matwaya/2019/matwaya2019.pdf>

³ https://stats.oecd.org/Index.aspx?DataSetCode=EDU_CLASS

⁴ https://stats.oecd.org/Index.aspx?DataSetCode=EDU_CLASS

Figure 7.1. Number of Students in the Different Educational Levels according to the Geographical Region and Affiliation, 2019/20



Source: Ministry of Education and Technical Education, Statistical Summary of Pre-University Education 2019/2020.

- The educational system in Egypt is characterized by the spread and persistence of the dropout phenomenon. Dropout rates in the preparatory stage exceed other stages and are more intense in rural governorates. They rise in the governorates exceeding the grand average in 12 governorates, including Sohag and Matrouh. For example, dropout rate in Matrouh is 5 percent higher than the overall average in 2017, compared to half this increase in 2016.

- Table 7.1. below shows the increase in dropout rates for the basic education level over the years, with dropout rates doubling during 2016/17 in some governorates such as Cairo, Sharqia and Matrouh.

- The poorest governorates have the highest dropout rates, with dropouts in Assiut (the poorest), for example, exceeding three times the dropout rate in governorates such as Cairo and Sharqia in 2016.

Table 7.1. Poverty and Dropout Rates in Selected Governorates

Governorate	Poverty rate	Dropout rate, primary education 2015/16	Dropout rate, preparatory education 2015/16	Dropout rate, age 4 and above 2017
Country level	32.5	0.5	4.0	7.28
Sharqia	24.3	0.3	2.5	6.04
Cairo	31.1	0.3	2.7	5.46
Beni Sueif	34.4	0.7	5.7	6.93
Assiut	66.7	0.7	8.7	7.26
Suhag	59.6	0.5	5.3	8.54
Matruh	50.1	0.9	6.7	12.56
Menia	54.7	0.4	4.0	5.39

Source: The Central Agency for Public Mobilization and Statistics (CAPMAS), 2018.

1.2. Government spending on education:

Public spending on education is about EGP 132 billion in the projected budget for 2019/20, which represents 10.6 percent of total public spending. The share of wages and employee compensations in the total spending on education is about 74 percent.

1.3. Household spending on education:

Rural households spend about half of what urban households spend on education. The private lessons component accounts for the largest proportion of household spending, as the percentage of annual family spending on this item reaches 45.6 percent of total spending on education in the rural areas compared to 32.2 percent in urban areas. The opposite is right in case of expenses and tuition fees, urban families spend one and a half times more than rural households, according to the Household Income, Expenditure and Consumption Survey 2017/18.

There are some tracks that should be addressed in particular when analyzing the implications of school suspension, which include:

1.4. Technical education and vocational training students:⁵

- Technical education embraces 40% of preparatory students, branching into about 200 specialties in 2019/20.
- The unemployment rate among technical intermediate graduates is more than 4 times higher than among General secondary and Al-Azhar graduates.
- Also, the poverty rate among them is higher compared to those with general secondary education by about 6 percent and is one and a half times more compared to holders of a university degree.
- Despite the high unemployment among technical education graduates, half of them are employed and two-thirds of them contribute to economic activity.
- Data indicate that two thirds of technical workers are working in the rural areas, equivalent to one and a half times their urban counterparts.
- 44.8 percent of the total poor are employed outside establishments in the informal sector.

1.5. Middle and high school students:

- The total score of middle school (preparatory) students at the end of the scholastic year determines the type of secondary education they will enroll in. Nearly half of Middle students are concentrated in rural areas. And 92 percent of them in public schools in 2019/20.
- The total score of students at the end of the secondary stage determines the type of college that they will join. Rural areas already include 31.5 percent of them, about 84 percent in government schools and only 16% in private schools.

Second: Demand and supply shocks in the context of the crisis cycle

The table 7.2. below presents possible scenarios⁶ for student status after the suspension of education according to the five stages of the crisis cycle and following the different possible supply and demand side shocks to the education sector, assuming the following hypothesis and conceptions:

1. Demand shock for education (domestic): Increase in number of students who have stopped studying, for any of the following three reasons:

- a) Absenteeism of some students from schools and universities due to parents concerns about the outbreak, regardless the Government's decision of education suspension.
- b) Students have stopped studying as a result of the government decision to suspend education with the possibility to pursue distance learning from home.
- c) Students stopped studying as a result of the government decision to suspend education, with inability to pursue distance learning.

2. Supply shock to the education sector (domestic): The lower ability of all categories and institutions of the education sector in Egypt to complete the educational process.

3. The analysis focuses on the pre-university education system particularly although, it also refers to Egyptian scholarship students abroad, because of its direct relationship to the crisis.

⁵ All data are for 2017 unless stated otherwise.

⁶ These estimates should be read with caution, as expectations may require further revision due to the evolving nature of the virus outbreak day by day, and its duration and scope are still unknown.

4. The supply and demand shocks to education were analyzed over the crisis cycle stages in the light of the different and successive decisions of the Ministry of Education and Technical Education regarding the situation of students (decisions are attached according to their chronological order of issuance).
5. The impact on the education sector is assessed from the two perspectives of quality of education and dropout rates.
6. In the analysis, quality of education is measured by the degree of educational attainment in light of dealing with the crisis and dropout rates resulting from the suspension of education.
7. The different scenarios addressing the impact of education suspension on students' dropout rates will be built based on education suspension in 2010/2011 following the January 25th Revolution. Thus, the analysis focuses on dropout rates during the last decade.
8. The analysis is building on dropouts from the preparatory level as they are much sharper compared to those from primary level.

Table 7.2. Potential Scenarios for the Impact of the Crisis on the Education Sector, based on the Aforementioned Crisis Cycle and Assumptions

Stage	Demand shock and/or supply shock	Analysis	Impact on the education sector
1. Emergence of the virus (December 2019 to January 2020)	A slight shock in the supply and demand sides regarding scholar students overseas.	- Suspending education in China to prevent the spread of the virus, and thus start bringing in Egyptian scholar students (who wish to come back) from Wuhan and other Chinese cities.	- Spending pressure on the financial resources of the missions as a result of bringing Egyptian students home on the mission's expense, and granting those who have stayed abroad additional grants, according to the statement by the Minister of Higher Education. However, there is lack of clarity regarding the time and financial frame of these grants.
	There are no shocks in the domestic supply and demand sides	There is no problem facing Egyptian scholar students in other countries of the world.	- Education process continues normally in Egypt.
2. The beginning of proliferation (February through mid-March 2020)	The problem of scholar students abroad continues to worsen due to the increased demand shock.	- Suspension of education in the United States and European countries to prevent the spread of the virus. The beginning of bringing in Egyptian scholar students (who wish to come back), in addition to Egyptian scholar students in China.	- Doubling pressure on the financial resources of scholarships budget, in order to protect Egyptian students in other countries and bring them back home on the mission expense. - Lower living conditions of Egyptian scholars who had to return, given the unclear situation of the intended grants that to be awarded for them after their return.
	A slight shock in demand domestically. There is no supply shock domestically.	- After the emergence of infected cases in Egypt with the beginning of the spread of the virus, some parents tended to absent their children from schools.	- Education continues normally in Egypt, but with a decrease in the number of regular students.

Stage	Demand shock and/or supply shock	Analysis	Impact on the education sector
<p>3. Aggravation of the problem (From mid-March to May 2020)</p>	<p>Complete paralysis of the education system and drastic shocks of demand and supply domestically (with resumption of the problem of students overseas)</p>	<p>Reaching the crisis peak during this period due to the decision to suspend education and close educational institutions for a period of 30 days.</p> <p>Consequently, the entire educational system comes to a breakdown, with students' confusion towards their educational status due to full absence for both students and teachers, and the government directed to follow through distance learning, with gradual government decisions regarding how to deal with the current scholastic year.</p>	<ul style="list-style-type: none"> - Widening gap between governmental, private and international institutions regarding the quality of education due to public institutions low readiness for distance learning, especially with regard to rural areas, and outside great governorates. - International schools and universities are the readiest for distance learning, followed by private then the government schools and universities. - For government schools, readiness may be higher in the stages implementing the new system of education, however it is unclear how to deal with the other stages, especially in light of the enforced absence of private tutoring that parents have to go through to compensate for deficiencies in the educational system, the thing that is clearly evident in the rural regions compared to urban ones. - Due to the country's awareness of the weak educational system, final examinations were completely canceled, which introduced another problem that will become clear in the next stage of the crisis. - The position is not clear regarding the end of the current school year and consequently the future of students is not clear due to changing decisions (see annex), which ended up in almost canceling the final exams for all. Note that students have lost nearly half of the scientific content for the current academic year that accordingly should be compensated next year. - With the extension of education suspension, an increase is expected in the natural drop-out rates for the basic stage of education (dropout rate in preparatory stage is 2 percent and in primary stage is 0.25 percent in 2018/2019).⁷

⁷ CAPMAS.

Stage	Demand shock and/or supply shock	Analysis	Impact on the education sector
<p>3. Aggravation of the problem (From mid-March to May 2020) cont.</p>			<ul style="list-style-type: none"> - Interruption in incomes for many groups such as teachers and employees working informally like in private lessons centers and others,⁸ some professors in private universities, employees in feeding services for the education sector (transportation and delivery services), and kindergarten owners. In turn, these reductions and deductions in salaries lead to a decrease in the consumption rate for most families, especially the poor ones. - The impact of the poor technological infrastructure in the education sector, especially in rural areas, has exacerbated the problem. On the other hand, increased pressure on the Internet as a result of students' pursuing their lessons and parents conducting their work from home led to a marked weakness in the performance quality of the communications and information technology sector.⁹ - A large percentage of those enrolled in schools and universities mainly depend on free meals provided inside educational institutions, which will negatively affect the health status of these students as a result of the current closure.
<p>4. Crisis recedes (Mid-May-August 2020) cont.</p>	<ul style="list-style-type: none"> - Continued domestic supply and demand shocks as a result of system paralysis. 	<p>There is no pressure on the supply side due to the end of the scholastic year and the advent of the summer season, but a problem of preparing for the new academic year and the degree of students' preparedness for it begins.</p>	<p>Emergence of problem with students transition to the next academic years as a result of:</p> <ul style="list-style-type: none"> - Different levels of educational attainment of previous years, especially in the rural areas and government schools, due to difficulty of pursuing distance learning. - Difficulty in determining the evaluation mechanism due to the cancellation of final exams for school students, at all levels, most importantly for preparatory and high school certificate stages.

⁸ Although the private lessons system is illegal, it will remain in place until the reform of the educational system is completed.

⁹ The impact of the crisis on the communications and information technology sector will be detailed in a separate report.

Stage	Demand shock and/or supply shock	Analysis	Impact on the education sector
5. Recovery (As of September 2020)	Regular schooling resumes assuming controlling the epidemic (end of the health crisis)	The new academic year witnesses many challenges related to the variation in the educational levels of previous students, unclear transitions between educational levels, and high dropout rates that are driven by two main factors: irregular schooling for longer periods of time, and impoverished families especially in rural areas and governorates with higher rates of dropout and poverty, as shown in the relation represented in Table 7.1.	<ul style="list-style-type: none"> - Variation in educational attainment rates that associated with average years of schooling. - The dropout phenomenon exacerbates the spread of informal sector. <p>Two scenarios for dropout rates can be built, as follows:</p> <p>Scenario 1 (optimistic): Higher rate of increase in dropout by one and a half times in all governorates</p> <p>Assuming the rate of increase in dropouts from the preparatory stage during the January 25th Revolution, as a result of school suspension then, which amounted to 6 percent in 2011/2012 compared to about 5.11 percent in 2010/2011 (revolution year), this scenario expects the rate of increase to rise by one and a half times, to reach about 3.35 percent.</p> <p>Scenario 2 (pessimistic): Doubling rate of increase in drop-out in all governorates.</p> <p>Assuming the previous rate of increase in the dropout from the preparatory stage during the January 25th Revolution, a doubling of this increase is expected in the aftermath of the current crisis to reach 3.8%, which is almost twice the current rate (2%).</p>

Source: The Egyptian Center for Economic Studies (ECES).

These estimates should be read with caution, as expectations may require further revision based on the day by day development of the outbreak, as its duration and scope are still unknown.

Education is entangled with a number of other sectors through several networks that represent the value chains leading to the education service (such as the health sector, the transportation sector, the trade sector, etc.), and thus shocks to it affect these sectors indirectly, in addition to other shocks to which these sectors are exposed (will be addressed in other reports), for example:

- **Health Sector:** The majority of the workers in the nursing profession are from women. The suspension of education prevents them working at a time there is an urgent need for them to support the health sector and contain the outbreak. Also, there is a direct impact on students in the basic levels of education who are

accustomed to receiving medical care in schools and getting compulsory vaccines at appropriate times, which poses a risk to the health of children at this critical age. It should be noted that the current increased focus on containing the outbreak of Coronavirus may harm the general health of children.

- **Transportation sector:** The transportation sector is affected by interruption of education as a direct result of disruption of movement, whether internally with respect to different means of transportation or across governorates due to the return of students to their homes in various governorates.

- **Manufacturing sector:** There is a direct impact on the productivity of the sector due to the decrease in the number of women working in factories. School meal production factories have also been affected as a result of suspension of education, in addition to the decrease in production of items accompanying the start of the new semester, including clothes, study tools

Third: Interventions required to mitigate the effects of the crisis

1. The resumption of the Ministerial decision to pursue distance learning depends on activating decentralization of management to the whole educational system so that targets could be effectively monitored, especially in rural regions, not only in great governorates.
2. Postponing the transition of preparatory and general secondary students to the following educational levels to be done in the first six months of the new scholastic year, so that cancelled courses and curricula could be fully covered, and thus perfectly moving to the new educational levels.
3. Utilizing the current interruption to prepare educational programs and courses for the new academic year, with the aim of bridging the gap in academic content due to the cancelled curricula, especially in mathematics and science.
4. Adopting an alternative contingency plan that includes pumping certain financial resources to compensate those who are out of work, and providing financial resources for Egyptian scholar students, whether those who are still abroad or returnees.
5. Setting a mechanism to compensate students of poor families for free school meals and continuing to provide it to them during the education suspension, due to their importance and impact of their cease on the consumption and spending patterns of these families.
6. Deciding the situation of the second semester tuition fees for private and international schools, which must be carried over entirely under the current circumstances of salary deductions and layoffs. This is in attempt to support the sector and encourage parents given the current highly consumption rates.
7. Allocating a financial budget for pre-university education that includes at least twice the current figure (EGP 132 billion pounds) to meet the requirements and handle the reper-

cussions of the crisis.

8. Coordination between the relevant embassies, the Ministry of Higher Education and the Administration of cultural affairs and missions sector to reconcile the financial conditions of Egyptian students wishing to return.
9. Providing a channel for communication (a hotline for example) through which advice and support is availed to Egyptian scholar students to reconcile their academic conditions with supervisors and ensure students' academic stability.

Fourth: Institutional weaknesses revealed by the crisis

The crisis of the Coronavirus outbreak demonstrated the institutional weaknesses that dominate the performance of the education system. The suspension of education revealed a clear defect in responding properly to such obligation. The most important features of this weakness are as follows:

1. The low budget allocated to education, which will not lead to any real development in the education system.
2. Distance learning has not been properly implemented, though its adoption as a learning mechanism will become the new normal.
3. Student overcrowding, weak absorptive capacity of schools and the absence of a vision to deal with it. The only solution lies in distance learning, which has already begun in the context of the crisis and represents an opportunity to make a rapid and large transformation in the educational system in which distance learning becomes an essential part in dealing with the problem of student overcrowding.
4. The clear widening gap between public and private education, which requires comprehensively revisiting government curricula to reach close levels to private education.
5. Low salaries of employees in the educational system, especially teachers, which is one of the main reasons for its weakness. The real value of the teacher has become evident during the current crisis, and therefore the teacher must get a financial compensation that allows him to do his work without being forced to go through private lessons to secure a decent standard of living.

6. Weak technical education and vocational training system in a way that negatively affects industry, for which there are detailed proposals addressing it in a study prepared by the Egyptian Center for Economic Studies.¹⁰
7. Weak health readiness in schools and the declining role of the Quality Assurance Authority despite its importance.

The following table shows the main weaknesses and some suggested measures:

Table 7.3. Institutional Weaknesses and Proposed Measures to Address Them

Weaknesses	Proposed measures
Distance learning system	<p>Complementing efforts made in digital transformation by preparing for the next year starting from now. The following are proposed:</p> <ol style="list-style-type: none"> 1. Shifting the whole system towards distance learning and using that to absorb student density by organizing courses and curricula so that students receive only scientific courses at schools within regular organized groups, while theoretical courses are transferred to e-learning platforms, and thus limiting overcrowdings in schools and classes. 2. Using television channels to broadcast electronic curricula to students in poor areas to ensure their inclusion in the distance learning process. 3. Exploiting the parallel informal education system to formally enrich the educational process, so that cooperation with teachers of private lessons can take place and benefit from them in broadcasting educational channels via television in exchange for a certain income. 4. Including educational activities for basic stages through electronic means.
Technical education and vocational training system	<ul style="list-style-type: none"> - The involvement of the private sector in the curriculum plan, in particular the training content of technical education. - Motivating the private sector to implement the tripartite model that includes the factory, workshop and school to ensure the effectiveness of technical education outputs.
inadequate financial allocation	<ul style="list-style-type: none"> - Carrying out a detailed objective revisit to the new annual budget plan, targeting the most affected groups, and limiting the spread of the informal sector. - Bringing education allocations in line with those proposed in the Egyptian constitution of January 2014.
Quality system	<ul style="list-style-type: none"> - Provide financial incentives to schools to encourage them adopting quality standards. - Releasing an electronic platform for the Quality Assurance Authority to ease the admission process.
School health system	<ul style="list-style-type: none"> - Providing a medical convoy in all schools, especially in rural areas. - Availing school health offices in educational departments.

Source: The Egyptian Center for Economic Studies (ECES).

¹⁰ <http://www.eces.org.eg/EventDetails?Lang=AR&C=2&T=1&ID=280&منهج-التعليم-والتدريب-القياسي-في-مصر>

Annex

Table A7.1. Ministry of Education Statements and Decrees (Chronologically from Most Recent at the Time of Writing the Report)

Weaknesses	Proposed measures
29/03/2020	Minister of Education and Technical Education Dr. Tarik Shawki has approved schedules for the end of the second semester (May 2020) e-exams for students of the first and second secondary grades.
27/03/2020	The Ministry of Education allows students to inquire about codes electronically, in continuation of the announced precautionary measures aimed to protect students in light of the Coronavirus pandemic.
27/03/2020	The Ministry of Education and Technical Education states that all tablets for students of the first and second secondary certificate are equipped with all means of connection (data chip - home WIFI network) to access educational platforms.
26/03/2020	<p>Minister of Education and Technical Education Dr. Tarik Shawki announced, through a video message, a set of decisions aimed at reducing strains on students in these exceptional circumstances through taking into consideration maintaining the educational outcomes.</p> <p>These decisions include:</p> <ul style="list-style-type: none"> • Students of all grades (from the third primary grade to the second preparatory grade) will not undergo second semester examinations. Students will instead prepare research papers for every course studied until 15 March (the beginning of semester suspension) and submit them online. • The remaining course material will be taken in the following academic year (for all grades). As for the third secondary certificate students, it has been agreed with the Ministry of Higher Education that the remaining course materials will be taught in the introductory year of all colleges. • First and second secondary grades: The e-exams will include every course studied until 15 March (the beginning of suspension of the academic year). Only the first secondary grade students will take the experimental exams (scheduled on April 5, 2020) from home. Students will be divided into groups throughout the day to access the exam platform. • Third secondary grade: Exams will include every course studied throughout the academic year (first semester + second semester until March 15, 2020). Students will take their final exams as scheduled inside schools, while taking all preventive measures to ensure the safety of students and increasing the number of exam halls. • Third preparatory students will not take second semester examinations. Students will instead prepare research papers for every course studied until 15 March and submit them online, as a condition for passing. Students (after submitting the research paper) will get the full score of the second semester (100 percent). Transition to the next educational stage (General Secondary/ technical education) will depend on the sum of the first and second semesters. <p>Minister of Education and Technical Education Tarik Shawki announced several measures for the students of technical education, as follows:</p> <ul style="list-style-type: none"> • Technical education (transitional grades): Students will continue e-learning activities through educational channels (Misr Educational Channel 11747 polarity vertical - NileSat), and Technical Education Channel on YouTube until Thursday April 16, 2020. All course material has been made available online for non-certificate grades of the technical education on technical education sector forums (www.fanyeduc.yoo7.com). • Technical Education on the YouTube Channel: https://www.youtube.com/channel/UC0ICJfzsyx7M29DPpFXFx2Q

Weaknesses	Proposed measures
	<ul style="list-style-type: none"> • Schools of applied technology and schools of competencies (non-certificate grades): students will communicate with the teachers throughout the suspension period via https://edmodo.org. • The period from 18 to 23 April 2020 (technical education students and students of applied technology schools): students are assigned e-learning activities, including research, projects and applied studies, implementing designs using specialized software, and preparing presentations for educational activities. • From April 26 to June 15, 2020: Each student prepares a combined file of the educational activities that he/she has accomplished and submits it to his/her school after its completion. Practical applications will be postponed till the return to school three weeks before the start of the new academic year. • The final results for transitional grades will be based on the file of the educational activities submitted by students and on the student's performance in the practical activities that will take place three weeks before the start of the new academic year, in addition to the scores of the first semester exams. <p>The Minister's decisions also included international schools (British diploma, and the American diploma). The decisions were as follows:</p> <p>First: British Diploma:</p> <ul style="list-style-type: none"> • 1-9th grade students will conduct a research project through the school administration to move to the higher grade. • 6th, 8th and 9th grades: The British Council will contact the exam boards to return the fees for the prescribed tests. • 10th, 11th, and 12th grades: The Ministry will contact the British Council to determine the method of evaluation. • For national subject examinations: from grade 1 to grade 11, students will submit a research project to move to the higher grade. Students in grade 12 will take their exams with Thanweya Ama students as usual. <p>Second: The American diploma:</p> <ul style="list-style-type: none"> • 1-12th grade students will conduct a research project in contact with the school administration in addition to the first semester exams, as a condition for moving to the higher grade. <p>Grade 12 and university enrollment, divided into two parts:</p> <ul style="list-style-type: none"> • For students who did not pass the SAT exam, the GPA represents 100 percent of the total for enrollment in the university. An admission examination will be held by the Ministry of Higher Education in the qualifying subjects according to each specialization. • For students who have passed the SAT exam, the student chooses between joining the university according to the criteria of last year (the GPA is 40% and the SAT is 60%), or GPA represents 100% of the total university admission requirement. • For students wishing to enroll in science colleges: The student must have completed the qualifying subjects for the target specialization or pass the SAT II exam according to the criteria of last year. • For national subject exams: from grade 1 to 11, a research project will be carried out and added to the scores of the first semester exams to move to a higher grade. Students in grade 12 will take their exams with Thanaweya Ama students as usual. • The Minister of Education and Technical Education announced the details of the research projects as follows:

Weaknesses	Proposed measures
	<ul style="list-style-type: none"> ○ The general framework of the required research project and how to correct it will be announced on April 2nd. Students will be assigned the required research projects on April 5, 2020. ○ The Minister warned students against research plagiarism, noting that identical research projects will be excluded, because cheating is illegal and unethical. ○ Regarding Egyptian students abroad, the Minister said that they can access the digital library in seven countries: UAE, Saudi Arabia, Bahrain, Kuwait, Jordan, Lebanon and Italy next week.
26/03/2020	The Ministry stresses that first secondary students will take experimental exam (no scores will be given) from home on April 5, 2020, as a training to prepare students for the end-of-year exam.
23/03/2020	The Ministry confirms that the schedule for the general secondary certificate exams for the academic year 2019/2020, which was announced earlier by the Ministry, is still valid and there has been no change to it.
22/03/2020	In continuation of the efforts made by the Ministry of Education and Technical Education in taking the necessary precautionary measures to combat the coronavirus, Dr. Tarik Shawki, Minister of Education and Technical Education, issued a decree regarding the examinations of outstanding students in science and technology in schools.
19/03/2020	Minister of Education and Technical Education Dr. Tarik Shawki approved the schedules of the first-round exams for the technical diplomas students (industrial - agricultural - commercial – hotel," according to the system of three and five years, for the current academic year 2019/2020.
19/03/2020	<p>Dr. Tarik Shawki, Minister of Education and Technical Education, reviewed the efforts made by the Ministry over the past days to implement "distance learning," following President Abdel Fattah El-Sisi's decision to suspend the course of study in schools to protect students.</p> <p>Most importantly:</p> <p>The Ministry established an electronic library in addition to the Egyptian Knowledge Bank "EKB" to help students study the various curricula for grades starting from kindergarten (kg) up to the secondary stage. Books are in both Arabic and English and are accessible to all students, parents and teachers.</p> <p>This website includes huge digital scientific content for all educational grades, and uses multimedia (video, images, documentary films) to explain the various lessons, as well as making available more than 80 dictionaries for use, as well as the Butterfly Encyclopedia. It also includes multidisciplinary content for the New Education System. (2.0).</p> <p>Students can access the digital library from the mobile phone or computer without any obstacles. The Ministry also provided another alternative, which is the educational channels that broadcast course material explanation on television.</p> <p>The Minister stated that an electronic platform has also been provided for communication between students and teachers over the coming period, as approximately 22 million students distributed over nearly 55,000 schools will be able to communicate with their teachers as if they were present in schools. Lesson explanations, answering student questions, and taking online exams will be conducted through this platform.</p> <p>Many videos that explain to students how to use the online platform will be published in a few days. Students will receive from their teacher in the class a code to access his virtual classroom to follow the class teacher electronically.</p> <p>Regarding the students' end of the year examination, Dr. Shawki stated that for Kindergarten (kg1 - kg2) and first and second primary grades that are subject to the new</p>

Weaknesses	Proposed measures
	<p>education system is implemented (2.0), teachers will prepare performance evaluation reports for their students. Parents will make sure that students complete the curriculum published on the digital library and the platform using the published electronic guide.</p> <p>From third primary to second preparatory grades (transitional grades): Students will not take second semester examinations. They will instead prepare research papers for every course studied through the electronic platform. Students will be able to communicate with their teachers to receive assistance in conducting the research papers within a time-frame of 2 months effective today.</p> <p>General certificates and technical diplomas: Students will take exams for the end of the current academic year at the time announced by the Ministry in exam halls. All the necessary precautionary measures will be taken to protect students in the exam halls in cooperation with the various state agencies.</p> <p>First and second secondary grades: The experimental electronic exam (without scores), scheduled on March 22, will be postponed to April 5, 2020, and will be taken from home. Concurrently, second secondary grade students will also take an experimental exam (without scores) as a final rehearsal to prepare students for the end of year exam.</p> <p>First and Second secondary students will take end of the year exams through the tablets from home, exams will be reviewed online and scores will be sent to students.</p> <p>First and second secondary home-schooling students will prepare research papers for every course studied like transitional grade students.</p> <p>First and second secondary students with special needs will prepare research papers for every course studied similar to transitional grade students.</p> <p>Egyptian students abroad will not take exams and instead will use the online platform and the digital library to conduct research papers due to the circumstances of their countries of residence.</p> <p>At the end of his speech, Dr. Tarik Shawki, Minister of Education and Technical Education, affirmed that there is no intention to delete parts of the curriculum, and asked parents and students to rely on the curricula relayed by the Ministry through the digital library and online platform only to protect students.</p>
17/03/2020	Minister of Education and Technical Education Dr. Tarek Shawki approved the schedule of the General Secondary Certificate Examination for Outstanding students in Science and Technology, first round for the current academic year 2019/2020.
15/03/2020	For the benefit of students, Minister of Education and Technical Education Dr. Tarek Shawki met with several Ministerial leaders and directors of the general development of subjects to explain the steps and procedures taken by the Ministry in relation to digitizing teaching educational materials during the suspension period.
15/03/2020	Dr. Shawky, Minister of Education and Technical Education, instructed directors of educational directorates in the various governorates to start a sterilization campaign of educational facilities in cooperation with the Ministry of Health.
15/03/2020	Minister of Education and Technical Education instructed the Educational Buildings Authority and directors of educational directorates in the various governorates to fix the damages.
14/03/2020	Minister of Education and Technical Education approved the exam schedule for the first round of Thanaweya Aama for the academic year 2019/2020.

Weaknesses	Proposed measures
13/03/2020	In light of some countries suspending the academic year, and respecting the decision of each country, the Minister of Education and Technical Education decided to postpone the examinations of Egyptian students in those countries until each country ends the suspension of the academic year.
11/03/2020	To protect the health and safety of Egyptian students, and to take the necessary precautions to counter the Coronavirus, Minister of Education and Technical Education Tarek Shawki decided to suspend school activities and adjust the school schedule.

Source: Ministry of Education and Technical Education.

8. Informal Sector

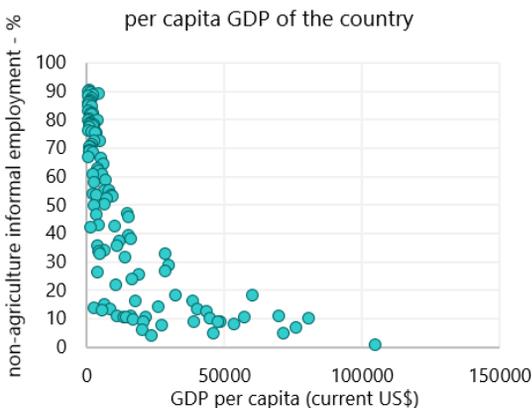
Lead Researcher: **Ahmed Dawoud**

First: Brief description of the subject of the report

The informal sector has always played a fundamental role in the Egyptian economy, especially in times of crisis. However, that role has never been a subject of agreement between academics and professionals. Some see it as an economic system from which a social protection network emanates to provide a source of income and support when the State's role is diminishing and formal sector activity is declining. Others do not see but a huge mass of resources that have yet to be covered by taxes, not to mention its close association with most of the problems that have spread in the Egyptian society over the past decades such as working in unsafe places, slums, child labor and school dropouts, among others.

Accordingly, understanding the repercussions of the current Corona crisis on those working in the informal sector in Egypt, whether individuals or companies, requires a disciplined scientific understanding of the nature of this sector, its dynamics, and the fundamental changes it has undergone in recent decades, as well as how it responded and interacted with the economic crises Egypt has gone through previously, and finally, the repercussions on the sector's role in the current crisis.

Figure 8.1. The Inverse Relationship between the Size of Informal Employment and the Per Capita GDP of the Country

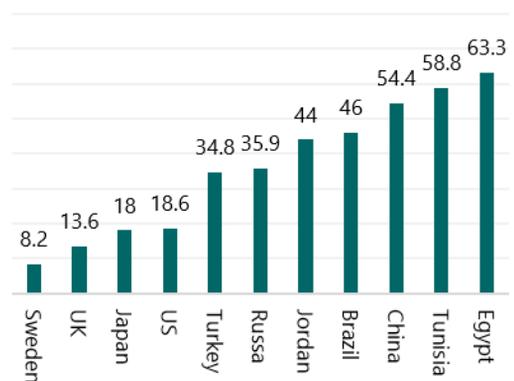


Source: International Labor Organization, 2018; World Bank, 2018.

1.1. The size of the informal sector in Egypt (compared to other countries, as well as its development over time)

- To begin with, the size of the informal sector is large in developing countries compared to developed countries (Figure 8.1), as the percentage of workers in the informal sector decreases substantially with the rise of the standard of living as measured by GDP per capita.
- The informal sector employs about 50 percent of non-farm employment in Egypt, 63 percent of the total employed in all sectors,¹ including agriculture, contributing equivalent to 30-40 percent of GDP.²
- This percentage is high compared to neighboring and comparator countries such as Tunisia, Jordan and Turkey, as well as in comparison with developed countries such as Britain and Sweden, where workers in the informal sector accounted for 59, 44, 34, 13.6 and 8.2 percent of the total employed, respectively, as shown in Figure 8.2.
- However, the informal sector has not always been this large in Egypt. However, it grew strongly during implementation of the economic reform program in the nineties and specifically during the privatization process, as well as after the global financial crisis of 2008 and the Revolution of January 25, 2011 up to the Revolution of June 30 as shown in Figures 8.3 and 8.4.

Figure 8.2. Informal Employment as a Percentage of Total Employment in Egypt, 2018

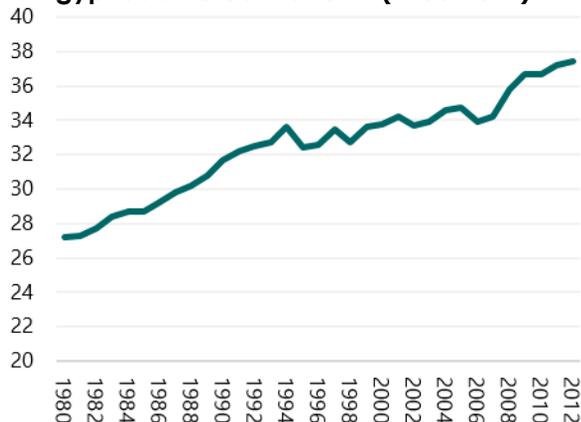


Source: International Labor Organization, 2018; World Bank, 2018.

¹ ILO. 2018. "Women and men in the informal economy: A statistical picture". Third edition

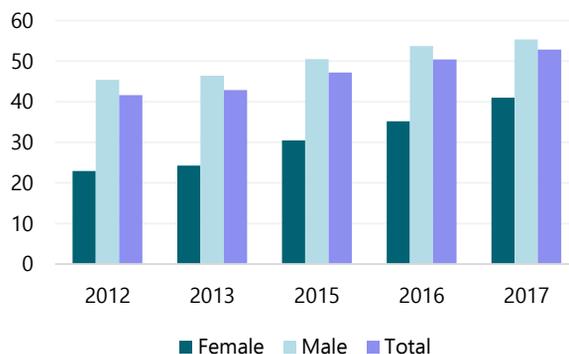
² Medina, L. and F. Schneider. 2018. Shadow Economies Around the World: What Did We Learn Over the Last 20 Years? IMF Working Paper 18/17.

Figure 8.3. The Size of the Informal Economy in Egypt as a Percent of GDP (1980-2012)



Source: International Labor Organization, 2019.³

Figure 8.4. Evolution of Informal Employment in Egypt (as a Share of Non-Agricultural Employment)



Source: Elshamy, 2015.⁴

1.2. The informal sector in Egypt: Types, reasons, and features

The following table distinguishes between three main types of informality, namely, employment, enterprises, and informal transactions, explaining the characteristics of each, as well as reasons for the increase of its magnitude.

Table 8.1. The Informal Sector in Egypt: Types, Reasons, and Features

Type	Features	Reasons
Informal employment	<ul style="list-style-type: none"> 60.4 percent of informal workers works in the informal sector, while the rest (39.6 percent) works in the formal sector under informal arrangements, that is, without contracts or insurance, as shown in Figure 8.5. Regarding the professional distribution of workers in the informal sector, 41.2 percent of them are employees, 18.8 percent are employers, 20.5 percent are own-account workers, and 19.5 percent of them are contributing family workers as shown in Figure 8.6. As for sectoral distribution, agriculture comes first, with 44.8 percent of total informal employment in Egypt, then industry (24.6 percent), mainly concentrated in small workshops such as blacksmithing, carpentry, small food factories, as well as recycling factories such as plastic, then services (30.6 percent), and are mainly concentrated in the construction, retail, and catering sectors, as shown in Figure 8.7. As for distribution by gender, Figures 8.6. and 8.7. show the concentration of women in unpaid domestic work and in agriculture. Moreover, the percentage of female employers is clearly lower compared to males. 	<ul style="list-style-type: none"> The Egyptian economy has long been unable to generate enough formal jobs to absorb the new entrants into the labor market, whose inflows have increased significantly since the 1990s.⁵ This is because of Egypt's industrial policy bias for capital intensity, not employment intensity, since the 1980s. The 1962 decision regarding the state's commitment to appointment in the government and public sector has not been cancelled yet, and most benefits and official services are linked to the governmental background. This makes about 81.6 percent of the unemployed in Egypt await a government job⁶, and given the limited official alternatives during the waiting period, they are often forced to accept an informal job.^{7&8}

³ World Bank. 2019. World Development Indicators.

⁴ Elshamy, M. H. 2015. Measuring the Informal Economy in Egypt. International Journal of Business Management and Economic Research (IJBMER), Vol 6(2), 2015, 137-142

⁵ The proportion of the population of working age (15-64 years) increased from 54.6 percent in 1990 to 62.6 percent in 2010

⁶ Dimova, R., S. Elder and K. Stephen. 2016. Labor market transition of young women and men in the middle east and north Africa. ILO, work4youth, publication series No. 44

⁷ Assaad, R. 2007. labor supply, employment and unemployment in the Egyptian economy, 1988-2006. ERF, Working Paper 0701

⁸ 75 percent of all new entrants to the labor market between 2000 and 2005 were forced to work informally because there was no formal alternative.

Type	Features	Reasons
	<ul style="list-style-type: none"> • Informal employment lacks health and social insurance and paid vacations, which makes them extremely vulnerable to any unexpected shocks. 	<ul style="list-style-type: none"> • Weak positive social mobility in Egypt, which drives the vast majority of young people to seek for achieving their aspirations through informal work. • Poor living standards make families send their children early to the labor market, which means that there is no chance to obtain a formal job in the future.⁹
Informal enterprises	<ul style="list-style-type: none"> • Informal enterprises constitute about 90 percent of small and micro enterprises in Egypt. These enterprises are very vulnerable because they lack access to finance, land, technology and the required technical knowledge. • Their vulnerability has been proven by The World Bank. It estimated that only 20 percent of the small enterprises that were established in Egypt in 2006 were able to survive until 2012.¹⁰ 	<ul style="list-style-type: none"> • Existing formal enterprises suffer from many problems related to rigidity of the business environment in Egypt, difficulty in obtaining the necessary licenses, high tax rates and other problems. This drives most start-ups to work informally from the start to avoid going through the same problems and obstacles. • Hence the weak formal system is the main reason behind the huge increase in informal enterprises.
Informal transactions	<ul style="list-style-type: none"> • These transactions take many forms, starting with dependence of formal enterprises on the services and products of informal enterprises. Formal enterprises might also employ workers informally to reduce costs. Finally, many informal enterprises can export indirectly through other formal enterprises. 	<ul style="list-style-type: none"> • Many enterprises resort to informal transactions in order to enjoy greater flexibility and freedom on the one hand and avoid restrictive government bureaucracy and exorbitant fees and taxes on the other. <p>In addition, 45.8 percent of formal enterprises in Egypt said that competition with informal enterprises is one of the most important constraints facing them, and this forces them to resort to informal practices to reduce costs and remain competitive.¹¹ This means that enterprises compete to reduce costs rather than for product quality, which negatively affects the competitiveness of the economy and reduces the well-being of society as a whole.</p>

Sources: The Egyptian Center for Economic Studies (ECES) based on ILO data.

9 Assad, R and C. Krafft. 2016. labor market dynamics and youth unemployment in the middle east and north Africa: evidence from Egypt, Jordan and Tunisia. ERF, Working Paper 993.

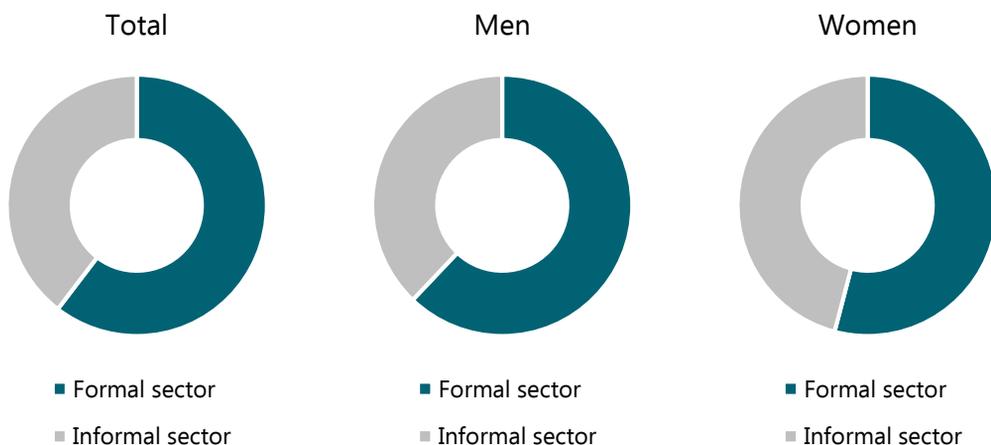
10 World Bank. 2014. Arab Republic of Egypt More Jobs, Better Jobs: A Priority for Egypt. Report No. 88447-EG

11 The World Bank. 2016. "Enterprise Surveys - Egypt"

In addition to the above, the informal sector is characterized by rapid recovery from crises in general and the current crisis in particular for the following reasons:

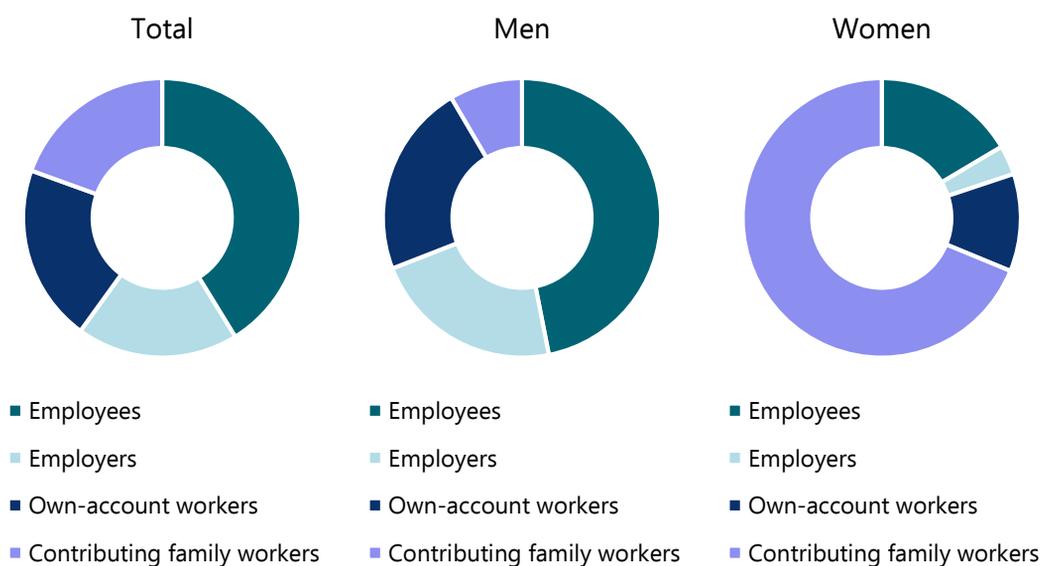
- The sector is closely linked to Chinese supply chains, which will often recover before the rest of the world's economies.
- The informal sector has dynamism, flexibility and the ability to respond to market demands and to restart operations more quickly than the formal sector, since it is not shackled by bureaucratic restrictions.
- It relates to the basic and direct needs of citizens, especially low-income groups.

Figure 8.5. Distribution of Informal Employment within the Formal and Informal Sectors



Source: International Labor Organization, 2018.

Figure 8.6. Professional Distribution of Workers in the Informal Sector



Source: International Labor Organization, 2018.

Figure 8.7. Sectoral Distribution of Informal Employment



Source: International Labor Organization, 2018.

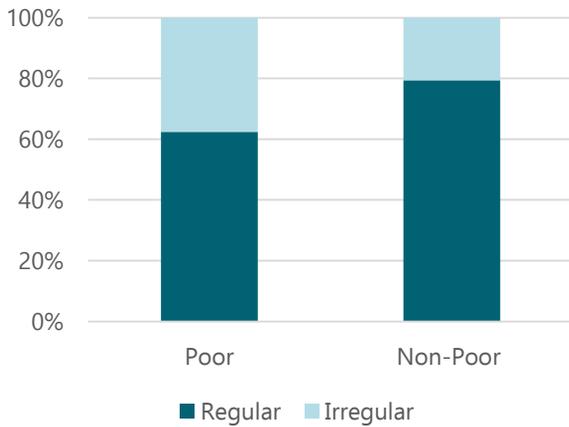
1.3. The impact of previous crises on those working in the informal sector in Egypt

- The informal sector played a fundamental role during the Global Financial Crisis as well as during the January Revolution. It absorbed about 1.6 million new workers during the two crises, particularly during the period 2008-2011,¹² compensating for the weak employment ability of the government and the formal private sector.
- However, the absence of any insurance coverage led to the deterioration of the conditions of informal workers during the two crises. They were forced to take greater risks and work for longer periods to achieve weak returns that are not sufficient for their needs. In addition, they were exposed to severe internal competition due to the influx of more workers to the informal sector at times characterized by declining demand, which resulted in a significant decrease in their incomes.¹³
- Both crises have led to reduced job stability in the informal sector, which means shifting from regular to irregular informal employment.¹⁴

- Irregularity deprived informal workers of a stable income, which made them even more vulnerable and poorer.¹⁵ Income and spending survey data for 2017-2018 confirm that workers outside establishments that are dominated by informal work are poorer than their counterparts working inside establishments in government and private sectors, and that the poverty rate is higher among unstable workers in particular as shown in Figures 8.8 and 8.9.
- Informal work has shifted from a temporary mean of support and income enhancement until a better formal job is obtained to become a closed circle from which there is no escape regardless of type and level of education. This means that informal workers have no chance for social advancement, due primarily to lack of improvement in the economic situation in Egypt in a way that leads to a significant improvement in the lives of all citizens since 2008, in addition to lack of formal job creation by both public and private sectors.¹⁶

12 ECES estimates based on data from the Central Agency for Public Mobilization and Statistics and the ILOSTAT database
 13 Women in Informal Employment: Globalizing and Organizing (WIEGO). 2011. Coping with Crises: Lingered Recession, Rising Inflation, and the Informal Workforce. Inclusive cities project, January 2011
 14 This pattern continued until the present time following the start of the economic reform program that the country started in 2016, as the construction sector absorbed about 67 percent of the total new entrants into the labor market in 2016/2017, with these opportunities being mostly informal and irregular. Source: Ministry of Planning and Economic Development, 2016-2017, Economic and Social Performance Follow-up report.
 15 Assad, R. and C. Krafft. 2013. The structure and evolution of employment in Egypt: 1998-2012. ERF, Working Paper 805.
 16 Assaad et al. 2019. socioeconomic status and the changing nature of school-to-work transitions in Egypt, Jordan, and Tunisia. ERF, Working Paper No. 1287

Figure 8.8. Distribution of the Poor according to Labor Stability, 2017/18



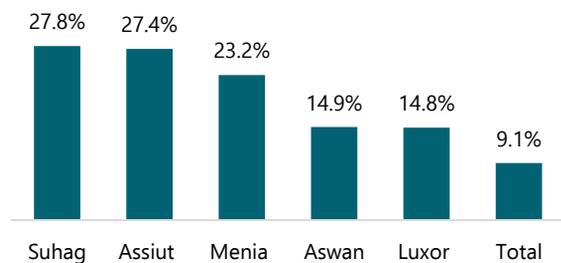
Source: The Egyptian Center for Economic Studies (ECES) calculations based on data of the CAPMAS Income and Expenditure Survey 2017/2018.

Second: Demand and supply shocks in the context of the Coronavirus crisis cycle

First, we would like to emphasize that the impact of the current crisis on the informal sector is fundamentally different from previous crises, whether it is the Global Financial Crisis or the January 25 and June 30 revolutions, that is in two respects:

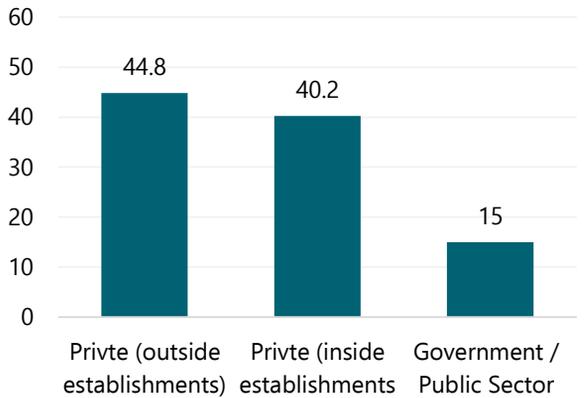
- First: The crisis affected the informal sector as much as it affected the formal sector. Thus, it lost its main feature which is the ability to compensate for the decline in employment in the formal private sector during crises. This will compound the impact of the crisis on the Egyptian economy in general and on the poorer classes in society in particular.
- Second: Informal employment is the most vulnerable to infection and transmission of the virus, given that the absence of insurance coverage or paid leave limits the ability of

Figure 8.10. The Proportion of Families Living in a Single Room, Shop, Kiosk, Tent, Burial Yard or House Boat



Source: The Egyptian Center for Economic Studies (ECES) calculations based on data of the Central Agency for Public Mobilization (CAPMAS), General Census of Population and Enterprises 2017.

Figure 8.9. Distribution of the Poor according to the Sector of Work, 2017/18



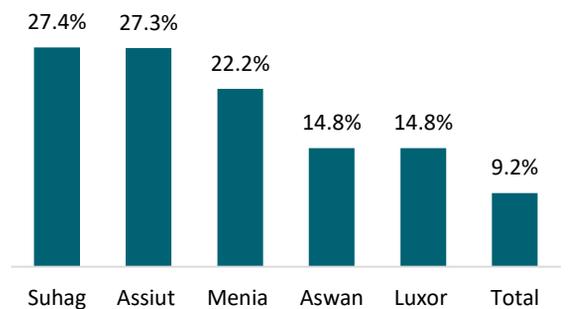
Source: The Egyptian Center for Economic Studies (ECES) calculations based on data of the CAPMAS Income and Expenditure Survey 2017/2018.

informal workers to adhere to the lockdown, in addition to the fact that their workplaces often lack health and occupational safety standards.

- In the event of an infection, the poorest places can turn into hotbeds for spreading the disease, as it is difficult for the vast majority of them to apply the rules of social distancing and home quarantines recommended by official parties due to limited resources and poor housing conditions.

In this regard, the population census data indicates that more than 8.3 million poor people (2.1 million families) do not live in an apartment but in a single room, kiosk, or tent, and 6.2 million citizens (1.6 million families) do not have running water in the house. About 8.4 million citizens (2.2 million families) do not have a private bathroom or kitchen, and these numbers are significantly higher in Upper Egypt governorates, as shown in Figures 8.10 and 8.11.

Figure 8.11. The Proportion of Households Without a Private Bathroom or Kitchen



Source: The Egyptian Center for Economic Studies (ECES) calculations based on data of the Central Agency for Public Mobilization (CAPMAS), General Census of Population and Enterprises 2017.

The following table reviews the possible scenarios of the impact of the crisis on workers in the informal sector at each stage of the crisis cycle in the context of the various assumptions of supply and demand shocks.

Supply shock: The inability of workers in the informal sector to provide services to others, either due to disruption of supply chains mainly related to China (such as workers in the field of trade, especially clothing, as well as craft workers dependent on the import of production inputs), or because of the precautionary measures taken by the State such as the curfew and the stoppage of many activities, which left wide sectors of workers in the informal sector unable to offer their services to others, whether for individuals or formal enterprises.

Demand shock: The State's precautionary measures restricted the movement of consumers, with most of them staying home, which led to a decline in demand for products and services of workers in the informal sector and small informal companies in densely populated areas away from industrial places.

Also, the fact that formal enterprises have been affected by the crisis means that their demand for the services of workers in the informal sector, such as transportation services, for example, has declined, especially that informal enterprises are often the first link in the local supply chains.

The analysis consists of two parts, the first is descriptive considering the potential effects monitored so far on the ground. The second is quantitative relying on analyzing the similar effect during the Global Financial Crisis as well as during the January Revolution. The quantitative part is limited only to the impact of the crisis on the number of unemployed for reasons related to detailed data availability, and also because informal workers is the most likely to be vulnerable to unemployment because it is the first to be laid off in times of crisis. Also, they represent approximately 83 percent¹⁷ of workers outside the government sector and the public business sector, meaning that they have the largest weight when calculating unemployment in Egypt.

Table 8.2. Potential Scenarios for the Impact of the Crisis on Unemployment, based on the Aforementioned Crisis Cycle and Assumptions

Stage	Demand and/or supply shock	Descriptive analysis	Quantitative effect ¹⁸
1. Emergence of the virus (December 2019 to January 2020)	A slight shock in supply and demand	<ul style="list-style-type: none"> The supply shock is limited to small enterprises and informal workers due to the disruption of Chinese supply chains such as ready-made garments sector, electronics, carpentry and blacksmithing workshops, as well as handicrafts. It is expected that the shock will be limited due to the possibility of presence of inventory that can be used. There is no shock in consumer demand for services and products of the informal sector at this stage because no precautionary measures have been taken in Egypt yet. Regarding the demand of formal enterprises for the services of informal workers, it is expected to decline slightly, as informal workers is the first to be dispensed with by enterprises as a result of being affected by disruption of Chinese supply chains. 	<p>The number of the unemployed in Egypt has increased by 5.3 percent in Q4 2019, to record 2329 thousand, compared to 2212 thousand in the third quarter of 2019, an increase of approximately 117 thousand unemployed.¹⁹</p> <p>The unemployment rate rose to 8 percent in the fourth quarter of 2019 compared to 7.8 percent in the third quarter of the same year.</p>

¹⁷ This percentage was calculated on the basis of data from the International Labor Organization as well as the Central Agency for Public Mobilization and Statistics, using the following formula (the number of workers in the informal sector) / (total number of employed in Egypt - the number of workers in government, the public sector, and the public business sector)

¹⁸ The quantitative analysis is based on a Gregorian year, not a fiscal year

¹⁹ This data covers the fourth quarter of 2019 (October - December), that is, it only covers the first month of the virus's emergence stage, which is December, while the second month of this phase, January, belongs to the first quarter of 2020.

Stage	Demand and/or supply shock	Descriptive analysis	Quantitative effect
2. The beginning of proliferation (February through mid-March 2020)	Severe supply shock and moderate demand shock.	<ul style="list-style-type: none"> The supply shock was mainly due to the crisis reaching its peak in China in February and the partial shutdown of factories in the affected areas, which affected the informal sector dependent on Chinese supply chains at a time the local stock is expected to start running out. In February, informal workers unrelated to Chinese supply chains have not experienced a supply shock yet, mainly because they relied on their direct physical effort for livelihood such as microbus and tuktuk drivers, agricultural workers, food cart owners and others. In the first half of March, signs of the shock to domestic demand began to appear for most workers in the informal sector, especially in large urban cities, due to the state of doubt and caution regarding the spread of the virus among consumers, which pushed them to limit their consumption of basic commodities such as food and drink. <p>Formal enterprises were also affected by the shock, as their activities were partially suspended until alternatives to China are found, leading to a decline in their demand for services of informal enterprises.</p>	<p>This stage is very similar to the situation during the Global Financial Crisis, in terms of an external shock in an economy of the size of China, without violent internal shocks yet.</p> <p>Hence, we assume that the effect in the current period is an increase in the number of the unemployed with the same rate caused by the Global Financial Crisis, which is 14.4 percent by the end of the first quarter of 2020 to record 2,665 thousand unemployed, an increase of approximately 336 thousand unemployed from the fourth quarter 2019. This is mainly due to the shock of supply and demand in March specifically.²⁰</p> <p>This means that unemployment rate will rise to 9.2 percent in the first quarter of 2020 compared to 8 percent in the fourth quarter of 2019.</p>
3. Aggravation of the problem (From mid-March to May 2020)	Greater supply shock and severe demand shock	<p>Although China is back to operating the major industrial centers, operation rates are still significantly lower than before the crisis, so the supply capacity of informal labor associated with Chinese supply chains is still weak, especially as it will face many logistical problems in transportation and customs clearance.</p>	<p>The International Monetary Fund announced that the world officially entered a state of recession that is more violent than the Global Financial Crisis, and that its impact will be more severe for countries that suffer from existing institutional weaknesses. In the presence of a more violent internal demand shock than that witnessed by Egypt during the January</p>

²⁰ Although 14.4 percent was recorded for a full year during the Global Financial Crisis, we assume that the unemployment rate will increase by the same rate during only one quarter in the current crisis, for two reasons. The first is that the current crisis is more severe in impact, and evidence for that is that unemployment in the fourth quarter of 2019 has already increased by 5.3 percent, though the crisis had not yet intensified. The second reason is the multiplier effect of the violent internal shock to the Egyptian economy.

Stage	Demand and/or supply shock	Descriptive analysis	Quantitative effect
<p>3. Aggravation of the problem (From mid-March to May 2020) cont.</p>		<ul style="list-style-type: none"> • The precautionary measures taken locally will also make the supply shock worse, especially for workers in activities that the government has banned completely, such as cafes and popular markets, most notably the Ataba market and the Khan al-Khalili market as well as weekly markets in all Governorates of Egypt. • Also, these measures mean a demand shock at the same time, for example: Stoppage of schooling will lead to a cease of demand on all related activities such as printing, photographing, restaurants, etc. • With the arrival of the virus to Europe and America, this means faltering industrial exporting companies in all fields, hence negatively affecting informal workers and informal enterprises supplying them. 	<p>Revolution, this means exacerbation of the negative impact in a way that exceeds all crises that Egypt previously experienced.</p> <p>Accordingly, we expect the number of unemployed to increase by the same percentage as during the Global Financial Crisis (14.4 percent) as well as during the first quarter of 2011 (34.3 percent) combined, i.e., by 48.7 percent to record 3463 thousand unemployed by the end of the second quarter of 2020, an increase of 1134 thousand workers compared to the fourth quarter of 2019.</p> <p>This means that the unemployment rate will rise to 12 percent in the second quarter of 2020 compared to 8 percent in the fourth quarter of 2019.</p>
<p>4. The crisis recedes (June - August 2020)</p>	<p>Gradual recovery in supply and continued demand shock</p>	<ul style="list-style-type: none"> • Bringing the virus under control almost completely in China, while Europe, America and the Arab countries, including Egypt, continue to try to control it. • China's recovery means a recovery of the supply shock to informal workers and enterprises dependent on Chinese supply chains, provided there are no logistical problems. • The continued local demand shock means weak demand for many activities and seasonal employment that were active during Ramadan, Eid al-Fitr and Eid al-Adha. • Local formal enterprises have not recovered yet, which means that their demand for the services of informal workers and enterprises continues to decline. 	<p>The biggest shock in the number of unemployed occurred during the second quarter of 2020 already, and the number of unemployed will rise by a smaller percentage just as it happened after the first quarter of the 2011 Revolution.</p> <p>Accordingly, we expect the number of the unemployed to rise during the third quarter of 2020 by rates ranging between 1% - 5% compared to the second quarter of the same year, which means an increase in unemployment by rates ranging between 0.1% and 0.5%, approximately.</p>

Stage	Demand and/or supply shock	Descriptive analysis	Quantitative effect
5. Recovery (As of September 2020)	Full recovery in supply and gradual recovery in demand	<ul style="list-style-type: none"> All countries recover from the virus, including Egypt, but economic recovery will occur gradually in both the formal and informal sectors alike, and the overall economic situation will not normalize until June 2021. But it is certain that the recovery of the informal sector will precede the recovery of the formal sector because of its flexibility, allowing it to form and change without cost according to the needs of the market. Informal firms associated with Chinese supply chains will be precisely the first to recover from the supply shock. A gradual improvement in domestic demand in parallel with the end of the crisis internally. However, demand will not reach the rates of the same period in the previous year due to the decline in disposable income for most Egyptians during the crisis period and not fully recovering yet. A gradual recovery in the demand of formal enterprises for the services of informal enterprise. 	The number of the unemployed decreases by 0.1% - 5% on a quarterly basis, starting from the fourth quarter of 2020 until absorbing the increase in the number of unemployed left behind by the crisis.

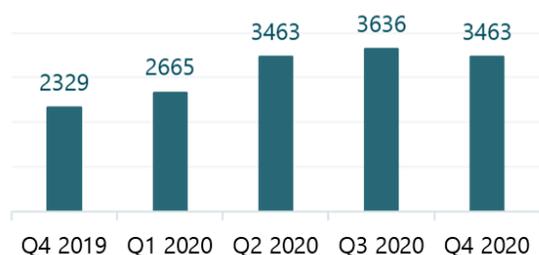
Source: The Egyptian Center for Economic Studies (ECES).

These estimates should be read with caution, as expectations may require further revision based on the day by day development of the outbreak, as its duration and scope are still unknown.

Based on the previous analysis, the crisis is expected to add between 336 - 1307 thousand unemployed to the total number of unemployed of 2329 thousand in the fourth quarter of 2019, which means that the unemployment rate will gradually increase from 8 percent in the fourth quarter of 2019 to 12.6 percent in the third quarter of 2020, as shown in Figures 8.12. and 8.13.

These estimates assume that recovery will start as of September 2020, which means an increase in the number of unemployed, and hence a greater increase in the unemployment rate if the recovery slows and the crisis continues for a longer period.

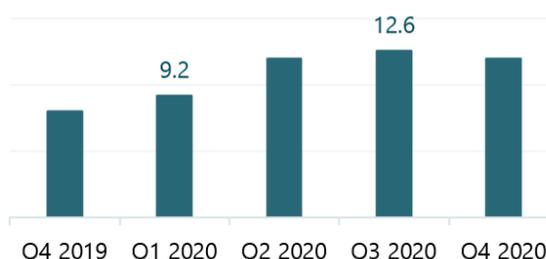
Figure 8.12. The Expected Impact of the Crisis on the Number of the Unemployed in Egypt (thousand)



Source: The Egyptian Center for Economic Studies (ECES) forecasts.

Moreover, these estimates did not take into account the cessation of the informal sector's role in employment during the current crisis, unlike previous crises. If this is taken into account, 1.6 million unemployed will be added to the previous estimates,²¹ which is the size of employment absorbed by the informal sector during the previous two crises (the Global Financial Crisis 2008 and the Revolution of January 25, 2011), and according to this scenario the crisis can add 2907 thousand unemployed to the total number of unemployed of 2329 thousand in the fourth quarter of 2019, which means that the unemployment rate can rise to 18.1 percent.

Figure 8.13. The Expected Impact of the Crisis on the Unemployment Rate in Egypt (%)



Source: The Egyptian Center for Economic Studies (ECES) forecasts.

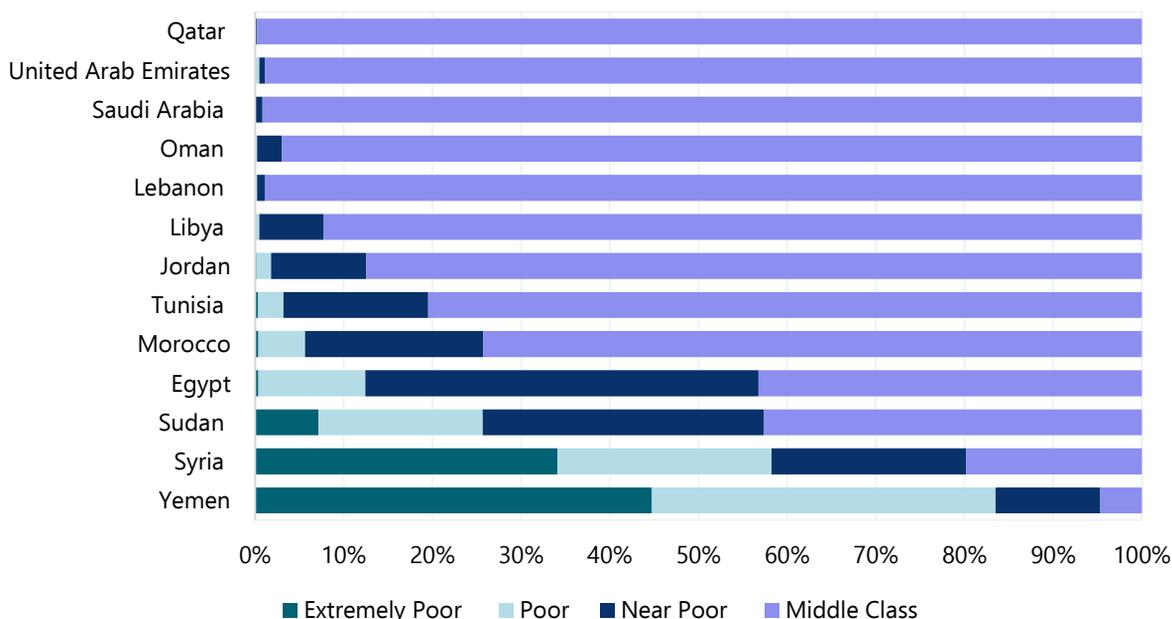
²¹ ECES estimates based on data from the Central Agency for Public Mobilization and Statistics and the ILOSTAT database.

Third: The impact of the crisis on poverty in Egypt

No doubt the current crisis will lead to a rise in poverty rates in Egypt, because the informal sector's stoppage of work means that millions of families lose their only source of income in the absence of any other alternatives. The International Labor Organization indicates that 0.4 percent of workers in Egypt are extremely poor, 12 percent of them are poor, and 44.4 percent are on the brink of poverty, and their situation is characterized by extreme vulnerability to any unexpected shocks, as shown in Figure 8.14. These are high rates compared to all Arab countries except for Sudan, Syria and Yemen.²²

The current crisis is expected to cause what is known as the effect of displacement, meaning displacement of the aforementioned 12 percent from poverty to extreme poverty, and driving the 44.4 percent (12.9 million workers) below the poverty line.²³ This is the direct impact, but there are also indirect effects on poverty rates in Egypt. This is because broad groups of people depend on that sector to provide what they need at prices commensurate with their limited incomes, and the sector's stoppage will clearly lead to a decline in the consumption rates of these groups.

Figure 8.14. The Proportion of Poor Workers in Egypt and the Arab Countries



Source: The Egyptian Center for Economic Studies (ECES) based ILO data.

Fourth: Specific proposals to alleviate the severity of the damage

The urgent implementation of a set of short-term solutions to alleviate the current crisis on informal workers, in parallel with an integrated strategy of medium-term measures to integrate them into the formal economy and improve their living conditions in a sustainable manner, is necessary for the safety of society in general and to enhance its ability to face any similar crises in the future.

This is in addition to avoiding a state of political and social instability that can prevail in society when broad groups of citizens find themselves

trapped in a vicious circle of poverty and disease. It should not be forgotten that the spark of the Arab Spring was launched from Tunisia by an informal worker who set himself ablaze in protest against the confiscation of his only source of livelihood.

4.1. Urgent measures

1. According to the International Labor Organization, the most important measure is to ensure a minimum income for groups whose livelihoods have been disrupted by the crisis in parallel with ensuring effective access to basic health and social services, especially for the most vulnerable groups. The

²² Poverty is measured here according to the World Bank's international poverty lines.

²³ This number is close to the number of workers outside establishments, who are 11.7 million workers according to estimates of the Central Agency for Public Mobilization and Statistics

organization also stresses the importance of societal dialogue and the necessity of investigating the economic repercussions on employment and helping those affected with the same efficiency as investigating infected cases health-wise.²⁴

2. Accordingly, the initiative of the Ministry of Manpower, which requires granting a subsidy of EGP 500 pounds to irregular labor, should be expanded on, along with introducing the following reforms, so that the crisis can be genuinely mitigated for informal labor on the one hand, and ensuring smooth implementation on the other hand:

- Increasing the benefit amount so that it covers the basic needs of the family, and to disburse it as long as the crisis persists and not on a one-off basis as required by the initiative.
- Improving the mechanism of data collection and disbursement of subsidies so that it is accurate, efficient, and preserves the dignity of the beneficiary. This requires linking the applicant's national ID to the databases of the Ministry of Supply and the Ministry of Social Solidarity and sending a text message stating whether or not the benefit is due.
- In the case of eligibility, the beneficiary goes to the nearest post office to receive the subsidy, because Egypt Post has about 4 thousand branches throughout the country, which will ensure no crowding.
- The initiative should include all forms of free and irregular employment, instead of limiting it to certain sectors exclusively, as stated by Ministry officials.
- Using the initiative as an opportunity to build a detailed database on free and irregular employment in Egypt, to be updated continuously thereafter.

3. The need to urge all companies to activate their social responsibility and adhere to the standards of the International Labor Organization, which require that workers be granted paid leave in times of crisis and not be dismissed from work except for reasons related to the inefficiency of the worker and

his weak ability to perform his duties. Absence from work for health or family reasons should not be an acceptable reason for dismissal from work, and employers must provide adequate levels of occupational and health safety standards for all employees in general and during the crisis period in particular, and provide all the necessary tools for free.²⁵

4. The need to establish an effective mechanism for follow-up and evaluation, so as to ensure that companies adhere to these rules, as well as ensure the proper implementation of the initiative of the Ministry of Manpower and that benefits reach those entitled.

Fifth: Institutional weaknesses revealed by the crisis

- The size of the informal sector in Egypt has increased despite the Government's continuous talk about the importance of integrating it into the formal economy. This is mainly due to the predominance of a purely tax perspective on the state's engagement with that sector for decades, the absence of a comprehensive strategy based on a sustainable approach as well as poor coordination among all stakeholders. International experience has shown that this fragmented approach often leads to perpetuation of unemployment, poverty and social injustice.²⁶
- The crisis also revealed that the informal sector is an integral part of the economy and that it plays a fundamental role during crises. It has also demonstrated a clear deficiency in the country's vision and the way it deals with that sector, and the absence of a comprehensive vision for its development.
- The suffering of workers in the informal sector due to their lack of presence within the formal system of the state, which prevented them from benefiting from many of the privileges that the government granted to the formal sector, which will deepen and entrench economic and social inequality in Egypt because the crisis has hit some more severely than others.
- The existence of a latent crisis of trust between the citizen and the government,

²⁴ ILO. 2020. "ILO Standards and COVID-19 (coronavirus)"

²⁵ ILO. 2020. "ILO Standards and COVID-19 (coronavirus)"

²⁶ Loayza, N. 2018. Informality: Why Is It So Widespread and How Can It Be Reduced. The World Bank. Research & Policy Briefs. No. 20, December 2018

clearly demonstrated by failure of citizens to fully comply with the instructions of the Ministry of Health. This can be ascribed to corruption, deterioration of public services, and lack of real political participation in setting priorities and formulating the general vision of the state. This made the doctrine of the state significantly different from that of the citizen, pushing the latter to run his life affairs as far away from the state as possible, creating parallel systems for savings and borrowing, others for the judiciary, and working and earning away from the purview of the state (informally).

- The absence of accurate databases on informal employment in Egypt that can be used to target them accurately according to the economic and social conditions of each category separately, and to determine the type of assistance or intervention required according to each case.
- Weak union life in Egypt in general and the absence of any union work for informal workers in particular. The crisis revealed the dispersion of informal workers in Egypt, and absence of any organizational form that unites them and gives them the ability to collectively negotiate and communicate their voice to the government on the one hand, and facilitates the government's mission in dealing with them effectively during crises on the other, as is the case in most countries of the world, especially Latin America.
- Compromising the role of civil society over the past years, which would have been able to play a broader role during the current crisis if its work and ability to move were not restricted before amending the law late last year.
- Dealing with the informal sector from an enterprise-based approach which means the state is unable to target informal employment within the formal companies.

Accordingly, it is important to move in two directions:

First, setting an integrated and serious strategy to rehabilitate the informal sector and integrate it into the formal economy away from the tax purview and dispersed roles of various government agencies, especially in light of the incentive for workers in the informal sector to join the formal system, even if it has problems, because they realized the missed opportunity during crises.

This strategy should start from a developmental perspective and address the direct and indirect causes that led to the expansion of the informal sector and caused the fragility of its workers in the first place. Most importantly, the weak and complex formal system, and the absence of the first steps to shift to the formal system through a strong social protection network consisting of health and social insurance and unemployment benefits, as happened in Latin America.

This strategy must also contain detailed policies that differentiate between informal employment on the one hand and informal enterprises on the other hand, as well as between enterprises that must be integrated into the formal economy and those that should not for economic efficiency considerations. In this regard, the Egyptian Center for Economic Studies is currently preparing a detailed study on the dimensions that must be available for dealing in a sustainable manner with the informal sector.

Second, enhancing the ability of workers in general, and informal workers in particular, to adapt during crises. This can be achieved through the application of the so-called Universal Basic Income, which requires giving each citizen a fixed monthly salary that covers his basic needs, without any conditions related to income and wealth, nor how to spend it, and not even conditional on regular attendance by children in schools and health care.

9. GDP

Lead Researcher: Dina Nour Eldeen

First: Brief description of the subject of the report

This report aims to provide preliminary estimates of the macroeconomic impact of the crisis and chart a course of policy action. It is important to note that we acknowledge the difficulty of this exercise. On the one hand, the information set, which is used to make the projections, is changing rapidly and significantly; on the other hand, we do not have precedents of shocks of comparable magnitude in Egypt's recent history to guide us. However, there are two recent shocks, which provide some guidance in this respect. The first shock is the global financial crisis of 2008, which bears similarities with the current crisis given the expected sharp decline in global economic growth. This was a global demand shock which also led to a significant dislocation in global supply-side capacity. Prior to this shock, Egypt had enjoyed some of its highest growth rates in recent history, and the shock led to a reduction in domestic growth rates due to the negative impact of the crisis on domestic private investment, as well as Egypt's international trade. Second, the aftermath of the January 2011 uprising in Egypt was a domestic shock, which destabilized both demand and supply channels in the Egyptian economy, and offers particular insights into the impact of a sudden and significant drop in investment and exports, with the impact felt mostly in the manufacturing sector, wholesale and trade, and tourism.

Second: Impact of the two previous shocks

As shown in Table 9.1., the Egyptian economy witnessed a prolonged period of high growth, which was balanced across the components of aggregate demand: household consumption, investment and export growth. At the peak of the crisis, world GDP growth declined drastically to 0.7 percent dragging down the GDP growth in Egypt from 6.6 percent to 4.3 percent. This decline was driven by a significant decrease in private investment and exports. Prior to the January 2011 uprising, the Egyptian economy was starting to show signs of recovery from the slowdown that followed the 2008 global financial crisis.

During the period 2009Q4-2010Q4, growth increased to 5.3 percent supported by the rebound in world GDP and the fiscal stimulus package of EGP 15.5 billion (1.5 percent of GDP) introduced by the government to boost domestic demand at the time. During the January 2011 uprising, GDP growth witnessed a large drop to an average of -0.9 percent during 2011, largely driven by a significant decline in private investments and exports. However, household consumption remained resilient during this period, and this played a significant role in supporting economic growth. An increase in government consumption starting 2012Q1 helped revive overall growth to 3.4 percent.

Table 9.1. Impact of the Two Recent Shocks on the Egyptian Economy (Average Quarterly Rates of Growth)

Time period	World GDP	Egypt's GDP	Household consumption	Government consumption	Investment	Exports	Imports
2007Q3-2008Q3	4.0	6.6	5.7	2.6	12.0	23.0	20.9
2008Q4-2009Q3	0.7	4.3	5.0	5.4	-6.9	-24.7	-28.4
2009Q4-2010Q4	4.3	5.3	4.5	4.0	8.5	6.3	6.3
2011Q1-2011Q4	4.3	-0.9	5.7	3.3	-10.0	-6.5	5.8
2012Q1-2012Q4	3.3	3.4	5.8	7.1	5.6	-5.4	7.2
⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮
2018Q1-2019Q3	3.3	5.4	0.9	2.6	14.9	-1.5	-7.8

Source: The Egyptian Center for Economic Studies (ECES) calculations based on data from the Ministry of Planning and Economic Development, Central Bank of Egypt and the IMF's International Financial Statistics Database.

It is important to note that right before the COVID-19 pandemic shock, the Egyptian economy grew at 5.4 percent during the period 2018Q1-2019Q3; however, the sources of growth were fundamentally different from previous expansions. During this period, household consumption was weak (growing at only 0.9 percent), and all of the heavy lifting in the economy was due to a surge in investments, where public investments took an increasingly important role.

- Global projections

The world growth outlook was already weak before the COVID-19 outbreak. This was in large part due to growing trade tensions and protectionist measures in the US. World growth was projected to slip below 3 percent in 2020, and recent data showed that new business orders (all goods, manufacturing goods and services) in advanced economies were on the decline. Also, global merchandise trade, and air and container freight traffic were contracting.¹ In line with emerging forecasts from many

institutions, the global impact of the pandemic is looking rather dire with many forecasts predicting a contraction similar or even stronger than the financial crisis of 2008 in most advanced economies.

Third: Growth outlook for the Egyptian economy under three different scenarios: 2020 and 2021

As indicated earlier, Egypt's growth was not severely affected in the aftermath of the 2008 crisis given its limited integration in international financial markets, and its solid domestic economic fundamentals at the time. However, the current shock is expected to have a larger effect since the Egyptian economy is currently reliant on external financing and given vulnerable growth dynamics in the components of aggregate demand, in particular household consumption, private investment, and exports.

In Table 9.2, we present three scenarios for the growth prospects in 2020 and 2021 based on differential speeds of virus containment.

Table 9.2. Potential Scenarios for the Impact of the Crisis on GDP Growth, based on the Aforementioned Crisis Cycle and Assumptions

Stage	Scenarios	Assumptions	Impact on GDP growth
1. Emergence of the virus (December 2019 to January 2020)		No significant supply disruptions or changes in consumer and investor sentiment. No known cases of COVID-19 appeared in Egypt at this time.	Estimated growth rate for 2019Q4 is 5.6%.
2. The beginning of proliferation (February 2020-mid March 2020)		Escalating supply disruptions with growing uncertainties among households and businesses.	Real GDP growth in 2020Q1 is projected to be 4.9% compared to 5.6% in 2019Q4.
3. Aggravation of the problem to 5- Recovery interlinked* (Mid-March 2020-end of 2021)	Scenario 1 (Optimistic): Quick Containment	In this scenario, we assume (a) containment of the virus by end of 2020Q2; (b) quick upturn in economic activity starting 2020Q3 (V-shaped recovery) where the growth momentum continues, driven mainly by an increase in investment and a contraction in imports; (c) unlike its resilient response in the previous two crises and given relatively weak growth during the last two years, household consumption is assumed to contract during the second and third quarters of 2020 and resume its growth momentum gradually starting 2020Q4, (d) government spending	Under this scenario of a short-lived shock, the recovery pace is expected to be higher than that of the other two scenarios. This scenario projects that real GDP growth will slow down to 3.5% in 2020 (down from an estimate of 5.5% in 2019) and continue recovering to 4.7% in 2021.

¹ Source: OECD Interim Economic Assessment "Coronavirus: The world economy at risk".

Stage	Scenarios	Assumptions	Impact on GDP growth
3. Aggravation of the problem to 5. Recovery interlinked* (Mid-March 2020-end of 2021) cont.		remains resilient, supporting economic growth throughout the forecasting period, (e) investments, mainly by the private sector, will be severely affected by the shock in 2020Q3, however, with quick containment of the virus, the business sentiment will be slightly affected and initial investment plans will resume in 2020Q4, (f) exports start to pick up gradually in 2020Q4 assuming a contemporaneous recovery in global demand.	
	Scenario 2 (Baseline): Mild Containment	In this scenario, we assume (a) virus containment to be slower than in the first scenario, lasting till 2020Q3; (b) economic disruptions last for the second and third quarters of 2020 and the economy begins to pick up only in 2020Q4 (U-shaped recovery); (c) recovery is projected to be sluggish as the impact of prolonged supply chain disruptions, employee layoffs and suspended production due to imposed quarantine measures and lockdowns will be more profound.	We project growth to dip to 2.3% in 2020 and pick up to 3.1% in 2021. To date, this scenario seems to be the most likely one.
	Scenario 3 (Pessimistic): Very Slow Containment	In this scenario, we assume (a) virus containment does not occur before the end of 2020; (b) a longer economic activity disruption, which lasts for four quarters: 2020Q1 through 2020Q4; (c) due to the accumulation of negative effects of the prolonged economic disruptions described above, this scenario suggests a similar outcome to the second scenario but with a more protracted dip in economic activity.	Real GDP growth is projected to drop to 0.8% in 2020 and increase to around 1.1% in 2021 as disruptions in economic activities lessen.

Source: The Egyptian Center for Economic Studies (ECES).

These estimates should be read with caution, as expectations may require further revision based on the day by day development of the outbreak, as its duration and scope are still unknown.

The preliminary growth projections presented in this note show that the speed of recovery is expected to vary across the three scenarios. While growth is expected to witness a quick recovery under the optimistic scenario, the rebound in economic activity in the pessimistic scenario is expected to be much more modest. However, these projections are also subject to downside risks. This concerns the deepening and widening of

the economic effects of the pandemic for the global economy. Hence, it is important to note that the current situation remains fragile with high uncertainty surrounding the global growth outlook. Accordingly, quick and targeted policy responses are needed to limit the adverse effect of those risks and ensure faster recovery. In what follows, suggested policy responses to the ongoing crisis will be discussed.

* Stages 3, 4 and 5 are interlinked in this analysis since the path of recovery depends on the speed of containment under each scenario.

Fourth: Needed policy interventions to mitigate the crisis impact

The macroeconomic policy response has so far been proactive rather than reactive with significant measures announced by various governmental bodies, including the Central Bank of Egypt (CBE) and the Ministry of Finance. This includes the reduction of the CBE policy rate by 3 percent, the announcement of a fiscal stimulus package of EGP 100 billion (around 1.9 percent of GDP level in FY 2018-2019) and various other announcements aimed at ensuring the solvency of individuals and businesses as business activity becomes increasingly disrupted.

While it is still early to provide a detailed assessment of the policy response, in what follows we suggest some important points to be considered.

4.1. On the fiscal policy front:

1. Fiscal policy is expected to play a prominent role in steering the economy during this crisis. The role of monetary policy should be supportive and accommodative.
2. While fiscal space is limited due to an elevated debt-to-GDP ratio, this is likely to be a time where debt levels are bound to increase for many nations. Egypt's fiscal stimulus package should be both sizable and immediate. A quick response is needed to provide immediate support to businesses to minimize job losses, and also to provide a safety net to individuals already out of job.
3. The primary and immediate candidate for increased spending should be the health sector and the containment effort.
4. In line with proposals in other countries, an increase in the coverage of cash transfers is required to counter the impact of lost jobs and incomes. This is of paramount importance for two reasons: First, to ensure that any lockdown measures will be feasible and will not result in unnecessary suffering by those without secured means of income. Second, cash transfers will help support household consumption, which is the dominant component of aggregate demand, and thus will lessen the impact of the shock on economic growth.
5. As the crisis is likely to hit private investment, and with public investment continuing to support growth under our scenarios, this is an opportune moment to redirect public spending

away from housing and real estate to more critical investments in the health care sector, the digital infrastructure for key services (e.g., education, commerce and financial services), and launch public-private partnerships to increase investment in the manufacturing sector for export-oriented industries or to allow for import substitution.

4.2. On the monetary policy front:

1. Given the dual nature of the shock to both demand and supply, it is important for the CBE to keep a close eye on disruptions in the supply side via continuous gathering of information from business associations. This is important not only for targeted interventions at the sectoral level, but crucially to avoid excessive liquidity expansion at a time of supply-side contraction, which will result in a surge in inflation.
2. The interest rate policy instrument may not be effective at this time of heightened uncertainty for consumers and investors. The use of macro prudential policies and non-traditional instruments (e.g., the reserve requirement ratio) may prove more effective during this crisis, and requires close coordination with the banking sector. For instance, the reserve requirement ratio was lowered from 14 percent to 10 percent in 2011 to increase liquidity.
3. The CBE has taken welcome steps to ensure short-term relief from debt payments for individuals. Similar initiatives have also been introduced to alleviate the burden of the crisis on selected sectors (e.g., tourism). However, it is necessary to quickly scale up these measures and work out how to target businesses in dire need.
4. The objective of monetary policy during the containment and recovery phase should not be blanket provision of cheap credit. Rather, it should be targeted to those sectors that are crucial for speeding up the pace of recovery, and also sectors where productivity growth is likely to be highest.
5. The management of the exchange rate is likely to be a contentious issue. The key to successful policy here is enhanced transparency. With a likely hit to both the sources and usage of foreign exchange, it is rather difficult to predict the intensity and direction of pressure on the Egyptian pound.

However, and as learned from the currency crisis of 2016, if the currency comes under significant pressure, then it is best to allow some controlled depreciation rather than allow a currency black market to appear or dollarization to increase.

In future reports, an assessment of the fiscal and monetary measures for the different sectors will be analyzed in further detail in the context of sectoral assessments of the impact of the crisis.

Fifth: Institutional weaknesses revealed by the crisis:

1. GDP measurement in Egypt suffers from known inaccuracies, particularly when it comes to measuring household consumption (around 80% of GDP). The official national accounts also do not capture the large informal economy, which makes it difficult to measure GDP and its sources of growth in a reliable manner. Addressing this issue require availing more resources to the Ministry of Planning to improve the way national accounts are prepared in Egypt.
2. Apart for measurement issues, data availability is also subject to significant delays. This prohibits the ability of the government and economic agents to have access to reliable data with a short lag. In this regard, it is suggested that the Ministry of Planning works on speeding up the process of collecting and disseminating the data.
3. It is important to align the efforts between the Ministry of Planning and CAPMAS to obtain consistent time series data on price developments for important series such as the GDP deflator, the producer price index, and export and import prices. Improving the measurement of these prices will enable more accurate analysis of real versus nominal changes in the components of GDP.
4. It is also important to develop local capacity at the relevant ministries to provide short- and medium-term projections for the components of GDP rather than rely entirely on those produced by international institutions.

10. Servicing External Debt

Lead Researcher: Yara Helal

First: Brief description of the subject of the report

This report aims to highlight the implications of the COVID pandemic for the management of Egypt's external debt servicing. Attention to this dimension has been driven by the need to indicate the impact of the pandemic on the sources of foreign currency revenue, along the lines detailed in previous reports that dealt with tourism, remittances, the revenue of the Suez Canal, and manufacturing exports. This requires looking at the other side, which is related to obligations in foreign currency, including servicing external debt. Perhaps the statement of the Central Bank of Egypt (CBE) about the decrease in net international reserves - on a monthly basis - by \$4.5 billion by the end of

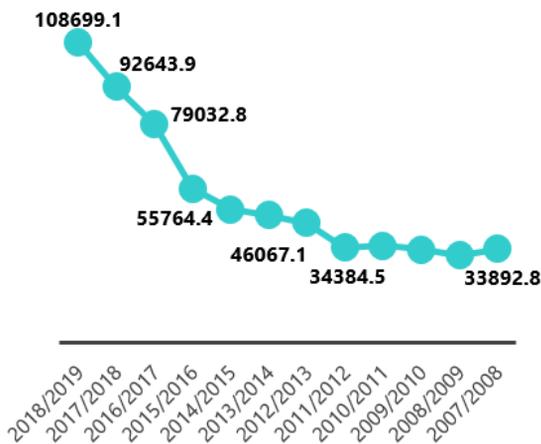
March 2020 highlights the importance of examining the impact of depletion of monetary sources compared to existing obligations.

Second: Evolution of Egypt's external debt position

In tracking the evolution of Egypt's external debt, three dimensions will be considered: Firstly, development of the volume of debt and its burden (indicators of sustainability and solvency), secondly debt structure in terms of the type of instruments, and finally some complementary ratios to clarify how different the current financial position is from previous crises.

2.1. Evolution of size and burden of Egypt's external debt burden

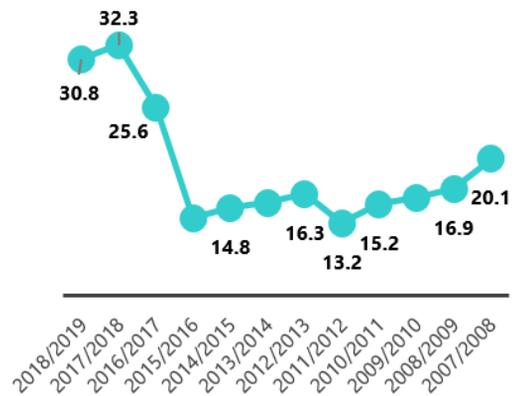
Figure 10.1. Balance of External Debt (million dollars)



Source: Central Bank of Egypt (CBE), monthly bulletin, various issues.

Looking at Figure 10.1, clearly the external debt stock in 2018/2019 is the highest since 2007/08. The balance of external debt recorded \$108.6 billion at the end of fiscal year 2018/2019, representing 30.8 percent¹ of GDP compared to 16.9 percent and 13.2 percent at the end of 2008/09 (the year of the Global Financial Crisis) and 2010/2011 (the year of the January 25 Revolution), respectively. This percentage is expected to reach 34.4 percent by the end of

Figure 10.2. External Debt/ GDP (%)



Source: Central Bank of Egypt (CBE), monthly bulletin, various issues.

the current fiscal year (in light of estimates prior to the current problem). Once external debt ratio exceeds 30 percent, it is past the first safety threshold defined by the International Monetary Fund. The upward trajectory of external debt (balance and percentage to GDP) can be monitored as of 2012/2013. And witnessed a leap in 2017/2018 following the liberalization of the exchange rate, and its upward trend continues.

1. Initial estimates for this percentage indicated that it reached 36 percent of GDP, according to Egypt External Position Report, first quarter 2019/2020.

Table 10.1. External Debt Safety Indicators for Selected Years

	2007/ 08	2008/ 09	2009/ 10	2010/ 11	2015/ 16	2016/ 17	2018/ 19
Short-term external debt/ net international reserves (%)	7.3	6.8	8.4	10.4	17.1	40.7	25.9
External debt service/ merchandise and service exports (%)	12.9	13.8	12.4	11.8	23.8	29	16.4
External debt service/ current revenue (%)	3.9	5.4	4.5	4.5	16.4	19.3	11.3

Source: The Central Bank of Egypt, Monthly Bulletin, various issues, and first quarter report (2020).

As for indicators of external debt safety, it is clear from Table 10.1. that the ratio of short-term external debt to net international reserves registered 25.9 percent at end of 2018/2019. Although lower than in 2016/2017, this came as a result of exit of foreign investments in sovereign debt instruments in the aftermath of the emerging market crisis in 2018. Consequently, this cannot be considered a radical change in the management of the external debt file. Regarding debt service (interest + installments) as a percentage of merchandise and services exports, it reached 16.4 percent at end of 2018/2019

compared to 13.8 percent in 2008/2009 and 6.3 percent in 2010/2011. The debt service ratio to current revenue (including remittances and the return on investment income in addition to commodity and service exports) increased to 11.3 percent in 2018/2019 compared to 5.4 percent and 4.5 percent in 2008/09 and 2010/2011, respectively. Although there is improvement in one or more of the indicators analyzed, these indicators generally illustrate the high burden of servicing debt obligations.

Table 10.2. Structure of External Debt according to Type of Debt (%)

	2007/ 08	2008/ 09	2009/ 10	2010/ 11	2015/ 16	2016/ 17	2018/ 19
Rescheduled bilateral loans	46	45	37	37	9	5	3
Other bilateral loans	15	15	14	15	11	8	9
International and regional institutions	22	26	30	31	25	28	30
Buyers' and suppliers' facilities	2	1	1	1	6	8	10

Source: The Central Bank of Egypt (CBE), Report on the External Position of the Egyptian Economy, various issues.

2.2. Structure of external debt has changed in terms of instruments

Looking at Table 10.2., it appears that variation in Egypt's external debt position also includes its composition in terms of instruments, a difference that can be captured from fiscal year 2015/2016. The ratio of both rescheduled bilateral loans and regular bilateral loans decreased compared to a rise in the share of loans from International institutions, deposits, bonds and medium-term facilities for suppliers and buyers, and short-term debt. In other words, the structure of external debt has become more diversified than in the wake of the Global Financial Crisis. Despite

diversification being positive, **in the current situation it implies the presence of types that may not be possible to include in a plan or request to postpone payment according to what is now proposed by some countries and international financial institutions.** What could be included in such a plan are bilateral loans of all kinds and loans from international institutions, which is 42 percent of the external debt stock according to June 2019 data. As for deposits, extending their term can be negotiated, and they represent 16 percent of external debt stock during the same period.

As for the rest of the debt types, especially short-term debt, medium-term facilities of suppliers, and bonds, they will need a different treatment, as they represent a commitment with non-sovereign entities, bearing in mind that the financial markets at present will not be attracted to invest in debt instruments of developing countries. In other words, it will not be possible to refinance bonds through other bonds, especially considering current monetary policy trends.

2.3. Comparing Egypt's current external position with previous crises

Table 10.3. The External Financial Position of the Egyptian Economy

	The global financial crisis		January 25 th , 2011 Revolution		Corona crisis
	Before the crisis	After the crisis	Before the crisis	After the crisis	Before the crisis
	2007/08	2008/09	2009/10	2010/11	2018/19
Net international reserves (million dollars)	34,572	31,310	35,221	26,564	44,481
Number of months of merchandise imports covered by net reserves (number)	7.9	7.5	8.6	6.3	8
Exchange rate (EGP / USD) - June average	5.336	5.599	5.599	5.937	16.684
Balance of payments (million dollars)	5420.4	-3377.6	3355.7	-9753.9	-102.5
Balance of payments / GDP (%)	3.3	-1.8	1.5	-4.1	-0.03
Net bank assets in foreign currency (1) - (2)	23,172	14,724	16,184	17,809	2,141
Bank assets in foreign currency (million dollars) (1)	27,944	19,630	21,703	23,312	18,533
Bank liabilities in foreign currency (million dollars) (2)	4,772	4,906	5,519	5,503	16,392

Source: The Central Bank of Egypt (CBE), Report on the External Position of the Egyptian Economy, various issues.

Table 10.3. provides a snapshot of some of the economic variables needed to describe the readiness of Egypt's external financial position to the Corona crisis. The comparison was made with the years prior to the Global Financial Crisis and the January 25, 2011 Revolution. Based on data received, three basic observations can be made:

First, net international reserves (expressed in the number of commodity months) remains constant in real terms despite the high level of net international reserves before the Corona crisis, recording \$44.4 billion at end of fiscal year 2018/2019, and reached, according to the latest estimate, \$45.5 billion by end of February 2020, compared to \$34.5 billion before the Global Financial Crisis and \$35.2 billion before the 2011 crisis. **The number of import months covered by these reserves is around 8 Months. But what is meant is that the differ-**

ent level of reserves does not mean better financial space at the present time. Second, the balance of payments performance in 2018/2019 has produced a total deficit, as a result of the emerging market crisis and the flight of foreign investment in sovereign bonds. On the other hand, **the years preceding the Global Financial Crisis and the 2011 crisis** witnessed a surplus in the balance of payments, which helped alleviate the crises when they occurred. Third, **the net foreign assets position of banks** at the end of the year preceding the Corona crisis (2018/2019) has decreased in relation to all comparable years. The net assets of banks are considered one of the liquidity havens to meet the various foreign exchange liabilities in the event of a deficit in current revenue. It is clear from the overall analysis that the position of Egypt's external debt and its serv-

ice at present is worse than in the Global Financial Crisis or even the January 2011 Revolution during the impact years, before calculating the impact of the current crisis, which is the starting point for the analysis below.

Third: Demand and supply shocks in the framework of the crisis cycle and in the context of the external debt file

3.1. Global developments related to the external debt file

In light of the importance of the subject under study, related to economic transactions with the outside world that represent an obligation on the national economy, it is necessary to identify the most important current or expected global economic developments that affect the subject under study, in order to determine the assumptions on which we will build the analysis as well as proposed solutions.

The most relevant trends monitored are the decisions of the global central banks to reduce interest rates and conduct quantitative easing to maintain the financial position of companies and the living standard of individuals in light of the current crisis. The US Federal Reserve, the Bank of Canada, the Bank of Japan, the European Central Bank, the Bank of England, and the Bank of Switzerland announced a coordination measure among them to obtain dollar liquidity through currency swap agreements.²

This was followed by the announcement of the REPO Agreement to assist other markets in providing dollar liquidity during the crisis.³ The International Monetary Fund and the World Bank also issued statements urging G-20 countries to reconsider debts that are due for payment by co-

untries experiencing financial pressures,⁴ in addition to offering financing packages to finance the fight against the Coronavirus. Several other institutions have joined in this regard, including, but not limited to, the European Development and Reconstruction Bank, and the African Import and Export Bank. However, this does not imply the availability of loans due to the financial pressure that the crisis imposes on the financing countries and all countries being affected. We do not know whether Egypt has applied to take advantage of these opportunities or not.

3.2. Demand and supply shock in the management of Egypt's external debt

- **Definition of demand and supply shock in the external debt analysis**

Due to the nature of the subject under study, which is important for the availability of foreign exchange to meet external debts, foreign currency will be **considered a commodity** that is exposed to shocks or pressures, whether in terms of supply or demand.

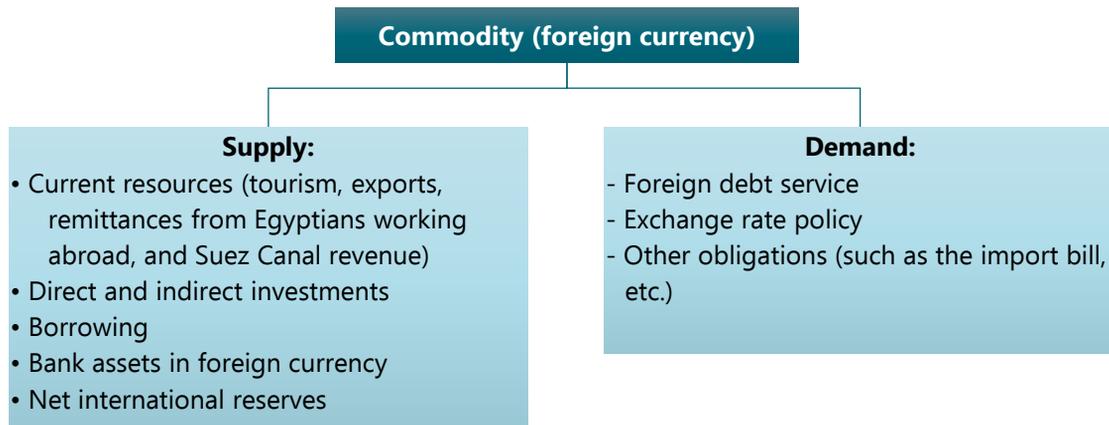
With regard to the definition of supply and demand channels for foreign currency, the supply side means sources of foreign currency revenue, including current resources such as tourism, exports, remittances of Egyptians working abroad and Suez Canal revenue, or of financing and capital such as direct and indirect investments, borrowing and bank assets in foreign currency, and finally net international reserves. As for demand, it is related to the foreign currency required for imports and debt servicing, and the state's policy towards the exchange rate. Figure 10.3 below provides an illustration.

2. https://www.ecb.europa.eu/press/pr/date/2020/html/ecb.pr200320_1-be7a5cd242.en.html

3. <https://www.federalreserve.gov/newsevents/pressreleases/fima-repo-facility-faqs.htm>

4. <https://www.imf.org/en/News/Articles/2020/03/25/pr20103-joint-statement-world-bank-group-and-imf-call-to-action-on-debt-of-ida-countries>

Figure 10.3. Channels of Supply and Demand Shocks to Foreign Exchange



Source: The Egyptian Center for Economic Studies (ECES).

3.3. Theoretical considerations and governing assumptions for analyzing impact scenarios

This section is concerned with clarifying the assumptions shared by all scenarios:

- The analysis depends on the Central Bank of Egypt’s outlook for external debt service (installments + interest) according to October 2019 data, which differs of course considering what has arisen or the burdens that may arise. Therefore, it is expected that the real figures will be higher than those mentioned.
- A methodology based on the expected impact of the current crisis on foreign exchange sources will be followed through the performance of balance of payments during previous crises (plus the difference in debt service). Thus, dimensions of foreign exchange supply and other factors competing with external debt servicing in the demand for cash are calculated.
- The years of the Global Financial Crisis and the January 25 Revolution were selected to show the impact of the current shock. Despite the difference of the nature of these crises compared to the current crisis in terms of reasons, scope and expected extent, the three crises share the presence of an impact on both sides of the balance of payments (revenue and obligations). A decrease in

exports due to weak global demand during the financial crisis or a halt in domestic production in 2011 have been accompanied with a decline in intermediate imports for these sectors. The impact of the Global Financial Crisis was less on the balance of payments compared to the 2011 crisis.⁵

- Assuming there is no significant change in the exchange rate of the major currencies due to coordination efforts between major central banks and thus reducing the impact of the book value of debt service.
- Assuming that the Central Bank of Egypt follows the global coordinating trends in terms of interest rates, which are heading towards easing, and continue in the same direction during the recovery period, with no significant change in the exchange rate of the Egyptian pound against other currencies.
- Due to the unpredictable nature of capital movement, it will not be quantified in the following scenarios, and its impact remains likely during any of the stages. Its balances according to October data are estimated at about \$18.9 billion. On the other hand, the period to be affected by the turmoil of the current crisis is presumed to continue until 2021/2022.

The assumptions for each stage will be mentioned in due context.

5 The comparability appeared in the balance of payments during 2014/2015 and 2015/2016, which also witnessed significant pressure due to the oil price war, the stopping of tourism in light of the travel ban, and the preference of Egyptians working abroad to transfer their money through informal channels to benefit from exchange rate differentials in the parallel market, in addition to the repercussions of restrictions on the movement of funds from direct or indirect investment as well as reluctance of local investors to surrender their export proceeds. However, the impact of the shock during this period was moderate between that estimated in the Global Financial Crisis and 2011. Perhaps this is due to the nature of the prevailing exchange rate policy at the time.

Table 10.4. Potential Scenarios for the Impact of the Crisis on Egypt's External Debt Service, based on the Aforementioned Crisis Cycle and Assumptions⁶

Stage	Demand and/or supply shock	Assumptions and methodology of analysis	Expected quantitative impact (gap of obligations and revenue in foreign currency)
1. Emergence of the virus (December 2019 to January 2020)	Mild and imperceptible shock. The previous period and not the virus itself.	Actual data for the balance of payments ⁷ performance during the first half of the current fiscal year will be used, that is, until the end of December.	<ul style="list-style-type: none"> • With reference to the most important items of the balance of payments, it is already clear that the impact of the crisis did not appear on the most important foreign currency resources, and the balance of payments achieved a surplus of \$410.9 million during the period July - December 2019 against a deficit of \$1.7 billion during the same period of the previous fiscal year. • Net medium- and long-term borrowing increased by about \$2.5 billion during the first half of the current fiscal year compared to the same period in the previous year. • Net international reserves stabilized at \$45.4 billion at end of January 2020 compared to \$45.3 at the end of November 2019. • The Egyptian pound exchange rate also witnessed an appreciation in its value against other currencies during December and January, as the average dollar exchange rate for the Egyptian pound decreased from 16.11 to 15.79.
2. The beginning of proliferation (February through mid-March 2020) & 3. Aggravation of the problem (From mid-March to mid-May 2020)	Shock repercussions begin to appear on all foreign currency resources	The two phases were combined and the analysis was focused on the second half of the current fiscal year due to the nature of the data available on external debt service obligations. The data mentioned are about debt service expectations according to the data of October 2019, and consequently, they are conservative without regard to what happened or what may arise.	<p>External debt service obligations for the second half of the current fiscal year are estimated at about \$12.9⁸ billion, four times the actual debt service in the first half of the year, including \$4.7 billion in debt service for deposits of some Gulf countries.</p> <p>As for balance of payments performance, the impact can be estimated through the following scenarios:⁹</p> <p>Scenario 1: Based on the 2008/09 Global Crisis data: The net impact is about \$8.7 billion (from a total surplus of \$5.4 billion to a deficit of \$3.3 billion) during three quarters of the year (the crisis began in September). Debt service has reached \$3 billion for the total fiscal year. Consequently, the total expected pressure on the balance of payments in the second half of this year becomes \$1.9 billion¹⁰ (net \$1.5 billion in light of the surplus achieved during the first half).¹¹</p>

⁶ The estimates presented in the analysis are discretionary in light of a highly variable and complex situation.

⁷ The balance of payments is the integrated framework for expressing all transactions with the outside world, in terms of revenue or obligations.

⁸ According to October 2019 data.

⁹ These scenarios remain subject to several reservations in different directions, but they are not disruptive in light of the following. The first reservation relates to the long-term monetary effect (the value in dollars). This reservation would make the estimated figures less than expected (underestimation). The response to this reservation comes in the form of correction provided by the difference in the exchange rate of the Egyptian pound against the dollar and thus doubling of the burden of the same amount. In addition, most of the years following these crises have produced performance that falls within the descending curve of the economic cycle, which also increases the severity of the burden. The second reservation is that the effect of the current crisis will not be during the whole fourth quarter, as there are some variables that will not witness a sharp decline until its end, meaning that the direction of the reservation here is overestimation. There is a third reservation, whose direction cannot be determined with regard to the difference in the composition of the balance of payments from the current situation, but assessment is overall as this circumstance has an overall impact rather than a sectoral one.

¹⁰ Another methodology for estimating the impact of the crisis on foreign exchange resources was conducted by calculating the total change of net bank assets, net international reserves, and change in the debt balance, then debt service payments were deducted for the same fiscal year giving comparable figures. This methodology is justified in light of the fixed exchange rate, which requires pumping dollar resources equal to obligations.

¹¹ The total amount is divided by 3 to determine the degree of impact in a quarter.

Stage	Demand and/or supply shock	Assumptions and methodology of analysis	Expected quantitative impact (gap of obligations and revenue in foreign currency)
<p>2. The beginning of proliferation (February through mid-March 2020) & 3. Aggravation of the problem (From mid-March to mid-May 2020) cont.</p>			<p>Consequently, the foreign currency gap (balance of payments deficit + debt service) according to this scenario = \$14.8 billion for the second half of 2019/2020, without taking into account the possibility of extending deposits.¹²</p> <p>Scenario 2 based on 2010/11 data (January 25 Revolution): The net impact is about \$13 billion in half a year (the crisis started in January), and debt service has reached about \$3 billion for the total fiscal year. Thus, the total pressure on the balance of payments becomes \$5 billion (net \$4.5 billion in light of the surplus achieved during the first half). Consequently, the foreign currency gap (balance of payments deficit + debt service) according to this scenario = \$ 17.4 billion for the second half of 2019/2020, without accounting for the possibility of extending deposits.¹²</p>
<p>4. Crisis recedes (Mid-May-August 2020) & 5. Recovery (As of September 2020)</p>	<p>The peak of the impact of the aforementioned supply shocks despite the start of the global recovery during the fifth stage with the possibility of reducing the debt service burden.</p>	<p>The crisis in cash sources was assumed to continue for two years as the most conservative possibilities. The data mentioned are about debt service expectations according to the data of October 2019, and consequently, they are conservative without regard to what happened or what may arise.</p>	<p>The impact will be estimated here on the next two fiscal years 2020/2021 and 2021/2022, and here scenarios will include debt obligations and balance of payment, with the annual cost estimated at four times the cost estimated in the previous stage. Consequently, the annual burden of the balance of payments deficit according to the first scenario becomes \$7.6 billion, and in the second scenario \$20 billion, without accounting for debt obligations.</p> <p>On the side of debt service obligations: Scenario 1: No change in foreign debt service obligations, which are estimated according to October data at: 2020/2021 = \$18.5 billion 2021/2022 = \$14 billion, and thus the foreign currency gap (balance of payments deficit + debt service) ranges between: 2020/2021 = 25.1 or \$38.5 billion & 2021/2022 = 21.6 or \$34 billion¹³ \$23.1 billion</p>

¹² According to the statement issued by the World Bank and the International Monetary Fund, the requests of countries to postpone their commitments begin in April, and it is expected that some negotiations will take place in light of the limited resources of these institutions, and therefore no assumption has been made of the obligations of the remainder of the current fiscal year.

¹³ Re-estimate according to balance of payment scenarios.

Stage	Demand and/or supply shock	Assumptions and methodology of analysis	Expected quantitative impact (gap of obligations and revenue in foreign currency)
<p>4. Crisis recedes (Mid-May-August 2020) & 5. Recovery (As of September 2020) cont.</p>			<p>Scenario 2: Partial deferring of debts¹⁴ of international institutions and bilateral debts (by 50 percent) and renewing deposits of the Gulf states during this period for two years, according to October data</p> <p>On this basis, debt service is estimated at:</p> <p>2020/2021 = \$5.2 billion 2021/2022 = \$7.6 billion, and therefore the foreign currency gap (balance of payments deficit + debt service) ranges between: 2020/2021 = 12.8 or \$25.2 billion & 2021/2022 = 15.2 or \$27.6 billion</p> <p>Scenario 3: a total deferral of debts of international institutions and bilateral debts and renewal of due deposits for two years,</p> <p>On this basis, debt service is estimated at: 2020/2021 = \$1.2 billion 2021/2022 = \$3.1 billion, and therefore the foreign currency gap (balance of payments deficit + debt service) ranges between: 2020/2021 = 8.8 or \$21.2 billion & 2021/2022 = 10.7 or \$23.1 billion</p>

Source: The Egyptian Center for Economic Studies (ECES).

These estimates should be read with caution, as expectations may require further revision based on the day by day development of the outbreak, as its duration and scope are still unknown.

Fourth: Interventions required to mitigate the effects of the crisis

No doubt the current stage has led all countries to abandon the perception of debt as a bad option, in exchange for its role in ensuring the continuity of economic activity. But this must be subject to great care and within a context governed by several considerations of good governance. Accordingly, the required interventions to deal with public debt in Egypt are divided into two types. The first relates to managing foreign exchange obligations during the period in which the foreign currency income generating sectors are affected, which is expected to extend for more than a year and a half. The second stage, which must be started

as of now, relates to preparing or arranging to meet debt obligations during the recovery stage. All solutions must be within a framework that supports future investor confidence in the Egyptian economy and its macro management.

4.1. Solutions for external debt management until 2021/2022

- **The Central Bank of Egypt negotiates extending the deadlines of Arab country deposits** that are due until 2021/2022, which creates financial space that reduces the burden of debt service obligations during this critical stage, estimated at about \$15.9 billion. This is out of \$44.5 billion due in total debt service

¹⁴ The data of the Central Bank of Egypt provide the expected debt service structure according to the type of debt. Bilateral debts and debts with international institutions were considered negotiable, in addition to Arab countries' deposits. Data is according to October 2019 estimates.

starting from the second half of the current fiscal year until the end of 2021/2022, according to the balance of external debt recorded on the first of October 2019, in addition to negotiating the extension of the maturity of bilateral debts or debts due to international financial institutions.

- **Chinese banks and regional funds can be approached for loans.¹⁵ One of the debt instruments that can be used currently is the REPO mechanism launched by the US Federal Reserve to help countries avail of dollar liquidity through the Fed's purchase of sovereign bonds issued in US dollars with the issuing country's commitment to repurchase them, according to specific parameters and conditions. Here, we note that with the availability of possible sources of financing, it must be pointed out that there is a need to strike a balance between maintaining exchange rate movements within reasonable limits, and not to overdefend the pound considering various developments.**

4.2. Solutions for securing sustainable cash resources as the recovery stage begins

- **A gradual shift towards domestic debt**, given the trend of low interest rates
- **Focusing on certain emerging industries** and carrying out the necessary legislative and institutional reforms to **attract direct investments** therein with the start of the economic recovery stage (these sectors will be identified in the detailed analysis of manufacturing industries).
- Focusing on currently popular export products such as medical masks.
- Planning the **localization of some feeding industries**, substituting imports to reduce the import bill and pay attention to technological sectors.
- Purchasing oil futures contracts to reduce its import bill during the recovery phase.¹⁶

Fifth: Structural weaknesses revealed by the crisis

- **The beginning of exacerbation of the external debt situation transpired with resorting to it in light of an unrealistic exchange rate to finance the budget deficit as of 2015**, which is the beginning of the problem due to less than a real estimate of the cost of this debt before resorting to it. **Also, financing of the budget deficit will not be an income generator that would enable paying these debts.** After the liberalization of the exchange rate, the debt bill rose unprecedentedly. Hence, attention should be paid to the dimension of the exchange rate as one of the risk factors in managing external debt.
- **After liberalization of the exchange rate in late 2016**, economic reforms focused on the financial side rather than the real and institutional side. Therefore, most of the increase in foreign exchange resources came from foreign investments in government debt instruments in light of an exceptional interest rate. **Meanwhile, no attention was paid to raising the attractiveness of the Egyptian Stock Exchange to attract portfolio investment in parallel.** But this source is not sustainable, which was proven in light of the emerging market turmoil in mid-2018, and it also **represents debt financing.** That is, debt paid off with another debt.
- **Weak net foreign asset position of banks, as a result of using foreign currency to relieve the pressure on the balance of payments during previous periods**, maintain the exchange rate and more recently due to investment portfolio's flight since the second half of 2018. Net foreign assets were also restructured with the resort to external borrowing as an alternative to relieve pressure.
- **Focusing, in achieving a commodity balance surplus or containing its deficit, on oil exports and gold exports** without paying attention to other components.
- **Weak economic sectors in attracting foreign direct investment**, most of which has been concentrated in extraction industries since the liberalization of the exchange rate.

¹⁵ Source: Dr. Mahmoud Mohieldin, Getting Ready for the New Normal, The Egyptian Center for Economic Studies, April 2020.

¹⁶ IBID



Nile City Towers - North Tower
8th Floor - Corniche El Nil,
Cairo 11221 - Egypt
Tel: (202) 246 190 37-44
Fax: (202) 246 190 45
Email: eces@eces.org.eg
Website: eces.org.eg
[f](https://www.facebook.com/eces.org.eg) [i](https://www.instagram.com/eces.org.eg) [in](https://www.linkedin.com/company/eces.org.eg) [yt](https://www.youtube.com/channel/UC...) eces.org.eg