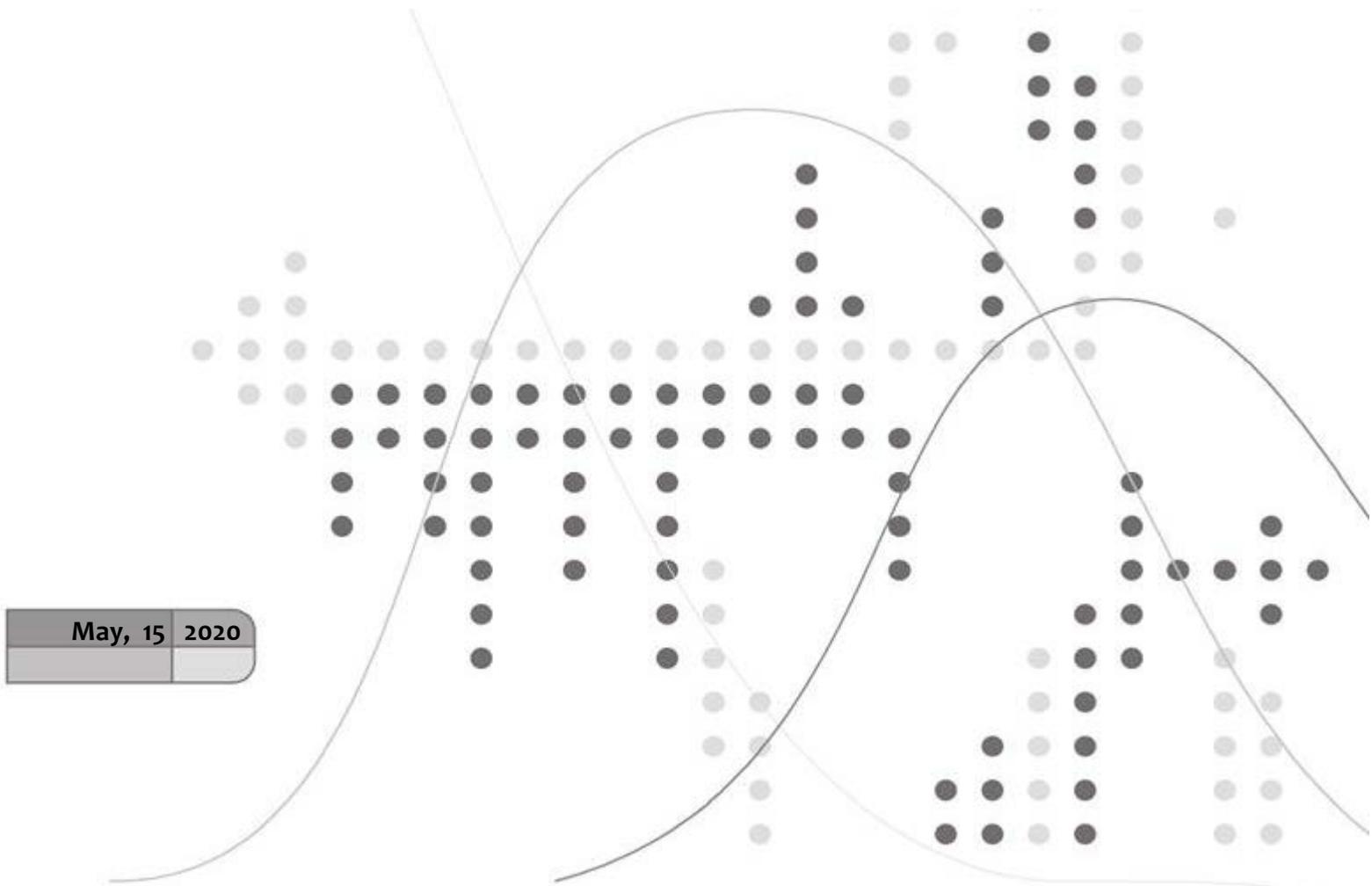


***Quarterly Review of the Economy, 2020:1Q
in Coronavirus times***



May, 15 2020

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The QRE is normally available by subscription. As a consequence of the Coronavirus crisis that India and the rest of the world is going through, this edition of the QRE is freely downloadable.

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Contents

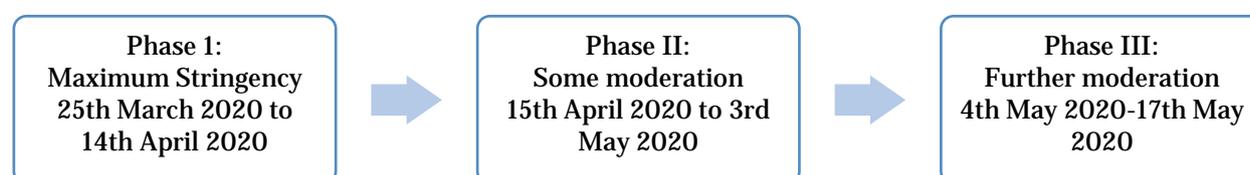
Overview	1
Agriculture	7
Industry	11
Services	17
External Sector	23
Prices	29
Policy Simulations	34
Monetary Policy and Financial Markets	38
Fiscal Outlook dealing with the COVID-19	45

Chapter 1: Overview

Sudipto Mundle and Bornali Bhandari

The novel coronavirus pandemic is like a tsunami that has engulfed the whole world, though with varied intensity¹. It began spreading late in India, giving the Government an opportunity to prepare for it, drawing lessons from the experience of countries where it struck earlier². India has responded with one of the toughest lockdowns in the world³. It has been rolled out in three phases with varying degrees of stringency, starting with maximum stringency in the first phase (Figure 0.1). The objective of the lockdown was to control the spread of coronavirus & the rate of spread, thereby moderating the initial testing, tracing, treatment burden on the public healthcare system and buying some time for medical services to be ramped up. The lockdown has met with success in the sense that the average daily growth rate of deaths related to COVID-19 has flattened significantly since March 2020 (Figure 0.2)⁴. However, the lockdown has unleashed a humanitarian crisis and also a severe economic crisis.

Figure 0.1: Timeline of the COVID-19 Lockdown



Source: Press Information Bureau.

¹ The coronavirus infection leads to the medical condition COVID-19. It may be referenced interchangeably in the report.

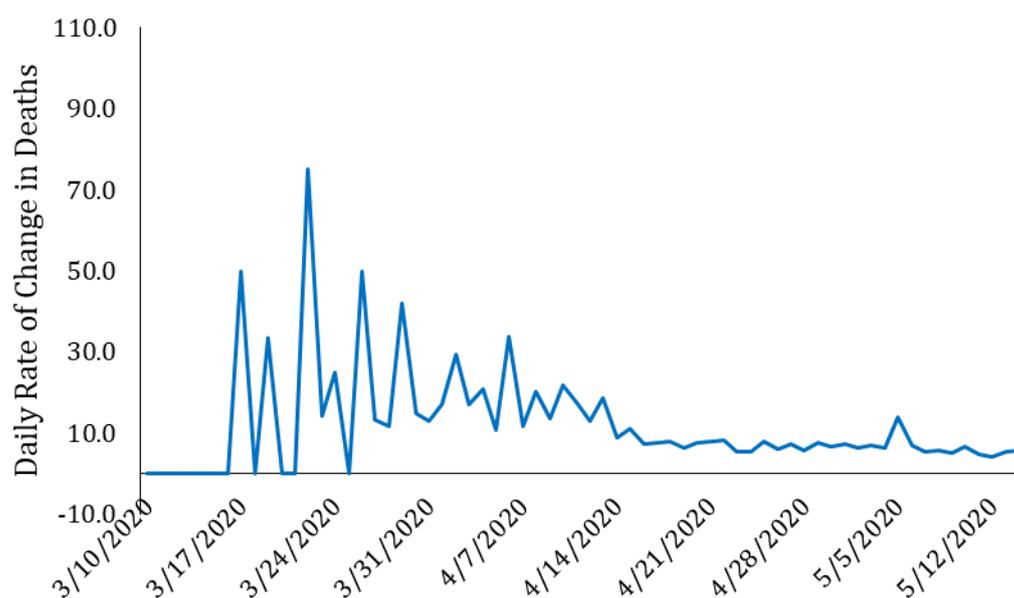
² There is also the experience of earlier pandemics, especially the Spanish Flu of 1918 (see Hatchett al. 2007 below).

Hatchett, R. J., Mecher, Carter E. and Lipsitch, M. 2007. "Public health interventions and epidemic intensity during the 1918 influenza pandemic". Proceedings of the National Academy of Sciences. 104(18): 7582-7587; DOI: 10.1073/pnas.0610941104. Accessed May 4, 2020.

³ It has been rated as having a stringency index of 100 in global comparisons (see Hale at al. 2020 below). Hale, Thomas, Noam Angrist, Beatriz Kira, Anna Petherick, Toby Phillips, Samuel Webster. "Variation in Government Responses to COVID-19" Version 5.0. Blavatnik School of Government Working Paper. April 29, 2020. Available: www.bsg.ox.ac.uk/covidtracker.

⁴ During Phase II of the implementation of the lockdown, the districts of India were divided into three zones: green, orange and red. The green zones are districts with either zero confirmed cases till date or no confirmed case in the last 21 days. The red zone classification is based on the total number of active cases, doubling rate of confirmed cases, extent of testing and surveillance feedback from the districts. Those districts, which were neither classified as red nor green, were classified as orange zones. As on 30th April, there were 130 districts in the red zone, 284 in the orange zone and 319 in the green zone. Unfortunately, all the seven major metros or economic centres of India – Bengaluru, Chennai, Delhi, Hyderabad, Kolkata, Pune and Mumbai are in the red zones. (see PIB 2020 below).

Press Information Bureau. 2020. *Extension of Lockdown for a further period of two weeks with effect from May 4, 2020*. <https://pib.gov.in/PressReleasePage.aspx?PRID=1620095>. May 1.

Figure O.2: Daily Rate of Change in Deaths (%), March 10, 2020 to May 14, 2020

Source: Authors' computations from Ministry of Health and Family Welfare, 5pm data.

The humanitarian crisis has arisen because the lockdown was launched without proper preparation. Daily wage workers were suddenly left with no jobs, no income, & no food and in the case of migrant workers no means of transport to go home. Lakhs of migrant workers have been walking back to their homes with no means of survival in the cities where they worked. The Central Government and some State Governments did announce the allocation of free extra rations and cash support for some target groups but migrant workers found it difficult to access these⁵. At the end of the second phase special trains were announced to take migrants home, but only a few every day and with much uncertainty about who should pay the fares etc.

Coming on top of a sustained slowdown of the economy, which had been underway since 2016-17, the lockdown has also triggered a severe recessionary crisis with large segments of the economy having been shut down. The economic shock has been particularly severe for the micro, small and medium enterprises (MSMEs), which had already suffered a high rate of mortality as a consequence of demonetisation and the faulty rollout of the Goods & Services Tax. MSMEs account for the bulk of employment outside agriculture and the high mortality in this economic segment accounts for a sharp rise in unemployment. The unemployment rate has soared to over 27 per cent (for the week ending May 3 2020), the highest ever recorded as per the

⁵ NCR Telephone Survey carried out in the National Capital Region during April 2020 revealed that there were urban-rural differences in the receipt of food and cash support with the rural areas at an advantage. However, it was the urban poor who bore the brunt of the lockdown in the first phase. NCAER. 2020. Delhi NCR Coronavirus Telephone Survey (DCVTS)- Round 2. Preliminary Findings. National Data Innovation Centre. http://www.ncaer.org/event_details.php?EID=279. 2nd May, 2020.

Centre for Monitoring Indian Economy⁶. However, it is likely that the fiscal-monetary stimulus announced earlier this week will arrest the recession and turn the economy around as discussed further below.

The rest of the chapter summarises the performance of major sectors during 2019-20 and assess the possible losses during Q1 of 2020-21 due to the lock down. Hopefully, the performance will improve later in the year as the stimulus package begins to take effect.

Agriculture

While there were disruptions in the agricultural sector in the first phase of the COVID-19 lockdown, there has been a gradual return to normalcy since mid-April. The prospects for output of the agricultural sector in 2020-21 will depend largely on the south-west monsoon. The forecast released by the India Meteorological Department on April 15, 2020 indicates that the south-west monsoon season rainfall for the country as a whole is likely to be normal. The availability of main inputs such as seeds and fertilisers is also reported to be comfortable for the upcoming season and the overall intensity of pests and diseases has remained below the Economic Threshold Level. The target of foodgrains production for the year 2020-21 has been fixed at 298 million tonnes as against an estimated output of about 292 million tonnes in 2019-20. Though there are no firm estimates there are high expectations from both horticulture as well as the dairy sector in the post-lockdown period. The NCAER Assessment is that Gross Valued Added (GVA) in Agriculture will grow at 2.3 per cent in 2020-21.

Industry

After coming to a virtual standstill in the third quarter of 2019-20 industrial growth, led by manufacturing, improved in January and February 2020. But the COVID-19 pandemic wiped out those green shoots in March 2020. The NCAER Assessment is that industrial real GVA will fall by (-) 54.2 per cent in Q1: 2020-21 before slowly recovering to zero per cent growth in the fourth quarter. Average industrial growth for Q2 and Q3 would be (-) 27 per cent and annual growth for 2020-21 would be (-) 27.1 per cent.

Services

The GVA in the services sector is expected to decline by (-) 16 per cent in Q1: 2020-21. Amongst its three sub-sectors; 'trade, hotels, transport, communication and broadcasting' would suffer maximum disruptions. However within this sub-sector communications is likely to register high growth because of the increased use of e-communications for both professional and social purposes. The sub-sector 'real estate, financial services & professional services' is expected to grow by 6.7 per cent in Q1: 2020-21 though within this sub-sector value added in the real estate is expected to

⁶ ENS Economic Bureau. 2020. "Unemployment rate soars to 27.11% amid COVID-19 pandemic: CMIE". *Indian Express*. <https://indianexpress.com/article/business/unemployment-rate-soars-to-27-11-amid-covid-19-pandemic-cmie-6395714/>. May 6.

decline sharply. In the 'public administration and other services' sub-sector, public administration itself and health services have had to perform at higher than normal levels in response to the COVID-19 crisis and related challenges. Education services remained operational, but at a reduced pace, while other personal services mostly remain closed. Consequently, the 'public administration & other services' sub-sector would continue to show positive income growth throughout 2020-21.

External Sector

The novel coronavirus pandemic is inflicting a high cost on lives and livelihoods worldwide, though its impact has been far more severe in some of the advanced economies located in Europe and the United States as compared to Emerging Market and Developing Economies located in Asia, Africa and Latin America, a pattern not yet fully understood. Weak external demand and COVID-19 triggered supply chain disruption has severely hit Indian exports, which contracted by 34 per cent in March 2020 on a y-o-y basis. However imports have contracted even more because of weak domestic demand and also the global oil price crash, thereby moderating the trade deficit. The pandemic has also had a severe adverse impact on remittance flows and triggered a large outflow of portfolio investments while slowing down the inflow of FDI. These developments have depreciated the Indian rupee, which in turn has exacerbated the flight of capital. Accelerated de-globalisation since the pandemic is likely to lead to a very different architecture of global trade and finance post the pandemic. India needs to actively engage with these international developments in its best interest while domestically ensuring finance and other support for key export sectors like the badly affected MSME sector, which has been worst hit by the pandemic. Pharmaceuticals is another export sector where India can take advantage of the disruption of old supply chains to embed itself in the new supply chains that will emerge.

Prices

After peaking in January 2020, CPI and WPI inflation moderated in February and March 2020 because of declining food prices. However, the headline retail inflation remained above the Reserve Bank of India (RBI) inflation tolerance band of four to six per cent. We expect headline inflation to be 6 per cent in Q1:2020-21 and 5 per cent for the full financial year 2020-21, though much will depend on the nature of any fiscal stimulus and other policy interventions in response to the COVID-19 crisis. Business expectations and other evidence suggests that at present the decline in demand has exceeded supply side disruptions, hence the decline in inflation. By the same token a faster recovery of demand in response to stimulus policies relative to supply responses could lead to a rise in inflation later in the year as indicated in the chapter on policy simulations.

Policy Simulations

As suggested in the individual sector chapters, when the individual assessments of the impact on GDP is added up, GDP in 2020-21 could decline by (-) 12.5 per cent. This is in the absence of any macroeconomic stimulus. Policy simulations explore the

impact of alternative fiscal stimulus policies on growth with the help of a policy simulation model. The results suggest that to register a positive growth, there is need for an additional increase in public expenditure of 3 per cent (of GDP) over the budgeted expenditure (Centre plus States) for 2020-21. A larger expenditure stimulus of 5 per cent of GDP would lead to a higher growth of 3.6 per cent albeit with higher double digit inflation, a large fiscal deficit and also a large current account deficit.

However, given the supply chain disruptions and expected higher mortality among MSMEs, if actual supply constraints turn out to be more binding than assumed in the simulation model, fiscal stimulus packages could lead to higher inflation and lower growth than indicated by our simulations.

Monetary Policy and Financial Markets

With the economy put under great strain in the midst of a global pandemic and a nationwide lockdown, the RBI rolled out a host of relief measures in a bid to soften the blow to the industry and services and stimulate the flow of credit. While well intended, transmission of monetary policy has been somewhat ineffective, with the banking and financial sector under strain even prior to the COVID-19 scenario. With banks unwilling to extend credit to the MSMEs, it is necessary that either the RBI or the government provide credit guarantee, in addition to offering partial guarantee for investing in non-banking financial corporations (NBFCs), particularly small and mid-sized NBFCs, which are one of the primary providers of credit to the MSMEs. Support to both MSMEs and NBFCs have in fact been announced by the Finance Minister on 13 May, 2020.

NCAER simulations indicate that output for 2020-21 would contract by nearly 13 per cent in the absence of a fiscal stimulus. A massive fiscal stimulus is necessary for moderating the negative shocks to the economy. Such a package should include additional funds required to counter the health crisis and the expanded food and income support to mitigate the effects of the lock down. The government has announced a large fiscal-monetary stimulus package on 12 May 2020 cumulatively adding up to 10 per cent of GDP, with further details provided on 13 May. But, so far there is no evidence of enhanced spending on the public healthcare system, additional food support, or additional income support for the poorest.

In addition to the liquidity measures of RBI, the stimulus package will entail an unprecedented annual sovereign borrowing program of around of around 8.7 per cent of GDP (this includes the budgeted net market borrowing of 2.7 per cent of GDP along with 6 per cent of GDP to to support the balance ₹12 trillion economic package). No single approach can cope such a massive demand for loans. Multiple channels will have to be combined, ideally spread over a period of two years. These would include lending by commercial banks, re-purposing and further liberalisation of 'Ways and Means' advances with much larger advance limits and longer period of advance and, finally, direct monetisation of a part of the deficit through direct RBI acquisition of government debt through private placements.

Fiscal Policy

India is grappling with three crises at the same time: the pandemic itself, a humanitarian crisis for migrant and daily wage workers and a strong negative shock to both employment and incomes, hence also government revenues. The extra spending on the medical response, increased delivery of free food and income support for the poor will lead to a massive increase in government expenditure. The revenue decline and large increase in expenditure will in turn lead to a large increase in the combined fiscal deficit of central and state governments. The existing budget estimates will need quick revisions through interim budgets.

The policy simulations in chapter VII indicate that with the fiscal and monetary policy measures taken earlier (before 12 May 2020), GDP is likely to decline by 4.1 per cent in 2020-21. A fiscal stimulus by way of additional public expenditure amounting to 5 per cent of GDP over and above that so far budgeted for 2020-21 would generate positive GDP growth of 3.6 per cent. However, this would come along with double digit inflation, a fiscal deficit close to 10 per cent of GDP (Centre plus States) and a widening of the current account deficit to an unsustainable level of 3.6 per cent of GDP. A more modest stimulus amounting to 3 per cent of GDP extra spending above that budgeted for 2020-21 would be a preferred option. It would lead to a modest but still positive GDP growth of 1.2 per cent along with a somewhat lower inflation rate of 8.9 per cent, a combined fiscal deficit of 8.8 per cent and a manageable current account deficit of 3 per cent.

The recent announcement of a strong fiscal-monetary stimulus package to revive the economy is most welcome but it is unlikely that the full package can be implemented within the current financial year. While details are awaited, the Prime Minister's announcement indicated that the Rs 20 trillion (10 per cent of GDP) stimulus package includes the measures already undertaken by the RBI as well as the Government as part of the first stimulus package. The RBI stimulus measures are estimated to have provided additional liquidity to the tune of Rs 8.04 trillion (4 per cent of GDP), leaving headroom for nearly Rs 12 trillion (6 per cent of GDP) for additional stimulus expenditure beyond budgeted levels. Taking into account the additional borrowing already announced (footnote 2), the Prime Minister's announcement implies a net additional spending stimulus amounting to 3 per cent of GDP. The total COVID-19 related additional expenditure provision of 6 per cent of GDP is even higher than the 5 per cent expenditure stimulus envisaged in our Scenario-4 and would lead to even higher rates of inflation, and larger fiscal and current account deficits than in Scenario-4. In the interest of restoring macroeconomic stability it is recommended that the Rs 20 trillion package be spread over 2020-21 and 2021-22.

Chapter 2: Agriculture

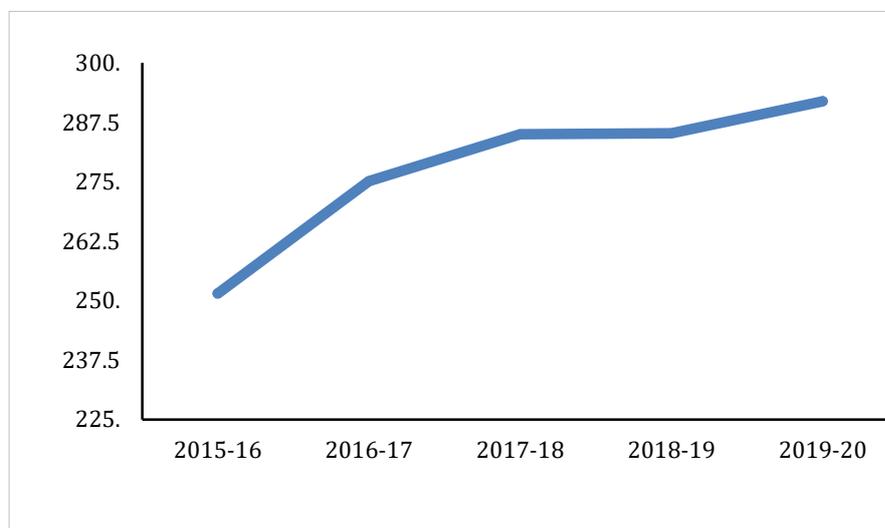
Anil K Sharma

While there were disruptions in the agricultural sector in the first phase of the COVID-19 lockdown, there has been a gradual return to normalcy since mid-April. The prospects for output of the agricultural sector in 2020-21 will depend largely on the south-west monsoon. The forecast released by the India Meteorological Department on April 15, 2020 indicates that the south-west monsoon season rainfall for the country as a whole is likely to be normal. The availability of main inputs such as seeds and fertilisers is also reported to be comfortable for the upcoming season and the overall intensity of pests and diseases has remained below the Economic Threshold Level. The target of foodgrains production for the year 2020-21 has been fixed at 298 million tonnes as against an estimated output of about 292 million tonnes in 2019-20. Though there are no firm estimates there are high expectations from both horticulture as well as the dairy sector in the post-lockdown period. The NCAER Assessment is that GVA in Agriculture will grow at 2.3 per cent in 2020-21.

A.1 Performance during 2019-20

As per the second advance estimates released by the National Statistical Office in February, 2020, the agricultural sector is likely to grow at 3.7 per cent in 2019-20 compared to the year preceding it, when the growth had slipped to 2.4 per cent. This improvement in farm sector growth is attributable to significant increase in the output of many crops as a consequence of better performance of rainfall in the monsoon as well as post monsoon season. The more recent estimates of agricultural output for selected crops show that food grain production in 2019-20 has touched a new record of 291.9 million tonnes. This is 2.3 per cent higher than the earlier record output of 285.2 million tonnes achieved last year (Figure A.1). The output of two major components of food grains – both rice at 117.5 million tonnes and wheat at 106.2 million tonnes scaled new peaks in 2019-20 (Table A.1).

Figure A.1: Output of Foodgrains from 2015-16 to 2019-20 (Million Tonnes)



Source: Ministry of Agriculture and Farmers Welfare.

**Table A.1: Estimated of Output of Selected Crops
(Million tonnes)**

Crops	2017-18	2018-19	2019-20
Rice	112.8	116.5	117.5
Wheat	99.9	103.6	106.2
Coarse cereals	47.0	43.1	45.2
Pulses	25.4	22.1	23.0
Total Food grains	285.0	285.2	291.9
Oilseeds	31.5	31.5	34.2
Cotton*	32.8	28.0	34.9
Sugarcane	379.9	405.4	353.8
Horticulture crops	310.7	310.7	313.4
Milk Output	176.3	187.7	191.0 (p)

Source: Directorate of Economics and Statistics, Government of India, Ministry of Agriculture and Farmers Welfare.

Notes: * The estimates for cotton are in million bales. (p) provisional

Among non-food grain crops, output of oilseeds in 2019-20 is estimated at 34.2 million tonnes, which is 8.6 per cent higher than 31.5 million tonnes produced in 2018-19. And, output of cotton in 2019-20 is estimated at 34.2 million bales, a very large annual increase of 24.6 per cent because of the fall in output during in 2018-19. However, sugarcane output was down by 12.7 per cent in 2019-20, reflecting the market response to high stocks of sugar, which seem to have been building up over the past few years.

The output of horticultural crops in 2019-20 is estimated at 313.4 million tonnes, which is marginally higher than output in 2018-19¹. The provisional estimate of milk output in 2019-20 places it at 1.8 per cent higher than last year's output of 187.7 million tonnes.

A.2 Prospects for 2020-21

A.2.1 Output

The prospects for output of the agricultural sector in 2020-21 depend largely on monsoon rainfall. The preliminary first stage forecast just released by the India

¹ The disruptions in supply chain for fruits and vegetables, livestock and fishing & aquaculture products in the last week of March 2020 may lead to somewhat lower growth in the fourth quarter of 2019-20 than what was estimated previously.

Meteorological Department (IMD) on April 15, 2020 indicates that quantitatively, the south-west monsoon season rainfall for the country as a whole is likely to be normal. The forecast further suggests that monsoon rainfall in the June to September period for the country as a whole, is most likely to be 100 per cent of the Long Period Average (LPA)) with an error margin of ± 5 per cent.

There will be further clarity on the expectation of monsoon rainfall in the second stage forecast, which will be released in the last week of May or Early June. Much will depend on the progress of the monsoon through the full season and its actual spatial distribution across various states. But early pointers are positive as far as the output is concerned. The level of water storage in the country's main reservoirs on May 6, 2020 was 163 per cent of the live storage during the corresponding period of last year and 159 per cent of last 10-year's average. The availability of main inputs such as seeds and fertilisers is reported to be comfortable for the upcoming season and overall intensity of pests and diseases has remained below the Economic Threshold Level (ETL). All these indicators have led the agricultural ministry to set high targets of growth for main crops. The target of foodgrains production for the year 2020-21 has been fixed at 298 million tonnes against an estimated output of about 292 million tonnes in 2019-20. Though there are no firm estimates expectations remain high for horticulture as well as dairy. Overall we are assuming agricultural growth of 2.4 per cent in 2020-21.

A.2.2 Harvesting, supply, and distribution

There is no doubt that conditions created by the lockdown due to Coronavirus pandemic has caused some disruptions in the food supply chain initially and there have also been reports of lack of buyers in some places due to scarcity of transport and labour in the distribution network.

The supply of milk has continued even during the lockdown as the dairy cooperatives as well as other suppliers of milk have ensured uninterrupted supplies. In the initial phase of lockdown, there was some decline, but gradually the sales have recovered with pro-active support from the co-operatives and the central and state governments. The supply of fruits and vegetables has also continued. Though commercial and private establishments have been closed dairy and vegetable booths have been open as these have been treated as essential services.

Therefore, with the progressive exemption of agricultural activities from the lockdown after the second half of April, there has been a steady move towards some normalcy in the agricultural supply chain, more so in areas that have been less affected.

A.2.3 Food Prices

Though last year was by and large a good year for the agricultural sector, there were a few commodities which experienced high rates of inflation due to seasonal and temporary shortages, e.g., a few vegetables, pulses, and cereals. This led to an overall food price inflation of 8.4 per cent in 2019-20 as compared to only 0.3 per cent in 2018-19 (Table A.2). However, there is a considerable divergence between the trends in WPI and CPI (for more details see Chapter V on Prices).

The inflationary pressures experienced in 2019-20 are likely to ease in 2020-21 as the government starts liquidating foodgrain stocks through Public Distribution

System shops and in the open market to increase supplies in this period of distress. As of March 2020 stocks were reckoned at 58.5 million tonnes – 27.5 million tonnes of wheat and 31.0 million tonnes of rice. This is much higher than the mandatory required stock level of 21.04 million tons at the beginning of April. The abundance of stocks and record output of many agricultural commodities in 2019-20 indicates that the short-term outlook for supply of essential food items will remain comfortable.

Direct income support was provided to farmers via the PM-KISAN in the sense that payments were front-loaded. This was announced in late March 2020. Plus the wage rates under the Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS) was also increased simultaneously. On May 14, 2020, the Government of India announced loans and liquidity support to farmers and the rural economy. Returnee migrants would also be provided jobs under the Mahatma Gandhi National Rural Employment Guarantee Scheme.

Table A.2: Changes in Wholesale Price Indices of Food Articles in 2019-20

S. No.	Product	Increase in 2018-19 over 2017-18	Increase in 2019- 20 over 2018-19
1	Food Articles	0.3	8.4
2	Cereals	5.6	7.5
3	Pulses	-9.5	15.9
4	Vegetables	-8.4	31.2
5	Fruits	-1.7	3.5
6	Milk	2.4	2.4
7	Eggs, meat and fish	1.7	6.5
8	Condiments and spices	3.5	11.1
9	Other food articles	0.2	-0.3

Source: Computed.

Chapter 3: Industry

Bornali Bhandari, Saurabh Bandyopadhyay and Ajaya Sahu

After coming to a virtual standstill in the third quarter of 2019-20 industrial growth, led by manufacturing, improved in January and February 2020. But the COVID-19 pandemic wiped out those green shoots in March 2020. The NCAER Assessment is that industrial real GVA will fall by (-) 54.2 per cent in Q1: 2020-21 before slowly recovering to zero per cent growth in the fourth quarter. Average industrial growth for Q2 and Q3 would be (-) 27 per cent and annual growth for 2020-21 would be (-) 27.1 per cent.

I.1 Introduction

After coming to a virtual standstill at the end of third quarter of 2019-20, industrial growth started showing some signs of recovery in January and February 2020. The novel coronavirus (COVID-19) shock wiped out these green shoots as India rolled out one of the toughest lockdowns in the world, with a stringency index of 100¹, which closed down large segments of industry.

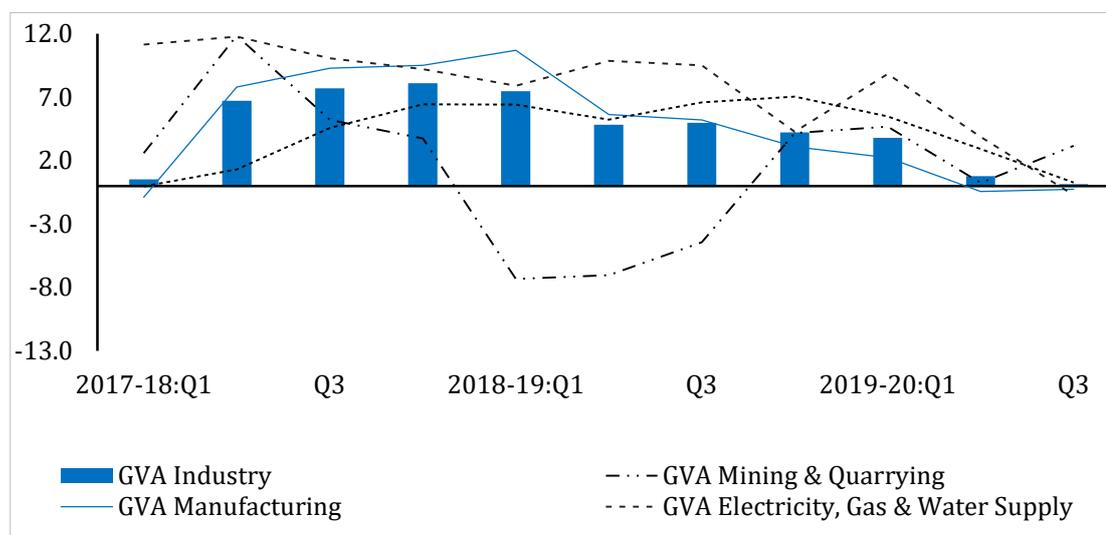
The maximum fall in GVA is expected in the first quarter when the whole country has been under strict lockdown for most of April 2020 with phased opening up in May. The hope is that the lockdown will be completely lifted by June 2020, when the Covid-19 spread may start receding. Our assessment is that India will slowly recover to its pre-COVID levels by the fourth quarter of 2020-21. The presumption is that there is no second wave of COVID-19 and associated lockdown in the autumn or winter of 2020-21. Overall, the outlook for 2020-21 remains grim.

I.2 Industry: Aggregative Trends

The 2nd Advance Estimates (AE) released on 28th February 2020 estimated industrial GVA growth to be 1.8 per cent in 2019-2020, substantially lower than the 4.9 per cent registered in 2018-19. Barring the mining sector which had showed negative growth in 2018-19, all the other sectors were estimated to show lower growth in 2019-20 compared to 2018-19. Indian industry was already in a major slowdown even before the COVID-19 crisis (Figure I.1).

¹ Hale, Thomas, Noam Angrist, Beatriz Kira, Anna Petherick, Toby Phillips, Samuel Webster. "Variation in Government Responses to COVID-19" Version 5.0. Blavatnik School of Government Working Paper. April 29, 2020. Available: www.bsg.ox.ac.uk/covidtracker.

**Figure I.1: GVA Industry and its Components
(%y-o-y, Q1: 2017-18 to Q3: 2019-20)**



Source: NCAER Computations from MoSPI.

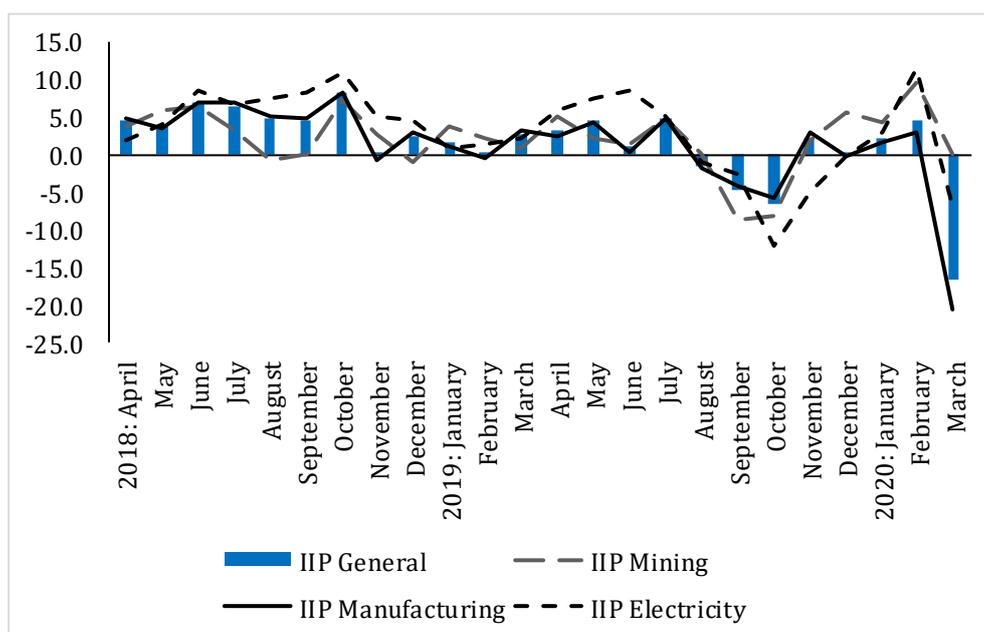
I.3 Trends in Industrial Activity in Q4: 2019-20

The Index of Industrial Production (IIP), the alternative indicator for organised sector industry, registered rising y-o-y growth in the first two months of 2020 but a steep decline of (-) 20.6 per cent in March 2020 (Figure I.2). Overall, IIP declined by (-) 3.8 per cent in Q4: 2019-20, mainly driven down by negative y-o-y growth in manufacturing (-5.8 per cent). This is the third consecutive quarter of negative growth for both IIP and IIP Manufacturing. The recession in manufacturing deepened in the fourth quarter of last fiscal because of COVID-19. For 2019-20, the IIP showed (-) 0.7 per cent growth.

All six use-based categories of goods showed negative growth in March 2020. Capital goods and consumer durable goods experienced the worst fall. The quarterly trends showed negative growth for all categories of goods except primary and intermediate goods. Core IIP, with a weight of 40.3 per cent in IIP recorded 0.3 per cent growth in the fourth quarter after registering negative growth in Q2 and Q3 of 2019-20. Coal, petroleum refinery products and electricity were the only three sectors which showed positive y-o-y growth in Q4:2019-20. The y-o-y growth rate of IIP of all sectors at 2-digit level was negative in March 2020.

Our assessment is that GVA industry (including mining, manufacturing, construction and electricity, gas & water utilities) would grow at 0.7 per cent in the fourth quarter (Table I.1).

Figure I.2: Index of Industrial Production, General, Mining, Manufacturing and Electricity (%y-o-y) April 2018 to March 2020



Source: NCAER Computations from MoSPI.

I.4 Outlook for 2020-21

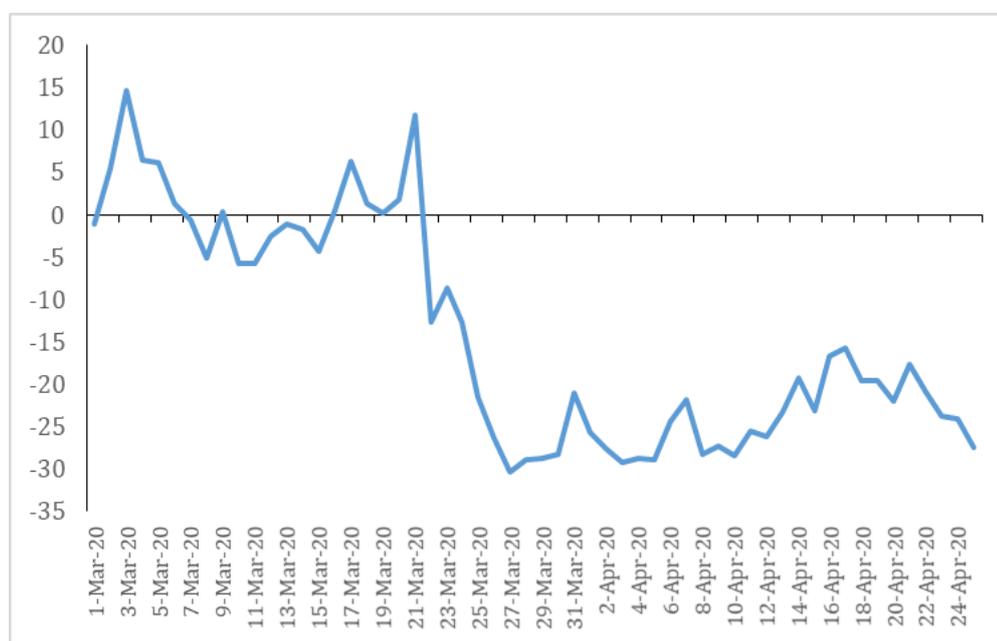
Any attempt to forecast industrial performance through conventional techniques under present conditions would be futile. Our assessment of industrial performance in the first quarter of 2020-21 is based on inputs from domain experts and such piecemeal data as has been available about likely performance of individual subsectors in the first quarter. The assumed impact of COVID-19 on overall industrial performance in Q1 is a weighted aggregation of these sub-sector level assessments. It has been assumed that the sub-sectors would be worst affected in April 2020 with activity gradually recovering thereafter as the lockdown is phased out through May and June. Industrial activity is likely to be back to output levels of 2019-20 by the end of Q4:2020-21.

1. Mining and Quarrying: The ‘mining and quarrying’ sub-sector has a 9.4 per cent share in industrial GVA. It is assumed that GVA in Mining will show zero growth in Q1: 2020-21. Even though the lockdown has not stopped production in that sector, prices may come down in the near future and stay there².
2. Manufacturing: The manufacturing sub-sector forms 56.4 per cent of industrial GVA. We use the demand for electricity as an indicator of manufacturing activity

² World Bank. 2020. “A shock like no other: The impact of COVID-19 on commodity markets”. <https://www.worldbank.org/en/research/commodity-markets>. April 23.

as it is a key input. Figure I.3 shows that there is a steep y-o-y fall in the daily maximum demand post-lockdown. The average fall in energy demand between 25th March 2020 and 13th April was (-) 25.6 per cent. The tentative recovery seen after 14th April has not been sustained.

Figure I.3: Maximum Energy Demand Met, March 1, 2020 to 25th April, 2020 (% y-o-y)



Source: Authors' computations Power System Operation Corporation Ltd. <https://posoco.in/>.

The impact of COVID-19 on manufacturing depends on what enterprises could stay open for producing 'essential items' under the Disaster Management Act since work-from-home is not an option for manufacturing. Further, supply chain disruption has affected both input and output flows. Finally, even in plants allowed to be open, worker absenteeism and adoption of social distancing would imply operation at sub-optimal capacity. The assessment for manufacturing sub-sectors is as follows:

- a. Food Products, Beverages and Tobacco: This sub-sector accounts for 10.1 per cent of the manufacturing sector. It is assumed that the GVA will fall by (-) 10 per cent in Q1: 2020-21. It did see some improvement in April 2020³.
- b. Textiles, Apparel and Leather Products: This sub-sector accounts for 12.5 per cent of the manufacturing sector. It is assumed that real GVA will fall by (-) 90 per cent in Q1: 2020-21 as plants were mostly closed. However,

³ Times of India. 2020. "Supply Chains Jump to Life". <https://timesofindia.indiatimes.com/india/supply-chains-jump-back-to-life/articleshow/75419070.cms>. April 27.

some enterprises may have been producing cloth masks, Personal Protection Equipment etc.

- c. Metal Products: This sub-sector accounts for 14.8 per cent of the manufacturing sector. Here it is assumed that real GVA will fall by 50 per cent in Q1: 2020-21.
- d. Machinery and Equipment: This sub-sector accounts for 22.8 per cent of the manufacturing sector and includes production of computers, electronics, communication, optical products etc. and repair of computers, personal & household goods. The sub-sector has been completely closed during phases 1 and 2 of the lock down and will need time to re-open. Therefore it is assumed that the real GVA will fall by 100 per cent in Q1:2020-21 in this sub-sector compared to GVA in Q1 of 2019-20.
- e. Other Manufactured Goods: This sub-sector accounts for 39.8 per cent of the manufacturing sector. It is assumed that the real GVA will fall by (-) 50 per cent in Q1: 2020-21 compared to the corresponding period last year. This sub-sector includes enterprises in manufacturing of pharmaceuticals, chemicals, rubber, plastic, coke and refined petroleum products, many of which have continued to operate during the lockdown.

Taking a weighted average, it is assumed that GVA of the manufacturing sector will fall by 62.6 per cent in Q1: 2020-21. This is broadly in line with the decline in Nikkei PMI for manufacturing, which fell to the tune of (-) 47.1 per cent in April 2020 on an m-o-m basis.

3. Electricity, Gas and Water Supply: This sub-sector accounts for 7.2 per cent of the industry sector. It is assumed that the GVA will fall by (-) 40 per cent in Q1: 2020-21. As already seen, electricity generation would fall because of lower demand (Figure I.3) on a y-o-y basis before showing a slow recovery in May 2020. Although IIP Electricity shows 2.1 per cent growth in Q4: 2019-20, it declined by (-) 7.2 per cent in March 2020, due to the impact of the lockdown in the last week of that month. Clearly the adverse impact would be much stronger in April.
4. Construction: This sub-sector accounts for 27 per cent of industry. It has been under full lockdown though some rural construction has been permitted under MGNREGA since April 14th. Post May 3rd, construction activities have been allowed in Green zone districts, albeit with restrictions and this is likely to continue after May 17th also. We have therefore assumed a (-) 60 per cent fall in the real construction GVA in Q1: 2020-21 compared to Q1: 2019-20.

A weighted sum shows that the industry GVA will fall by 54.2 per cent in Q1: 2020-21 (Table I.1). We assume that the sector will be gradually recovering through Q2 and Q3, averaging a (-) 27 per cent decline in output for this period, till it reaches 2019-20 output levels (i.e. zero growth) by Q4: 2020-21.

Table I.1: Quarterly Assumptions about Disruptions in GVA and Key Sectors (%y-o-y)

Sector	2019-20:Q4	2019-20	2020-21:Q1	Average growth rate of 2020-21:Q2 and Q3	2020-21:Q4	2020-21
Industry	0.7	1.4	-54.2	-27.0	0	-27.1
Mining	3	2.8	0			
Manufacturing	0.5	0.5	62.4			
Electricity, Gas & Water Supply	2.1	3.5	40	Left Blank intentionally		
Construction	0	2.2	60			

Source: NCAER.

The Government announced a host of measures for micro, small and medium enterprises (MSMEs) on May 13, 2020 in terms of providing collateral, debt and equity. It streamlined the definition of MSMEs and made it common across manufacturing and services sectors. To encourage MSMEs' business, global tenders were to be disallowed in government procurement tenders. It remains to be seen how the recently announced measures play on-ground to encourage MSME activities and nurse them back to health. Further, the Government announced free rations for migrants who have no ration cards on May 14, 2020. The GoI had asked the States' Labour Welfare Boards to use the cess collected from builders to distribute it to construction workers via Direct Benefit Transfer.

Chapter 4: Services

Bornali Bhandari

The GVA in the services sector is expected to decline by (-) 16 per cent in Q1: 2020-21. Amongst its three sub-sectors; trade, hotels, transport, communication and broadcasting would suffer maximum disruptions. However within this sub-sector communications is likely to register high growth because of the increased use of e-communications for both professional and social purposes. The sub-sector real estate, financial services & professional services is expected to grow by 6.7 per cent in Q1: 2020-21 though within this sub-sector value added in the real estate is expected to decline sharply. In the public administration and other services sub-sectors, public administration itself and health services have had to perform at higher than normal levels in response to the COVID-19 crisis and related challenges. Education services remained operational, but at a reduced pace, while other personal services mostly remain closed. Consequently, the 'public administration & other services' sub-sector would continue to show positive income growth throughout 2020-21.

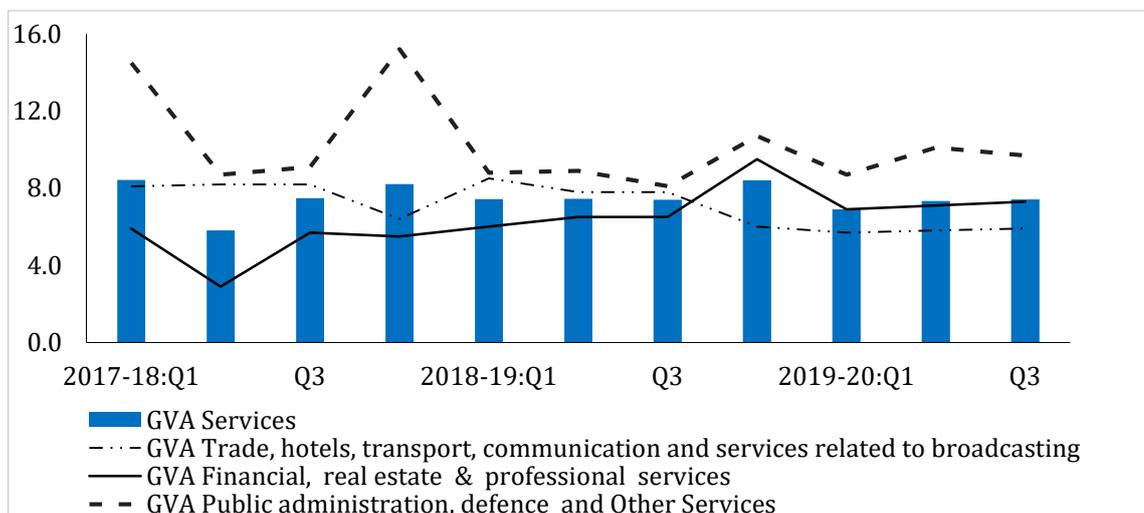
S.1 Introduction

Services sector growth was stable at 7.3 per cent during the second and third quarters of 2019-20. Growth was probably slower in the fourth quarter since almost all leading indicators for the services sector pointed to either negative or slow growth. The outlook for 2020-21 is mixed with zero growth in 'trade, hotels, transport, communication and services related to broadcasting' and positive growth in 'financial, real estate and professional services' & 'public administration, defence & other services'.

S.2 Services sector in 2019-20

S.2.1 Gross Value Added of GVA Services and its Components

Figure S.1: GVA Services and its Components
(%y-o-y, Q1: 2017-18 to Q3: 2019-20)



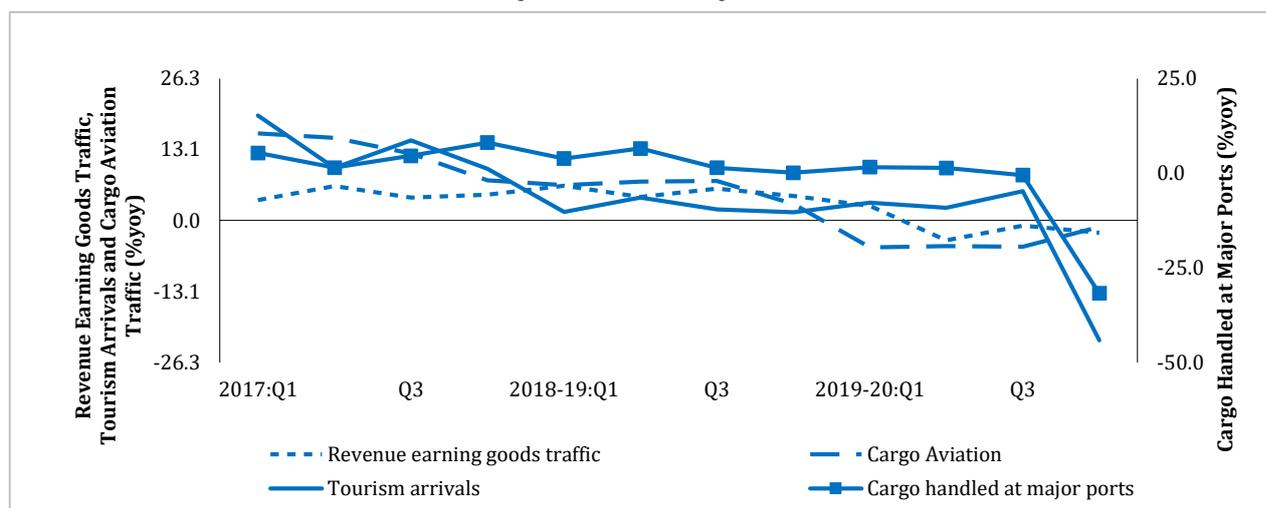
Source: NCAER Computations from MoSPI.

The 2nd Advance Estimates (AE) of National Accounts released on 28th February 2020 estimated the growth of GVA in Services to be 7 per cent in 2019-2020, lower than 7.7 per cent seen in 2018-19 (First Revised Estimates). The Q3: 2019-20 y-o-y services growth rate showed a marginal increase on a year-on-year (y-o-y) basis compared to the corresponding quarter of the previous fiscal (Figure S.1). This was mainly driven by elevated growth in ‘financial, real estate and professional services’ and ‘public administration, defence & other services’.

S.2.2 Lead Indicators from Q4: 2019-20

Within the Services sector the novel coronavirus (COVID-19) first impacted the ‘trade, tourism, hotels and restaurants’ sub-sector (Figure S.2). Post the implementation of the lockdown on 24th March 2020, the transport sub-sector was also adversely affected (Figure S.2) with road, rail and aviation cargo traffic declining. Passenger aviation traffic also declined by (-) 2.6 per cent y-o-y January-February 2020 cumulatively. Alternative data from Directorate General of Civil Aviation shows that domestic passenger aviation traffic fell by (-) 33.1 per cent in Q4: 2019-20. Production of commercial vehicle sales, a leading indicator for road cargo traffic fell by (-) 54 per cent in Q4: 2019-20. The financial sub-sector growth also slowed down in Q4: 2019-20 as indicated in the Money and Financial Markets chapter. These fourth quarter indicators suggest that annual growth will be well below 7 per cent in the 2nd AE for the services sector.

Figure S.2: Tourism Arrivals, Cargo Traffic carried by Aviation, Ports and Railways 2017-18:Q1 to 2019-20:Q4



Note: Cargo Aviation Traffic is from January-February, 2020.

Source: Ministry of Railways, Tourism, Airways Authority of India, India Ports Association and CMIE.

S.3 Outlook for 2020-21

Growth of the sub-sectors within the services sector for Q1: 2020-21 have been assessed based on such indicative information as is available as of now and inputs from domain experts. These were then aggregated on a weighted basis to assess the impact of COVID-19 on the Services sector as a whole. It has been assumed that the worst impact would be felt in April 2020. The Nikkei PMI for Services sector fell by 89 per cent in April 2020 on a month-on-month basis, indicating severe weakening of sentiments in private sector activity. It has been further assumed that mandated restrictions on operations in the sector would be removed in a phased manner after May 17th enabling the sector to adjust back to the output levels of Q4, 2019-20 by Q4 of 2020-21. The sub-sectors are discussed in further detail below:

1. 'Trade, hotels, transport, communication and services related to broadcasting': The share of this sector in the services sector is about 35.6 per cent. Our assessment for this sub-sector is that the GVA in this sub-sector would fall by (-) 62.4 per cent (Table S.1). Further details are as follows:
 - a. Trade and repair services: This sub-sector is adversely affected as most shops engaged in retail and wholesale trade were closed due to the lockdown in April. Only shops selling essential items remained open in but for shorter hours. The nation was divided into three zones – green, orange and red districts based on the spread of COVID-19. Zone-wise rules for opening up were announced towards the end of phase 2 of the lockdown on May 1, 2020. All shopping malls were to remain closed irrespective of the zones¹. Stand-alone shops, neighbourhood shops and shops in residential complexes were allowed to be opened from May 4, 2020. Repair services were completely remained closed for the first two phases of the lockdown². Noting that essential services were open through the lockdown and others are being allowed to open gradually through May and June, it is expected that the GVA in this sector would fall by (-) 70 per cent in Q1: 2020-21 compared to Q1, 2019-20.
 - b. Hotels & Restaurants: This was the first sector to be affected directly due to the COVID-19 related lockdown. Even the latest Guidelines issued on May 1, 2020 says that all hospitality services would remain closed barring the ones that are catering to coronavirus front line workers and stranded tourists, migrants etc. Restaurants have been partially closed with food delivery allowed. The GVA in this sector is expected fall by 80 per cent. The impact of COVID-19 on the tourism sector is separately discussed in Box S.1.

¹ Press Information Bureau. 2020. *Extension of Lockdown for a further period of Two Weeks with effect from May 4, 2020*. <https://pib.gov.in/PressReleasePage.aspx?PRID=1620095>. May 1.

² Please see Figure O.1 for the timeline of the lockdown.

Box S.1. Impact of COVID-19 on Tourism Sector

The Hotels & Restaurants (H&R) constitute 5.7 per cent of the sector “Trade, hotels, transport, communication and services related to broadcasting” in GVA terms (7-year average in annual series, NAS). GVA in H & R for Q1:2019-20 is estimated at Rs 36,958 crore.

As per Tourism Satellite Accounts (TSA), the tourism sector contributes about 2.8 per cent to total national GVA, which for Q1:2020-21 is estimated at Rs 93,173 crore (this takes into account the tourism components in Hotels, restaurants, transports services, recreational activities etc.). All the components in this sector have been severely affected, hence there is an estimated 90 per cent disruption in the tourism sector for Q1: 2020-21.

The number of jobs in tourism is estimated at about 35 million. Of these, about 44 per cent are self-employed and rest are employees. We can assume that self-employed continue to retain their jobs but with little work or revenue generation. If we assume that about 50 per cent of the remaining 56 per cent are laid off. That means a loss of about 10 million jobs in the tourism sector alone.

Source: Contributed by Poonam Munjal, Senior Fellow, NCAER.

- c. Transport, storage and warehousing: Passenger traffic across all modes was halted for the most part during the first two phases of the lockdown. The latest guidelines suggest that public transport may be opened in green zones but with social distancing norms. As on April 30, migrants were allowed for inter-state movement by a few special trains. Some long distance have started operated for general passengers from 12 May, 2020

The closure of cargo traffic has varied over the phases. Roads carry most of Indian freight and they faced many challenges including labour shortage, very limited road-side facilities like eateries, empty trucks on return journeys and restrictions on crossing inter-state borders etc. This has eased in the third phase with no passes required at many inter-state borders. Both ports and airports also saw restricted movement of cargo traffic in the first two phases of the lockdown. Therefore, the GVA of this sector is expected to fall by (-) 70 per cent in Q1:2020-21. The sub-optimal operation of the logistics sector has a further negative impact on Gross Domestic Product through input-output linkages (Box S.2).

- d. Communication and Services related to broadcasting: The telecom sector would have a positive shock as people moved to working from home. Webinars, online educational classes etc. would have increased demand in this sector. Although private courier services were closed, postal services remained open and catered to the varied needs during this lockdown. Computers, consultancy and related activities and information service

activities have remain operational in Q1: 2020-21. In sum, the GVA in this sector is expected to increase by 12.5 per cent on a y-o-y basis.

Box S.2: Lockdown, Logistics inefficiency and Impact on economy

A lockdown effectively increases the logistics cost of transporting goods in multiple ways. The shortage of labour at the origin and destination and new norms of social distancing may lead to increased time in loading/unloading activities, causing in effect lower efficiency. The restriction on movement of traffic through red zones imply that cargo may have to be transported through bypass road. The intermittent traffic barricades along the highway and multiple check points by law enforcers invariably lead to more time and thereby lower efficiency leading to higher transportation cost.

If cost efficiency in transportation falls due to the lockdown, how does it affect overall GDP? The effect will be higher in sectors which have greater forward and backward linkages. NCAER is assessing using the Global Trade Analysis Project Computable General Equilibrium model consisting of 57 sectors and 14 major trading partners of India. The policy shocks are applied only on Indian parameters of the model related to the logistics related sectors. We assume that the productivity will decline by 5 per cent due to the lockdown in the following logistics sectors: land transport, water transport, air transport and retail trade. The 5 per cent decline is purely an assumption for illustrative purposes not a robust estimate.

A 5 per cent fall in efficiency in Indian shipping translates to 1.3 per cent loss in GDP and 1.6 per cent decline in exports. At the sectoral level, effects are more pronounced on manufacturing compared to agricultural. The largest fall in output would be in the following sectors: wearing apparels (3.1 per cent), metals (3.1 per cent), leather products (2.4 per cent), transport equipment (2.2 per cent), and electronic equipment (2.1 per cent).

Source: Contributed by Sanjib Pohit, Professor and Devender Pratap, Fellow, NCAER.

2. Financial, real estate & professional services: Overall the GVA of this sub-sector is expected rise by 6.7 per cent in Q1: 2020-21. The average share of this sub-sector in overall services sector is 40.3 per cent.
 - a. Financial services is assumed to register positive growth as banks and other financial outreach activities have remained open. Business/banking correspondents have been reaching out to provide last mile delivery of social welfare benefits via Direct Benefit Transfer. It is expected that the GVA in this sub-sector will rise by 12.5 per cent in Q1: 2020-21.
 - b. Real estate activities remained closed. It is expected that the GVA in real estate would fall by (-) 70 per cent in Q1: 2020-21.

- c. Business services are assumed to have remained open as there was a shift to work from home. Professional, scientific and technical services have continued and some administrative and support service activities have also continued. Legal activities have continued, though at a reduced pace, as courts carried out activities via e-Courts. Accounting and book keeping activities have also continued. However, rental and leasing service activities seem to have come to a stop. Growth of 12.5 per cent growth is expected for this sub-sector in Q1: 2020-21.
3. Public administration, Defence and Other Services: On average, this group accounts for 24.1 per cent of the services sector. We expect 10 per cent growth in this sector. The sheer nature of the COVID-19 related lockdown means that there would be a higher demand for public administration. Defence, of course, remained operational. Education services remained operational, but at a reduced pace, while other personal services mostly remain closed. We are assuming that the GVA of the health sub-sector has experienced a positive shock because of the much higher level of activity in response to the COVID-19 crisis, mainly in public health services. The outlook for the sector remains grim, notwithstanding the assumption of positive growth in some sectors. Plus, as pointed out in the case of the transport sector, there is a direct impact and then there is indirect impact.

Table S.1: Quarterly Assumptions about Disruptions in GVA and Key Sectors (%y-o-y)

Sector	2019-20:Q4	2019-20	2020-21:Q1	Average growth rate of 2020-21:Q2 and Q3	2020-21:Q4	2020-21
Services	5.3	6.7	-16.3	-8.2	0	-8.2
Trade, hotels, transport, communication and services related to broadcasting	0	4.3	-62.4			
Financial, real estate & professional services	7.8	7.1	6.7	Left intentionally blank		
Public administration, Defence and Other Services	10		10			

Source:NCAER.

As mentioned in the previous chapter on Industry, the Government of India (GoI) announced a host of measures for micro, small and medium enterprises (MSMEs) on May 13, 2020. Plus, rations have been announced for urban migrants on May 14, 2020. Further the GoI announced credit facility for street vendors.

Chapter 5: External Sector

Sudipto Mundle and Prerna Prabhakar

The COVID-19 pandemic is inflicting a high cost on lives and livelihoods worldwide. However, its impact has been far more severe in some of the advanced countries in Europe and the United States as compared to Emerging Market and Developing Economies in Asia, Africa and Latin America as well as advanced Asian economies like Japan, South Korea and Taiwan. This is a pattern not yet fully understood. Weak external demand and COVID-19 triggered supply chain disruption has severely hit Indian exports, which contracted by 34 per cent in March 2020 on a y-o-y basis. However imports have contracted even more because of weak domestic demand and also the global oil price crash, thereby moderating the trade deficit. The pandemic has also had a severe adverse impact on remittance flows and triggered a large outflow of portfolio investments while slowing down the inflow of FDI. These developments have depreciated the Indian rupee, which in turn has exacerbated the flight of capital. Accelerated de-globalisation since the pandemic is likely to lead to a very different architecture of global trade and finance post the pandemic. India needs to actively engage with these international developments in its best interest while domestically ensuring finance and other support for key export sectors like the badly affected MSME sector, which has been worst hit by the pandemic. Pharmaceuticals is another export sector where India can take advantage of the disruption of old supply chains to embed itself in the new supply chains that will emerge.

E.1. World Economy

The novel corona virus disease (COVID-19) pandemic continues to take a huge toll in lives and also livelihoods in many countries across the globe. However, its impact has been far more severe in some of the advanced countries in Europe and the United States as compared to Emerging Market and Developing Economies in Asia, Africa and Latin America as well as advanced Asian economies like Japan, South Korea and Taiwan. This is a pattern not yet fully understood. Several countries have resorted to social distancing, quarantining, lockdowns and closures of all non-essential sectors/businesses, imposing a severe adverse shock on economic activity.

The IMF is now projecting that global output will decline by about (-) 3% in 2020 (IMF World Economic Outlook, April 2020). Output in the AEs is projected to decline by (-) 6.1 per cent, a sharp drop from its January forecast of 1.6 per cent growth. This large change reflects the devastating effect of COVID-19 during the first Q1 of 2020 (Table E.1). United States output is expected to decline by 5.9 per cent in 2020, while the Euro Area's is projected to contract by 7.5 per cent, with recession in all countries, especially Italy. Output in Japan is expected to decline by 5.2 per cent. In contrast, output growth in the Emerging Market and Developing Asia is also expected to slow down sharply but still remain positive at 1 per cent, mainly on account of China - though this is where the pandemic originated- and India.

In our view, the IMF projections may be far too optimistic. In India for instance the IMF is projecting positive growth of 1.9 per cent while our own assessment at

NCAER is that output will actually decline by about 12 per cent -13 per cent in 2020-21. Hence, the global recession may be more severe than the IMF projections, projections that are more or less followed by several other multilateral agencies and other private financial institutions.

E.2. India's External Sector

The severe global recession is being reflected in India's external balances. Merchandise and services exports have been adversely impacted, having negative implications for the trade balance.

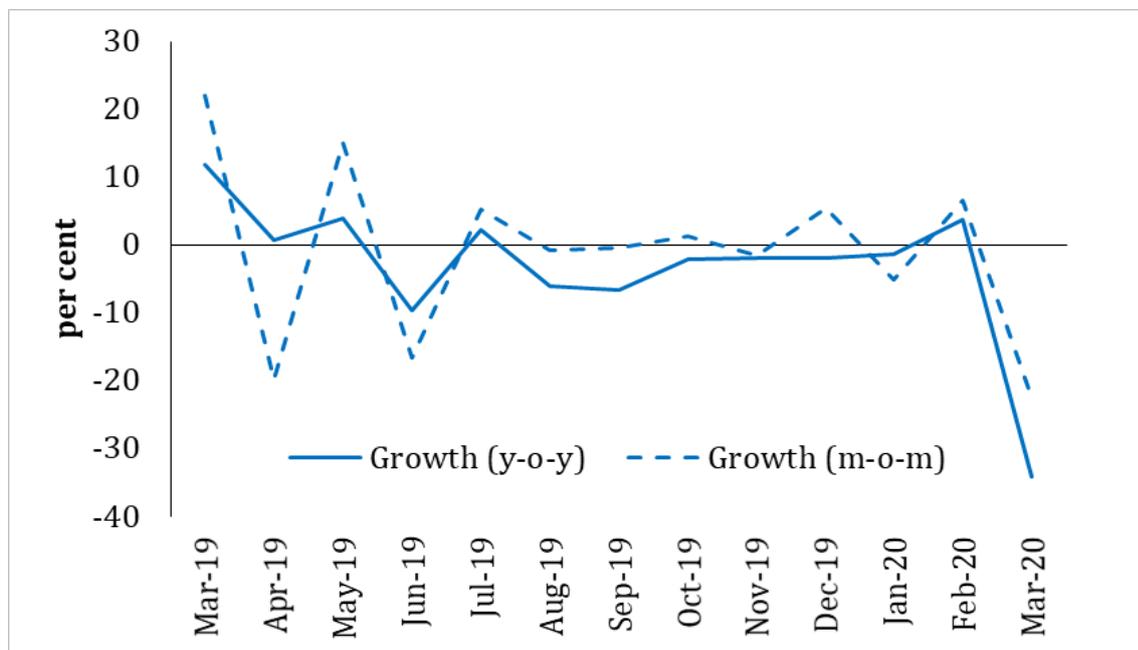
India's total exports, including merchandise and services¹, amounted to US\$ 528.45 billion, for the period of April-March 2019-20, exhibiting a decline of 1.4 per cent year-on-year (y-o-y). The decline was particularly sharp in March 2020, when external demand started crashing on account of the pandemic. India's March exports declined by 27 per cent on a month-on-month (m-o-m) basis and 34 per cent on a y-o-y basis. Total imports declined more sharply at 6.3 per cent on a y-o-y basis, especially on account of the exceptional fall in oil price, amounting to US\$ 598.61 billion. Consequently, the trade deficit for the period April-March 2019-20 remained moderate at US\$ 70.2 billion

E.2.1 Merchandise trade

Merchandise exports during the period April-March 2019-20 stood at US\$ 314.31 billion, a contraction of 4.8 per cent compared to the same period last year (Figure E.1). Merchandise imports for the period April-March 2019-20 amounted US\$ 467.19 billion i.e. a contraction of 9.1 per cent (Figure E.2). This fall in merchandise imports is largely attributable to the decline in value of oil imports by 8.9 per cent. The decline was particularly sharp in March 2020 at 15 per cent. This was due to the crash in Brent crude oil prices to only US \$ 33 per barrel in March 2020, a decline of around 48 per cent since January 2020.

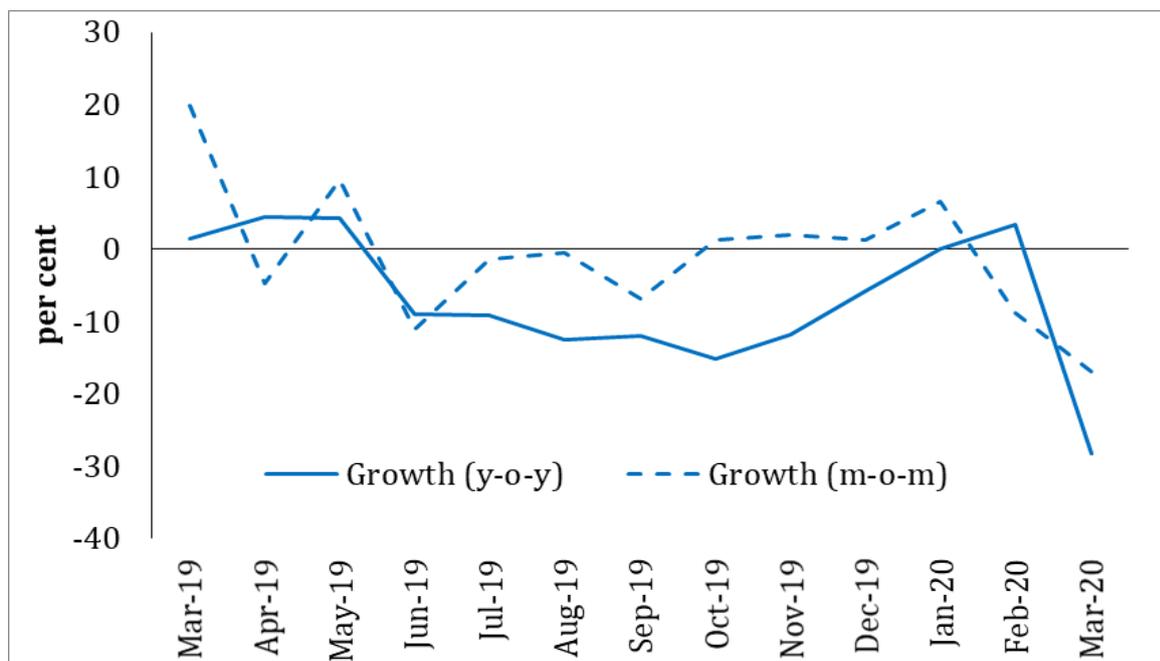
¹ The latest data for services sector released by RBI is for February 2020. The data for March 2020 is an estimation, which will be revised based on RBI's subsequent release.

Figure E.1: Merchandise Exports (in US dollar terms) Growth(%y-o-y) and Volatility (% m-o-m) (March 2019 to March 2020)



Source: Ministry of Commerce and Industry.

Figure E.2: Merchandise Imports (in US dollar terms) Growth(%y-o-y) and Volatility (% m-o-m) (March 2019 to March 2020)



Source: Ministry of Commerce and Industry.

E.2.2 Services Trade

The receipts and payments for services trade amounted to US\$ 214.1 billion and US\$ 131.4 billion, respectively, yielding a surplus of US\$ 82.7 billion during April-March 2019-20. Exports and imports grew by 4.1 per cent and 5.2 per cent respectively during this period. The impact of the pandemic shows up in the decline in services exports. The y-o-y growth of exports declined from 11.6 per cent to 6.9 per cent between December 2019 when the virus first appeared and February 2020 by which time the virus had spread to most countries across the world. However, imports of services increased from 10.4 per cent to 12.8 per cent on a y-o-y basis. It is expected that release of the March data will reveal that the worst affected sectors are travel, computer and information services and telecommunications.

E.3. Transmission Channels

Global economic shocks are transmitted to the economy through multiple channels. In this section the main channels through which the current global shock are being transmitted to the Indian economy are briefly reviewed.

E.3.1 Foreign Investment Flows

In India as in other EMDEs, rising risk aversion triggered by the COVID-19 pandemic has led to capital flight from the country. Net Foreign Direct Investment (FDI) increased by 30 per cent for the period April-February 2019-20 on a y-o-y basis. However, between January and February 2020, net FDI inflows are down to half their value amounting to USD 2873 Million. Foreign Institutional Investments and Foreign Portfolio Investments amounting to USD 8.3 billion were pulled out of the Indian market in March 2020 alone according to the National Securities Depository Limited (NSDL).

E.3.2 Remittances

Remittances are a major source of foreign exchange receipts for India. The pandemic has had a severe adverse effect on remittance flows. The World Bank estimates that remittances to India will fall sharply by about 23 per cent to US\$64 billion in 2020 while it had grown by 5.5 per cent to \$83 billion during 2019².

The decline in remittance flows is not only on account of the pandemic but also because of the collapse of oil prices that has severely impacted the Gulf economies which account for a large share of remittances to India, over 50 per cent according to the Reserve Bank of India (RBI).³

² Ratha, Dilip K.; De, Supriyo; Kim, Eung Ju; Plaza, Sonia; Seshan, Ganesh Kumar; Yameogo, Nadege Desiree. 2020. "COVID-19 Crisis Through a Migration Lens (English)". *Migration and Development Brief*. No. 32. Washington, D.C.: World Bank Group.

³ Jain, R., Gajbhiye, D and Tewari, S.. 2018. "'Globalising People: India's Inward Remittances". *RBI Bulletin*. pp. 45-55. November.

E.3.3 Oil price shock

It will be evident from the foregoing that the oil price collapse is not an unmixed blessing for India. It has impacted the Indian economy in two ways, one positive and one negative. On the one hand it has been a major factor accounting for the decline in the value of imports, thereby containing the trade deficit. On the other hand it has both reduced the value of our oil exports and significantly disrupted the inflow of remittances.

E.3.4 Exchange Rate

The Indian rupee has been depreciating in line with the outflow of foreign capital described above. It depreciated by 4.3 per cent (vis-a-vis the US\$) in one month between February and March 2020. At the time of writing (8 May, 2020), it had further depreciated to Rs 75.8 per US\$. While this helps to reduce the imbalance between exports and imports it is also reducing the return on external portfolio investments, thereby reinforcing the outflow of capital as in other EMDEs. For Indian investors, who have borrowed in foreign exchange, often without hedging, the currency depreciation is increasing their debt burden.

E.4 Possible Roadmap Ahead for India's External Sector

The full extent of global economic shock from the pandemic is not yet fully evident. But clearly it is reminiscent of the Great Depression of 1930s and far more severe than the Great Recession of 2008. It is significantly accelerating the pace of de-globalisation which was already underway since the crisis of 2008. In all likelihood the whole architecture of global economic relations, in particular global trade and supply chains could change radically. India needs to remain alert to such changes and adjust quickly to meet its best interests. While safeguarding its key export sectors and taking advantage of new opportunities to expand their markets at the national level, India also needs to engage with other countries at the international level to help shape the post-pandemic architecture of international trade and finance in a way consistent with its national interests .

The micro, small and medium enterprises (MSME) sector which accounts for 50 per cent of India's exports has been the worst hit due to closure of the economic activity across the country. Support for this sector, especially by way of access to bank finance is key for reviving the sector which not only accounts for half our exports but also the bulk of our employment outside agriculture. Another key sector for the growth for India's exports is pharmaceuticals. In the wake of the pandemic there has been a surge in the global demand for pharmaceutical products and medicines but the supply chains have been disrupted since China, where the pandemic first hit, is the global hub for manufacturing active pharmaceutical ingredients (APIs). India itself is dependent on China for 70 per cent of its API requirements. However, with the disruption of existing

supply chains, India should seek to create and develop an adequate API manufacturing base and become a major player the global pharmaceutical market.

Health has now emerged as a major global public good, or collective good, requiring close international cooperation through the World Health Organisation (WHO) and other partnerships. The World Trade Organisation (WTO) has also observed in its latest report that the “pandemic has highlighted the need for greater cooperation and efforts to reduce barriers to trade, including through increased mutual recognition agreements (MRAs).”⁴ India needs to actively engage with other countries in taking these agendas forward. In particular, India can leverage its multilateral and regional ties for liberalising trade in medicines and pharmaceutical products. In two of India’s existing Free Trade Agreements (FTAs), the India-Japan FTA and Indian-Singapore FTA, there are provisions for greater cooperation for generic medicines. These provisions should be replicated in other bilateral, regional and multilateral FTAs.

Table E.1: Growth of Global Output and Trade (% , y-o-y)

Country	Estimated	Projections	
	2019	2020	2021
World Output	2.9	-3	5.8
Advanced Economies	1.7	-6.1	4.5
United States	2.3	-5.9	4.7
Euro Area	1.2	-7.5	4.7
Germany	0.6	-7	5.2
France	1.3	-7.2	4.5
Italy	0.3	-9.1	4.8
Spain	2	-8	4.3
Japan	0.7	-5.2	3
United Kingdom	1.4	-6.5	4
Emerging Market and Developing Economies	3.7	-1	-1
Emerging and Developing Asia	5.5	1	1
China	6.1	1.2	1.2
India	4.2	1.9	1.9
ASEAN-5	4.8	-0.6	-0.6
Latin America and the Caribbean	0.1	-5.2	3.4
Brazil	1.1	-5.3	2.9
Mexico	-0.1	-6.6	3
World Growth Based on Market Exchange Rates	2.4	-4.2	5.4
World Trade Volume (goods and services)	0.9	-11	8.4

Source: IMF. 2020. *World Economic Outlook*.

<https://www.imf.org/en/Publications/WEO/Issues/2020/04/14/weo-april-2020>. April.

⁴ World Trade Organisation. 2020. *The Treatment of Medical Products in Regional Trade Agreements*. https://www.wto.org/english/news_e/news20_e/rta_27apr20_e.htm. April 27.

Chapter 6: Prices

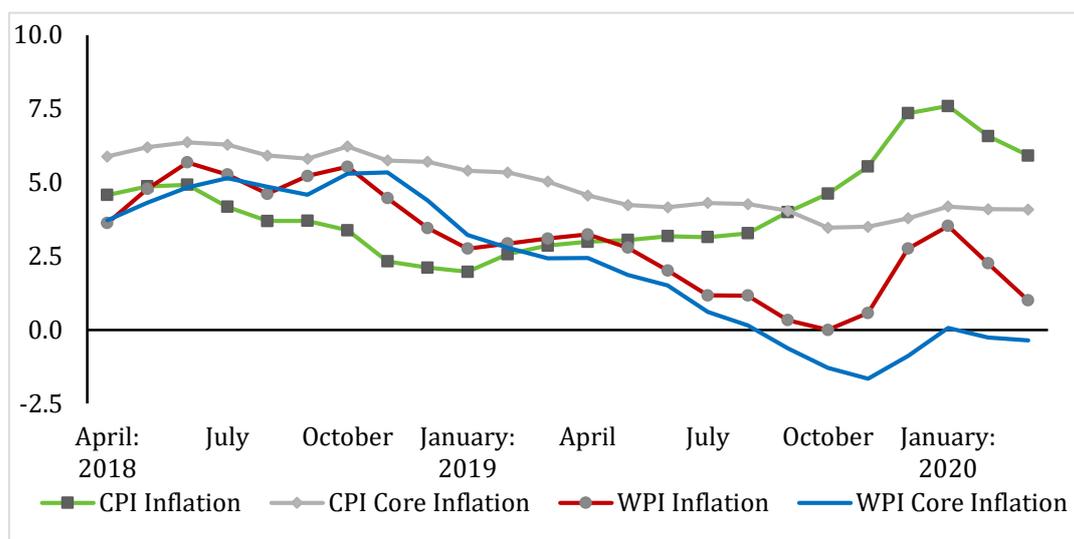
Rudrani Bhattacharya¹ and Ajaya K Sahu

After peaking in January 2020, CPI and WPI inflation moderated in February and March 2020 because of declining food prices. However, the headline retail inflation remained above the RBI inflation tolerance band of four to six per cent. We expect headline inflation to be 6 per cent in Q1:2020-21 and 5 per cent for the full financial year 2020-21, though much will depend on the nature of any fiscal stimulus and other policy interventions in response to the COVID-19 crisis. Business expectations and other evidence suggests that at present the decline in demand has exceeded supply side disruptions, hence the decline in inflation. By the same token a faster recovery of demand in response to stimulus policies relative to supply responses could lead to a rise in inflation later in the year as indicated in the chapter on policy simulations.

P.1 Introduction

Food price inflation continues to drive both Consumer Price Index (CPI) inflation and Wholesale Price Index (WPI) inflation and it has declined in recent months (January-March 2020). But its contribution to overall inflation has come down. Consequently, the gap between overall inflation and core inflation (without food and fuel) came down in Q4:2019-20 for both CPI and WPI (Figure P.1).

**Figure P.1: CPI and WPI Inflation: Overall and Core
April 2018- March 2020, (%y-o-y)**



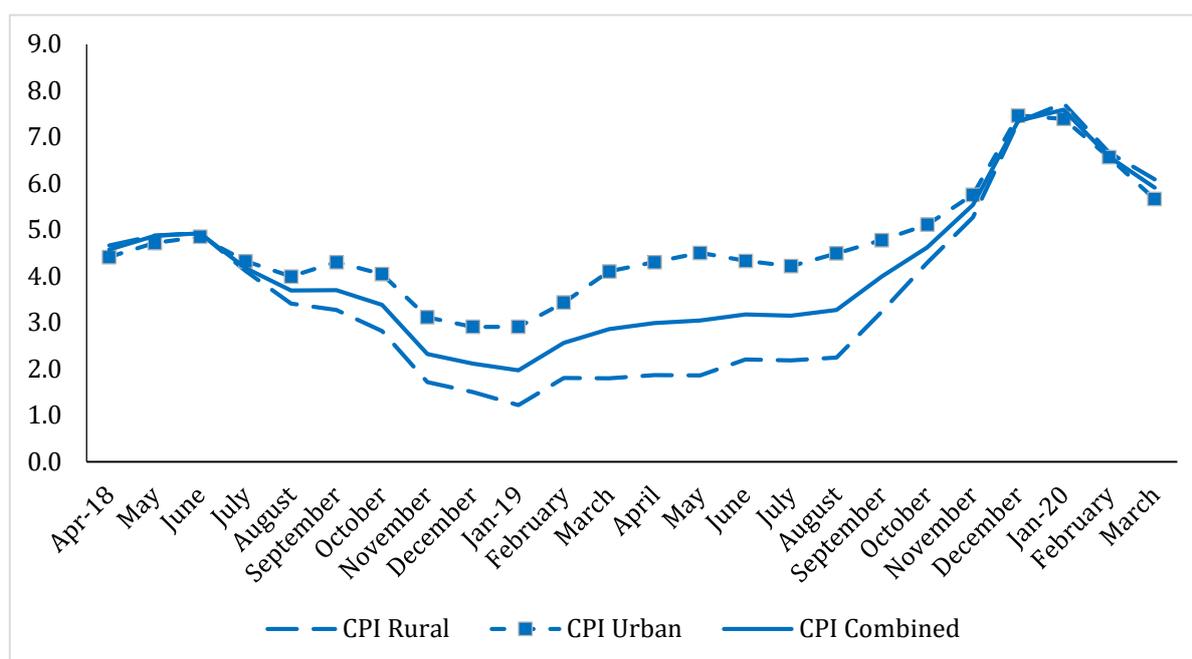
Source: Authors' calculations from MoSPI and Office of Economic Advisor.

¹ Rudrani Bhattacharya is an Assistant Professor at the National Institute of Public Finance and Policy, New Delhi.

P.2 Retail Inflation

After bottoming out at 2 per cent in January 2019 the CPI inflation rate (headline inflation) gradually rose to 7.6 per cent in January 2020 on a year-on-year (y-o-y) basis, thus crossing the upper bound of the RBI inflation tolerance band of 4 to 6 per cent. The CPI rural inflation rate rose from 1.2 per cent in January 2019 to 7.7 per cent in January 2020 while the CPI urban inflation rate similarly rose from 2.9 per cent to 7.4 per cent over the same period. After peaking in January, the headline inflation rate had declined to 5.9 per cent by March 2020 (Figure P.2).

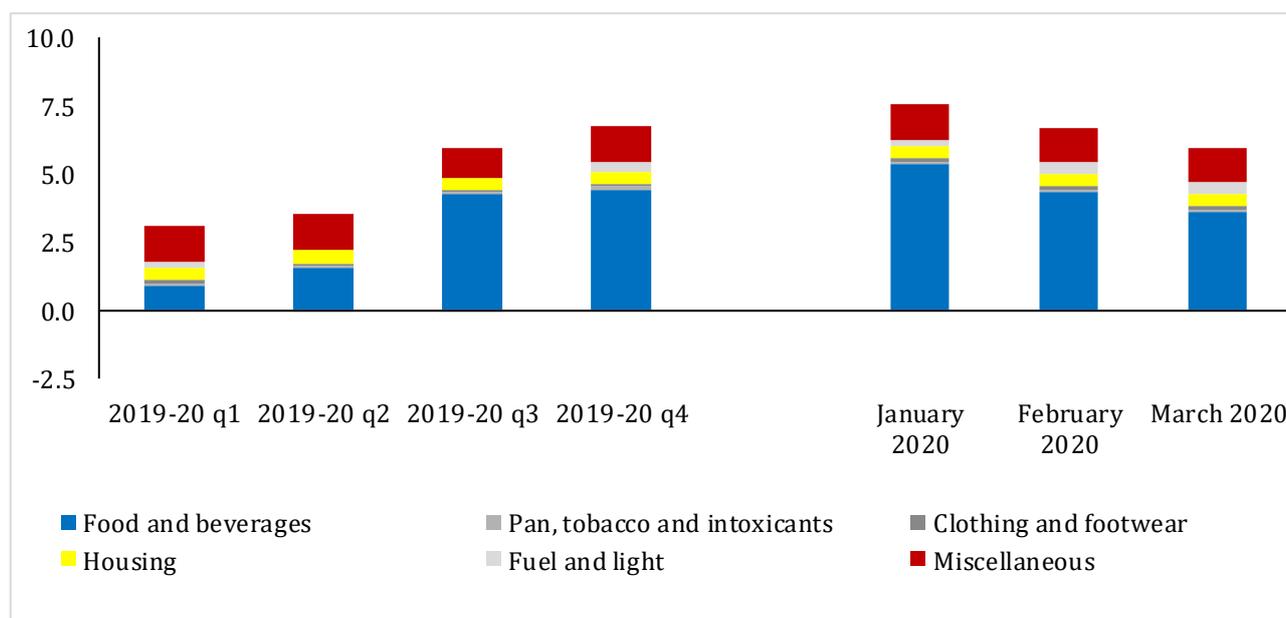
Figure P.2: CPI Inflation and Sectoral Variation, April 2018–March 2020 (% y-o-y)



Source: Authors’ calculations from MoSPI.

Figure P.3 shows that ‘food and beverages’ inflation was the main driver of overall inflation. Its contribution increased from 28.6 per cent of total inflation in Q1: 2019-20: to 72.4 per cent in Q3: 2019-20, then declining to 65.6 per cent in Q4: 2019-20. On a monthly basis the contribution of ‘food and beverages’ inflation in total inflation declined from 70.7 per cent in January 2020 to 64.6 per cent in February 2020 and further to 60.1 per cent in March 2020. Further decomposition of ‘food & beverages’ inflation shows that it was mainly driven by changes in vegetables’ prices. The contribution of ‘miscellaneous items’ (which includes transport, education and health items) which was very large in Q1:2019-20 (43.5 per cent) is now down to 19.1 per cent in Q4: 2019-20.

Figure P.3: Contributors to overall CPI Inflation Q1-Q4: 2019–20, January- March 2020 (% y-o-y)



Source: Authors’ calculations from MoSPI.

P.3 Wholesale Price Inflation

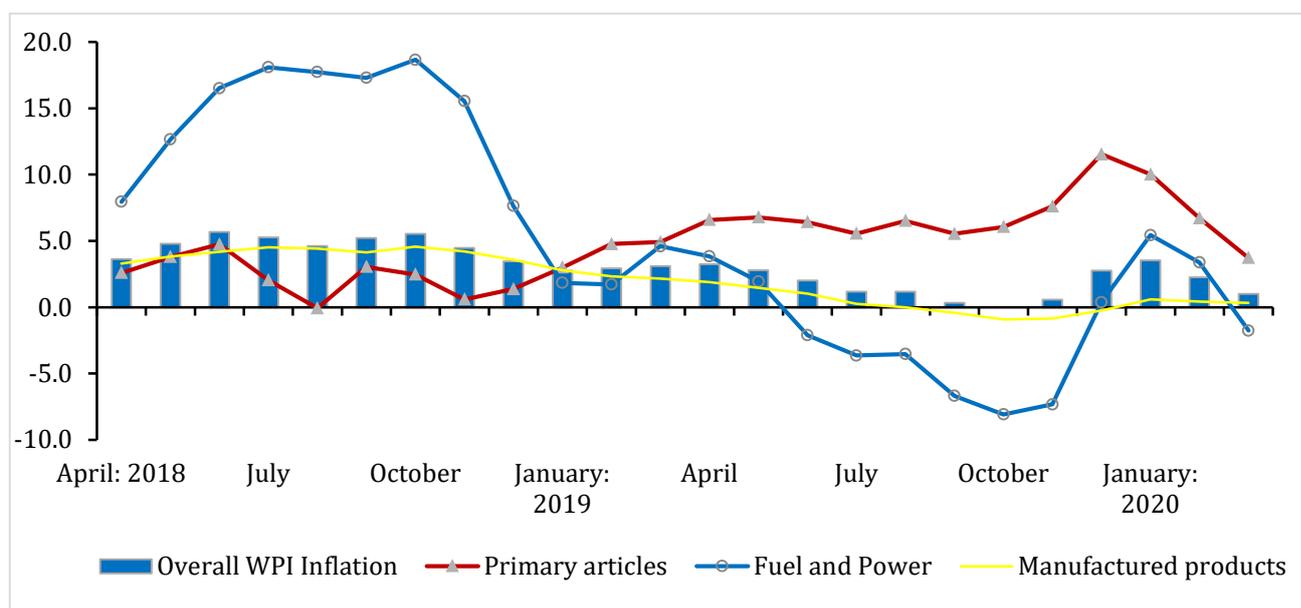
The y-o-y WPI inflation rate in Q4 of 2019–20 rose to 2.3 per cent, as compared to 0.9 per cent and 1.1 per cent in Q2 and Q3 respectively. Overall inflation was driven by increase inflation in all the three broad groups, namely, ‘primary articles’, ‘fuel and power’, and ‘manufactured products’ with weights of 22.6 per cent, 13.2 per cent, and 64.2 per cent, respectively. While the ‘primary articles’ price index increased by 6.8 per cent in Q4, inflation rates in ‘fuel and power’, and ‘manufactured products’ increased by 2.3 per cent and 0.5 per cent respectively (Figure P.4).

Food inflation, which includes both primary food items as well as manufactured food items, declined to 7.6 per cent in Q4 of 2019-20 as compared to 9.3 per cent in Q3. Within the food group, the inflation rate for fruits and vegetables declined sharply from 29.9 per cent in Q3 of 2019–20 to 17.1 per cent in Q4, but which was still quite high. Thus, as with retail inflation, WPI inflation has also been primarily driven by food prices, in particular the prices of fruits and vegetables. However, the relative contribution of this group had declined in the fourth quarter.

While y-o-y inflation estimates present the average inflation rate over the last eleven months, the seasonally adjusted month-on-month (m-o-m) change in inflation rates gives a more recent picture. As opposed to a sharp decline in y-o-y inflation in CPI food and headline inflation in March 2020, the m-o-m changes show a mild rebound in these two price series in the same month. The rebound is also visible for CPI core

inflation.² For wholesale prices the annualised m-o-m inflation in primary and aggregate WPI (seasonally adjusted) and WPI Energy (Fuel and Power) declined in March, 2020. However, WPI for manufacturing showed a rebound in March, 2020, after recording negative inflation rate between January and February, 2020.

Figure P.4: WPI Inflation and Its Components April 2018 to March 2020 (% y-o-y)



Source: Authors' calculations from based on data from Office of Economic Advisor

P.4 Energy Price Inflation

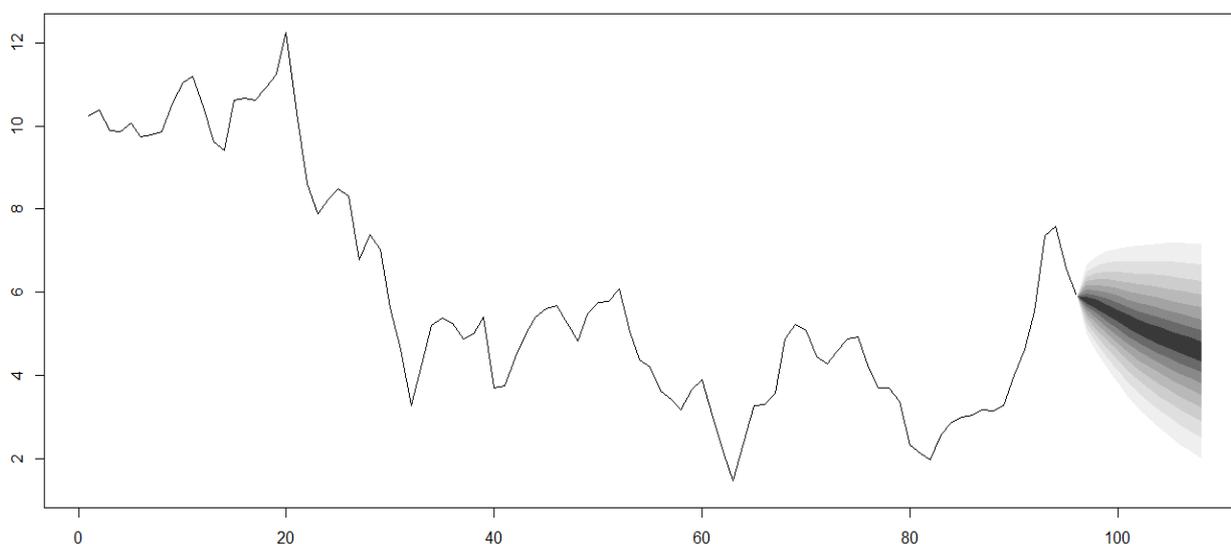
Crude oil price halved from US\$63/barrel in January, 2020 to US\$33/barrel in March 2020. In rupee terms crude oil prices declined by 14 per cent in February, 2020 and of 47 per cent in March 2020, reflecting the depreciation of the rupee. This is marginally reflected in the WPI for Fuel and Power, which decreased by 2 per cent in March 2020, and not at all in the CPI inflation rate which rose from 4 per cent in January, 2020 to 6 per cent in February and further to 7 per cent in March. This is because the decline in border prices has been mopped up through higher revenues and not passed on to the market.

² CPI core and aggregate CPI are not adjusted for seasonality as we do not find significant seasonal fluctuations in these price indicators.

P.5 Expected Behaviour of Inflation in 2020-21 Q1 and rest of the financial year 2020-21

To project the expected headline inflation in Q1: 2020-21 and for the financial year 2020-21, we have estimated a Vector Auto Regression (VAR) model using a data set consisting of monthly y-o-y inflation rates from April 2011 to March 2020 for WPI oil, WPI food, CPI food, CPI core, headline CPI; changes in the repo rate and exchange rate; and changes in bank credit to the commercial sector as a proxy for the current level of economic activities. The model predicts that CPI headline inflation will slowly decline over the next 12 months (Figure P.5). The effect of declining demand on prices is expected to be partly offset by the expected cost-push on the supply side due to disruption of input supply chain as well as high mortality of MSMEs in the manufacturing sector. This predicted trend is consistent with the declining trend of average inflation expectations reported by RBI Household Surveys of Inflation Expectations. Our model further predicts that the CPI headline inflation will be 6 per cent in Q1: 2020-21 Q1 and 5 per cent during the financial year 2020-21. However, this does not provide for possible stimulus policies during the year, in which case the picture could change as suggested by the policy simulations discussed in the next chapter.

Figure P.5: Outlook for CPI inflation (%y-o-y), April 2012 to March 2021



Source: Contributed by Rudrani Bhattacharya, Assistant Professor, NIPFP.

Note: The X axis of the figure represents the time period from April, 2012 to March, 2021. The shaded part shows the forecasted inflation rate from April 2020 to March 2021.

Chapter 7: Policy Simulations in the context of COVID 19

*N R Bhanumurthy*¹

As suggested in the previous chapters GDP in 2020-21 could decline to (-) 12.5 per cent in 2020-21 in the absence of any macroeconomic stimulus. This chapter, explores the impact of alternative fiscal stimulation policies on growth with the help of a policy simulation model. The results suggest that to register a positive growth, there is a need for an additional increase in public expenditure of 3 per cent (of GDP) over the budgeted expenditure (Centre plus States) for 2020-21 (simulation Scenario-3). A larger expenditure stimulus of 5 per cent of GDP would lead to a higher growth of 3.6 per cent. However, there is a trade-off here as this GDP growth will come with double digit inflation, a near double-digit combined fiscal deficit ratio to GDP (Centre plus States) and also an unsustainable current account deficit of 3.6 per cent of GDP (simulation Scenario-4)².

The recently announced cumulative fiscal-monetary stimulus package of Rs 20 trillion includes RBI's liquidity measures taken earlier and the additional borrowing requirements to achieve the budgeted expenditure targets for 2020-21 despite the anticipated revenue shortfall (simulation Scenario-2). After adjusting for these, the net additional spending over and above existing budget targets (Centre plus States) would amount to about 3.3 per cent of GDP, which is similar to our preferred scenario (simulation Scenario-3), which simulated the macroeconomic impact of additional spending amounting to 3 per cent of GDP.

PS.1 Introduction

The impact of COVID-19 on the world economy is turning out to be to be very severe. Several international agencies suggest that global Gross Domestic Product (GDP), which was earlier expected to grow by 3 per cent, is likely to decline by (-) 3 per cent in 2020. For India, the International Monetary Fund had earlier predicted a GDP growth rate of 1.9 per cent. However, since then, with the lockdown extended further, most analysts now forecast negative growth in 2020-21.

Earlier chapters have reported the expected output shock expected by domain experts for different sectors and sub-sectors of the economy. Aggregating these inputs points to a decline in Gross Value Added (GVA) of as much as (-) 25.7 per cent in the first quarter of the current financial year (Table PS.1). Negative growth is expected to continue for next two quarters as well, though with a gradual reduction in the shortfall, until there is finally a moderate growth of 0.5 per cent in the fourth quarter of 2020-21 (this is mostly the effect of a low base in Q4 of 2019-20). These quarterly growth assumptions suggest that India may not experience a sharp 'V' shaped recovery as many expect³. For the year as a whole, the GVA growth turns out to be (-) 12.5 per cent, which

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² Further, given the supply chain disruptions and expected higher mortality among MSMEs, if actual supply constraints turn out to be more binding than assumed in the simulation model, the fiscal stimulus packages could lead to higher inflation and lower growth than indicated by our simulations.

³ See for instance the interview by Chief Economic Advisor, Krishnamurthy Subramanian in Economic Times. <https://economictimes.indiatimes.com/news/economy/finance/gdp-will-contract-in-the-first-quarter-kv-subramanian-cea/articleshow/75567696.cms>

would be the sharpest reduction experienced in India since independence. However, these growth numbers are based on the assumptions that there are no policy responses (either fiscal or monetary) to address the slowdown (baseline simulation scenario). The large fiscal-monetary stimulus package recently announced implies the actual outcomes will be much more positive than this dire baseline scenario

Table PS.1: Quarterly Assumptions about Disruptions in GVA and Key Sectors (%y-o-y)

Sector	2019-20:Q4	2020-21:Q1	2020-21:Q2	2020-21:Q3	2020-21:Q4	2019-20	2020-21
Agriculture	0.0	0	3.0	3.0	3.0	2.4	2.3
Industry	0.7	-54.2	-27.0	-27.0	0	1.4	-27.1
Services	5.3	-16.3	-8.0	-8.0	0	5.8	-8.1
GVA	3.0	-25.7	-12.3	-12.3	0.5	4.4	-12.5

Sources: NCAER and NIPFP.

While the Government (both Centre and some States) as well as Reserve Bank of India have brought some short term support measures, many have argued for much stronger fiscal support to revive the economy⁴. Apart from ramped up health services, enhanced free food distribution and income support, the stimulus is demanded mainly for employment intensive sectors such as micro, small and medium enterprises (MSMEs) that were already in a weak condition (after demonetisation and poorly administered Goods & Services Tax rollout) and which are now worst affected by the lock down. Against this background, an attempt has been made in this chapter to assess the impact of varying levels of fiscal stimulus on GDP growth and other major macroeconomic variables such as inflation, fiscal deficit, and current account deficit (CAD), etc.

This exercise is based on a macroeconomic policy simulation model originally developed by Mundle, Bhanumurthy and Das (2011) which has been used in different versions to address macroeconomic fiscal and monetary issues that have arisen from time to time⁵. In its present application the negative growth assumption of (-) 12.5 per

⁴ Many have argued for a fiscal stimulus of as much as 5 per cent of GDP.

⁵ The model was originally applied to find a macroeconomic path that combined fiscal consolidation with high growth (see Mundle et al. 2011 below). Its key policy conclusion of expenditure switching expenditure from revenue to capital spending was incorporated into the recommendations of the 13th Finance Commission and later the FRBM Committee. A second version was applied to analyse the impact of oil price policy reform (see Mundle et al. 2014 below). An expanded version with fiscal multipliers was used to analyse alternative deficit and debt policies (see Bhanumurthy et al. 2018 below) and most recently to explore alternative fiscal deficit and devolution policies for the 15th Finance Commission (see Bhanumurthy et al. 2019 below).

cent for 2020-21 is imposed on the model to derive the corresponding expenditure, revenue and deficit conditions for the base case. Using these initial numbers, four fiscal policy scenarios have been simulated. The results are presented in Table PS.2. It is assumed throughout that monetary policy will be accommodating. On the external side exports are largely dependent on external demand and tariffs while imports are largely dependent on domestic demand and the price of oil. It is assumed throughout that advanced countries will grow as per the IMF projections and that international oil prices will remain at US\$30 per barrel.

PS.2 Scenarios

In the base case, while a sharp decline in the GDP growth rate is imposed, its impact on the fiscal deficit (Centre plus States combined) is limited because the revenue decline is largely passed on to a reduction in public expenditure. Inflation remains moderate at 4.5 per cent (Table PS.2).

Table PS.2: Some Simulation Results

Scenarios	GDP growth (%)	Inflation (%)	Fiscal Deficit (as % of GDP)	Current Account (as % of GDP)
Base case	-12.5	4.5	6.4	1.4
Scenario-1	-4.1	6.6	7.4	2.3
Scenario-2	-1.9	7.4	7.7	2.5
Scenario-3	1.2	8.9	8.8	3.0
Scenario-4	3.6	10.1	9.4	3.6

Source: Estimates using model from Bhanumurthy N R, Bose, S. and Satija, S. 2019. "Fiscal Policy, Devolution and Indian Economy". *NIPFP Working Paper No. 287*. <https://nipfp.org.in/publications/working-papers/1883/>. New Delhi. December.

Mundle, S., Bhanumurthy, N.R. and Das, S. 2011. "Fiscal Consolidation with High Growth: A Policy Simulation model for India". *Economic Modelling*. 28 (6): 2657-2688. November.

Mundle, S., Bhanumurthy, N R and Bose, S. 2014. "Subsidy Elimination With and Without a Global Oil Shock: The Macroeconomics of Oil Price Policy Reform" in N. Jung (ed.) *The Political Economy of Energy and Growth*, Oxford University Press, New Delhi.

Bhanumurthy N R, Bose, S. and Chakravatti P. 2018. "Targeting Debt and Deficits in India: A Structural Macroeconometric Approach". *Journal of Quantitative Economics*. Springer; The Indian Econometric Society (TIES). 16(1): 87-119, December.

Bhanumurthy N R, Bose, S. and Satija, S. 2019. "Fiscal Policy, Devolution and Indian Economy". *NIPFP Working Paper No. 287*. <https://nipfp.org.in/publications/working-papers/1883/>. New Delhi. December.

The four scenarios are presented below:

- Scenario-1: Starting with the base case, revenue and capital expenditures are increased as per the 2020-21 (Budget Estimates).
- Scenario-2: Increasing the public expenditure by 1 per cent of GDP and the reduction in repo rate.
- Scenario-3: Increasing the public expenditure by 3 per cent of GDP.
- Scenario-4: Increasing the public expenditure by 5 per cent of GDP.

In Scenario 1, it is assumed that central government expenditures is maintained as proposed in the Union Budget 2020-21⁶. In this scenario GDP declines by (-) 4.1 per cent. The fiscal deficit still increases to 7.4 per cent of GDP while inflation goes up to 6.6 per cent (Table PS.2).

Scenario 2 incorporates the stimulus measures taken so far by government and the Reserve Bank of India (RBI) (prior to 12 May, 2020, also see chapter VIII on monetary policy). Public expenditure is increased by 1 per cent⁷ of GDP while the assumed policy interest rate is reduced. In this scenario, the decline in GDP is limited to (-) 1.9 per cent, while the fiscal deficit at 7.7 per cent of GDP is similar to that in Scenario 1. The inflation rate now rises to 7.4 per cent.

In Scenario 3 public expenditure is increased by 3 per cent of GDP. In this case GDP growth turns positive at 1.2 per cent. But the fiscal deficit now goes up to 8.8 per cent and inflation rises to nearly 9 per cent (Table PS.2).

In Scenario 4 the fiscal stimulus is raised to 5 per cent of GDP as has been suggested by several analysts. In this case GDP grows by 3.6 per cent but the fiscal deficit goes up further to 9.4 per cent and inflation hits double digits at over 10 per cent. The current account deficit also rises to an unsustainable 3.6 per cent of GDP (Table PS.2). The sharp rise in inflation with every simulated increase in public expenditure, implies that there is a faster response of aggregate demand compared to the supply response. This is presumably a correct reflection of ground reality where supply chains have been disrupted and not easily restored because of the high mortality of small and medium enterprises in the wake of the lock down. If actual supply constraints turn out to be more binding than assumed in the simulation model, fiscal stimulus packages could lead to even higher inflation and lower growth than indicated by our simulations. It is important at this juncture to remain alert against the risks of stagflation while launching a stimulus package. Alternatively, if there is an improved supply response later in the year, this could moderate inflationary pressures. However, this may need much broader policy interventions than just the increase in public expenditure.

⁶ In the case of States as there are no aggregate Budget estimates available government expenditures for 2020-21 is assumed to be as per the estimates made prior to the COVID 19 in Scenario 1.

⁷ In Scenarios 1 to 4, additional increase in public expenditure is distributed between capital and revenue expenditure at 10 per cent and 90 per cent, respectively.

Chapter 8: Money and Financial Markets

Sudipto Mundle and Pallavi Choudhuri

With the economy put under great strain in the midst of a global pandemic and a nationwide lockdown, the RBI rolled out a host of relief measures in a bid to soften the blow to the industry and services and stimulate the flow of credit. While well intended, transmission of monetary policy has been somewhat ineffective, with the banking and financial sector under strain even prior to the COVID-19 scenario. With banks unwilling to extend credit to the MSMEs, it is necessary that either the RBI or the government provide credit guarantee, in addition to offering partial guarantee for investing in NBFCs, particularly small and mid-sized NBFCs, which are one of the primary providers of credit to the MSMEs. Support to both MSMEs and NBFCs have in fact been announced by the Finance Minister on 13 May, 2020.

NCAER simulations indicate that output for 2020-21 would contract by nearly 13 per cent in the absence of a fiscal stimulus. A massive fiscal stimulus is necessary for moderating the negative shocks to the economy. Such a package should include additional funds required to counter the health crisis and the expanded food and income support to mitigate the effects of the lock down. The government has announced a large fiscal-monetary stimulus package on 12 May 2020 cumulatively adding up to 10 per cent of GDP, with further details provided on 13 May. But, so far there is no evidence of enhanced spending on the public healthcare system, additional food support, or additional income support for the poorest.

In addition to RBI's liquidity measures, the stimulus package will entail an unprecedented annual sovereign borrowing program of around of around 8.7 per cent of GDP (this includes the budgeted net market borrowing of 2.7 per cent of GDP along with 6 per cent of GDP to support the balance ₹12 trillion economic package). No single approach can cope such a massive demand for loans. Multiple channels will have to be combined, ideally spread over a period of two years. These would include lending by commercial banks, re-purposing and further liberalisation of 'Ways and Means' advances with much larger advance limits and longer period of advance and, finally, direct monetisation of a part of the deficit through direct RBI acquisition of government debt through private placements.

M.1 Introduction

As COVID-19 continues to wreak havoc across nations, it's not just the health systems and public health infrastructure that are under great strain but also economies. In India the virus has dealt a severe blow to an economy that was already ailing. NCAER's quarterly business confidence index dropped by over 30 per cent in the last quarter of the previous fiscal year, falling from 111.2 in Q3: 2019-20 to 77.3 in Q4: 2019-20, the lowest since the Asian crisis of 1998. The Nikkei Composite PMI fell from 50.6 in March 2020 to 7.2 in April 2020. This was the combined effect of the pre-existing slow down and the COVID-19 virus that has spread quite rapidly in India since late March.

M.2 Policy Rate Cuts and Inflation

To cushion the blow to industry and services and stimulate the flow of credit the Reserve Bank of India (RBI) rolled out a host of relief measures, which included, among others, (i) reducing the repo rate by 75 basis points (bps) to 4.4 per cent on March 27, 2020, (ii) cutting the cash reserve ratio (CRR) by 100 bps to 3.0 per cent, (iii) announcing targeted long term repo operations (TLTRO) worth one trillion rupees, and (iv) reducing the reverse repo rate in two subsequent phases, March 27 and April 17, by 90 bps and 25 bps respectively to 3.75 per cent (see Figure M.1).

Overall, the RBI's cut in interest rates and liquidity injections till April 17, 2020 amounts to approximately ₹6.54 trillion (about 3.27 per cent of GDP) as noted in the RBI Governor's statement on April 17, 2020¹. These include liquidity injections of ₹2.8 trillion since the February 2020 bi-monthly meeting, with another ₹3.74 trillion package announced on March 27, 2020 (comprising TLTRO operations in April, 2020, along with adjustments under CRR and MSF)². Additionally, the RBI announced subsequent measures for ₹1.5 trillion, comprising (a) ₹50,000 crore for TLTRO 2, (b) ₹50,000 crore earmarked for refinancing of SIDBI, NABARD, and NHB, and (c) liquidity facility of ₹50,000 crore for mutual funds. Together, these liquidity measures add up to ₹8.04 trillion, amounting to 4.02 per cent of GDP.

Lowering the repo rate was aimed at reducing the cost of borrowing, while the cut in the reverse repo rate was aimed at dis-incentivizing banks from parking their surplus funds with the RBI. The RBI also rolled out a support facility for mutual funds following the closure of several funds by Franklin Templeton, one of the largest mutual fund operators.

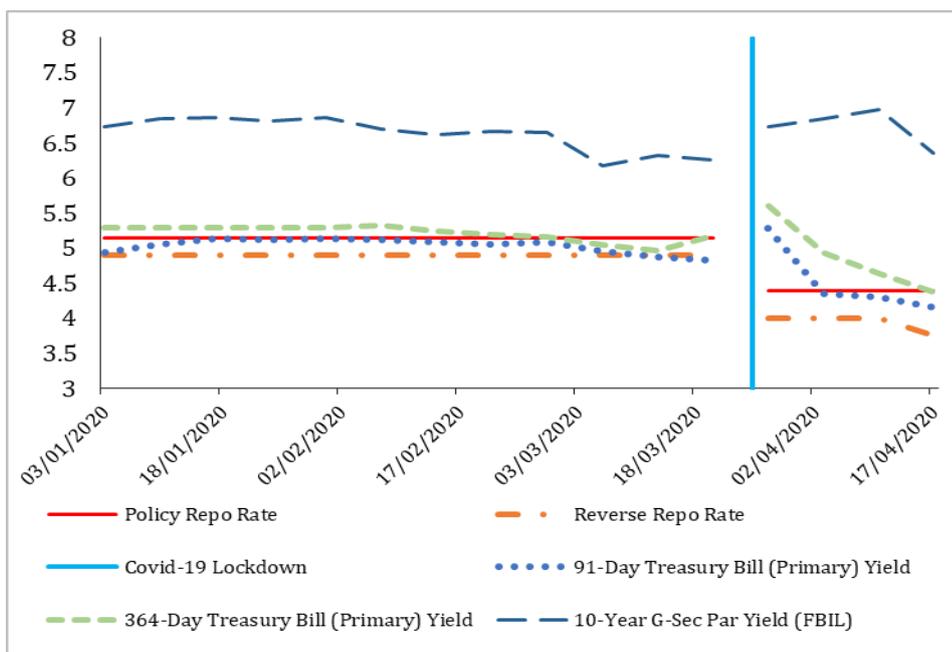
¹ For details on RBI's Covid-19 operations, see RBI Governor's statement dated April 17, 2020 and March 27, 2020: The RBI governor announced a Covid-19 package of ₹3.7 trillion.

https://www.rbi.org.in/Scripts/bs_viewcontent.aspx?id=3853

https://www.rbi.org.in/Scripts/BS_PressReleaseDisplay.aspx?prid=49582

² Note, that the estimate of ₹6.5 trillion liquidity package does not include subsequent measures announced by the RBI, comprising (a) ₹50,000 crore for TLTRO 2, (b) ₹50,000 crore earmarked for refinancing of SIDBI, NABARD, and NHB, and (c) liquidity facility of ₹50,000 crore for mutual funds. Together these would add up to approximately to another 0.75 per cent of GDP

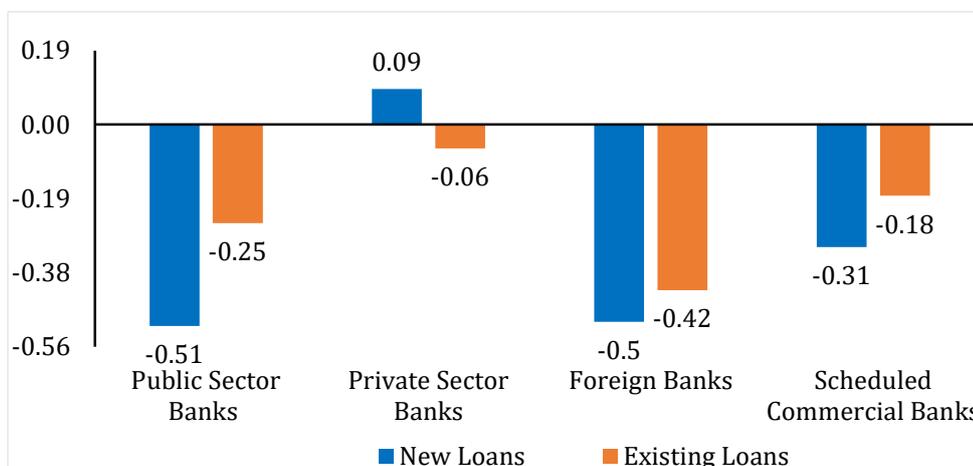
Figure M.1: Rates and Yields, % (January to April 2020)



Source: RBI.

Though the repo rate went down by 100 bps between September 2019 and March 2020, the weighted Average Lending Rate (WALR) on fresh rupee loans of commercial banks declined by 50 basis points (bps) only for public sector banks and foreign banks, and increased 9 bps for private banks, indicating a near breakdown of the transmission channel for private banks during the period (see figure M.2).

Figure M.2: Change in Weighted Average Lending Rate (WALR) between September 2019 and February 2020



Source: RBI.

On April 17, the RBI announced a further reduction in the reverse repo rate, by 25 bps to 3.75 per cent, in a tacit admission that the earlier provision for enhancing liquidity, using tools such as LTROs and TLTROs, did not have the desired effect. However, it appears that banks have continued to park funds with the RBI even at the reduced reverse repo rate, instead of lending or investing in the bonds market in the desired segments. The data from the RBI on money market operations show that net liquidity absorption as on April 30, 2020 was ₹4.9 trillion, with banks parking ₹7.35 trillion at the reverse repo rate.

Headline inflation based on the consumer price index (CPI) started easing from February 2020. NCAER has assessed headline inflation to be 6 per cent in Q1:2020-21 and 5 per cent for the full financial year 2020-21, though much will depend on the nature of any fiscal stimulus and other policy interventions in response to the COVID-19 crisis (see Chapters VII on Policy Simulations). The Indian rupee depreciated by 5.17 per cent during the last quarter of fiscal 2019-20, and fell by another 2.27 per cent on April 17, 2020, hitting an all-time low of INR 76.54 against the US Dollar (spot rate). Rising risk aversion and capital flight from EMEs during this period of great uncertainty in the global trade and macroeconomic outlook could exert further pressure on the Indian rupee. Continuing depreciation could raise the risk of imported inflation, leaving less room for further rate cuts.

M.3 Risk aversion and NBFCs

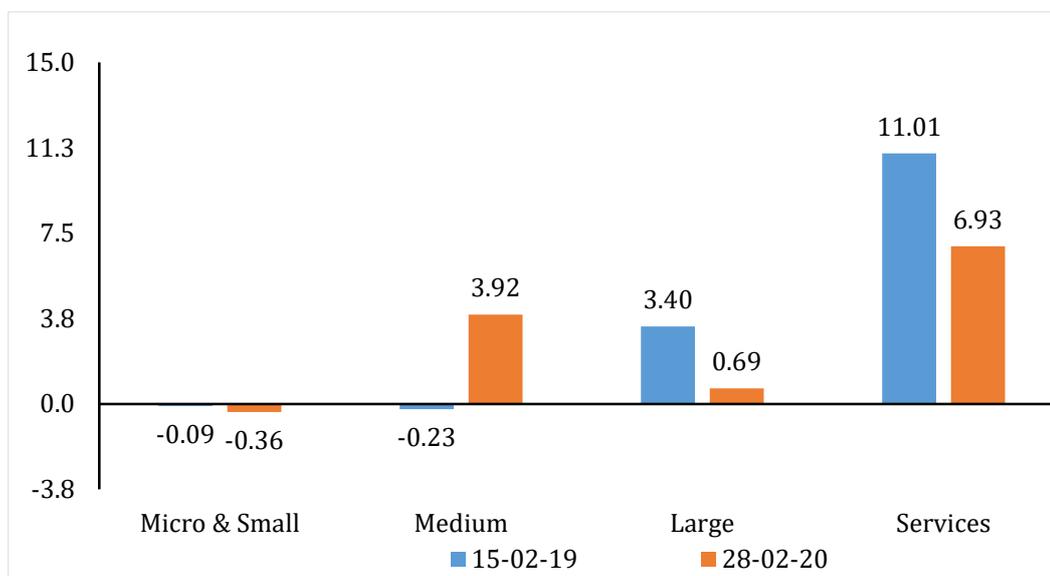
As financial markets, including the banking sector, exhibit high levels of risk aversion, bank credit is unlikely to take off in the prevailing scenario. Banks are still unwilling to lend, especially to Non-banking financial companies (NBFCs) which remain the main sources of credit for micro, small, and medium enterprises (MSMEs). The RBI received bids for only ₹12,850 crores, about half the ₹25,000 crore it was offering under its revised Targeted Long-Term Repo Operation (TLTRO) on April 17, 2020. Quite likely this is a consequence of high risk aversion triggered by the IL&FS crisis of September 2018 and other similar fiascos that followed. In the light of such trends, the government or the RBI need to provide some form of at least partial credit guarantees for NBFCs, especially the small and medium sized NBFCs, banks are likely to continue to shy away from investing in such segments. Such support was in fact announced by the Finance Minister on 13 May, 2020, in relation to the Prime Minister's ₹20 trillion stimulus package announced on 12 May, 2020.

M.4 MSMEs and stalled bank lending

The growth of credit to industry (comprising both MSME and large industries), came down to 0.68 per cent, y-o-y, by February 28, 2020 as compared to 2.78 per cent during the previous year (February 15, 2019). While medium industries fared better

than other industry segments, the growth of credit to micro and small industries was negative at (-) 0.36 per cent (See Figure M.3).

Figure M.3: Growth Rate of Credit Across Sectors (% , y-o-y)



Source: RBI

Interestingly, non-food credit dipped beyond March 29, falling by ₹33,872 crores to ₹102.85 trillion as on April 10, 2020. On the supply side, lending has fallen on account of risk-aversion on the part of banks, as the ability of businesses to service loans declines during any downturn. On the demand side, the drop in business sentiments, along with a fall in economic activity resulting from the lockdown, have tempered demand for loans.

MSMEs are facing a particularly severe crisis as their cash flow have dried up while their wage bills and operating costs have piled up, significantly raising their need for working capital. However, even prior to the COVID-19 scenario banks were turning towards low yield safer government securities using the SLR (statutory liquidity ratio) window instead of extending credit to the MSME sector. Unless loans directed towards MSMEs are backed by government or RBI guarantees, banks may continue to steer clear of this sector. Responding to this challenge, on 13 May 2020 the Finance Minister announced a large credit guarantee arrangement for MSMEs totaling ₹3 trillion as part of the ₹20 trillion package announced on 12 May, 2020

M.5 Bond yields

On March 18 the RBI indicated that it would be buying short-term notes and government bonds to ease bond yields, which had shot up due to risk inversion. While the 91-day treasury bills (T-bills) had fallen below the policy repo rate, to 4.3 and

subsequently to 4.15 per cent on April 10 and 17, respectively, the high yields on long-dated bonds persisted because of the fear of high macroeconomic uncertainty, impending recession and potential stagflation. The markets may also be factoring a possible large increase in government borrowing to finance extra spending related to COVID-19 relief measures and the corresponding increase in supply of sovereign bonds.

The yield on the ten-year benchmark government security (G-sec) spiked to 6.98 per cent on April 10, increasing the term premia³ on bonds. The cut in the reverse repo rate on April 17 led to stronger monetary transmission at the shorter end of the bond market. The yield on the ten-year G-sec fell by 9 bps to 6.35 per cent compared to the previous day yield, while that on the T-bill fell by as much as 17 bps to 4.15 per cent. To cool off the yields on the longer dated securities, the RBI relaunched its bond swapping programme, termed as India's version of Operation Twist, with a view to aiding monetary transmission at the longer-end of the bond market, and softening the yield on corporate bonds.

M.6 Financing Government Borrowing⁴

NCAER simulations indicate that output for 2020-21 would contract by about 13 per cent, with nominal GDP going down by about 6 per cent, in the absence of a strong macroeconomic stimulus. As discussed in the chapter on Fiscal Policy, a massive stimulus package is necessary for moderating the negative shocks to the economy, much of which should be the additional funds required to ramp up the health infrastructure and COVID-19 testing facilities necessary to counter the health crisis and the expanded food and income support to mitigate the effects of the lock down.

The Prime Minister, on May 12, 2020, announced an economic package, 'Atmanirbhar Bharat Abhiyan', which includes previous stimulus announcements made by the government relating to COVID-19, liquidity management operations by the RBI, and further measures, amounting to a total of ₹20 trillion. After netting out RBI's liquidity stimulus to the tune of ₹8.04 trillion, our assessment indicates that the announced stimulus package will require additional government borrowing (Centre plus States) to the tune of 6 per cent of GDP to support the expenditure stimulus of nearly ₹12 trillion⁵. This is in addition to the government's existing borrowing program as noted in the Fiscal Outlook chapter. Such a massive borrowing program may need to be spread over a period of two years. But, more importantly, given the huge scale of lending required to finance such a massive, unprecedented borrowing program, no single channel of financing can suffice. This is where the accommodating role of monetary policy and the financial sector needs to be planned imaginatively.

³ Term premium is the difference between short term policy rate and long term bond yields

⁴ in writing this section we have benefitted a great deal from discussions with C. Rangarajan, to Y V Reddy and, especially, Usha Thorat. However, the authors are responsible for the views expressed and any remaining errors.

⁵ This includes ₹6.5 trillion worth of liquidity measures undertaken by the RBI till April 17, along with subsequent liquidity measures of another ₹1.5 trillion since April 17.

The first option is for both central and state governments to borrow from commercial banks. Since there is an additional risk premium for states' borrowing it may be better for the central government to do the borrowing and on-lend the money to the states at the same interest rate as is being done now for States loans from multilateral institutions. But the commercial banks will only be able to absorb a part of such huge additional borrowing and yields are bound to go up.

Another option would be to tweak the Ways and Means Advances (WMA), which is a credit facility extended by the RBI to the Centre and States to provide short-term liquidity. While the RBI has raised the limit for the WMA by 60 per cent over its previous level on March 31, 2020, state governments have been reluctant to use this window, given that the tenor of such borrowing is limited to a 90-day period. States have continued to borrow from the primary market at a higher rate instead. Under the present scenario, the RBI can consider relaxing the duration limit of WMA to a one-year period and in addition raising the WMA limit to accommodate the emerging borrowing needs of State Governments to cope with the present crisis. These advances can be provided at the repo rate. At the end of the one-year term, such advances can be converted to dated securities of varying maturities to spread out the debt repayment burden.

The final option is for the RBI, the debt manager of the government, to monetise a part of deficit, i.e., directly acquire the government bonds through private placements⁶. While this will probably be necessary as a last resort, it should be in combination with the other two options which should be considered first.

Such an extra-ordinary combination of measures have not been adopted previously, but nor has the Indian economy faced a crisis of such severity as now. Exceptional challenges call for exceptional measures.

⁶ See Kar (2020) for a discussion on deficit monetization. Kar, Sabyasachi (2020). A Revamped Budget Could Make Deficit Monetisation Credible. Bloomberg Quint, April 28, 2020.

Chapter 9: Fiscal outlook: Dealing with the Covid19 shock

Sudipto Mundle and Ajaya K Sahu

India is grappling with three crises at the same time: the pandemic itself, a humanitarian crisis for migrant and daily wage workers and a strong negative shock to both employment and incomes, hence also government revenues. The extra spending on the medical response, increased delivery of free food and income support for the poor will lead to a massive increase in government expenditure. The revenue decline and large increase in expenditure will in turn lead to a large increase in the combined fiscal deficit of central and state governments. The existing budget estimates will need quick revisions through interim budgets.

The policy simulations in chapter VII indicate that with the fiscal and monetary policy measures taken earlier (before 12 May 2020), GDP is likely to decline by 4.1 per cent in 2020-21. A fiscal stimulus by way of additional public expenditure amounting to 5 per cent of GDP over and above that so far budgeted for 2020-21 would generate positive GDP growth of 3.6 per cent. However, this would come along with double digit inflation, a fiscal deficit close to 10 per cent of GDP (Centre plus States) and a widening of the current account deficit to an unsustainable level of 3.6 per cent of GDP. A more modest stimulus amounting to 3 per cent of GDP extra spending above that budgeted for 2020-21 would be a preferred option. It would lead to a modest but still positive GDP growth of 1.2 per cent along with a somewhat lower inflation rate of 8.9 per cent, a combined fiscal deficit of 8.8 per cent and a manageable current account deficit of 3 per cent¹.

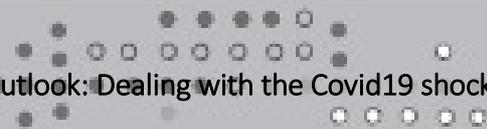
The recent announcement of a strong fiscal-monetary stimulus package to revive the economy is most welcome but it is unlikely that the full package can be implemented within the current financial year. While details are awaited, the Prime Minister's announcement indicated that the Rs 20 trillion (10 per cent of GDP) stimulus package includes the measures already undertaken by the RBI as well as the Government as part of the first stimulus package. The RBI stimulus measures are estimated to have provided additional liquidity to the tune of Rs 8.04 trillion (4 per cent of GDP), leaving headroom for nearly Rs 12 trillion (6 per cent of GDP) for additional stimulus expenditure beyond budgeted levels.² Taking into account the additional borrowing already announced (footnote 2), the Prime Minister's announcement implies a net additional spending stimulus amounting to 3 per cent of GDP. The total COVID-19 related additional expenditure provision of 6 per cent of GDP is even higher than the 5 per cent expenditure stimulus envisaged in our Scenario-4 and would lead to even higher rates of inflation, and larger fiscal and current account deficits than in Scenario-4. In the interest of restoring macroeconomic stability it is recommended that the Rs 20 trillion package be spread over 2020-21 and 2021-22.

PF.1 Introduction

The COVID-19 pandemic is like a tsunami that has hit the whole world. India is grappling with three crises at the same time: the pandemic itself especially in high density slums and chawls with no possibility of social distancing, a humanitarian crisis especially for migrant workers and daily wage workers following the lock down, and a very sharp, negative macroeconomic shock to both employment and incomes, hence also government revenues. The extra spending on the medical response, increased testing, contact tracing and treatment of infected persons to fight the COVID-19 pandemic, and on increased delivery of free food

¹ However, in view of the supply chain disruptions and expected higher mortality of MSMEs due to the lockdown, if actual supply constraints turn out to be more binding than assumed in the model, the fiscal stimulus packages could lead to higher inflation and lower growth than indicated in our simulations.

² As against this the government has already announced an extra borrowing program of Rs 5.9 trillion.



and income support for the poor will lead to a massive increase in government expenditure. The sharp revenue decline and large increase in expenditure will in turn lead to a huge increase in the combined fiscal deficit of Central and State Governments. The budget estimates prepared prior to the multiple COVID-19 shock have been completely undermined by the shock and will need quick revisions through interim budgets.

PF.2 Revenue Outlook

On the revenue side the 2020-21 budget had assumed an increase of 9.2 per cent in total revenue as against an increase of 18.4 per cent in 2019-20 (revised estimates or RE). This is mainly on account of non-tax revenues which have been projected to grow by only 11.4 per cent in 2020-21 as compared to an increase of over 40 per cent in 2019-20 (Table PF.1). The exceptionally large increase in non-tax revenues in 2019-20 was mainly on account of the large one time transfer of Reserve Bank of India (RBI) surpluses to the government based on recommendations of the Jalan Committee. Total tax revenues have been projected to grow by 12 per cent in 2020-21 as compared to only 4 per cent in 2019-20. The budget assumed that direct taxes, which account for about 54 per cent of gross tax revenue would grow by about 13 per cent in 2020-21 as against only 4 per cent in 2019-20. Indirect taxes (which account for about 46 per cent of gross tax revenue) were expected to grow by 11.1 per cent in 2020-21 as compared to only 4 per cent in 2019-20. On the capital account, non-debt capital receipts which actually declined by nearly 21 per cent in 2019-20 were assumed to grow by over 175 per cent because of postponed sales and new sales of public sector equity.

Needless to say, these comparisons are now only of academic interest in view of the complete disruption of economic activity and, consequently, revenue flows to the government³. As explained in the simulations in chapter VII, our assessment is that economic activity would have been down by nearly 26 per cent in Q1 of 2020-21 and by about 13 per cent for the whole year in the absence of a macroeconomic stimulus. Allowing for an inflation rate of 6 per cent⁴ and an observed buoyancy of about 1 per cent implies that nominal GDP and total revenue (Centre and States) will both be down by about (-) 7 per cent in 2020-21 compared to 2019-20 (RE), as shown in Table PF.1. However, now that a large stimulus package has been announced, the revenue loss will be contained.

PF.3 Expenditure Outlook

Total central government spending was set to increase by 12.7 per cent over that of 2019-20 (RE) in the budget estimate for 2020-21 (Table PF.2) while expenditure (excluding loans, advances and debt repayments) was set to grow at 9.2 per cent (Appendix Table PF.11) broadly in line with planned receipts. However, these too are now only of academic interest following the COVID-19 shock. Dealing with the health crisis and the humanitarian crisis will

³ On Friday 8th May the Central Government announced an additional COVID-19 related borrowing programme of Rs 4.2 trillion and it had earlier announced additional borrowing of Rs 1.7 trillion. This additional borrowing of Rs 5.9 trillion was on top of the Rs 7.8 trillion announced in the budget. This additional borrowing would help to offset the likely shortfall in revenue compared to that targeted in the 2020-21 Central Government budget.

⁴ Given the scale of uncertainty about the extent of the current shock and the likely response of government by way of a fiscal and monetary stimulus, forecasting of the likely inflation rate is challenging. The assumed inflation rate of 6 per cent is only our best guess at present.

require large increases in expenditure under selected heads. However, the room for such reallocation is limited because of committed expenditures thus implying a sharp increase in total expenditure. Given the expected decline in revenues, this will entail a very large increase in the fiscal deficit.

Dealing with the COVID-19 itself will entail a massive increase in health expenditure to deal with the requirements of COVID-19 testing, contact tracing and treatment. This will be partly on account of acquiring more equipment like testing kits, ventilators, etc., and drugs but also the expansion of hospital beds and temporary low-skill health workers to support skilled medical workers who are in short supply. Though some reputed private hospitals and laboratories have been included in the campaign against COVID-19, the bulk of the effort is being borne by the public healthcare system, especially in the State Governments.

The same applies to relief food distribution and income support. There have been proposals to make this available free for a few months. This can be targeted to consumers through the Public Distribution System (PDS), expanded if possible, or universally to all those who ask for it, possibly about 80 per cent of the population. Without getting into questions of how such delivery of food support can be best managed, it needs to be noted that the delivery, whatever be the selected mechanism, will again have to be managed by the State Governments.

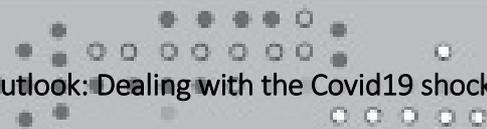
Similarly, proposals are on the table for providing income support, whether through existing targeted channels such as PM-Kisan and Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS) or universal, in which case again probably about 80 per cent of the population would actually access it.

PF.3 Fiscal Stimulus

Whether it is medical care or food support or income support, all of these will have to be delivered by state governments, even if they are coordinated by the Central Government. The State Government are severely resource constrained since their revenues have also fallen due to the lock down, reportedly by as much as 90 per cent in some cases. Further, the room for reallocation of existing expenditure is limited because of the large share of committed expenditures, especially interest payments, wages and salaries. So their support activities will mainly have to be financed through additional COVID-19 related special transfers from the central government or through additional borrowing by the states, or through some combination of the two. However, their borrowing headroom is limited because of the Fiscal Responsibility and Budget Management (FRBM) Act.

In the central budget the room for additional central transfers to the states through reallocation of central expenditure is quite limited because here too, in addition to loans, advances and debt repayments, the large bulk of central government spending is on committed expenditures, such as interest payments, pensions and wages and salaries of civilian and defence personnel under General Services as well as under different sectoral heads (Appendix Table PF.1). Hence, most of the COVID-19 crisis related extra spending by the central government will require additional borrowing⁵.

⁵ As mentioned in footnote 3, on 8th May the Central Government had announced an additional COVID-19 related borrowing program of Rs 5.9 trillion. This additional will help to offset the expected revenue shortfall of the



Thus, the additional COVID-19 related expenditure will entail large increases in Central and State government deficits. This will require suspension of the Central and State Government fiscal deficit limits set down under their respective FRBM Acts. Further, the 15th Finance Commission's award for 2020-21 will need to be revisited to take account of the COVID-19 disruption. Finally, the budgets of the Central and State Governments will also have to be revised through interim budgets to take into account the sudden drop in revenues, the additional expenditure liabilities and the revised award of the 15th FC on tax devolution and grant transfers to the states.

It was mentioned earlier that apart from the medical crisis and humanitarian crisis, the lock down following the spread of COVID-19 infections had also triggered an economic crisis. Our present assessment, based on an aggregation of sub-sector level expectations, is that output in Q1 of 2020-21 would have been down by over 26 per cent during Q1, 2020-21 and by about 12.5 per cent for the year as a whole in the absence of any fiscal stimulus measures.⁶ This would have led to a massive increase in unemployment. The Centre for Monitoring the Indian Economy reports that the unemployment rate has already shot up to 27.1 per cent during the week ended May 3, the highest on record⁷. However, these adverse effects should be considerably moderated by the total package of fiscal-monetary stimulus measures announced recently. At present, the total public expenditure on health services, food subsidy, and income support such as MNRREGS and PM-KISAN, together add up to approximately 2.5 per cent of GDP, mostly spent by the Centre⁸. The additional spending on ramping up medical services to cope with the pandemic plus supply of free food plus income support will probably require an additional 2.5 per cent of GDP. Some of this extra expenditure, say about 1-2 per cent of GDP, could be financed by reallocation of current expenditure on non-merit subsidies or reduction of capital spending. On the other hand there will also be a significant shortfall in revenue receipts as already noted. So on balance, our assessment at this stage is that the entire COVID-19 related extra spending will have to be financed through additional borrowing.

The simulations in Chapter VII suggest that with extra borrowing by the Central and State governments to simply maintain the level of spending envisaged in their respective 2020-21 budgets, GDP would still decline over 4 per cent this year while the combined the fiscal deficit would go up to 7.4 per cent of GDP (Scenario-1). Even with a spending stimulus of around 0.8 per cent of GDP earlier indicated by the Central Government, growth would still be negative at (-) 1.9 per cent (Scenario- 2). To climb out of the recession and get back to even modest positive growth will require a stronger fiscal stimulus, including the additional 2.5 per cent of GDP that would be required for Covid19 related health care and relief expenditure described above. Several analysts have suggested an extra spending package amounting to about 5 per cent of nominal GDP or approximately Rs 10 trillion⁹. The Chapter

Central Government in 2020-21. But it neither includes the expected revenue shortfall of State Governments nor the COVID-19 related additional expenditure program of the kind described above. However, on 14th May the Finance Minister announced new measures to provide free rations to non-ration card holding migrant worker households as provided earlier to ration card holders plus a special rental housing program for migrant workers and acceleration of the portable ration card program. These schemes would be implemented in collaboration with state governments.

⁶ Reported in Table PS.1 of Chapter VII above.

⁷ Mahesh Vyas, The jobs bloodbath of April 2020, Business Standard 5 May 2020.

⁸ We would like to thank Dr Satadru Sikdar of NIPFP for this computation.

⁹ See among others Nitin Pai, Look ahead of the current crisis to plan for an economic revival, *Mint*, 29 March,

VII simulations indicate that this would lead to about 3.6 per cent GDP growth, but this would come along with double digit inflation and a combined fiscal deficit of nearly 10 per cent of GDP. It would also entail an unsustainable current account deficit of around 3.6 per cent of GDP (Scenario-4). A smaller expenditure stimulus of 3 per cent of GDP would yield a modest but still positive GDP growth of 1.2 per cent, a somewhat lower inflation rate of 8.9 per cent, a fiscal deficit of 8.8 per cent of GDP and a more manageable current account deficit of 3 per cent (Scenario-3). It would also fully cover the estimated requirement of COVID-19 related spending amounting to about 2.5 per cent of GDP. Hence an additional expenditure package of 3 per cent of GDP or about Rs 6 trillion over and above what has already been done would appear to be the optimal stimulus package¹⁰.

The recent announcement of a strong, cumulative fiscal-monetary stimulus package to revive the economy is most welcome, but it is unlikely that the entirety the entire package can be fully implemented in one year . While details are awaited, the Prime Minister's announcement indicated that the Rs 20 trillion (10 per cent of GDP) stimulus package includes the measures already undertaken by the RBI as well as by the Government as part of the first stimulus package. The RBI stimulus measures are estimated to provide liquidity to the tune of Rs 8.04 trillion (4 per cent of GDP) while the Government's earlier stimulus amounted to Rs 5.9 trillion (approximately 3% per cent of GDP). Netting out the RBI liquidity measures, the total expenditure stimulus provision in the envelope package amounts nearly Rs 12 trillion (6% of GDP) including the Rs 5.9 trillion already announced.

This is even more ambitious than the 5% expenditure stimulus in our Scenario-4. If fully implemented in this financial year it would lead to even higher inflation and even larger fiscal and current account deficits than in our Scenario-4. We would therefore recommend that total package be spread over 2020-21 and 2021-22.

2020, Devesh Kapur and Arvind Subramaniam, Fiscal Space: Not if but how, *Business Standard*, 8 April, 2020; Deepak Nayya, Unlocking the economy , *Mint* April 10, Sudipto Mundle, Triple trouble: coronavirus, hunger and the economy, *Mint*, 17 April, 2020

¹⁰ It should be pointed out that in view of the supply chain disruptions and expected higher mortality among MSMEs due to the lockdown, if actual supply constraints turn out to be more binding than assumed in the simulation model, the fiscal stimulus packages discussed here could lead higher inflation and lower growth than indicated by our simulations.

Table PF.1: Receipts and Percentage Changes

		Rs crores			%age changes		%age share in Total*		
		2018-19 (Actual)	2019-20 (RE)	2020-21 (BE)	2019-20 (RE) over 2018-19 (Actuals)	2020-21 (BE) over 2019-20 (RE)	2018-19 (Actual)	2019-20 (RE)	2020-21 (BE)
1	Revenue receipts (3+10)	1563170 (8.2)	1850101 (9.1)	2020926 (9.7)	18.36	9.23	93.82	95.78	89.98
2	Tax revenue (gross)	2080203 (11.0)	2163423 (10.6)	2423020 (11.6)	4.00	12.00			
3	Tax revenue (net to Centre)	1316951 (6.9)	1504587 (7.4)	1635909 (7.8)	14.25	8.73	84.25	81.32	80.95
4	Direct tax	1125226 (5.9)	1170000 (5.7)	1319000 (6.3)	3.98	12.74	54.09	54.08	54.44
5	Indirect tax	954977 (5.0)	993423 (4.9)	1104020 (5.3)	4.03	11.13	45.91	45.92	45.56
6	Central GST	457535 (2.4)	514000 (2.5)	580000 (2.8)	12.34	12.84	47.91	51.74	52.54
7	UT GST	2407 (0.01)	2704 (0.01)	3000 (0.01)	12.34	10.95	0.25	0.27	0.27
8	Integrated GST	28947 (0.2)					3.03	0.00	0.00
9	GST compensation Cess	95081 (0.5)	98327 (0.5)	110500 (0.5)	3.41	12.38	9.96	9.90	10.01
10	Non-tax revenue	246219 (1.3)	345514 (1.7)	385017 (1.8)	40.33	11.43	15.75	18.68	19.05
11	Non-debt capital receipts	102885 (0.5)	81605 (0.4)	224967 (1.1)	(-)20.7	175.68	6.18	4.22	10.02

Source: 2018-19 figures are taken from CGA Monthly publications. 2019-20 (RE) and 2020-21 (BE) are taken from Receipt Budget 2020-21

Note: Figures in brackets show %age of GDP. *Share of revenue receipts and non-debt capital receipts: share of total receipts, tax (net to centre) and non-tax revenue: share of total revenue receipts, direct and indirect tax: share of gross tax revenue, various GSTs: share of indirect tax

Table PF. 2: Receipts, Expenditure and Deficits

	Rs crores			%age changes		%age share in Total*		
	2018-19 (actual)	2019-20 (RE)	2020-21 (BE)	2019-20 (RE) over 2018-19 (Actuals)	2020- 21 (BE) over 2019- 20 (RE)	2018-19 (actual)	2019- 20 (RE)	2020- 21 (BE)
1 Revenue receipts	1563170 (8.2)	1850101 (9.1)	2020926 (9.7)	18.4	9.2	93.8	95.8	90.0
2 Tax revenue (net to Centre)	1316951 (6.9)	1504587 (7.4)	1635909 (7.8)	14.2	8.7	84.2	81.3	80.9
3 Non- tax revenue	246219 (1.3)	345514 (1.7)	385017 (1.8)	40.3	11.4	15.8	18.7	19.1
4 Non-debt capital receipts	102885 (0.5)	81605 (0.4)	224967 (1.1)	(-)20.7	175.7	6.2	4.2	10.0
5 Total receipts (1+4)	1666055 (8.8)	1931706 (9.4)	2245893 (10.8)	15.9	16.3	100	100	100
6 Total Expenditure	2311422 (12.2)	2698552 (13.2)	3042230 (14.6)	16.7	12.7			
7 Revenue expenditure	2008463 (10.6)	2349645 (11.5)	2630145 (12.6)	17.0	11.9	86.9	87.1	86.5
8 Revenue deficit	445293 (2.3)	499544 (2.4)	609219 (2.9)	12.2	22.0			
9 Fiscal deficit (6-5)	645367 (3.4)	766846 (3.8)	796337 (3.8)	18.8	3.8			
10 Primary deficits	62692 (0.3)	141741 (0.7)	88134 (0.4)	126.1	(-)37.8			

Source: 2018-19 figures are taken from CGA Monthly publications. 2019-20 (RE) and 2020-21 (BE) are taken from Budget at a glance 2020-21

Note: Figures in brackets show %age of GDP. *Share of revenue receipts and non-debt capital receipts: share of total receipts, tax and non-tax revenue: share of total revenue receipts, revenue expenditure: share of total expenditure

Appendix Table PF.1: Expenditure and Allocations

Heads	2018-19 (Actual)	2019-20 (RE)	2020-21 (BE)	2020-21 (BE) over 2019-20 (RE) (%age change)	Per cent of total expenditure		
					2018- 19 (actual)	2019- 20 (RE)	2020- 21 (BE)
1 Total expenditure (excluding loans and advances; debt repayments)	2661094 (14.0)	3052196 (14.9)	3332061 (14.8)	9.2	100.0	100.0	100.0
2 General services*	1213204 (6.4)	1345202 (6.6)	1453790 (6.5)	8.1	45.6	44.1	43.6
2.1 Interest payment and servicing of debt	595552 (3.1)	663297 (3.2)	733203 (3.3)	10.5	22.4	21.7	22.0
2.2 Defence services	299113 (1.6)	325591 (1.6)	332102 (1.5)	2.0	11.2	10.7	10.0
3 Social services*	112826 (0.6)	146408 (0.7)	163670 (0.7)	11.8	4.2	4.8	4.9
3.1 Education, sports, art and culture	43901 (0.2)	53334 (0.3)	55512 (0.2)	4.1	1.6	1.7	1.7
3.2 Medical and public health	23170 (0.1)	27351 (0.1)	30770 (0.1)	12.5	0.9	0.9	0.9
4 Economic services*	940666 (5.0)	1065170 (5.2)	1125779 (5.0)	5.7	35.3	34.9	33.8
4.1 Agriculture and allied activities	179388 (0.9)	238308 (1.2)	267796 (1.2)	12.4	6.7	7.8	8.0
4.2 Rural development	63928 (0.3)	74115 (0.4)	64223 (0.3)	-13.3	2.4	2.4	1.9
4.3 Infrastructure Services	432763 (2.3)	459597 (2.2)	539997 (2.4)	17.5	16.3	15.1	16.2
4.3.1 Irrigation and flood control	2946 (0.0)	3549 (0.0)	4579 (0.0)	29.0	0.1	0.1	0.1
4.3.2 Energy	51704 (0.3)	62162 (0.3)	66206 (0.3)	6.5	1.9	2.0	2.0
4.3.3 Transport	341336 (1.8)	354033 (1.7)	384987 (1.7)	8.7	12.8	11.6	11.6
4.3.4 Communications	36777 (0.2)	39852 (0.2)	84225 (0.4)	111.3	1.4	1.3	2.5
5 Grants-in-aid and contributions	382712 (2.0)	483030 (2.4)	569534 (2.5)	17.9	14.4	15.8	17.1
6 Capital expenditure outside revenue account	399523 (2.1)	398432 (1.9)	391322 (1.7)	-1.8	15.0	13.1	11.7

Source: Based on the Annual Financial Statement of Union Budget 2020-21.

Notes:

1. Figures in parenthesis indicate percentage of GDP.
2. Expenditure data for row numbers 2 to 4.6 and 6 are net expenditure of the Centre. BE: Budget estimates. RE: Revised estimates. *Subcategories under the item head are not exhaustive.



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