The Impact Of COVID-19 On India's Output And Employment

BHUPESH YADAV

The economy is a non-linear network of various sectors. The impact of a shock like COVID-19 and the lockdown will propagate through various sectors like a contagion much like the virus. This article uses the Social Accounting Matrix (SAM) for India to estimate the impact of the shock on the economy. We suggest that depending on the severity of the shock, the GDP will grow in the band of 2.26% to 6.29% in nominal terms. The most affected sectors will be ones with strong linkages to other sectors and overseas demand.

Keywords: Indian Economy; Social Accounting Matrix; COVID-19; Lockdown

BEFORE the viral shock hit us, the Indian economy was already going through a period of slow growth and a high unemployment rate due to demand-side depression like other worldwide economies. Now, the large supply and possibly a large demand side slowdown caused by the coronavirus pandemic would accelerate the slowdown and put a large number of people out of work.

The production of non-essential items has completely stopped and this affects about 50% of the economy. After the lockdown is lifted, people will start consuming non-essentials again and the demand in the economy will perhaps bounce back. But there are two caveats to this. First, some of the demand will be met by already existing inventories. Second, sectors which are highly dependent on import for their major inputs will not be able to produce at their existing capacity due to disruption in global supply chains. This would mean that production will be at its bare minimum pace for some more time, and there will be very little addition to the Gross Domestic Product (GDP).

Therefore, between now and production resuming at full capacity, a lot of people will be out of work with no incomes. This would, in turn, lead to an accompanying decrease in consumption, a further depression in demand and hence a second round of hit on the GDP.

Also, exports will take a big hit due to decrease in demand from the other countries who are also badly hit by the same pandemic. Given, that private consumption is about 60% and exports are about 20% of the total GDP for the year 2018-19, domestic consumption by households and exports play an important role in driving the economy. Of late, the quarterly GDP growth has been falling consistently and the main reason for it is the decrease in domestic consumption and external demand.

We estimate the impact of this lockdown and further downturn in the economy by using the Social Accounting Matrix (SAM) model formulated by IDF for the year 2015-16 and updated major indicators of interest for the year 2019-20.[1] Using the SAM model we can assess the impact of this lockdown, and more generally the pandemic, on output, income, employment and household incomes of different sections of the society. This is done by making use of multipliers generated by the model for different sectors. [2]

According to the SAM, industrial goods contribute about 30%, services sector 53% and agriculture 17% in the private final consumption of the Indian economy. Meanwhile, industrial goods contribute about 52%, services sector 45% and agriculture 3% in the total exports of the Indian economy. Of the total employment in the economy, the industrial sector employs 17%, agriculture sector 40% and service sector is the highest employer at 43%. So, the high dependence of the industry and service sectors on domestic consumption by households and exports would imply more unemployment in these sectors due to the slowdown in the economy.

This article assumes four different scenarios to estimate the possible impacts of the shock on the economy.

Scenario 1 is 'Historical'. It signifies an economy growing in normal conditions (business as usual). For India, this is the average of the last few years and before the lockdown. For the historical period (2017-2020) scenario, exports of goods and services on an average grew at compounded annual growth rate of 6.58%, and PFCE

[1] A SAM can be defined as an organised matrix representation of all transactions and transfers between different production activities, factors of production, and institutions (like households, firms and government), actual or imputed, within the economy and with respect to the rest of the world. It is thus a comprehensive accounting framework within which the full circular flow of income --- from production to factor income to household income to household demand and back to production is captured.

[2] The multipliers measure the response of the economy to a change in one unit's demand for a sector. Any shock in any sector X, like an exogenous increase in output, impacts the aggregate economic activity not only owing to this sector's growth but also owing to the indirect growth induced by those that are connected to the sector. Here; we have taken decrease in exports and household consumption as the external shocks in the economy.

at 7.33% respectively.[3] Also, the GDP grew at almost the same rate of 7.73% in nominal terms (see Table 1).

Scenarios 2, 3 and 4 are 'Future'. They indicate growth during the downturn period after the lockdown. For the future period (2020-2021), we have assumed the growth of exports and PFCE as growing at different rates under different scenarios.
Scenario 2 (poor conditions): Exports and PFCE growing at 75% of normal condition.
Scenario 3 (very poor conditions): Exports and PFCE growing at 50% of normal condition.
Scenario 4 (worst case): Exports and PFCE growing at 25% of normal condition.

We have estimated the output, income and employment generated in the economy in these scenarios (see Table 2).

Table 1: Growth Rates of major Economic indicators at Current Prices

	2016-17	2017-18	2018-19	2019-20	CAGR (2017-2020)[4]
GDP	11.50	11.30	11.00	7.50	7.73
GVA[5]	10.80	11.10	10.70	7.90	7.33
PFCE	12.20	10.60	11.60	9.10	7.33
Exports	8.10	8.90	17.30	1.01	6.58

Source: National Account Statistics 2019

Impact on output, income and employment in aggregate economy

If the exports and PFCE grew at the same rate of growth as in historical period, that is scenario 1 for the next one year. Then an amount of INR 404372.85 billion would be generated in the economy. If it grew as per scenario 3 (which we deem most likely), the loss in the output would be to the tune of INR 16195.70 billion. The loss in output will lead to loss of income or GVA and employment amounting to INR 8170.45 billion and INR 25.35 million respectively. Similarly, the extent of losses for other scenarios is presented in Table 2.

The growth rates under different scenarios presented in Table 3 show growth of GDP at 4.52% in nominal terms and employment with a negative growth of 1.73%

[3] PFCE is private final consumption expenditure.
[4] CAGR is compounded annual growth rate
[5] GVA is gross value added.

for scenario 3 (which we deem most likely). As per the different scenarios we have created, the GDP will be growing in the band of 6.29% to 2.26% nominally.

Table 2: Total output, GVA and employment

Indicator	Current Scenario (2019-20)	Scenario—1	Scenario--2	Scenario--3	Scenario--4
Output (INR billion)	371981.46	404372.85	394499.31	388177.16	380075.19
GVA (INR billion)	180311.35	196652.26	191655.37	188481.81	1843942.46
Employment (million numbers)	535.57	551.64	536.05	526.29	513.64

Source: Author's calculation

Table 3: Growth rates of major indicators (percentage)

Indicator	Scenario--1	Scenario—2	Scenario--3	Scenario--4
Output	8.70	6.05	4.34	2.17
GVA	9.06	6.29	4.52	2.26
Employment	3.00	0.00	-1.73	-4.09

Source: Author's calculation

Impact on household income

The decrease of income in the economy leads to decrease in the incomes of the different sections of households simultaneously. As per the estimates in scenario 3, rural households lose INR 2591 billion and urban household INR 2724 billion. Even though in absolute terms the richer class losses more, but proportionally economically lower sections of the society lose much more due to their already poor income base. The bottom 20% of the households that are already under the poverty line becomes poorer. Some households in the next 20% that are very close to the poverty line, will fall below the poverty line due to decrease in monthly per capita income, in turn monthly per capita consumption.

Potential risks associated with major sectors

The biggest political challenge facing the country will be to deal with the rise in inequality as the resources get scarcer. This income shock needs to be addressed in a manner that will reduce the pain of vulnerable households. Some wealth distribution needs to take place to minimise this gap.

Impact on total economy due to external shock in different sectors

The major sectors that will contribute to the maximum loss (both direct and indirect) in terms of income due to slow growth in the aggregate economy are: other services, food products, textile and textile products, transport and supporting services, banking and insurance and education. All these sectors are either export oriented or have high domestic consumption, along with having high income multipliers. Hence they contribute maximum losses when economy is on slow growth path.

1) Textile and products
   - High dependency on China for raw materials
   - Among the country's largest employers, with majority labour contractual
   - Strong backward linkages with other sectors, translating external shocks into higher indirect losses for other sectors that provide inputs to it
2) Transport and equipment
   - Highly export oriented sector
   - Already facing weak domestic demand
   - Falls in non-essential item category, hence postponement of demand likely
   - Strong backward linkages with other sectors, translating external shocks into higher indirect losses for other sectors that provide inputs to it
   - Auto clusters located in states like Maharashtra, Gujarat, Tamil Nadu and Delhi NCR with high COVID pandemic cases
3) Transport and supporting services
   - Major contribution to exports, hence major losses
   - High potential for employment loss with employment multiplier on higher side
   - Strong connect with hospitality and tourism that are affected by the pandemic
4) Banking and insurance
   - Strong interlinkages with all sectors, hence higher indirect losses
   - Non-performing assets (NPA) likely to increase due to loan defaults
   - High loss of income and employment due to higher multiplier

5) Communication services
   - Already in a bad shape, looking to the government for a bailout
   - With 'work from home' dynamics, the broadband network load will increase, and the sector does not have resources to invest

The way forward

Future strategies to cope with such unexpected pandemics should be to change the way businesses are run. Our recommendations follow:

1) Increase investment in healthcare systems and tighten norms to govern the same.
2) Invest in technology infrastructure to deal with this kind of biological emergencies.
3) Reduce single source dependence on imported goods, especially in strategic sectors which form critical part to the supply chain, and produce these locally. Or, may be diversify the supply chain.
4) Attempt by businesses to minimise fixed costs and move towards variable cost strategies.
5) Educate and train people to deal with such emergencies to help minimise losses.
6) Encourage and/or make mandatory for businesses to provide social security to employees.
7) Use this opportunity to attract businesses in other countries to invest here. Since, businesses from other countries would exit China now, it is a window of opportunity for India.