37th Voorburg Group Meeting on Service Statistics

Virtual Meeting
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Cross-cutting Topic:
"Dealing with economic shocks – countries report experiences through the pandemic including lessons learned and steps taken to mitigate measurement challenges for future economic shocks"

"India's Experience through the Pandemic & Steps taken to mitigate measurement challenges"

India

Table of Content

1.   Introduction

1.1   India's steady growth and recovery have been hampered by the COVID-19 pandemic's recurring waves of disruption. Supply shortages increased shipping costs and commodity prices, escalating inflationary pressures and jeopardizing the global economic health. Like other countries, strict lockdowns in different phases were imposed in India in March, 2020.Initially, a 21-day nationwide lockdown (LD1.0: 25 Mar, 2020 to 14 Apr, 2020) was announced to control the transmission of COVID-19 and due to which many manufacturing industries, markets, as well as public gatherings were shut down. There have been three more lowdown phases in succession (LD2.0: 15 April to 3 May 2020, LD3.0: 4 May to 17 May 2020, LD4.0: 18 May to 31 May 2020). Unlock was also announced in phases in an effort to revive the Indian economy.

1.2   Since then, there have been disruptions in daily life and significant changes to way of life. In India, contact based sectors such as tourism; restaurants, hotels etc. were severely affected, while others, such agriculture and related industries, information technology, etc. have displayed a remarkable degree of resilience.

1.3   In contrast to past economic crisis, there was a marked contraction in private consumption demand, services output, and the labor market, particularly for low-skilled workers who do not have the option of working from home. This was due to a combination of social exclusion, activity and mobility restrictions, steep income losses, and severely weakened consumer confidence. Thus, the pandemic created a fusion of a broad-based aggregate demand shock and a lockdown-induced supply shock.

2.   Economic impact of Covid-19 induced lockdown

2.1   The pandemic was an exceptional economic shock that simultaneously affected economies all across the world causing increased uncertainty, decreased confidence,

income losses, weaker growth prospects, fear of spreading the crisis, curtailed spending options as a result of the closure of all contact-sensitive activities, the inciting of precautionary savings, risk aversion among businesses, and a subsequent decline in consumption and investment with cessation of economic activity and labor mobility restrictions. The necessary protection measures implemented across countries severely impacted economic activity worldwide. Every economic activity was brought to a standstill with a collapse in both supply chains, and contraction in aggregate demand. Countries were operating below potential while health risks persist. The cumulative loss to GDP was experienced across countries in 2020 as compared to pre-pandemic levels i.e. 2019. Some of the country's GDP growth rate is depicted below:

Figure-1: GDP Growth
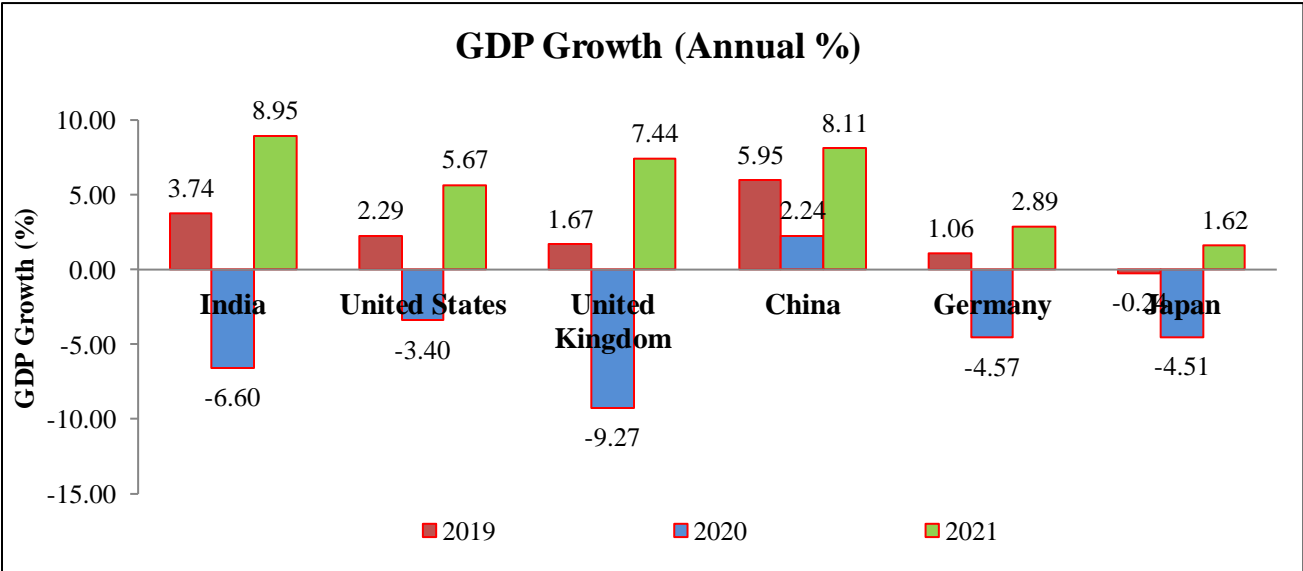

Source: World Bank Database

2.2   India's GDP dropped massively during the year 2020-21. The steep decline in GDP is said to be the biggest ever recorded for the nation. India showed a resilient recovery due to adoption of best suited calibrated approach. Other countries also started showing recovery sign with additional fiscal support, the predicted vaccine-powered rebound in

the second half of 2021, and sustained economic activity adaption to low mobility as the main drivers. The continuous recovery of the world economy to its pre-pandemic levels of activity remained prone to setbacks with every new wave of Covid-19.

2.3   The major contributing factor remained the disruption caused by the COVID-19 that brought the majority of manufacturing firms, particularly micro, small and medium enterprises (MSMEs), to a near complete standstill during the lockdowns. An immediate halt was put to many business activities across the country leading to low-scale operations, and eventually, a negative impact on their production volumes and revenue. The pandemic has revealed and aggravated systemic flaws in capacities and performance that existed prior to the outbreak in number of industries. Particularly the lockdown measures stopped or scaled back manufacturing operations and the production of goods and services.

2.4   They have had and still have major effects on productive output of industries, workers' and communities' livelihoods, as well as national and international supply networks. Global output is slowly moving towards to its normal pre- Covid levels.

Figure-2: Performance of Industrial sector

IIP Y-o-Y growth till Dec-20 and growth over pre-COVID level i.e. 2019 during 2021
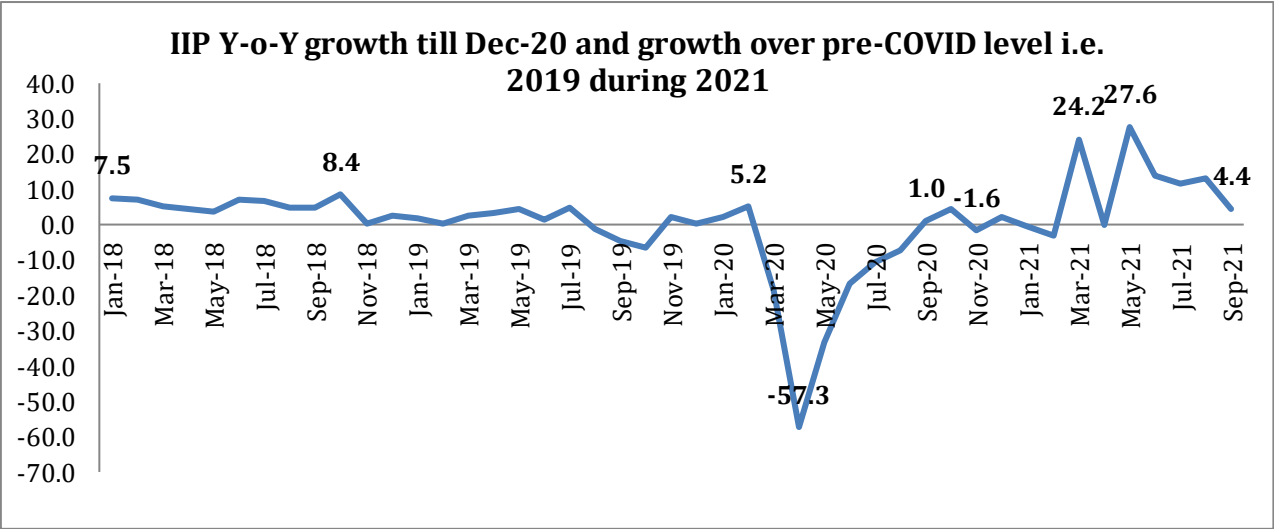
2.5   The economic consequences of the COVID-19 pandemic raised an emergency situation for urgent policy responses to keep the economy afloat and support households and firms alike. The Indian industry has been marked by both severe losses and windows of opportunity. Manufacturing sector experienced the deepest drop, bearing the brunt of the output decline during the first wave of the pandemic. However, the cumulative rise of the IIP reflects the improvement in industrial performance as a result of the economy's gradual opening up in June 2020, rising consumer demand, and continued policy assistance.

3.   Policy Response in India:

3.1   AatmaNirbhar Bharat relief package is a bouquet of measures equivalent to Rs 29.87 lakh crores or 15 per cent of India's GDP to provide support for strong and robust revival of economic activates in the economy. The announcements under the AatmaNirbhar Bharat Abhiyan were made in three tranches i.e., AatmaNirbhar Bharat Packages (ANB) 1.0, 2.0, and 3.0 on 13th -17th May, 2020, 12th October, 2020 & 12th November 2020 respectively. There are five pillars of AatmaNirbhar Bharat:

- ➢ **Economy:** An economy that brings Quantum Jump rather than Incremental change.
- ➢ **Infrastructure:** An infrastructure that became the identity of modern India.
- ➢ **System:** A system that is driven by technology which can fulfill the dreams of the 21st century.
- ➢ **Demography:** Our vibrant demography is our strength in the world's largest democracy, our source of energy for self-reliant India.
- ➢ **Demand:** The cycle of demand and supply chain in our economy, is the strength that needs to be harnessed to its full potential. In order to increase demand in the

country and to meet this demand, every stake-holder in our supply chain needs to be empowered.

3.2   Some the key measures under AatmaNirbhar Bharat Packages are:

● Rs.3 lakh crores Emergency Credit Line Guarantee Scheme (ECLGS) for Businesses, including MSMEs (which has subsequently been increased to Rs. 5 lakh crore, as announced in Budget 2022-23).

● Rs. 20,000 crore Subordinate Debt for Stressed MSMEs

● Rs. 50,000 crore equity infusion through MSME Self-Reliant India Fund.

● New definition of MSME: A uniform investment and turnover based criterion for both manufacturing and service MSME enterprise.

● No Global tenders for Government tenders of upto Rs.200 crore

● 2% Interest Subvention for 12 months for Shishu MUDRA loanees- Relief of Rs. 1500 crore

● Rs. 5000 crore Credit facility for Street Vendors

● Rs. 30,000 crore Additional Emergency Working Capital for farmers through NABARD.

● Rs. 2 lakh crore concessional credit boost to 2.5 crore farmers under Kisan Credit Card Scheme

● Rs. 1 lakh crore Agri Infrastructure Fund for farm-gate infrastructure for farmers.

● Rs. 10,000 crore scheme for formalisation of Micro Food Enterprises (MFE).

- Rs. 40,000 crore increase in allocation for MGNREGA to provide employment boost.

- Increase borrowing limits of States from 3% to 5% for 2020-21 only & promoting State level reforms.

- LTC Cash Voucher Scheme- cash payment to employees in lieu of one LTC during 2018-21, (full payment on Leave encashment and tax-free payment of LTC fare).

- Aatma Nirbhar Bharat Rozgar Yojana- to incentivize job creation during COVID-19 recovery.

- Production Linked Incentive worth Rs. 1.46 Lakh Crore offered to 10 champion sectors.

- Rs. 18,000 Crore Additional outlay for PM Awaas Yojana – Urban.

3.3   The developmental and regulatory policy measures were implemented with the main objective to enhance liquidity support for financial markets and other stakeholders, ease financial stress caused by COVID-19 disruptions while strengthening credit discipline, improve the flow of credit, deepen digital payment systems and facilitate innovations across the financial sector by leveraging on technology. These policy measures has enabled steady improvement in mostly all the sectors of the economy that were deeply effected on account of deep dent on livelihoods, scarred minds, production capacities and confidence with far-reaching economic and social costs caused by the Pandemic.

4.   Impact of Covid-19 on Survey based Price Indices:

4.1   In the face of high uncertainty brought on by the COVID-19 pandemic, maintaining the quality standards of statistics was challenging. However, availability of accurate and robust statistics became essential for evidence-based policy formulation.

4.2   Data collection and its availability were severely hampered by the social distancing norms and lockdowns in numerous fields. The compilation of survey-based indicators such as CPI, WPI, etc. were seriously hindered as a result of low response rates due to the following factors:

1) **No contact with the selected units:** With restriction on movements, the selected units for the survey were not reachable causing a significant lower response, especially if the survey is compulsory. The degree of noncontact relies on the accuracy of the unit-specific data on the frame and the procedures used to make contact.

2) **Limited communication on data:** Also, once communication has been established with a chosen unit; there has been a situation where the unit shown inconvenience in providing all or part of the required information due to uncertainty in their production or sale brought on by the pandemic.

3) **Temporary shutdown of units:** Lockdown hampered the movement of workers and this led to the shutting down of production units temporarily due to non-attendance of labor, disruption in supply of raw materials and hence effecting the production, as well as responses.

Table-1: Response rate of different price indices in India

Indicator	Response Rate (in %)		
	Pre- lockdown Period	Lockdown period	Post- lockdown Period
WPI			
CPI	75% - 95%	45% - 70%	75%- 95%
IIP			

4.3   With reduced response rate, quantum of imputation and estimation expanded. In order to maintain continuity while safeguarding respondent and field interviewer safety, data collection had undergone several operational changes such as data collection from face-to-face to telephone interviews was quickly adopted.

5. Measurement methods and issues:

5.1   The COVID-19 pandemic has caused both a public health crisis and an economic crisis. The compilation of the survey-based indicators such as WPI, CPI, etc. were severely impacted by the outbreak of pandemic during the initial wave, affecting the accuracy and reliability of the indicators. Therefore, the authorities in charge of gathering and disseminating real sector statistics began exploring alternative methods of data collection and estimation of non-response. For example, in many socio-economic and business surveys, traditional face-to-face interviews were replaced by telephonic interviews and on-line surveys. According to a survey conducted by the United Nations Statistics Division (UNSD) and the World Bank, over 95 per cent of National Statistical Offices (NSOs) had partially or fully stopped face-to-face data collection in May 2020. However, the compilation of aggregates from electronic systems were least affected.

5.2   Faced with the challenge of data inadequacy caused by the Covid-19 pandemic and lockdown, advice of multilateral agencies including the IMF and World Bank sought on the practices followed elsewhere to prepare economic indicators such as industrial production, retail inflation and economic growth.

5.3   Below are the details of such indicators and the methodology/procedure adopted by their compiling authority to overcome the challenges that arose with the imposing of nation-wide lockdown.

5.3.1   Wholesale Price Index (WPI):

5.3.1.1   Among the various price indices in India, WPI is an important measure to monitor the dynamic movement of prices at the wholesale level. It is generally defined to capture all bulk transactions of goods carried out in the domestic market. The universe of

WPI, therefore, comprises all possible transactions at first point of bulk sale in the domestic market.

- **Data Response:**

5.3.1.2   In view of the limited transactions of products in the wholesale market in the month of April 2020, due to spread of Covid-19 pandemic, the Price Movement of selected Sub-groups/Groups of WPI, following the principles of adequacy, was released. All Commodities WPI could not be computed for the month of April-2020 due to non-availability of substantial data of several manufacturing commodities

5.3.1.3   The price movement of these Sub-groups/Groups of WPI was worked out by taking the prices of only those items for which at least 25% of price quotations were reported from the selected manufacturing units.

5.3.1.4   Out of the 22 National Industrial Classification (NIC) two-digit groups for Manufactured products, based on above criterion, indices were compiled only for 5 manufacturing groups i.e., manufacture of food products, manufacture of beverages, manufacture of chemicals and chemical products, manufacture of pharmaceuticals, medicinal chemical and botanical products, and manufacture of Basic Metals.

5.3.1.5   However, these provisional figures of WPI in April 2020 with limited response rate were made final after a period of eight weeks/ two months by which time efforts were made to ensure submission of almost all the required price data using alternative methods including continuous follow up through telephonic enquiry, email, etc.

- **Estimation of Non-response and Data Substitution:**

5.3.1.6   The response rate fall to 65 percent, against the usual response rate of 93-95 percent.

5.3.1.7   Numbers of Virtual training /discussions were organized on a frequent basis with the Field Offices of National Statistical Office (NSO), MoSPI for ensuring maximum response rate of the operational manufacturing units. Price collectors were contacted through telephone on a daily basis to assist them in resolving the issues faced while collecting the price data and duly validating the submitted data.

5.3.1.8   Simultaneously, operational factories/manufacturing units across the country were contacted directly for briefing them about the collection of price data through different means. The manufacturing units were also requested to submit the Expected/tender prices during the lockdown period for maintaining continuity and smooth flow of price data.

Table-2: WPI All commodities (Base 2011-12)

WPI	Pre- lockdown Period			Lockdown period			Post- lockdown Period		
	Jan 20	**Feb 20**	**Mar 20**	**Apr 20**	**May 20**	**Jun 20**	**July 20**	**Aug 20**	**Sep 20**
Index	123.4	122.2	120.4	119.2	117.5	119.3	121.0	122.0	122.9
Growth Rate	0.3	-1.0	-1.5	-1.0	-1.4	1.5	1.4	0.8	0.7

Source: Monthly Index of WPI, OEA, DPIIT. Inflation rates calculated on month on month basis.

Figure-3: WPI: All Commodities (Base 2011-12)
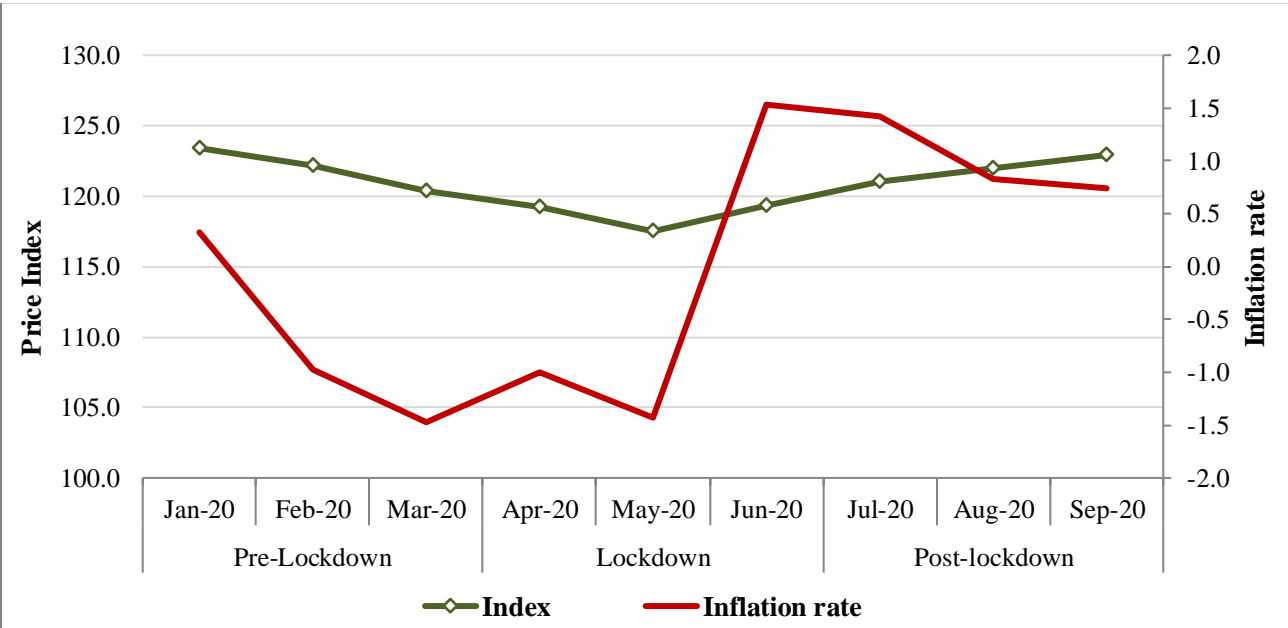
5.3.1.9   It is clearly visible that the WPI index for All Commodities declined during the initial lockdown months (i.e. Apr, 20 and May, 20). The inflation rate was the lowest during the month of May 2020. With easing out of the restrictions in June 20, WPI index depicts an increasing trend...

Table-3: Growth (Month on Month) of Major Groups of WPI (Base 2011-12) (in Percent)

	Jan 20	Feb 20	Mar 20	Apr 20	May 20	Jun 20	Jul 20	Aug 20	Sep 20
Major Groups									
Primary Articles	-1.1	-3.0	-3.8	0.3	-0.4	2.6	3.0	1.1	1.4
Fuel & Power	1.5	-1.1	-4.0	-9.7	-10.6	6.6	6.0	1.4	-0.1
Manufactured Products	0.7	0.0	-0.2	0.1	-0.4	0.3	0.1	0.6	0.6

5.3.1.10 At the major group level, it remained negative in May 2020 for all the three major groups. Persistent volatility in the global crude oil prices during the year 2020-21 also led to fall in inflation of major fuel products. WPI fuel & power inflation dropped sharply from 1.5 percent in Jan 20 to (-) 9.7 percent in April 20 and further to (-) 10.6 percent in May 2020. WPI Manufactured Products inflation declined from 0.7 percent in Jan 20 to (-) 0.4 percent in May 20. Agricultural prices remained more or less stable during the period of pandemic induced restrictions. This may be attributed to the lower income elasticity of demand for these commodities compared to other commodities.

5.3.2 Consumer Price Index (CPI):

5.3.2.1 Consumer Price Indices (CPI) measure changes over time in general level of prices of goods and services that households acquire for the purpose of consumption.

- **Data Response:**

5.3.2.2 There was a limited transaction of products in the market during the month of April, 2020. CSO, MoSPI was compelled to publish imputed figures for consumer price index (CPI) for two consecutive months during the first wave of the pandemic in 2020 due to immense difficulty in collection of prices for many items. In view of the preventive measures and associated travel advisories to contain the spread of COVID-19, it was not feasible for the field enumerators to visit the specified retail outlets to collect data/price quotations. Accordingly, the price collection of CPI through personal visits of price collectors was suspended with effect from 19th March, 2020. During this period,

5.3.2.3 Closure of non-essential shops during nation-wide lockdown affected the sale/purchase of goods in the country. The whole exercise was carried out by well experienced staff of FOD, NSO stationed at about 200 locations across the country. NSO collected prices from 674 urban markets and 524 villages, for commodities which were

available and being transacted during the initial month of lockdown i.e. April 2020 out of 1114 urban markets and 1181villages. Partial indices were compiled.

- **Estimation of Non-response and Data Substitution:**

5.3.2.4   In these circumstances, the NSO field enumerators collected data through telephone from the designated outlets and augmented this with visits to the neighborhood shops for items being transacted. As the number of price quotations received was less, it was not feasible to construct / compute either State level indices or the all India General CPI.

5.3.2.5   Further, the various pandemic related restrictions were gradually lifted and non-essential activities started resuming operations during the month of June, 2020. The data collected, however, did not meet the adequacy criteria for generating robust estimates of CPIs at the State-level.

5.3.2.6   To address the non-availability of data for several sub-groups during April and May, 2020, NSO undertook a separate exercise based on the imputation methodology recommended in 'Business Continuity Guidelines', brought out by Inter-Secretariat Working Group on Price Statistics (ISWG-PS) (combined forum of ILO, EuroStat, OECD, UNECE, World Bank and IMF) in May, 2020. Broadly, this approach advocated imputing the missing (due to non-availability of data) sub-group index with the index computed using the index at the next higher level of aggregation, compiled based on available/observed data.

5.3.2.7   The Price Movement of Sub-groups/Groups of CPI which met the principles of adequacy as follows:

i) The price of only those items were included which have been reported from at least 25% of markets, separately for Rural & Urban sector and constituted more than 70% weight of the respective Sub-groups/Groups.

ii) The all India indices have been compiled using Direct Approach by considering a common market at the national level in both Rural & Urban sectors separately.

5.3.2.8   During this time, a series of discussions were held with International Organizations like World Bank, ILO, ADB, IMF, Eurostat, OECD and several other countries on how they are managing and addressing the data flow challenges on account of the pandemic. While few countries estimated the missing data using imputation methods, their scope, coverage and size was not comparable to the Indian case. Indian concern was shared with these Organizations.

5.3.2.9   Parallel discussions were also held in the Inter-Secretariat Working Group on Price Statistics (ISWGPS) (combined forum of ILO, EuroStat, OECD, UNECE, World Bank and IMF) also brought out its Business Continuity Guidelines in May 2020 which goes into details of imputation for non-transacted items. The ISWG-PS recommended as follows:

"If an entire index is missing, it is recommended to use the next level up in aggregation as the basis for making the imputation. For example, if all prices for oranges are missing, the index for citrus fruits can be used as the basis for making the imputation. If all citrus fruits are missing, the index for fruits is used as the basis for making the imputation. If all fruits are missing, the index for fruits and vegetables is used, and so on".

"Missing elementary aggregates could be imputed by the all items index calculated using the price movements of those sub-indices for which there are data. First, all

sub-indices which have been calculated based on a majority of observed prices are used to compile the all item index. Second, the short-term change of the all items index is then used as the basis for imputing the missing indexes. Imputation with the all items CPI corresponds to leaving the elementary aggregate out of the calculation of the CPI."

5.3.2.10   In the Indian context the above approach implied that imputation would need to be done for even those groups / sub-groups of CPI where no data was available or collected or transacted. Under normal circumstances there are disruptions in data flows for a few commodities which are generally localized in nature and imputation works well. This was for the first time that the data flow was disrupted not at the local level but at the national level for several commodities.

5.3.2.11   The ISWG-PS approach indicates that the balance of convenience, continuity and comparability (with limitations) would be in favor of preparing the complete CPI even though there is large scale imputation. A significant part of CPI price data could not be captured for April and May 2020.The series so compiled was only for the purpose of providing estimates as a business continuity approach. Thus, the imputed CPI series were seen in this light especially when using it in a time series comparison within and across countries. It was proposed to continue with this approach in the following months till the data collection exercise resumes full operation.

5.3.2.12   The allocated weights of such items were distributed (imputed) on pro-rata basis to the related items/ to respective, section/sub-group/group. In such cases, the effective size of item basket will be lessened by no. of items permanently obsoleted. This practice is rarely followed in CPI; obsoleted items are, generally, substituted with items, which are serving similar purpose.

Table-4: CPI Combined (Base 2012)

CPI	Pre- lockdown Period			Lockdown period			Post- lockdown Period		
	Jan 20	Feb 20	Mar 20	Apr 20	May 20	Jun 20	July 20	Aug 20	Sep 20
Index	150.20	149.10	148.60	151.4	150.9	151.8	153.9	154.7	156.4
Growth Rate	-0.13	-0.73	-0.34	1.88	-0.33	0.60	1.38	0.52	1.10

Source: CPI Combined monthly index, MoSPI, Inflation rates calculated on month on month basis.

Figure-4: CPI: Combined (Base 2012)
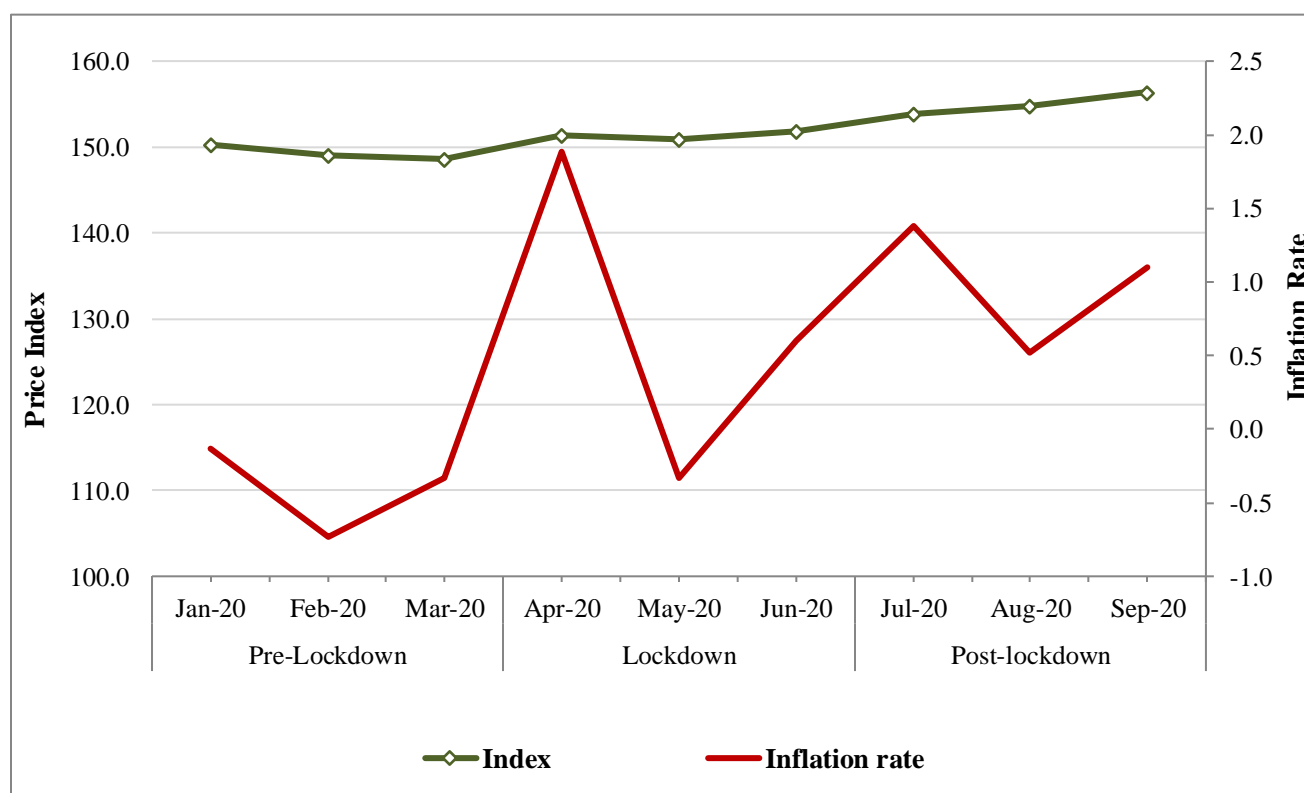
5.3.2.13   Unlike WPI, CPI-Combined (Base 2012) increased during the initial months of lockdown (i.e. Apr 20 and May 20). WPI inflation has been in the negative region while CPI-C inflation has been above 6 per cent owing to supply chain disruptions caused by COVID-19 restrictions, lockdowns, and night curfews. The major feature in this widening gap is that this has happened in a period witnessing high food inflation.

Table-5: Growth (Month on Month) of Components of CPI (Base 2012)   (in Percent)

	Jan-20	Feb-20	Mar-20	Apr-20	May-20	Jun-20	Jul-20	Aug-20	Sep-20
Cereals and products	0.6	0.3	0.2	2.5	-0.2	0.8	-0.5	-0.3	-0.6
Meat and fish	1.5	0.1	-0.3	1.6	8.3	4.8	-0.9	-2.0	1.0
Egg	2.5	-2.0	-2.4	0.5	-0.7	2.4	-0.4	1.1	5.8
Milk and products	1.2	0.5	0.5	2.7	-0.3	-1.2	0.0	0.2	0.0
Oils and fats	3.3	1.2	-0.2	3.0	1.0	-0.1	0.8	0.6	1.4
Fruits	-1.7	-1.0	0.5	5.2	-0.3	-1.5	2.2	0.3	0.2
Vegetables	-9.2	-13.4	-7.9	7.2	-10.6	3.8	13.8	4.8	12.1
Pulses and products	1.5	0.5	0.0	6.6	0.5	-0.2	-0.3	-0.4	0.7
Sugar and confectionery	0.1	-0.4	-0.4	6.3	-3.2	-2.0	0.8	1.1	-0.2
Spices	1.5	0.7	0.8	2.5	0.2	1.3	0.3	0.2	0.4
Non-alcoholic beverages	0.2	0.3	0.1	0.1	1.2	0.7	0.9	1.1	1.3
Prepared meals; snacks; sweets etc.	0.4	0.3	0.3	1.8	-0.2	-0.2	0.3	0.4	0.2
Food and beverages	-1.0	-2.0	-1.1	3.4	-0.8	0.9	1.9	0.6	2.2
Pan; tobacco; and intoxicants	0.4	0.5	0.6	1.2	0.7	5.2	-0.5	1.0	-0.1
Clothing	0.1	0.2	0.3	1.5	0.1	-0.7	0.4	0.2	0.2
Footwear	0.1	0.1	0.1	1.5	0.1	0.1	-0.7	0.6	0.2
Clothing and footwear	0.1	0.2	0.2	1.5	0.2	-0.6	0.2	0.2	0.2
Housing	0.7	0.6	-0.2	0.7	0.0	-0.6	0.5	0.5	0.1
Fuel and light	0.6	1.8	1.2	-3.2	-1.1	-0.4	0.8	-0.1	0.1
Household goods and services	0.3	0.1	0.0	1.7	0.2	-1.9	1.4	0.2	0.0
Health	0.5	0.3	0.4	-1.1	1.5	1.0	0.4	0.4	0.4
Transport and communication	0.8	-0.5	-0.3	1.8	0.2	1.9	2.6	0.8	0.7
Recreation and amusement	0.4	0.3	0.3	1.9	0.2	1.0	-1.6	0.4	-0.1
Education	0.3	0.1	-0.1	2.0	0.2	-2.0	1.3	-0.6	0.6
Personal care and effects	1.4	0.8	1.3	1.6	0.1	2.6	1.8	2.7	-0.9
Miscellaneous	0.6	0.1	0.1	1.2	0.5	0.5	1.4	0.7	0.3
Consumer Food Price Index	**-1.2**	**-2.4**	**-1.3**	**3.8**	**-1.0**	**1.1**	**2.2**	**0.7**	**2.4**

5.3.2.14 The spike in CPI inflation driven by spike in food prices was mainly a supply-side phenomenon owing to the COVID-19 crisis. Supply disruptions during lockdown, non-availability of labor at Mandis, impediments to transportation, and excess

rains during the kharif harvest period led to crop damages and pushed up food prices, especially those of vegetables.

5.3.3   Index of Industrial Production (IIP):

5.3.3.1   The Index of Industrial Production (IIP) is a composite indicator that measures the short-term changes in the volume of production of a basket of industrial products during a given period.

- **Data Response:**

5.3.3.2   In India, a 21-day national lockdown was imposed from end of March 2020 to prevent the proliferation of COVID-19 and it was expected that the economic activities would freeze except for some essential services. This resulted in low-scale operations and eventually had a severe influence on production levels, which had a variety of effects on the overall manufacturing sector in the country. This eventually had a negative impact on turnover and income generated from the manufacturing sector.

- **Estimation of Non-response and Data Substitution:**

5.3.3.3   A core team was set up. Day-to-Day monitoring of response from the establishments was monitored in a whatsapp group as all the officials were working from home.

5.3.3.4   The production estimates for the non-responding units are developed using various methods including: repetition of last available data; taking the average production data for the last few months; using previous year's growth rate; etc. The appropriate estimation procedure is decided by the source agencies themselves in consultation with NSO, MoSPI.

5.3.3.5   The data collection has been done through telephonic surveys wherever possible so as to maintain smooth flow of data. In order to enhance the data response from factories based on the response rate pattern, source agencies follow-up with non-responding factories and the factories showing delayed response.

5.3.3.6   Method of estimation was changed during the Apr- June 2020 i.e. the lockdown period for realistic reflection of the production. Post Covid, the method was again reviewed, and initial method of estimation was reinstated/resumed.

Table-6: Index of Industrial Production (IIP) (Base 2011-12)

IIP	Pre- lockdown Period			Lockdown Period			Post- lockdown Period		
	Jan 20	Feb 20	Mar 20	Apr 20	May 20	Jun 20	July 20	Aug 20	Sep 20
Index	137.4	134.2	117.2	54.0	90.2	107.9	117.9	117.2	124.1
Growth Rate	2.2	-2.3	-12.7	-53.9	67.0	19.6	9.3	-0.6	5.9

Source: IIP monthly index, MoSPI, Inflation rates calculated on month on month basis.

Figure-5: Index of Industrial Production (IIP) (Base 2011-12)
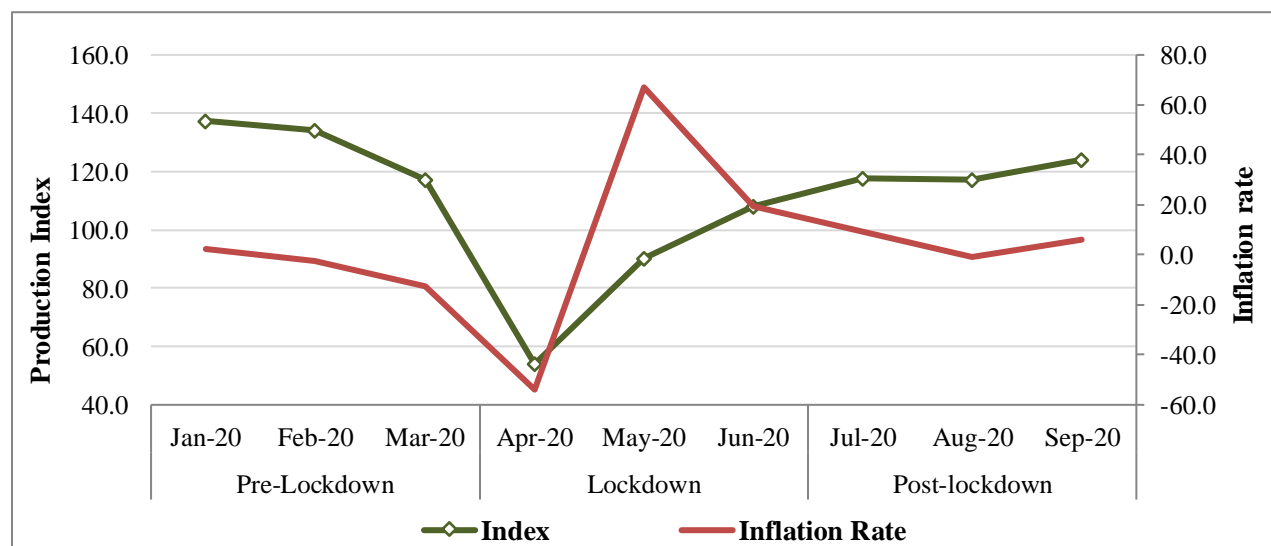
5.3.3.7   The IIP started declining and reached to its lowest during April 2020. The reason behind such a fall can be attributed to restrictions imposed on the movement of goods and people during lockdown. It severely impacted workforce capacity and disrupted supply chains, bringing nearly all manufacturing activity to a stand-still during the first wave of Covid-19. The calibrated and gradual unlocking process led to the resumption of economic activities translating into positive growth in IIP for the first time in September-2020 since the lockdown.

Table-7: Growth (Month on Month) of Different Components of IIP   **(in Percent)**

	Jan-20	Feb-20	Mar-20	Apr-20	May-20	Jun-20	Jul-20	Aug-20	Sep-20
By Sector									
Mining	2.8	-0.8	6.2	-39.8	11.2	-2.2	2.1	-4.0	4.3
Manufacturing	1.8	-2.7	-16.8	-62.3	100.5	26.9	10.6	0.2	6.6
Electricity	3.5	-1.2	-4.4	-14.5	19.9	3.7	6.5	-2.2	2.3
By Use Based Classification									
Primary goods	2.9	-1.8	2.6	-31.3	14.7	3.1	4.6	-4.8	3.0
Capital goods	9.3	-4.9	-25.5	-90.4	405.7	80.2	11.1	7.1	19.0
Intermediate goods	-0.1	-0.7	-13.8	-64.5	87.7	29.3	15.9	3.2	3.2
Infrastructure/ construction goods	0.2	-1.2	-18.9	-82.7	335.5	30.0	11.9	1.6	1.5
Consumer durables	5.7	-5.4	-29.1	-93.4	621.8	97.0	27.1	10.2	17.8
Consumer non-durables	0.1	-3.1	-20.7	-40.3	86.1	9.0	1.2	-6.2	5.3

5.3.3.8   The IIP also fell to a negative growth indicating that core manufacturing activity also suffered setbacks resulting from the pandemic. The fall in growth and index was expected as was the recovery of the index too. However, the number of units responding has improved in May 2020 as compared to the earlier months of lockdown. With the subsequent periods of conditional relaxations in restrictions, IIP indicated a graded pickup in industrial activity in the economy.

6.   Initiatives for other surveys conducted in the Economy:

6.1   During the year, there was continued compilation and dissemination of primary statistics on monetary aggregates; balance of payments; external debt; effective exchange rates; combined government finances; household financial savings; and flow of funds on established timelines and quality standards. Several initiatives have been undertaken to deal with the data gaps created due to movement restrictions and other disruptions caused by the pandemic:

- ❖ New high frequency indicators of economic activity were combined with conventional indicators to generate alternative aggregate measures that helped assess the impact of the pandemic on the economy and also the pace of normalization.
- ❖ Electronic Data Submission Portal (EDSP) was modified with enhanced security features for facilitating International Banking Statistics (IBS) data submission.
- ❖ The Reserve Bank of India temporarily substituted its computer aided personal interview (CAPI) based surveys of households with telephonic surveys to provide continuity.
- ❖ Training of reporting entities and investigators were also on online platforms.
- ❖ The proportions of interviews verified through audio and telephonic verification were increased to compensate for the inability to conduct on-spot verifications or field visits.

7.   Lesson Learned:

7.1   The economic consequences of the COVID-19 pandemic raised an emergency situation for urgent policy responses to keep the economy afloat and support households and firms alike. The countries' experience in this area prior to the pandemic was limited or non-existent, as these methods, which are considered innovative; do not guarantee

some factors that enhance on-site collection of information on the prices of goods. Except for a few industries that were severely affected by the pandemic, response rates were at or above average levels during the pandemic in almost all areas. Initially data collection became more difficult due to the inability to conduct in- person visits and business shutdowns. This led to shifting away from in person data collection to alternative methods.

7.2   However, a judicious mix of developmental and innovative measures needs to be put in place to lessen the damaging impacts of such crisis and facilitate data availability in future. These include:

❖ Building a uniform data-driven framework with new data collection methods and new data sources linked to digitalization involving low human interference to supplement on-site collection for a pandemic-resilient future.

❖ Harmonizing data reporting/collecting norms across different states.

❖ Continuous training of data collectors and supervisors to collect data through alternative data collection methods for achieving representative coverage.

❖ Building a system of auxiliary information.

❖ Training on Crisis Management

❖ Alternative source of data needs to be tapped such as machine learning, traffic, etc. A system for assessment of various method of estimation needs to be put in place for adoption of appropriate method giving optimum result.

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