

# Services

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*The services sector as a whole has mostly recovered from the impact of the nationwide lockdown imposed during March-May 2020 and localised lockdowns during the second covid wave in April-May 2021, although some of the sub-sectors continue to be impacted. During the first half of 2021-22, the Services sector grew by 10.8 per cent. The recovery is more pronounced given the Gross Value Added (GVA) of Services crossed the pre-pandemic level in Q2 2021-22. However, being a contact intensive sub-sector, GVA of 'Trade, hotels, transport, communication & services related to broadcasting' still remains below its pre-pandemic level. The overall Services sector GVA is expected to grow by 8.2 per cent in 2021-22, although the spread of Omicron variant brings in a degree of uncertainty for near term, especially in segments that require human contact.*

*High frequency indicators such as services purchasing managers' index, air freight and rail freight bottomed out in 2020. The impact of second covid wave in April-May 2021 on these indicators was much more muted as compared to during the full lockdown in March-May 2020. During April-December 2021, rail freight crossed its pre-pandemic level while air freight and port traffic almost reached their pre-pandemic level. Domestic air and rail passenger traffic is also increasing gradually. The global issue of container shortage is impacting port traffic.*

*Services exports, after the initial slump during the first three quarters of 2020-21, surpassed its pre-pandemic level in Q4 2020-21. During H1 2021-22, services exports grew by 21.6 per cent, deriving strength from global demand for software and IT services exports. India's share in world commercial services exports increased to 4.1 per cent in 2020. Moreover, the IT-BPM services revenue reached US\$ 194 billion in 2020-21, adding 1.38 lakh employees during the same period. The Government undertook a major reform of removing telecom regulations in the IT-BPO sector. As per a survey conducted by NASSCOM, these reforms have reduced compliance burden, enhanced productivity, increased global competitiveness and lowered the cost of doing business in India. Similarly, the Government has opened up space sector to private players, which will enhance the socio-economic use of space assets and activities. During the first half of 2021-22, the Services sector received over US\$ 16.7 billion FDI accounting for almost 54 per cent of the total FDI inflows into India.*

*Startups in India have grown remarkably over the last six years. The number of new recognised startups have increased to over 14,000 in 2021-22 from only 733 in 2016-17. As a result, India has become the third largest startup ecosystem in the world after the US and China. Further, a record 44 Indian startups have achieved unicorn status in 2021 taking the overall tally of unicorns in India to 83, most of these are in the services sector.*

## INTRODUCTION

9.1 Services sector contributes over 50 per cent to India's GDP. While Covid-19 pandemic has had an adverse impact on most sectors of the economy, the services sector has been the worst affected as its' share in India's GVA declined from 55 per cent in 2019-20 to 53 per cent in 2021-22.<sup>1</sup> Within the services sector, the effect of Covid-19 has been varied. While non-contact services such as information, communication, financial, professional and business services have remained resilient, the impact has been much severe on contact based services such as tourism, retail trade, hotel, entertainment and recreation, etc.

## IMPACT OF COVID-19 AND SEQUENTIAL RECOVERY

9.2 The services sector contracted by 8.4 per cent Year on Year (YoY) in 2020-21 (Table 1). This decline was driven by a sharp contraction of 18.2 per cent YoY in the sub-sector 'Trade, hotels, transport, communication & services related to broadcasting'. Owing to its contact intensive nature, the services included in this sub-sector had to bear the maximum brunt of the disruptions caused by the prevailing pandemic. The sub-sector 'Public administration, defence & other services' which includes expenditure by the government on one hand and services such as health, education, recreation etc, on the other, contracted by 4.6 per cent YoY in 2020-21. The relatively less contact intensive sub-sector 'Financial, real estate & professional services' was the least impacted, with a marginal decline of 1.5 per cent YoY in its GVA during 2020-21 (Table 1).

9.3 During the first half of the current fiscal year, the services sector has registered a steady recovery. Overall, the services sector grew by 10.8 per cent YoY in first half (H1) 2021-22 (Table 1). A closer look at the quarterly estimates shows that Gross Value Added (GVA) in services sector (excluding construction) crossed its pre-pandemic level<sup>2</sup> in Q2 2021-22 (Table 2, which compares the performance of quarterly GVA over the GVA in Q3 2019-20). The sub-sector 'Trade, hotels, transport, communication & services related to broadcasting', which was the worst hit last year, grew by 18.4 per cent YoY in H1 2021-22. However, the quarterly GVA of this sub-sector is still below its pre-pandemic level (Table 2). On the other hand, GVA of 'Public administration, defence & other services' sub-sector witnessed a robust recovery. During H1 2021-22, the sub-sector grew by 12 per cent YoY, surpassing its pre pandemic level in Q2 2021-22 (Table 2). The ramping up of government expenditure in the wake of Covid-19 has contributed to the recovery of this sub-sector. Further, the sub-sector 'Financial, real estate & professional services' expanded by 5.8 per cent YoY in H1 2021-22, its GVA remained resilient throughout (Table 2).

<sup>1</sup>As per the Advance Estimates of 2021-22.

<sup>2</sup>Pre-pandemic level denotes Q3 2019-20 GVA

**Table 1: Services Sector Performance**

| Sector   | Share in GVA<br>(per cent) | Growth (YoY) (per cent)         |                                 |                 |                 |             |             |             |
|--|----------------------------|---------------------------------|---------------------------------|-----------------|-----------------|-------------|-------------|-------------|
|  | 2021-22<br>(AE)            | 2018-19<br>(2 <sup>nd</sup> RE) | 2019-20<br>(1 <sup>st</sup> RE) | 2020-21<br>(PE) | 2021-22<br>(AE) | 2021-22     |             |             |
|  |                            |                                 |                                 |                 |                 | Q1          | Q2          | H1          |
| <b>Total Services<br/>(Excluding construction)</b>                               | <b>53</b>                  | <b>7.2</b>                      | <b>7.2</b>                      | <b>-8.4</b>     | <b>8.2</b>      | <b>11.4</b> | <b>10.2</b> | <b>10.8</b> |
| Trade, hotels, transport,<br>communication & services<br>related to broadcasting | 16.9                       | 7.1                             | 6.4                             | -18.2           | 11.9            | 34.3        | 8.2         | 18.4        |
| Financial, real estate &<br>professional services                                | 20.9                       | 7.2                             | 7.3                             | -1.5            | 4.0             | 3.7         | 7.8         | 5.8         |
| Public administration,<br>defence & other services*                              | 15.2                       | 7.4                             | 8.3                             | -4.6            | 10.7            | 5.8         | 17.4        | 12.0        |

Source: Ministry of Statistics and Programme Implementation.

Note: Share in GVA is in current prices and growth in GVA is at constant 2011-12 prices;

\*: Other services include Education, Health, Recreation, and other personal services

RE: Revised Estimates. PE: Provisional Estimates. AE: Advance Estimates

**Table 2: Gross Value Added in Services sub-sectors**  
Relative To Pre-Pandemic Levels (Q3 2019-20 GVA= 100)

| Sector   | 2020-21<br>Q1 | 2020-21<br>Q2 | 2020-21<br>Q3 | 2020-21<br>Q4 | 2021-22<br>Q1 | 2021-22<br>Q2 |
|--|---------------|---------------|---------------|---------------|---------------|---------------|
| Trade, hotels, transport,<br>communication & services<br>related to broadcasting | 52            | 81            | 92            | 108           | 70            | 87            |
| Financial, real estate &<br>professional services                                | 123           | 126           | 107           | 107           | 127           | 136           |
| Public administration, defence<br>& other services                               | 78            | 88            | 98            | 103           | 83            | 104           |
| Total Services   | 84            | 99            | 99            | 106           | 94            | 109           |
| Total GVA  | 78            | 92            | 101           | 106           | 92            | 100           |

Source: Ministry of Statistics and Programme Implementation.

9.4 As per the first advance estimates, Gross Value Added (GVA) of services sector is estimated to grow by 8.2 per cent in 2021-22. Sub-sectors 'Trade, hotels, transport, communication & broadcasting services', 'Financial, real estate & professional services', and 'Public administration, defence & other services' are estimated to expand by 11.9 per cent, 4 per cent and 10.7 per cent respectively in 2021-22. A part of this growth is attributable to the low base in 2020-21. It is, however, pertinent to note that at the time of writing the Economic survey, new restrictions were being introduced within the country and worldwide due to the Omicron variant, posing fresh risk to the ongoing recovery, especially in contact intensive segments.

## TRENDS IN HIGH FREQUENCY INDICATORS

9.5 The upturn in Services GVA, when seen with the trend in high frequency indicators such as Purchasing Managers Index (PMI) Services Index, freight and passenger traffic point to a pickup in economic momentum.

### Services PMI

9.6 India's services sector activity, gauged by PMI services, which had contracted for five consecutive months since March 2020, recovered sharply in October 2020. It dropped again for three consecutive months (May, June and July 2021) as a consequence of the second Covid-19 wave. Notably, the contraction during May-July 2021 was not as sharp as seen during the first lockdown.

9.7 With the easing of restrictions, PMI Services started to grow once again from August 2021 recording strongest jump in over 10 years to 58.4 in October 2021<sup>3</sup> (Figure 1(a)). PMI index moderated to 55.5 in December 2021.

### Freight traffic

9.8 The freight traffic (rail, air and port) had fallen sharply as a consequence of the complete lockdown in March 2020 (Figure 1(b, c and d)). As the economy gradually opened up from June 2020, freight traffic also started to improve. Freight traffic registered strong growth in during April- June 2021, partly reflecting the rebound from the low base during the same period last year. The impact of second covid wave in April-May 2021 on these indicators was much more muted as compared to during the full lockdown in March-May 2020.

9.9 In 2021-22 (till December), total freight loading by Indian railways was 1,029.94 Million Tonnes (MT) which is 18.37 per cent higher than 870.08 MT during the same period in 2020-21. Infact, Indian railways recorded almost 16 per cent increase in freight loading as compared to the corresponding period during the pre-pandemic year (2019-20), where the freight loading was 888.88 MT.

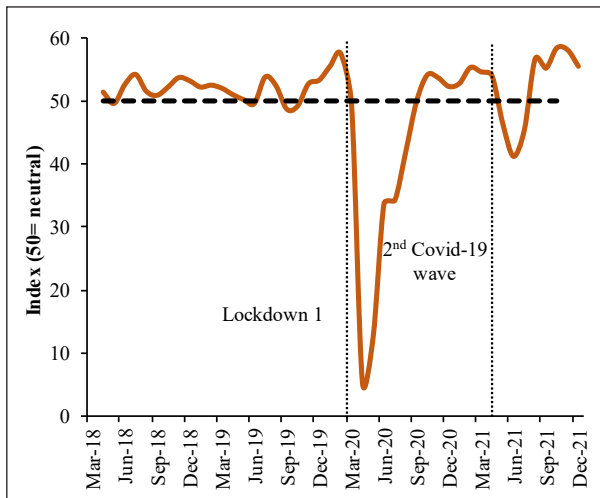
9.10 Indian airports handled 20.97 lakh tonnes of freight in 2021-22 (till November) as compared to 14.44 lakh tonnes during the same period last year recording a growth of 45.25 per cent. This is slightly lower than the air freight loading of 22.88 lakh tonnes during the pre-pandemic period of April-November 2019.

9.11 Between April- November 2021, Indian ports handled total traffic of 857.3 MT as compared to 779.1 MT handled during the same period in 2020, registering a growth of over 10 per cent. The cargo traffic recorded so far in 2021 has almost reached the pre-pandemic level of 864.3 MT during April- November 2019.

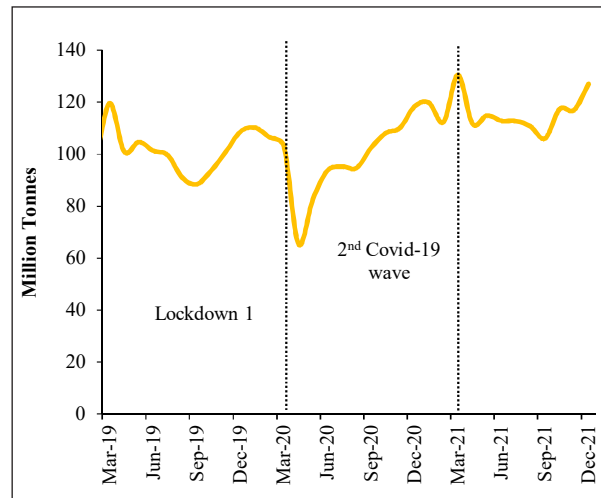
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<sup>3</sup>A reading above 50 indicates expansion in economic activity.

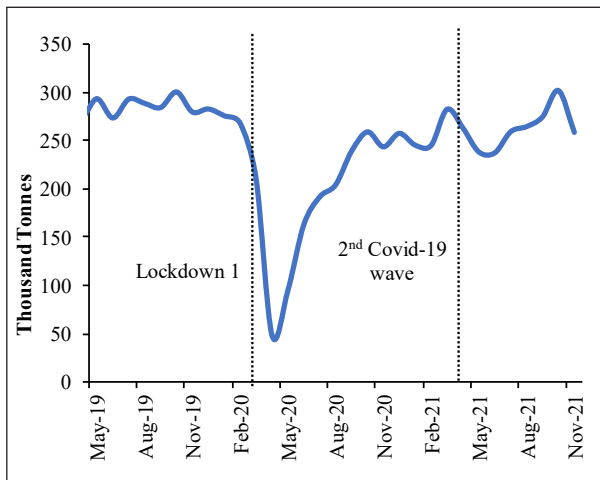
**Figure 1(a): Services PMI Index**



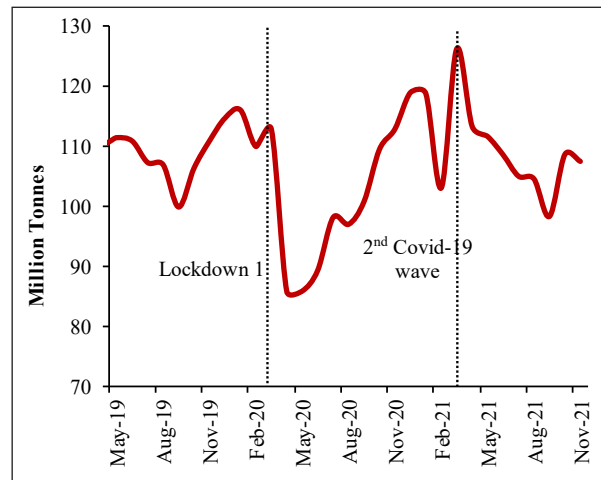
**Figure 1(b): Rail Freight**



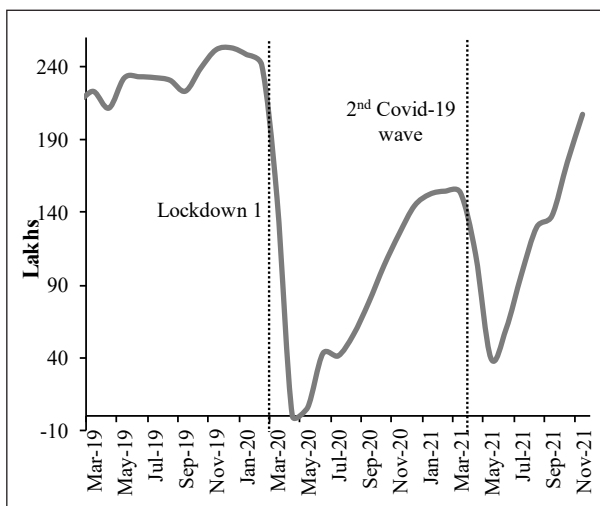
**Figure 1(c): Air Freight**



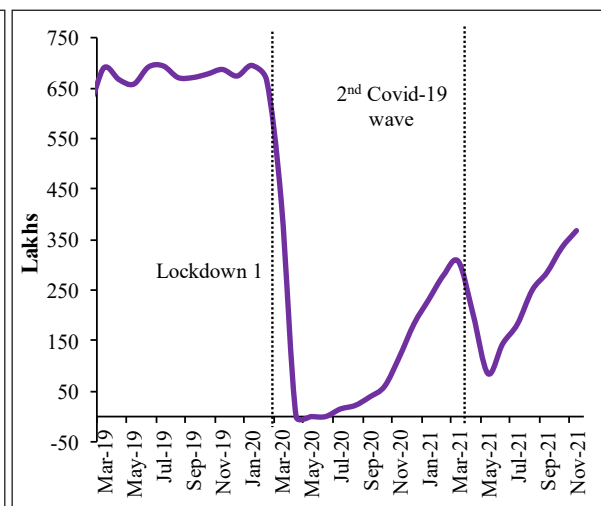
**Figure 1(d): Cargo Traffic**



**Figure 1(e): Domestic Air Passenger Traffic**



**Figure 1(f): Rail Passenger Traffic**



Source: IHS Markit Economics, Indian Railways, Airports Authority of India, Ministry of Ports, Shipping and Waterways.

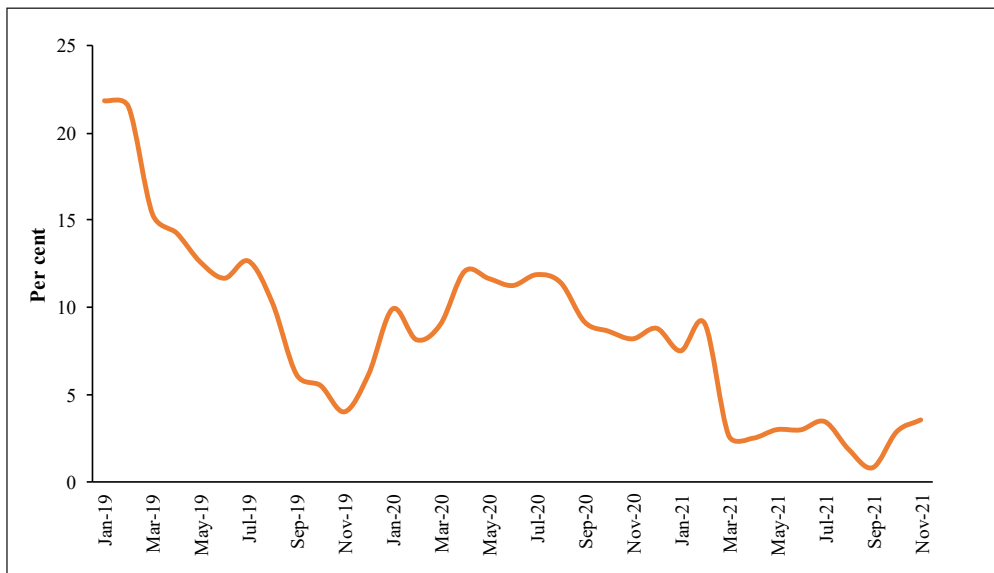
## Passenger traffic

9.12 Travel restrictions in the early half of 2020-21 had halted the movement of Indian airlines and railways leading to a sharp fall in air and rail passenger traffic (Figure 1(e and f)). Domestic passenger traffic (both air and rail) had then started to recover gradually from August 2020 on a monthly basis but fell again in April-May 2021 due to the disruptions caused by second wave of Covid-19. It has picked up since then. During April- November 2021, airlines carried over 9.56 crore domestic passengers. Monthly data suggests that air passenger traffic is gradually reaching the pre-pandemic levels. Railway passenger traffic, on the other hand, is still much below the pre-pandemic levels. During April-November 2021, Indian railways carried over 185.1 crore domestic passengers. The emergence of the Omicron variant and the consequential travel restrictions pose a threat to the domestic passenger traffic in the near term.

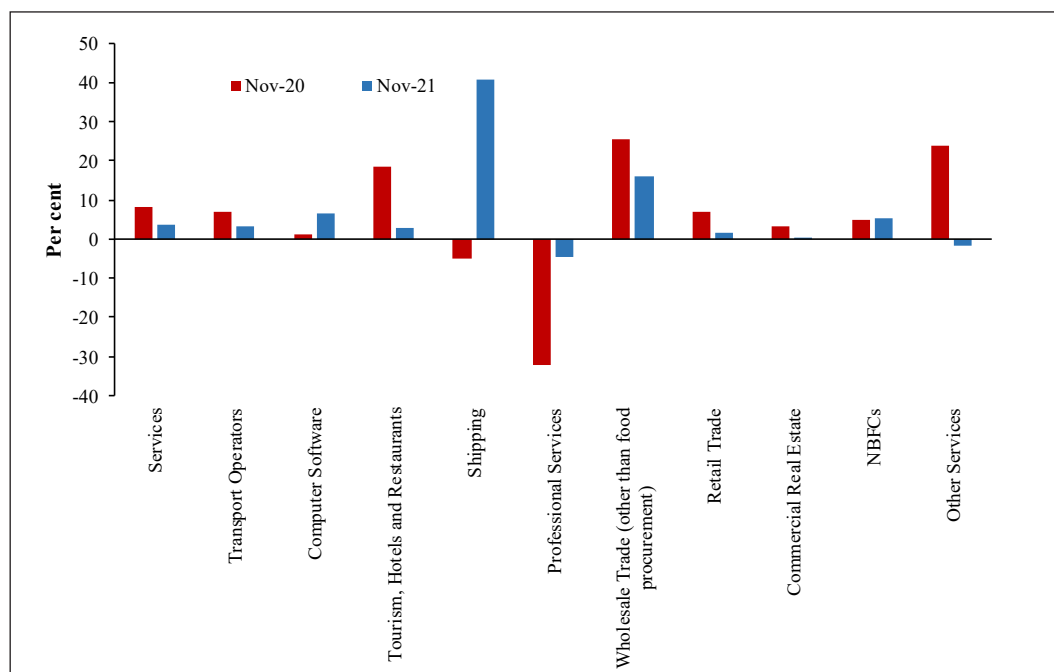
## Bank credit to Services Sector

9.13 Bank credit growth to services sector which had moderated significantly in 2019, started picking up in 2020, increasing to 8.8 per cent (YoY) at the end December 2020, as compared to 6.2 per cent in December 2019 (Figure 2). This momentum has lost its pace in 2021-22. Bank credit growth decelerated to 3.6 per cent YoY at the end of November 2021 as compared to 8.2 per cent a year ago. However, it is important to note that corporates have raised more money through capital markets than banking capital in 2021-22 so far (See Chapter 4 Monetary Management and Financial Intermediation for details).

**Figure 2: Growth in Bank Credit to Services Sector**



Source: RBI.

**Figure 3: Growth in Bank Credit to Services Sub-Sectors (YoY)**

Source: RBI.

Note: Data denotes Credit outstanding as on November 2020 and 2021.

9.14 Bank credit to services sector registered a growth (YoY) of 3.6 per cent in November 2021, as compared to the 8.2 per cent a year ago (Figure 3). The slowdown in growth is largely on account of the lower growth in credit to ‘Tourism, Hotel & Restaurants’, ‘Transport Operators’ and Trade- Retail as well as Wholesale. On the other hand, growth in bank credit picked up in ‘Computer Software’, ‘Shipping’, and ‘Non-Banking Financial Companies (NBFCs)’.

## SERVICES SECTOR SHARE AT THE STATE AND UT LEVEL

9.15 The services sector accounts for more than 50 per cent of the Gross State Value Added (GSVA) in 12 out of the 33 states and UTs (Table 3). Chandigarh stands out with a particularly high share of services in GSVA at 74 per cent while Sikkim’s share remains the lowest at 24.25 per cent. Notably, Services share in Sikkim’s GSVA has increased from over 18 per cent in 2018-19 to over 24 per cent in 2020-21. Similarly, over the last three years, share of services in GSVA has increased by over 4 per cent for Himachal Pradesh and Odisha. Maharashtra and Karnataka are the top two contributors to services GSVA, with Rs 15.1 lakh crore and Rs 9.71 lakh crore gross value added by services sector in 2020-21 respectively.

9.16 Due to the Covid-19 pandemic and restrictions in movement, GSVA in services sector declined in 2020-21 relative to the pre-pandemic year 2019-20. This is true for 13 out of 20 states for which data is available. During 2020-21, services GSVA contracted by almost 11 per cent in Rajasthan, and by almost 10 per cent in Jharkhand and Punjab. On the other hand, Sikkim achieved the highest growth of 11.71 per cent in services GSVA during 2020-21.



**Table 3: Services Sector Performance at the State and UT Level**

| State             | Services Share in GVA (per cent) |         |         | Growth in Services GVA (per cent, YoY) |         |         |
|-------------------|----------------------------------|---------|---------|--|---------|---------|
|                   | 2018-19                          | 2019-20 | 2020-21 | 2018-19                                | 2019-20 | 2020-21 |
| A and N Islands   | 64.09                            | 64.82   | 64.82   | 5.05                                   | 5.66    | -       |
| Andhra Pradesh    | 42.25                            | 41.86   | 41.64   | 8.24                                   | 6.20    | -6.71   |
| Arunachal Pradesh | 47.84                            | 46.82   | -       | -1.19                                  | 12.22   | -       |
| Assam             | 39.20                            | 42.37   | -       | -1.64                                  | 8.08    | -       |
| Bihar             | 54.78                            | 56.20   | 57.14   | 13.94                                  | 7.30    | -0.11   |
| Chandigarh        | 73.47                            | 74.00   | -       | 2.66                                   | 5.50    | -       |
| Chhattisgarh      | 30.02                            | 30.64   | 31.18   | 8.32                                   | 7.71    | 0.75    |
| Delhi             | 67.84                            | 68.22   | 68.58   | 6.20                                   | 7.30    | -5.48   |
| Goa               | 26.54                            | 28.69   | -       | 2.15                                   | 6.43    | -       |
| Gujarat           | 25.18                            | 25.73   | -       | 11.03                                  | 8.01    | -       |
| Haryana           | 40.74                            | 41.98   | 42.83   | 7.36                                   | 9.02    | -5.67   |
| Himachal Pradesh  | 30.68                            | 32.62   | 35.45   | 5.68                                   | 7.75    | 0.50    |
| Jammu and Kashmir | 53.39                            | 54.66   | 57.15   | 10.58                                  | 3.04    | 2.08    |
| Jharkhand         | 34.50                            | 37.28   | 36.19   | 9.51                                   | 8.23    | -9.99   |
| Karnataka         | 52.83                            | 54.83   | 56.08   | 8.72                                   | 6.73    | -3.05   |
| Kerala            | 52.24                            | 53.29   | -       | 7.78                                   | 4.09    | -       |
| Madhya Pradesh    | 33.30                            | 32.94   | 31.14   | 9.96                                   | 8.70    | -8.94   |
| Maharashtra       | 45.19                            | 47.10   | -       | 7.24                                   | 8.29    | -       |
| Manipur           | 60.31                            | 59.77   | -       | 6.62                                   | 5.53    | -       |
| Meghalaya         | 56.55                            | 58.33   | 59.62   | 10.89                                  | 8.19    | -8.67   |
| Mizoram           | 49.61                            | 50.82   | -       | 6.63                                   | 16.49   | -       |
| Nagaland          | 57.56                            | 57.45   | -       | 8.59                                   | 7.92    | -       |
| Odisha            | 30.27                            | 32.70   | 34.37   | 2.24                                   | 8.43    | -1.01   |
| Puducherry        | 33.91                            | 34.57   | -       | 6.68                                   | 7.95    | -       |
| Punjab            | 40.43                            | 42.34   | 41.83   | 6.95                                   | 5.60    | -9.40   |
| Rajasthan         | 43.43                            | 44.01   | 43.07   | 11.18                                  | 4.43    | -10.95  |
| Sikkim            | 18.20                            | 21.82   | 24.25   | 11.54                                  | 20.92   | 11.71   |
| Tamil Nadu        | 40.80                            | 41.21   | 41.81   | 5.65                                   | 5.40    | 1.11    |
| Telangana         | 53.89                            | 54.90   | 54.53   | 7.91                                   | 5.69    | -3.94   |
| Tripura           | 45.45                            | 45.87   | 47.95   | 8.98                                   | 13.78   | 1.78    |
| Uttar Pradesh     | 40.77                            | 42.32   | 42.35   | 7.64                                   | 7.72    | -8.50   |
| Uttarakhand       | 27.99                            | 28.58   | -       | 6.41                                   | 6.03    | -       |
| West Bengal       | 46.15                            | 47.81   | 49.77   | 5.87                                   | 7.74    | 0.59    |

Source: Handbook of Statistics on Indian States, RBI.

Note: - Data not available at the time of writing the Survey



## FDI INFLOWS INTO SERVICES SECTOR

9.17 Services sector is the largest recipient of FDI inflows in India. According to the World Investment Report 2021 by the UN Conference on Trade and Development (UNCTAD), India was the fifth-largest recipient of Foreign Direct Investment (FDI) in 2020 improving its rank by four places, from ninth position in 2019. In 2020-21, India registered highest ever annual FDI inflows of US\$ 81.97 billion. The country has received US\$ 43.12 billion FDI inflows in the first six months of 2021-22. FDI equity inflows, i.e., FDI inflows minus re-invested earnings, were US\$ 31.15 billion during April-September 2021, growing by 3.8 per cent over the corresponding period last year.

9.18 During H1 2021-22, services sector received US\$ 16.73 billion FDI equity inflows. This is over 29 per cent lower than the FDI equity inflows into services in the corresponding period last year. This fall was driven by Computer Software & Hardware sub-sector. In H1 2020-21, FDI equity inflows into 'Computer Software & Hardware' sub-sector was US\$ 17.55 billion. It has declined by US\$ 10 billion to reach US\$ 7.12 billion in H1 2021-22. However, this is still 77 per cent higher than the FDI equity inflows into this sub-sector during H1 2019-20. On the other hand, 'Financial, Business, Outsourcing, R&D, Courier, Tech Testing & Analysis', 'Education' sub-sector witnessed strong inflows amounting to US\$ 3.16 billion and US\$ 2.25 billion respectively in April-September 2021. Nonetheless, the services sector still accounts for over 50 per cent of the total FDI equity inflows into India during this period (Table 4).

**Table 4: Gross FDI Equity Inflows into Services Sector**

| Services Sub-Sectors  | Share in Gross FDI Equity Inflows into Services Sector in 2021-22 (per cent)* | (US\$ Million) |         |         |                |                |                |
|---|---|----------------|---------|---------|----------------|----------------|----------------|
|   |   | 2018-19        | 2019-20 | 2020-21 | April-Sep 2019 | April-Sep 2020 | April-Sep 2021 |
| Financial, Business, Outsourcing, R&D, Courier, Tech Testing & Analysis | 18.84   | 9,158          | 7,854   | 5,060   | 4,455          | 2,252          | 3,152          |
| Computer Software & Hardware  | 42.59   | 6,415          | 7,673   | 26,145  | 4,025          | 17,554         | 7,124          |
| Trading   | 12.27   | 4,462          | 4,574   | 2,608   | 2,143          | 949            | 2,052          |
| Telecommunications  | 2.25  | 2,668          | 4,445   | 392     | 4,280          | 7              | 376            |
| Information & Broadcasting  | 0.54  | 1,252          | 823     | 314     | 196            | 161            | 91             |
| Hotel & Tourism   | 2.21  | 1,076          | 2,938   | 369     | 859            | 283            | 370            |
| Hospitals & Diagnostic Centers  | 1.97  | 1,045          | 635     | 501     | 376            | 163            | 329            |
| Education   | 13.44   | 777            | 3,245   | 1,250   | 216            | 604            | 2,248          |
| Retail Trading  | 1.38  | 443            | 472     | 1,338   | 243            | 1,230          | 231            |
| Consultancy Services  | 0.91  | 411            | 1,047   | 938     | 473            | 110            | 153            |
| Sea Transport   | 2.22  | 279            | 199     | 294     | 173            | 144            | 372            |
| Air Transport   | 1.14  | 191            | 918     | 204     | 114            | 97             | 190            |

|   |      |        |        |        |        |        |        |
|---|------|--------|--------|--------|--------|--------|--------|
| Agriculture Services  | 0.25 | 88     | 46     | 124    | 23     | 60     | 42     |
| Gross FDI Equity Inflows into Services Sector (US\$ million)    |      | 28,265 | 34,868 | 39,539 | 17,577 | 23,612 | 16,727 |
| Change from Previous Year (per cent)                            |      | -2.4   | 23.4   | 13.4   | 33.1   | 34.3   | -29.2  |
| Gross FDI Equity Inflows into India (US\$ million)              |      | 44,366 | 49,977 | 59,636 | 26,096 | 30,004 | 31,153 |
| Share of Services Sector in Gross FDI Equity Inflows (per cent) |      | 63.7   | 69.8   | 66.3   | 67.4   | 78.7   | 53.7   |

Source: Department for Promotion of Industry and Internal Trade (DPIIT).

Note: \*: Up to September 2021

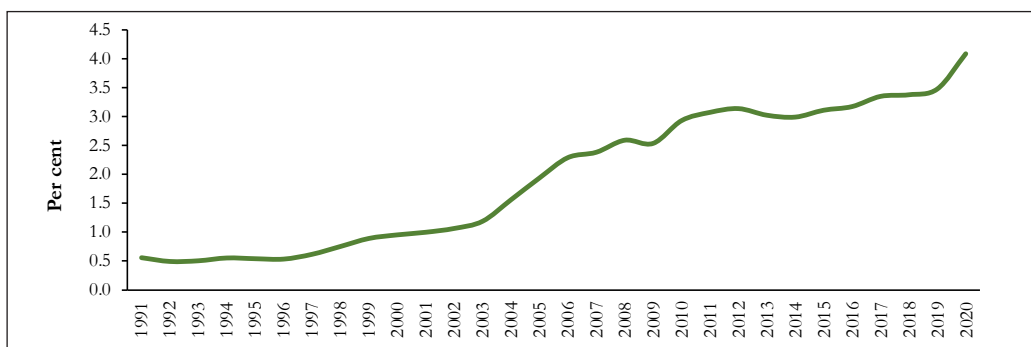
## TRADE IN SERVICES SECTOR

9.19 World trade in commercial services plummeted in 2020 following the Covid-19 pandemic. The slowdown in global services was predominately due to restrictions on travel and tourism and reduction in transportation services, largely in the passenger segment (WTO, 2021). In 2021 so far, world trade in services has shown signs of recovery as a result of world-wide extensive inoculation and resumption in global economic activity. According to WTO, global services trade returned to positive growth territory in April-June 2021, rising 26 per cent yoy largely reflecting the rebound from same period last year, the quarter in which the strongest impact due to Covid-19 was felt. Bolstered by increased demand for goods, shipping under-capacity and higher freight costs, transport services improved on YoY basis. However, travel services remain below pre-pandemic levels. Despite signs of recovery, the WTO expects global services trade to grow at a slower pace than goods trade in 2021, particularly in sectors related to travel and leisure.

### Services exports

9.20 India has a dominant presence in global services exports (Figure 4). It remained among the top ten services exporter countries in 2020, with its share in world commercial services exports increasing from 3.4 per cent in 2019 to 4.1 per cent in 2020.

**Figure 4: India's share in World Commercial Service Exports**



Source: World Bank

Note: Commercial service exports are total service exports minus exports of government services not included elsewhere. International transactions in services are defined by the IMF's Balance of Payments Manual (1993) as the economic output of intangible commodities that may be produced, transferred, and consumed at the same time.

9.21 The impact of Covid-19 induced global lockdown on India's services exports was less severe as compared to merchandise exports. During 2020-21, India's goods exports (BoP basis) declined by 7.5 per cent (YoY), while services exports declined by only 3.3 per cent (YoY). The impact was much severe in travel exports, which fell almost 72 per cent in 2020-21. During H1 2021-22, with vast inoculation drive and pickup in global demand, India's services exports increased by 21.6 per cent as against a fall of 7.8 per cent during the same period a year ago (Table 5). The improvement in exports was seen in almost all services sub-sectors, barring travel services which remained in contractionary mode due to persisting restrictions on international travel and tourism (Table 5).

**Table 5: Services Trade Performance by sub-sector**

| Commodity Group               | Share (per cent) |            | Value (US\$ Billion) |              |                    |                    | Growth (per cent YoY) |             |                    |                    |
|-------------------------------|------------------|------------|----------------------|--------------|--------------------|--------------------|-----------------------|-------------|--------------------|--------------------|
|                               | 2010-11          | 2020-21    | 2019-20              | 2020-21      | 2020-21 (Apr-Sept) | 2021-22 (Apr-Sept) | 2019-20               | 2020-21     | 2020-21 (Apr-Sept) | 2021-22 (Apr-Sept) |
| <b>Total Services Exports</b> | <b>100</b>       | <b>100</b> | <b>213.2</b>         | <b>206.1</b> | <b>96.8</b>        | <b>117.6</b>       | <b>2.5</b>            | <b>-3.3</b> | <b>-7.8</b>        | <b>21.6</b>        |
| Travel                        | 12.7             | 4.1        | 30.0                 | 8.5          | 4.0                | 3.7                | 5.5                   | -71.7       | -72.5              | -6.6               |
| Transportation                | 11.4             | 10.6       | 21.0                 | 21.9         | 10.2               | 14.3               | 7.8                   | 4.1         | -3.3               | 40.7               |
| Insurance                     | 1.6              | 1.2        | 2.4                  | 2.4          | 1.2                | 1.6                | -8.7                  | -2.2        | -3                 | 35.9               |
| GNIE*                         | 0.4              | 0.3        | 0.7                  | 0.6          | 0.3                | 0.4                | 8.0                   | -4.5        | -8.8               | 43.7               |
| Software Services             | 42.6             | 48.5       | 93.1                 | 100          | 47.4               | 57.6               | 11.5                  | 8.6         | 2.9                | 21.4               |
| Business Services             | 19.3             | 23.9       | 45.7                 | 49.2         | 22.9               | 26.8               | 16.9                  | 7.5         | 2.5                | 17.1               |
| Financial Services            | 5.2              | 2.1        | 4.7                  | 4.3          | 2.0                | 2.5                | -2.6                  | -8.3        | -20.3              | 24.4               |
| Communication                 | 1.3              | 1.4        | 2.7                  | 2.8          | 1.4                | 1.6                | 6.3                   | 2.9         | 2.4                | 15.0               |
| <b>Total Services Imports</b> | <b>100</b>       | <b>100</b> | <b>128.3</b>         | <b>117.5</b> | <b>54.9</b>        | <b>66.2</b>        | <b>1.8</b>            | <b>-8.4</b> | <b>-14.2</b>       | <b>20.7</b>        |
| Travel                        | 13.7             | 9.8        | 22.0                 | 11.5         | 5.5                | 6.8                | 1.4                   | -47.7       | -54.8              | 23.1               |
| Transportation                | 17.2             | 16.8       | 24.3                 | 19.8         | 9.0                | 14.8               | 18.3                  | -18.7       | -25.9              | 64.9               |
| Insurance                     | 1.7              | 1.8        | 1.7                  | 2.1          | 0.9                | 1.0                | -2.9                  | 18.4        | 19.9               | 9.6                |
| GNIE*                         | 1.0              | 0.9        | 1.1                  | 1.0          | 0.5                | 0.4                | -0.7                  | -7.7        | -14                | -16.6              |
| Software Services             | 2.7              | 8.7        | 8.5                  | 10.3         | 4.6                | 5.7                | 45.5                  | 21.2        | 15.6               | 22.4               |
| Business Services             | 34.4             | 42.1       | 46.9                 | 49.5         | 23.9               | 24.1               | 16.0                  | 5.6         | 4.1                | 0.9                |
| Financial Services            | 9.3              | 4.1        | 2.9                  | 4.8          | 2.2                | 2.6                | -16.3                 | 63.2        | 94.8               | 19.0               |
| Communication                 | 1.4              | 1.2        | 1.3                  | 1.4          | 0.7                | 0.6                | 14.7                  | 11.0        | 3.2                | -11.3              |
| Services Trade Balance        | 100              | 100        | 84.9                 | 88.6         | 41.8               | 51.4               |                       |             |                    |                    |
| Goods Trade Balance           |                  |            | -157.5               | -102.2       | -25.8              | -75.1              |                       |             |                    |                    |

Source: RBI.

Note: \*: Government not included elsewhere

9.22 India's software exports, with a share of 48.5 per cent in total services exports, remained relatively resilient during Covid-19 period with higher demand for digital support, cloud services and infrastructure modernisation catering to the new pandemic challenges. The top software companies have reported average revenue growth rate of above 21 per cent (in \$ terms) in H1 2021-22 on account of the increased revenue from their manufacturing, financial, banking and insurance, communication, retail, life sciences and health care segments.

9.23 Until 2019-20, India was net exporter of travel services. However, amid drop in foreign tourist arrivals owing to the mobility restrictions imposed worldwide, travel receipts remained below the pre-pandemic level. In April-September 2021, travel exports were US\$ 3.7 billion, which is slightly lower than US\$ 4 billion in April-September 2020 and far modest than US\$ 14.6 billion during the same period in 2019 (i.e., pre-pandemic period). Growth in receipts from exports of transportation services had moderated to 4.1 per cent due to slowdown in trade activity and supply chain disruptions in 2020-21. However, with resumption in cross-border trade activity and shortage in shipping containers impacting transport costs, the transportation receipts posted growth of 40.7 per cent in H1 2021-22 on a YoY basis (Table 5).

9.24 Among other segments, business services exports increased by 17.1 per cent in H1 2021-22, even surpassing the pre-pandemic levels, mainly on account of rise in receipts relating to professional and management consultancy.

### **Services imports**

9.25 India's services imports exhibited sharper decline of 8.4 per cent in 2020-21 in comparison with services exports primarily on account of fall in travel and transportation payments.

9.26 During H1 2021-22, growth of services imports was 20.7 per cent on account of relaxation in lockdown restrictions and resumption in domestic economic activity. Among the major sectors, payments for overseas travel rose by over 23 per cent in H1 2021-22 on YoY basis; however, it still remained far below its pre-pandemic level. International shortage in shipping vessels has increased the transportation cost, which is evident in escalation of 64.9 per cent in outgo on account of transportation services during April-September 2021. Business services, the largest category in India's import of services, increased by 0.9 per cent in H1 2021-22. The increase in business services payments was due to technical, trade-related, other business services, higher outward remittances for maintenance of offices abroad.

9.27 Despite Covid-19 impacting travel and transport services exports in 2020-21, double digit growth in gross exports of services, aided by exports of software, business and transportation services, resulted in an increase of 22.8 per cent in net exports of services in H1 2021-22.

## **MAJOR SERVICES: SUB-SECTOR WISE PERFORMANCE AND RECENT POLICIES**

9.28 Most sub-sectors of the services sector, particularly, aviation, tourism and port traffic slumped in 2020-21 with the onset of Covid-19 related global shutdown and restrictions in movements. In 2021-22 so far, these sub-sectors have shown signs of recovery, largely reflecting the rebound from same period last year.

9.29 All commercial international flights have been banned since March 2020. This has affected foreign tourist travel and consequently foreign exchange earnings from tourism. Domestic passenger traffic, on the other hand, has seen some signs of recovery. During April-November 2021, 95.6 million passengers travelled, up from 45.2 million during the same period last year. Cargo traffic at ports rose by approximately 10 per cent to 857.3 Million Tonnes (MT) during April-November period of the current fiscal year as compared to 779.2 MT during April-November 2020 (Table 6). This section discusses developments in some key sub-sectors of the services sector in detail.

**Table 6: Performance of Key Sub-Sectors in India's Services Sector**

| Sub-Sector   | Indicator  | Unit              | Year    |         |         |                     |                       |
|--|--|-------------------|---------|---------|---------|---------------------|-----------------------|
|  |  |                   | 2017-18 | 2018-19 | 2019-20 | 2020-21             | 2021-22               |
| IT –BPM<br>(excluding<br>e-commerce and<br>Hardware) | IT-BPM<br>revenues   | US\$<br>billion   | 151.4   | 161.8   | 174.3   | 177.9 (E)           | -                     |
|  | Exports  | US\$<br>billion   | 125.1   | 135.5   | 146.6   | 149.1 (E)           | -                     |
|  | Domestic   | US\$<br>billion   | 26.3    | 26.3    | 28      | 28.9 (E)            | -                     |
| Aviation   | Airline<br>passengers  | million           |         | 344.7   | 340.9   | 115.7               | 106.5 <sup>#</sup>    |
|  | Domestic   | million           |         | 275.2   | 274.4   | 105.6               | 95.6 <sup>#</sup>     |
|  | International  | million           |         | 69.4    | 66.5    | 10.1                | 10.9 <sup>#</sup>     |
| Telecom  | Wireless phone<br>subscriptions <sup>a</sup>                 | million           | 1,183.4 | 1,161.8 | 1157.8  | 1181                | 1,180.8 <sup>##</sup> |
|  | Wireless internet<br>subscriptions <sup>a</sup>              | million           | 472.7   | 582.8   | 720.8   | 799.3               | 810.1 <sup>##</sup>   |
| Tourism  | Foreign tourist<br>arrivals <sup>b</sup>                     | million           | 10.0    | 10.6    | 10.9    | 2.74 <sup>###</sup> | -                     |
|  | Foreign<br>exchange<br>earnings from<br>tourism <sup>b</sup> | US\$<br>billion   | 27.3    | 28.6    | 30.1    | 6.96 <sup>###</sup> | -                     |
| Shipping   | Gross tonnage of<br>shipping <sup>a</sup>                    | million<br>tonnes | 12.6    | 12.8    | 12.7    | 13                  | 12.96 <sup>^</sup>    |
|  | Number of ships <sup>a</sup>                                 | number            | 1,382   | 1,405   | 1,431   | 1,463               | 1,488 <sup>^</sup>    |
| Ports  | Port traffic   | million<br>tonnes | 1,208.6 | 1,277.3 | 1317.7  | 1246.1 (P)          | 857.3 <sup>#</sup>    |
|  | Cargo capacity<br>(Major Ports)                              | million<br>tonnes | 1,451.2 | 1,514.1 | 1,514.9 | 1,510.6             | -                     |

Sources: Telecom Regulatory Authority of India (TRAI), Department of Telecom, Ministry of Tourism, Ministry of Shipping, Airports Authority of India, Ministry of Electronics and Information Technology, NASSCOM.

Note: a: As of March of ensuing financial year; b: On calendar year basis; #For Apr-Nov 2021 ; ##: As of June 2021; ###: Jan-June 2020; @: As of June 2021; ^As of August 2021. P=Provisional. E= NASSCOM provisional estimates

## Tourism Sector

9.30 In normal times, tourism sector is a major contributor to GDP growth, foreign exchange earnings and employment. However, the Covid-19 pandemic has had a debilitating impact on world travel and tourism everywhere, including India.

9.31 According to the World Tourism Barometer of the United Nation's World Tourism Organization (January 2021), International Tourist Arrivals (ITA) declined by 74 per cent globally in 2020 over the previous year, with restrictions on travel, low consumer confidence and a global struggle to contain the Covid-19 spread. ITA had reached a total of 1.5 billion in 2019, and reduced to 381 million in 2020, leading to an estimated loss of US\$ 1.3 trillion in export revenues. This weakness in international tourism has continued in 2021. During January-September 2021, ITA worldwide was 20 per cent lower than the same period in 2020 and 64 per cent below 2019 levels.

9.32 The resumption of international tourism will continue to depend largely on a coordinated response among countries in terms of travel restrictions, harmonized safety and hygiene protocols and effective communication to help restore consumer confidence. This is particularly critical at a moment when cases are surging in some regions and new Covid-19 variants are emerging in different parts of the world.

9.33 To contain the spread of virus, the Indian airspace regulator, Director General of Civil Aviation (DGCA), had suspended all commercial international flights in March 2020. This restriction has been extended till February 28, 2022. However, special international flights have been operating under the Vande Bharat Mission to help expats fly back home under special diplomatic arrangements (air travel arrangements)<sup>4</sup> with various countries since May 2020. At present, India has transport bubbles with 35 nations<sup>5</sup>. Under this Mission, which is currently in its 15<sup>th</sup> phase, over 47,000 inbound and outbound flights have been operated as on December 31, 2021, carrying over 63.55 lakh passengers.

9.34 At the time of writing, new restrictions were being introduced worldwide due to the spread Omicron variant of the Covid-19. Thus, the trajectory of tourism sector, especially international tourism remains uncertain.

## IT BPM Services

9.34 The Information Technology-Business Process Management (IT-BPM) sector is a major segment of India's services. During 2020-21, according to NASSCOM's provisional estimates, IT-BPM revenues (excluding e-commerce) reached US\$ 194 billion, growing by 2.26 per cent YoY, adding 1.38 lakh employees.

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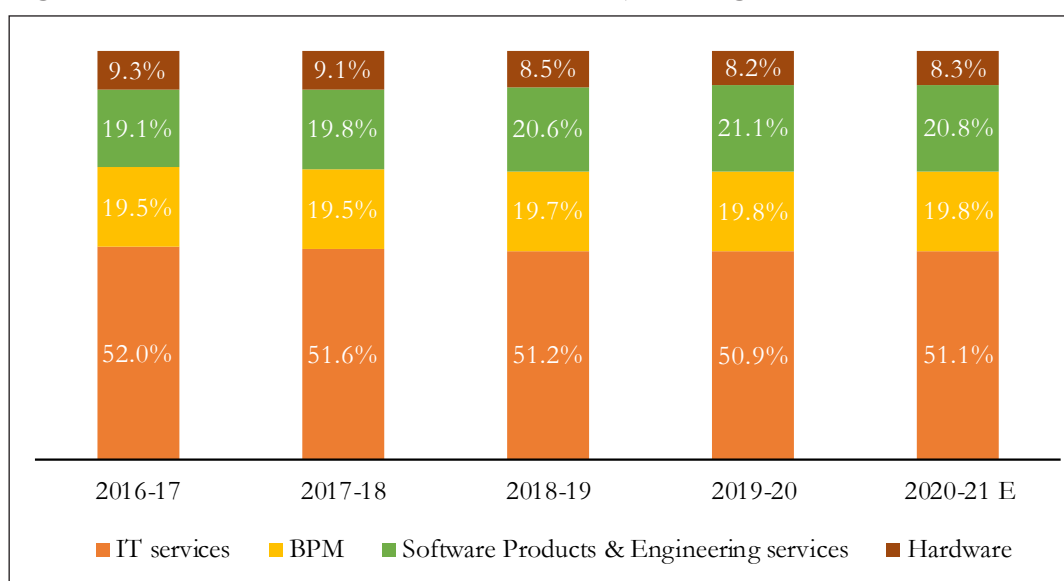
<sup>4</sup>“Transport Bubbles” or “Air Travel Arrangements” are temporary arrangements between two countries aimed at restarting commercial passenger services when regular international flights are suspended as a result of the Covid-19 pandemic. They are reciprocal in nature, meaning airlines from both countries enjoy similar benefits.

<sup>5</sup>Afghanistan, Australia, Bahrain, Bangladesh, Bhutan, Canada, Ethiopia, Finland, France, Germany, Iraq, Japan, Kazakhstan, Kenya, Kuwait, Maldives, Mauritius, Nepal, Netherlands, Nigeria, Oman, Qatar, Russia, Rwanda, Saudi Arabia, Seychelles, Singapore, Sri Lanka, Switzerland, Tanzania, Ukraine, UAE, UK, USA, Uzbekistan.

### Share of IT-BPM Sub-sectors

9.36 Within the IT-BPM sector, IT services constitutes the majority share (> 51 per cent) (Figure 5). Its share has been consistent over the last many years. The share of Software & Engineering services in the IT-BPM sector, which was consistently growing each year, saw a slight decline to 20.78 per cent in 2020-21. BPM services share remained same at 19.8 per cent, while that of Hardware services slightly improved to 8.3 per cent. In 2020-21, IT services, Software & Engineering services, BPM services, and Hardware services earned revenues of US\$ 99.1 billion, US\$ 40.3 billion, US\$ 38.5 billion, and US\$ 16.1 billion, respectively.

**Figure 5: Sub-sectors share in IT-BPM Revenue (excluding hardware & e-commerce)**



Source: NASSCOM. Note: E: Estimate.

### Share of Exports in IT-BPM Sector

9.37 During 2020-21, the total revenue in IT-BPM sector (excluding hardware and e-commerce) grew at 2.1 per cent (YoY). A significant portion of this revenue comes from exports. During 2020-21, exports revenues grew by 1.93 per cent to reach US\$ 149.1 billion (Table 7).

**Table 7: Exports and Domestic Market Size of Indian IT-BPM Industry (excluding hardware & e-commerce)**

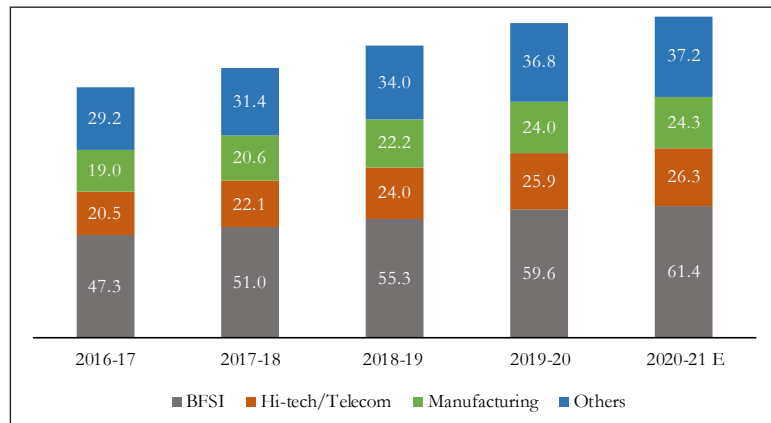
| Year     | Revenue (US\$ billion) |         |       | Percentage growth (YoY) |         |       |
|----------|------------------------|---------|-------|-------------------------|---------|-------|
|          | Domestic               | Exports | Total | Domestic                | Exports | Total |
| 2016-17  | 23.8                   | 116.1   | 139.9 | 10.45                   | 7.64    | 8.11  |
| 2017-18  | 26.3                   | 125.1   | 151.4 | 10.44                   | 7.77    | 8.22  |
| 2018-19  | 26.3                   | 135.5   | 161.8 | -0.27                   | 8.34    | 6.84  |
| 2019-20  | 28.0                   | 146.3   | 174.3 | 6.70                    | 7.93    | 7.73  |
| 2020-21E | 28.9                   | 149.1   | 177.9 | 3.01                    | 1.93    | 2.11  |

Source: NASSCOM. Note: E: Estimate.



9.38 Out of the total US\$ 149.1 billion in exports of the IT-BPM sector (excluding hardware and e-commerce) in 2020-21, Banking, Financial services and Insurance (BFSI) contributed US\$ 61.4 billion, accounting for over 41 per cent of the exports. Hi-tech/Telecom and Manufacturing services contributed US\$ 26.3 billion and US\$ 24.3 billion, accounting for a share of 17.65 and 16.28 per cent respectively (Figure 6). All the three sub-sectors witnessed a marginal increase in export revenues in 2020-21 YoY, with BFSI growing by 3 per cent, Hi-tech/Telecom services by 2 per cent and Manufacturing services by 1 per cent.

**Figure 6: Sector wise break up of Indian IT BPM Export Revenues (excluding hardware & e-commerce) (US\$ billion)**



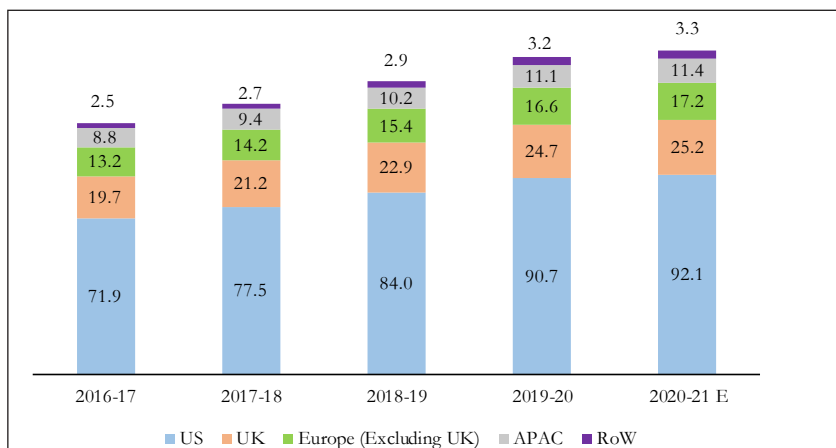
Source: NASSCOM. Note: E: Estimate.

Note: Others include emerging sectors like Retail, Healthcare, Media etc.

*Distribution of export revenues*

9.39 United States remained the biggest source of exports revenues amounting US\$ 92.1 billion in 2020-21(Figure 7). This accounts for about 62 per cent of total IT-BPM exports (excluding hardware and e-commerce). This is followed by UK, which is second largest export market for IT-BPM services with a share of around 17 per cent. The revenue from exports to UK amounted to US\$ 25.2 billion in 2020-21. Europe (excluding UK) and Asia-Pacific account for 11.5 per cent and 7.7 per cent respectively of the export earnings of India.

**Figure 7: Geographic Break-up of India’s IT-BPM Exports (excluding hardware & e-commerce) (US \$ billion)**



Source: NASSCOM. Note: E: Estimate.

9.40 Over the last year, a number of policy initiatives have been undertaken to drive innovation and technology adoption in the sector, including relaxation of Other Service Provider regulations (See Box 1), Telecom Sector Reforms and Consumer Protection (e-commerce) Rules, 2020. This would significantly expand access to talent, increase job creation, and catapult the sector to the next level of growth and innovation.

### Box 1: Removal of Telecom Regulations in IT-BPO Sector

Last year, the Government undertook a major reform of liberalizing the Telecom regulations in the IT-BPO sector. In legal parlance, these are called Other Service Providers (OSPs). New revised and simplified OSP guidelines were first issued in November 2020 and further in June 2021. Prior to this, the OSPs were regulated under the Revised Terms and Conditions- Other Service Provider 2008.

IT and IT enabled service companies carrying out services like tele-medicine, e-commerce, call centre, network operation centre and other IT Enabled Services, by using Telecom Resources provided by Authorised Telecom Service Providers were required to be registered as Other Service Provider (OSP) and comply with the onerous obligations of the OSP Regulations. The application and approval processes were cumbersome and compliance obligations such as in relation to the sharing of infrastructure, work from home arrangements, use of EPABX and internet connectivity, etc. were tedious and made compliance challenging.

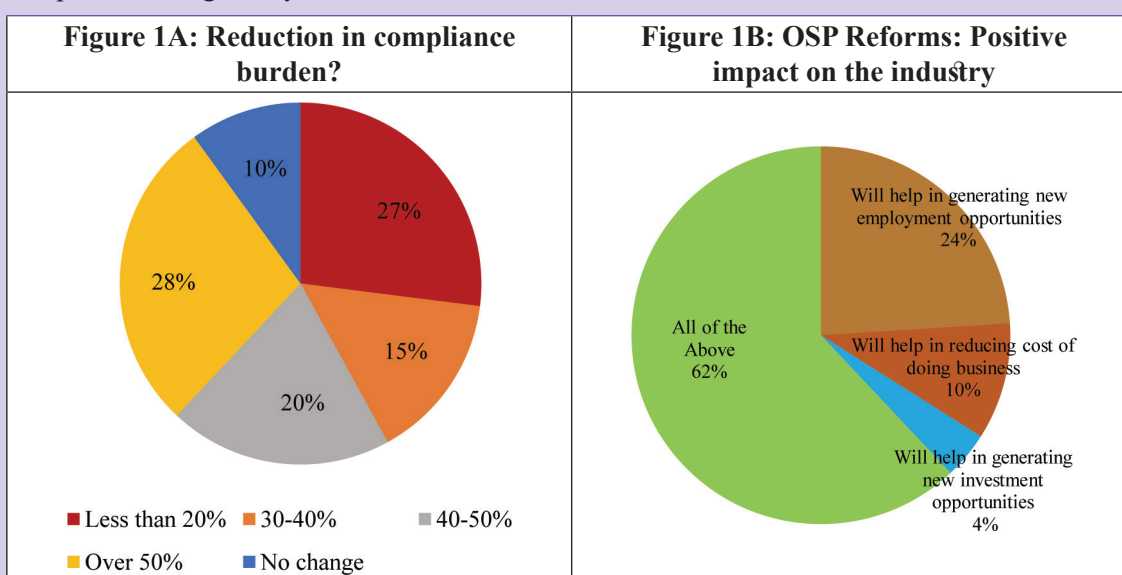
The revised guidelines which resolve these issues are as follows:

- Clear definition of OSP: The applicability of new guidelines is limited to entities that provide "Voice based BPO services" to its customers. Voice based BPO services is defined to mean call center services. The new guidelines have explicitly clarified that non-voice-based entities will not be governed by the OSP regime.
- Removal of registration requirement No registration certificate will be required for OSP centres in India.
- Removal of requirement of bank guarantee: No bank guarantee whatsoever will be required for any facility or dispensation under these guidelines.
- Removal of distinction between domestic and international OSPs: The categorization of OSPs has been done away with and one single OSP category has been introduced regardless of their domestic/ international business operations.
- Work from home and remote locations allowed: The agents at home/anywhere shall be treated as remote agents of the OSP centre. The interconnection between remote agents is permitted using any technology including broadband over wireline/wireless. The remote agent can now directly connect to customer Electronic Private Automatic Branch Exchange (EPABX) /centralised EPABX without the need to connect with the OSP centre.
- Interconnectivity between OSPs allowed: Interconnection between two or more OSP centres of the same or unrelated company is now permitted.
- Sharing the infrastructure: Infrastructure sharing among OSPs is now allowed. The guidelines allow the use of EPABX at foreign locations.

This reform will provide a big stimulus for growth of IT-BPO industry in India and help in creating more income and employment.

NASSCOM undertook a survey between October to November 2021 to assess the impact of OSP reforms on IT-BPM Sector. Its findings are as follows:

- 92 per cent of the participants stated that the OSP reforms have helped reduce compliance burden. While 28 per cent of the participants responded that their compliance burden reduced by more than 50 per cent, 20 per cent of participants acknowledged compliance reduced by 40-50 per cent. 15 per cent of participants responded that compliance reduction by 30-40 per cent (Figure 1A).
- 24 per cent of the respondents expect that OSP reforms will help in generating new employment opportunities, 10 per cent expect that it will reduce the cost of doing business in India, whereas 64 per cent expect all these benefits to accrue (Figure 1B).
- Further, 83 per cent of the participants responded that these reforms will help in reducing the financial burden; 24 per cent of the respondents stated that these reforms have significantly enhanced productivity of their organization; and 94 per cent said that these reforms will increase competitiveness globally.

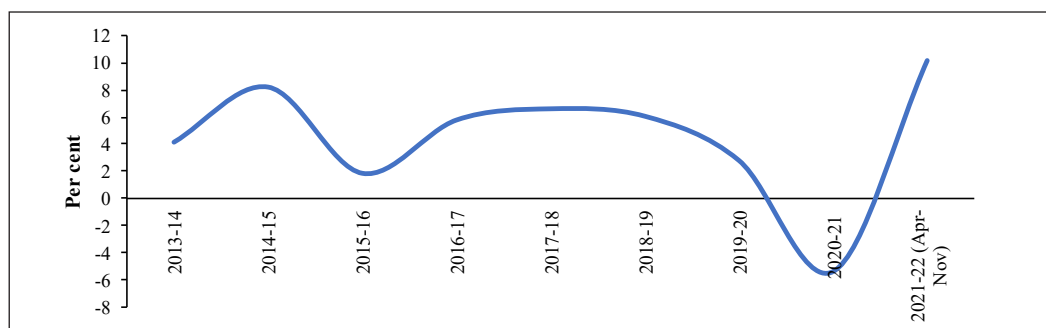


- Almost all participants were satisfied with the work from home/work from anywhere relaxations’.
- Over 62 per cent of the respondents indicate that they will increase their employment by 5-10 per cent annually over the next 5 years; and around 50 per cent of the respondents indicated expanding into new locations.

## Ports, Shipping and Waterways Services

9.41 Development of ports is crucial for the economy. Ports handle around 90 per cent of export-import cargo by volume and 70 per cent by value in India. The total cargo capacity of all the ports has increased to 1,246.86 Million Tonnes Per Annum (MTPA) as of March 2021 from 1,052.23 MTPA as of March 2014.

9.42 Hit by disruptions caused by Covid-19, cargo traffic at India’s ports decreased by 5.4 per cent during 2020-21, to 1,246.86 MT from 1,317.73 MT during 2019-20. Port traffic has picked up in 2021-22 so far, registering a growth of 10.16 per cent during April-November 2021 over the same period last year (Figure 8). During the first eight months of 2021-22, ports handled total traffic of around 858.3 MT, as compared to 779.2 MT in the corresponding period of previous year.

**Figure 8: Growth (YoY) in traffic at all ports**

Source: Ministry of Ports, Shipping and Waterways

9.43 Major ports handled traffic of around 465.4 million tonnes during April-November 2021, growing by 12 per cent over same period last year. Almost all major ports (except SMP Kolkata, Vizag and Mormugoa ports) recorded high growth in traffic, partly reflecting a rebound from the low base during the same time last year. Kamarajar Port in Chennai recorded highest growth of 70.9 per cent followed by JNPT Port at 27.9 per cent. Deendayal Port handled the maximum Cargo of 85.12 MT during April-November 2021.

9.44 A key indicator of efficiency of the ports sector is the shipping Turnaround Time (TRT). Over the last seven years, TRT at major ports has declined consistently from almost 3.64 days in 2015-16 to 2.25 days in 2021 (April-December). The turnaround time is now the lowest at the JNPT port (1.16 days) and the highest at the Visakhapatnam and Mormugao ports (Table 8). Kamarajar port has shown biggest improvement in reducing average turnaround time from over 6.5 days in 2015-16 to less than 2 days in 2021-22 (April-December).

9.45 According to UNCTAD, the median ship turnaround time globally was 1 day in 2020. This is slightly higher than the year 2019 where the turnaround time was 0.97 days. During 2020, to contain the virus, terminal operators, authorities, and intermodal transport providers took steps to reduce social contact. This slowed port operations, thereby increasing the time spent by vessels on port.

**Table 8: Average Ships' Turnaround Time at Major Indian Ports (in days)**

| PORT                  | 2015-16 | 2016-17 | 2017-18 | 2018-19 | 2019-20 | 2020-21 <sup>@</sup> | 2021-22<br>(Apr- Dec) |
|-----------------------|---------|---------|---------|---------|---------|----------------------|-----------------------|
| Kolkata               | 3.98    | 4.73    | 4.11    | 3.84    | 4.21    | 3.18                 | 2.87#                 |
| Haldia                | 3.27    | 3.45    | 3.76    | 3.04    | 3.62    | 3.09                 | 2.46#                 |
| Paradip               | 4.50    | 4.99    | 3.31    | 2.51    | 2.98    | 2.42                 | 2.28                  |
| Visakhapatnam         | 3.84    | 3.75    | 2.58    | 2.51    | 2.48    | 2.75                 | 3.15                  |
| Kamarajar<br>(Ennore) | 6.53    | 2.70    | 2.20    | 1.97    | 1.85    | 1.79                 | 1.95                  |
| Chennai               | 2.53    | 2.51    | 2.21    | 1.98    | 2.00    | 2.14                 | 2.24                  |
| V.O.<br>Chidambaranar | 3.73    | 4.40    | 2.69    | 1.96    | 2.01    | 1.92                 | 2.02                  |

|                        |             |             |             |             |             |             |             |
|------------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| Cochin                 | 2.18        | 1.99        | 1.54        | 1.47        | 1.51        | 1.49        | 1.44        |
| New Mangalore          | 2.63        | 2.35        | 2.04        | 1.93        | 1.91        | 1.91        | 1.94        |
| Mormugao               | 3.65        | 4.51        | 2.63        | 2.63        | 2.69        | 3.15        | 3.15        |
| Mumbai                 | 4.61        | 3.27        | 3.72        | 2.52        | 2.56        | 2.46        | 3.10        |
| JNPT                   | 2.44        | 2.01        | 2.24        | 2.13        | 2.00        | 1.19        | 1.16        |
| Deendayal<br>(Kandla)  | 4.66        | 4.40        | 2.51        | 3.01        | 2.94        | 2.83        | 2.48        |
| <b>All Major Ports</b> | <b>3.64</b> | <b>3.43</b> | <b>2.68</b> | <b>2.48</b> | <b>2.59</b> | <b>2.33</b> | <b>2.25</b> |

Source: Ministry of Ports, Shipping and Waterways

Note: @: Average Turnaround time during 2020-21 is based on Pilot boarding till de-boarding

#: Turnaround time calculated as per prevailing modified formula (lock to lock)

9.46 The Covid-19 pandemic related restrictions on international trade in 2020 have led to a smaller flow of containers in active shipping. The prolonged partial closure of ports across the world created a glut of containers in some ports and abject shortage in others. At the same time, because of widespread manufacturing delays, not enough containers were manufactured. As the global economy began to recover since early 2021, the containers which were stuck at various storage points are not being sent back into service fast enough. This has resulted in a skewed demand-supply for shipping containers, leading to very high shipping rates. During April-September 2021, India spent US\$ 14.8 billion on transportation services imports, which is 64.9 per cent higher than last year.

9.47 To address the problem of shortage of containers and high freight rates, the Government has adopted a multi-pronged strategy. This includes pressing additional shipping/container capacity into service through measures such as higher import of empty containers, improved operational planning by facilitating close coordination between exporters and shipping lines, release of abandoned/detained/seized containers, increasing duty free stay of containers. Further measures include freight discounts for empty repositioning by railways, measures to improve the turnaround times of containers through tracking and monitoring of dwell times so as to effectively enhance availability of containers, promoting use of bulk/break-bulk movement by exporters wherever feasible.

### *Sagarmala Programme*

9.48 The Sagarmala programme is the flagship programme of the Ministry of Ports, Shipping and Waterways to promote port-led development in the country by taking advantage of India's 7,500 km long coastline, 14,500 km long potentially navigable waterways and the strategic location on major maritime trade routes. The core vision of the Sagarmala programme is to reduce the logistics cost for export, import and domestic trade. Presently, a total of 802 projects worth Rs. 5.53 lakh crore are part of Sagarmala Programme. Of these, 181 projects worth Rs. 94,712 crore have been completed and 398 projects worth Rs. 2.48 lakh crore are under various stages of implementation.

## Space Sector

9.49 Since its inception in the 1960s, the Indian space program has grown drastically. Administered by the Department of Space (DOS) and primarily executed by its R&D arm, the Indian Space Research Organization (ISRO), capabilities have been developed in the space sector across all domains. This includes indigenous space transportation systems; space assets comprising of fleet of satellites catering to the needs of earth observation, satellite communication, meteorology, space science & navigation; ground infrastructure and a host of operational programs related to the applications of space technology to the common uses of the society.

9.50 Across the globe, the trend of space activities is in a state of transition. From being primarily a government driven activity, the sector has been witnessing increasing participation of private sector – not only in the traditional vendor role but also in taking up end-to-end space activities. With this in mind, Government undertook reforms in space sector in 2020, which envisage the private sector to act as a co-traveler in the exploration of outer space and also in providing space-based services.

9.51 As a part of these reforms, the first step taken was empowering New Space India Limited (NSIL)-the Public Sector Undertaking (PSU) in this sector –to “own” the operational launch vehicles and space assets of ISRO. Further, the present supply-based model was changed to demand-driven model, wherein NSIL shall act as aggregator of user requirements and obtain commitments. The first outcome in this regard came recently to the fore with Tata Sky signing an MoU with NSIL for utilizing the capacity on board the upcoming communication satellite GSAT-24, to be built by ISRO and launched by Arianespace.

9.52 The second important step was the creation of an independent nodal agency under the Department of Space, Indian National Space Promotion and Authorization Centre (IN-SPACe), which shall act as the promotor and regulator of space activities in India by NGPEs (Non-government/private entities). This body has been tasked with prioritising the launch manifest as per the requirements of NSIL, ISRO and NGPEs. It shall also allow utilization of capital intensive DOS-owned facilities at reasonable cost by the private sector. In a little over a year since the agency was announced, the interim IN-SPACe board has received close to 40 proposals from large industries, MSMEs, start-ups and academia covering broad range of activities in space domain – cutting across both upstream (launch vehicle/satellite manufacturing) as well as downstream (Earth Observation applications, communications, etc.)

9.53 The third vital step has been in providing a predictable, forward-looking, well defined and enabling regulatory regime for space activities in the country. The first to be updated were the SpaceCom and SpaceRS policies, further liberalizing the traditional Satellite Communication and Remote Sensing sectors, respectively, thus enabling entrepreneurs/industries to take up end-to-end activities in these domains.

9.54 These initiatives have been received with much zeal and vigor by the entrepreneurs. Five private satellites have been tested at ISRO facilities, four student satellites were launched aboard the PSLV C-51. The national registration mechanism for space objects has been implemented, with five satellites registered. A total of six MoUs have been signed with private/academic entities for sharing technical expertise and facilities.

9.55 Trends in the number of start-ups engaged in the space sector also show the pace of growth of space sector in India (Table 9). Just in the last three years number of startups in the space sector has increased from 11 in 2019 to 47 in 2021.

**Table 9: Number of Start-ups in Space Sector**

| Year         | No of start-ups |
|--------------|-----------------|
| 2012         | 1               |
| 2013         | 1               |
| 2014         | 1               |
| 2015         | 3               |
| 2016         | 1               |
| 2017         | 8               |
| 2018         | 7               |
| 2019         | 11              |
| 2020         | 21              |
| 2021         | 47              |
| <b>Total</b> | <b>101</b>      |

Source: ISRO

Note: ISRO/DOS doesn't register any start-ups. However, start-ups are registered with startupindia under DPIIT. Around 75 start-ups are shown under space technology category in the startupindia portal. But these numbers are not exhaustive, as some of the start-ups registered under other categories are also involved in the space domain.

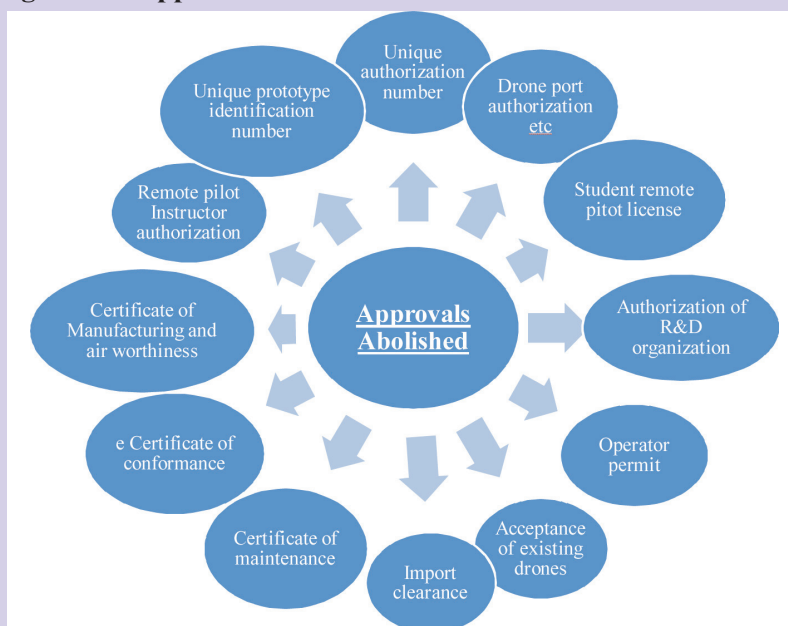
9.56 With these recently undertaken policy initiatives and private sector participations, the Indian space sector is expected to capture a larger share of the global space economy, which was close to US\$ 447 billion in 2020. At present, India accounts for only about 2 per cent of the space economy, much behind the major players – USA and China.

### Box 2: Drone Rules, 2021

In March 2021, the Ministry of Civil Aviation (MoCA) published the UAS Rules, 2021. These Rules were considered too stringent and restrictive as they involved considerable paperwork, required permissions for every drone flight and very few “free to fly” green zones were available. Based on the feedback, the Government decided to repeal the Unmanned Aircraft Systems (UAS) Rules, 2021 and replace the same with the liberalised Drone Rules, 2021, which was notified on 25th August 2021. Key features of Drone Rules 2021 include:

- **Several approvals abolished; with the total forms to be filled reduced from 25 to 5:** Various approvals such as unique authorisation number, unique prototype identification number, certificate of manufacturing, and operator permit etc. have been done away with. Certain exemptions have also been introduced for nano/micro drones.



**Figure 3A: Approvals abolished under the new Drone Rules 2021**

Source: PIB

- **Type of fees reduced from 72 to 4;** further the quantum of fees to be paid reduced considerably and delinked with the size of drone. For instance, the fee for a remote pilot license fee has been reduced from Rs 3000 (for large drone) to Rs 100 for all categories of drones.
- **Extended applicability of rules:** Drones up to 500 kg are now subject to regulations, compared to the earlier limit of 300 kg. This brings drone taxis and heavy payload-carrying drones within the ambit of the rules. For drones with weight more than 500 kg, the provisions of the Aircraft Rules 1937 shall apply.
- **Simplified and accessible certification process:** A Digital Sky platform is being developed as a single-window platform for one-step and one-time clearances for drone ownership and operation. Manufacturers and importers may generate their drones' unique identification number on the digital sky platform through self-certification.
- **Prior security clearance removed**
- **Expanded area of drone operations:** An interactive map on the Digital Sky platform specifies colour-coded zones on the map i.e. green, yellow and red, indicating free zones, those which require prior permission, and no-fly zones, respectively. The perimeters of these zones have also been liberalised to increase freely accessible airspace under the green category. This map will be made accessible through a machine-readable Application Programming Interface.
- **Relaxations on foreign companies:** Foreign-owned and controlled Indian companies can conduct drone operations in India. Import of drones will be regulated by Directorate General of Foreign Trade (DGFT).
- **No remote pilot licence required** for micro drones (for non-commercial use) and nano drones. Remote pilot licence will be issued by Director General of Civil Aviation (DGCA) within 15 days of pilot receiving the remote pilot certificate from the authorised drone school through the digital sky platform.
- **Relaxations for Research and Development (R&D):** Requirements such as type certification have been removed for drone manufacturers conducting R&D in premises located in green zone.
- **Reduced penalties:** The maximum penalty under new rules has been reduced from Rs 5 lakhs to Rs 1 lakh.

### Box 3: Revised Guidelines for Acquiring and Producing Geospatial Data

On 15th February 2021 the Department of Science and Technology released guidelines for the creation, acquisition and use of geospatial data, including maps. Being critical to mapping activities in India, geospatial data was previously heavily regulated and required licenses to be obtained for the use of such data. Given the increase in freely and publicly available geospatial data and services, the erstwhile restrictions had become redundant and severely hampered technological innovation in the sector, which specifically affected domestic players. The newly released guidelines aim to build a more permissive regime which opens up the industry to collaboration and progress, while supporting Indian companies operating in this sector.

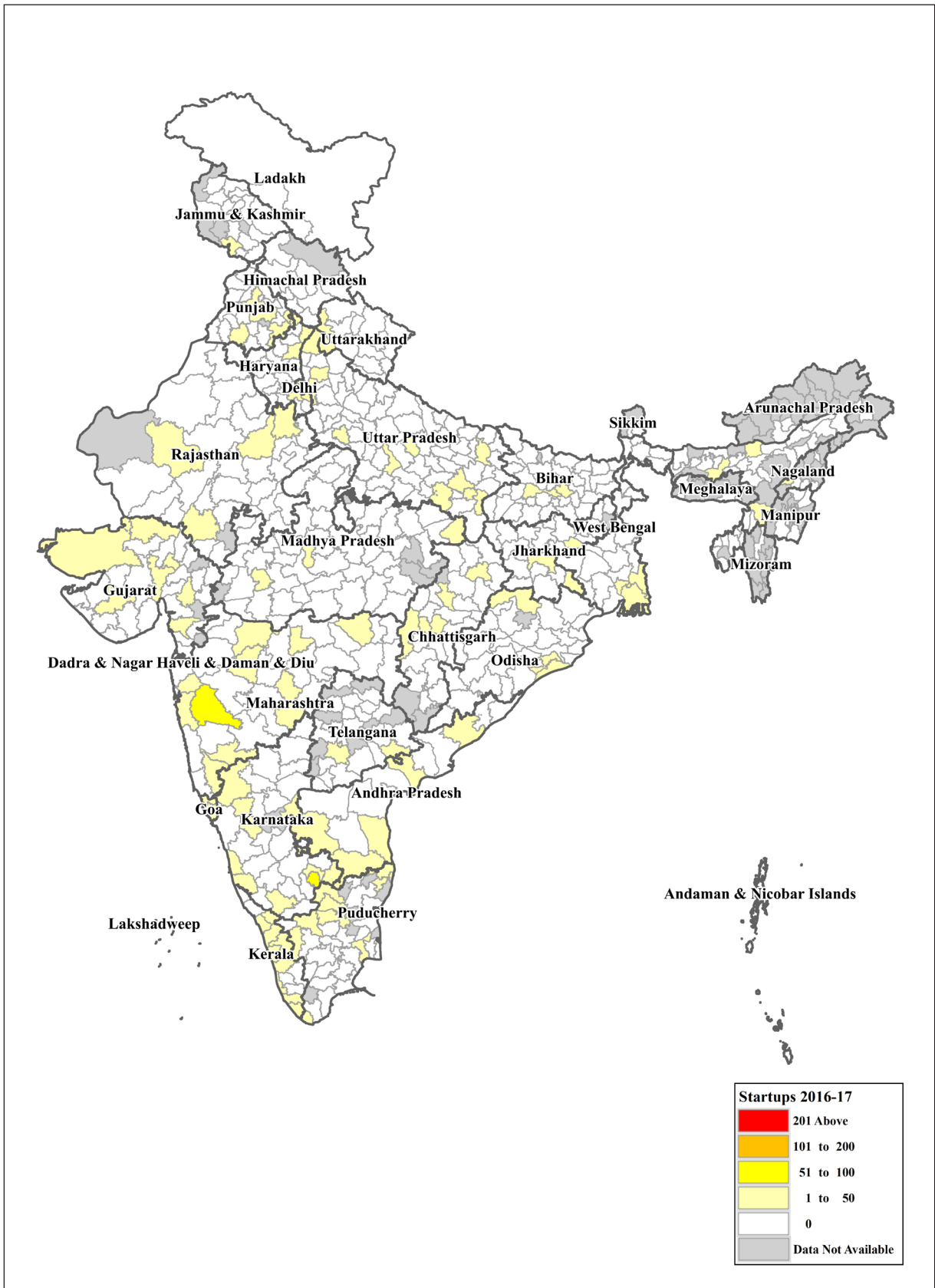
Some key changes under the guidelines are as follows:

- **Introduction of a self-certification regime:** All entities are now required to follow a self-certification process to show adherence to the guidelines, as opposed to obtaining prior approval or licenses for the use of geospatial data and maps.
- **Relaxation of restricted areas:** Mapping activities are prohibited only for specific attributes of highly sensitive locations, as opposed to restricted areas under the previous regime.
- **Specific permissibility for Indian Entities:** Only Indian owned and controlled entities are permitted to (i) use geospatial data above a certain special accuracy; (ii) use specific technologies such as ground truthing and verification; and (iii) conduct activities such as street view surveying and surveying in Indian territorial waters. While non-Indian companies are not permitted to undertake any of the above, they can license this data from Indian entities through the use of APIs, only for the purposes of serving their Indian customers,
- **Relaxation on export restrictions:** The guidelines permit the export of maps with resolutions up to a 1:100 resolution thereby relaxing the previous threshold of 1:250000. Maps which are finer than the specified resolution threshold must be localised, and are only permitted to be stored and processed on servers located within India.
- **Open access to publicly funded data:** The guidelines require all geospatial data produced using public funds, including data produced by the Survey of India, to be freely accessible to all Indian entities, for scientific, economic and developmental purposes. Certain categories of classified geospatial data will be exempted from this requirement.

## Startups

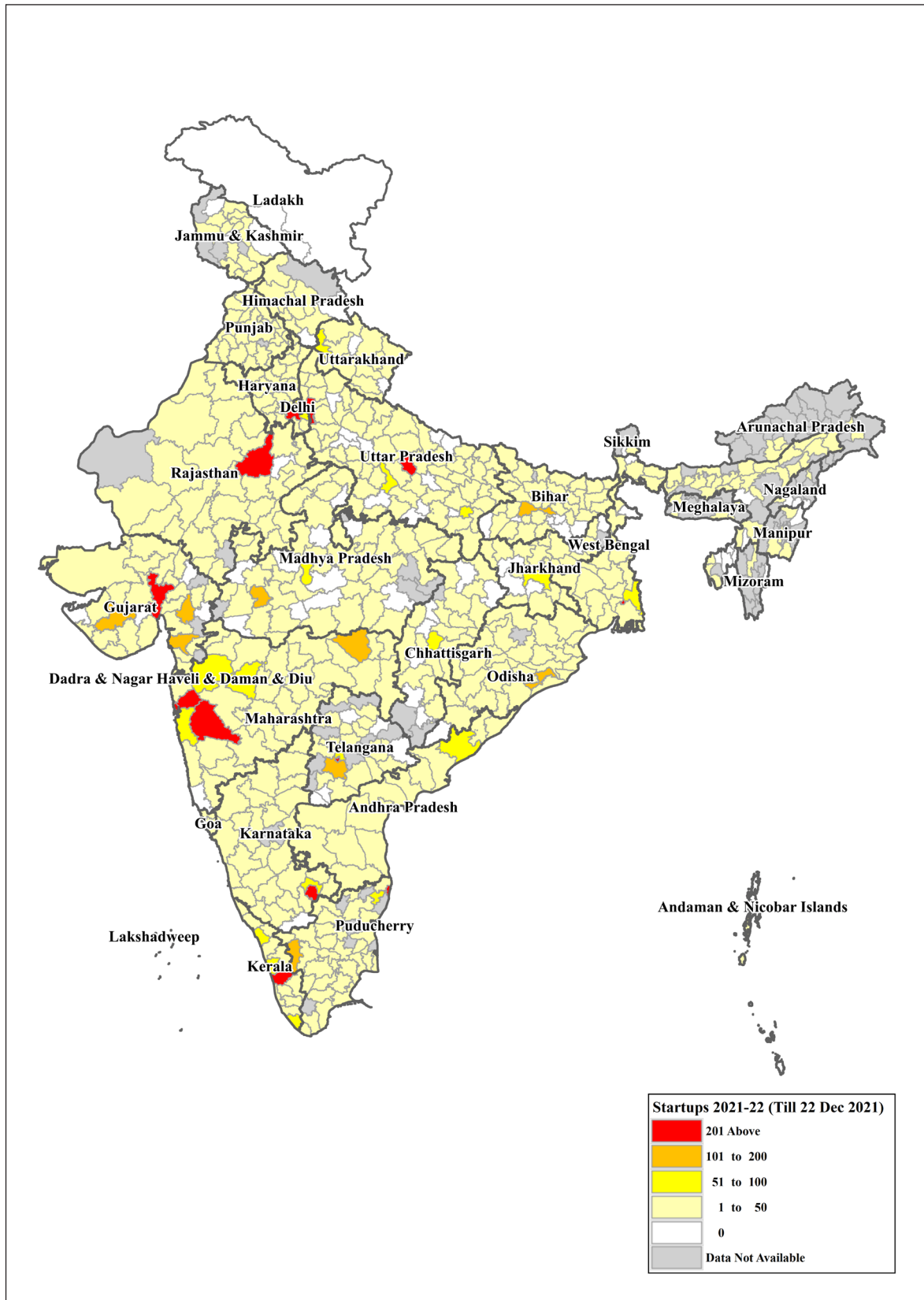
9.57 Startups in India have grown remarkably over the last six years, most of these belong to the services sector. During 2021, the Government recognised over 14,000 new startups as compared to only 733 new startups during 2016-17. As a result, more than 61,400 startups have been recognised in India as of January 10, 2022. Figure 9 & Figure 10 show the spread of startups in Indian districts. During 2021, 555 districts had at least one new startup. On the other hand, only 121 districts had at least 1 new startup in 2016-17.

Figure 9: New Startups recognised in 2016-17



Source: DPIIT

Figure 10: New Startups recognised in 2021-22\*



Source: DPIIT

\*As on 22<sup>nd</sup> December 2021

9.58 Over the recent years, Delhi has replaced Bangalore as the startup capital of India. Over 5,000 recognised startups were added in Delhi while 4,514 startups were added in Bangalore between April 2019 to December 2021. With a total of 11,308 startups, Maharashtra has the highest number of recognised startups.

9.59 India had a record number of start-ups (44) reach unicorn status in 2021. It overtook UK to emerge as the third highest country in number of unicorns after US and China which added 487 and 301 unicorns respectively in 2021. As of January 14, 2022, India has 83 unicorns with a total valuation of US\$ 277.77 billion.

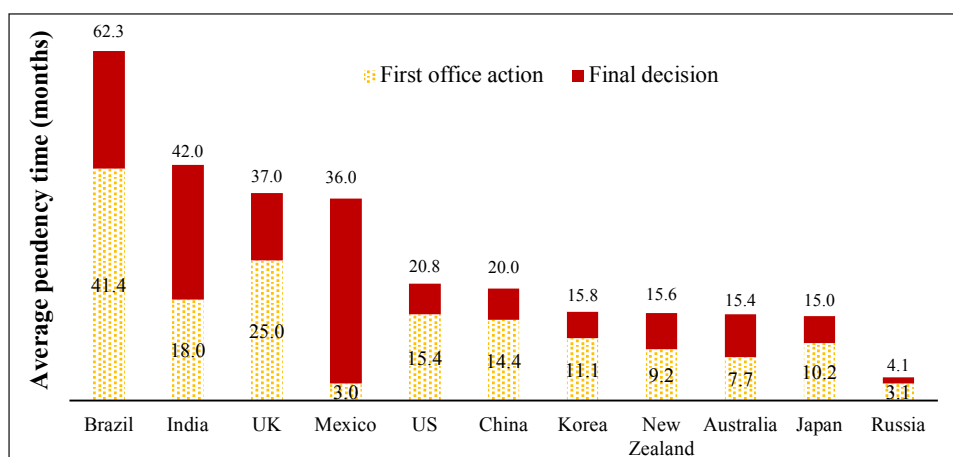
## Patents

9.60 Most of India's startups are in the IT/ knowledge-based sector. Intellectual property, specifically patents are key to this knowledge-based economy. There has been gradual increase in the filing and granting of patents in India. The number of patents filed in India has gone up from 39,400 in 2010-11 to 45,444 in 2016-17 to 58,502 in 2020-21 and the patents granted in India has gone up from 7,509 to 9,847 to 28,391 during the same time period. Further, the number of patents application are increasingly coming from Indian residents rather than MNCs. The share of Indian residents in total applications has increased from 20 per cent in 2010-11 to around 30 per cent in 2016-17 and 40 per cent in 2020-21. Consequently, India's ranking in Global Innovation Index has climbed 35 ranks, from 81<sup>st</sup> in 2015-16 to 46<sup>th</sup> in 2021.

9.61 This is a remarkable progress, but the number of patents granted in India is still a fraction compared to patents granted in China, USA, Japan, and Korea. According to World Intellectual Property Organization (WIPO), the number of patents granted in China, USA, Japan, Korea stood at 5.30 lakh, 3.52 lakh, 1.79 lakh, 1.35 lakh respectively for 2020.

9.62 One of the key reasons for relatively low patents in India vis a vis USA, China, etc is India's low expenditure on Research and Development (R&D) activities, which was 0.7 per cent of its GDP in 2020. However, this is not the only reason. The procedural delays and complexity of the process is another cause for low patents in India. The average pendency for final decision in acquiring patents in India is 42 months as of 2020. This is much higher than 20.8, 20, 15.8 and 15 months respectively for USA, China, Korea and Japan (Figure 11). Note that average pendency for final decision in acquiring patents has reduced in India from 64 months in 2017 to 52 months in 2019 and further to 42 months in 2020. Box 4 shows the step-by-step procedure followed in patent application and compares the prescribed time limit with actual time taken.

**Figure 11: Average Pendency times for final decision in 2020**



Source: World Intellectual Property Indicators, 2021

### Box 4: Patent application procedure in India

| Application stages  | Prescribed time limit   | Actual time taken and issue   |
|---|---|---|
| <p>Once the patent application is filed, a request for examination can be filed anytime within 48 months from the date of filing, although it is usually filed along with the application.</p>  |   |   |
| 1.  | <p><b>Publication:</b> Once the application has been filed, it is published by the Controller.</p>  | <p><b>18 months</b></p> <p>The reason for granting this amount of time is to allow the applicant time to withdraw it.</p>   |
| 2.  | <p><b>Reference to an Examiner:</b> Examiners are officers appointed by the Controller to conduct a formal as well as a substantive examination of the invention.</p>   | <p><b>1 month</b> from the date of publication.</p>   |
| 3.  | <p><b>First Examination Report:</b> The examiner must submit an examination report to the Controller, after which the First Examination Report (FER) is issued by the Controller to the applicant.</p>              | <p><b>3-5 months</b></p> <p>The Examiner must submit the FER to the Controller within 1-3 months from the date of receipt. The Controller must then issue the FER to the applicant within 2 months.</p> |
| <p>After the FER has been issued, the applicant has 6 months to provide its responses to the Controller.</p>  |   |   |
| 4.  | <p><b>Hearing:</b> Controller must notify and conduct a hearing to determine the validity of responses to the FER and any outstanding objections which may not have been adequately addressed by the applicant.</p> | <p><b>No time limit has been prescribed for the completion of this step</b></p> <p>The hearing is usually completed within <b>6-9 months</b> from the date of receiving responses to the FER.</p>       |
| <p>After the hearing, the applicant must submit written submissions and the relevant documents (including any additional information, explanations, evidence and amendments required pursuant to the hearing) within fifteen days from the date of hearing.</p> |   |   |



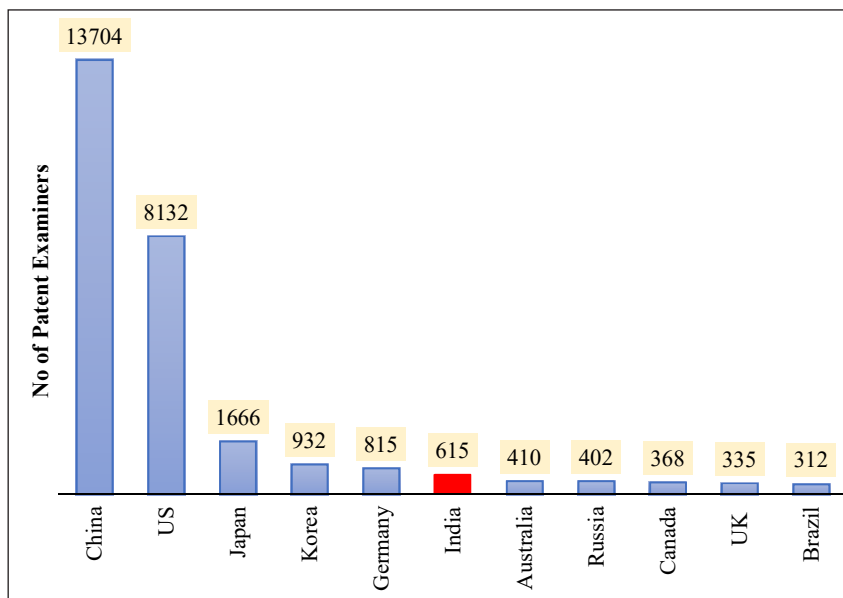
|   |   |  |   |
|---|---|--|---|
| 5.  | <b>Pre-grant Opposition:</b><br>The Controller notifies the applicant of any oppositions received in relation to the application                                    | <b>No time limit has been prescribed for the completion of this step.</b><br><br>To allow for objections, a minimum of <b>6 months</b> is provided subsequent to publication before a patent is granted. | Notification is typically provided <b>immediately</b> .   |
| After details of the pre-grant opposition have been notified, the applicant is required to submit a reply statement accompanied by appropriate evidence within three months from the date of notice. After submission of the reply the Patent Office needs to take the following steps. |   |  |   |
| 6.  | <b>Opposition Hearing:</b> The Controller after hearing the parties (if requested) considers the evidence and takes a decision as to the validity of the opposition | <b>1 month</b> from the completion of proceedings  | Typically, this takes around <b>3-4 months</b> .  |
| 7.  | <b>Grant:</b> The patent is granted and published once (i) all FER responses are accepted and (ii) no pre-grant oppositions are pending                             | <b>No time limit prescribed for the completion of this step</b>  | <b>4-6 months</b> from the completion of all proceedings.<br><br>Where there is no hearing, grants are typically issued <b>within 12 months</b> from the date of submission of responses to the FER |

Source: Survey Estimates

9.63 Box 4 and Figure 11 show that the time taken for the first step, i.e. publishing the application by the controller is currently 18 months in India, as compared to 15.4, 14.4, 11.1, 10.2 months respectively in US, China, Korea and Japan. In order to reduce the time taken in the application process of patents, prescribed time limits for the first step may be reduced to 14-15 months bringing it in line with US and China.

9.64 Secondly, delay in India's patent application is also due to the low number of patent examiners in India. The number of patent examiners in India in 2020 were 615 as opposed to 13,704 in China, 8,132 in United States and 1,666 in Japan (Figure 12). This leads to huge delay in receiving First Examination Report (FER) delaying the whole process. This was also noted by the Parliamentary Standing Committee on Commerce's Review of Intellectual Property Rights Regime in India (2021). Hence, there is an urgent need to increase the number of patent examiners.



**Figure 12: Number of patent examiners in 2020**

Source: World Intellectual Property Indicators, 2021

9.65 Another issue which leads to delays in the process is that there is no time limit prescribed in the statute for controller to conduct a hearing to determine the validity of responses to the FER and any outstanding objections which may not have been adequately addressed by the applicant. It was found that this usually takes about 6-9 months. Additionally, the decision after the opposition hearing by the controller which should usually happen in 1 month typically takes about 3-4 months. Therefore, a fixed timeline for grant after the opposition hearing should be put in place.