



# COVID-19 and the Egyptian Economy

## From reopening to recovery: Alternative pathways and impacts on sectors, jobs, and households

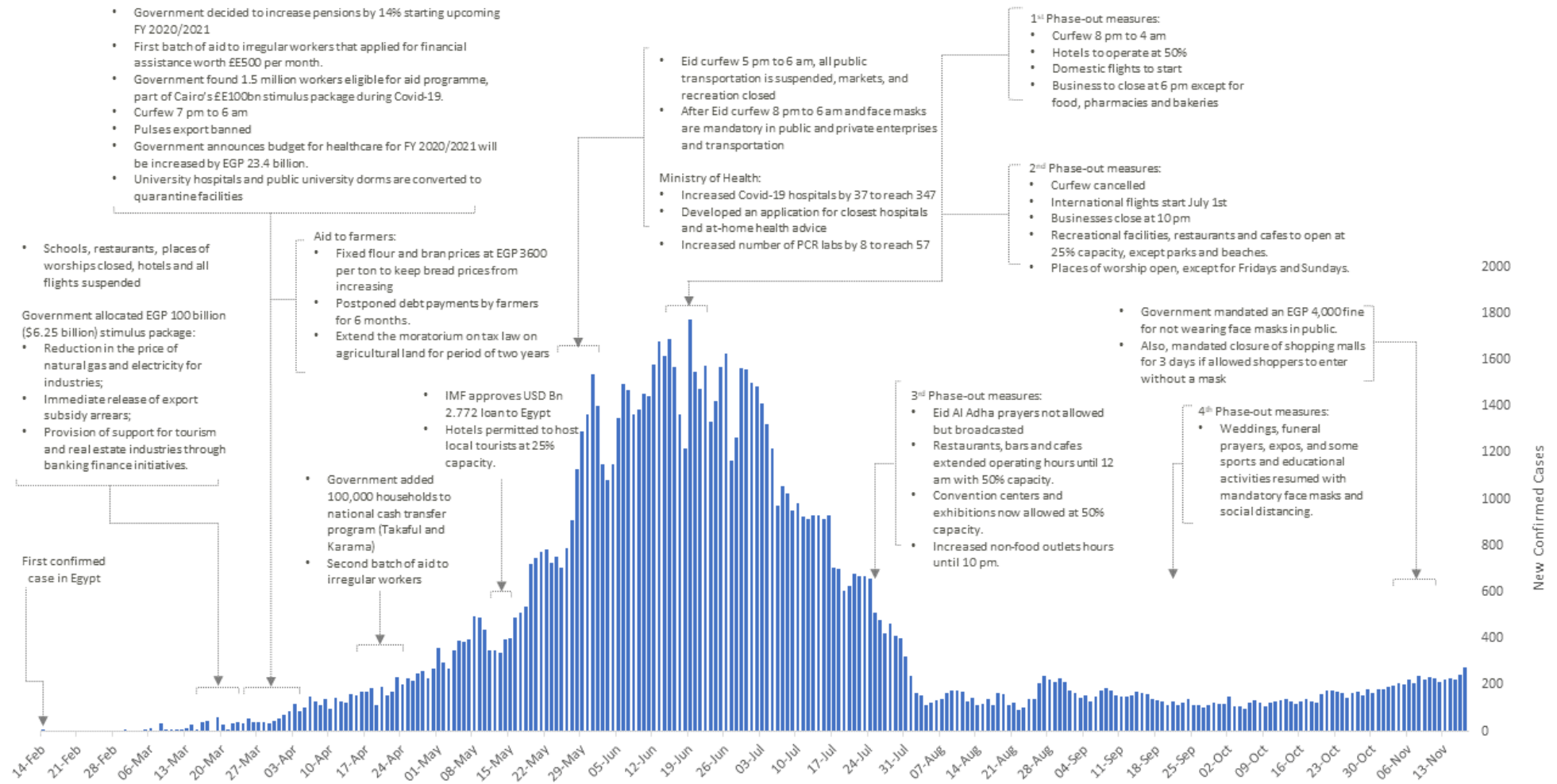
A joint note by the International Food Policy Research Institute and the Ministry of Planning and Economic Development of the Government of the Arab Republic of Egypt

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Although the global economy is forecasted to shrink by 4.4 percent in 2020 (IMF 2020), the Egyptian economy is proving resilient to the immense human and financial costs caused by the global COVID-19 pandemic. This resilience is mainly explained by the successful implementation of the economic reform program since 2016 that provided more fiscal space to withstand the adverse impact of the COVID-19 crisis. However, that Egypt's economy is holding up is also due to the rapid response and proactive measures to limit the impact of the virus that were implemented by the Egyptian Government since March 2020 (MPED 2020). These enabled the country to avoid a full lockdown policy (Figure 1). While Egypt posted negative economic growth rates from April to June 2020 at the height of the crisis, overall economic growth was still positive at 3.6 percent for fiscal year (FY) 2019/20. This estimate is only slightly lower than the initial projection of the impact of the pandemic on Egypt's economy of an annual economic growth equal to 3.8 percent, as estimated by staff of the International Food Policy Research Institute (IFPRI) and the Ministry of Planning and Economic Development (MPED) (Breisinger et al. 2020). The deviation between the early and final estimate can be mainly explained by the lower than expected growth rates in the manufacturing and health services sectors and the better than expected performance of the trade and transport sectors.

The number of daily reported COVID-19 cases in Egypt has come down from more than 1,600 in June to less than 200 in September, although a slight increase has been registered in mid-November. Supported by the relatively low number of reported cases, economic recovery in Egypt continues. This recovery has been supported by the gradual phasing out of the COVID-19 related restrictions that were put in place by the Government of Egypt (GOE). Between the end of June and September, GOE implemented a series of measures to revive the economy (Figure 1). These included ending the nighttime curfew; reopening of hotels with 50 percent occupancy rates; resumption of international and domestic flights; and again allowing sports and other recreational activities.

**Figure 1: COVID-19 cases in Egypt and policy response timeline, February to November 2020**



Source: IFPRI Egypt COVID-19 Food Policy Monitor

In addition, GOE is currently engaging in an upbeat public investment plan which focuses on promising economic sectors and maintains solid economic fundamentals. For FY 2020/21, government investments are projected to increase to around 280 billion EGP. These will be directed towards enhancing infrastructure in the construction, information and communication technology (ICT), housing, and transportation sectors. Indeed, in this time of high uncertainty, public investment can play a role in boosting the confidence for private investments and compensate for the expected drop in private investment.

## Objective

The objective of this Policy Note is to estimate the impact of the phasing out of these COVID-19 related measures and of alternative recovery scenarios for the period July to December 2020 using a social accounting matrix (SAM)-based multiplier model. This is a follow-up to an earlier policy note on COVID-19 in Egypt that focused on the economic impacts experienced during Egypt's three-month partial lockdown from April to June 2020 (Breisinger et al. 2020).

**Table 1: Scenarios for Egypt's recovery from July to December 2020**

	Period	Fast recovery	Gradual recovery	Slow recovery	Global shocks
	Q4 2019/20 FY (March to May 2020)	Partial lockdown period			• Remittances and export demand decline
<b>Without Government Intervention</b>		<ul style="list-style-type: none"> <li>• Easing restrictions on transportation, lifting nighttime curfew.</li> <li>• Hotels operate with maximum occupancy rate raised to 50 percent. Domestic tourism was permitted first, then international tourists allowed to visit Red Sea resorts.</li> <li>• Reopening of sports clubs, cinemas, and theaters with a maximum of 25 percent capacity.</li> <li>• Cafes and restaurants initially allowed to operate until 10pm and then later until 12 pm.</li> </ul>			
	Q1 2020/21 FY (June to Aug. 2020)	<ul style="list-style-type: none"> <li>• Production loss from lockdown period reduced by 95 to 98 percent for most sectors.</li> <li>• Hotels loss reduced by only 50 percent</li> </ul>	<ul style="list-style-type: none"> <li>• Production losses from lockdown period reduced by 95 to 99 percent for most sectors.</li> <li>• Hotels losses reduced by only 50 percent.</li> </ul>	<ul style="list-style-type: none"> <li>• Production losses from lockdown period reduced by 80 to 85 percent for most sectors.</li> <li>• Hotels losses reduced by only 50 percent.</li> </ul>	<ul style="list-style-type: none"> <li>• Remittances did not decline, contrary to earlier expectations. Hence, we did not implement any negative shock to remittances in any of the economic recovery scenarios.</li> </ul>
	Q2 2020/21 FY (Sept. to Nov. 2020)	<ul style="list-style-type: none"> <li>• Production losses reduced by 99 percent.</li> <li>• Hotels losses are reduced by only 50 percent.</li> </ul>	<ul style="list-style-type: none"> <li>• Production losses reduced by 95 to 99 percent.</li> <li>• Hotels losses are reduced by only 50 percent.</li> </ul>	<ul style="list-style-type: none"> <li>• Production losses reduced by 90 to 95 percent. Those from lockdown period reduced by 85 to 90 percent.</li> <li>• Hotels losses reduced by only 50 percent. Those from lockdown by 80 to 85 percent.</li> <li>• Transportation losses reduced by 80 to 85 percent.</li> </ul>	
<b>With Government Intervention</b>	Q1 2020/21 FY (Jun. to Aug. 2020)	<ul style="list-style-type: none"> <li>• Keep the same recovery assumptions for each sector for each quarter as in the scenario without government intervention.</li> <li>• Assume an increase in government investment of 281 billion EGP (17.7 billion USD), as targeted in Government of Egypt's Investment Plan for FY 2020/21.</li> <li>• Assumes most of these investments are directed to boost the construction, housing, water and irrigation, and transportation sectors, especially road and bridge projects on the national road network, lining of canals, the inception of a monorail project to connect Cairo to the New Administrative Capital and to 6<sup>th</sup> of October City, and the completion of the third and fourth phases of the Cairo metro.</li> </ul>			
	Q2 2020/21 FY (Sept. to Nov. 2020)				

Source: Authors.

Specifically, here we consider the likely impacts on Egypt’s economy by fiscal year quarter (Q1 – June to Aug. 2020; Q2 – Sept. to Dec. 2020)<sup>1</sup> under an extended scenario that:

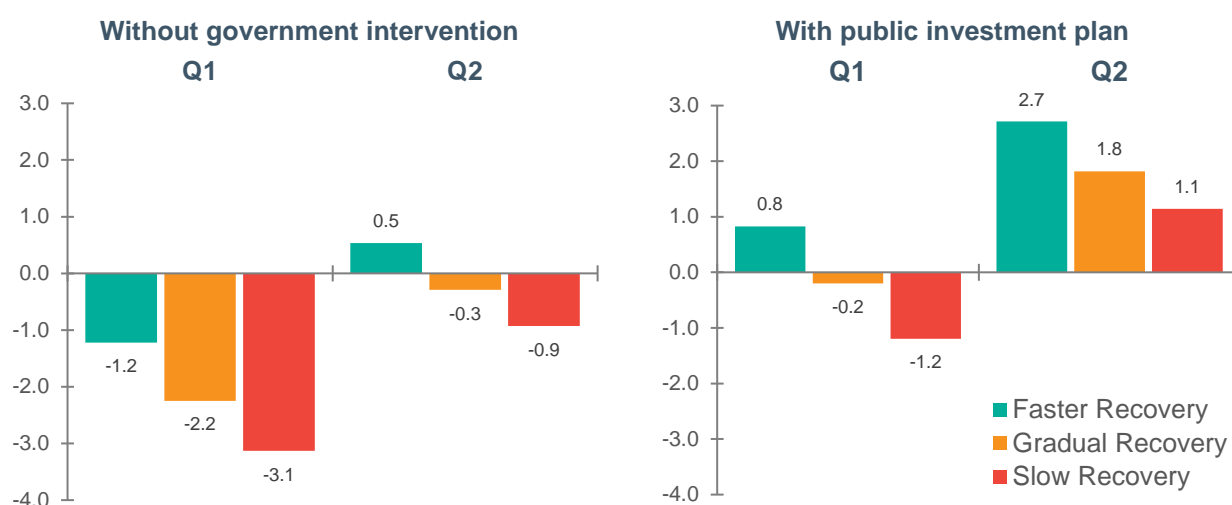
- Assumes either a rapid, a more gradual, or a slow easing of COVID-19 related restrictions in order to propel economic recovery during the first half of fiscal year 2020/21; and
- Differentiates between recovery with and without government support through a large-scale public investment program. (See Table 1.)

Although the economy started to recover as COVID-19 related measures were lifted in Q1 between June and August, we still assume sizeable economic losses over that quarter due to the time it takes for demand to pick up and for sectors and firms to fully reopen. Due to most COVID-19 restrictions having been fully phased-out, Q2 is assumed to be mostly exempted from negative economic shocks associated with the restrictions.

## Modeling results

Figure 2 shows quarterly GDP growth results from the scenarios used with the SAM-based multiplier model for Egypt. Without government interventions, it is estimated that the partial lifting of restrictions in Q1 would still lead to quarterly GDP reductions of between 1.2 and 3.1 percent, compared to GDP in Q1 of FY 2019/20 a year earlier. Even in the case of fast recovery but without a large-scale intervention, recovery would be slow and GDP growth would be comparable to the 1.1 percent estimated for the lockdown period (April to June) with an emergency response package (Breisinger et al. 2020). However, these losses turn into gains in Q2 with an almost complete abolishment of restrictions, but only under the most optimistic fast recovery assumptions. Without any government intervention, economic growth would remain negative under the more pessimistic gradual and slow recovery scenarios. We estimate that only if recovery is supported by the public intervention program will economic growth gain momentum. With such government support, the model analysis suggests quarterly GDP may increase by between 1.1 and 2.7 percent in Q2 with slow and fast recovery, respectively, over what was achieved in the previous year in the same quarter.

**Figure 2: Economic recovery scenarios without and with government intervention, percentage growth in quarterly GDP**



Source: Authors’ analysis using SAM-based multiplier model for Egypt.

Taking Q1 and Q2 together (first half of FY 2020/21), it is estimated that the GDP growth rate would be negative between -0.3 and -2.0 percent, under the fast and slow recovery scenarios,

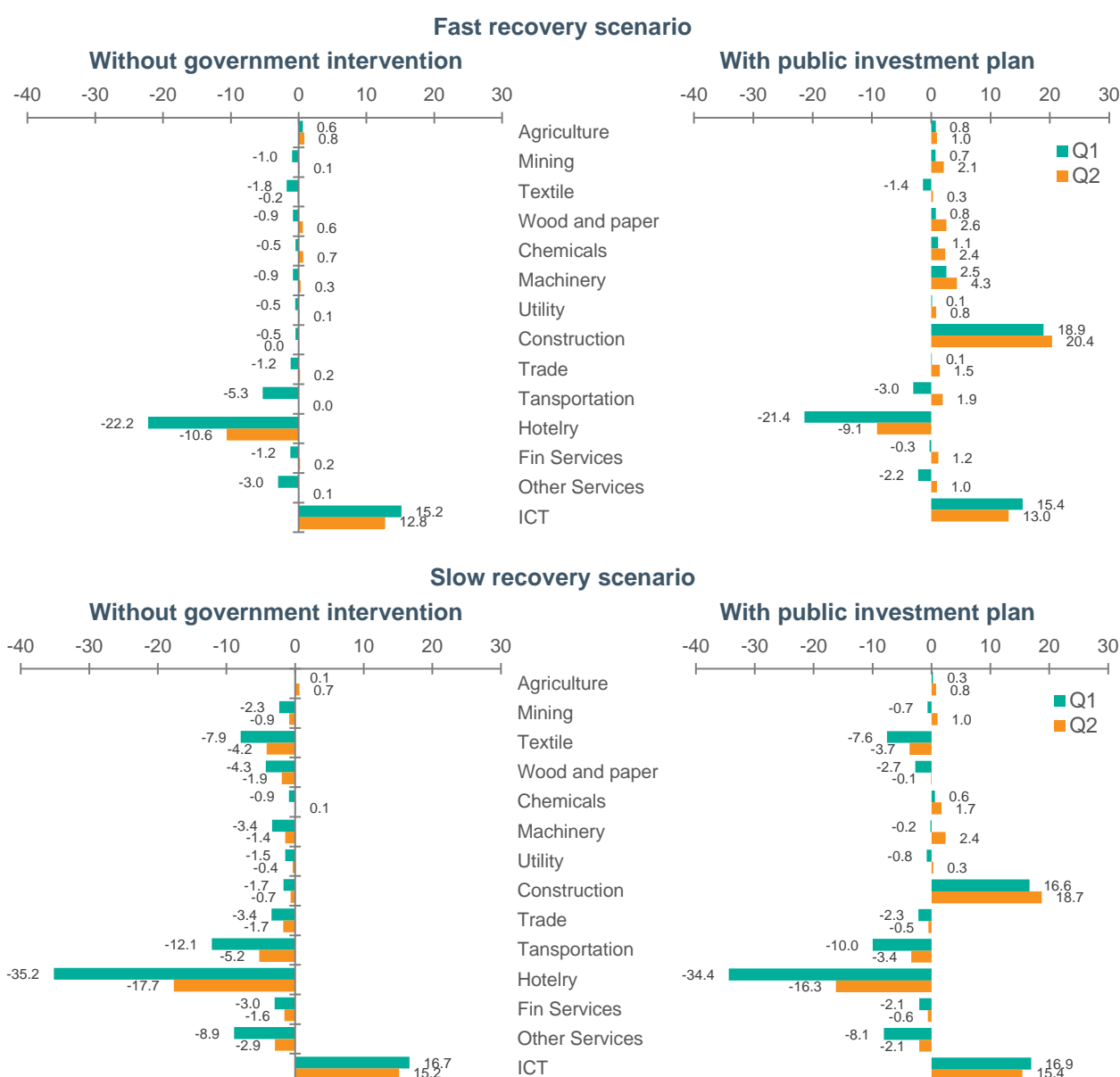
<sup>1</sup> The Fiscal Year for Egypt starts on 1 July and ends 30 June. The analysis in this Policy Note covers the period of 1 July to 31 Dec. 2020, i.e., Q1 and Q2 of FY 2020/21.

respectively, without government intervention. However, the implementation of the government investment plan would significantly improve economic performance – the GDP growth rate is expected to turn positive to 1.8 percent under the fast recovery scenario and is estimated to remain at zero under the slow recovery scenario.

These results suggest that the **large-scale public investment program is essential for a return to positive, short-term growth in Egypt’s economy.**

**Some sectors, like construction and parts of the manufacturing sector, are projected to recover more quickly than others, like hotels and restaurants.** From April to June 2020, the services sector, with the exception of ICT, was hit hardest, followed by manufacturing. GDP losses in the services sector were a result of the partial closing of trade activities and reductions in air and surface transport, both of which had a significant impact on services GDP. The reduction of industrial and manufacturing activities are due to both significant direct and indirect effects related to the partial lockdown (Breisinger et al. 2020). Agriculture has been the most resilient sector, with parts of the livestock sub-sector even posting positive growth.

**Figure 3: Projected growth in quarterly sectoral GDP under fast and slow recovery scenarios, without and with government intervention**



Source: Authors’ analysis using SAM-based multiplier model for Egypt.

Figure 3 shows the results at sector level for Q1 and Q2 of FY 2020/2021 under the most optimistic fast recovery scenario (upper panel) and most pessimistic slow recovery scenario (lower panel). Without government intervention, sectoral growth in both Q1 and Q2 would remain negative or close to zero in all sectors, except ICT and agriculture (left side, Figure 3).

However, with government interventions through the public investment plan (right side, Figure 3), losses in the hotel and restaurants are expected to be lower in the case of a fast recovery as a result of the positive indirect demand effects from the government stimulus package. Construction and manufacturing are the sectors that benefit most from the public investment program under both the fast and the slow recovery scenarios due to the direct effects of the investments. Manufacturing overall is expected to grow by 1.4 percent in Q1 and 3.1 percent in Q2 under the fast recovery scenario and by -0.6 percent in Q1 and 1.7 percent in Q2 under the slow pace of recovery. In contrast, agriculture and ICT mainly benefit from positive indirect effects. However, if the Egyptian economy recovers only slowly, most producers of consumer goods, such as wood and paper or textiles, and providers of services, such as financial and other services or transportation and trade, may still experience negative growth in Q1 and Q2 of FY 2020/21, even with the public investment program.

For the first half of FY 2020/21, most of the economic sectors will remain negatively affected under both the fast and slow recovery without government intervention, except for ICT and agriculture. However, with government's expansionary investment program, most of these losses will turn into gains, especially for sectors such as manufacturing, particularly chemicals and machinery, and for the construction sector, the largest winner. Trade would also achieve positive growth rate under a fast recovery path.

**Recovery of household incomes is projected to be relatively equal** (Figure 4). During the partial lockdown period, higher-income households were estimated to face the largest income losses. However, lower-income households also saw their incomes decline.

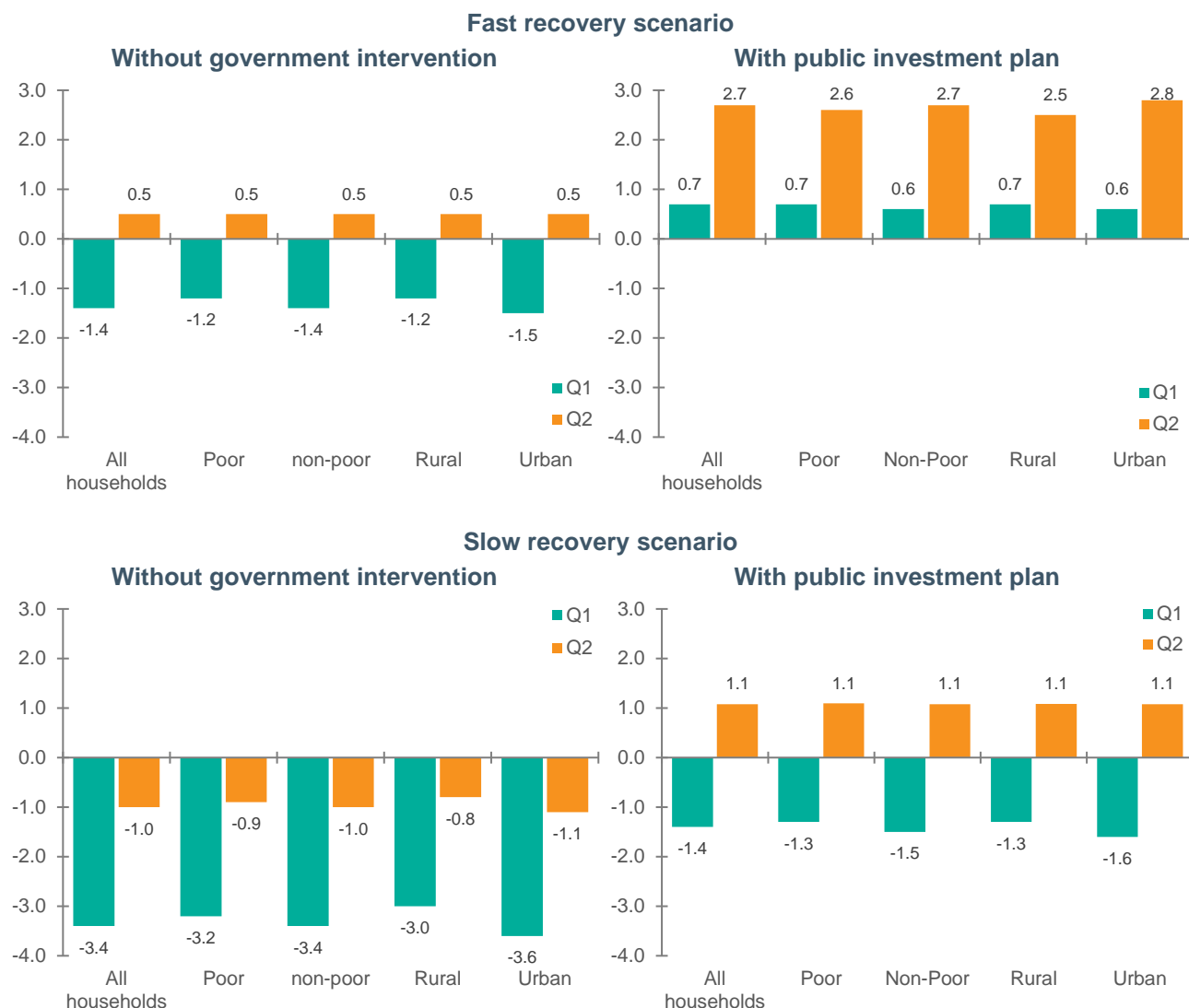
Compared to household income losses of between 6 and 10 percent during the partial lockdown period from April to June 2020, household incomes are still expected to decline or increase only slightly in Q1 and Q2 of FY 2020/21 under scenarios in which government offers no support (left side, Figure 4). Under the fast recovery scenario with no government support, household income is estimated to fall by 1.4 percent in Q1, while it is expected to grow by 0.5 percent in Q2. However, if economic recovery is supported by public interventions as planned, a fast recovery scenario is expected to lead to household income gains averaged across all households of 0.7 and 2.7 percent in Q1 and Q2, respectively.

Under the slow recovery scenario with no government support, households are expected to experience losses in income of 3.4 and 1.0 percent in Q1 and Q2, respectively. Government support will improve incomes under the slow recovery scenario – while incomes will decline by 1.4 percent in Q1, they will rise by 1.1 percent in Q2.

Income gains and losses are not evenly distributed across households. Generally, the incomes of rural households are hurt less by lockdown measures than urban households, on the one hand. On the other, rural households benefit relatively less than do urban ones from any recovery program, whether slow or fast, and from the public investment program. Yet, both rural and urban households are expected to experience short-term income losses in Q1.



**Figure 4: Projected impact on household incomes under fast and slow recovery scenarios, without and with government intervention**



Source: Authors' analysis using SAM-based multiplier model for Egypt.

During the first half of FY 2020/21, all households will experience an income loss ranging from -0.4 to -2.1 percent, under fast and slow recovery without government intervention. Households in urban areas suffer the most, as their real quarterly income falls by -0.5 and -2.4 percent under the two tracks of recovery, respectively. Nevertheless, with a large-scale investment plan, their income may increase by 1.8 percent under a fast recovery path, while only falling by -0.2 percent, if the recovery takes place at a slower pace. All households will benefit from more investment spending as this would translate into higher earnings under the fast recovery scenario and lower income losses under the slow recovery path.

Even though poor households experience the lowest relative income losses; nevertheless, these losses in income have and would have adversely impact(ed) millions of people during the lockdown and recovery periods. Many of these households may require additional government support.

### From recovery towards a new growth model

The results of this analysis using a SAM-based multiplier model of the Egyptian economy have shown the importance of large-scale stimulus packages during times of economic crisis, as during the global COVID-19 pandemic. Without such packages, economic output will shrink, and many

more people will lose jobs and income and fall into poverty. Investing in infrastructure projects, such as road expansion and construction activities, generates new job opportunities, especially for many low skilled and seasonal workers, who were highly vulnerable to the partial lockdown measures imposed to halt the spread of COVID-19. Also, expansion in agricultural and livestock projects under the investment plan for FY 2020/21 should increase food production, enhance the efficiency of production in the sector, stabilize food markets, and; hence, provide Egypt with greater food security. The government also has expanded the social safety net, increasing the number of beneficiaries served by the *Takaful* and *Karama* program by 100,000 households. The government has also identified more than 1.5 million informal workers to receive direct cash payments.

Still, each crisis also presents an opportunity to rethink and improve. As such, the economic recovery process may also provide opportunities for fostering more private sector-driven and more sustainable economic transformation. Large-scale investments in improving irrigation and water efficiency are a critical component of promoting modernization and structural change in the agricultural sector and an essential building block for a food and water-secure future.

Egypt also now has new opportunities to increase and enhance digitization of services in order to develop a knowledge-based economy. Policy support should be provided to encourage venture capital that is directed towards establishing early stage technology startups, with a particular focus on firms operating in the education, healthcare, and finance sectors. Also, there is a widespread move to expand online education, especially at universities, and to launch online degrees. However, new regulations should be enacted to guide these developments into the future. Enhancing investments in human capital using high-tech pedagogic techniques represents an important impetus for much-needed structural change leading to more productivity gains and sustainable economic progress in Egypt.

**In sum, public investment is a powerful element of the economic stimulus package that is being put in place in Egypt to limit the economic fallout from the COVID-19 pandemic. Even as Egypt, as well as other countries continue to work to save lives and livelihoods, significant well-designed public investment coupled with reforms that improve the business climate can lay the foundation for a more resilient and private-sector driven economy to reach Egypt's 2030 Vision.**



## Appendix – Assessing the short-term economic impacts of COVID-19 with SAM multiplier models

Social Accounting Matrix (SAM) multiplier models are ideally suited to measuring short-term direct and indirect impacts of unanticipated, rapid-onset demand-side economic shocks, such as those caused by the COVID-19 pandemic. At the heart of the multiplier model is a SAM, an economywide database that captures resource flows associated with all economic transactions that take place in the economy, usually over the course of a financial year. As such, the SAM represents the structure of the economy at a point in time, showing the relationships between actors, i.e., productive activities, households, government, and foreign institutions, in terms of how they interact and transact via commodity and factor markets. The SAM multiplier model provides a mechanism for estimating the effects of an external shock – typically an exogenous change in final demand for goods and services – on sectoral and national production, factor incomes (wages or rents), and household incomes on the basis of the production, employment, and consumption relationships captured in the SAM database.

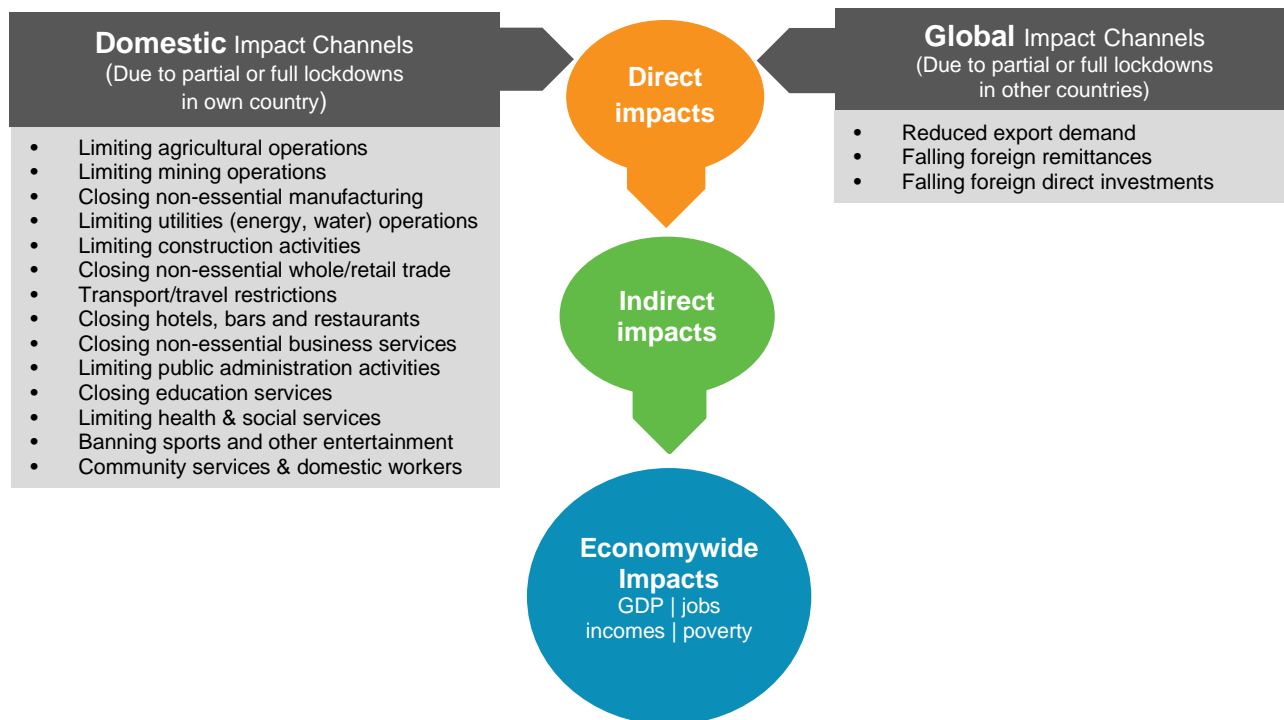
Apart from the direct production effect in the sector affected by the demand change, other sectors are affected indirectly via changes in demand for intermediate inputs defined by input-output relationships. Additionally, resulting changes in the levels of composition or employment could lead to further changes in household consumption demand. The strength of the multiplier model lies in the fact that the multiple rounds of these indirect effects are fully estimated. The more detailed the SAM is in terms of the activities, commodities, and factor and household accounts it includes, the more refined the SAM multiplier analysis is in terms of analyzing the direct and indirect impact pathways and distributional effects of the external shock.

The short-run analysis period assumes that technical input-output relationships, the input choices of producers, and the consumption patterns of households do not (yet) change in response to the simulated shock. Such longer-term behavioral responses are captured in general equilibrium models of the economy. However, the anticipated short-term nature of the COVID-19 shock and the likelihood that the economy will return to a “business-as-usual” state once the crisis dissipates and/or compensatory measures are implemented makes the SAM multiplier framework a more appropriate tool than general equilibrium models for analyzing this particular shock (Breisinger et al. 2009; Round 2003). Consistent with the short-term nature of the analysis, we assume that households, the government, savings-investments, and international trade are exogenous.

The Egypt multiplier model is based on a SAM developed jointly by Egypt’s Central Agency for Public Mobilization and Statistics (CAPMAS) and IFPRI. While the SAM itself has a 2015 base-year, multiplier results are applied to national accounts, household income, and population data for 2019 to permit an assessment of the likely impacts of COVID-19 in 2020. The research reported in this Policy Note used an extended version of the multiplier model that allows for capturing sector-level impacts and seasonality of those impacts (Thurlow 2020).

Figure 5 summarizes the underlying conceptual framework for the use of Egypt’s SAM-based multiplier model to examine the impacts on the economy of the COVID-19 related shock. There are global (external) and domestic (internal) impact channels. External channels include exports and remittances, while the domestic impact channels depend on full or partial lockdown measures. These domestic impact channels might provoke negative effects, such as the closure of restaurants, factories, and commercial shopping centers. In addition, they might also induce positive outcomes, especially with regards to communication and health-related sectors.

**Figure 5: Conceptual framework underlying the use of the SAM-based multiplier model to assess the impacts of COVID-19 on the Egyptian economy**



Source: Authors.

In the SAM multiplier model, a closure of restaurants, for example, is modeled as a 100 percent loss of output for restaurants. Similarly, if textile factories are now operating with two shifts of workers instead of three, we assume a reduction of about 33 percent in textile output. Recovery from the lockdown and expansionary public investments are modeled as lower negative supply and demand shocks and as positive supply shocks in specific sectors, respectively.

Both the external and domestic impact channels induce a direct impact on specific economic activities. However, there also are several rounds of indirect effects. For example, the sharply reduced demand from restaurants and hotels for food commodities will significantly affect the economic activities of food producers and suppliers, while public investment in infrastructure will boost the construction, housing, and transportation sectors. These multiplier effects also are captured by our economywide SAM multiplier model.

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