Impact of COVID-19 on the Jordanian economy

Economic sectors, food systems, and households

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Economic growth in Jordan potentially will come to a halt this year. This comes as a result of the COVID-19 pandemic outbreak. Government imposed an economic lockdown which restricted non-essential economic activities and people's movement in order to contain the virus. A SAM multiplier model was used to estimate the economic impact of the lockdown and to explore potential recovery pathways for the Jordanian economy. Some of the key findings from this modeling exercise are:

- National GDP is estimated to have fallen by 23 percent during the lockdown period. The services sector was hardest hit, seeing an estimated drop in output of almost 30 percent.
- Food systems in Jordan are estimated to have experienced a reduction in output by almost 40 percent.
- Employment losses during the lockdown were estimated at over 20 percent, mainly driven by job losses in services, followed by agriculture.
- Household income fell on average by around one-fifth due to the lockdown, mainly driven by contraction in service sector activities, by slowdown in manufacturing activity, and by lower remittances from abroad.
- GDP growth rates for Jordan's economy will continue to be negative through 2020, ranging from -5.7 to -7.4 percent, depending on the speed of economic recovery. A slow pace of recovery is expected.

This economic recovery offers opportunities for fostering sustainable economic transformation and structural change. Economic policies and incentives should be directed towards more economic diversification, greater resilience to withstand economic shocks, and job creation.

Global economic growth projections for 2020 have been revised downward, reflecting a dramatic worldwide economic downturn that has been driven by lockdowns associated with the COVID-19 pandemic that sharply restricted workforce mobility and trade flows. Jordan is no exception to this pattern, as the International Monetary Fund (IMF) recently revised downwards its outlook on expected levels of growth for the Jordanian economy through 2020 (IMF 2020a).

Since the first case of Coronavirus infection was registered in Jordan on 2 March 2020, the Jordanian government has taken strict measures to curb further spread of the virus. Jordan's borders closed immediately, and air travel was suspended (Figure 1). On 17 March, the Jordanian government activated a defense law to enforce strict lockdown that restricted movement within the country and closed all businesses and industries. The Jordanian military was used by government to effectively implement the lockdown, allowing only food delivery services and some export-oriented industries to function. Movement of persons between governorates was also prohibited to reduce cross-country contamination.

Figure 1: Jordan – timeline of new COVID-19 cases and policy responses, early March to end October 2020

Source: IFPRI Jordan COVID-19 Food Policy Monitor

In early April, Jordan shifted to a partial lockdown which allowed some resumption of economic activity by allowing factories located in industrial zones to resume their operations. Shortly thereafter businesses and commercial activities in selected sectors were allowed to reopen. Schools and universities switched to remote learning and evaluation mechanisms to end the academic year.

With a continuing decline in COVID-19 cases being registered in that period, Jordan lifted additional lockdown measures in early May. Most businesses could begin working, so long as they took all precautionary public health measures. However, hotels, cafes, and public areas were kept closed. In early June, transport between governorates resumed, night curfews were shortened, and hotels and cafes re-opened. In August, air travel partially resumed, but was restricted to travelers from 20 specified countries whose residents had a COVID-19 status medical certificate and full medical insurance coverage.

In parallel, the government launched a public awareness campaign to inform the public on COVID-19 testing and treatment facilities, allocating 50 million Jordanian Dinars (JOD) (over 70 million USD) immediately for purchases of health equipment and supplies. The government also developed "Aman", a mobile telephone application that alerted users if it determined that they had been in contact with an individual who tested positive for COVID-19 infection. However, Jordan saw an increase in the number of cases in September and October 2020 (Figure 1).

To mitigate the negative economic effects of these COVID-19 control measures, the government of Jordan has implemented a policy response package. Allowances for social cash transfers were

increased for poor households. In addition, a temporary cash transfer program was established for the unemployed and self-employed with around 81 million JOD to provide income support especially for seasonal workers. Other COVID-19 policy response measures include introducing price ceilings for commodities, cutting interest rates to maintain an accommodative monetary policy, and injecting 550 million JOD into the banking sector to ensure its liquidity. The government has also allowed the private sector to defer social security contributions on wages for up to three months and decreased the contribution rate from 21.75 to 5.25 percent. In addition, the Central Bank of Jordan delayed loan repayment installments by companies that were hit hard by the crisis and also provided funds of about 500 million JOD for low interest loans addressed to small and medium-sized enterprises. The government also has received emergency financial support from the IMF of around 400 million USD to cover part of the country's financing needs after the COVID-19 shock (IMF 2020b).

The partial lockdown combined with unfavorable external conditions sharply reduced economic activity in Jordan. Particularly, in a time of uncertainty about the future and how long the crisis will persist, modelling can provide insights, guidance, and suggestions to inform the decision-making process. In this regard, we use a Social Accounting Matrix (SAM)-based multiplier model for Jordan to estimate the likely impact of COVID-19 on economic sector growth, food systems, and household incomes (Thurlow 2020). A range of COVID-19 related shocks are considered for the period between March and end of August 2020. These include reductions in revenue from tourism, remittances, and exports and the economic effects of the domestic precautionary measures associated with the lockdown of March and April.

COVID-19 impacts differ across sectors – most lose, some benefit

We carried out a sector-by-sector assessment of the impact on the Jordanian economy of the COVID-19-related lockdown period that draws on Jordanian official reports, various news sources, and expert opinions. We summarize here our assessment for the main sectors of the Jordanian economy. These assumptions on the size of the shock on the specific sub-sectors are used in our SAM multiplier model scenarios.

Agriculture: Domestic agricultural production plays a key role for Jordan's food security, especially during times of international crises. While the Jordanian agriculture sector has the smallest GDP share of only 5.6 percent in 2019, agriculture was one of the most affected sectors by the lockdown measures. As informality is high in Jordan's agricultural labor force, only workers with licenses could work in farming, while all informal workers were banned. This resulted in a shortage of labor in the sector, affecting both harvests and costs. Hence, agriculture output declined during the lockdown period. Moreover, restrictions on labor movement constrained land preparation activities, affecting upcoming harvests, and implying negative effects on agriculture over the medium term.

Industry: The industrial sector makes up 28 percent of Jordan's GDP. Under the lockdown measures, government allowed only food and major export-oriented industries, such as pharmaceuticals, potash, and phosphates, to continue some of their operations. All other industries were forced to stop operating. Later when the restrictions were relaxed, they were allowed to operate, but at less than their full productive capacity. Hence, the output of textiles and clothing industries was cut by 15 percent, reflecting a drop in both domestic and foreign demand and disruptions in global supply chains. In contrast, fertilizer and other chemical industries increased their production. These firms realized an increase in exports by approximately 20 percent, benefiting from export restrictions on their competitors in other countries. The production of other manufacturing sectors, such as metals, machinery, and equipment, was cut by 15 percent as a result of reduced demand and some bottlenecks emerging in the supply of intermediate inputs. The construction sector also was negatively affected due to restrictions on labor movement, requirements for social distancing, and other precautionary measures.

Services: The services sector in Jordan was hit hard by the pandemic lockdown measures. Most retail businesses, entertaining facilities, restaurants, and hotels were closed. Transportation and travel activities were cut by 35 percent, reflecting prohibitions on travel between governorates to reduce the further spread of the virus, as well as restrictions on air travel. The tourism sector experienced a sharply decline in revenue due to the ban of international flights. In consequence, demand for hotels was cut by 85 percent. However, the information and communication technology (ICT) sector witnessed a clear expansion as a result of the rise in the demand for internet services for e-learning and remote working. We assume that ICT output increased by 20 percent. For other services sub-sectors, including entertainment, recreation, and cultural and sports activities, the decline in production due to the lockdown in Jordan was assumed to be 20 percent.

Figure 2: Estimates of change in sectoral GDP for Jordan during COVID-19 lockdown period, percent change from Q2 2019

Source: COVID-19 Jordan multiplier model.

Significantly reduced economic output in Jordan during the COVID-19 lockdown

Given these domestic and external economic headwinds and in spite of the application of policy measures to mitigate their impact, our SAM multiplier modeling results document a sizable adverse impact on economic output and household welfare in Jordan due to the COVID-19 lockdown. However, the magnitude of the longer-term impact of these shocks will depend on how long the COVID-19 crisis persists.

Jordan's real quarterly GDP for the second quarter of 2020 is estimated from our model scenarios to decline by 22.6 percent, compared to the second quarter of 2019 (Figure 2). This loss in GDP is the result of a drop in output of the services sector by almost 30 percent and a decline of about 15 percent for the industry and agriculture sectors.

The reduction in the services sector is dominated by the sharp decline in tourism revenues – sluggish global growth is expected to have a continuing strongly adverse impact on tourism (IMF 2020). The negative impact on services is also driven by the temporary halting of trade activities and business services as well as restrictions on travel. These disruptions contribute to more than 80 percent of the decline of GDP.

The fall in industrial and manufacturing output is due to both significant direct and indirect effects of the lockdown. The direct

Figure 3: Estimates of COVID-19 impacts on Jordan's agri-food system, percent change from Q2 2019

Source: COVID-19 Jordan multiplier model.

impacts are magnified by indirect effects induced by changes in the demand for intermediate inputs or by adversely affecting many of the strong forward linkages in the Jordanian economy, especially for food processing, trade, and transportation.

Food systems in Jordan also suffered, losing almost 40 percent of their quarterly value-added (Figure 3). Most of this economic damage occurs in food services, including hotels and restaurants, with an estimated loss of over 90 percent.

Unpacking the over 15 percent drop in agricultural value added, the modeling results show a significant decline in the production of fruits and vegetables and crops (Figure 4). This is mainly driven by labor restrictions in farming activity, with more foreign workers returning to their home countries as a result of the non-renewal of their work permits. According to Department of Statistics, non-Jordanians constitute most of the labor in agriculture – 85 percent of livestock workers and 92 percent of crop labor in 2015 were non-Jordanians (Figueroa et al. 2018).

Figure 4: Change in agricultural and agro-processing GDP during lockdown period, percent change from Q2 2019

Source: COVID-19 Jordan multiplier model.

Food processing value added fell by around 6.2 percent (Figure 4), this was mainly driven by indirect effects of the lockdown, such as, for example, restaurants and hotels demanding less food. Moreover, processed food is more intensively consumed by urban households, who were relatively highly affected by the lockdown.

Temporary employment declined over 20 percent; services jobs especially hard hit

The impact of the COVID-19 lockdown on employment were mainly driven by job losses among workers in services, followed by agriculture (Figure 5). Employment in these sectors was heavily affected by the supply and demand shocks following the onset of the COVID-19 crisis. Tourism, the second-largest employer in Jordan, recorded a sharp fall in the number of visitors and, consequently, seasonal workers in the

Figure 5: Employment during lockdown period, percent change from Q2 2019

Source: COVID-19 Jordan multiplier model.

tourism sector were hit hard by the crisis. Sluggish demand for sports and other recreational activities, for household workers, and in construction, transportation, retail trade, and agriculture also contributed significantly to the decline in employment. It should be highlighted that much of the employment in these sub-sectors is characterized by a high level of informality, as nearly half of the wage workers in them are not covered by Jordan's social security system.

COVID-19 lockdown had a substantial negative impact on household income

The decline in economic activity has generated a sizeable loss in the incomes of many households. Overall, household income fell by around one-fifth due to the lockdown, on a quarterly basis (Figure 6). This fall was mainly driven by contraction in service sector activities, including reductions in trade, transport, hotel, and sport services. Households were also affected by the slowdown in manufacturing activity and by lower remittances from abroad.

Figure 6: Change in household income, during the lockdown period, percent change from Q2 2019

Source: COVID-19 Jordan multiplier model.

While all households were hurt by lower economic activities, urban households experienced the greatest reductions in their incomes due to the COVID-19 crisis. This is because they receive most of their income from employment in the services and industrial sectors, which were the sectors most hit by the closing of businesses and lower tourist expenditures during the COVID-19 related lockdown in Jordan. Nonetheless, households in rural areas may suffer more deprivation due to the lockdown, as agricultural labor is associated with a higher incidence of poverty – 40 percent of rural households are poor (Figueroa et al. 2018).

Gradual reopening and new opportunities

As of August, Jordan started re-opening the economy in early June by relaxing lockdown restrictions in order to avoid more economic contraction. To understand the likely impact of different pathways to economic recovery during the second half of 2020, we use three recovery scenarios – a rapid, a more gradual, and a slow easing of COVID-19 related restrictions. It is estimated that the GDP growth rate will continue to be negative through the rest of 2020. Based on scenarios run using the SAM multiplier model, growth rates will range from -5.7 to -7.4 percent, depending on the speed of economic recovery (Figure 7). A slow pace of recovery is expected during the second half of 2020 because of persistent social distancing measures. In addition, a possible decrease in productivity may be associated with businesses having to increase their spending on workplace safety and hygiene standards. More broadly, investment spending may fall as a result of continuing high levels

of uncertainty about the resolution of the COVID-19 health crisis and its associated effects on the economy both nationally and globally (IMF 2020a).

Conclusions and policy recommendations

In the period under study, after an initial shock, Jordan managed to facilitate the reopening of its economy following the COVID-19 lockdown. This re-opening and the related support that government is offering to the sectors that were hard hit under the lockdown may also provide opportunities for fostering sustainable economic transformation and structural change. Economic policies and incentives should be directed towards more diversification in economic activities, greater resilience to withstand economic shocks, and job creation.

For example, rural economic transformation should be promoted by developing integrated agricultural value chains directed towards higher value production and agro-processing. An increased emphasis on agro-processing should provide opportunities for farm households to move from working in lower value commodity production activities and participate instead in higher value agro-processing activities, realizing improved incomes by doing so. The government also should foster the development of domestic manufacturing value chains that could possibly substitute for imported goods. Reduced import bills would result in less pressure on the current account, especially with expected decline in export revenues.

Jordan should also focus on establishing a well-targeted social safety net, as the pandemic has highlighted the high levels of informality in employment in all countries in the Middle East and North Africa. There is a pressing need to build a comprehensive digital database to better identify and target the most vulnerable beneficiaries for social protection purposes. The government of Jordan should also accelerate the transition towards a more digital economy and enhancing the ICT sector given that many organizations are currently oriented towards more telecommuting and e-learning.

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Figure 7: Percentage change in GDP under fast, gradual, and slow economic recovery scenarios

Source: COVID-19 Jordan multiplier model.

Appendix – Assessing short-term COVID-19 impacts with a SAM multiplier model

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, showing the relationships between actors, i.e., productive activities, households, government, and external sector, 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.

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. Additionally, resulting changes in the levels or composition of 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 captured. 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.

Since this is a short-run analysis period, it is assumed that technical input-output relationships, the input choices of producers, and the consumption patterns of households do not (as yet) change in response to the simulated shock. Such behavioral responses are captured in general equilibrium models, but 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 over time makes the SAM multiplier framework a more appropriate tool for analyzing this particular shock. (Breisinger et al. 2009; Round 2003.). Consistent with the short-term nature of the analysis, we assume that net expenditures for households and government, patterns of savings and investment, and international trade are exogenous to the model. i.e., we do not take into account second-round effects on these economic flows.

Figure 2: Conceptual framework of the SAM multiplier model for the Jordanian economy

Source: Authors.

The Jordan multiplier model is based on a SAM developed by the International Food Policy Research Institute (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. This note uses an extended version of the multiplier model that captures sector-level impacts and seasonality in the impacts (Thurlow 2020).

Figure 2 summarizes the underlying conceptual framework of the Jordan SAM multiplier model and how it is used to examine the likely impact of COVID-19 on the Jordanian economy. There are external and internal (domestic) 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. They also might induce positive outcomes, especially with regards to the information and communication technology (ICT) and the health-related sectors. In the SAM multiplier model, a closure of restaurants, for example, is modeled as a 100 percent loss of restaurants output. Similarly, if textile factories are operating with two shifts instead of three, we assume a reduction of about 30 percent in the output of the textile sub-sector.

Both the external and domestic impact channels induce a direct impact on economic activity. However, there are also several rounds of indirect effects. For instance, the closure of restaurants and hotels would result in sharply reduced demand for food commodities. These are the multiplier effects that are captured by our economy-wide SAM multiplier model.

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