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INDUSTRY OUTLOOK

AIRLINES INDUSTRY: PROSPECTS AND CHALLENGES

28 April 2022

Introduction

The Airlines Industry is possibly among the most affected industry (others are tourism, travel & entertainment, hotels etc.) that is still reeling under pressure, starting from the Covid-19 pandemic. The impact might further aggravate because of geopolitical dynamics, including the ongoing war between Russia and Ukraine. For instance, the upward pressure on crude oil price has hiked the aviation turbine fuel (ATF) prices. Further, in terms of air passenger traffic, January 2022 experienced a collapse due to the increase in Omicron cases.

While Omicron cases subsided, the potential fear of further new variants cannot be ruled out. According to the CAPA forecast, the Indian airlines will fly between 8.0 crore – 9.5 crore passengers domestically in the FY 22. The expected loss for the industry is also revised downwards to around \$3.5 billion.



In this backdrop, the report is structured as follows: First, it provides a brief backdrop to the challenges faced by the industry since the onset of the Covid-19 pandemic; thereafter certain initiatives undertaken by various government entities (e.g., Ministry for Civil Aviation) are discussed; subsequently, the current challenges faced by the industry are probed, and finally, it explores and examines the future outlook and places matters in perspective.

Background:

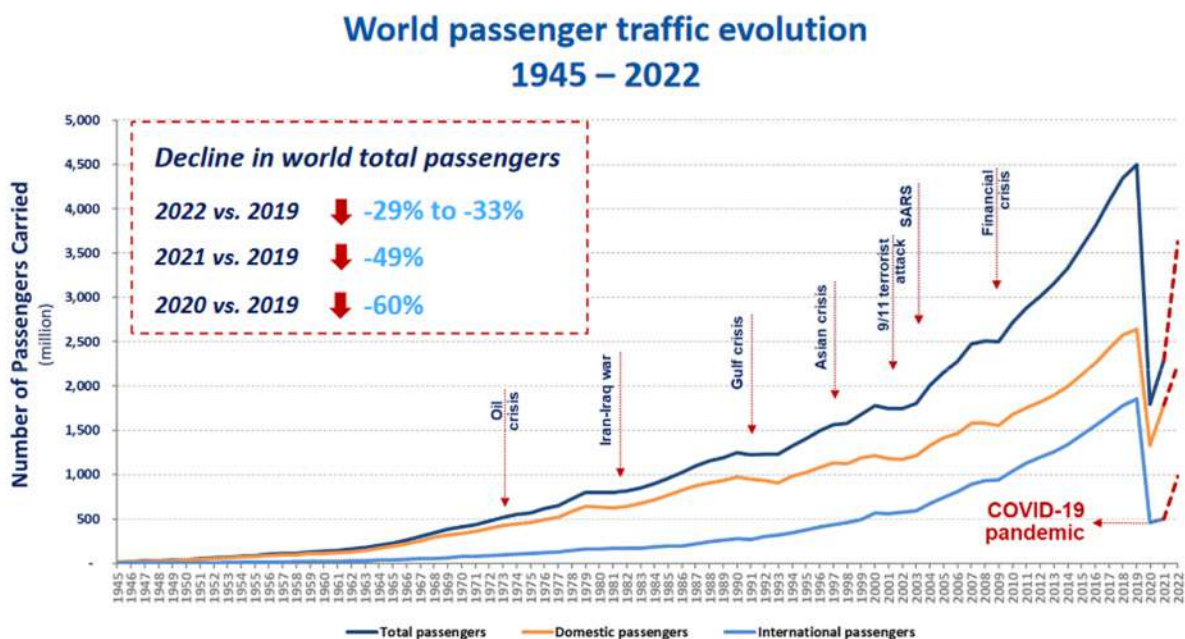
I. Covid-19 pandemic has created a havoc for the industry

While the airline industry was going through a reasonably satisfactory performance before FY20, it was one of the hardest hit after the Covid-19 pandemic occurred because of the severe restriction on movements. In 2020, industry global revenues totaled \$328 billion, around 40 percent of 2019, which was also same as in 2000, in nominal terms. It was expected that the industry will return to its 2019 position not before 2024.[1] The estimated loss for the industry is around \$4.1 billion in the current fiscal (2021-22), with another \$3.9 billion losses reported in the last fiscal.[2] The losses can increase further due to volatile Brent crude prices, which have been aggravated due to heightened geo-political issue following the Russia-Ukraine tussle.

The COVID-19 impact on world scheduled passenger traffic for year 2020 vis-à-vis 2019 is manifested in the following aspects:[3]

- Overall reduction of 50% of seats offered by airlines.
- Overall reduction of 2,703 million passengers (-60%).
- Approx. USD 372 billion loss of gross passenger operating revenues of airlines.

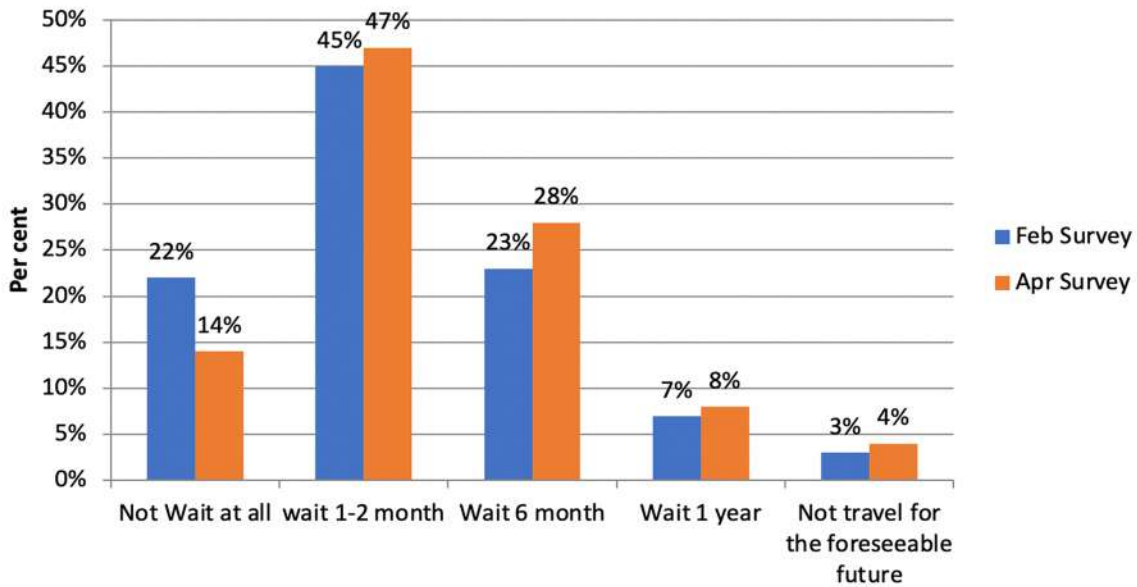
Fig 1: World passenger traffic collapses with unprecedented decline in history



Source: "Effects of Novel Coronavirus (COVID-19) on Civil Aviation: Economic Impact Analysis (15 Feb'22)
https://www.icao.int/sustainability/Documents/Covid-19/ICAO_coronavirus_Econ_Impact.pdf

After the second wave and subsequent to the advent of Omicron; the supply side risks increased substantially, which was manifested in shortage of crucial intermediate inputs globally e.g., semiconductor, chips, among others. The demand risks have gradually subsided as revealed by the moderate pick-up in traffic, but such risks are contingent on the emergence of any other variant of Covid. In FY2021, of the approximately 700 aircraft in the Indian airline fleet, around 300-350 aircraft (200-250 domestic and 100 international) were surplus to requirements. In 1HFY2022 there will continue to be the equivalent of at least 250-300 aircraft grounded.[4]

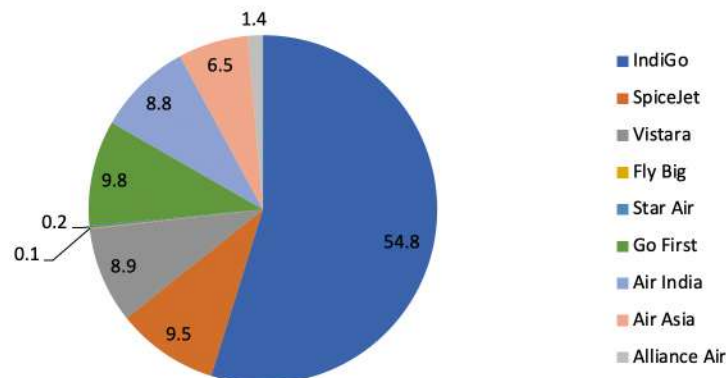
Fig 2: Passenger Survey in Feb & April 2020 by IATA



Source: IATA Covid-19 Passenger Survey.

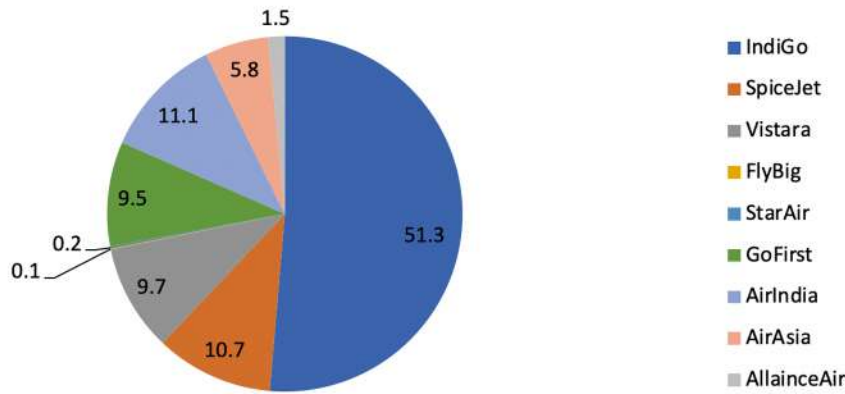
Despite humongous Covid challenges faced by the Airlines industry; the International Air Transport Association (IATA) forecasts that India will become the third-largest aviation market in terms of passengers by 2024.[5] One positive development is that traffic resumed to a pre-Covid level of normalcy and the Omicron impact remained range-bound. A comparison of market share of major players was undertaken between May 2021, February 2022, and March 2022 (Fig.3 , Fig 4 and Fig.5). It is interesting to observe that while in Feb'22 IndiGo's market share marginally declined, Spice Jet's market share increased marginally. However, IndiGo's market share has again regained in March 2022 [54.8 per cent], whereas SpiceJet's market share has tumbled marginally [from 10.7 per cent to 9.5 per cent]. There is an increase of market share of Vistara's in February 22 to around 9.7 per cent from 4.60 per cent in May 2021. But it has declined to 8.9% in March 2022. Air India's market share declined from 20.30 per cent in May 2021 to 11.1 per cent during February 2022 and further to 8.8 in March 2022. There are some emerging players like GoFirst, FlyBig, Star Air, etc.

Fig 3: Market Share of Major Players in March'2022(%)



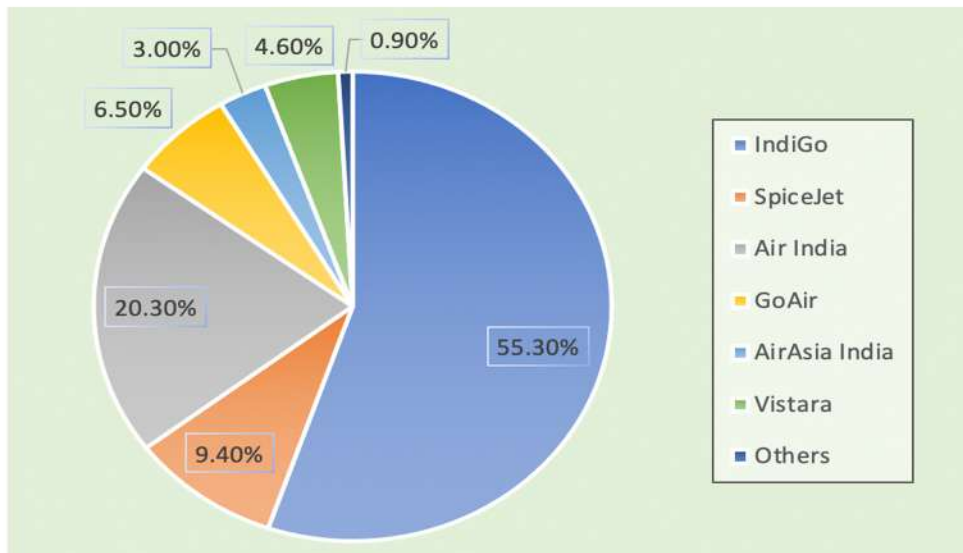
Source: Directorate General of Civil Aviation [DGCA].

Fig 4: Market Share of major players in Feb'2022(%)



Source: DGCA

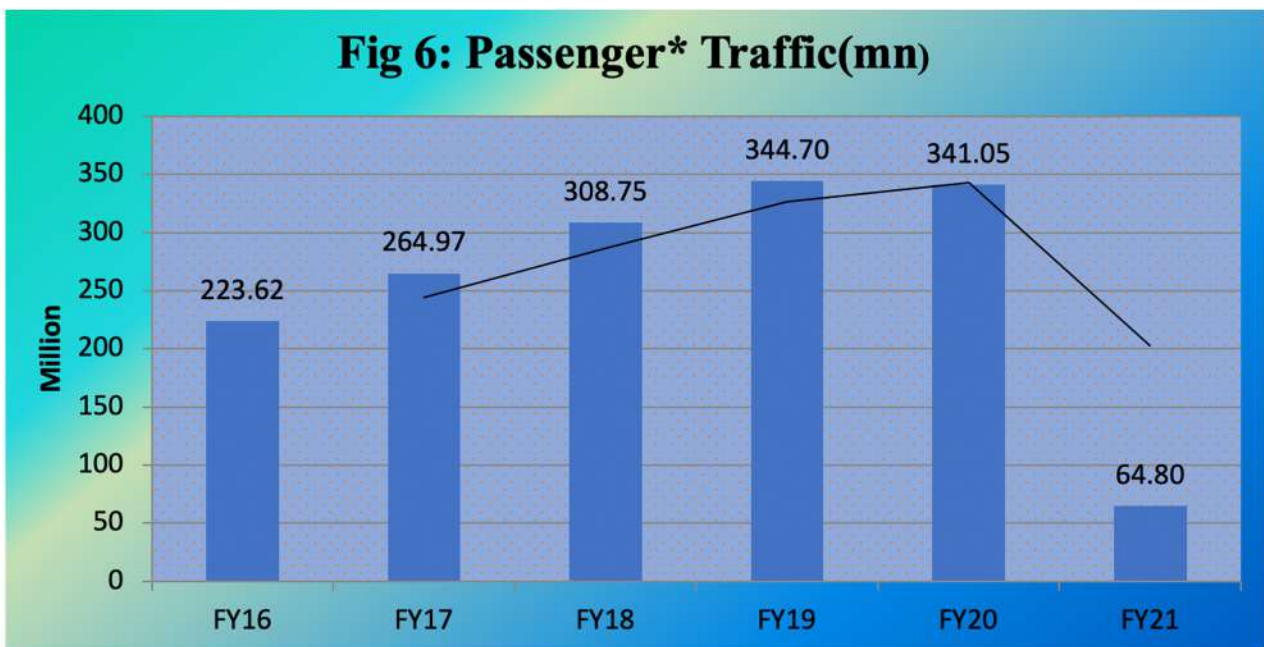
Figure 5: Market Share of major Players (%) [May 2021]*



*According to latest data by DGCA; Source: Directorate General of Civil Aviation ; [https://www.dgca.gov.in/digigov-portal/?page=jsp/dgca/InventoryList/dataReports/aviationDataStatistics/airTransport/domestic/airTraffic/May2021R.pdf&main4264/4206/sericename](https://www.dgca.gov.in/digigov-portal/?page=jsp/dgca/InventoryList/dataReports/aviationDataStatistics/airTransport/domestic/airTraffic/May2021R.pdf&main4264/4206/sericename;); p-4.

In FY21, airports in India pegged the domestic passenger traffic to be ~105 million, a 61.66 per cent year-on-year (YoY) decline, and international passenger traffic to be ~10 million, an 84.78 per cent YoY decline, over the fiscal year ended March 31, 2020.[6] The airlines industry has witnessed a huge downfall of more than 60 per cent in domestic passengers in FY21 as compared to FY20 as illustrated in the figure below (Figure 5). The corresponding fall in international passengers was even greater reaching almost 85 per cent.

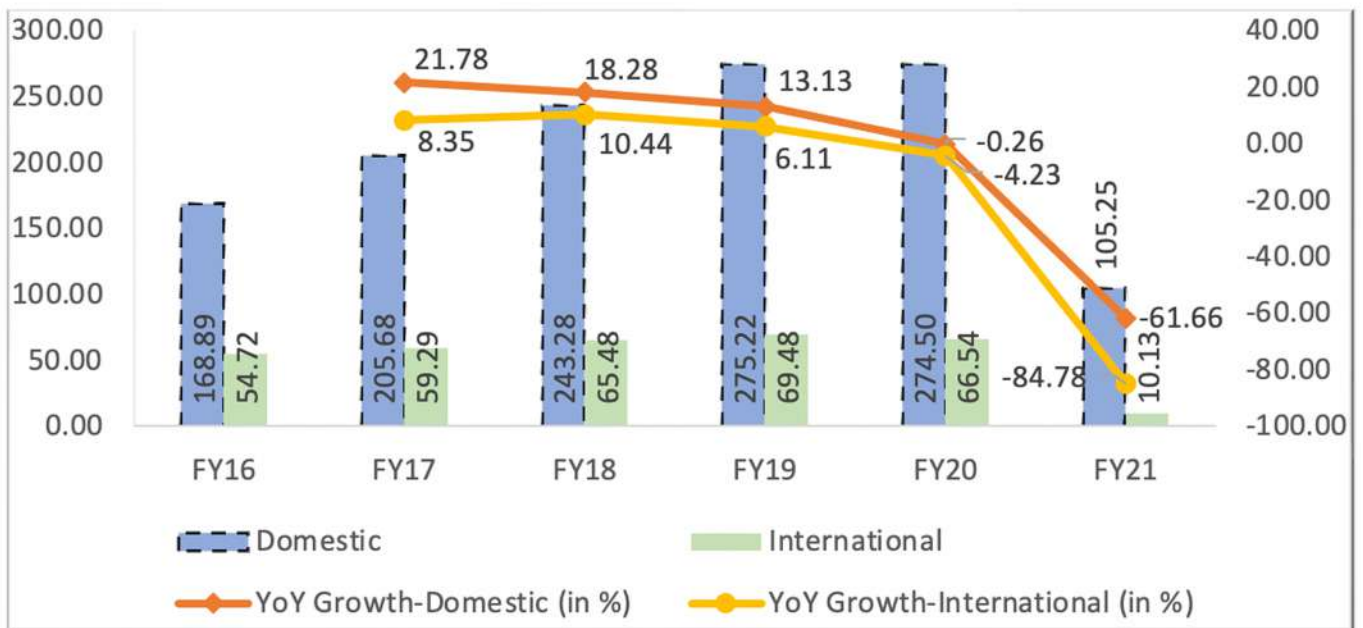
Nevertheless, the number of airports in India increased from 74 since 2014 to 140 until 2021, and is further expected to increase to 220 by 2025. With approximately Rs. 93,000 crore capex pipeline India is likely to see both greenfield and brownfield airports in the next couple of years.[7] The Aircraft fleet is also likely to increase from 710 to 120 each year together with the development of the share of wide-body aircraft for greater long-haul connectivity.



*passenger - Domestic + International, # CAGR is until FY20, ^ - until December 2020

The passenger traffic (domestic + international) increased steadily until FY19, after it declined in FY20 due to Covid impact. Subsequent to the pandemic, the estimate stood relatively modest in FY21. From the following Figure 5, it can be observed that both global and domestic YOY growth declined in FY21.

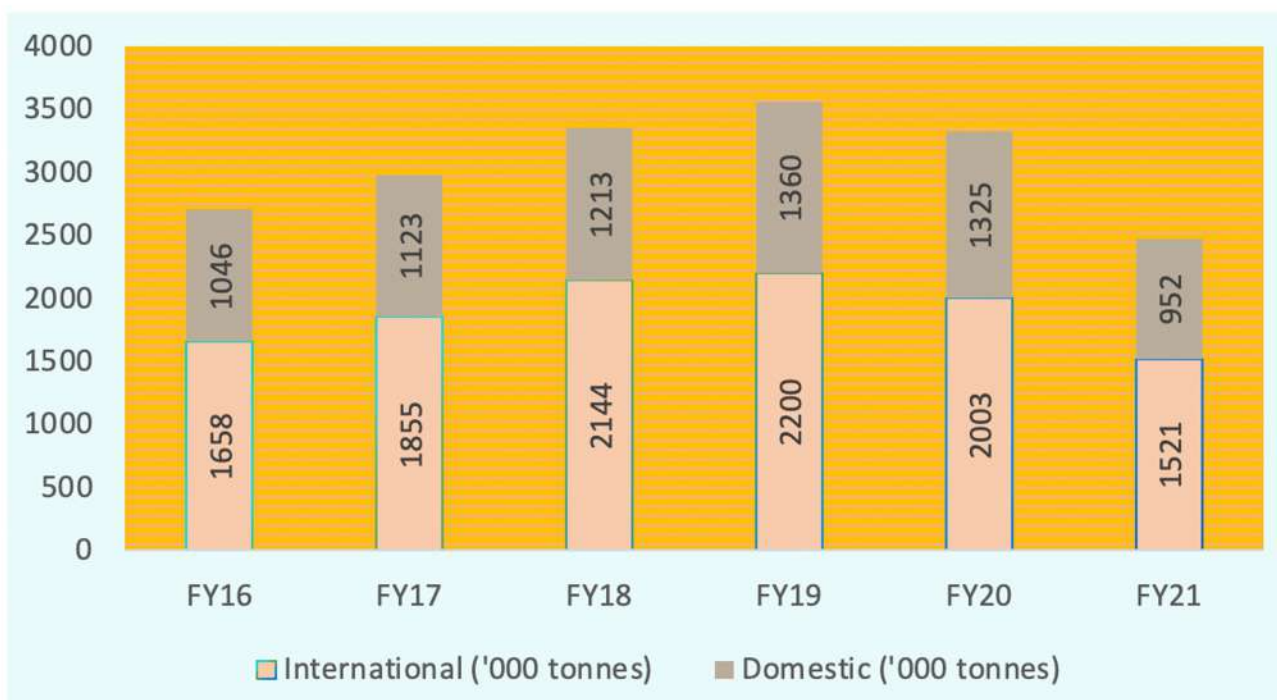
Figure 7: International and Domestic Passenger Traffic (in million)



Source: Indian Aviation Industry, Indian Brand Equity Foundation (2021).

The freight carriage was also not encouraging (Figure 7). The international freight traffic from India reduced by almost 24 per cent in FY21 compared to FY20. The corresponding decline for domestic freight traffic was about 28 per cent for the corresponding years.

Figure 8: International and Domestic Freight Traffic ('000 tonnes)



Source: Indian Aviation Industry, Indian Brand Equity Foundation (2021).

However, the emergence of Akasa Air and Jet Airways (India) Ltd; is generating some optimism in this loss-making industry. Akasa Air is likely to launch its first commercial flight around June 2022. Jet Airways under the new ownership is also hoping to restore the air operator certificate (AOC) soon. Among Indian Airlines, IndiGo is at the forefront in terms of the international weekly departures (505), followed by Air India (361), Air India Express (340), SpiceJet (130), GoFirst (74) and Vistara (56).[8]

According to the DGCA website, passengers carried by domestic airlines during Jan-Feb 2022 were 141.04 lakhs as against 155.61 lakhs during the corresponding period of previous year thereby registering annual growth of - 9.36 % and monthly growth of -1.68 %. [9]

However, in March'2022, passengers carried during Jan-March'2022 were 248 lakhs as against 233.83 lakhs during the corresponding period of previous year, therefore registering annual growth of 6.06 per cent and monthly growth of 36.74 per cent. [10]

Growing Drone Industry

Drones can generate substantial employment and economic growth due to their outreach to remote and inaccessible areas. According to a media coverage by the "Business Standard: Wings India" drones and their components manufacturing industry may see an investment of over ₹ 5000 crore over the next three years. Moreover, the annual sales turnover of the drone manufacturing industry may increase from ₹ 60 crore in 2020-21 to over ₹ 900 crore in 2023-24 and the drone manufacturing industry can generate more than 10,000 direct jobs over the next three years. [11]

Additionally, the drone-based service delivery industry including operations, logistics, traffic management, data processing, etc. also will increase to over ₹30,000 crore in the next three years and generate more than five lakh jobs. Strategically, India has banned certain foreign imported drones (barring foreign imported drone components) partly towards a move for Atmanirbhar Bharat scheme, and partly on the ground of security concerns; except for R&D and defence purposes.

The Production Linked Incentives (PLIs) schemes are a right move for the growth of the drone industry; whereas total incentives of ₹120 crore spread over three financial years; the qualification norm is that manufacturers' annual sales turnover should be above ₹2 crore and ₹50 lakh for drones and drone components.

Brighter Prospects- Simulator Industry

Simulators are machines that reconstruct a cockpit environment and also provide training to pilots before flying a plane. In other words, it is a piece of equipment that is designed to represent real conditions, for example in an aircraft or spacecraft. The global flight simulator market is projected to grow from \$3.67 billion in 2021 to \$5.75 billion in 2028 at a CAGR of 5.99% in forecast period, 2021-2028. [12] Post Covid-19, flight simulator training providers are focusing on new strategies /redesigning operation structures. The growth of this segment is lucrative going forward, given the need of commercial and readily available active pilots. While the average retirement age of Pilots in Middle East is around 45 years, in European market it is even less. India has considerable growth potential in this segment, and many companies are foraying in making software parts since this segment is high-tech, niche product.

II. Institutional Initiatives

The Ministry for Civil Aviation formed three committees to get advice on critical issues of the industry. The three advisory committees for airlines, airports and maintenance and repair organisations and flight training institutes, comprise CEOs and promoters. The group will meet once every month to sort out regulatory and financial issues.[13] According to the announcement in the Union Budget 2021-22, the government has lowered the custom duty from 2.5 per cent to zero per cent on components or parts, including engines, for manufacturing of aircrafts by public sector units of the Ministry of Defence.[14]

Additionally, under Emergency Credit Line Guarantee Scheme (ECLGS) 3.0, the current ceiling of ₹500 crore of loan outstanding for eligibility under ECLGS 3.0 is to be removed, subject to maximum additional ECLGS assistance to each borrower being limited to 40 per cent or ₹200 crore, whichever is lower. ECLGS 3.0 was extended up to 30th Sept. 2021 or till guarantees for an amount of ₹3 lakh crore were issued. The last date of disbursement under the scheme was extended to 31st Dec. 2021.[15]

Buoyed by the rising volume of imports and exports (since 30 per cent of Indian trade is airborne), the National Air Cargo Policy Outline of the Government of India held that the Indian air cargo and logistics could become the most efficient, and the cost and time-effective globally by end 2030. In an attempt to provide an impetus to the aviation industry, the Government of India plans to invest up to \$ 1.83 billion to develop airport infrastructure along with aviation navigation services by 2026. The country aims to open 100 new airports by 2024, of which 30 airport projects are already in progress across various regions of India. According to the Ministry of Commerce and Industry data, India has envisaged increasing the number of its airports to a total of 190-200 by 2040.

Towards this end, the Airports Authority of India (AAI) has announced a few developments in Indian Airports – construction of a new airport on a green field site in Hollongi, Arunachal Pradesh (November 2022), new integrated passenger terminal building expansion of Tiruchirappalli & Pune Airport (March 2022), Guwahati International Airport (June 2022), Maharaja Bir Bikram Airport (Early 2021, which is about to be complete) and major expansion of Surat Airport (December 2021).[16] However, the targets might be stretched due to the pandemic. The Gol has also undertaken many measures for fostering growth of the drone industry; including liberalized Drone Rules, 2021 (notified on 25th August, 2021), drone airspace map (published on 24th September 2021), PLI schemes for drones, UAS Traffic Management Policy Framework (published on 24th October 2021) and monetary grant programme for purchase of agricultural drones.

Monetising Assets

As per the National Monetisation Pipeline (NMP), 25 AAI airports have been earmarked for asset monetisation between 2022 and 2025. Mumbai International Airport conducted roadshows with global bond investors on February 22 and 23 as it looks to re-charge plans for an overseas bond offering amidst volatility in international markets. AAI has formed joint ventures in seven airports. Recently, it awarded six airports: Ahmedabad, Jaipur, Lucknow, Guwahati, Thiruvananthapuram, Mangaluru, for operations, management and development under PPP for a period of 50 years.[17]

III. Industry Risk

The Airlines industry is yet to come out of the woods from the crippling impact of the Covid-19 pandemic. Further, the catastrophic impact of Russia's invasion of Ukraine has created humongous geo-political instability. As a fallout of this development, travellers between the North American countries and South Asian countries have been impacted severely by airspace closures; for instance, Delta Airlines, Air Canada and Virgin Atlantic have cancelled many flights to the Indian sub-continent. Some flights lost access to Russian airports; and they had to go further away from Russia, requiring technical stops for fuelling as well as enhanced flight time has substantially pushed up costs.



Airline travel is ramping up for the spring and summer seasons, but a shortage of pilots and crew is causing a surge in flight cancellations. JetBlue is the latest airline to slash its schedule due to staffing challenges, followed by similar cuts by Alaska Airlines last week. Some Delta Air Lines pilots are also protesting their schedules, holding they are overworked.[18] However, India has acquired certain competitive advantages due to this tussle between Russia and Ukraine; for instance, certain leading Airlines plan to increase flights to North America, and will add more flights to Europe and the US.

Nevertheless, the most disturbing aspect is the skyrocketing prices of the crude oil as the conflict deepened and sanctions imposed by the EU, US and other countries including Singapore on Russia. Air Turbine Fuel (ATF) attracts the highest taxes in India compared with the rest of the world, and at present, it costs twice as much as before the Covid-19 pandemic. Fundamentally, ATF is derived from Brent crude, which is imported by India from the Oil Producing and Exporting Countries (OPEC), and hence its price is affected by fluctuation in global crude oil prices.

The Indian carriers are the largest users of ATF, and being adversely impacted by the volatile and increasing ATF prices. The ATF price structure contains crude oil import price, import duties levied by the government and the cost of refining crude. With import duty on crude, the marketing margin is added by the Oil Marketing Companies (OMCs). Thereafter, the state governments impose taxes, throughput charges, excise duty and customs duty. On March 2022, the Crude oil price stood at (Indian Basket) \$112.87/barrel (\$/bbl), which shot up from Feb'22 at \$94.07/barrel (\$/bbl). At present, the Central Basic Excise Duty (BED) on ATF is 11 per cent, basic Custom Duty (BCD) is 5 per cent and Additional Custom Duty (ACD) is 11 per cent. [under the list of Non-GST goods].^[19]

Overall, ATF constitutes 45 per cent of the cost of operating an airline and that the present situation has led to a massive increase in oil prices. In addition, there are varied levels of state taxes and VAT which further increase the cost. There is also an exploration if ATF could be brought under the GST ambit. However, Union and certain states are acting on taxation regimes and 12 additional states and UTs are in the process of bringing VAT and ATF rates in the bandwagon of 1 to 5 per cent. ^[21]

Historical / Previous ATF / Jet fuel price in New Delhi

MONTH	RUPEES ₹		DOLLARS \$	
	₹ / KL	₹ / Lit.	\$ / KL	\$ / Lit.
01-Apr-22	112924	112.924	1125.25	1.12525
01-Mar-22	93530	93.53	930.77	0.93077
01-Jan-22	76062	76.062	756.23	0.75623
01-Dec-21	77532	77.532	817.37	0.81737
01-Oct-21	72582	72.582	738.28	0.73828
01-Sep-21	66527	66.527	679.56	0.67956
01-Aug-21	69136	69.136	698.70	0.6987
01-Jul-21	68262	68.262	700.89	0.70089
01-Jun-21	64118	64.118	666.62	0.66662
01-May-21	61690	61.69	615.08	0.61508
01-Apr-21	58374	58.374	606.10	0.6061
01-Mar-21	59400	59.4	614.07	0.61407
01-Feb-21	53795	53.795	560.66	0.56066

Source: <https://www.petroldieselpri.com/atf-aviation-jet-turbine-fuel-oil-price-in-india-and-cities>

The historical prices for New Delhi is listed above, the prices have moved to 112924 ₹/KL in April 2022 for domestic flights to 1125.25 \$ /KL for international flights. Volatile exchange rate and aviation turbine fuel (ATF), which accounts for roughly half of the total costs, has risen continuously. From the following figure, it can be observed that ATF prices had shown an increasing trend during June'21-July'21. However, the increase was not as large as seen in recent times (April 2022) following heightened geopolitical tension and the war between Russia and Ukraine (refer the above mentioned Table).

Figure 9: Aviation Turbine Fuel Prices (per kilolitre in Delhi)



Source: <https://www.livemint.com/news/india/air-travel-likely-to-get-costlier-as-jet-fuel-prices-soar-11625128375296.html> *Note - as on 1st of every month

ATF Prices in Metros (Rupees/Kl) for Domestic Airlines [Applicable from 1 April 2022]

Metros	Prices
Delhi	112,924.83
Kolkata	117,353.71
Mumbai	111,690.61
Chennai	116,583.71

ATF Prices in Metros (Dollars/Kl) for Domestic Airlines on International Run [Applicable from 1 April 2022]

Metros	Prices
Delhi	1,125.25
Kolkata	1,165.50
Mumbai	1,121.67
Chennai	1,120.44

Source: IOCL; <https://iocl.com/aviation-fuel>

Many airlines have suffered due to the lack of timely fund infusion. The stoppage and go-slow of flights, and the severe hit on business due to the pandemic led to a build-up of the outstanding amount to many vendors and suppliers. Accordingly, long-time payments could not be done/ were withheld. Certain airlines were also stuck in legal battles. In this grim scenario, motivating employees remained a major challenge.

Certain challenges were also visible in adopting new technology; for instance, DGCA has barred ninety Spice Jet pilots from flying Boeing 737 MAX planes, and highlighted that they need to be retrained after faults were detected at the simulator centre for training. The faults were identified during a surveillance check at the Greater Noida-based facility. The surveillance found that the stick shaker^[22] of the simulator was non-functional. Skill-up gradation with the advent of new technologies, are therefore, posing certain challenges; though such issues can be a part of a process of further quality enhancement.

IV. Way Forward

The Airlines industry that was already reeling under stress due to Covid-19 pandemic received a further setback due to the Russian-Ukraine war. This has generated huge uncertainty for the Aviation Turbine Fuel (ATF) prices [discussed at length in the "Industry Risk" Section]. Given the evolving situation, the pace of resumption of international operations by other countries, the spread and virulence of Covid-19 across countries and consumer confidence in airlines, it could take more months to recover from the current situation to come back to the pre-Covid-19 levels of travel demand.

Meanwhile the airlines need to stress better capacity, better fleet, focus on quality and more effective use of their network to reduce unit cost and distribute fixed cost for the airline with improved load factor and yields. With a proper eco-system and enabling policies aimed at quality, cost and passenger interest, the ascendant working group and widening middle-class demography, India could become the third-largest aviation market by 2025.

The State governments and the Centre have already initiated steps to combat the disease. The Ministry of Civil Aviation (MoCA), maintained that the industry was returning to pre-Covid levels prior to the Omicron hit and airlines had reached 90 per cent of the pre-pandemic peak traffic in November 2021. The Centre for Asia Pacific Aviation (CAPA) India, in a report titled India Airline Outlook 2022, indicated that 2022 is expected to see a surge of 52 per cent in domestic and 60 per cent in international air traffic. The major factors that will drive the pace of recovery will be the fruitful execution of government initiatives, new private investments (including segments like drone & components, simulators etc.) and opening up of regional airports. There are some positives for the industry in 2022 with Tata Sons finally taking over Air India and Jet Airways resuming its operations.

The privatisation of Air India will help infuse technology, capital, and the private sector's management practices into the system. A major driver of growth for the aviation industry over the past few years has been UdeDesh ka Aam Nagrik (UDAN) that enhanced the regional air connectivity from un-served and underserved airports by making air travel affordable to the masses. MOCA presently has set a target of operationalizing as many as 100 un-served and underserved airports by 2025 under UDAN. Out of that, 61 airports have already been operationalised. As passenger traffic nears pre-pandemic levels and with ambitious targets set by the government, it appears that 2022 may prove to be a defining period for the sector.

Omicron might affect the growth a bit, but the overarching scenario in 2022 will be the key in determining the long-term outlook for Indian aviation.^[23] Going forward, there are certain positive developments for the Indian airlines industry, for instance, the disruption in the Indian airlines due to Akasa airlines will possibly be seen from 2024-25 onwards once it acquires scale and competitiveness with focus on profitability rather than market share.

It is encouraging to note that Boeing (7 April 2021) [24] has forecasted that strong aviation growth in India due to the country's growing economy and an expanding middle class, fueling demand for more than 2,200 new jets valued at nearly \$320 billion over the next 20 years. Indian carriers have opportunities for growth in international markets, according to the Boeing forecast. Several airlines have started or plan to start non-stop routes between India and North America to serve a passenger preference for direct service flights.

Other insights from Boeing's market forecast include the following aspects: [25]

- In India, single-aisle airplanes such as the 737 family will continue to serve growth in domestic as well as regional markets, such as short-haul flights from India to the Middle East and Asia-Pacific regions. Indian operators will need 1,960 new single-aisle airplanes over the next 20 years.
- To meet long-term demand for long-haul connectivity, especially to North America and Europe, Boeing forecasts a 20-year market for 260 new wide-body airplanes such as the 787 Dreamliner, an increasingly popular model in India.
- India air cargo growth is expected to average 6.3% annually over the next 20 years, driven by India's manufacturing and e-commerce sectors. The "Make in India" initiative is expected to support the above-global average cargo traffic growth in the Indian domestic market.
- India's civil aviation industry will require nearly 90,000 new pilots, technicians and cabin crew personnel during the 20-year forecast period, with a growing number of women choosing to pursue aviation careers.

In sum, while the medium term civil aviation growth scenario is reasonably optimistic, there continue to be some persisting headwinds (e.g., high operating costs with fuel accounting for 35 per cent of the total expenses, high debt levels, regulatory changes, rupee volatility, deferred establishment of modern infrastructural facilities) in the pursuit of what Professor W.W. Rostow termed in a different context, "take-off into self-sustained growth". There are, however, growth drivers, such as, a steady macro-economic growth, the ascendancy of the middle class, healthy competition among the airlines, strengthening infrastructure and a conducive policy frame at the national level.

ENDNOTES

1. "Back to the future? Airline sector poised for change post-COVID-19", McKinsey (April 2021). Available at <https://www.mckinsey.com/industries/travel-logistics-and-infrastructure/our-insights/back-to-the-future-airline-sector-poised-for-change-post-covid-19>
2. "Back to the future? Airline sector poised for change post-COVID-19", McKinsey (April 2021). Available at <https://www.mckinsey.com/industries/travel-logistics-and-infrastructure/our-insights/back-to-the-future-airline-sector-poised-for-change-post-covid-19>
3. *ibid.*
4. "Key Trends in Indian Aviation in FY2022: Impact of Second Wave"(May 2021)CAPA India <https://www.capaindia.com/blog/trends2022/>
5. "India to become world's third largest aviation market around 2024: IATA"(25 October 2018) Hindustan Times; <https://www.hindustantimes.com/india-news/india-to-become-world-s-third-largest-aviation-market-around-2024-iata/story-1zhwhqJxFwBEG3gdWJ1o7M.html>
6. "Indian Aviation Industry", Indian Brand Equity Foundation (2021). Available at <https://www.ibef.org/industry/indian-aviation.aspx>
7. "Up & Up: Airports, Pilots, Passengers, Cargo, Drones" (7 April 2022); Column by Jyotiraditya M Scindia; Union Civil Aviation Minister, Times of India.
8. "Airlines emerging from covid set to fly into fresh competition" (6 April 2022) Livemint.
9. <https://www.dgca.gov.in/digigov-portal/?page=jsp/dgca/InventoryList/dataReports/aviationDataStatistics/airTransport/domestic/airTraffic/Feb2022.pdf&main4264/4206/sericenamehttps://www.dgca.gov.in/digigov-portal/?page=jsp/dgca/InventoryList/dataReports/aviationDataStatistics/airTransport/domestic/airTraffic/Feb2022.pdf&main4264/4206/sericename>
10. <https://www.dgca.gov.in/digigov-portal/?page=jsp/dgca/InventoryList/dataReports/aviationDataStatistics/airTransport/domestic/airTraffic/March2022.pdf&main4264/4206/sericename>
11. Interview with Amber Dubey, Joint Secretary the Ministry of Civil Aviation and head of the drones division by Shobha John.[Business Standard: Wings India:A Commercial Feature].
12. <https://www.fortunebusinessinsights.com/flight-simulator-market-102592>
13. "Jyotiraditya Scindia forms committees to advise on civil aviation sector", Business Standard (21st July 2021). Available at https://www.business-standard.com/article/economy-policy/jyotiraditya-scindia-forms-committees-to-advise-on-civil-aviation-sector-121072100355_1.html
14. See "Union Budget 2021: Major Highlights for The Aviation Industry Budget Proposes More Tax Incentives for Aircraft Leasing and Financing Customs Duty Reduced on Aviation Sector Components Monetisation of Airports Proposed" (9 February 2021) PIB Delhi <https://pib.gov.in/PressReleasePage.aspx?PRID=1696500> Boost to Krishi Udaan scheme "Indian Aviation Industry", Indian Brand Equity Foundation (2021). Available at <https://www.ibef.org/industry/indian-aviation.aspx>
15. See <https://pib.gov.in/PressReleasePage.aspx?PRID=1722846> for more details.
16. "Indian Aviation Industry", Indian Brand Equity Foundation (2021). Available at <https://www.ibef.org/industry/indian-aviation.aspx>
17. <https://www.investindia.gov.in/sector/aviation>
18. Reported by CNN (12 April 2022).
19. Petroleum Planning and Analysis Cell (PPAC)https://www.ppac.gov.in/content/149_1_PricesPetroleum.aspx
20. <https://www.businesstoday.in/industry/aviation/story/aviation-experts-call-for-bringing-atf-under-gst-after-recent-price-rise-328254-2022-04-01>
21. "Up & Up: Airports, Pilots, Passengers, Cargo, Drones" (7 April 2022) , column by the Union Civil Aviation Minister J. M. Scindia; Times of India.
22. Stick shaker is an instrument that vibrates rapidly when the aircraft is stalling, failing to lift itself; Business Standard [14 April 2022].
23. <https://www.thehindubusinessline.com/specials/flight-plan/2022-holds-promise-for-the-airline-sector/article38203299.ece>
24. "India Air Travel Expected to Double in Next Decade" (7 April 2021) Boeing Press Release; <https://www.boeing.co.in/news-and-media-room/news-releases/2021/april/india-air-travel-expected-to-double-in-next-decade.page?>
25. "India Air Travel Expected to Double in Next Decade" (7 April 2021) Boeing Press Release; <https://www.boeing.co.in/news-and-media-room/news-releases/2021/april/india-air-travel-expected-to-double-in-next-decade.page?>

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