

Assessing the Impacts of COVID-19 on Myanmar's Economy

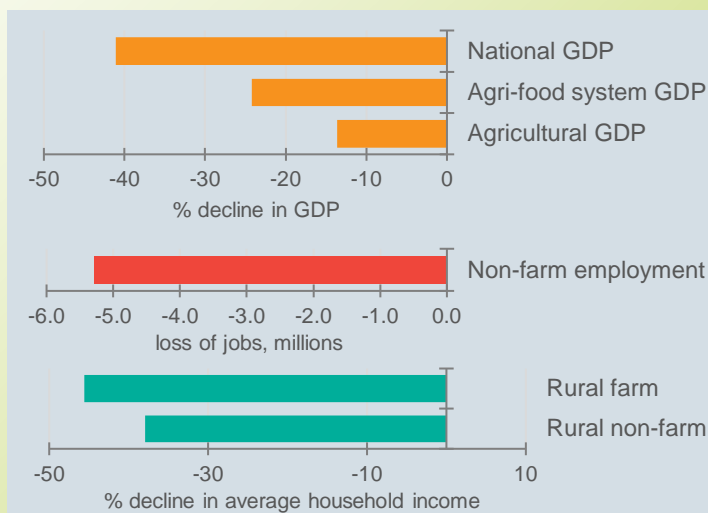
A Social Accounting Matrix (SAM) Multiplier Approach

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The measures taken by the Government of Myanmar to contain the transmission of COVID-19 are a necessary and appropriate response. In-depth analysis of measures of this magnitude on firms, households, government, and the economy as a whole is key to the design of policy interventions that can mitigate the economic losses and support a sustained and robust recovery. Our analysis found the following:

Economic impacts due to a two-week lockdown compared to a no-COVID situation

- Myanmar's GDP is estimated to fall by 41 percent during the lockdown period.
- The agri-food sector is adversely affected by falling consumer & export demand.
- Nonfarm jobs nationally fall by 5.3 million
- Rural household incomes show significant short-term decline



The economic losses to Myanmar's economy in 2020 due to the COVID-19 pandemic will be huge – a drop in production on the order of between 6.4 and 9.0 trillion Kyat – and likely will push the economy into a recession or lead to stagnant growth, at best, for the year.

Although lockdown policies provide exemptions for most agricultural activities, linkages to other sectors indirectly affect the agri-food sector significantly. The agricultural sector is expected to contract by between 1.1 and 2.4 percent in 2020, and recovery will be slow.

Closure of factories will have a large negative economic impact due to the strong linkage effects between manufacturing and upstream primary agriculture and downstream marketing services. Reopening the manufacturing sector is crucial for economic recovery in Myanmar.

We use a Social Accounting Matrix (SAM) multiplier model to assess the effects of the COVID-19 pandemic on Myanmar's economy. The SAM multiplier model is a simulation tool suited to measuring short-term direct and indirect economy-wide impacts of unanticipated, rapid-onset economic shocks, such as COVID-19. The model builds on a SAM, a database that captures resource flows associated with all economic transactions taking place in an economy, the interlinkages across sectors, and relationships between economic actors and with the rest of the world. The Myanmar SAM captures 63 distinct activities or sectors to characterize Myanmar's economy in 2019.

We assess the effects of COVID-19 resulting from:

- External shocks to Myanmar's economy that affect exports and tourism, that interrupt export-oriented manufacturing supply chains, and that lower international remittance incomes, and
- Policy-induced shocks resulting from the necessary response of the Government of Myanmar to the pandemic.

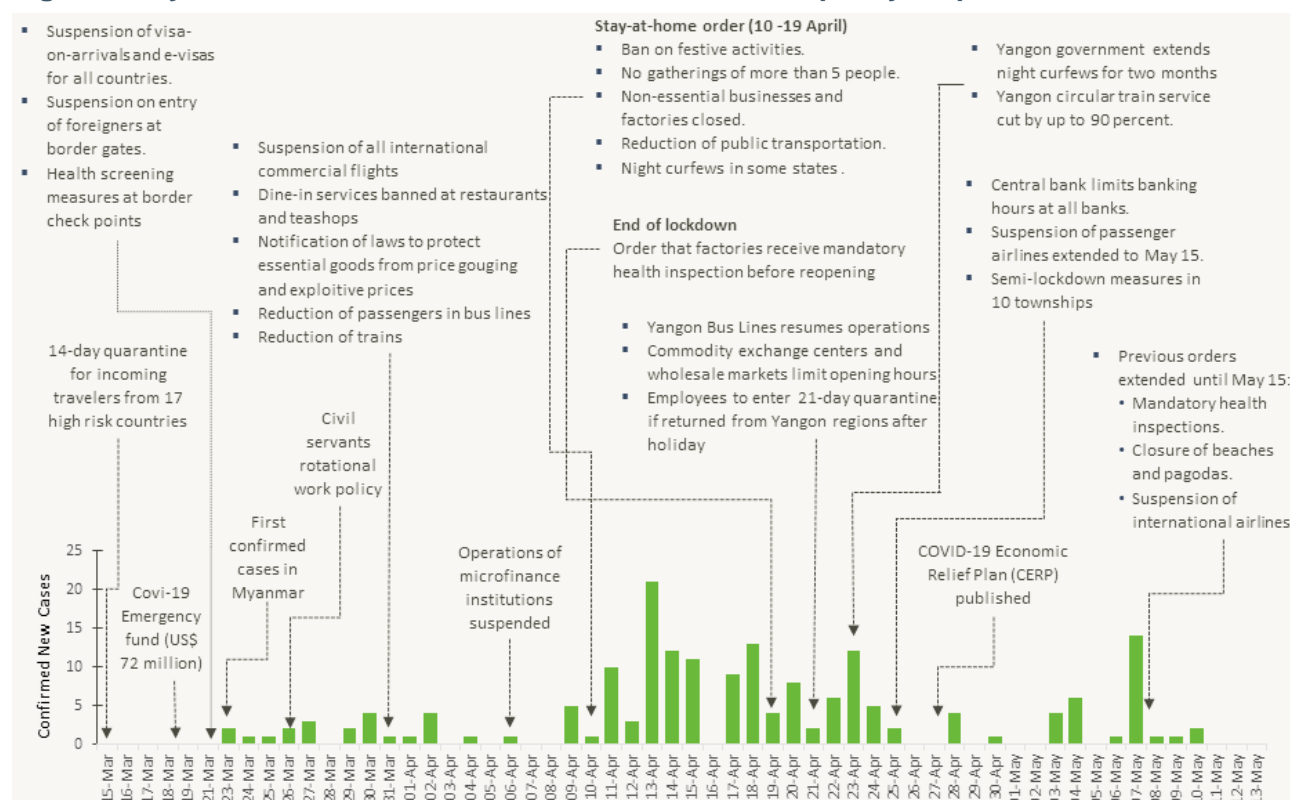
Considering both external factors and policy measures, we use the model to simulate the economic effects of COVID-19 under different economic recovery conditions.

This Policy Note is a detailed synthesis of IFPRI Myanmar Strategy Support Program Working Paper 01 (<http://ebrary.ifpri.org/digital/collection/p15738coll2/id/133742>). Considerably more detail on the context of COVID-19 in Myanmar, the model and the scenarios used with the model, and the results of the modeling exercise can be found in the Working Paper.

Myanmar's Policy Responses to COVID-19

Notified on 4 January 2020 of an unexplained pneumonia disease in China, the Government of Myanmar formed on 13 March the National Central Committee to Prevent, Control and Treat COVID-19. This committee has the responsibility of preventing the spread of COVID-19 in the country. On 23 March, the first COVID-19 case was confirmed, with the first death on 31 March (Figure 1).

Figure 1: Myanmar – timeline of new COVID-19 cases and policy responses, 2020



Source: Compiled by authors.

Due to its proximity to China, the Government of Myanmar's early response was to curtail the entry of Chinese travelers by suspending visa-on-arrival privileges, cancelling flights between some high-risk provinces in China and Myanmar, and setting more restrictive conditions for those who were allowed to enter the country. The Government strictly quarantined all returnees from abroad and all individuals who were in contact with test-positive patients.

On 6 April, just before the Thingyan water festival seven-day holiday that marks Myanmar's traditional New Year, the national and regional governments issued a nationwide stay-at-home order to contain the spread and to prevent outbreaks of COVID-19 – a “lockdown” of the country. Government urged all citizens to stay at home as much as possible during the holiday period and for the week following the holiday. Celebration activities for the festival were strictly prohibited, travel and movement were restricted, most industrial activities were shut down, public and private administrative activities were curtailed, and all non-essential businesses and schools were closed.

The economic reopening is expected to be a gradual process. As Myanmar eased the lockdown in late April, new restrictive policies were imposed. These include requiring all factories to undergo a mandatory health inspection before reopening; extending previous bans on gatherings, events, and the opening of recreational facilities; limiting business hours at banks and commodity exchange centers; subjecting returned foreign workers to quarantine; and restricting the usage of certain highways and transportation in certain states. While the Government of Myanmar wants to protect food supply chains with more lenient policies, these supply chains have been continuously affected since the lockdown. In particular, many restaurants and food catering businesses remained closed voluntarily because it was judged to not be economically viable for their businesses to open with a drastically reduced number of customers.

The policy measures and directives implemented by the Government of Myanmar in response to COVID-19 are expected to have impacts beyond the lockdown period on the agriculture, industry, and service sectors through several different pathways.

- **Restrictions on residents' movement and transportation** to curb COVID-19 spread could affect production and processing activities in all economic sectors. Supply chain logistics for various sectors will also be disrupted because restrictions on highways and vehicle use will hinder the normal flow of goods.
- **Restrictions on banking and microfinance operations** could slow down normal financial functions, such as payments, funds withdrawals and transfers, and obtaining the loans that firms need to maintain their cash flow. These restrictions will also prevent some farmers from obtaining commercial inputs for the upcoming growing season.
- **Restriction on public administrative activities** may delay or disrupt the normal operation of government functions, which include supporting private enterprises, providing public goods and services, and providing social welfare services.

The government has also instituted a series of policy measures to maintain essential economic activities and trade flows and to reduce interruptions in supply chains, especially for pharmaceutical products and essential food items. These include taking steps to minimize delays in importing and exporting goods and reducing taxes or fees that apply to a number of business transactions.

The impact of the pandemic and the measures put in place to contain its impact will vary by economic sector and by source – domestic versus international. Table 1 provides a summary by sector of the expected economic impact in the medium term of the COVID-19 crisis, while Table 2 suggests how external COVID-19 related shocks will affect Myanmar's economy.

Table 1: Expected level of impact of COVID-19 pandemic in Myanmar, by economic sector

| Sector | Lockdown restrictions or exemptions | Impact? |
|--|---|---------|
| Agriculture | <ul style="list-style-type: none"> Farming activities are in essential sectors, so are exempted from most restrictions. Reduced trading volumes due to closure of restaurants and food services. Suspended development projects and reduced extension activities. External shocks from trading countries, mainly China and India. Lending for monsoon cropping season in doubt as microfinance suspended. | Minimal |
| Mining | <ul style="list-style-type: none"> Many mining blocks and extracting activities without registration ordered to close. Existing mines allow to operation during lockdown period. | Minimal |
| Manufacturing | <ul style="list-style-type: none"> Food processing & medicines exempted, as considered essential. Movement restrictions have affected operations, even for essential sectors. Nonfood producing companies closed during lockdown. Factories face mandatory inspection post-lockdown before can reopen. | High |
| Utilities | <ul style="list-style-type: none"> Electricity & water distribution exempted from most restrictions, as essential. Three hydro power construction projects delayed. | Minimal |
| Construction | <ul style="list-style-type: none"> Construction sites closed, including most public works. Workforce reduced Lockdown is in busiest construction season. Projects delayed as monsoon comes. Construction industry has underlying conditions that make it particularly sensitive to economic shocks and disruptions: projects contracted with deadlines; bank loans limited, and mortgage system underdeveloped. No clear relief channels – COVID-19 loan program excludes the sector. | High |
| Wholesale & retail trade services | <ul style="list-style-type: none"> Retailers of essential goods exempted, but with limited daily trading times. Social distancing restrictions may affected operations of some markets. Reduced customer numbers and trade volumes. | Some |
| Transportation, storage & cargo | <ul style="list-style-type: none"> Air travel closed; although cargo & freight transport exempted, as essential. Inter-district passenger transit suspended for a month. Urban passenger transit reduced to 25 percent. Interstate train routes reduced and number of inter-city circular train operations cut by between 50 and 90 percent. | High |
| Hotels & food services | <ul style="list-style-type: none"> Hotels, restaurant, cafés, and bars closed, apart from take-away foods. Limited delivery options for food or other products. High reliance on tourism sector, which virtually stopped since February. | High |
| Banking, finance & insurance | <ul style="list-style-type: none"> Banks operating through digital platforms. Transactions volume decreased; lower or delayed loan repayments. Microfinance institutions suspended and ordered not to collect repayment with 'force' Other financial institutions closed or teleworking (e.g., insurance) | Some |
| Professional services | <ul style="list-style-type: none"> Almost all closed or teleworking, e.g., legal and accounting services. Activities involving in-person field visits affected, e.g., engineers. | Some |
| Public administration, law enforcement | <ul style="list-style-type: none"> Public services & agencies remain open, but most staff teleworking. Police & security services exempted, as essential. | Minimal |
| Education services | <ul style="list-style-type: none"> Closure of public schools consistent with school breaks lasting to June. Private schools with different school break period and vocational training and non-formal schools all closed. Schools are not ready for online learning. | Minimal |
| Health services | <ul style="list-style-type: none"> Health services exempted for restrictions, as essential. Elective operations reduced, but rising number of COVID patients. | Minimal |
| Sports & entertainment | <ul style="list-style-type: none"> Sports & outdoor entertainment banned. Tourist sites closed. Some activities operating, such as newspapers, radio & television. | High |
| Other services | <ul style="list-style-type: none"> In-person religious gatherings banned. Operations of informal repair firms are limited due to movement restrictions. | High |

Source: Compiled by authors.

Table 2: External economic impacts of COVID-19 pandemic on Myanmar's economy

| External factor | Lockdown restrictions or exemptions | Impact? |
|-----------------|--|---------|
| Export demand | <ul style="list-style-type: none"> Reduced international tourism & business travel. Lower demand for mineral exports. Lower export demand for agricultural and other primary products. | High |
| Remittances | <ul style="list-style-type: none"> More than 1 million immigrants in Thailand, China, and other Asian countries lost their jobs and returned home. Declines in remittances sent by nationals working abroad are large. Lower remittance payments through trade transactions. | High |

Source: Compiled by authors.

On 27 April the Government published the COVID-19 Economic Relief Plan (CERP). The goals of the plan are to:

1. Improve the macroeconomic environment through monetary stimulus.

2. Ease the impact on the private sector through improvements to the investment, trade, and banking sectors.
3. Ease the impact on laborers and workers.
4. Ease the impact on households.
5. Promote innovative products and platforms.
6. Strengthen health care systems.
7. Increase access to COVID-19 response financing.

Under the seven goals, the CERP describes 10 strategies, 36 action plans, and 76 actions. The implementation of the relief plan is expected to cost a minimum of 2.8 trillion Kyat or 2 billion USD.

The Myanmar Social Accounting Matrix (SAM) multiplier model

COVID-19 and the mitigation policies imposed to control the spread of coronavirus are unexpected shocks to the economy of Myanmar. Such policies can have catastrophic direct impacts on economic sectors when industries and businesses have to suspend operations immediately. At the same time, shocks or policy responses affecting a particular industry can have major indirect impacts on other economic sectors through supply and demand linkages. To assess the broad economic impacts of this type of shock therefore requires an economywide approach.

We use a multisector multiplier model for the analysis, an approach which captures the complexity of an inter-connected economy. The model used here to examine the economic impact of COVID-19 is based on a Social Accounting Matrix (SAM) of Myanmar's economy, which describes the economic connections between actors of all sorts within the national economy and provides a highly disaggregated picture of the economy. We use the 2015 Myanmar SAM scaled up to represent the economy at the end of 2019. There are 63 production sectors (industries) in the SAM, eight different types of labor defined according to four level of education in rural and urban locations, and four types of capital – crops; livestock; mining and other capital used in fishery, forestry and nonagricultural sectors outside mining; and land used in agricultural crop production. The income generated in the production sectors is distributed to 15 types of households that represent rural farm, rural non-farm, and urban households disaggregated by five income quintiles. The income households receive is used for private consumption expenditure (disaggregated by commodity), savings, transfers, and taxes. Households also receive income through inflows of international remittances. Government receives taxes and makes expenditures, including transfers to households. The economy is open, with imports of goods and services adding to domestic supplies and exports and other international transfers adding to demand.

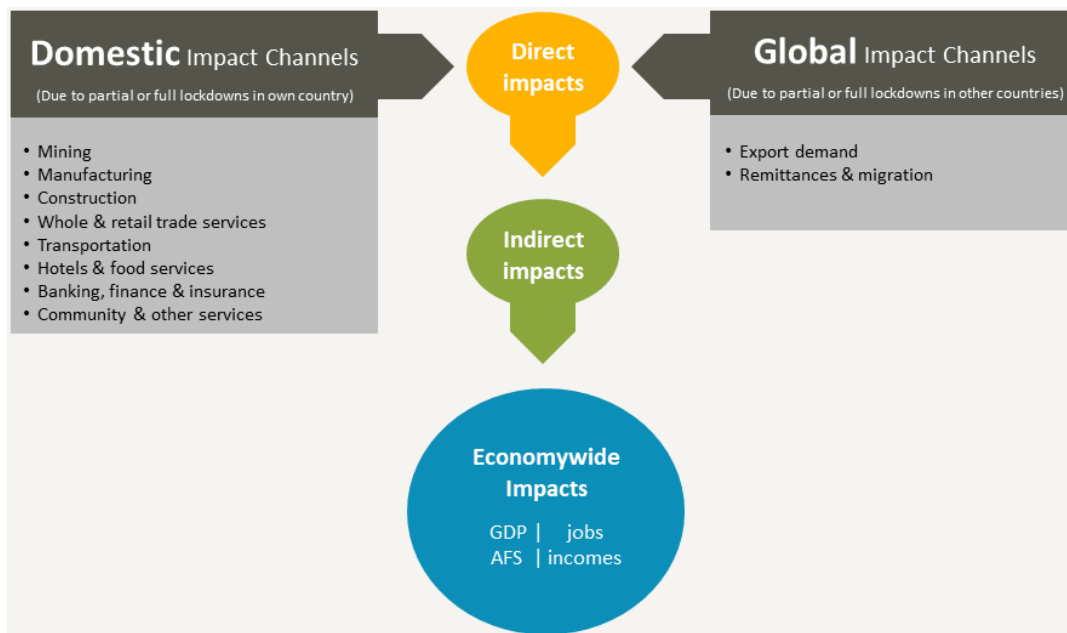
Figure 2 provides a graphical framework of how scenarios of shocks from domestic and global sources are applied to the SAM multiplier model in order to gauge the likely level of direct and indirect impacts of the shocks on the economy as a whole and on sectors within the economy.

There are two limiting assumptions in the use of SAM multiplier models in economywide analysis:

- Industries demand inputs in fixed proportions to output, i.e., all input-output coefficients are fixed and technology and preferences are linear.
- Prices are fixed. Adjustments to shocks work through changes in quantities, not prices.

However, these assumptions, while strong, are reasonable for analyzing the impact of the COVID-19 pandemic on Myanmar's economy. The shocks we are observing are working through the economy in weeks or months, not years. In such a short period, it is unlikely that production technologies are changed significantly by the pandemic. In the short run, the pandemic will not cause significant changes in relative prices or wages of employed labor.

Figure 2: Analytical framework for use of SAM multiplier models to examine economywide impact of COVID-19



Source: Compiled by authors. Note: GDP = Gross domestic product; AFS = agri-food sector of the national economy

Because of the nature of the SAM, the SAM multiplier model provides “what-if” projections of a variety of economic indicators given specified model scenarios. The results of these model scenarios are not “forecasts” of the future. Rather, they should be seen as counterfactual comparative exercises against a normal situation without COVID-19. Using a consistent empirical model for conducting such counterfactual assessments is useful as it provides a disciplined framework for analysts, which can support coherence in debates on policy alternatives for minimizing the impact of COVID-19-related shocks on Myanmar’s economy and its people.

The COVID-19 easing and recovery scenarios used with the Myanmar SAM multiplier model

Two scenarios are designed for use with the SAM multiplier model for Myanmar to simulate both the lockdown period, the impact of the COVID-19 restrictions, and the speed of economic recovery through 2020:

- A faster easing and recovery scenario, and
- A slower easing and recovery scenario.

Temporally, we follow Myanmar’s fiscal year (FY), running from October 2019 to September 2020, for the analysis. Different assumptions are made under each scenario for each quarter of the fiscal year as to how the model will capture both domestic and international effects of the pandemic on Myanmar’s economy. Table 3 summarizes the assumption in the shocks under the two scenarios.

While the designed shocks in the scenarios run in the model try to take policy, producer and consumer behaviors, and external factors into consideration as much as possible, COVID-19 is an unprecedented global shock. Consequently, it is difficult in the midst of the crisis to understand and project the many factors that could affect either individual national economies or the global economy. The results of the model should not be treated as a projection of the future. Rather, the model allows us to understand the economywide impacts of COVID-19 through interactions within the economy of Myanmar. Such analysis can help to inform the design of coping and recovery policies and strategies.

Table 3: Assumptions of the two Myanmar model scenarios for the period October 2019 to September 2020 (FY 2020)

| | | Faster recovery | Slower recover | Global shocks |
|----|-----------|---|--|---|
| Q1 | October | No shocks in the pre-COVID-19 period | | |
| | November | | | |
| | December | | | |
| Q2 | January | | | • Fall in exports due to COVID-19 outbreak in China |
| | February | | | |
| | March | | | |
| Q3 | April | • Full lockdown period for 2 weeks in early-April, follow by direct shocks being eased by 25 percent in both scenarios | | • Fall in exports, reduction in remittances |
| | May | | | |
| | June | • Direct shocks eased by 75 percent in first two weeks; transport, hotels, and bars by 50 percent • Direct shocks eased by 90 percent in last two weeks; transport, hotels, and bars by 70 percent | • Direct shocks eased by 25 percent in first two weeks; trade, transport, hotels, and bars by 50 percent • Direct shocks eased by 75 percent in last two weeks; transport, hotels, and bars by 50 percent | • Fall in exports eased by 50 percent |
| Q4 | July | • Direct shocks eased by 90 percent | • Direct shocks eased by 75 percent • Trade, transport, hotels, and bars eased by 50 percent | • Fall in exports eased by 75 percent under fast recovery • 50 percent under slow recovery |
| | August | • Transport, hotels, and bars eased by 70 percent | | |
| | September | • Direct shocks eased by 100 percent • Trade eased by 90 percent • Transport, hotels, and bars eased by 70 percent | | • Remittance shock eased by 50 percent under fast recovery |

Source: Authors' scenario construction. Note: FY = fiscal year (Oct. to Sept.).

Economic impacts during the lockdown period

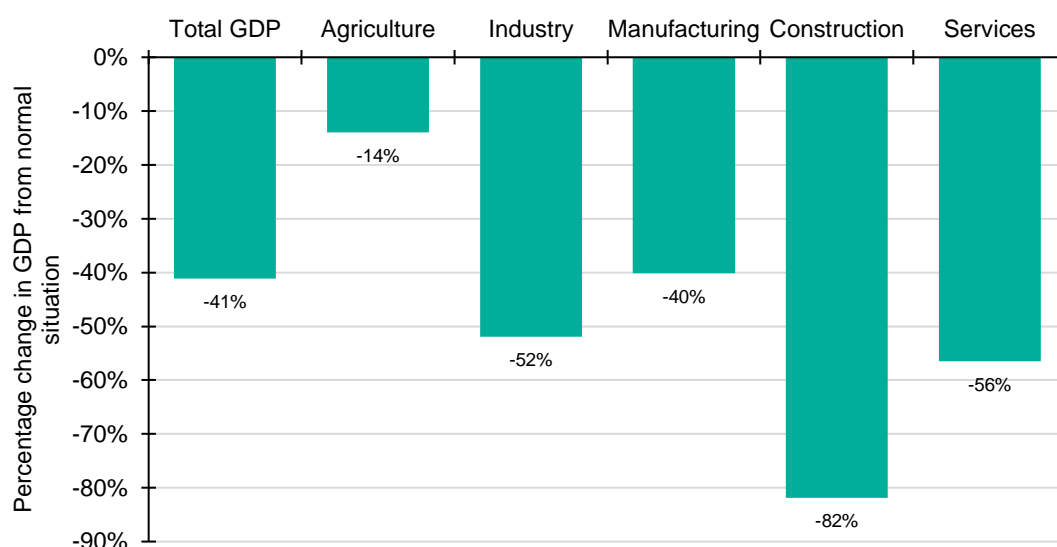
On April 6, the Union and regional governments issued the nationwide stay-at-home order for containing the spread of virus and preventing the outbreak of COVID-19 pandemic in the country. This was just before the seven-day Thingyan water festival which starts on April 10. The government urged all citizens to stay at home as much as possible during the holiday period and the week that followed. We define these two weeks as the “lockdown” period in the model (Table 3).

We first assess economic losses during the lockdown period for total GDP and by the three aggregate sectors – agriculture, industry, and services (Figure 3). Also included in the figure are estimates of the fall in value-added for the manufacturing and the construction, the two industry subsectors that experienced a shutdown of almost all activities during the lockdown.

National GDP fell by 41 percent compared with a normal situation without COVID during the same period. The sector-specific impacts are estimated as follows:

- **Industry.** Output declined by 52 percent, in which construction and manufacturing fell by 82 percent and 40 percent, respectively.
- **Services.** Output declined by 56 percent.

Figure 3: Estimated percentage change in Myanmar's GDP during the April 2020 two-week COVID-19 lockdown period, by sector



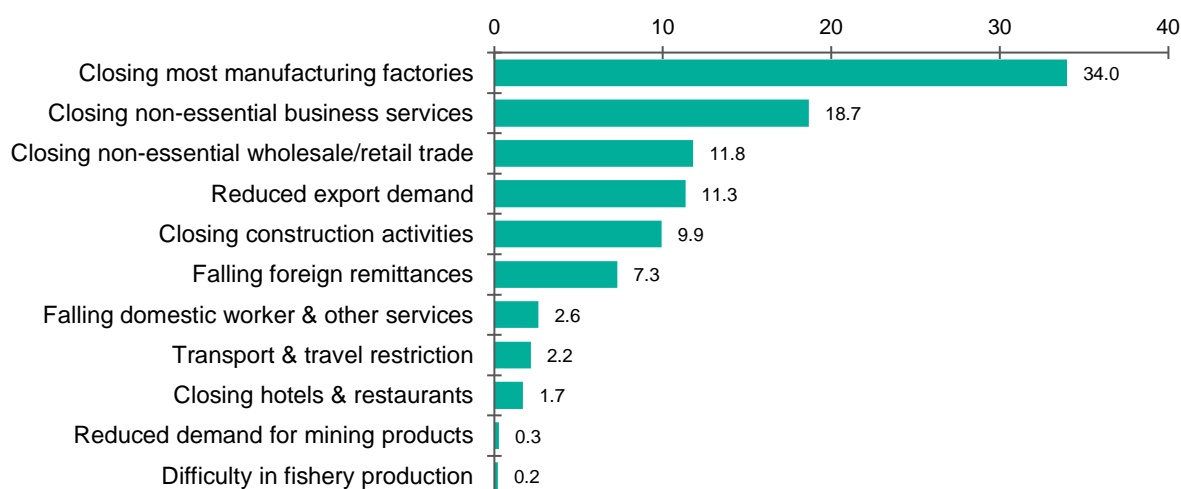
Source: Results from IFPRI's Myanmar SAM multiplier model.

Note: The percentage change is compared with a normal situation over the same period.

- Agriculture.** Although the lockdown policies provided exemptions for most agricultural activities, the economywide linkages significantly affect the sector indirectly via reductions in intermediate demand from Myanmar's nonagricultural sectors, falling exports, lowered consumer demand due to loss of remittance income, and difficulties in operating some agribusinesses. In total, the lockdown period's impact on agriculture is estimated as a decline of 14 percent overall.

Figure 4 decomposes the decline in total GDP into different channels of direct shocks imposed in the model. We rank the impact channels according to their contribution to fall in GDP.

Figure 4: Contributions of specific policy restrictions and external shocks to overall change in Myanmar's GDP during two-week lockdown period, percentage share



Source: Results from IFPRI's Myanmar SAM multiplier model

Closing many manufacturing factories had the largest economywide impact during the lockdown period. With an average annual sectoral growth rate close to 9 percent between 2014 and 2019, manufacturing has been the fastest growing sector in Myanmar's economy. In recent years, the sector has accounted for more than 20 percent of national GDP, which explains why a 40 percent decline in manufacturing GDP can lead to a 34 percent decline in national GDP during the lockdown.

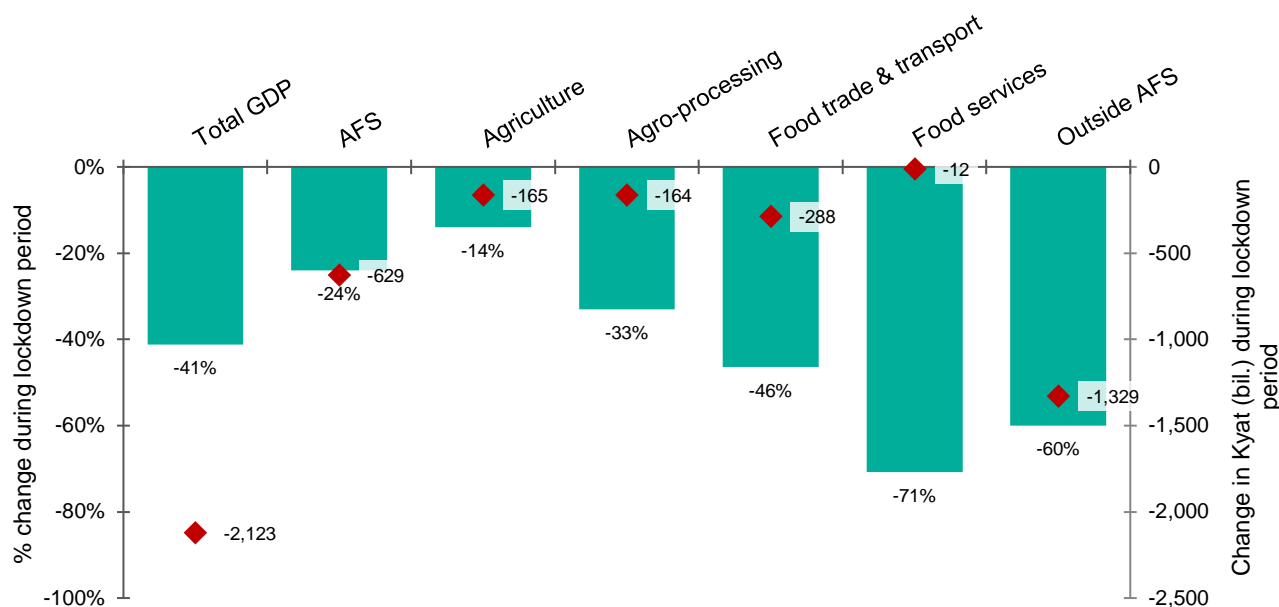
Export-oriented manufacturing was already badly hit by external factors before the lockdown period due to the cancellation of export orders and to the disruption of imported raw and intermediate material supplies. Many workers in such enterprises become jobless even before the lockdown.

Closing non-essential business services ranks second among the policy restrictions and shocks causing the decline in Myanmar's GDP. Closing non-essential domestic trade, including that in agricultural and food products, and construction activities are of similar importance in explaining the fall in GDP. The two external channels – reduced export demand and falling remittance inflows – also contribute to the fall in GDP.

Next we measure the lockdown's impact on the agri-food sector (AFS) of Myanmar. AFS makes up about 44 percent of Myanmar's GDP. The following are the components of AFS:

- The traditional primary agricultural sector – all crops, livestock, forestry and fishing. Within AFS, primary agriculture makes up about 48 percent by value.
- Food processing, which is a manufacturing subsector and includes some non-food manufacturing subsectors that directly use agricultural raw materials as intermediates. Agro-processing makes up about 20 percent of AFS.
- Value-added production of inputs used directly by farmers and agro-processors, e.g., fertilizer and banking services and domestic transportation and retailing and wholesaling trade activities associated with moving agri-food products between farms, firms, and markets. Agri-food related trade and transport activities account for 32 percent of AFS.
- Value-added food services sector and a portion of the value-added in the hotels and accommodation sector. Food services make up less than one percent of AFS.

Figure 5: Change in agri-food sector GDP during the two-week lockdown period, percentage change relative to normal situation (left axis) and in value (right axis)



Source: Results from IFPRI's Myanmar SAM multiplier model.

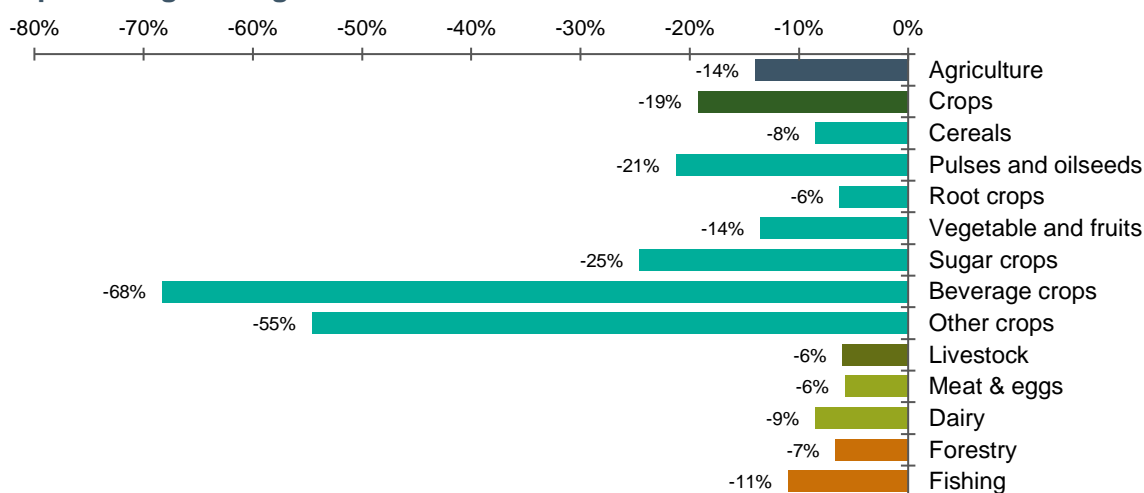
Note: The percentage change is compared with a normal situation over the same period. AFS = agri-food sector.

Figure 5 shows that the food service component of AFS suffered relatively the most under the lockdown, falling by 71 percent. This decline is largely driven by the closure of food catering services, restrictions on dine-in service at restaurants, and the voluntary closure of restaurants because of lack of customers. However, in absolute terms in Kyat, the loss of value-added in food services is modest because it is the smallest component of AFS. The largest impact of the lockdown on AFS

components in absolute terms is on agri-food related trade and transport. This component accounts for almost half of the fall in GDP for AFS overall.

Finally, in order to identify the main agricultural, manufacturing, and service subsectors that are most affected during the lockdown period, Figure 6 displays the impact of the lockdown for several subsectors in agriculture. Similarly, Figure 7 presents information for manufacturing subsectors with more detailed disaggregation for agri-food processing activities. Services subsectors are considered in Figure 8.

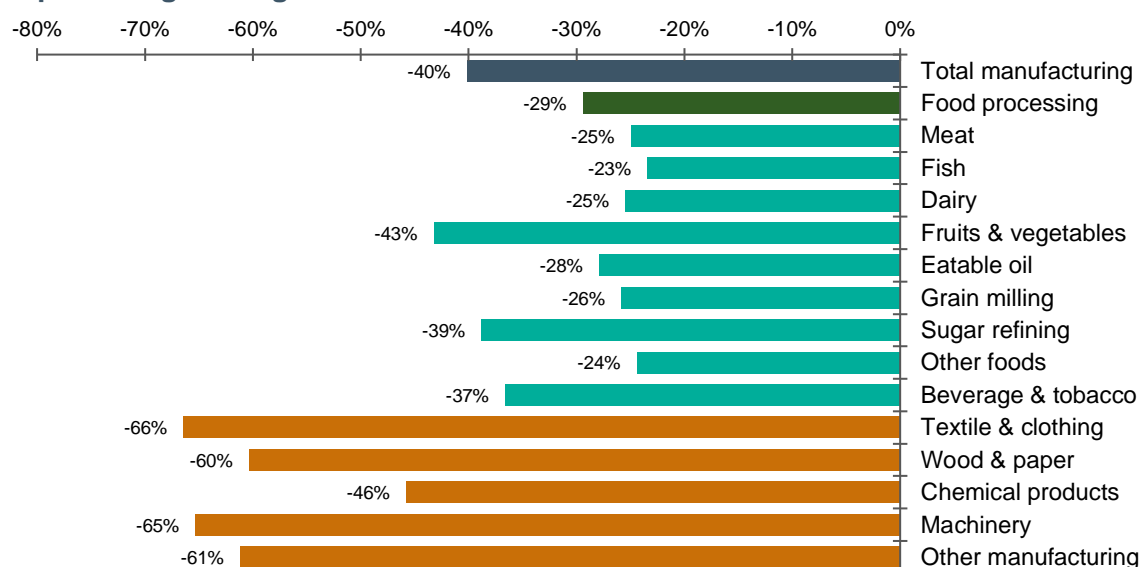
Figure 6: Agricultural subsectors – impact of two-week lockdown on subsectoral GDP, percentage change relative to normal situation



Source: Results from IFPRI's Myanmar SAM multiplier model

Note: The percentage change is compared with a normal situation over the same period.

Figure 7: Manufacturing subsectors – impact of two-week lockdown on subsectoral GDP, percentage change relative to normal situation



Source: Results from IFPRI's Myanmar SAM multiplier model

Note: The percentage change is compared with a normal situation over the same period.

Figure 8: Services subsectors – impact of two-week lockdown on subsectoral GDP, percentage change relative to normal situation



Source: Results from IFPRI's Myanmar SAM multiplier model

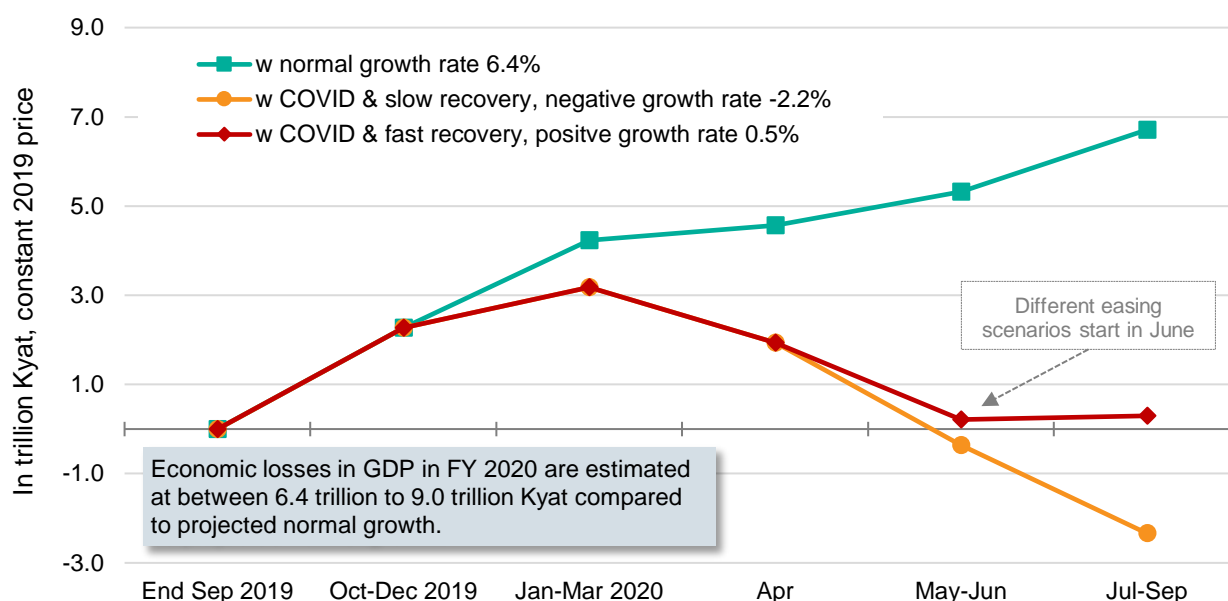
Note: The percentage change is compared with a normal situation over the same period.

Macroeconomic impact of COVID-19 on Myanmar's economy through 2020 under two different recovery scenarios

While Myanmar eased the lockdown in late April, restrictive policies were maintained or new ones imposed post-lockdown. Thus, economic reopening is expected to be a slow and gradual process.

We first focus on the macroeconomic impact of COVID-19 through 2020. It is necessary to start with a benchmark that represents the economic performance of Myanmar's economy in 2020 under a normal situation. Myanmar has experienced impressive economic growth over the past 10 years, with an average growth rate of 6.3 percent for the period 2016 to 2019. This is close to the pre-COVID projected annual growth rate for Myanmar's economy in 2020 (World Bank 2019). We use this projection to represent the performance of the economy under a normal situation without COVID.

Figure 9: Cumulative changes in Myanmar's GDP in FY 2020 with and without COVID-19, by value (trillion Kyat)



Source: Results from IFPRI's Myanmar SAM multiplier model. Myanmar's fiscal year (FY) runs from October to September.

Note: Cumulative changes are compared to Myanmar's GDP at end-FY 2019 and measured in constant 2019 prices.

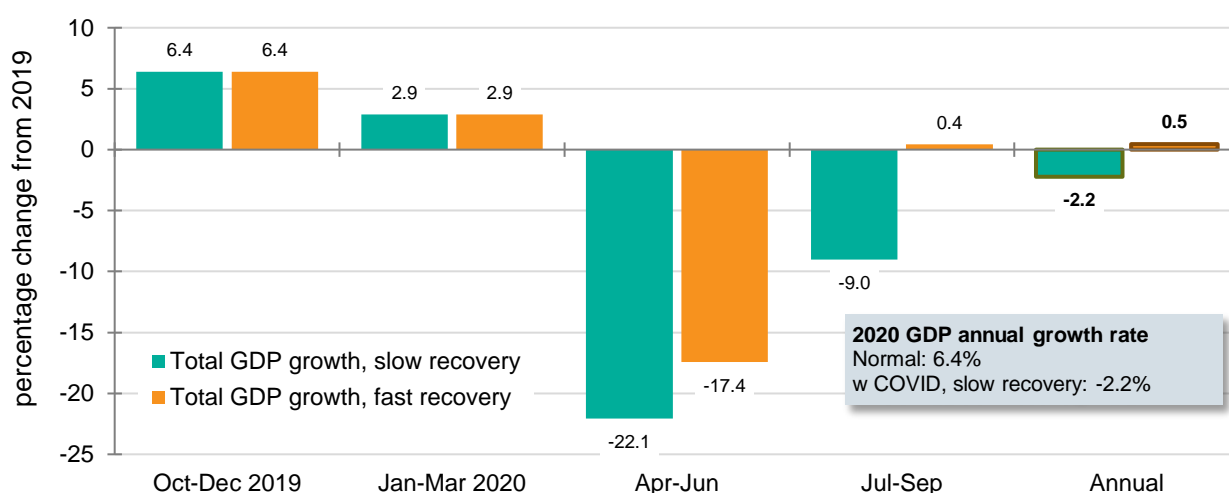
What are the economic losses from COVID-19 in 2020 compared with the expected normal situation of Myanmar's GDP growing at 6.4 percent annually? Losses in GDP are a cumulative

process as the impact of COVID-19 will vary over 2020. Figure 9 displays the cumulative difference of 2020 GDP from the end of September 2019. This is based on new gains in GDP in 2020 under a normal situation and under the COVID-19 situation for the two different recovery scenarios.

Projected GDP for 2020 under a normal situation would reach about 118 trillion Kyat measured in constant 2019 prices – about 7 trillion Kyat more than in 2019. COVID-19 started to affect the GDP trajectory in the second quarter between January and March 2020. This was due to falling demand for Myanmar's exports. The growth trajectory significantly reverses in April and continues the downward trend in May and June. Thereafter, the GDP growth trajectories differ significantly under the fast and the slow easing and recovery scenarios. Under the slow recovery scenario, the downward trend will continue to the last quarter FY 2020. Under the fast recovery scenario, the growth trajectory turns upward from end-June, but in a much more modest manner than is seen in the growth trajectory under a normal situation. Compared to the normal growth trajectory and depending on the pace of the recovery in the last quarter 2020, the cumulative losses in 2020 GDP for Myanmar's economy will be between 6.4 trillion and 9.0 trillion Kyat in constant 2019 prices.

To understand economic losses across quarters, Figure 10 displays estimated growth rates for each quarter and for FY 2020 under the two different recovery scenarios.

Figure 10: Predicted quarterly and annual growth rates in national GDP for FY 2020 under different recovery scenarios



Source: Results from IFPRI's Myanmar SAM multiplier model

Note: Growth rate in GDP is relative to the same period in FY 2019 and based on constant 2019 prices.

- The first is a COVID free quarter, so the growth rate is the same as the projected annual growth rate under a normal situation.
- COVID-19 started to affect growth in the second quarter mainly due to reduced exports to China, reduced tourism, and interruption of export-oriented manufacturing supply chains. The effect on the economy in this quarter is the same in both recovery scenarios.
- The third quarter shows the substantial decline in GDP growth. National GDP is expected to fall 22.1 percent from the same period of 2019 under the slow recovery scenario and fall 17.4 percent with fast recovery. The GDP declines in April and May are same in the two scenarios – the 4.7 percentage point difference is due to different recovery paces in June only.
- With different recovery paces, economic growth rates in the last quarter differ significantly under the two scenarios. With slow recovery, the growth rate continues to be negative at -9.0 percent in this quarter. However, under the fast recovery scenario, economic growth turns modestly positive (0.4 percent).

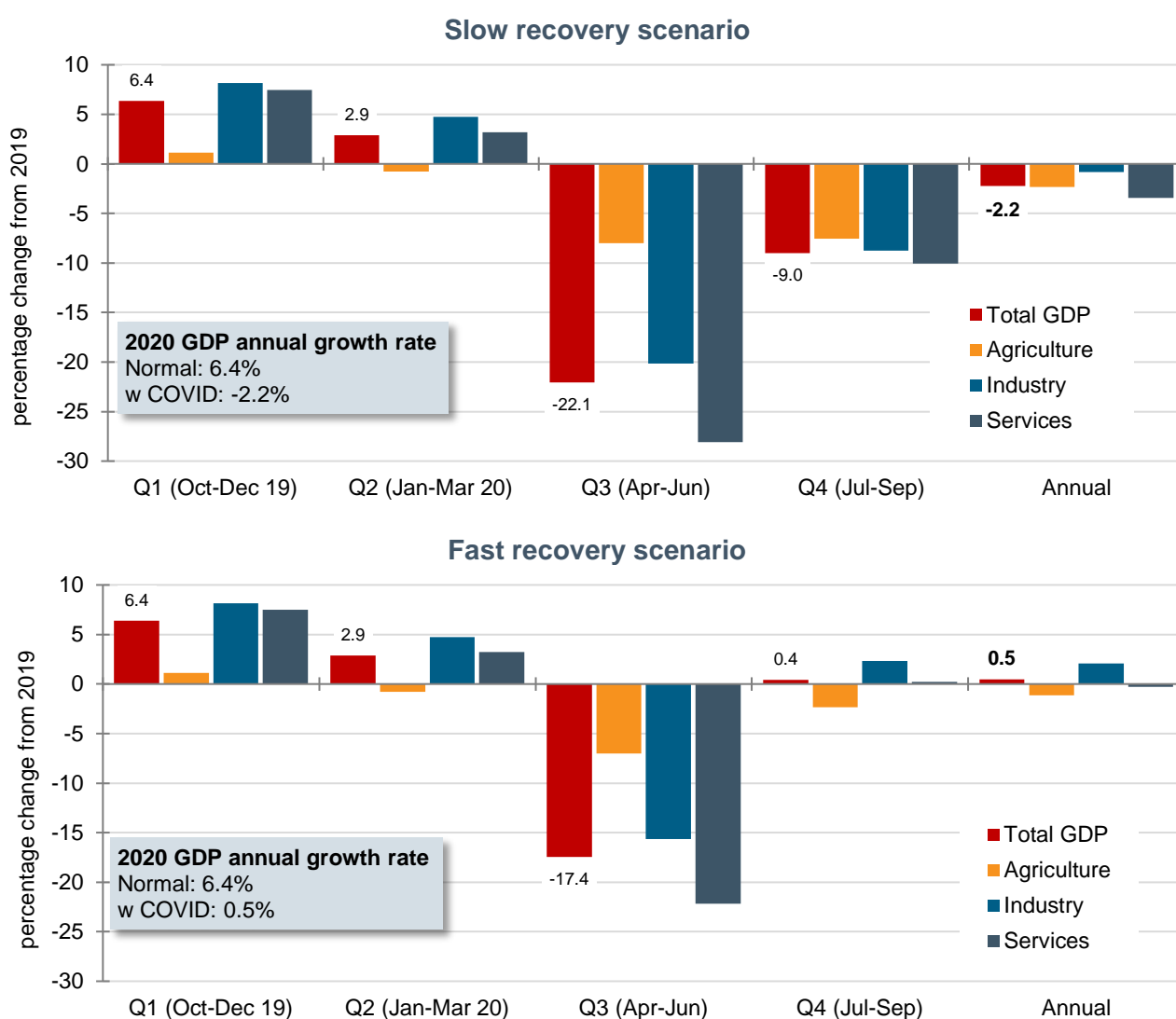
Combining these quarterly estimates from the model, the annual GDP growth rate for Myanmar's economy for FY 2020 is expected to be -2.2 percent with slow recovery and +0.5 percent with fast

recovery. Thus, it is highly likely that the impact of COVID-19 will either push Myanmar's economy into a recession with negative growth or, at best, result in stagnant growth in 2020.

Figure 11 displays the economic growth effects under the two different recovery scenarios by sector. Agricultural growth for FY 2020 is negative under both scenarios: -2.4 percent with slow recovery and -1.1 percent with fast recovery. A few reasons explain this result for agricultural growth:

- Agricultural growth is stagnant even under a normal situation. The projected agricultural growth rate in 2020 under a normal situation is based on the annual average of the last four years, which is only 1.1 percent.
- When agricultural exports are negatively affected by China's COVID outbreak in February and March in the model, the agricultural GDP growth rate becomes negative (-0.8 percent) in the second quarter, while other sectors still grow positively.
- Finally, although agriculture is less negatively affected by the COVID shock between April and June, the recovery of the sector is slow because there is less room for recovery from the easing of the direct restrictions related to COVID-19. While growth in industry and services becomes positive in the last quarter with fast recovery, agriculture growth remains negative.

Figure 11: Predicted quarterly sectoral economic growth rates under different recovery scenarios



Source: Results from IFPRI's Myanmar SAM multiplier model

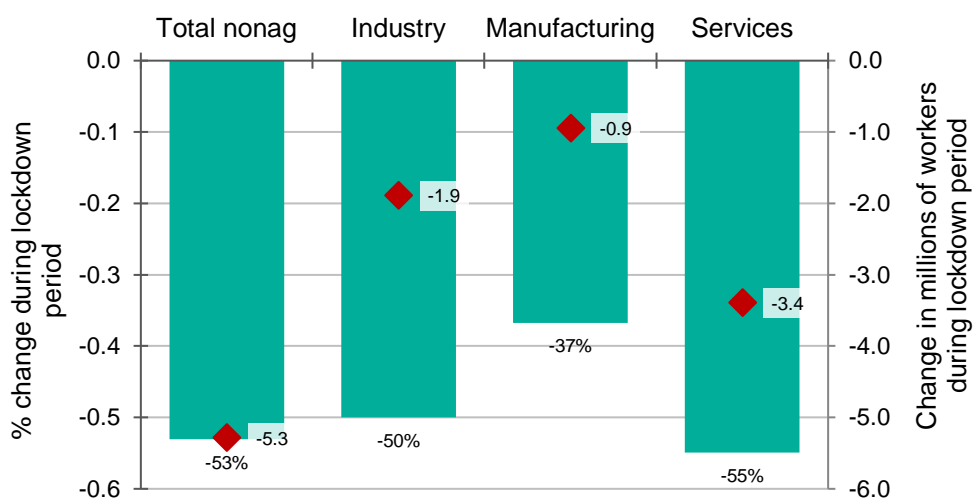
Note: Growth rate in GDP is relative to the same period in FY 2019 and based on constant 2019 prices.

Impact of COVID-19 on nonfarm employment

We now turn to the impact of COVID-19 on employment in Myanmar, focusing on nonfarm employment. The employment situation in the agricultural sector is harder to assess as most farmers are self-employed and many workers are seasonal. We first examine employment during the lockdown period and then turn to the employment impact for the third and fourth quarter of FY 2020.

Figure 12 displays the predicted changes in nonfarm employment during the two-week lockdown for total non-agriculture and for three nonagricultural sectors. (The manufacturing subsector is a sub-component of the industry sector.) Nonagricultural employment falls by 53 percent during the lockdown period, with 5.3 million people predicted to lose their jobs. While some public employees continued to receive wages without working, many private businesses laid off their employees. Self-employed nonfarm business people will also lose substantial revenue with their businesses being shut down during the lockdown.

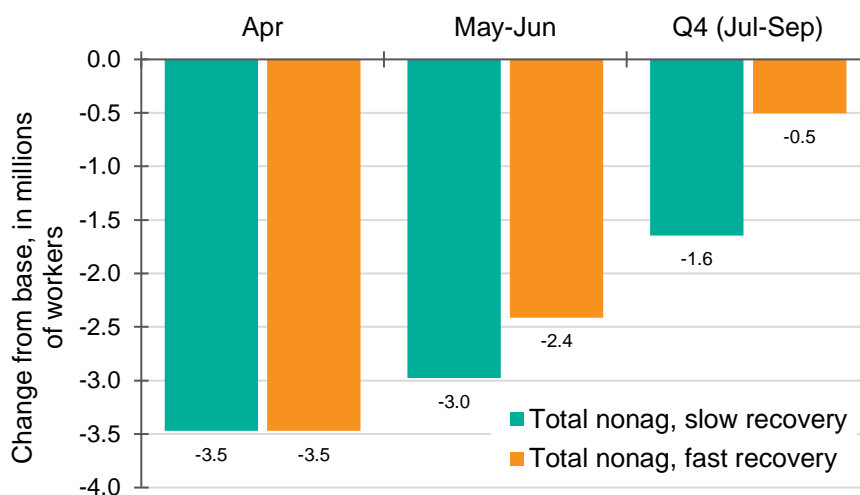
Figure 12: Change in nonfarm employment during two-week lockdown period



Source: Results from IFPRI's Myanmar SAM multiplier model. Note: Manufacturing is a sub-component of the industry sector. Note: The percentage change is compared with a normal situation over the same period.

We also use the model to assess the possible impact on employment in April, May and June, and over the last quarter of FY 2020 under the two different recovery scenarios. Figure 13 displays the result for total nonagricultural employment.

Figure 13: Predicted change in nonfarm employment over Q3 and Q4 FY 2020 under different recovery scenarios, millions of workers



Source: Results from IFPRI's Myanmar SAM multiplier model. Note: The percentage change is compared with a normal situation over the same period.

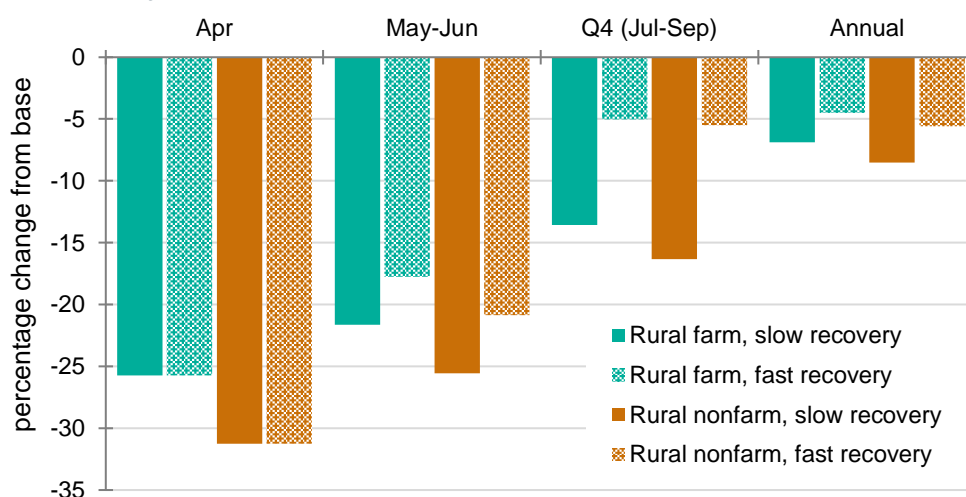
The pace of economic recovery affects the number of people returning to their jobs or businesses. One-month fast recovery in June can reduce the number of lost jobs by 500,000, while with fast recovery in the last quarter 2020, 1.1 million more people could return to their jobs or businesses.

However, even with a fast recovery, some lost employment and self-employed businesses will not come back. By the end of FY 2020, the total employment number will be about 500,000 less than that of 2019. In addition, we expect many young people who are seeking to join the labor force for the first time will not find employment in 2020. With the number of nonfarm jobs being less than in 2019, unemployment in 2020 will possibly be a larger challenge than is indicated by the estimates from the model scenarios, as those scenarios do not take into consideration growth in the size of the economically active population of Myanmar.

Impact of COVID-19 on household income

Finally, the model simulations assess possible impacts of COVID-19 on household income. While the model groups households into three groups: rural farm, rural nonfarm, and urban, here we focus only on the two rural household groups. Figure 14 reports COVID-19's impact on their average income under the two different recovery scenarios for April, May-June, the last quarter (July-September) and annually for FY 2020.

Figure 14: Predicted change in average household incomes in FY 2020 under two different recovery scenarios



Source: Results from IFPRI's Myanmar SAM multiplier model

Note: The percentage change is compared with a normal situation over the same period.

A significantly negative effect on household income for April 2020 is seen. Because lockdown policies mainly target economic activities outside agriculture, the negative income effect is larger for rural nonfarm than for rural farm households. Household incomes are expected to continue falling in May and June, but fall less with fast recovery than with slow recovery. In the fourth quarter of FY 2020, fast recovery results in the declines in household income to be much smaller than under a slow recovery. Moreover, with fast recovery rural nonfarm households' income recovers faster – by the last quarter, the declines in income are similar between rural farm and nonfarm households. Still, even with fast recovery, rural farm and nonfarm household income will be 4.5 percent and 5.6 percent lower than under a normal non-COVID-19 situation, respectively.

Conclusions

The policy measures taken by the Government of Myanmar to contain the transmission of COVID-19 are a necessary and appropriate response to the pandemic. Unfortunately, policy measures of this

magnitude will inevitably have economic costs for firms, households, government, and the economy as a whole. The assessed economic costs of the COVID-19 pandemic for Myanmar's economy as described above should be interpreted as plausible predictions based on available information. In practice, the negative economic impacts of the current crisis could be greater than the findings from this model. At the same time, government responses in terms of immediate protection of business and household income and longer-term economic stimulus packages could lower the cost.

- An important first-order result of this analysis is that reopening the manufacturing sector is crucial for Myanmar's economic recovery. The sector is one of the fastest growing sectors. Many manufacturing enterprises are labor intensive, so are important for job recovery. Agri-food processing is an important component of the agri-food sector. More importantly, through its demand for agricultural raw materials and various logistic services, manufacturing has the strongest linkage effects in the economy both to upstream primary agriculture and to downstream transportation, trade, and other services. Without an almost returned-to-normal manufacturing sector, the economy is unlikely to quickly return to its recent high growth trajectory.
- Many of the negative impacts of the COVID-19 pandemic on agriculture and agribusiness occur primarily through indirect channels as a result of linkage effects in the economy. Continued policy support to Myanmar's agri-food sector is critical to ensuring that incomes derived from farming and agribusinesses continue as a stabilizing influence on the economy.
- Like manufacturing, construction and some service sectors will be affected severely by the pandemic. Many rural households depend on such activities for their livelihoods. Stimulus packages to help small and large businesses in these badly affected sectors will be needed. Not only will such programs protect the livelihoods of workers and entrepreneurs earning income from such activities, they also will advance and accelerate the economic recovery.
- There is a high likelihood that Myanmar's current social protection programs will have to be extended. The nature of the economic shock suggests that its income effects may be heterogeneous across households in several dimensions. Notably, the most vulnerable households are the ones that rely on informal nonfarm businesses in both rural and urban areas. Many of them have found their income sources substantially reduced by the pandemic and will possibly fall into poverty traps. Devising programs to help them avoid such traps requires further micro-level analysis using household data.
- Finally, the modeling results suggest that efforts to minimize the negative economic impacts of COVID-19 will depend partly on restoring trade, especially for agricultural commodities, both domestically and with neighboring countries. Markets in rural areas should be kept open to the extent that public health and safety measures can allow.

The Government of Myanmar has recently released a comprehensive and sensible economic COVID-19 relief plan (CERP 2020). The anticipated spending under the plan will be around 2.8 trillion Kyat (about 2 billion USD), which is equivalent to between 2 and 4 percent of national GDP in 2019. Considering that the loss in national GDP estimated in our analysis is between 6.4 trillion and 9.0 trillion Kyat by the end of FY 2020, the size of this economic stimulus package might be too modest to enable all firms, households, and the whole economy return in 2021 to their pre-COVID-19 growth trajectories.

We expect this modeling exercise and planned new analyses will support the systematic and comprehensive policy response of the Government of Myanmar to the COVID-19 pandemic and subsequent recovery period. Relevant and timely analyses are critical not only for understanding the pandemic's effects on livelihoods and the country's economy but also for designing effective policies and programs to protect livelihoods and return Myanmar to its encouraging growth trajectory.

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