

Industry and Infrastructure

The industrial sector based on Index of Industrial Production (IIP) registered a growth of 0.6 per cent for 2019-20 (April-November) as compared to 5.0 per cent during 2018-19 (April-November). Growth of manufacturing sector was 0.9 per cent during 2019-20 (April-November) as compared to 4.9 per cent during 2018-19 (April-November). Growth of refinery products sector stood at (-)1.1 per cent during 2019-20 (April-November) as compared to 5.3 per cent during 2018-19 (April-November). Steel sector achieved a growth of 5.2 per cent during 2019-20 (April-November) as compared to 3.6 per cent during 2018-19 (April-November). Government has initiated several policies in various infrastructure sectors to enhance their capacity and output. Report of the Task Force on National Infrastructure Pipeline released on 31.12.2019 has projected total infrastructure investment of ₹ 102 lakh crore during the period FY 2020 to 2025 in India.

INTRODUCTION

8.1 Industrial sector performance is critical to achieving the ambitious goal of making India a five-trillion economy. The sector plays a decisive role in determining the overall growth of national output and employment through its backward and forward linkages with the other two sectors of the economy. It contributes close to 30 per cent of total gross value added (GVA). The sector is, however, vulnerable to several internal and external economic challenges which affect its overall performance.

TRENDS IN INDUSTRIAL SECTOR

8.2 Industrial sector performance in terms of its contribution in GVA improved in 2018-19 over 2017-18. However, as per the estimates of Gross Domestic Product by National Statistical Office (NSO), the real GVA of industrial sector grew by 1.6 per

cent in first half (H1) (April-September) of 2019-20, as compared to 8.2 per cent in H1 of 2018-19. The low growth in industrial sector is primarily due to manufacturing sector which registered a negative growth of 0.2 per cent in 2019-20 H1. Growth of real GVA at basic prices for industrial sector is given in Table 1.

Index of Industrial Production (IIP)

8.3 The IIP is a measure of industrial performance. It assigns a weight of 77.6 per cent to manufacturing followed by 14.4 per cent to mining and 8.0 per cent to electricity. Overall, IIP growth has moderated to 3.8 per cent in 2018-19 compared to 4.4 per cent in 2017-18. During the current year 2019-20 (April-November), it grew at 0.6 per cent as compared to 5.0 per cent in the corresponding period of previous year (Table 2). The moderation in growth is mainly arising from subdued manufacturing

activities due to slower credit flow to medium and small industries, reduced lending by NBFCs owing to liquidity crunch, tapering of domestic demand for key sectors such as automotive sector, pharmaceuticals, and machinery and equipment, volatility

in international crude oil prices, prevailing trade related uncertainties, etc. Exports of key labour intensive sectors, such as gems & jewellery, basic metals, leather products and textile products under-performed during the current financial year.

Table 1: Growth rate of Gross Value Added (GVA) in Industry at Constant Prices (in per cent)

	Share in GVA*	2017-18	2018-19 (PE)	2019-20		2019-20 (1st AE)
				Q1	Q2	
Mining & Quarrying	2.4	5.1	1.3	2.7	0.1	1.5
Manufacturing	16.4	5.9	6.9	0.6	-1.0	2.0
Electricity, Gas, Water Supply & other Utility Services	2.8	8.6	7.0	8.6	3.6	5.4
Construction	8.0	5.6	8.7	5.7	3.3	3.2
Industry	29.6	5.9	6.9	2.7	0.5	2.5

Source: NSO

Note: * - Share in GVA is at current prices (2018-19), AE - Advance Estimate, PE- Provisional Estimate.

Table 2: Index of Industrial Production (IIP) Growth Rates (in per cent)

	Weight	2015-16	2016-17	2017-18	2018-19	2018-19	2019-20
						(April- November)	(April- November)
General Index	100.0	3.3	4.6	4.4	3.8	5.0	0.6
Sectoral Classification							
Mining	14.4	4.3	5.3	2.3	2.9	3.7	-0.1
Manufacturing	77.6	2.8	4.4	4.6	3.9	4.9	0.9
Electricity	8.0	5.7	5.8	5.4	5.2	6.6	0.8
Use Based Classification							
Primary goods	34.0	5.0	4.9	3.7	3.5	4.8	0.1
Capital goods	8.2	3.0	3.2	4.0	2.7	7.2	-11.6
Intermediate goods	17.2	1.5	3.3	2.3	0.9	0.7	12.2
Infrastructure/ construction goods	12.3	2.8	3.9	5.6	7.3	8.3	-2.7
Consumer durables	12.8	3.4	2.9	0.8	5.5	7.8	-6.5
Consumer non- durables	15.3	2.6	7.9	10.6	4.0	4.0	3.9

Source: NSO.

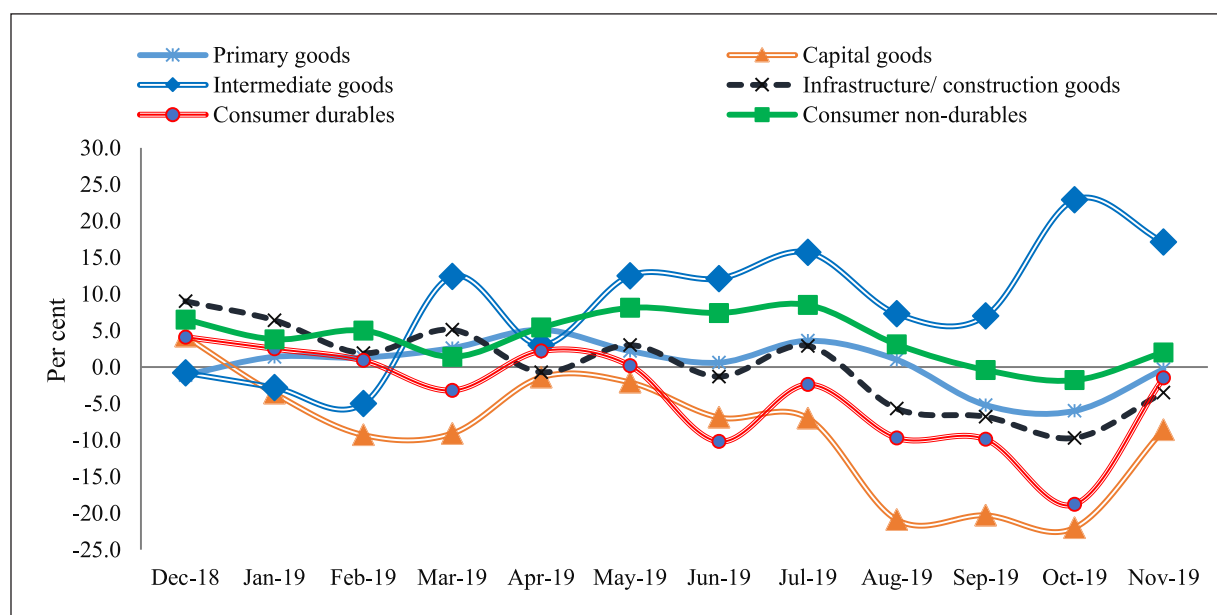
8.4 As per the use-based classification of IIP, the growth of capital goods and consumer durables declined by 11.6 per cent and 6.5 per cent respectively during the current

financial year 2019-20 (April-November). Consumer durables segment was hit mainly due to lack of demand from the household sector especially in Automobile industry.

The growth of infrastructure/ construction goods declined by 2.7 per cent in the current financial year 2019-20 (April-November). However, intermediate goods, consumer non-durable and primary goods registered a growth of 12.2 per cent, 3.9 per cent and 0.1 per cent, respectively, during 2019-20 (April-November) (Table 2). Figure 1

shows the monthly growth of IIP by use-based classification. Intermediate goods and consumer non-durable registered positive growth in November 2019, however, primary goods, capital goods, infrastructure/ construction goods and consumer durables reported negative growth in November 2019.

Figure 1: Monthly growth (in per cent) of IIP (Use based classification)



Source: NSO.

Eight Core Industries

8.5 The Index of Eight Core Industries measures the performance of eight core industries i.e., Coal, Crude Oil, Natural Gas, Refinery Products, Fertilizers, Steel, Cement and Electricity. The industries included in the Index of Eight Core Industries comprise 40.27 per cent weight in the Index of Industrial Production (IIP).

8.6 Growth of Eight Core Industries stood flat during the current financial year (April-November, 2019). During the corresponding period of the previous year, these industries grew at 5.1 per cent. While fertilizers, steel and electricity have seen expansion in their

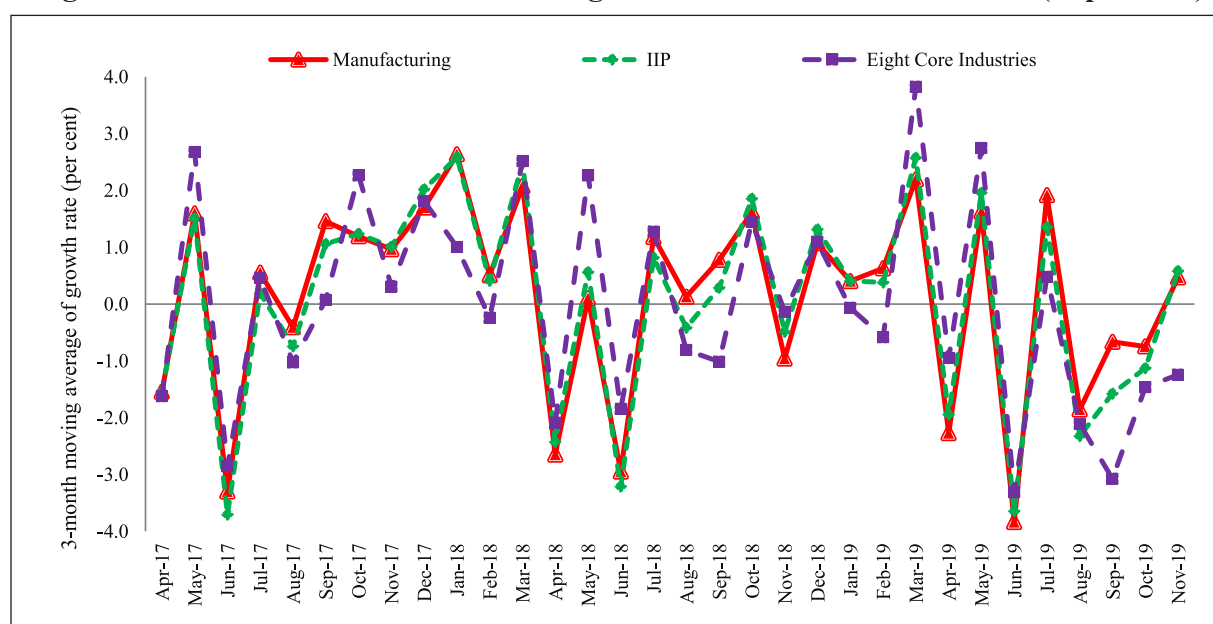
production, production of coal, crude oil, natural gas and refinery products have contracted during the current financial year (Table 3). Excessive rainfall during monsoon, law and order problem prevailing in mining areas and strike during September 2019 impacted the coal sector. Crude oil industry continued to show contractionary trend with a growth rate of (-) 5.9 per cent in 2019-20 (April-November) owing to operational issues like power shutdowns, electrical faults due to rains/winds/ thunderstorms, etc. Growth rate of 3 Months Moving Average Month-on-Month (M-o-M) of IIP, Eight Core Industries and Manufacturing sector from 2017-18 to 2019-20 shows that the three indicators move in tandem with some occasional deviation (Figure 2).

Table 3: Growth in the production of Eight Core Industries (in per cent)

Sector	Weight	2016-17	2017-18	2018-19	2018-19 (April- November)	2019-20 (April- November)
Coal	10.3	3.2	2.6	7.4	9.0	-5.3
Crude Oil	9.0	-2.5	-0.9	-4.1	-3.6	-5.9
Natural Gas	6.9	-1.0	2.9	0.8	-0.7	-3.1
Refinery Products	28.0	4.9	4.6	3.1	5.3	-1.1
Fertilizers	2.6	0.2	0.0	0.3	-1.3	4.0
Steel	17.9	10.7	5.6	5.1	3.6	5.2
Cement	5.4	-1.2	6.3	13.3	14.2	0.0
Electricity	19.9	5.8	5.3	5.2	6.6	0.7
Overall Index	100	4.8	4.3	4.4	5.1	0.0

Source: Office of the Economic Adviser, DPIIT

Note: The industry-wise weights indicated above are individual industry weight derived from IIP and blown up on pro-rata basis to a combined weight of Index of Eight Core Industries equal to 100.

Figure 2: Growth rate of 3 Months Moving Average Month-on-Month (M-o-M) of IIP, Eight Core Industries and Manufacturing sector from 2017-18 to 2019-20 (in per cent)

Source: Survey Calculation using Office of the Economic Adviser, DPIIT and NSO data.

Performance of Central Public Sector Enterprises (CPSEs)

8.7 As per the Department of Public Enterprises, there are 348 CPSEs as on

31.03.2019, of this, 249 are in operation, 86 CPSEs are yet to start commercial operations and 13 CPSEs are under closure/liquidation. Out of 249 operating CPSEs, as many as 178

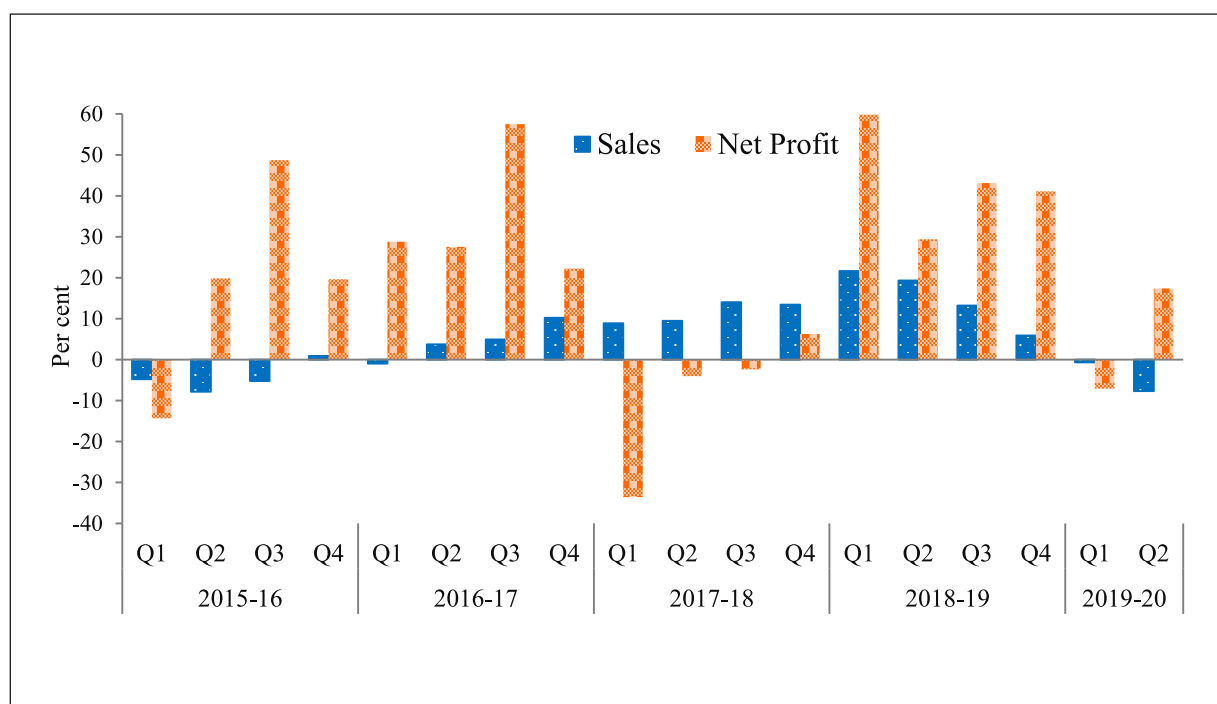
CPSEs showed profit during 2018-19, 70 CPSEs incurred losses during the year and 1 CPSE has shown neither profit nor loss. The total profit of profit making CPSEs (178) was ₹ 1.75 lakh crores in 2018-19. The total loss of loss making enterprises (70) stood at ₹ 31,635 crore during the year. The overall net profit of the 249 operating CPSEs went up by 15.52 per cent to ₹ 1.43 lakh crores in 2018-19 from ₹ 1.24 lakh crores in 2017-18. The contribution of CPSEs to the Central Exchequer increased by 4.67 per cent to ₹ 3.69 lakh crores in 2018-19 as against previous year of ₹ 3.52 lakh crores.

8.8 The cumulative investment (paid up capital plus long terms loans), which was ₹ 29 crores in 5 enterprises as on March 31, 1951, has gone up to ₹ 16.41 lakh crores in 335 CPSEs as on March 31, 2019. The increase in investment in all the CPSEs was 14.65 per cent in 2018-19 over 2017-18, and capital employed went up by 11.71 per cent over the same period.

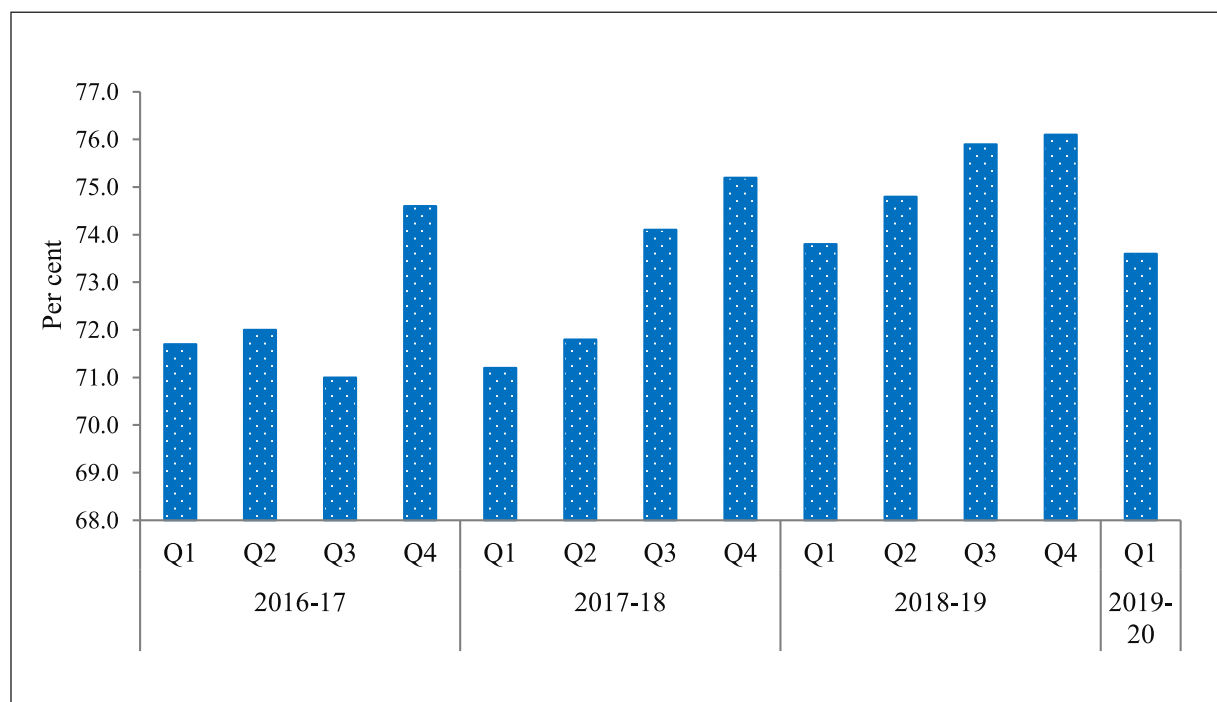
Corporate Sector Performance

8.9 As per Reserve Bank of India (RBI) Studies on Corporate Performance, demand conditions for the manufacturing sector weakened in Q2 of 2019-20, with a contraction (y-o-y) in nominal sales. Petroleum products, iron and steel, motor vehicles and other transport equipment companies were the major contributors to slowdown. Sales growth (y-o-y) of over 1,700 listed private manufacturing companies contracted by 7.7 per cent in Q2 of 2019-20, after remaining in expansionary zone since Q2 of 2016-17. Net profit for the manufacturing sector contracted in Q1 of 2019-20, mainly due to a production slowdown. Net profit of corporate sector recovered in Q2 of 2019-20 and was 17.4 per cent (Figure 3). The capacity utilisation of India's manufacturing sector remains stable at 73.6 per cent in Q1 of 2019-20 as compared to 73.8 per cent in Q1 of 2018-19 (Figure 4).

Figure 3: Growth in sales and net profit of listed Manufacturing Companies in the Private Corporate Sector (in per cent)



Source: RBI.

Figure 4: Capacity utilisation of India's manufacturing sector (in per cent)

Source: RBI.

Gross Capital Formation in Industrial Sector

8.10 As per the data on national income, consumption expenditure, saving and capital formation released by NSO on January 31, 2019, the rate of growth of Gross Capital Formation (GCF) in industry has registered a sharp rise from (-) 0.7 per cent in 2016-17

to 7.6 per cent in 2017-18, showing upward momentum of investment in industry. Mining & Quarrying, Manufacturing, Electricity, Gas, Water Supply & Other Utility Services and Construction had registered a growth rate of 7.1 per cent, 8.0 per cent, 6.1 per cent and 8.4 per cent respectively in 2017-18 (Table 4).

Table 4: Growth rate of GCF by Industry (at 2011-12 constant prices) (in Per cent)

	2015-16*	2016-17#	2017-18@
Industry	11.1	-0.7	7.6
Mining & Quarrying	-19.6	16.4	7.1
Manufacturing	11.4	1.3	8.0
Electricity, Gas, Water Supply & Other Utility Services	22.4	-12.9	6.1
Construction	2.6	10.1	8.4

Source: NSO.

Note:* - Third Revised Estimates, # - Second Revised Estimates, @ - First Revised Estimates.

Credit Flow to the Industrial sector

8.11 Growth in gross bank credit flow to the industrial sector, on a year-on-year (y-o-y)

basis, rose to 2.7 per cent in September 2019 as compared to 2.3 per cent in September 2018. Credit flow to industries like wood & wood products, all engineering, cement & cement

products, construction and infrastructure increased in September 2019 as compared to September 2018, while credit flow to mining & quarrying, textiles, petroleum, coal products & nuclear fuel, glass & glassware and basic metal & metal products contracted

in the same period. Credit flow to industries like food processing, chemicals & chemical products, vehicles, vehicles parts & transport equipment registered lower growth in September 2019 as compared to September 2018 (Table 5).

Table 5: Growth of Industry-wise deployment of Gross Bank Credit (in Per cent) (Year-on-Year)

	March 2018	September 2018	March 2019	September 2019
Industry	0.7	2.3	6.9	2.7
Mining & Quarrying (incl. Coal)	19.7	29.8	1.1	-3.0
Food Processing	6.8	2.2	1.1	0.6
Textiles	6.9	1.3	-3.0	-5.7
Petroleum, Coal Products & Nuclear Fuels	9.4	18.5	-3.1	-4.2
Wood & Wood Products	3.3	6.4	10.2	7.1
Chemicals & Chemical Products	-5.5	11.7	17.5	2.6
Glass & Glassware	6.5	30.3	17.0	-8.0
All Engineering	3.8	3.8	8.6	4.4
Cement & Cement Products	-3.1	-10.4	5.9	17.5
Basic Metal & Metal Product	-1.2	-7.9	-10.7	-7.9
Vehicles, Vehicle Parts & Transport Equipment	7.0	9.1	1.4	6.9
Construction	9.5	8.7	10.4	10.5
Infrastructure	-1.7	4.7	18.5	7.2
Other Industries	4.2	-1.8	6.8	7.4

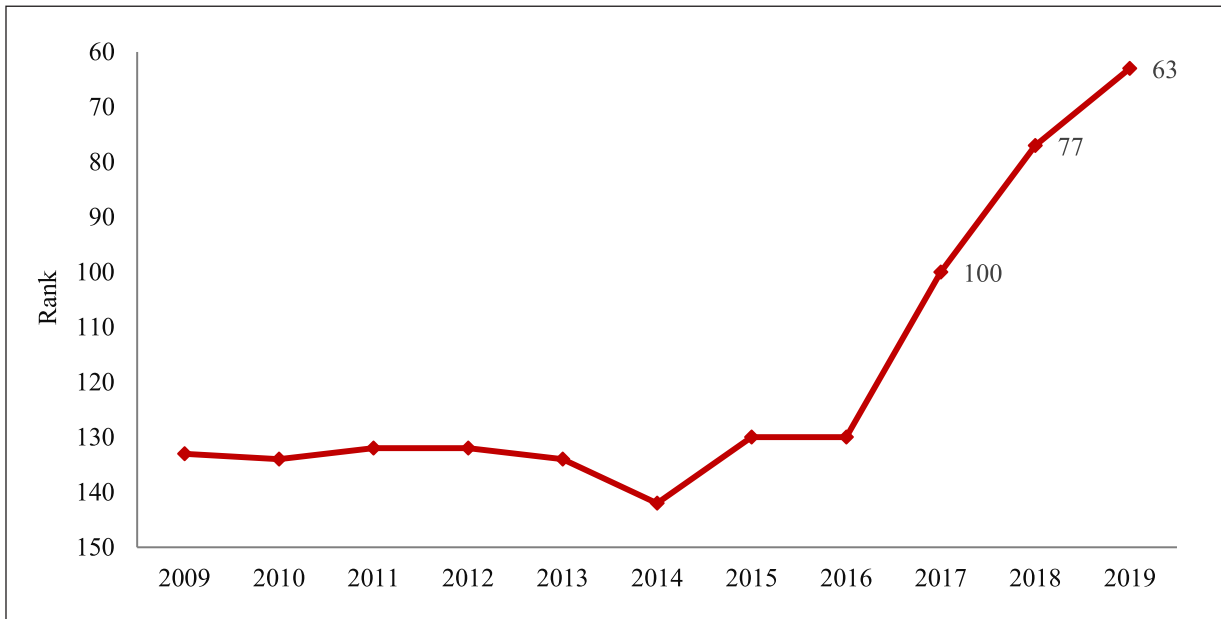
Source: RBI.

Ease of Doing Business

8.12 Government of India has taken several industry specific reform initiatives since 2014 that have significantly improved the overall business environment. In order to improve ease of doing business, the emphasis has been on simplification and rationalization of the existing rules and introduction of information technology to make governance more efficient and effective. The improvement in

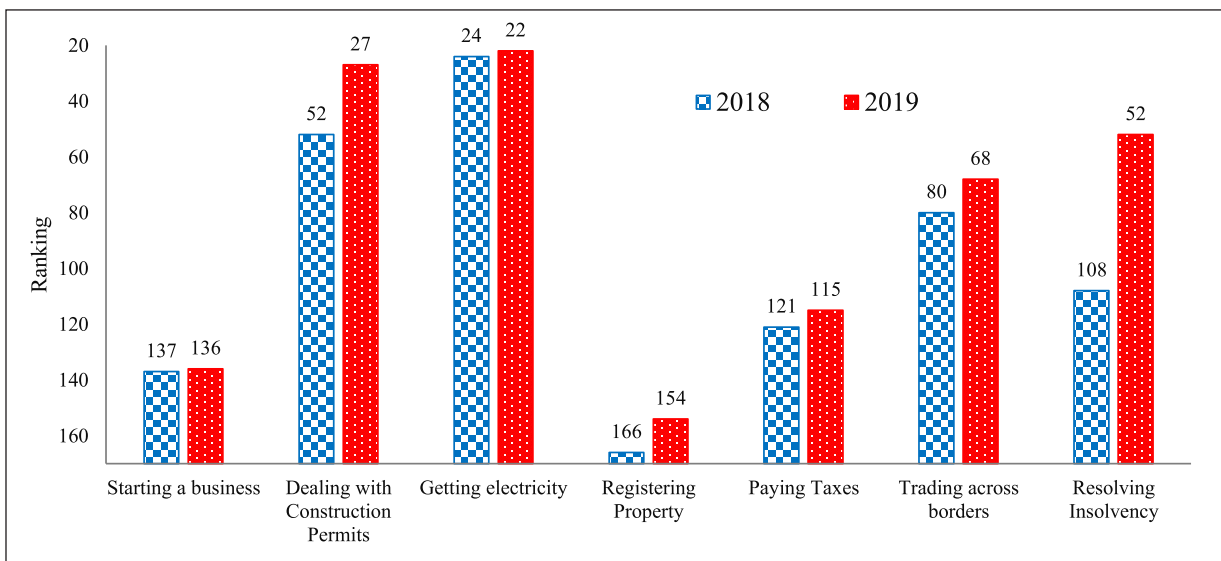
the business environment as a result of these reforms is reflected in India's considerably improved ranking to 63rd position among the 190 countries in the World Bank's Doing Business 2020 Report. This is a jump of 14 ranks over its previous rank of 77 (Figure 5). The ranking is based on 10 indicators which span the life-cycle of a business. India has improved its rank in 7 out of 10 indicators and has moved closer to international best practices (Figure 6).

Figure 5: India’s ranking in World Bank Ease of Doing Business Reports



Source: World Bank.

Figure 6: India’s Progress in Ease of Doing Business Reports Rankings



Source: World Bank.

Start-up India

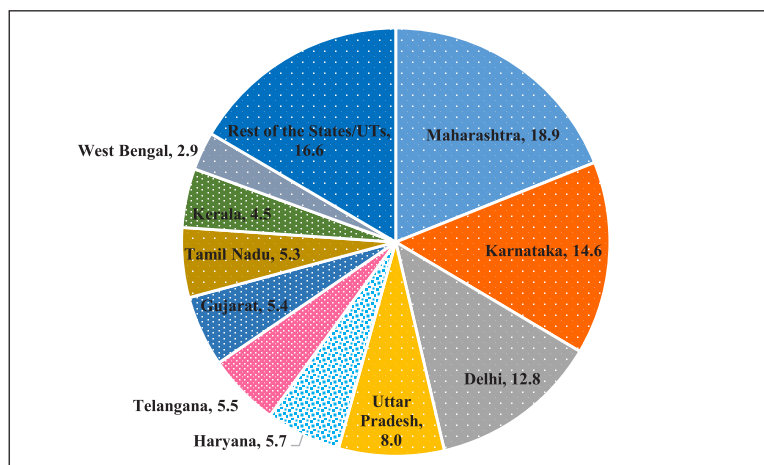
8.13 Startups drive economic growth, create employment and foster a culture of innovation. In order to promote innovation and entrepreneurship among enterprising youth, the Hon’ble Prime Minister of India had announced the “Startup India, Stand-up India” initiative on August 15, 2015. The

initiative aims to create an ecosystem that is conducive for the growth of startups. A plan comprising 19 action points was unveiled on January 16, 2016. As on January 8, 2020, 27,084 startups were recognized across 551 districts, 55 per cent of which are from Tier I cities , 45 per cent from Tier II and Tier III cities. 43 per cent of recognized startups have at least one woman director. Steps have

been taken for easing regulations such as exemptions from Income tax on investments raised by startups; implementation of 32 regulatory reforms to improve Ease of Doing Business for startups; self-certification regime for six labour laws and three environmental laws; and Startup India Hub as ‘One Stop Shop’ for the startup ecosystem in which 3,67,773 users have availed free Startup India

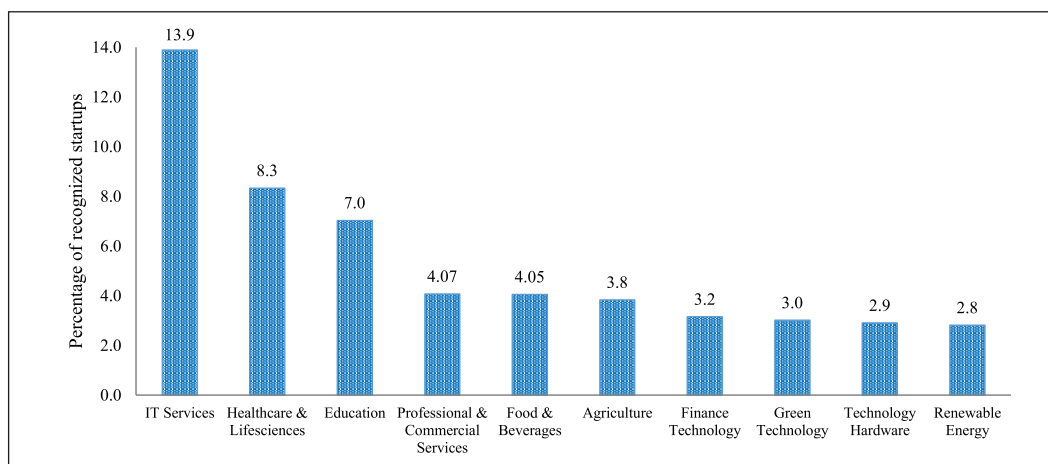
learning Program to build business plans, etc. Maharashtra, Karnataka and Delhi are the top three performers in terms of State-wise distribution of recognized startups in India (Figure 7). As per industry-wise distribution of recognized startups, IT Services accounted for 13.9 per cent followed by Healthcare and Life Sciences (8.3 per cent) and education (7.0 per cent) (Figure 8).

Figure 7: Major State-wise distribution of recognized startups in India (in per cent)



Source: DPIIT.

Figure 8: Major Industry-wise distribution of recognized startups in India (in per cent)



Source: DPIIT.

Foreign Direct Investment (FDI)

8.14 FDI is a major driver of economic growth as it enhances productivity by bringing capital, skills and technology to the host country. The Government is playing

a proactive role in investment promotion through a liberal FDI policy. During 2019-20 (up to September, 2019), total FDI Equity inflows were US\$26.10 billion as compared to US\$22.66 billion during 2018-19 (up to September, 2019). Out of FDI Equity inflows

of US\$26.10 billion during 2019-20 (up to September, 2019), nearly 80 per cent have come mainly from Singapore, Mauritius, Netherlands, USA and Japan.

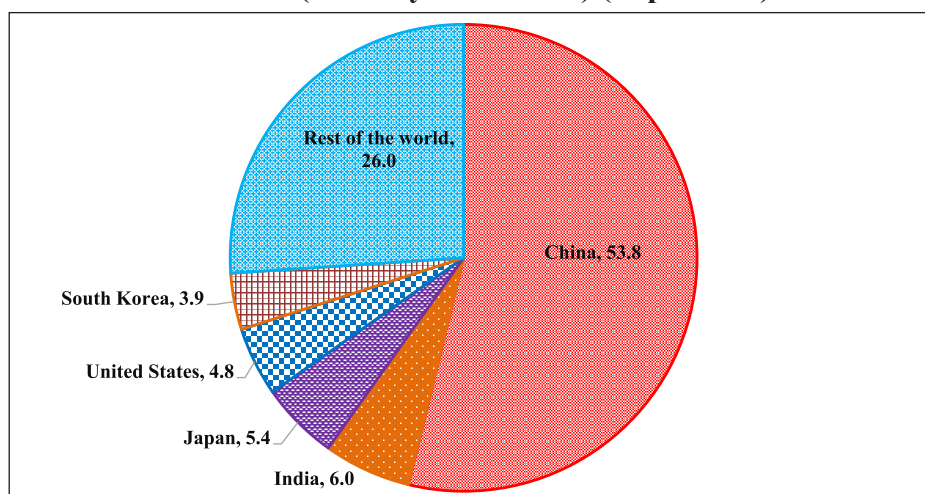
SECTOR WISE ISSUES AND INITIATIVES

Steel

8.15 India stood at second position in the production of crude steel (Figure 9). It is also the third largest consumer of the finished steel

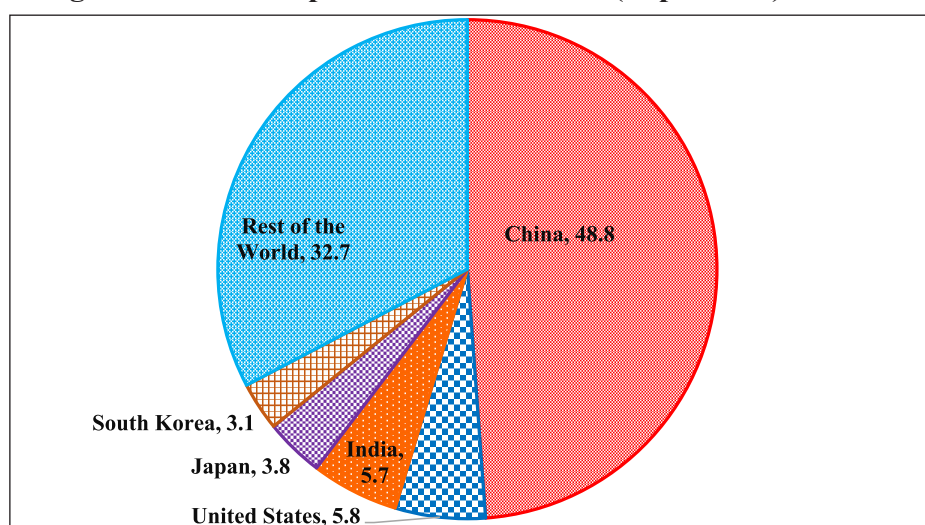
after China and USA (Figure 10). However, its per capita consumption was only 74.1 kg during 2018-19 (Figure 11). During 2018-19, India produced 109.2 MT of crude steel and in the current financial year (FY) till October 2019, crude steel production was 64.3 MT, displaying a growth of 1.5 per cent over corresponding period of last year with utilisation capacity of 77.4 per cent. Similarly production of finished steel was 137.2 MT in 2018-19 and 59.73 MT during April-October 2019 (Figure 12).

Figure 9: Country wise share of Crude steel production for 2019 (January-November) (in per cent)



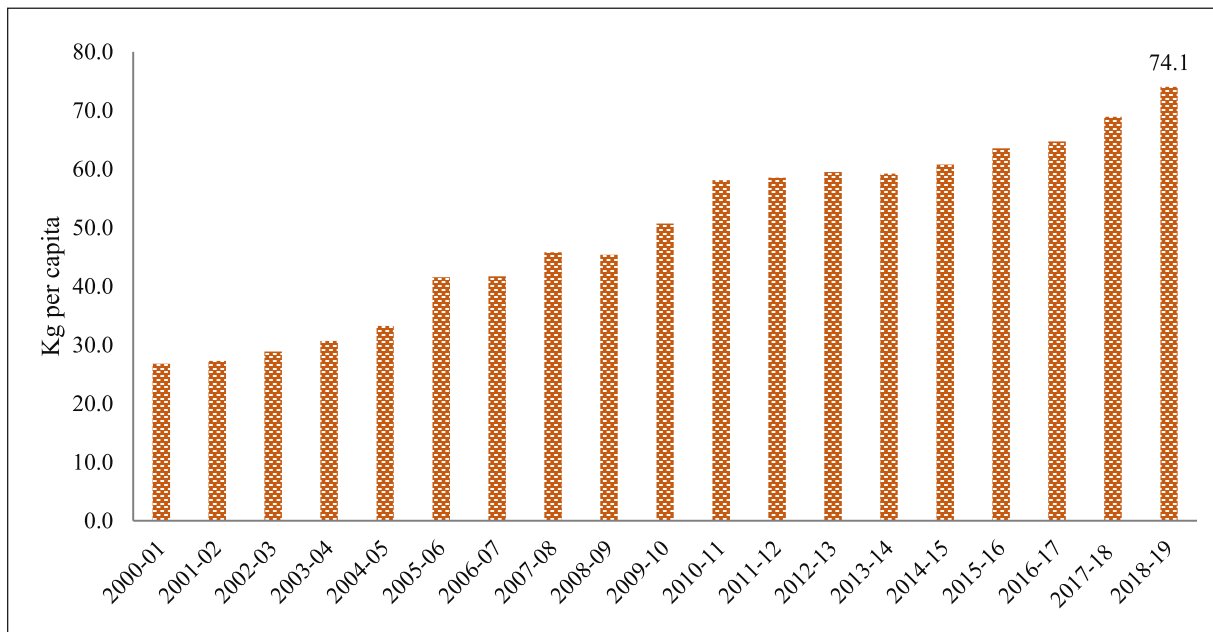
Source: World Steel Association.

Figure 10: Consumption of finished steel (in per cent) for 2018



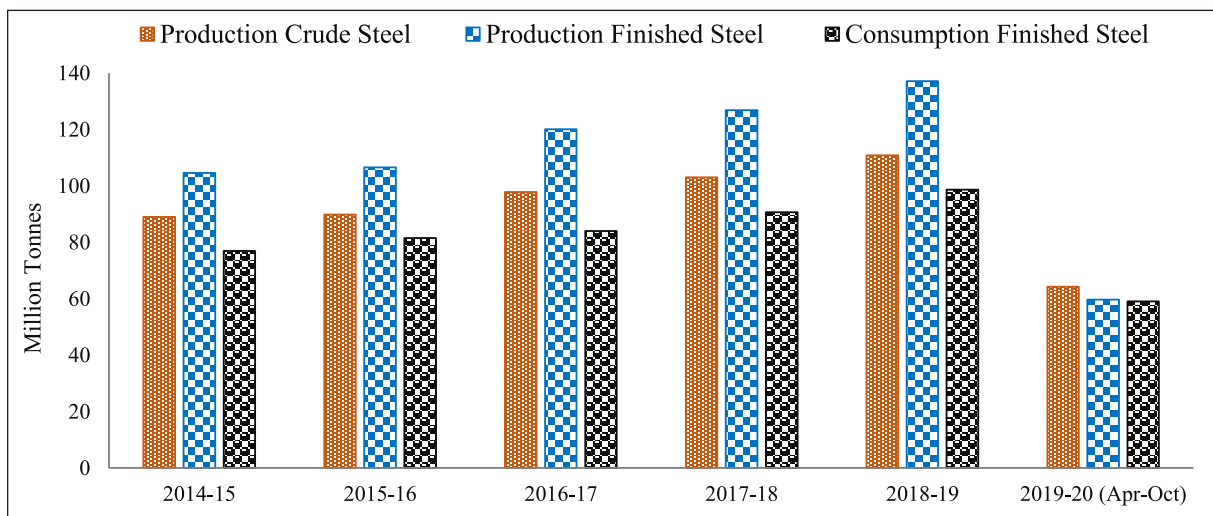
Source: World Steel Association.

Figure 11: Per capita consumption of total finished steel (Kg) for India



Source: Joint Plant Committee.

Figure 12: Production & Consumption of finished steel (Million Tonnes)

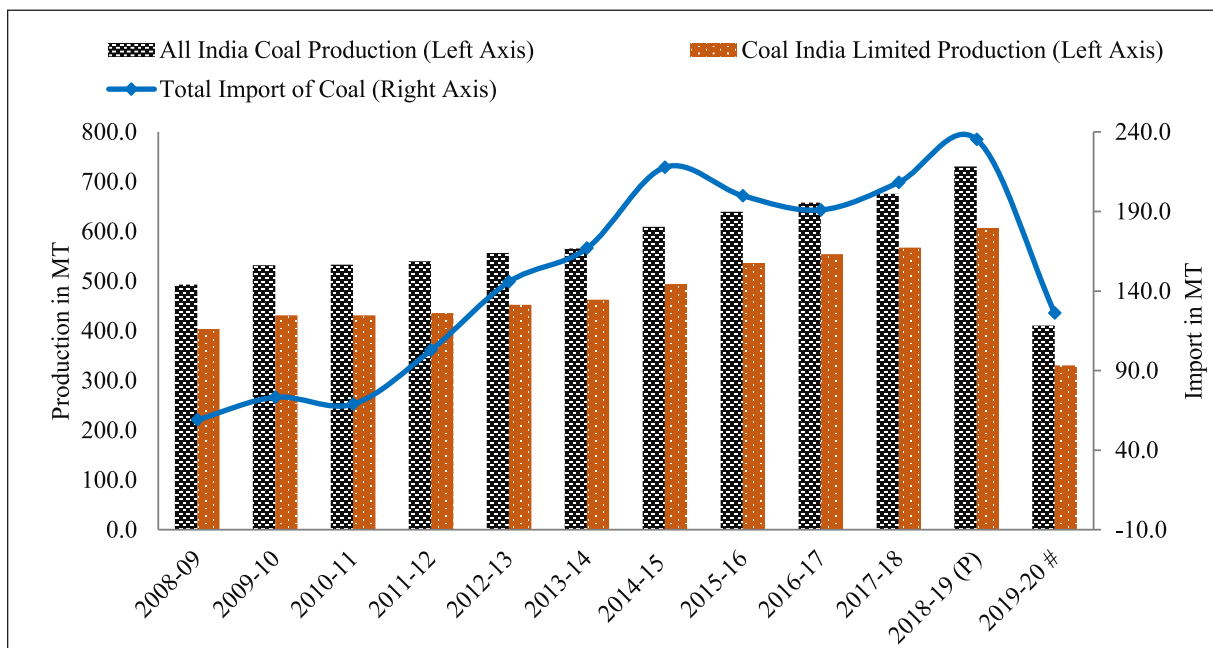


Source: Ministry of Steel.

Coal

8.16 Overall production of raw coal in India during the year 2018-19 was 730.4 million tonnes (MT) displaying a growth of 8.1 per cent. In the current year 2019-20 (April-November), all India coal production was 410.5 MT with a growth rate of (-) 5.3 per cent which is attributable to heavy and unseasonal rains. It is notable that during the first quarter

coal production registered a positive growth and then took a dip when the rains set in. The gap between demand and supply of coal in the country is currently being met through coal imports by consuming sectors. As per available data (from Directorate General of Commercial Intelligence and Statistics), 126.20 MT of coal was imported during April 2019 to September 2019 (Figure 13).

Figure 13: Production and import of Coal in India (in million tonnes)

Source: Ministry of Coal.

Note: (P)- Provisional; #-Production figures upto November 2019 and import figures upto September 2019.

Micro, Small & Medium Enterprises (MSME)

8.17 Micro, Small & Medium Enterprises (MSMEs) contribute significantly in the economic and social development of the country by fostering entrepreneurship and generating largest employment opportunities at comparatively lower capital cost, next only

to agriculture. Government is committed to supporting this critically important sector for better credit flow, technology upgradation, ease of doing business and market access. On 2nd November 2018, Hon'ble Prime Minister made 12 key announcements for faster growth of this sector and for promoting ease of doing business. These initiatives alongwith their status are given in Table 6.

Table 6: Status of key initiatives for faster growth of MSMEs and promoting ease of doing business.

S.N.	Initiative	Status
1	In-principle approval for loans up to ₹ 1 crore within 59 minutes through online portal.	1,59,422 number of loans, involving ₹ 49,330 crore have been sanctioned and 1,38,646 number of loans, involving ₹ 37,106 crore have been disbursed (up to October 2019).
2	Interest subvention of 2 per cent for all GST registered MSMEs on incremental credit up to ₹ 1 crore.	SIDBI has received and settled the claims of ₹ 18 crore from 43 Banks/NBFCs for the period (02.11.2018 – 31.03.2019).
3	All companies with a turnover of more than ₹ 500 crore to be mandatorily on TReDS platform to enable entrepreneurs to access credit from banks, based on their upcoming receivables.	There were 1881 non-compliant Companies, out of these 1881 non-compliant Companies identified by Ministry of Corporate Affairs for taking action, so far 329 companies have registered themselves on the TReDS portal.

4	All CPSUs to compulsorily procure at least 25 per cent from MSEs instead of 20 per cent of their total purchases.	During 2019-20 (up to October 2019), CPSUs have procured goods and services worth ₹ 15,936.39 crore from 59,903 MSEs and that is 28.26 per cent of the total procurement by CPSUs during the same period.
5	Out of the 25 per cent procurement mandated from MSEs, 3 per cent reserved for women entrepreneurs.	During 2019-20 (up to October 2019) procurement from 1471 women MSEs is of ₹ 242.12 crore and that is 0.43 per cent of the total procurement.
6	All CPSUs to compulsorily procure through GeM portal.	258 CPSUs/CPSBs have been on boarded/registered on GeM portal post 02.11.2018. Total 57,351 MSE Sellers & Service providers registered on GeM portal and 50.30 per cent of orders value on GeM portal is from MSEs.
7	20 Technology Centers (TCs) and 100 Extension Centers (ECs) to be established at the cost of ₹ 6,000 crore.	Till date, six locations have been identified for TCs, RFP issued for PMC for 20 TCs, DPRs of 20 ECs approved and ₹ 99.30 crore are released. 10 more ECs planned in FY 2019-20.
8	Government of India to bear 70 per cent of the cost for establishing Pharma clusters.	Four districts viz. Solan (Baddi), Indore, Aurangabad and Pune were selected for assisting pharma clusters for developing common facilities. In principle approval was granted for the proposal from Pune on 31.01.2019.
9	Returns under 8 labour laws and 10 Union regulations to be filed once in a year.	All regional Heads were advised to vigorously reach out to the employers in their region to make them aware about the facility of filing Online Unified Annual Return on Shram Suvidha Portal under 8 Labour Laws and 10 Central Rules.
10	Establishments to be visited by an Inspector will be decided through a computerized random allotment.	Total 3080 inspections have been conducted which were assigned through computerized random allotment system and all inspection reports have been uploaded on Shram Suvidha Portal.
11	Single consent under air and water pollution laws. Returns will be accepted through self-certification and only 10 percent MSME units to be inspected.	All the operations were stayed by Hon'ble High court of Delhi. As of now the matter is sub-judice.
12	For minor violations under the Companies Act, entrepreneurs no longer have to approach court but can correct them through simple procedures.	So far action has been taken against two companies which fall in the category of MSME by imposition of penalty instead of filing case in the court as per Ordinance/Amendment Act.

Source: Ministry of Micro, Small and Medium Enterprises

Textile and Apparels

8.18 Textiles contributed 18.0 per cent of manufacturing and 2.0 per cent of GDP in 2017-18. The share of textiles and clothing in India's total exports was 12 per cent in 2018-

19. The sector is the biggest employer after agriculture and it employs 4.5 crore people directly and 6 crore people in allied sectors. Estimated man-made fibre and filament yarn production increased by 4 per cent and 8 per cent, respectively, during April-August

2019. Estimated cloth production by mill sector declined by about 4 per cent during April-August 2019 (Table 7). Exports of textile and clothing products including

handicrafts from India have increased to US\$40.4 billion in 2018-19 from US\$ 39.2 billion in 2017-18 registering a growth of 3 per cent (Table 8).

Table 7: Estimated Production of man-made fibre, filament yarn, spun yarn and cloth

Period	Man-made fibre	Man-made filament yarn	Cotton yarn	Blended & 100% Non-cotton yarn	Total Spun Yarn	Cloth		
						Mill sector *	Decentralized sector**	Grand Total (Excluding Khadi, Wool & Silk)
	Kg	Kg	Kg	Kg	Kg	Sq. mtr	Sq. mtr	Sq. mtr
2015-16	1347	1164	4138	1527	5665	2315	62269	64584
2016-17	1364	1159	4055	1604	5659	2264	61216	63480
2017-18	1319	1187	4064	1616	5680	2157	64688	66845
2018-19	1443	1159	4182	1680	5862	2012	68034	70046
2018-19 [#]	603	476	1758	695	2453	873	27938	28811
2019-20 (P) [#]	629	512	1677	710	2387	837	28209	29046
Variation 2019-20 Over 2018-19 (per cent) [#]	4.3	7.6	-4.6	2.2	-2.7	-4.1	1.0	0.8

Source: Ministry of Textiles.

Note: (P) - Provisional, *- Based on statistical data received from units, ** - Based on set of conversion ratio of yarn to fabric, #- (April-August).

Table 8: Exports of textile and clothing products including handicrafts from India (Million US\$)

	2015-16	2016-17	2017-18	2018-19
Textile & Apparel	35,995	35,372	35,666	36,627
Handicrafts	3,293	3,639	3,573	3,804
Total textile & clothing including Handicrafts	39,288	39,011	39,239	40,431
India's overall exports	2,62,290	2,75,852	3,03,376	3,29,536
Share of textile & clothing exports in overall exports (in per cent)	15	14	13	12

Source: Ministry of Textiles.

INFRASTRUCTURE

8.19 It is well-accepted that investment in infrastructure is necessary for growth. Power shortages lead to dependence on expensive captive power, which in turn impels high costs and lack of competitiveness for the economy. Inadequate transport infrastructure leads to bottlenecks both in the supply of raw materials as well as movement of finished goods to the

marketplace. The price that farmers get for their produce is depressed if there is no connectivity through good quality rural roads, which in turn keeps rural incomes depressed negating the fruits of high overall growth performance. For all these reasons, provision of adequate infrastructure is essential for growth and for making growth inclusive. India recently launched the National Infrastructure Pipeline for the period FY 2020-2025 (Box 1).

Box 1: National Infrastructure Pipeline 2020-2025

Investment in Infrastructure is necessary for growth. To achieve the GDP of \$5 trillion by 2024-25, India needs to spend about \$1.4 trillion (₹ 100 lakh crore) over these years on infrastructure. The challenge is to step-up annual infrastructure investment so that lack of infrastructure does not become a binding constraint to the growth of the Indian economy. To implement an infrastructure program of this scale, it is important that projects are adequately prepared and launched.

To draw up the National Infrastructure Pipeline (NIP) for each of the years from FY 2019-20 to FY 2024-25, an inter-ministerial Task Force was set up in September 2019 under the chairmanship of Secretary (DEA), Ministry of Finance.

NIP is expected to enable well-prepared infrastructure projects which will create jobs, improve ease of living, and provide equitable access to infrastructure for all, thereby making growth more inclusive. NIP also intends to facilitate supply side interventions in infrastructure development to boost short-term as well as the potential GDP growth. Improved infrastructure capacities will also drive competitiveness of the Indian economy.

The Finance Minister released the Report of the Task Force on National Infrastructure Pipeline (abridged version) on 31.12.2019. The NIP has projected total infrastructure investment of ₹ 102 lakh crore during the period FY 2020 to 2025 in India. Energy (24 per cent), Roads (19 per cent), Urban (16 per cent), and Railways (13 per cent) amount to over 70 per cent of the projected capital expenditure during the said period.

As per the NIP, Central Government (39 per cent) and State Government (39 per cent) are expected to have equal share in funding of the projects followed by the Private Sector (22 per cent). It is expected that private sector share may increase to 30 per cent by 2025. Out of the total expected capital expenditure of ₹ 102 lakh crore, projects worth ₹ 42.7 lakh crore (42 per cent) are under implementation, projects worth ₹ 32.7 lakh crore (32 per cent) are in conceptualization stage and rest are under development. Hence about two-thirds of the pipeline is already firmed up. It is also expected that projects of certain states would be added to the pipeline in due course. The sector wise break-up of NIP projects is as follows:

Ministry/ Department	FY 20-25 (Amount in ₹ Crore)
Power	11,75,995
Renewable Energy	9,29,500
Atomic Energy	1,54,088

Petroleum and Natural Gas	1,94,666
Total Energy	2,454,249
Roads	19,63,943
Railways	13,68,523
Ports	1,00,923
Airports	1,43,398
Urban (AMRUT, SMART Cities, MRTS, Affordable Housing, Jal Jeevan Mission)	16,29,012
Telecommunication	3,20,498
Irrigation	7,72,678
Rural Infrastructure	
Rural Infrastructure	4,10,955
Water and Sanitation	3,61,810
Total Rural Infrastructure	7,72,765
Agriculture Infrastructure	54,298
Food Processing Industries	1,255
Food and Public Distribution	5,000
Total Agriculture & Food Processing Infrastructure	60,553
Higher Education	1,18,348
School Education	37,791
Health and Family Welfare	1,68,622
Sports	7618
Tourism	24,321
Total Social Infrastructure	3,56,701
Industries and Internal Trade	2,99,237
Steel	8,2-25
Total Industrial Infrastructure	3,07,462
Total (₹ crore)	102,50,704[#]

Note: #- As on 31.12.2019. Subject to change as more data becomes available.

The Task Force has given its recommendations on required changes to several key sectoral policies and other reform initiatives by the Central and State Governments such as developing a robust bond market for infrastructure companies, speedy resolution of infrastructure disputes, optimal risk sharing through better and balanced PPP contracts, and sanctity and enforceability of contracts.

The NIP captures the infrastructure vision of the country for the period FY20-25. This is the first-ever exercise undertaken in the country. However, it is recognized that financing of the National Infrastructure Pipeline would be a challenge. It is hoped that a bouquet of well-prepared projects would attract investment from Central and State Governments, Urban Local Bodies, Banks and Financial Institution, PE funds, and private investors, both local and foreign.

SECTORAL DEVELOPMENTS

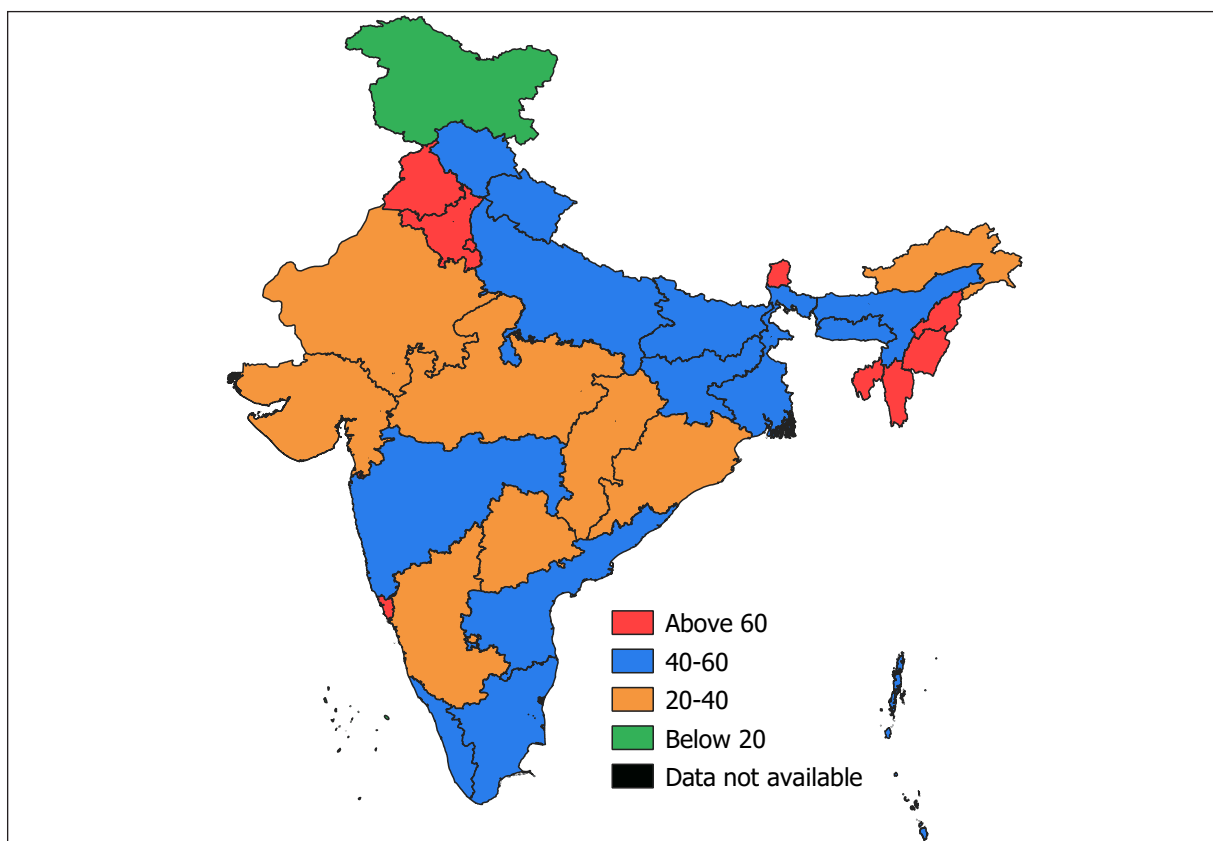
Road Sector

8.20 Road transport is the dominant mode of transportation in terms of its contribution to Gross Value Added (GVA) and traffic share. The share of transport sector in the GVA for 2017-18 was about 4.77 per cent of which the share of road transport is the largest at 3.06 per cent, followed by the share of the Railways (0.75 per cent), air transport (0.15 per cent) and water transport (0.06 per cent). Similarly, as per the National Transport Development Policy Committee Report, as of 2011-12, road transport is estimated to handle 69 per cent and 90 per cent of the countrywide freight and passenger traffic, respectively. The Ministry of Road Transport & Highways (MoRTH) is mandated with the development and maintenance of road

networks especially the National Highways as well as the implementation of the Motor Vehicle Act under which it formulates broad policies relating to road transport.

8.21 Road Network in the Country: A good road network is an essential requirement for the rapid growth of the economy. Roads provide connectivity to remote areas, open up backward regions and facilitate access to markets, trade and investment. Roads should not be looked at in isolation, but as part of an integrated multi-modal transport system, which provides crucial links with airports, railway stations, ports and other logistical hubs. As on 31.3.2018, India had a road network of about 59.64 lakh km. The total length of National Highways was 1.32 lakh km as on March 1, 2019. Its State-wise density is given in Map 1. The pace at which roads

**Map 1: State/ UT-wise density of National Highways (NH) as on 01.03.2019
(in Kms per 1,000 SQ Km of Area)**



Source: NHAI website.

have been constructed has grown significantly from 17 kms per day in 2015-16 to 29.7 kms per day in 2018-19. However, the pace seems to have moderated in 2019-20 (Table 9).

8.22 Total investment in the Roads and Highway sector has gone up more than three times in five year period of 2014-15 to 2018-19 (Figure 14).

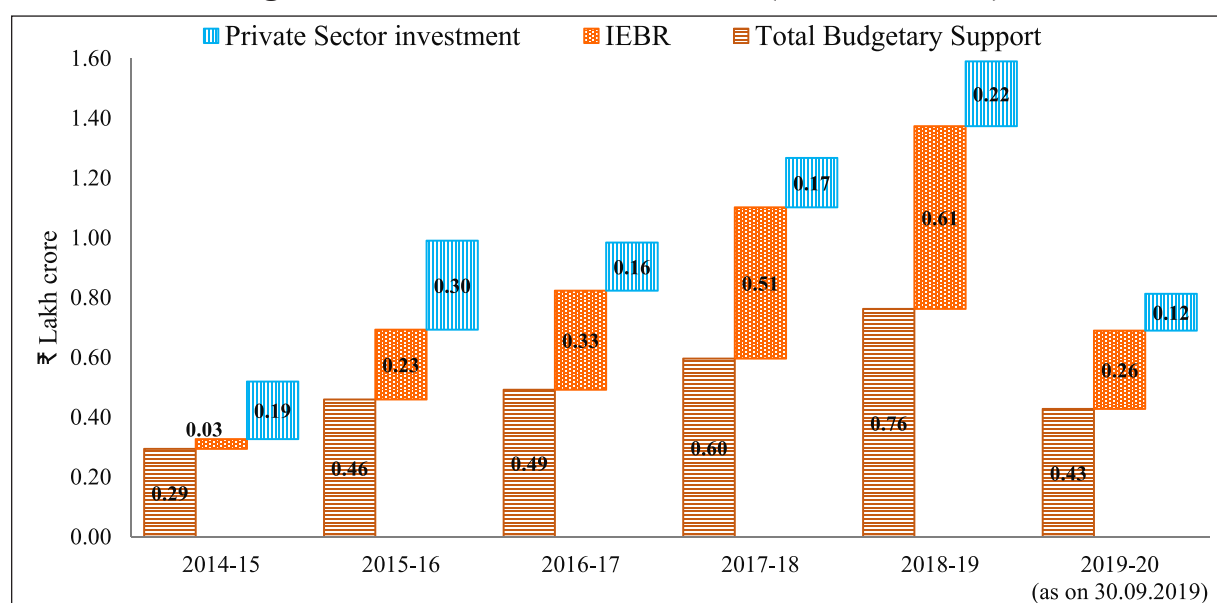
Table 9: Road Length Awarded & Constructed (Length in km)

	2015-16	2016-17	2017-18	2018-19	2019-20 #
Award of NHs/Road projects	10,098	15,948	17,054	5,494	2,103
Construction of NHs/Roads	6,061	8,231	9,829	10,855	4,622
Road construction per day	17	23	27	29.65	12.7

Source: MoRTH.

Note: # - As on 30.09.2019.

Figure 14: Investment in Road Sector (in ₹ Lakh crore)



Source: MoRTH, Note: IEBR - Internal and Extra Budgetary Resources.

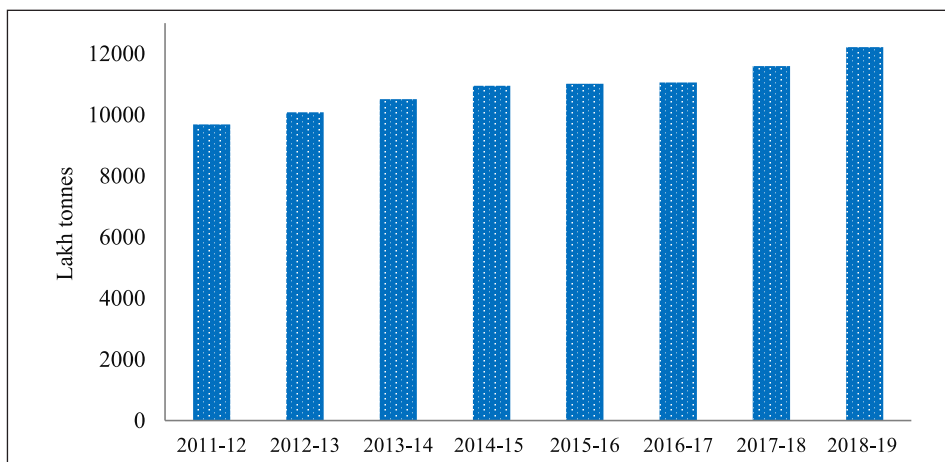
Railways

8.23 Indian Railways (IR) with over 68,000 route kms is the third largest network in the world under single management. During the year 2018-19, Indian Railways carried 120 crore tonnes of freight and 840 crore passengers making it the world's largest passenger carrier and 4th largest freight carrier. Revenue Earning Freight loading by IR during 2018-19 was 12,215 lakh tonnes as against 11,596 lakh tonnes during 2017-18, registering an increase of 5.34 per cent (Figure 15). Passengers originating was 84,390 lakh in 2018-19 as compared

to 82,858 lakh in 2017-18, registering an increase of 1.85 per cent in 2018-19 over the previous year (Figure 16).

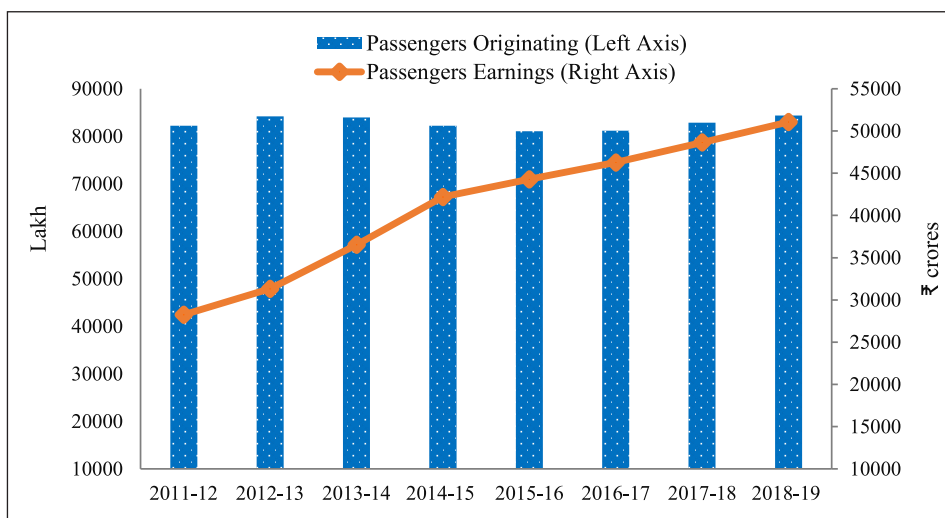
8.24 Rail Safety: Safety is accorded the highest priority by Indian Railways and steps are being undertaken on a continuous basis to prevent accidents and to enhance safety of the passengers. During 2018-19, consequential train accidents decreased from 73 to 59 in comparison to the corresponding period of the previous year. In the year 2019-20 (April - October 2019), 41 consequential train accidents have occurred (Table 10).

Figure 15: Revenue Earning Freight loading Originating traffic (lakh tonnes) (excluding loading by Konkan Railways)



Source: Ministry of Railways.

Figure 16: Passengers originating (in lakh) and Passengers Earnings ₹ Crores) (includes Metro Railway/ Kolkata)



Source: Ministry of Railways.

Table 10: Rate of occurrence of rail accidents

Type of Accident	2016-17	2017-18	2018-19	2019-20 (April to October)
Collision	5	3	0	3
Derailments	78	54	46	29
Manned Level Crossing Accidents	0	3	3	1
Unmanned Level Crossing Accidents	20	10	3	0
Fire in Trains	1	3	6	7
Miscellaneous	0	0	1	1
Total	104	73	59	41

Source: Ministry of Railways.

8.25 Cleanliness and environmental Initiatives by Indian Railway: Indian Railways cover over 8,700 stations and carry around 230 lakh passengers daily with clientele of varied socio-economic backgrounds. Cleanliness is a continuous process and every endeavour is made to keep the stations and coaches in properly maintained and clean condition. Special Cleanliness Campaigns

under Swachh Bharat Abhiyan were launched by Indian Railways on October 2, 2014. Regular intensive campaigns/drives have been organized since then by the Indian Railways with the sole objective to achieve significant and sustainable improvements in cleanliness standards. Progress made under Swachh Rail, Swachh Bharat is given in Table 11.

Table 11: Progress of Swachh Rail, Swachh Bharat

Activity	Status as on 31.03.2015	Status as on 31.03.2019	Status as on 31.10.2019
Bio-toilets in passenger Coaches (Numbers)	19,746	1,95,917	2,26,000
Mechanized cleaning contracts at Stations	584 stations	890 stations	940 stations
Plastic bottle crushing machines	Nil	128 stations	215 stations
Rag picking contracts	877 stations	1,280 stations	1,300 stations
Dustbins	Provided at some stations only	Provided at all major stations	Provided (separate for dry/wet waste) at all major stations
EMS(Environment Management System) (ISO: 14001) certification of Railway Stations	Nil	8 stations	75 stations
Funds allocated for station sanitation (₹ crore.)	294	643	643

Source: Ministry of Railways.

8.26 Modernization of stations: Modernization/upgradation of Railway stations in Indian Railways is a continuous and on-going process. 1,253 stations have been identified for development under Adarsh Station Scheme and are planned to be developed by 2019-20. A dedicated SPV, Indian Railway Station Development Corporation (IRSDC) Limited has been set up to carry out modernization of railway stations. IRSDC is working on modernization of many stations on PPP mode.

Civil Aviation

8.27 India is the third largest domestic market for civil aviation in the world. India has 136

commercially-managed airports by Airports Authority of India (AAI) and 6 under Public-Private Partnerships (PPP) for Operation, Maintenance and Development of airports. The airline operators in India have scaled up their aircraft seat capacity from an estimated 0.07 annual seats per capita in 2013 to 0.12 in 2018. The comparable estimates for China, the second largest domestic market in the world, over this period were 0.33 in 2013 and 0.49 in 2018, while those of the United States of America, the largest domestic market, were 2.59 in 2013 and 2.95 in 2018.

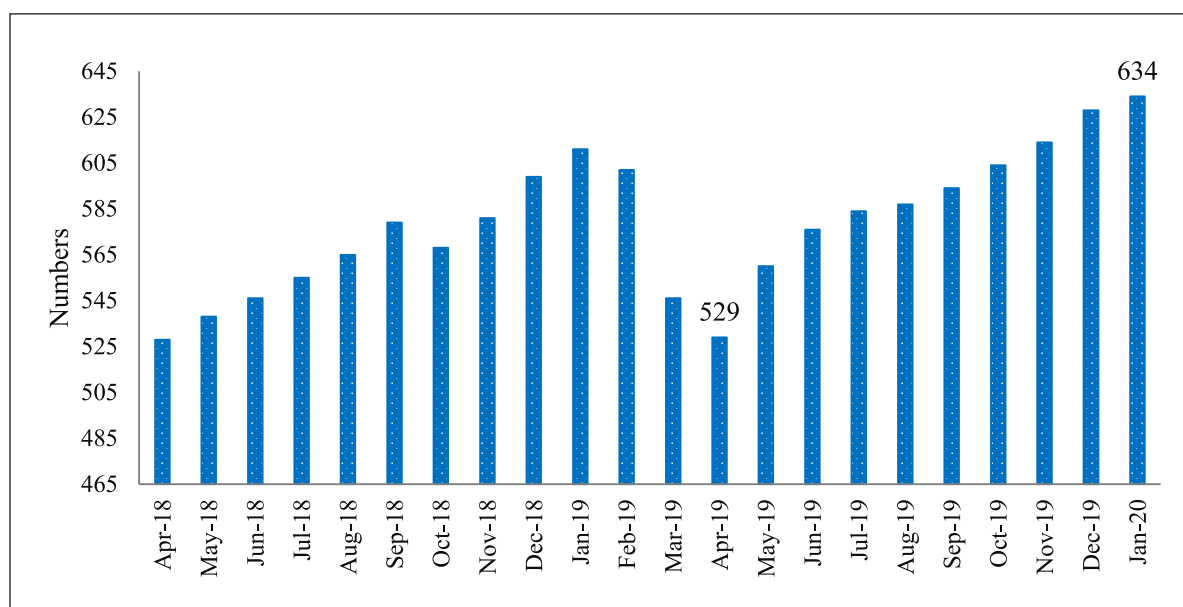
8.28 Indian aviation re-established its resilience in the year 2019-20. Despite a large

airline suspending operations on April 17, 2019, the sector swiftly sprung back to fill the void created in passenger and air cargo capacity (Figure 17). The trends in total passenger (domestic and international) and air cargo handled at airports are depicted in Figure 18 and 19, respectively. Capacity utilization is also being augmented by way of automation at airports. Overall objective is to meet the growing demand and set global best practices and performance quality standards. A total of 43 airports have been operationalized since the scheme for operationalizing unserved airports (Udan) was taken up, of which 4 were done in FY 2019-20. On airport connectivity, India stood first along with 7 others (USA, China, Japan, UK, etc.) in the Global Competitiveness Report 2019 of World Economic Forum.

8.29 To ease the strain on existing airport capacities, 100 more airports are to be made operational by FY 2023-24 (Figure 20). Besides using 46 idle airstrips, 16 private greenfield airports, 15 AAI airports,

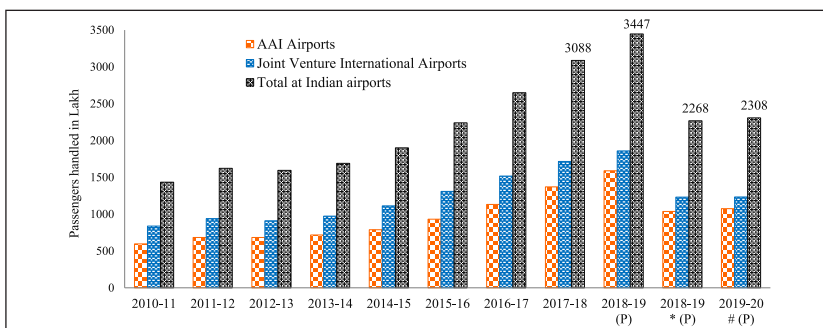
31 heliports, and 12 waterdromes would be developed. To bring in efficiency and resources, six airports (Ahmedabad, Guwahati, Jaipur, Lucknow, Mangalore, and Thiruvananthapuram) have been taken up for development under PPP mode. Five new greenfield airports [Durgapur (West Bengal), Shirdi (Maharashtra), Pakyong (Sikkim), and Kannur (Kerala) and Kalaburagi/Gulbarga (Karnataka)] were successfully operationalized this year. To continue with the high growth trajectory, the Government has been providing a congenial environment so that the Indian carriers double their fleet from about 680 aircraft (number of aircrafts endorsed on Scheduled Airlines) at the close of November 2019 to over 1,200 by FY 2023-24. This would be achieved by easing leasing and financing from Indian shores in conformance with the provisions of the Cape Town Convention and Protocol on Aircraft Equipment, efficient use of air traffic rights, encouraging domestic and international passenger and goods transfers, and rationalizing the tax regime.

Figure 17: India's Scheduled Operational Commercial Fleet (in Numbers)



Source: Ministry of Civil Aviation.

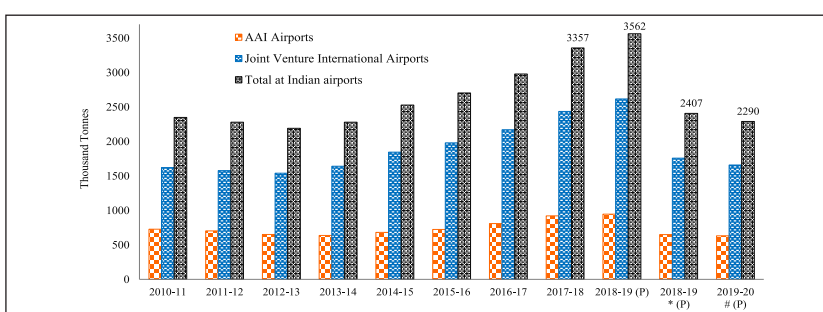
Figure 18: Passengers handled by Indian Airports (in lakh)



Source: Ministry of Civil Aviation.

Note: (P) - Provisional, * - (April to November 2018), # - (April to November 2019)

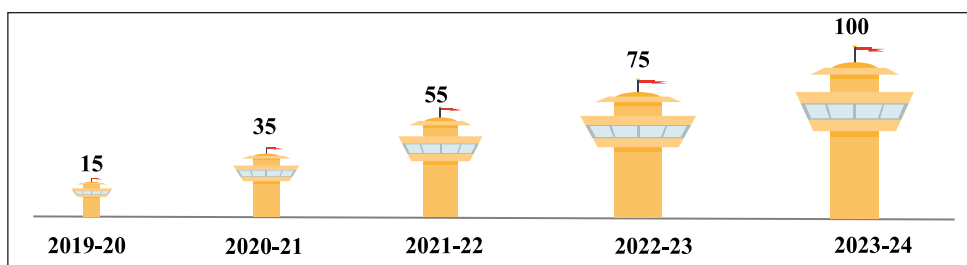
Figure 19: Cargo handled by Indian Airports (in thousand tonnes)



Source: Ministry of Civil Aviation.

Note: (P) - Provisional, * - (April to November 2018), # - (April to November 2019)

Figure 20: Additional Airport Capacity to be Developed (cumulative number of airports)



Source: Ministry of Civil Aviation.

Shipping

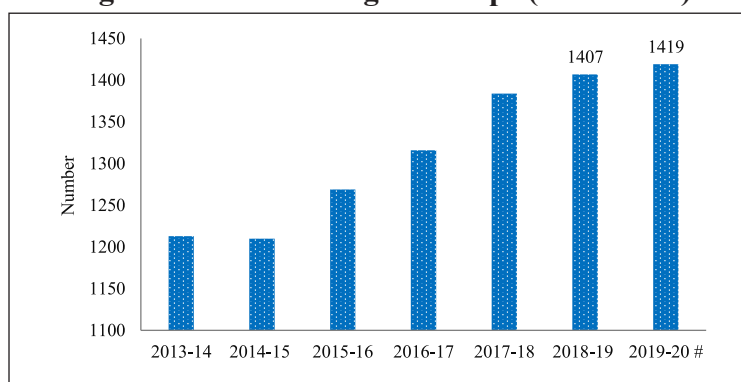
8.30 Shipping is essential to both commodity and services trade of any country. Around 95 per cent of India's trade by volume and 68 per cent in terms of value is transported by sea. The performance of the global shipping industry is generally mirrored by Indian shipping. India's shipping tonnage was only 1.92 lakh Gross Tonnage (GT) on the eve of independence. It increased gradually

thereafter, but was practically stagnant at around 70 lakh GT till the beginning of 2004-05. However, the tonnage tax regime introduced by the Government of India in that year boosted the growth of the Indian fleet as well as its tonnage. However, it is an undeniable fact that the after-effects of the global economic downturn are still having negative effect on the global shipping industry in general and Indian Shipping industry in particular.

8.31 As on 30th September, 2019, India had a fleet strength of 1,419 ships (Figure 21). Despite one of the largest merchant shipping fleet among developing countries, India's share in total world dead weight tonnage (DWT) is only 0.9 per cent as on January 1, 2019 according to Institute of Shipping

Economics and Logistics. The existing Indian fleet is also aging, with the average age increasing from 15 years in 1999 to 19.71 years as on October 1, 2019 (42.06 per cent of the fleet is 21 years and above and 12.49 per cent is in the 16 to 20 year age group).

Figure 21: Fleet strength of ships (in number)



Source: Ministry of Shipping.

Note: # - As on 30 September 2019

8.32 Ports Sector: The Major Ports in the country have an installed capacity of 1,514.09 MTPA as in March, 2019 and handled traffic of 699.09 MT during 2018-19. While increasing the capacity of major ports, Ministry of Shipping has been striving to improve the operational efficiencies through mechanization, digitization and process

simplification. As a result key efficiency parameters have improved considerably. The Average Turnaround Time in 2018-19 improved to 59.51 Hrs as against 64.43 Hrs in 2017-18. The Average Output Per Ship Berthday has increased from 15,333 Tonnes in 2017-18 to 16541 Tonnes in 2018-19 (Table 12).

Table 12: Performance Indicators of Major Ports in India

Indicators	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20 (upto September, 2019)
Traffic Handled (in MMT)	545.79	555.49	581.34	606.47	648.4	679.37	699.09	348.45
Average Turn Around Time (in Hrs)	101.76	93.6	96	87.36	82.32	64.32	59.51	64.69
Average Output per-ship per berth day (in tonnes)	11800	12468	12458	13156	14576	15333	16541	16014
Operating surplus ₹ Crore)	1807.43	2518.9	3599.4	4296.56	4979.58	5856.33	6424.36	Not Available

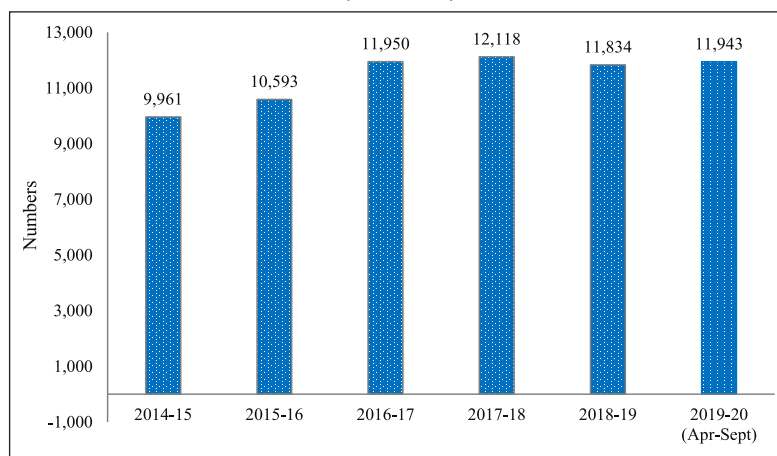
Source: Ministry of Shipping.

Telecom Sector

8.33 Total telephone connections in India grew by 18.8 per cent from 9,961 lakh in 2014-2015 to 11,834 lakh in 2018-19. As on 30 September 2019, the total subscription stood at 11,943 lakh (Figure 22) of which 5,147 lakh connections were in the rural areas and 6,796 lakh in the urban areas. Landline telephone connections were at 206 lakh while the number of wireless telephone connections stood at 11,736 lakh at the end of September

2019. The wireless telephony now constitutes 98.27 per cent of all subscriptions whereas share of landline telephones now stands at only 1.73 per cent. The overall tele-density in India stands at 90.45 per cent, the rural tele-density being 57.35 per cent and urban teledensity being 160.71 per cent at the end of September 2019. The private sector dominates with a share of 88.81 per cent (10,606 lakh connections) at the end of September, 2019 while the share of public sector was 11.19 per cent (1,336 lakh connections).

Figure 22: Total telephone connections from 2014-15 to 2019-20 (April-September) (in lakh)



Source: Department of Telecommunication.

8.34 Internet and broadband penetration in India has kept a rapid pace. The number of internet subscribers (both broadband and narrowband put together) stood at 6,653 lakh at the end of June 2019 as compared to 2,516 lakh in 2014. The number of mobile internet subscribers was 6,436 lakh at the end of June 2019 while the number of wireline internet subscribers was 217 lakh. Total broadband connections increased by about ten times, from 610 lakh in 2014 to 5,946 lakh in June 2019. This has accelerated the growth in internet traffic, with data usage touching the highest ever level of 462 lakh terabytes in the year 2018. India is now the global leader in monthly data consumption, with average consumption per subscriber per month increasing 157 times

from 62 MB in 2014 to 9.8 GB in June 2019. The cost of data has also reduced substantially, enabling affordable internet access for millions of citizens.

8.35 Challenges: There are 4 major players in the sector - 3 in the private sector and BSNL & MTNL in the public sector, operating in mutually exclusive zones. Since 2016, the sector has witnessed substantial competition and price cutting by the Telecom Service Providers (TSPs) creating financial stress in the sector. As a result, the sector is experiencing consolidation. While some operators have filed for bankruptcy, others have merged, in their quest to improve viability. The price of data in the country is among the lowest in the world. For the quarter ending June

2019, the price of data was ₹ 7.7 per GB as compared to ₹ 200 per GB in June 2016. The Average Revenue Per User (ARPU) for GSM based mobile services has also gone down substantially from ₹ 126 in June 2016 to ₹ 74.30 in June 2019.

8.36 BSNL and MTNL are also affected by the tariff war that has impacted their cash flow resulting in mounting losses. The Government has drawn up a plan to revive these PSUs. The revival plan consists of several measures including reduction of staff cost through Voluntary Retirement Scheme, allotment of spectrum for 4G services, monetization of land/building, tower and fiber assets of BSNL/MTNL, debt restructuring through sovereign guarantee bonds and ‘in-principle’ approval for merger of BSNL and MTNL.

Telecom Infrastructure and Connectivity

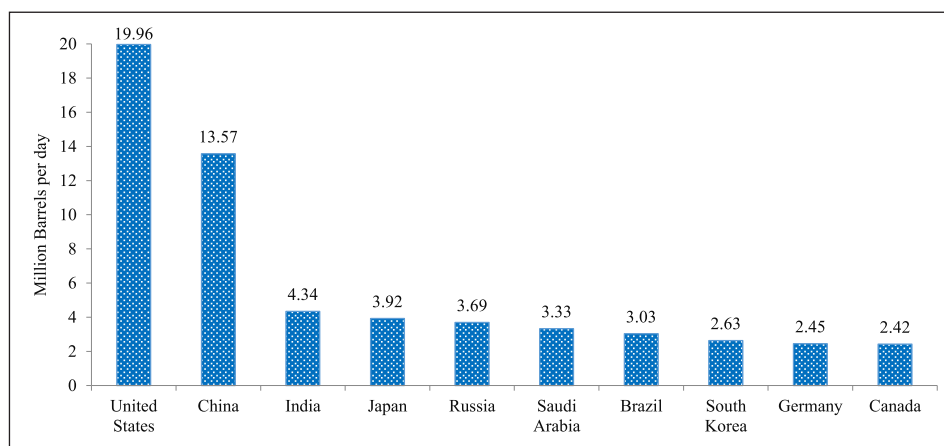
8.37 (i) BharatNet: For achieving the goal of developing broadband highways as part of the Digital India campaign, the Government is implementing the flagship BharatNet Programme in a phased manner for providing broadband connectivity to all the 2.5 lakh Gram Panchayats (GPs) in the country. The project envisages an optimal mix of

optical fibre, radio and satellite media. The broadband infrastructures created under the project would be available to all categories of service providers on non-discriminatory basis. (ii) Public Wi-Fi Access: Public Wi-Fi hotspots ensure last-mile delivery of broadband to users and are much easier to scale than adding new mobile towers. (iii) Towers and BTS: The number of Mobile Base Transceiver Stations (BTS) has seen a rise from 7.9 lakh in 2014 to 21.8 lakh (in July 2019) while Optical Fibre Cable has increased from 7 lakh km to around 14 lakh km during the period. (iv) Project for Left Wing Extremism (LWE) Areas and North East Region: The Department of Telecom executed a project for providing Mobile Services in 2,335 locations in Andhra Pradesh, Bihar, Chhattisgarh, Jharkhand, Maharashtra, Madhya Pradesh, Odisha, Telangana, Uttar Pradesh and West Bengal, which are affected by Left Wing Extremism (LWE) with an outlay of ₹ 4,781 crores.

Petroleum and Natural Gas

8.38 India is the third largest energy consumer in the world after USA and China (Figure 23). With a share of 5.8 per cent of the world’s primary energy consumption, India’s energy requirement is fulfilled primarily by Coal,

Figure 23: Top 10 Oil consumers of World in 2017



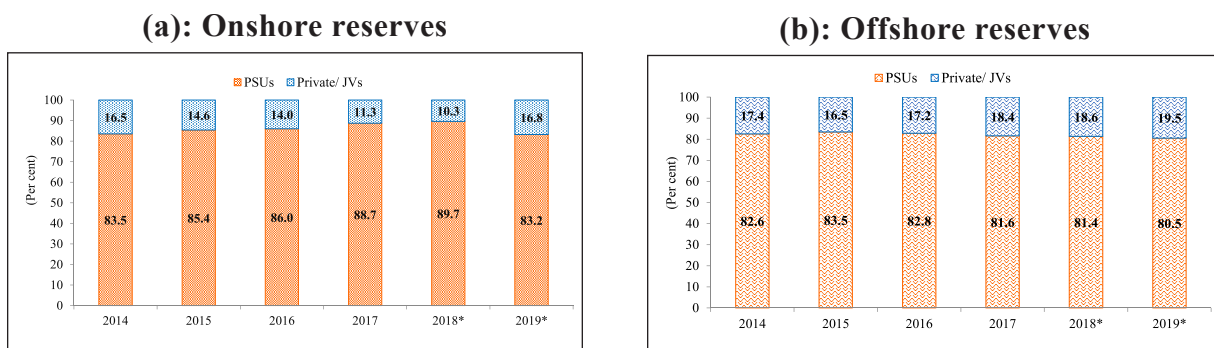
Source: US Energy Information Administration.

Note: Oil includes crude oil, all other petroleum liquids, and biofuels.

8.40 The surge in reserves of crude oil in 2019 is accompanied by corresponding increase in onshore and offshore reserves, with onshore reserves rising at a steeper rate. This may be the result of the major reforms undertaken by Ministry of Petroleum and Natural Gas in exploration and licensing policy to enhance exploration activities, attract domestic and foreign investment and accelerate domestic

production of oil and gas from existing fields. It can be seen from Figure 26(a) that the share of private/ joint ventures in onshore crude oil reserves were falling till 2018, but has seen an uptick in 2019. In case of offshore reserves of crude oil, the participation of private sector is steadily rising, with the share of private/ JVs reaching to 19.5 per cent in 2019 (Figure 26(b)).

Figure 26: Share of PSUs and Private/ Joint Ventures (JVs) in Reserves^{\$} of Crude Oil



Source: Ministry of Petroleum and Natural Gas.

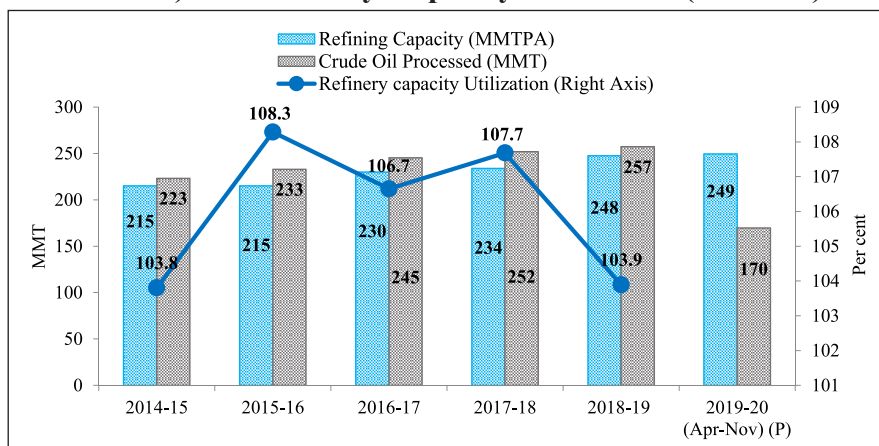
Note: *- Provisional.

\$- The reserves are as on 1st April of the year.

8.41 India with a refining capacity of 249.4 MMTPA is the fourth largest in the world after the United States, China and Russia. Refinery capacity increased from 234.0 MMT in 2017-18 to 247.6 MMT in 2018-19, while Crude Oil processed rose to 257.2 MMT in 2018-19

as against 251.9 MMT in 2017-18. However, refinery capacity utilisation fell to 103.9 per cent in 2018-19, compared to 107.7 per cent in 2017-18 (Figure 27). There is a need to augment refining capacity to meet growing demand for petroleum fuels and petrochemicals.

Figure 27: Refinery capacity and Crude Oil Processed (Quantity in Million Metric Tonnes) and Refinery Capacity Utilization (Per cent)



Source: Ministry of Petroleum & Natural Gas.

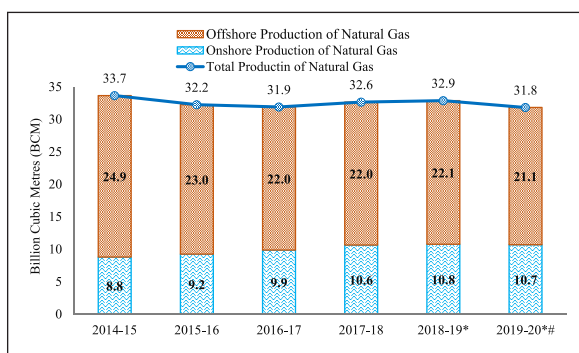
Note: P- Provisional.

8.42 During 2019-20, the domestic production of natural gas is estimated to be 31.8 billion cubic metres (BCM) (Economic Survey calculations). Figure 28(a) shows that the declining trend in domestic production of natural gas till 2016-17 was arrested in 2017-18 and it

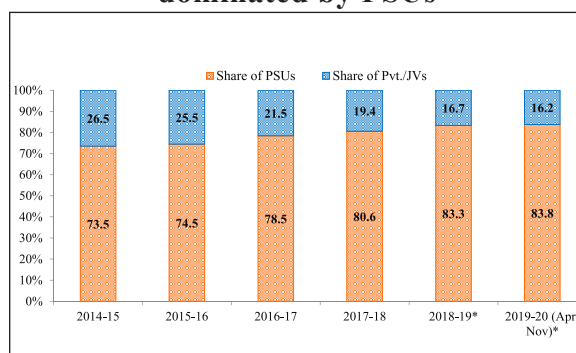
rose further in 2018-19. The similar trend can be observed for offshore production of natural gas, while onshore production increased continuously since 2014-15. Figure 28(b) depicts that the production of natural gas is dominated by PSUs, with its share increasing over the period.

Figure 28: Total domestic Production of Natural Gas- Onshore and Offshore wise and PSUs and Private/ Joint Ventures-wise

(a): Production of Natural Gas



(b): Production of Natural Gas dominated by PSUs



Source: Ministry of Petroleum and Natural Gas and Economic Survey calculations.

Note: *- Provisional.

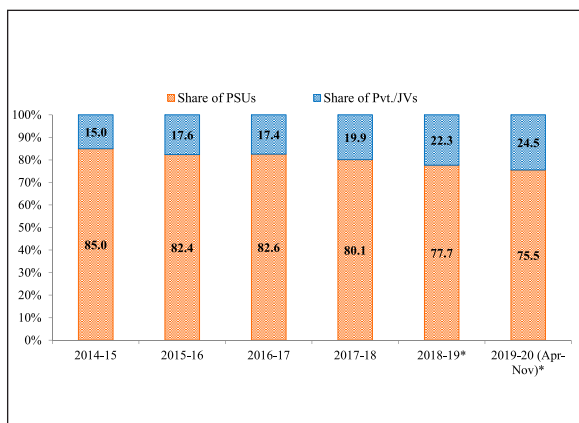
#- The natural gas production for 2019-20 is estimated on the basis of figures available for 2019-20 (April-November).

8.43 Further, Figure 29 clearly brings out that the presence of Private/ Joint Ventures has increased in onshore natural gas production

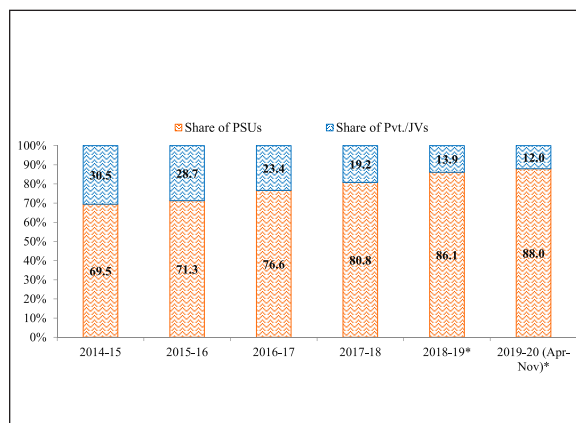
over time (Figure 29(a)), while the opposite is true for offshore natural gas production, with the share of PSUs rising steadily (Figure 29(b)).

Figure 29: Share of PSUs and Private/ Joint Ventures (JVs) in Onshore and Offshore Natural Gas Production

(a): Share of PSUs falling for Onshore Natural Gas Production



(b): Share of PSUs rising for Offshore Natural Gas Production



Source: Ministry of Petroleum and Natural Gas.

Note: * - Provisional.

8.44 In order to encourage the participation of private entities in oil and natural gas sector, Government has undertaken several reform measures which, *inter-alia*, include simplified fiscal and contractual terms, bidding of exploration blocks under Category II and III sedimentary basins without any production or revenue sharing to Government, early monetization of discoveries by extending fiscal incentives, incentivizing gas production including marketing and pricing freedom, induction of latest technology and capital, more functional freedom to National Oil Companies for collaboration and private sector participation for production enhancement methods in nomination fields, etc.

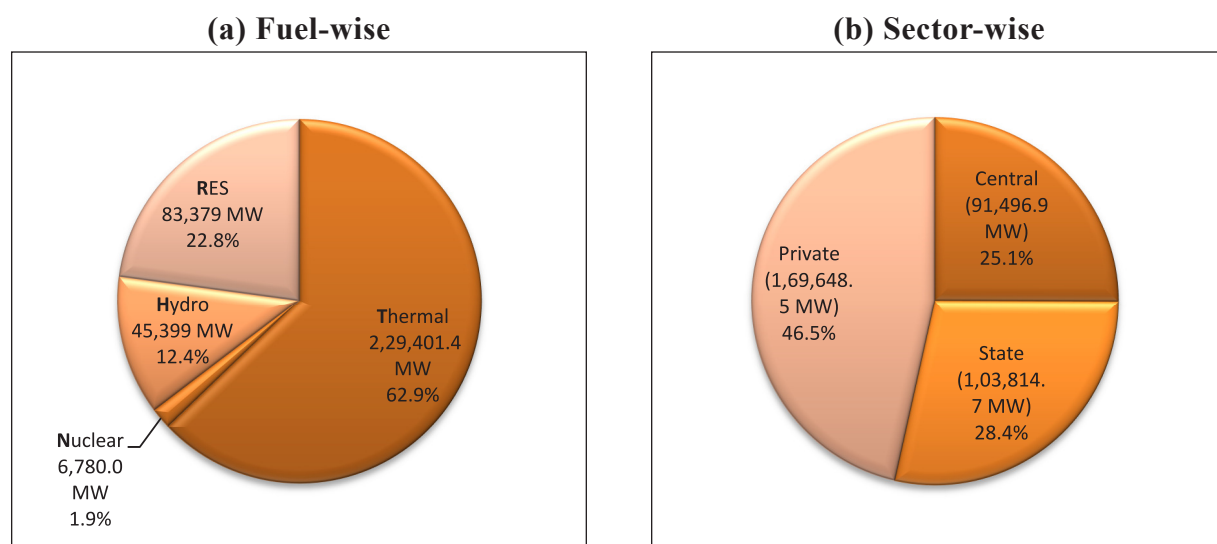
Power

8.45 Power sector in India has witnessed a paradigm shift over the years due to the constant efforts of Government to foster investment in the sector. As a result, India has improved its ranking to 76th position in the Energy Transition Index published by the World Economic Forum (WEF). *Fostering Effective Energy Transition, 2019*

Report of WEF states, “India, Indonesia and Bangladesh have made fast progress towards universal electrification due to strong political commitment, a stable policy regime, use of grid expansion, and decentralized generation sources, and a supportive environment for investment in infrastructure.”

8.46 Along with universal electrification, commendable progress has been made in generation and transmission of electricity. The installed capacity has increased from 3,56,100 MW in March 2019 to 3,64,960 MW as on 31.10.2019. The fuel-wise and sector-wise distribution shows that thermal power accounts for about 63 per cent of total installed capacity (Figure 30(a)) and roughly half of the generation capacity is in the private sector (Figure 30(b)). Total generation of energy (including imports and renewable sources of energy) was 659 BU (as on 30.09.2019). In addition, the peak deficit i.e. the percentage shortfall in peak power supply vis-a-vis peak hour demand has declined from around 9 per cent in 2012-13 to 0.7 per cent during 2019-20 (October 2019).

**Figure 30: Total Power Generation Capacity as on October 2019
(Fuel-wise and Sector-wise)**



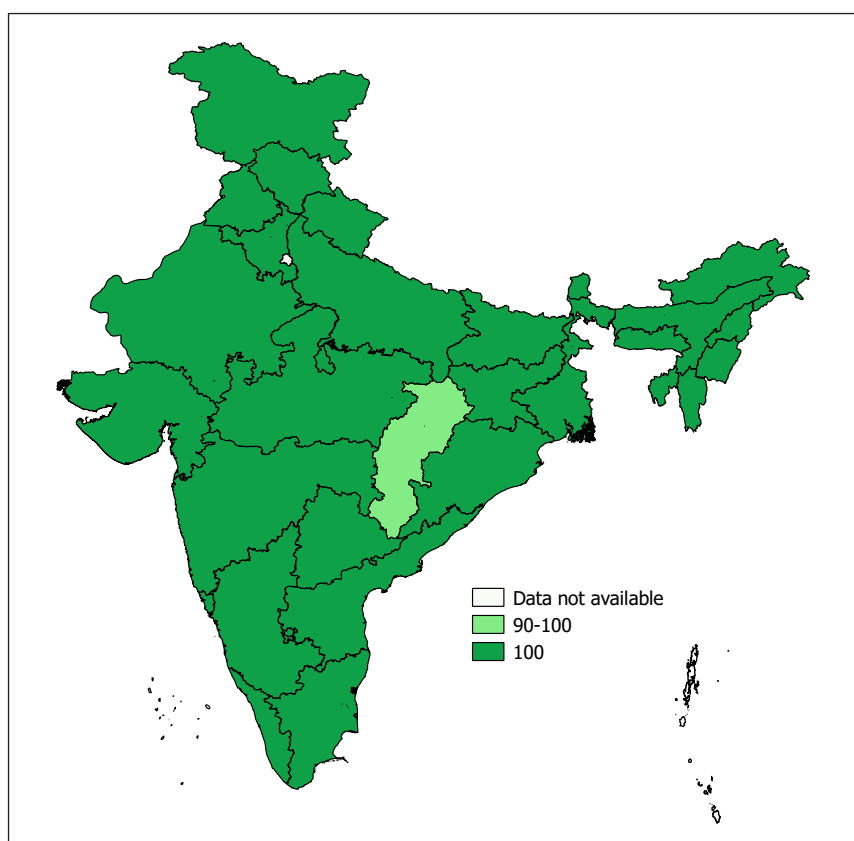
Source: Ministry of Power.

Note: RES- Renewable Energy Sources.

8.47 Access to electricity is necessary for making growth inclusive and for promoting ease of living. Pradhan Mantri Sahaj Bijli Har Ghar Yojana (Saubhagya) was launched on September 25, 2017 with an outlay of ₹ 16,320 crores to achieve universal household electrification by providing last mile connectivity by 31.03.2019. All the States have reported electrification of all households on Saubhagya portal, as on 31.03.2019, except few households in LWE affected Bastar region of Chhattisgarh (Map 2).

8.48 Supply of electricity to the rural domestic consumers is a good indicator of inclusive growth. As a result of various initiatives taken by Government of India along with the State governments, 18 States have reported supply of more than 20 hours of electricity supply while remaining states have reported about 15 or more hours. This is a major achievement compared to yester years when there were regular power cuts.

Map 2: Electrification Status



Source: <https://saubhagya.gov.in>

Mining Sector

8.49 As per available information, India produces as many as 95 minerals which include 4 hydrocarbon energy minerals (coal, lignite, petroleum & natural gas), 5 atomic minerals (ilmenite, rutile, zircon, uranium, and monazite), 10 metallic, 21 non-metallic

and 55 minor minerals. It provides basic raw materials to many important industries. Mining and quarrying sector contribution (at current price) to GVA accounted for about 2.38 per cent during 2018-19 as per provisional estimates of Annual National Income 2018-19 published by NSO. Based on the overall trend, the Index of Mineral

Production (base 2011-12 = 100) for the year 2018-19 is estimated to be 107.9 as compared to 104.9 of previous year.

8.50 There has been a notable turnaround in mineral production because of policy

reforms. The production of major minerals during the year 2018-19 has recorded a growth of 25 per cent when compared to last year in terms of value (Table 13).

Table 13: Production of Major Minerals specified under MCDR Act for the years 2016-17 to 2018-19 (Value in ₹ '000)

Minerals	Unit	2016-17		2017-18 (P)		2018-19 (P)	
		Quantity	Value	Quantity	Value	Quantity	Value
Bauxite	T	24745487	14865504	22312681	15020673	23687679	17168251
Chromite	T	3727780	31937475	3480928	32109182	3970688	35836112
Copper Concentrate	T	134787	6506133	141863	7742763	155435	9395244
Gold	Kg	1595	4362410	1648	4763056	1664	5241705
Iron Ore	'000t	194584	252291800	200955	342628915	206446	451854804
Lead Conc.	T	268047	9669267	306399	11429378	358371	16316814
Zinc Conc.	T	1484244	43385599	1539655	49799283	1457171	56083774
Manganese Ore	T	2395134	16248429	2589271	19717530	2820227	22702512
Silver	Kg	460811	18320758	557691	21179042	679376	25824746
Tin Conc.	Kg	12121	8736	16758	10139	21211	13839
Phosphorite	T	1124440	2996711	1534269	3771584	1284580	3547584
Diamond	Crt	36491	639562	39699	410737	38437	581058
Garnet (abrasive)	T	85413	787302	158154	1636667	123404	1568237
Graphite (r.o.m.)	T	122438	94158	33558	25656	39370	37712
Kyanite	T	3253	13458	7818	23002	4889	15228
Sillimanite	T	68131	535949	81638	669340	69033	559792
Limestone	'000t	314669	73878426	338552	74407420	379049	84841855
Limeshell	T	12344	34774	10893	39593	7534	27786
Magnesite	T	299149	749297	195033	503919	146581	396564
Marl	T	2203700	317886	1822514	285095	1890309	325122
Moulding Sand	T	27685	6623	7097	1793	14423	3889
Siliceous Earth	T	77270	55340	58875	57457	77739	51897
Selenite	T	4328	8656	469	939	2906	5812
Sulphur	T	560825	-	825173	-	890400	-
Vermiculite	T	9042	8162	6055	7078	3161	3807
Wollastonite	T	166186	158823	153049	126700	184063	173972

Source: MCDR Returns, IBM.

Note: (P)- Provisional, t- Tonne, Kg- Kilogram, '000t- Thousand Tonnes, crt- Carats.

Housing and Urban Infrastructure

8.51 India is one of the fastest growing countries in the world with rapid urbanization. There were about 37.7 crore people residing in the urban habitats of India (Census 2011), comprising about 31 per cent of the total population which is expected to reach 60.6 crore by 2030 (2015:UN).

8.52 The Pradhan Mantri Awas Yojana-Urban (PMAY-U) was launched in June, 2015 to provide pucca house with basic amenities to all eligible urban poor. The States/UTs were mandated to conduct demand survey to estimate the housing demand in their respective cities/towns. So far, a validated demand of 1.12 crore houses has been registered. Urban habitats and cities are the epicentres of economic growth which has contributed significantly to the Indian economy. Over 60 per cent of India’s current

GDP comes from the cities and towns. The construction sector accounts for 8.2 per cent of GDP which includes housing and employs about 12 per cent of the workforce¹. Therefore, the investment made under PMAY (U) not only provides pucca houses to the eligible families to achieve the goal of ‘Housing for All’ but also triggers multiplier effect on the overall economy. PMAY-U is one of the largest housing schemes of the world covering complete urban India. PMAY (U) is being implemented through four verticals (Figure 31).

8.53 The scheme of PMAY (U) is rapidly moving towards achieving the vision for providing a pucca house to every household by 2022. Out of 1.03 crore houses approved, 60 lakhs have been grounded for construction, of which 32 lakh houses have been completed and delivered (Figure 32).

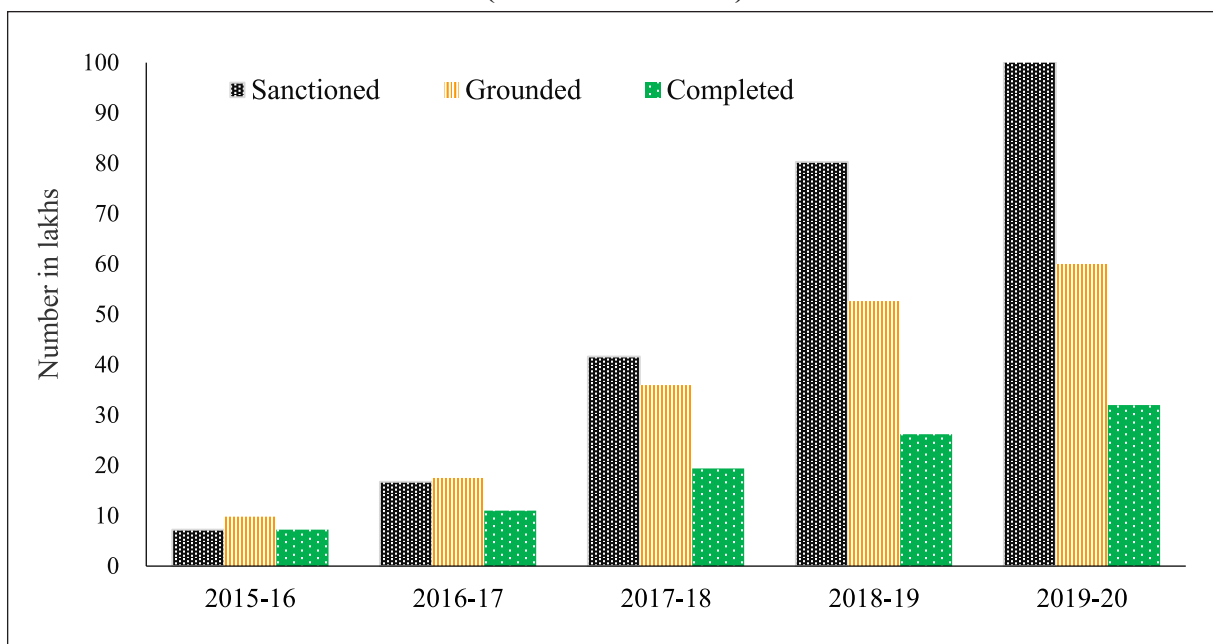
Figure 31: Different verticals of PMAY(U)

Verticals	In Situ Slum Redevelopment (ISSR)	Credit Linked Subsidy Scheme (CLSS)	Affordable Housing in Partnership (AHP)	Beneficiary Led House Construction/enhancement (BLC)
Features	<ul style="list-style-type: none"> - “In-situ” using land as a resource with private participation - extra FSI/TDR/FAR if required -Gol grant Rs.1 lakh per house 	<ul style="list-style-type: none"> - Subsidy for EWS and LIG for new house or incremental housing (EWS: Annual Household Income Up to Rs. 3 lakh and house sizes upto 30 sq.m, LIG: Annual Household Income Between Rs. 3-6 lakhs and house sizes upto 60 sq.m) - Upfront subsidy @6.5% for EWS and LIG for loans upto Rs.6 lakh, calculated at NPV basis 	<ul style="list-style-type: none"> - with private sector or public sector including Parastatal agencies - Central Assistance of Rs1.5 lakh per EWS house in projects where 35% of constructed houses are for EWS category 	<ul style="list-style-type: none"> - for individuals of EWS category for new house or enhancement - Cities to prepare a separate integrated project for such beneficiaries - Central assistance of Rs. 1.5 lak per beneficiary

Source: Ministry of Housing and Urban Affairs.

¹. Source: Study Report on “Impact of Investments in the Housing Sector on GDP and Employment of Indian Economy” (2014), by National Council of Applied Economic Research (NCAER).

**Figure 32: Physical progress of PMAY (U) (Number of Houses in lakhs)
(As on 01.01.2020)**



Source: Ministry of Housing and Urban Affairs.

8.54 The significant progress of PMAY (U) with regard to earlier schemes is an outcome of comprehensive strategy of inclusion, scheme architecture, use of digital/space technology, funding mechanism etc. As a principle, the scheme adopts demand driven approach carrying forward the ethos of cooperative federalism. Unlike the earlier schemes, the States/UTs have been authorised to prepare and approve the projects based on city wise demand survey to meet the requirement of their housing demand. A State Level Appraisal Committee (SLAC) for Technical Appraisal of the Projects and a State Level Sanctioning and Monitoring Committee (SLSMC) under the chairmanship of Chief Secretary of the States/UTs for approval of the projects have been constituted in each State/UT. As land and colonisation is the State subject, the function of beneficiary identification based on eligibility criteria has also been entrusted to States/UTs. Such flexibility has resulted in greater participation of the States/UTs and the citizens. The scheme has mandated ownership of the house in the name of female

of household or in the joint name along with male member of the household to enable women's empowerment.

8.55 Given the large number of houses sanctioned under the Mission, arrangement for regular funding for project is vital for grounding and completion of projects. Over and above the year-on-year budgetary provisions, a separate mechanism through creation of National Urban Housing Funds (NUHF) has been approved by Union Cabinet to mobilise resources through Extra Budgetary Resources (EBR) to the tune of ₹ 60,000 crore for funding PMAY(U). Such arrangement has enabled the Ministry to provide Central assistance in a time bound manner for uninterrupted progress of projects with States/UTs and Central Nodal Agencies (CNAs). Government has also created an Affordable Housing Fund (AHF) in the National Housing Bank (NHB) with an initial corpus of ₹ 10,000 crore using priority sector lending shortfall of banks/financial institutions. The fund is used for micro

financing of the HFCs and NBFCs which provide loans at reduced interest rate to the individual borrowers for promoting home ownership.

8.56 Current Implementation Status of Smart Cities Mission (SCM): All 100 cities under Smart City Mission have incorporated Special Purpose Vehicles (SPVs), City Level Advisory Forums (CLAFs) and appointed Project Management Consultants (PMCs). Since the launch of the mission, 5,151 projects

worth more than ₹ 2 lakh crores are at various stages of implementation in the 100 cities. As on November 14, 2019, 4,154 SCM projects worth ₹ 1.49 lakh crores (72 per cent of the total proposals) have been tendered, of which 3,359 projects worth ₹ 1.05 lakh crores (51 per cent of total proposals) have been issued work orders. 1,290 projects worth ₹ 22,569 crores have been completed and are operational. Major achievements of Smart Cities Mission are given in Figure 33.

Figure 33: Smart Cities Mission: Major achievements (As on 14.11.2019)



Source: Ministry of Housing and Urban Affairs.

WAY FORWARD

8.57 In a fast moving world to maintain growth momentum, India has to develop its industry and infrastructure. As an emerging economy, the scope for Industry 4.0 and Next generation infrastructure are enormous. To experience the potential of the perfect blend of Industry 4.0 and next generation infrastructure, it is necessary to clear the decks which are obstructing the way forward. Industry 4.0 encompasses automation in industrial sectors whereas next generation infrastructure brings physical infrastructure and technology like internet of things, automation together to maximize the efficiency of physical infrastructure. For a smooth and fast

development, India needs adequate and timely investment in quality infrastructure.

8.58 To achieve the GDP of \$5 trillion by 2024-25, India needs to spend about \$1.4 trillion on infrastructure. The challenge is to step-up annual infrastructure investment so that lack of infrastructure does not become a binding constraint on the growth of the Indian economy. The National Infrastructure Pipeline (NIP) captures the infrastructure vision of the country for the period FY20-25. Report of the Task Force on NIP released on 31.12.2019 has projected total infrastructure investment of ₹ 102 lakh crore during the period FY 2020 to 2025 in India.

CHAPTER AT A GLANCE

- The industrial sector as per Index of Industrial Production (IIP) registered a growth of 0.6 per cent in 2019-20 (April-November) as compared to 5.0 per cent during 2018-19 (April-November).
 - Fertilizer sector achieved a growth of 4.0 per cent during 2019-20 (April-November) as compared to (-)1.3 per cent during 2018-19 (April-November).
 - India has considerably improved its ranking in Ease of Doing Business to 63rd position in 2019 compared to 77th position in 2018.
 - Crude steel production witnessed growth of 1.5 per cent during 2019-20 (April-October).
 - The installed capacity of power generation has increased to 3,64,960 MW as on 31 October 2019.
 - Report of the Task Force on National Infrastructure Pipeline released on 31.12.2019 has projected total infrastructure investment of ₹ 102 lakh crore during the period FY 2020 to 2025 in India.
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