

The Economic Ramifications of COVID-19 Pandemic on the Global Aviation Industry

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ABSTRACT

COVID-19 pandemic has triggered an unprecedented global health phenomenon which has drastically altered all aspects of the contemporary life with a diverse range of economic implications for the aviation industry. The primary purpose of research approach adopted in this study is to analyze and study the COVID-19 pandemic's economic repercussions on the global aviation industry. The findings revealed that it's difficult to overestimate how much the COVID-19 outbreak has wreaked havoc on the aviation industry, and the resurgence of aviation industry has been shrouded in mystery. In the baseline recovery scenarios, the aviation industry's revenues in 2022 are projected to surpass \$432 billion, representing 65% of 2019's revenue. From 2022 to 2028, the aviation industry is predicted to grow at compound annual growth rate (CAGR) of 8.9%, reaching a total value of \$1.09 trillion. Furthermore, passenger traffic is anticipated to rebound to roughly 80% of pre-pandemic levels by 2024 totaling \$1.4 trillion, nearly equaling the 2019 pre-pandemic revenue peak of \$1.43 trillion.

1. Introduction

The aviation industry is of utmost importance for the economic prosperity and strategic development of many countries and it plays an irreplaceable role in the global transportation system. It has weathered crises and demonstrated long-term resilience, becoming an indispensable means of transport. Historically, aviation industry has doubled in size every fifteen years and has grown faster than most other industries. Airlines worldwide carried around 4.3 billion passengers in 2018 with 8.3 trillion revenue passenger kilometers (RPKs). Fifty-eight million tonnes of freight were transported by air, reaching 231 billion freight tonne kilometers (FTKs). Every day, almost 12 million passengers and approximately USD 18 billion in commodities are transported by over 100,000 flights. According to ATAG (2018), in 2016, the worldwide aviation industry's overall economic effect (direct, indirect, induced, and tourism-related) was USD 2.7 trillion, accounting for 3.6% of global GDP. There were 1.2 million people engaged in the civil aerospace industry (i.e., manufactures aeroplanes, systems, and engines). Other on-airport jobs employed another 5.6 million individuals.

Aviation industry produced 55.3 million indirect, induced, and tourism-related jobs. Tourism is one of the businesses that strongly rely on aviation industry. Air travel contributes to economic development and poverty alleviation by promoting tourism. Approximately 1.4 billion tourists traverse borders each year, with more than half of them travelled to their destinations by air transportation. In 2016, the aviation business supported about 37 million jobs in the tourism industry, contributing around USD 897 billion to global GDP. Air transport facilitates global trade and e-commerce by allowing manufacturing to be distributed globally. Air transportation was predicted to transport USD 6.8 trillion worth of products worldwide in 2018, accounting for 35% of global trade by value although representing for less than 1% by volume (FAA, 2020).

Therefore, the aviation industry is a crucial sector that requires worldwide attention. The emergence of a pandemic, which is likely to fracture the industry and change its operations, is one of the most prevalent and unprecedented challenges to this significant industry. A series of catastrophes struck the aviation and tourism businesses between 2000 and 2015. The September 11th attacks in 2001, for example, were a huge disruptor. There also came a Severe Acute Respiratory Syndrome (SARS) outbreak in 2003, the global economic crisis in 2008/2009, and the 2015 Middle East Respiratory Syndrome (MERS) outbreak (Gössling et al., 2020). Since 2020, the air transportation sector has been radically impacted by the devastating impact of the COVID-19, which has resulted in the worst health catastrophe in a century and the worst economic disaster since the Second World War. The virus's rapid geographical spread has been one of the features of the COVID-19 pandemic (Lai et al., 2020). Due to the lockdown regulations worldwide during the pandemic, the global aviation industry has been severely hit (Liu et al., 2020). The 2019 outbreak of COVID-19 continues to present a threat to public health and global economy (Huang et al., 2020; Yue et al., 2020). As the pandemic wreaked havoc on many countries' healthcare systems, rigorous public health measures were undertaken across the world (Fan et al., 2021). Many industries have suffered as a result of these policies, but the aviation industry has been practically wiped out (Donthu & Gustafsson, 2020). The COVID-19 pandemic has left an indelible imprint on international travel demand; approximately 90% of the population has been impacted by a sort of air traffic restriction. Deep reductions in passenger revenue and the number of people employed in the aviation industry foreshadow a massive disruption to economies which rely heavily on air transport (Baker, 2020). Hence, the study aims to estimate the economic implications of COVID-19 pandemic on the global the aviation industry.

2. Literature Review

2.1. COVID-19 Pandemic

The year 2020 has been marked by the outbreak of disease called coronavirus (COVID-19). COVID-19 has turned into a fully blown pandemic. The disease was first observed in December 2019 around Wuhan and is caused by Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2) (Andersen et al., 2020). The COVID-19 worldwide pandemic is the most widespread in a century's worth of human history, which is both a critical issue and a tremendous challenge for the whole planet, and it presents a significant danger to human life and health. COVID-19 was proclaimed a worldwide pandemic by the World Health Organization (WTO) on March 11th, 2020, when the new coronavirus, which was unknown to world health officials just three months ago, swiftly spread to over 121,000 individuals throughout Asia, the Middle East, Europe, and the United States (CNBC, 2020). As the most recent worldwide threat, the 2019 coronavirus (COVID-19) pandemic has impacted business operations across the board. The aviation industry is one of the most industries which was affected from the pandemic because the

disease is easily passed among passengers (Maneenop & Kotcharin, 2020). Most airlines came to a standstill as a result of the extraordinary drop in passenger demand (combined with country-specific flight prohibitions); several businesses had to discontinue nearly all operations and ground entire fleets (Sun et al., 2020). The COVID-19 has wreaked havoc on airports, potentially halting progress in developing countries (Adrienne et al., 2020). As a consequence, air traffic has plummeted, forcing airlines to reduce capacity. Many have been shut down by governments in order to stop the virus from spreading, resulting in a significant drop in income. Given the significance of airports in the economic growth of cities, nations, and regions, COVID-19 will have a massive influence on the worldwide economy (IFC, 2020).

Many airlines were in a difficult situation prior to the pandemic (Air Berlin, Monarch Airline, Flybmi, Thomas Cook, etc.) and many of them suspended operations and declared bankruptcy during the epidemic (Flybe, Virgin Australia, Avianca Peru and Brazil, Aeroméxico, etc.). Maneenop and Kotcharin (2020) investigated the pandemic influence on the airline business, and they concluded that if governments trust in market mechanisms and let airline companies to file for bankruptcy, the global supply chain and linked industries will be disrupted. Nonetheless, the aviation economy has shown resilience in the face of enormous setbacks in the past, including energy crises, financial crises, wars, and previous epidemics (Gudmundsson et al., 2021). It's often overlooked that the aviation industry is not only a victim of the COVID-19 pandemic, but also plays a key role in transmission of infection, allowing a local epidemic to become a global pandemic (Chinazzi et al., 2020), As has been reported in the past for a number of other diseases, such as, Ebola (Pigott et al., 2014), seasonal influenza (Khan et al., 2009), Malaria/ Dengue fever (Semenza & Luzzatti, 2014), and SARS/ MERS (Poletto et al., 2016). Global GDP growth was anticipated to be negative in 2020 for the first time since 2008, see Fig. 1.

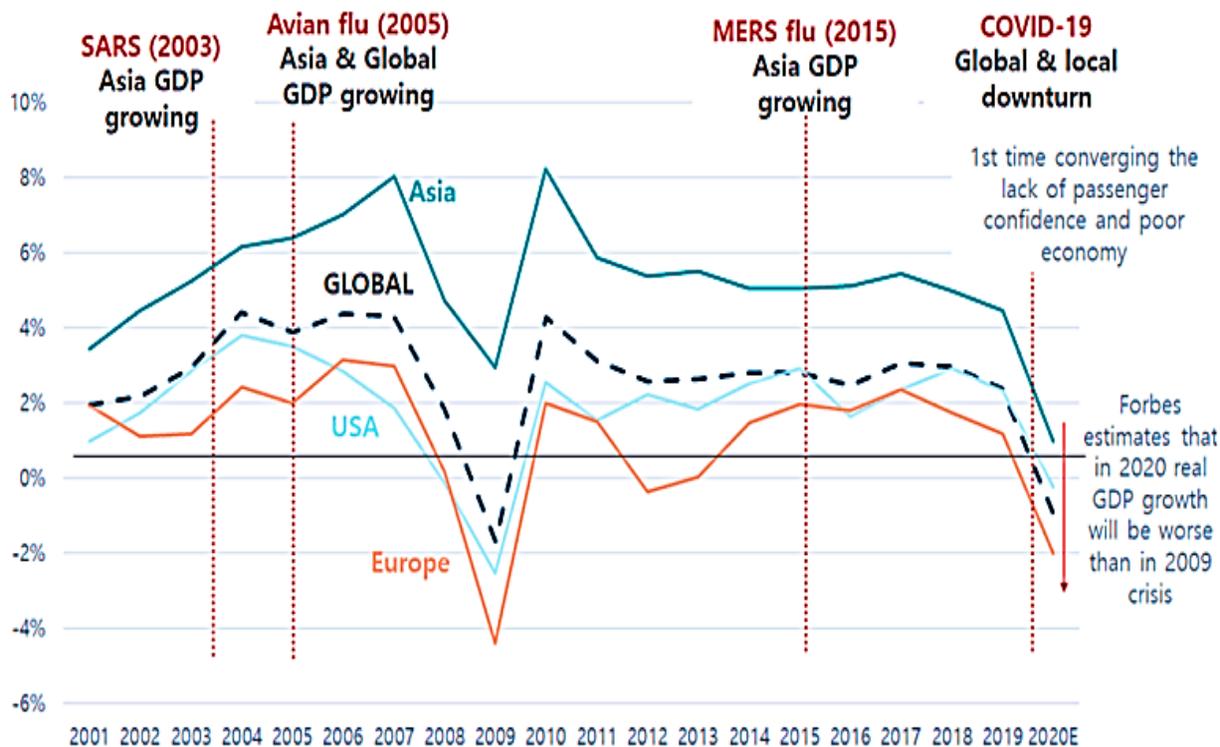


Fig. 1. The Impact of Global Health Crises on the Air Transport Industry (2008-2020)

Source: (ALG, 2020)

2.2. The Worldwide Air Transportation under COVID-19 Pandemic

In comparison to the expected baseline (pre-COVID-19 prediction for 2020), the impact of the COVID-19 crisis removed more than 6.1 billion passengers for the whole year 2020, indicating a 64.6% reduction in worldwide passenger traffic. The drop is 63.3% when compared to the year 2019. International passenger traffic was essentially non-existent in the second half of 2020 after the Great Lockdown in April 2020. In terms of international passenger volume, the year finished with less than 1 billion passengers, a drop of more than 75% compared to 2019. The impact of COVID-19 on world scheduled passenger traffic in 2020, as compared to 2019 levels (ICAO, 2022):

1. Overall reduction of 2,703 million passengers (-60%).
2. Overall reduction of 50% of seats offered by airlines.
3. Approx. USD 372 billion loss of gross passenger operating revenues of airlines. As illustrated in Fig. 2, Europe and Asia/Pacific accounted for over 70% of global international traffic in 2019.

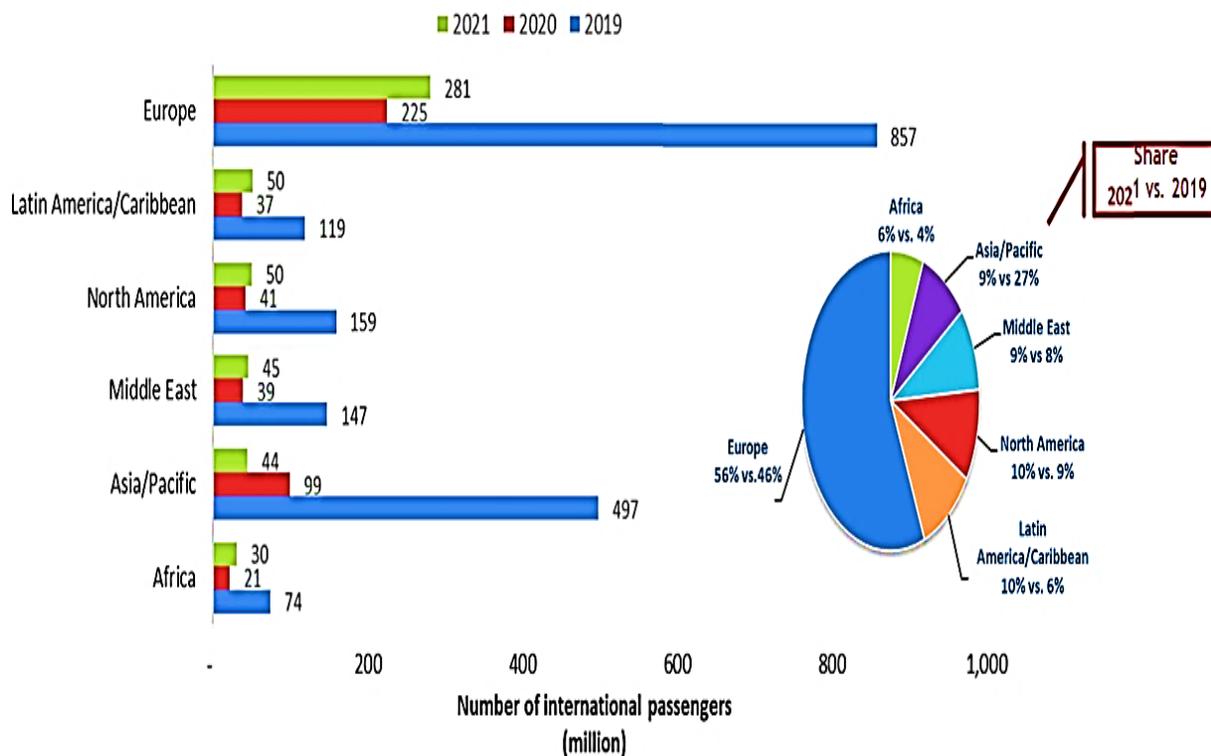


Fig. 2. Number of International Passengers by Region (2019-2021, based on from/to State)
Source: (ICAO, 2022)

Early recovery of huge domestic markets such as China, Russia, and the United States boosted domestic passenger traffic growth. Domestic transportation volume in 2020 was slightly higher than 2.4 billion passengers, a 54.7% decrease from the level in 2019. Domestic passenger traffic, as shown in Fig. 3, is frequently more resilient than international traffic; domestic passenger traffic in Asia-Pacific and North America has declined by 20% to 25% less than international traffic. In 2021, North America surpassed China in terms of global domestic passenger traffic, with a share of over 30% (ICAO, 2022).

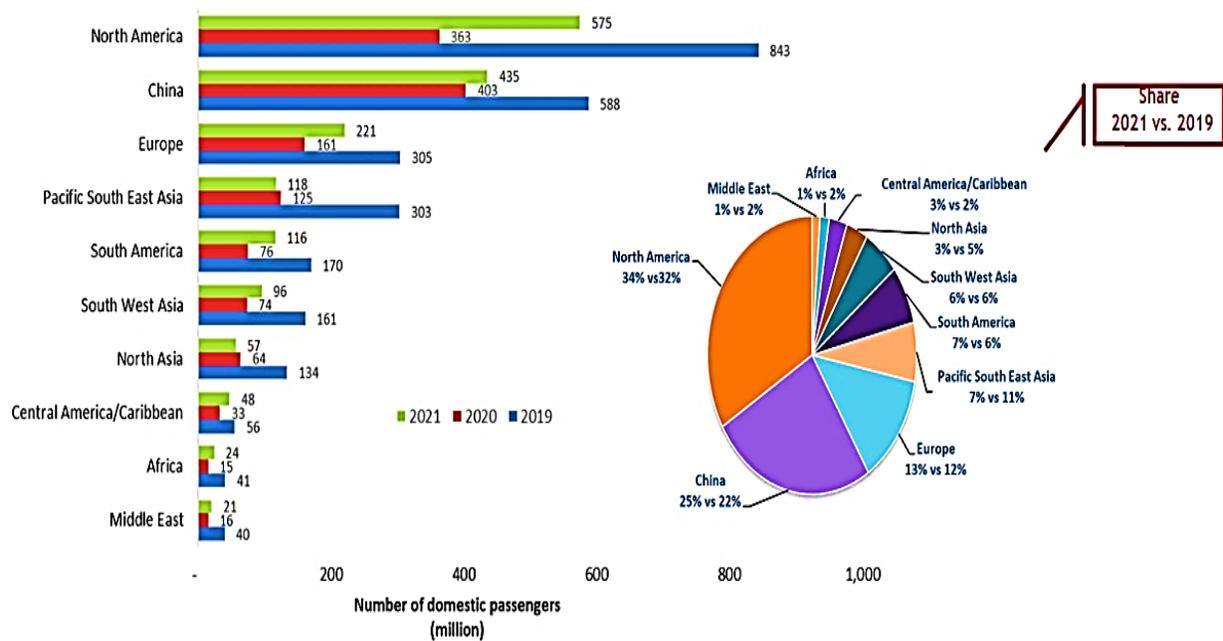


Fig. 3. Number of Domestic Passengers by Route Group (2019-2021)
Source: (ICAO, 2022)

3. Methodology

The study is an exploratory research which makes use of secondary data. The research discussed the economic repercussions of COVID-19 pandemic on the aviation industry with data from various secondary sources to achieve the study's objective from the global perspective. Data was acquired from the global associations associated with the aviation industry (e.g., International Air Transport Association, International Civil Aviation Organization, Federal Aviation Administration, African Airlines Association, The European Organization for the Safety of Air Navigation, Air Transport Action Group, ALG Aviation, Airports Council International, International Finance Corporation, and The African Development Bank Group), literary research sources, government press release, official documents, etc. The statistical data obtained from the reports produced by the international organizations affiliated with the aviation industry were used to further analyze COVID-19's influence on the global aviation industry.

4. Results and Discussion

4.1. The Economic Implications of COVID-19

Despite COVID-19 interruptions, the air travel recovery continued into the year-end, with industry-wide revenue passenger kilometers (RPKs) down 45.1% in December 2021 compared to December 2019. Global RPKs increased to 41.6% of 2019 levels in 2021, up from 34.2% in 2020, as new markets reopened as immunization progressed. In 2021, worldwide passenger seat capacity- available seat kilometers (ASKs) rebounded to 51.2% of pre-pandemic levels, but the global passenger load factors (PLFs) dropped 15.4 percentage points to 67.2% compared to 2019. North and Latin American airlines concluded the year as the top performers, with RPKs down 23% from December 2019. Despite airline cancellations, worldwide seat capacity- available seat kilometers (ASKs) climbed to 62.4% of 2019 levels in December, up from 60.2% in November. ASKs declined by 48.8% in 2021 compared to 2019, a 7.8 percentage point improvement over 2020, as airlines continued to repair capacity to meet recovering passenger demand. Because of the rebound in travel on US domestic and North-Central America routes, North American carriers

returned the most seats to the market (70.1% of 2019). Except for Latin America, where more seats were full in 2021 than in 2020, passenger loads factors (PLFs) were not near pre-crisis levels in any of the region's countries. In 2021, the industry-wide PLF was 67.2%, which was 15.4 percentage points lower than in 2019. Global PLF was 72.3% in December 2021, compared to 82.1% in December 2019. In 2021, international passenger demand was 75.5% lower than in 2019. Capacity (measured in available seat kilometers/ ASKs) plunged 65.3%, while load factor dropped 24.0 points to 58.0%. Domestic demand fell 28.2% in 2021 compared to 2019. The load factor plummeted 9.3 percentage points to 74.3%, while capacity shrank by 19.2%. Despite concerns about Omicron, total traffic for the month of December 2021 was 45.1% lower than the same month in 2019, an improvement over the 47.0% decrease in November. The capacity was down 37.6%, while the load factor was down 9.8% to 72.3%. Since November, ticket bookings for prospective domestic and international travel have declined. In the first half of January, tickets sold for travel at any time in the future were at 45% of 2019 levels, down from 50% in December and 56% in November (IATA Monthly Statistics, 2021), see table 1.

Table 1

Air passenger Market in Detail- December 2021

	World Share	December 2021 (% ch vs. the same month in 2019)				December 2021 (% year-on-year)		
	in 2021 ¹	RPK	ASK	PLF(%pt) ²	PLF(level) ³	RPK	ASK	PLF(%pt) ²
TOTAL MARKET	100.0%	-45.1%	-37.6%	-9.8%	72.3%	79.5%	45.5%	13.7%
Africa	1.9%	-57.1%	-52.1%	-7.6%	64.7%	32.1%	19.0%	6.4%
Asia Pacific	27.5%	-65.6%	-55.0%	-19.1%	62.5%	-4.6%	-5.1%	0.3%
Europe	24.9%	-37.4%	-30.4%	-8.5%	74.5%	177.5%	120.3%	15.4%
Latin America	6.5%	-22.8%	-22.2%	-0.7%	81.6%	83.4%	65.7%	7.9%
Middle East	6.5%	-49.6%	-41.3%	-11.0%	66.3%	163.6%	76.7%	21.8%
North America	32.6%	-22.9%	-16.9%	-6.1%	79.3%	139.4%	61.8%	25.7%
International	37.6%	-58.4%	-50.7%	-12.8%	68.9%	182.8%	98.1%	20.6%
Africa	1.5%	-60.5%	-54.9%	-8.9%	63.3%	27.7%	13.3%	7.2%
Asia Pacific	3.1%	-87.5%	-79.7%	-31.4%	50.4%	133.0%	55.1%	16.8%
Europe	18.6%	-41.5%	-33.3%	-10.3%	73.4%	228.0%	144.9%	18.6%
Latin America	2.1%	-40.4%	-40.0%	-0.6%	81.3%	150.8%	98.5%	17.0%
Middle East	6.0%	-51.2%	-42.8%	-11.4%	66.0%	180.1%	83.6%	22.7%
North America	6.2%	-41.7%	-31.6%	-12.5%	72.2%	185.5%	87.0%	24.9%

(IATA Monthly Statistics, 2021)

When compared to 2019, airline capacity is down 70% to 80% in 2020, and several significant airlines have temporarily halted operations. In early 2020, about 60% of the entire fleet was grounded. In early 2020, compared to 2019, US airline capacity was down more than 70%. These decreases are significantly greater than the 19% reduction after September 11th and the 11% loss following the global financial crisis of 2008 (McKinsey, 2020).

¹ % of Revenue Passenger Kilometers (RPKs)

² Change in Load Factors (LFs) vs. same month in 2019

³ Load Factors (LFs) level

Fig. 4 clearly estimates US airline load factor has dropped by roughly 70%, far higher than previous crises.

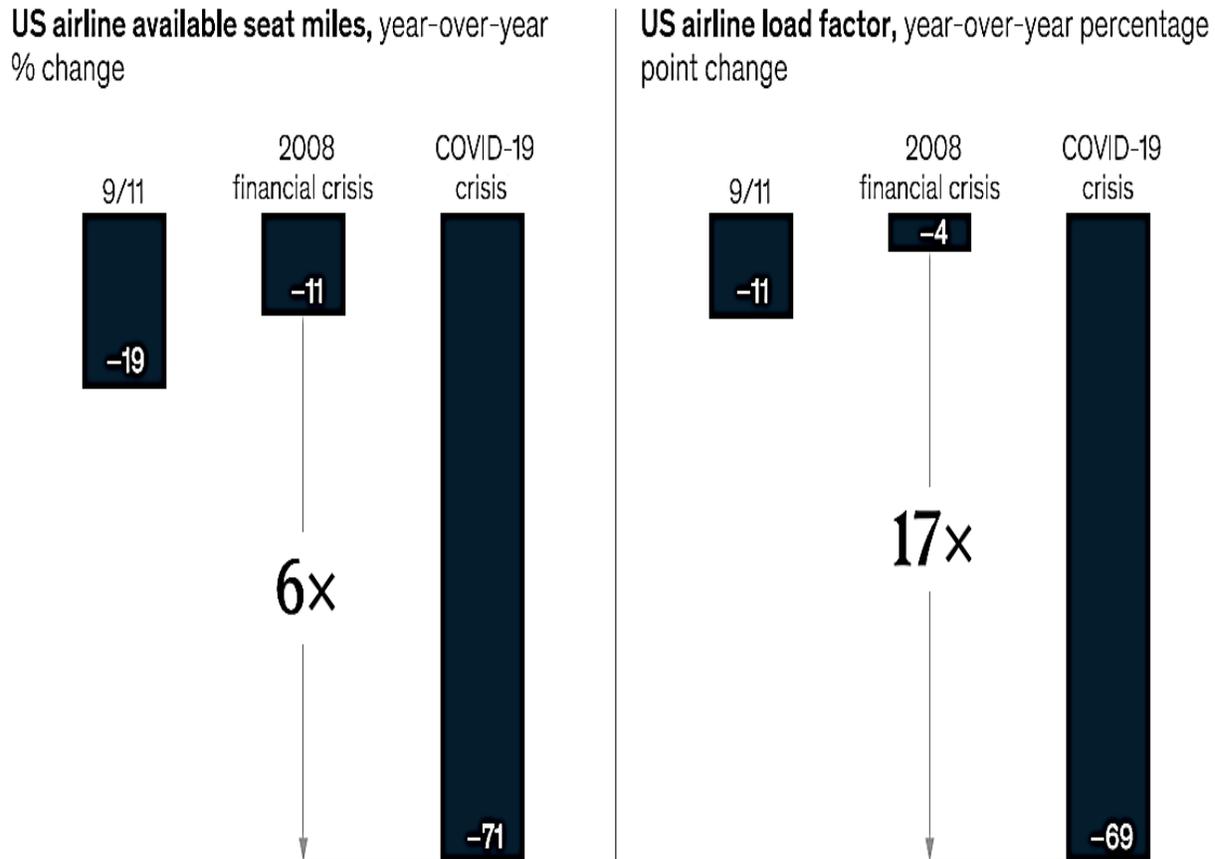


Fig. 4. LFs and ASKs
Source: (McKinsey, 2020)

In Europe, traffic recovered marginally but steadily in 2021, starting at -64% in January compared to 2019 levels and concluding at -22% in December. Since the summer, traffic has been rather consistent at around 70%, owing to the EU Digital COVID accreditation. However, total traffic in 2021 was down 44% compared to 2019, with 4.9 million fewer flights than in 2019 and no significant improvement over 2020. (6.1 million fewer). Reduced traffic's effects were still unevenly distributed, with the five worst-affected nations (-55% to -62% traffic) being located in the north, while the five least-affected countries were all located in the south (-8% to -27%). Greater regularity and returning travel have helped airlines and airports stay viable, but not enough to get their balance sheets back into the black. Even while it was not as bad as 2020's devastating losses (€22.2 bn and 1.7 bn), airline losses in 2021 were €18.5 bn, with 1.4-1.5 billion fewer passengers. The main airline companies are running 30% to 64% fewer flights as a result of high load factors (about 50%-60%). In 2021, the aviation sector demonstrated its ability to bounce back from a catastrophe that paralyzed economies in 2020. Even though the unfolding pandemic has seen traffic slide away from the optimistic prediction and progressively converges on the baseline forecast (Eurocontrol, 2022). According to table (2), traffic is likely to return to 70%-90% of 2019 levels in 2022.

Table 2
Estimated Impacts Compared to 2019 and Baseline

Compared to	Seat Capacity (%)			Passenger Number (thousand)			Passenger Revenue (USD, million)			
	Total	International	Domestic	International	Domestic	Total	International	Domestic		
2019										
1Q 2020	-16.4%	-21.5%	-12.9%	-100,825	-24.6%	-139,201	-22.4%	-30,993	-18,575	-12,418
2Q 2020	-78.2%	-92.6%	-67.6%	-461,109	-96.7%	-523,533	-78.8%	-129,835	-82,146	-47,689
3Q 2020	-55.3%	-75.3%	-39.9%	-451,781	-85.5%	-369,010	-53.0%	-115,933	-82,356	-33,576
4Q 2020	-48.0%	-75.7%	-29.0%	-377,836	-86.2%	-279,313	-42.4%	-95,624	-69,914	-25,710
Total 2020	-50.1%	-67.7%	-37.6%	-1,391,550	-75.1%	-1,311,058	-49.6%	-372,385	-252,991	-119,395
1Q 2021	-49.7%	-75.6%	-32.2%	-355,015	-86.8%	-283,090	-45.5%	-91,685	-65,858	-25,827
2Q 2021	-43.3%	-72.1%	-22.0%	-396,161	-83.0%	-196,753	-29.6%	-87,442	-70,759	-16,682
3Q 2021	-36.2%	-53.8%	-22.6%	-343,255	-64.9%	-210,007	-30.2%	-81,590	-64,852	-16,738
4Q 2021	-30.5%	-47.4%	-19.0%	-249,506	-56.9%	-169,560	-25.7%	-63,377	-49,737	-13,639
Total 2021	-39.8%	-61.9%	-23.9%	-1,343,937	-72.5%	-859,409	-32.5%	-324,093	-251,206	-72,887
1Q 2022	-26.3%	-44.7%	-13.9%	-225,066	-55.0%	-140,211	-22.5%	-57,074	-45,052	-12,022
	to-25.9%	to-44.4%	to-13.3%	to -219,539	to-53.7%	to-127,256	to-20.5%	to-54,943	to-44,055	to-10,888
2Q 2022	-24.3%	-39.7%	-12.9%	-235,973	-49.5%	-135,345	-20.4%	-56,287	-44,987	-11,299
	to-23.0%	to-38.6%	to-11.5%	to -221,928	to-46.5%	to-112,714	to-17.0%	to-51,816	to-42,439	to-9,377
3Q 2022	-21.0%	-36.1%	-9.3%	-238,870	-45.2%	-114,160	-16.4%	-55,043	-45,718	-9,326
	to-17.5%	to-31.9%	to-6.5%	to-204,924	to-38.8%	to-76,753	to-11.0%	to-45,949	to-39,695	to-6,255
4Q 2022	-19.5%	-35.3%	-8.9%	-197,982	-45.2%	-105,899	-16.1%	-48,508	-39,628	-8,880
	to-12.0%	to-25.1%	to-3.1%	to-144,471	to-33.0%	to-49,772	to-7.6%	to-33,774	to-29,383	to-4,391
Total 2022	-22.7%	-38.8%	-11.2%	-897,804	-48.4%	-495,091	-18.7%	-216,769	-175,269	-41,500
	to-19.5%	to-34.8%	to-8.5%	to-790,861	to-42.7%	to-366,496	to-13.9%	to-186,483	to-155,572	to-30,910

Compared to	Seat Capacity (%)			Passenger Number (thousand)			Passenger Revenue (USD, million)			
	Total	International	Domestic	International	Domestic	Total	International	Domestic		
Baseline										
1Q 2020	-19.6%	-24.5%	-16.2%	-119,027	-27.9%	-167,086	-25.7%	-36,643	-21,802	-14,841
2Q 2020	-78.8%	-92.8%	-68.5%	-479,340	-96.8%	-545,678	-79.5%	-135,148	-85,383	-49,765
3Q 2020	-56.6%	-76.1%	-41.7%	-470,410	-86.0%	-394,233	-54.7%	-121,608	-85,671	-35,936
4Q 2020	-49.1%	-76.3%	-30.5%	-390,623	-86.6%	-297,315	-43.9%	-99,804	-72,404	-27,401
Total 2020	-51.6%	-68.7%	-39.4%	-1,459,400	-76.0%	-1,404,313	-51.4%	-393,202	-265,259	-127,943
1Q 2021	-52.6%	-77.0%	-36.2%	-380,902	-87.6%	-328,751	-49.2%	-100,481	-70,500	-29,982
2Q 2021	-46.5%	-73.9%	-25.9%	-428,960	-84.1%	-238,306	-33.8%	-97,390	-76,809	-20,581
3Q 2021	-40.3%	-56.9%	-27.6%	-382,051	-67.3%	-264,596	-35.3%	-93,957	-72,101	-21,856
4Q 2021	-34.4%	-50.4%	-23.3%	-277,532	-59.5%	-213,597	-30.4%	-73,356	-55,658	-17,697
Total 2021	-43.3%	-64.2%	-28.2%	-1,469,445	-74.3%	-1,045,250	-37.0%	-365,184	-275,069	-90,115
1Q 2022	-32.5%	-49.1%	-21.3%	-264,299	-58.9%	-207,565	-30.1%	-70,290	-52,047	-18,243
	to-32.1%	to-48.9%	to-20.8%	to-258,772	to-57.7%	to-194,611	to-28.2%	to-68,159	to-51,051	to-17,109
2Q 2022	-30.6%	-45.3%	-19.5%	-288,095	-54.4%	-198,229	-27.3%	-71,765	-54,538	-17,227
	to-29.5%	to-44.4%	to-18.2%	to-274,049	to-51.8%	to-175,599	to-24.2%	to-67,294	to-51,989	to-15,304
3Q 2022	-28.9%	-42.6%	-18.3%	-302,253	-51.1%	-199,481	-25.5%	-74,854	-57,496	-17,358
	to-25.8%	to-38.9%	to-15.7%	to-268,307	to-45.3%	to-162,073	to-20.7%	to-65,760	to-51,473	to-14,287
4Q 2022	-26.6%	-41.2%	-16.7%	-244,590	-50.4%	-176,431	-24.2%	-64,819	-49,431	-15,388
	to-19.8%	to-32.0%	to-11.4%	to-191,079	to-39.4%	to-120,304	to-16.5%	to-50,086	to-39,186	to-10,899
Total 2022	-29.6%	-44.4%	-18.9%	-1,099,149	-53.5%	-781,183	-26.7%	-281,585	-213,396	-68,189
	to-26.7%	to-40.9%	to-16.5%	to-992,207	to-48.3%	to-652,587	to-22.3%	to-251,299	to-193,699	to-57,599

Source: (ICAO, 2022)

4.2. COVID-19 vs. African Aviation Industry

On a worldwide basis, air transport in Africa is still a minor consideration. Strong GDP growth, the continent's rapid urbanization, and the rise of middle classes – all of whom desire to travel – are all poised to shake things up. The African aviation sector is poised for historic expansion. Air traffic is expected to grow at a 5.7% yearly rate through 2034. The African aviation industry also

provides significant investment prospects, with the cost of new aircraft expected to be over \$160 billion (Proparco, 2016). According to IATA, airlines across the region lost more than US\$3 billion between 2012 and 2019. The pandemic increased the financial predicament of individuals who are already in a bad financial state. Most of them will need refinancing to stay afloat, and in the worst-case situation, they will have to go through M&A or bankruptcy. The change in seating supply from May to October compared to the same months in 2019, using two airlines for each of the three specified categories: airlines centred in an International Hub, airlines located in a Regional Hub, and Southern Africa low-cost carriers (LCCs) as an example. Regional airlines were the least affected of these examples, as the border restrictions in Africa were established later. Rwandair's stock dropped by 82%, while ASKY's stock dropped by 74%. By October, ASKY had significantly restored its seat supply as a pure regional airline (-24% in comparison to October 2019 figures). Rwandair has also regained a portion of its regional offer, but in all areas where it operates, it remains below 50% of its October 2019 offer. In contrast, international hub airlines' reliance on the first inter-continental traffic to be suspended positioned them for the worst case scenario, with drops of up to 99% in the case of RAM and -83% in the case of Ethiopian. Ethiopian has excelled RAM following this massive drop, restoring 45% of its seating supply by October, owing to its pre-pandemic robust health, among other things. The epidemic has worsened the financial troubles of the LCCs, which were already struggling to stay solvent. Both companies reduced their seating supply by more than 90% in May, with no optimistic growth forecasts until October, when they offered 20% of the seats available in the same month of 2019. The situation is made worse by the fact that the market they operate in (Southern Africa) is only slowly recovering (The African Development Bank Group, 2020), as seen in table 3.

Table 3

Estimated Impacts of COVID-19 on African Aviation Industry 2019-2022

Compared to 2019	Seat Capacity (%)			Passenger Number (thousand)			Passenger Revenue (USD, million)			
	Total	International	Domestic	International	Domestic	Total	International	Domestic		
1Q 2020	-12.2%	-15.1%	-7.3%	-2,922	-17.2%	-1,434	-14.3%	-736	-606	-130
2Q 2020	-93.8%	-93.8%	-93.9%	-17,687	-97.9%	-9,410	-97.7%	-4,639	-3,786	-853
3Q 2020	-75.1%	-77.7%	-70.1%	-18,507	-87.8%	-8,610	-81.1%	-4,734	-3,954	-780
4Q 2020	-55.3%	-61.8%	-44.5%	-13,715	-75.8%	-6,171	-57.2%	-3,548	-2,989	-559
Total 2020	-59.6%	-63.1%	-53.5%	-52,831	-71.2%	-25,625	-62.4%	-13,657	-11,334	-2,323
1Q 2021	-50.2%	-56.0%	-40.6%	-12,231	-72.0%	-5,308	-52.7%	-3,161	-2,680	-481
2Q 2021	-43.4%	-54.2%	-23.5%	-12,715	-70.4%	-3,520	-36.6%	-3,049	-2,730	-319
3Q 2021	-37.6%	-40.9%	-31.4%	-11,383	-54.0%	-4,445	-41.9%	-2,903	-2,500	-403
4Q 2021	-26.8%	-31.9%	-18.6%	-7,823	-43.2%	-3,002	-27.8%	-2,097	-1,825	-272
Total 2021	-39.3%	-45.5%	-28.4%	-44,152	-59.5%	-16,275	-39.6%	-11,211	-9,736	-1,475
1Q 2022	-25.9%	-33.7%	-12.8%	-7,568	-44.6%	-2,277	-22.6%	-1,973	-1,767	-206
	to -25.6%	to -33.3%	to -12.7%	to -7,275	to -42.9%	to -2,084	to -20.7%	to -1,895	to -1,706	to -189
2Q 2022	-23.5%	-26.8%	-17.5%	-6,745	-37.3%	-2,523	-26.2%	-1,772	-1,543	-229
	to -22.3%	to -25.3%	to -16.7%	to -6,066	to -33.6%	to -2,231	to -23.2%	to -1,604	to -1,402	to -202
3Q 2022	-22.7%	-26.4%	-15.7%	-7,504	-35.6%	-2,490	-23.5%	-1,947	-1,721	-226
	to -19.8%	to -23.1%	to -13.6%	to -6,223	to -29.5%	to -1,981	to -18.7%	to -1,635	to -1,455	to -180
4Q 2022	-17.6%	-24.3%	-6.7%	-6,195	-34.2%	-1,583	-14.7%	-1,640	-1,497	-144 to -63
	to -10.7%	to -16.5%	to -1.4%	to -4,194	to -23.2%	to -700	to -6.5%	to -1,142	to -1,078	
Total 2022	-22.2%	-27.5%	-12.8%	-27,853	-37.5%	-8,826	-21.5%	-7,293	-6,493	-800
	to -19.5%	to -24.4%	to -10.8%	to -23,758	to -32.0%	to -6,995	to -17.0%	to -6,276	to -5,641	to -634

Source: (ICAO, 2022)

An economic slump of this scale poses a significant danger to the continent's economic development during the previous decade, especially for a continent with an emerging (and fast rising) middle class. Airline capacity in Africa for 2021 is estimated to be between 60% and 63%

lower than initially intended levels. As a result, in 2021, the African aviation sector would have lost about \$15 billion in passenger income (\$8.6 billion for African-registered airlines), not to mention the pandemic affects this loss may have on other sectors of the economy. In 2019, Africa had 72.4 million international tourists, up 5.4% from 2018. This is a lower figure than the 8.4% achieved the previous year, but it reflects a global slowdown and barely accounts for 5% of global GDP. Global tourist arrivals fell by 57% from January to June 2020, and by 100% in the second quarter, due to the COVID-19 pandemic. In comparison to 2019, the number of tourists fell by 18 million, with a 62% decrease in North Africa and a 54% decrease in Sub-Saharan Africa. African airlines carried a total of 95.6 million passengers, up 3.66 million compared to 2018. Unfortunately, total RPKs growth slowed to 4.2% in 2019, down from 6.1% in 2018. The passenger load factor of 71.6% is the lowest of all the regions, and it is 10% below the industry average. Cargo, on the other hand, has improved, with the African continent being the only one to see a rise in freight traffic (7.8%). While the worldwide business reported positive net post-tax revenues of USD 26.4 billion and USD 5.8 profit per passenger, African airlines continue to lose revenue, with a negative after-tax profit of USD 300 million and a USD 2.67 loss per passenger (AFRAA, 2020^a). AFRAA (2020^b) estimates that five million African jobs would be lost in aviation and related industries in 2020. These accounts for more than half of the 7.7 million people employed in the aviation industry in the region (see table 4).

Table 4

Aviation Relief for African Airlines Critical as COVID-19 Impacts Deepen

Country	Revenue Impact (US\$ Billion)	Passenger Demand Impact (%)	Potential Jobs Impact	Potential GDP Impact (US\$ Billions)
South Africa	-3.02	-56%	-252,100	-5.1
Nigeria	-0.99	-50%	-125,400	-0.89
Ethiopia	-0.43	-46%	-500,500	-1.9
Kenya	-0.73	-50%	-193,300	-1.6
Tanzania	-0.31	-39%	-336,200	-1.5
Mauritius	-0.54	-59%	-73,700	-2
Mozambique	-0.13	-49%	-126,400	-0.2
Ghana	-0.38	-51%	-284,300	-1.6
Senegal	-0.33	-51%	156,200	-0.64
Cape Verde	-0.2	-54%	-46,700	-0.48

Source: (IATA, 2020^a)

4.3. COVID-19 vs. Asia-Pacific Aviation Industry

In comparison to 2019, Asia-Pacific airlines reported a 3.6% increase in international demand and a 17.1% decrease in international capacity in 2021. In December, regional airlines reported an 8.8% growth in overseas demand compared to 2019. The demand for goods manufactured in the region, especially PPE, remains robust. International capacity was still restricted in December, down 10% from the same month in 2019. In comparison to 2019, there were significant differences in the geographical performance of air freight in 2021. The strongest performers were North American airlines, which saw a 20.2% growth in international demand on an annual basis. In comparison to 2019, carriers in the Middle East and Africa reported double-digit growth in overseas demand in 2021 (10.6% and 11.3%, respectively). International demand for Asia-Pacific and European carriers increased by 3.6% in 2021 compared to 2019. Only Latin

American airlines had a 15.2% drop in international demand in 2019 compared to the year 2019 (IATA, 2022), see table 5.

Table 5

Estimated Impacts of COVID-19 on Asia- Pacific Aviation Industry 2019-2022

Compared to 2019	Seat Capacity (%)			Passenger Number (thousand)				Passenger Revenue (USD, million)		
	Total	International	Domestic	International		Domestic		Total	International	Domestic
1Q 2020	-26.1%	-30.1%	-24.3%	-42,794	-34.9%	-98,882	-34.6%	-16,747	-8,505	-8,242
2Q 2020	-68.5%	-91.3%	-58.6%	-117,426	-96.4%	-199,367	-68.6%	-38,956	-24,899	-14,057
3Q 2020	-49.3%	-88.3%	-32.4%	-120,815	-94.6%	-136,522	-44.1%	-34,664	-25,641	-9,023
4Q 2020	-37.3%	-86.6%	-15.7%	-117,468	-93.9%	-85,527	-28.5%	-30,376	-25,124	-5,252
Total 2020	-45.3%	-74.2%	-32.7%	-398,503	-80.1%	-520,298	-43.9%	-120,743	-84,169	-36,574
1Q 2021	-43.3%	-84.4%	-25.0%	-114,192	-93.1%	-111,312	-38.9%	-32,033	-24,159	-7,874
2Q 2021	-37.4%	-84.5%	-16.7%	-113,035	-92.8%	-77,887	-26.8%	-28,401	-23,864	-4,537
3Q 2021	-50.1%	-84.3%	-35.3%	-116,834	-91.5%	-150,349	-48.6%	-35,162	-24,694	-10,468
4Q 2021	-45.4%	-81.1%	-29.8%	-110,736	-88.5%	-130,537	-43.5%	-33,183	-23,553	-9,630
Total 2021	-44.1%	-83.6%	-26.8%	-454,797	-91.5%	-470,085	-39.6%	-128,779	-96,269	-32,509
1Q 2022	-38.0%	-78.3%	-20.1%	-105,720	-86.2%	-103,925	-36.3%	-30,419	-22,147	-8,271
	to -37.3%	to -77.9%	to -19.2%	to -104,744	to -85.4%	to -97,035	to -33.9%	to -29,691	to -21,921	to -7,771
2Q 2022	-38.8%	-76.8%	-22.2%	-103,321	-84.8%	-107,829	-37.1%	-30,070	-21,577	-8,493
	to -36.8%	to -75.1%	to -20.0%	to -100,105	to -82.2%	to -93,671	to -32.2%	to -28,297	to -20,835	to -7,463
3Q 2022	-34.2%	-72.1%	-17.8%	-102,838	-80.6%	-98,022	-31.7%	-29,310	-21,470	-7,840
	to -28.9%	to -65.9%	to -13.0%	to -93,688	to -73.4%	to -71,451	to -23.1%	to -25,283	to -19,381	to -5,902
4Q 2022	-28.1%	-63.2%	-12.7%	-92,537	-74.0%	-79,800	-26.6%	-25,639	-19,392	-6,261
	to -15.2%	to -44.3%	to -2.5%	to -68,544	to -54.8%	to -36,786	to -12.3%	to -17,090	to -13,980	to -3,110
Total 2022	-34.7%	-72.5%	-18.1% to	-404,254	-81.3%	-389,576	-32.8%	-115,404	-84,537	-30,866
	to -29.4%	to -65.7%	-13.6%	to -367,081	to -73.8%	to -298,943	to -25.2%	to -100,361	to -76,116	to -24,245

Source: (ICAO, 2022)

Global airline passenger revenues would fall by \$554 billion in 2020 as a result of the COVID-19 pandemic a 55% reduction from 2019. Airlines in Asia Pacific would face the highest revenue decrease of US\$113 billion in 2020 compared to 2019 (-US\$88 billion in the 24 March projection), as well as a 50% drop in passenger demand (-37% in 24 March estimate). These projections are predicated on a three-month period of harsh travel restrictions, with domestic limitations gradually lifted before regional and intercontinental restrictions. Airlines are struggling to stay afloat, with a cash burn of \$61 billion in the second quarter. If governments do not intervene quickly to guarantee that airlines have the financial flow to see them through this period, there will be more casualties. Supporting airlines has a larger economic impact (IATA, 2020^b), see table 6.

Table 6
COVID-19 Impact on Asia-Pacific Aviation Worsens

Country	Percentage Change in Passenger Demand (2020 vs. 2019)	Passenger Demand Impact/ Origin-Destination Volumes (2020 vs. 2019)	Revenue Impact (US\$, Millions) (2020 vs. 2019)	Potential Jobs Impact (2020 vs. 2019)
Australia	-51%	-50,510,000	-14,255	-362,100
Bangladesh	-48%	-5,541,000	-1,073	-61,900
Brunei Darussalam	-50%	-605,000	-114	-8,500
Cambodia	-45%	-5,390,000	-866	-770,000
Fiji	-51%	-1,158,000	-305	-65,100
India	-47%	-89,764,000	-11,221	-2,932,900
Indonesia	-49%	-59,756,000	-8,225	-2,069,000
Japan	-50%	-93,862,000	-22,625	-585,900
Laos	-51%	-1,618,000	-220	-23,800
Malaysia	-51%	-33,513,000	-4,236	-220,500
Maldives	-51%	-2,747,000	-639	-37,200
Nepal	-51%	-3,422,000	-522	-229,900
New Zealand	-50%	-12,865,000	-3,388	-170,100
Pakistan	-52%	-9,866,000	-1,829	-259,400
Philippines	-47%	-28,852,000	-4,481	-548,300
Republic of Korea	-52%	-59,219,000	-10,755	-371,200
Singapore	-48%	-23,897,000	-6,732	-169,000
Sri Lanka	-58%	-4,049,000	-715	-408,200
Thailand	-52%	-55,562,000	-8,289	-2,167,000
Vietnam	-45%	-31,902,000	-4,347	-989,500

Source: (IATA, 2020^b)

4.4. COVID-19 vs. European Aviation Industry

Intra-European flights, which account for 81% of all flights, were down 43% of the year 2019. Southern Africa (-32%) would be the least affected in 2020, owing to the freight market's robustness. It is followed by Mid-Atlantic flows (-35%), which experienced a spike in October when the holiday season switched from southern Europe to the Caribbean. Travel to Asia-Pacific remained nearly unchanged from 2020 (-44%), reflecting the fact that most Asian nations are still closed to outsiders. The rest of traffic flows were between -47% and -55% of their 2019 levels at the end of the year, with the South Atlantic being the most hit (-55%). Traffic to/from Russia and Belarus was also down by 55%, owing to EU flight restrictions on the latter since the summer. With the exception of North Africa, Fig. 5 shows worldwide flows to/from Europe in December 2021 vs. 2019. Many locations show a notable percentage rebound compared to the yearly view (-51% annual, slipping even further to -52% in December). Flights declined from 45% to 67% on average among the top ten European carriers (Eurocontrol, 2022).

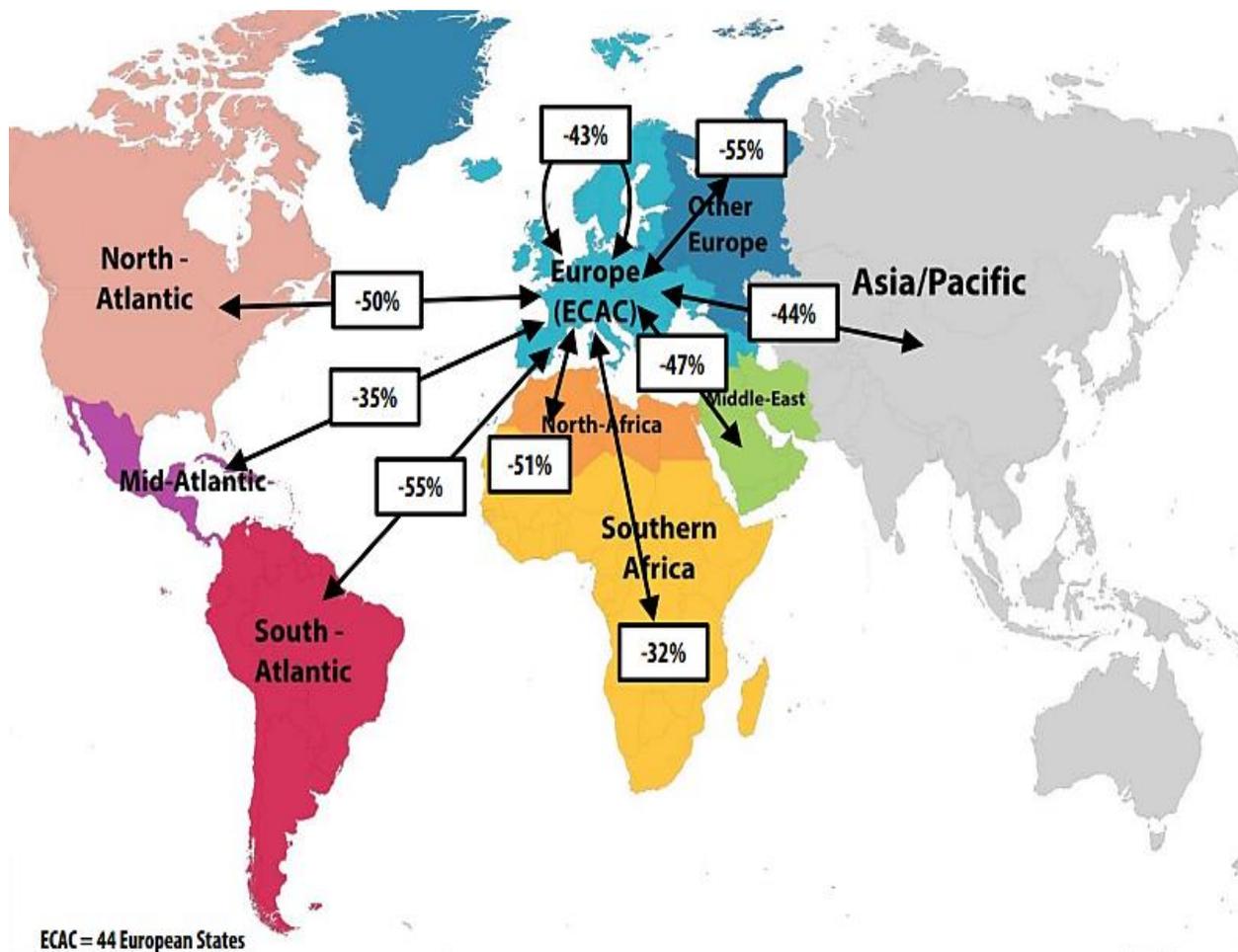


Fig. 5. Traffic Evolution between Worldwide Regions (2021 vs. 2019)

Source: (Eurocontrol, 2022)

European airlines have been experiencing reduced load factors, averaging approximately 50%-60%, and have been operating fewer flights throughout the year. While the summer boost was welcomed for all airlines operating intra-European routes, with some LCCs able to increase capacity to levels approaching or even exceeding those of 2019, overall pandemic losses continue

to weigh hard on revenues. In comparison to 2019, European carriers reported a 3.6% rise in international demand and a 17.4% decrease in capacity in 2021. Airlines reported a 6% rise in international demand in December compared to the previous year. When compared to pre-pandemic levels, international capacity was down 5.9% in December 2021(see table 7).

Table 7**Estimated Impacts of COVID-19 on European Aviation Industry 2019-2022**

Compared to 2019	Seat Capacity (%)			Passenger Number (thousand)				Passenger Revenue (USD, million)		
	Total	International	Domestic	International	Domestic	International	Domestic	Total	International	Domestic
1Q 2020	-16.1%	-18.8%	-9.7%	-34,739	-20.9%	-10,422	-15.2%	-5,897	-5,040	-857
2Q 2020	-90.4%	-93.7%	-80.8%	-223,834	-96.9%	-67,761	-86.3%	-36,453	-30,882	-5,571
3Q 2020	-57.5%	-66.2%	-30.4%	-209,853	-78.8%	-28,921	-34.1%	-32,247	-29,870	-2,378
4Q 2020	-65.3%	-74.4%	-41.6%	-163,959	-84.7%	-36,367	-50.1%	-26,448	-23,458	-2,990
Total 2020	-59.3%	-65.9%	-41.1%	-632,385	-73.8%	-143,471	-47.1%	-101,045	-89,249	-11,795
1Q 2021	-71.9%	-80.6%	-51.4%	-147,275	-88.7%	-35,932	-52.3%	-24,192	-21,238	-2,954
2Q 2021	-63.4%	-74.0%	-32.8%	-192,851	-83.5%	-27,697	-35.3%	-28,870	-26,593	-2,277
3Q 2021	-32.1%	-41.7%	-2.2%	-145,093	-54.5%	-4,412	-5.2%	-21,893	-21,530	-363
4Q 2021	-26.4%	-32.9%	-9.4%	-83,767	-43.3%	-9,811	-13.5%	-14,109	-13,303	-807
Total 2021	-47.4%	-56.2%	-23.3%	-568,986	-66.4%	-77,851	-25.6%	-89,064	-82,664	-6,401
1Q 2022	-25.7%	-30.6%	-14.3%	-68,870	-41.5%	-13,367	-19.5%	-12,435	-11,336	-1,099
	to -25.6%	to -30.5%	to -14.2%	to -66,454	to -40.0%	to -12,332	to -18.0%	to -12,027	to -11,013	to -1,014
2Q 2022	-24.3%	-28.9%	-11.1%	-90,078	-39.0%	-12,509	-15.9%	-14,134	-13,105	-1,028
	to -23.8%	to -28.2%	to -10.9%	to -83,812	to -36.3%	to -11,041	to -14.1%	to -13,171	to -12,263	to -908
3Q 2022	-21.1%	-25.1%	-8.8%	-91,832	-34.5%	-11,111	-13.1%	-14,231	-13,317	-913
	to -17.8%	to -20.9%	to -8.2%	to -74,451	to -28.0%	to -9,037	to -10.7%	to -11,702	to -10,959	to -743
4Q 2022	-20.9%	-25.1%	-11.5%	-66,719	-34.5%	-10,938	-15.1%	-11,535	-10,687	-899
	to -14.8%	to -17.2%	to -8.4%	to -46,459	to -24.0%	to -7,812	to -10.8%	to -8,543	to -7,901	to -642
Total 2022	-22.9%	-27.2%	-11.1%	-317,499	-37.1%	-47,305	-15.5%	-52,335	-48,446	-3,889
	to -20.3%	to -24.0%	to -10.4%	to -271,175	to -31.6%	to -40,221	to -13.2%	to -45,443	to -42,137	to -3,307

Source: (ICAO, 2022)

In terms of airline losses (-\$11.9 billion) and EBIT margin in 2021, Europe is likely to be the worst-affected area in the world (-9.5%). Passenger traffic (measured in revenue passenger km, RPK) is expected to be down 70% this year, the weakest performance of any region except Africa (-72%) and the Middle East (-73%). RPK growth is predicted to be 47.5% next year, lagging below comparable regions such as Asia Pacific (50%) and North America (60.5%). Travel restrictions and quarantine have a demonstrable influence on demand for travel. In comparison to the normal curve, intra-EU bookings are down 81% for the quarter ended January 10th, 2021. Since 2019, overall connectivity in Frankfurt has decreased by 68%, London by 67%, Paris by 67%, Istanbul by 66%, Moscow by 64%, and Amsterdam by 53% (IATA, 2020^c). Table 8 shows the most recent economic effect figures for a number of European countries. In this table, the passenger and revenue impacts are not additive. They take into account the effects of all airlines, regardless of where they are registered. Taking everything into consideration, airlines, airports, and aviation services will lose almost EUR 140 billion in income in 2021. According to IATA, over 7 million jobs in Europe are presently at danger as a result of aviation (including tourism).

Table 8

Impact of COVID-19 on European Aviation Economies

Country	Passenger Impact	Impact O-D Passengers (Million)	Impact Passenger Revenues (USD Billion)	Impact Employment Supported by Aviation	Impact GDP Supported by Aviation (USD Billion)
Austria	-70%	-19.9	-3.1	-63500	-5.6
Belgium	-74%	-22.6	-3.2	-77500	-7.4
Czech Rep	-78%	-13.4	-1.7	-41700	-1.5
Finland	-72%	-11.3	-1.7	-45900	-4.1
France	-74%	-108.5	-19.4	-511000	-46.1
Germany	-74%	-132.2	-21.4	-602500	-42.7
Greece	-76%	-37.2	-5.4	-284200	-12.4
Hungary	-71%	-11.7	-1.5	-52900	-2.2
Ireland	-75%	-26.4	-3.4	-102100	-14.8
Italy	-76%	-117.0	-16.6	-414300	-28.1
Netherlands	-71%	-38.2	-7.2	-199700	-16.5
Norway	-62%	-20.9	-3.1	-95800	-10.4
Poland	-70%	-27.4	-3.3	-78600	-2.6
Portugal	-74%	-34.9	-5.0	-212700	-9.2
Romania	-68%	-14.1	-1.7	-62100	-1.5
Russia	-60%	-69.9	-10.4	-479900	-11.1
Slovakia	-74%	-2.0	-0.2	N/A	N/A
Spain	-76%	-159.7	-21.5	-1116800	-73.5
Sweden	-72%	-24.5	-3.2	-119000	-11.9
Switzerland	-73%	-36.3	-6.7	-141700	-18.9
Turkey	-63%	-67.5	-8.6	-620300	-27.3
Ukraine	-68%	-13.2	-1.7	-98700	-0.9
UK	-76%	-193.6	-35.6	-858500	-65.7

Source: (IATA, 2020^d)

4.5. COVID-19 vs. Latin American-Caribbean Aviation Industry

Losses for Latin American airlines will drop from \$5.6 billion this year to \$3.7 billion by 2022. The majority of the markets in the region are open, although there are a few significant outliers (Argentina for example). The strength of the US-Latin American market will be a crucial role in improving the situation. Substantial reorganization expenses will weigh on financial efficiency as the region's carriers adjust to new economic realities, keeping the region in a collective deficit. In 2021, Latin American airlines reported a 15.2% drop in international demand and a 30.2% drop in capacity compared to 2019. The restructuring procedures are winding down, and December was the strongest month of the year, with regional carriers reporting a 2.9% drop in international demand compared to December 2019. This was a major improvement over the previous month's 13.4% drop (IATA, 2022), see table 9.

Table 9

Estimated Impacts of COVID-19 on Latin American- Caribbean Aviation Industry 2019-2022

Compared to 2019	Seat Capacity (%)			Passenger Number (thousand)				Passenger Revenue (USD, million)		
	Total	International	Domestic	International	Domestic	Total	International	Domestic		
1Q 2020	-7.8%	-14.6%	-3.8%	-5,612	-17.9%	-3,558	-6.4%	-1,461	-1,159	-303
2Q 2020	-89.7%	-92.1%	-88.5%	-28,142	-96.2%	-48,642	-89.9%	-9,695	-5,640	-4,054
3Q 2020	-72.6%	-80.5%	-68.7%	-26,337	-89.6%	-41,394	-71.2%	-8,818	-5,339	-3,479
4Q 2020	-47.6%	-62.6%	-40.1%	-21,963	-76.7%	-23,622	-40.6%	-6,462	-4,471	-1,991
Total 2020	-54.0%	-61.2%	-50.1%	-82,054	-69.2%	-117,215	-51.9%	-26,435	-16,609	-9,827
1Q 2021	-41.1%	-54.9%	-33.1%	-23,138	-73.8%	-21,905	-39.5%	-6,568	-4,718	-1,850
2Q 2021	-39.5%	-47.4%	-35.2%	-18,593	-63.5%	-19,673	-36.4%	-5,500	-3,837	-1,662
3Q 2021	-24.9%	-37.3%	-18.7%	-14,491	-49.3%	-11,087	-19.1%	-3,994	-3,054	-940
4Q 2021	-13.9%	-27.1%	-7.1%	-10,381	-36.2%	-2,922	-5.0%	-2,442	-2,187	-255
Total 2021	-29.8%	-42.0%	-23.2%	-66,602	-56.1%	-55,587	-24.6%	-18,503	-13,796	-4,707
1Q 2022	-6.1%	-22.8%	3.5%	-10,265	-32.8%	1,902	3.4%	-2,021	-2,161	141
	to -5.9%	to -22.5%	to 3.7%	to -9,723	to -31.0%	to 2,911	to 5.2%	to -1,830	to -2,054	to 224
2Q 2022	0.6%	-11.5%	7.2%	-6,417	-21.9%	3,926	7.3%	-1,040	-1,368	327
	to 1.2%	to -10.5%	to 7.6%	to -5,470	to -18.7%	to 5,047	to 9.3%	to -760	to -1,181	to 421
3Q 2022	-0.4%	-10.4%	4.6%	-5,825	-19.8%	2,757	4.7%	-1,089	-1,311	222
	to 0.6%	to -8.8%	to 5.3%	to -4,511	to -15.3%	to 4,084	to 7.0%	to -719	to -1,051	to 332
4Q 2022	-4.2%	-14.0%	0.7%	-6,527	-22.8%	1,064	1.8%	-1,343	-1,421	77
	to -1.5%	to -11.0%	to 3.2%	to -4,781	to -16.7%	to 2,848	to 4.9%	to -846	to -1,072	to 226
Total 2022	-2.3%	-14.7%	4.3%	-28,852	-24.3%	9,963	4.4%	-5,430	-6,222	793
	to -1.5%	to -13.4%	to 4.9%	to -24,485	to -20.6%	to 14,889	to 6.6%	to -4,155	to -5,357	to 1,202

Source: (ICAO, 2022)

4.6. COVID-19 vs. Middle-East Aviation Industry

The airline business is a major economic driver in Africa and the Middle East, accounting for up to 8.6 million jobs and \$186 billion in GDP. Every job produced in the air transport industry generates an additional 24 jobs in the overall economy. Middle Eastern carriers reported a 10.6% growth in international demand in 2021 compared to 2019 and a 10.1% in international capacity. Growth slowed toward the end of the year, owing in part to a declining trend in volumes on the major Middle East-Asia route. When compared to December 2019, airlines in the area experienced a 5.7% rise in international demand in December. When compared to the same month last year, international capacity fell 9.2% in December (IATA, 2022), see table 10.

Table 10

Estimated Impacts of COVID-19 on Middle-East Aviation Industry 2019-2022

Compared to 2019	Seat capacity (%)			Passenger number (thousand)				Passenger revenue (USD, million)		
	Total	International	Domestic	International	Domestic	Total	International	Domestic		
1Q 2020	-19.4%	-19.6%	-18.7%	-6,929	-20.1%	-2,066	-20.9%	-1,411	-1,216	-195
2Q 2020	-89.8%	-90.3%	-88.2%	-34,333	-96.1%	-9,442	-93.0%	-7,194	-6,302	-892
3Q 2020	-73.7%	-79.1%	-53.5%	-36,862	-90.2%	-7,687	-72.3%	-7,467	-6,740	-727
4Q 2020	-61.4%	-69.6%	-30.3%	-30,213	-83.9%	-5,210	-55.5%	-6,041	-5,549	-492
Total 2020	-61.3%	-65.0%	-47.7%	-108,337	-73.6%	-24,405	-60.9%	-22,113	-19,807	-2,306
1Q 2021	-56.2%	-63.4%	-31.2%	-27,783	-80.4%	-5,722	-57.8%	-5,631	-5,090	-541
2Q 2021	-51.5%	-60.3%	-20.3%	-28,127	-78.7%	-5,300	-52.2%	-5,669	-5,168	-501
3Q 2021	-45.0%	-50.9%	-22.7%	-27,565	-67.4%	-4,948	-46.5%	-5,494	-5,026	-468

4Q 2021	-33.3%	-36.8%	-20.2%	-18,121	-50.3%	-2,948	-31.4%	-3,666	-3,387	-279
Total 2021	-46.4%	-52.7%	-23.7%	-101,596	-69.0%	-18,918	-47.2%	-20,460	-18,672	-1,788
1Q 2022	-28.6%	-31.2%	-19.3%	-15,818	-45.8%	-3,053	-30.8%	-3,242	-2,953	-288
	to -28.2%	to -30.9%	to -19.2%	to -15,174	to -43.9%	to -2,870	to -29.0%	to -3,108	to -2,836	to -271
2Q 2022	-22.2%	-24.7%	-13.1%	-14,029	-39.3%	-2,453	-24.2%	-2,877	-2,645	-232
	to -21.0%	to -23.5%	to -12.5%	to -12,588	to -35.2%	to -2,135	to -21.0%	to -2,585	to -2,383	to -202
3Q 2022	-24.8%	-28.0%	-12.8%	-16,318	-39.9%	-2,399	-22.6%	-3,296	-3,069	-227
	to -22.6%	to -25.5%	to -11.6%	to -13,920	to -34.1%	to -1,936	to -18.2%	to -2,815	to -2,632	to -183
4Q 2022	-24.5%	-24.2%	-25.4%	-13,428	-37.3%	-3,164	-33.7%	-2,841	-2,542	-299
	to -20.1%	to -19.3%	to -23.1%	to -9,970	to -27.7%	to -2,656	to -28.3%	to -2,163	to -1,912	to -251
Total 2022	-24.9%	-27.0%	-17.3%	-59,315	-40.3%	-10,989	-27.4%	-12,198	-11,159	-1,039
	to -23.0%	to -24.8%	to -16.5%	to -51,652	to -35.1%	to -9,596	to -23.9%	to -10,670	to -9,763	to -907

Source: (ICAO, 2022)

The impact of COVID-19 continues to be felt by airlines in the Middle East. Commercial traffic has virtually ceased, and income streams have vanished. There really is no way to salvage airlines from a liquidity crisis by decreasing costs. The collapse of aviation industry will have disastrous consequences for economies and employment in many countries. In a region where aviation is a major economic pillar for many countries, the consequences will be substantially severe. In the Middle East, 1.7 million jobs in aviation and aviation-related businesses would be destroyed in 2020. This accounts for roughly half of the 3.3 million jobs in the aviation industry in the area. In the year 2020, 323,000 jobs will be lost in the aviation industry. This constitutes around 46% of the 595,000 aviation-related jobs in the region. The region's GDP, which is underpinned by aviation, will drop by much to \$105 billion, or 49% below pre-COVID-19 levels. Closed borders have diminished aviation's contribution to the region's GDP from \$213 billion to \$108 billion. This loss has far-reaching effects, including the loss of 1.7 million jobs (see table 11).

Table 11

Relief is Critical for Middle East Airlines as COVID-19 Impact Deepens

Nation	Revenue Impact (US\$ Billion)	Passenger Demand Impact (Millions)	Passenger Demand Impact (%)	Potential Jobs Impact	Potential GDP Impact (US\$ Billions)
Saudi Arabia	-7.2	-35	-51%	-287,500	-17.9
UAE	-6.8	-31	-53%	-378,700	-23.2
Egypt	-2.2	-13	-48%	-279,800	-3.3
Morocco	-1.7	-11	-41%	-499,000	-4.9
Iran	-1.8	-8.7	-47%	-206,900	-4.3
Kuwait	-1	-5.2	-41%	-24,100	-1.6
Algeria	-0.79	-5.8	-58%	-169,800	-3
Qatar	-1.7	-4.8	-49%	-70,200	-2.8
Tunisia	-0.6	-4.3	-44%	-92,700	-1.2
Oman	-0.7	-4.3	-48%	-51,500	-1.7

Source: (IATA, 2020^e)

4.7. COVID-19 vs. North American Aviation Industry

American carriers are expected to outperform other markets. In the second quarter of 2021, the US market began to turn cash-positive, and in 2022, with a projected profit of \$9.9 billion, it will be the only region in positive financial territory. In 2021, compared to 2019, North American carriers saw a 20.2% rise in international demand and a 0.2% increase in international capacity. In comparison to 2019, the sector was the only one to have capacity increase in 2021. International demand increased by 20.5% in the fourth quarter, according to airlines in the region. Consumer demand for commodities continues to favour the region's carriers. Compared to December 2019, international capacity increased by 6.2% (IATA, 2022), see table 12.

Table 12

Estimated Impacts of COVID-19 on North American Aviation Industry 2019-2022

Compared to 2019	Seat Capacity (%)			Passenger Number (thousand)				Passenger Revenue (USD, million)		
	Total	International	Domestic	International	Domestic	Total	International	Domestic		
1Q 2020	-2.5%	-16.4%	0.3%	-7,828	-20.9%	-22,839	-11.9%	-4,741	-2,049	-2,691
2Q 2020	-71.4%	-91.9%	-67.3%	-39,688	-96.7%	-188,913	-85.4%	-32,899	-10,637	-22,262
3Q 2020	-50.2%	-81.2%	-44.0%	-39,406	-90.8%	-145,876	-65.7%	-28,003	-10,813	-17,190
4Q 2020	-44.2%	-68.9%	-39.7%	-30,518	-82.7%	-122,416	-58.9%	-22,749	-8,324	-14,426
Total 2020	-42.8%	-65.3%	-38.4%	-117,440	-73.9%	-480,043	-56.9%	-88,392	-31,823	-56,569
1Q 2021	-40.0%	-64.1%	-35.1%	-30,396	-81.0%	-102,912	-53.6%	-20,100	-7,973	-12,127
2Q 2021	-28.3%	-60.9%	-21.9%	-30,840	-75.1%	-62,676	-28.3%	-15,953	-8,567	-7,386
3Q 2021	-19.5%	-53.0%	-12.9%	-27,889	-64.3%	-34,765	-15.7%	-12,144	-8,047	-4,097
4Q 2021	-14.6%	-39.3%	-10.1%	-18,679	-50.6%	-20,340	-9.8%	-7,880	-5,483	-2,397
Total 2021	-25.4%	-54.5%	-19.7%	-107,804	-67.9%	-220,694	-26.2%	-56,076	-30,069	-26,007
1Q 2022	-13.1%	-32.5%	-9.2%	-16,825	-44.8%	-19,492	-10.1%	-6,984	-4,687	-2,297
	to -12.7%	to -32.1%	to -8.8%	to -16,169	to -43.1%	to -15,847	to -8.3%	to -6,393	to -4,525	to -1,867
2Q 2022	-8.8%	-25.0%	-5.5%	-15,384	-37.5%	-13,956	-6.3%	-6,394	-4,749	-1,645
	to -7.7%	to -23.8%	to -4.5%	to -13,888	to -33.8%	to -8,683	to -3.9%	to -5,398	to -4,375	to -1,023
3Q 2022	-4.2%	-22.1%	-0.6%	-14,554	-33.5%	-2,895	-1.3%	-5,171	-4,830	-341
	to -2.4%	to -19.7%	to 1.0%	to -12,132	to -28.0%	to 3,567	to 1.6%	to -3,797	to -4,217	to 420
4Q 2022	-9.0%	-25.5%	-6.0%	-13,502	-36.6%	-12,015	-5.8%	-5,576	-4,206	-1,416
	to -5.7%	to -21.2%	to -2.9%	to -10,523	to -28.5%	to -4,667	to -2.2%	to -3,991	to -3,441	to -550
Total 2022	-8.5%	-26.1%	-5.0%	-60,031	-37.8%	-48,358	-5.7%	-24,109	-18,410	-5,699
	to -7.0%	to -24.1%	to -3.7%	to -52,711	to -33.2%	to -25,630	to -3.0%	to -19,578	to -16,558	to -3,020

Source: (ICAO, 2022)

4.8. COVID-19 vs. the Global Airport Industry

Airports are critical to a city's, country's, and region's economic development. By providing services to airlines, moving passengers, and delivering goods, they immediately contribute to the economy. Prior to the COVID-19 outbreak, the airport business was predicted to produce around \$188 billion in 2020. The impact of COVID-19 pandemic on airport revenues was unprecedented, resulting in a 66.3% in 2020 compared to the predicted baseline (pre-COVID-19 income prediction). The second quarter of 2020 alone amounted to a revenue decline of about \$43.5 billion, or more than 91.1%, as compared to the predicted baseline. Europe and the Middle East, similar to passenger traffic, were the worst-affected regions. In absolute terms, Europe is expected to lose 44.4 billion in revenue in 2020. In comparison to the predicted baseline, Europe

and the Middle East had a 70.5% drop in revenues in 2020. In 2021, the impact of the COVID-19 on airport revenues will still be felt. By the end of 2021, airports are expected to lose more than 94 billion USD in revenue, decreasing revenue forecasts in half (-50.0%) compared to the predicted baseline (-48.1% compared to 2019 level). Each quarter of 2021 is forecast to improve from the preceding one, with a reduction of 64.7% in the first quarter to 35.2% in the fourth quarter compared to the projected baseline. In absolute terms, Europe will continue to be the most impacted region, with an anticipated revenue loss of more than 37.4 billion USD by the end of 2021. The Middle East and Europe will be the worst impacted, with declines of 58.9% and 58.1%, respectively. The Asia-Pacific region will recover the most, with 59.7% of the anticipated baseline (Airports Council International, 2021^a), see table 13.

Table 13
Impact of COVID-19 on the Global Airports Industry

Region	Passenger Number/ International and Domestic				Airport Revenue/ Aeronautical and Non-Aeronautical			
	million and % change from "business as usual" baseline scenario				USD billion and % change from "business as usual" baseline scenario			
	2020		2021		2020		2021	
Africa	-165	-67.6%	-147	-55.8%	-2.670	-67.6%	-2.378	-55.8%
Asia/ Pacific	-2,148	-61.3%	-1,474	-40.3%	-36.206	-61.3%	-24.837	-40.3%
Europe	-1,764	-70.5%	-1,490	-58.1%	-44.368	-70.5%	-37.486	-58.1%
Latin America	-433	-61.1%	-360	-48.8%	-7.090	-61.1%	-5.889	-48.8%
Middle East	-304	-70.5%	-267	-58.9%	-10.762	-70.5%	-9.444	-58.9%
North America	-1,307	-62.5%	-936	-43.5%	-23.723	-67.0%	-14.071	-47.2%
Total	-6,121	-64.6%	-4,673	-47.5%	-124.820	-66.3%	-94.106	-50.0%

Source: (Airports Council International, 2021^b)

Figure 6 depicts the cumulative traffic losses for the top 10 airports through 2021. In 2019, the world's two busiest airports, Amsterdam-Schiphol and Frankfurt, both lost significant amounts of traffic (229K and 252K, respectively), but remained in the middle of the pack in terms of percentage of traffic loss. With 283K fewer flights, London-Heathrow is the worst-affected airport, followed by Munich with 264K. Munich is the second worst-affected in terms of percent of traffic lost with -64% of 2019 traffic, only surpassed by Manchester, which has lost a staggering -67% of pre-pandemic streams (136K fewer flights). Düsseldorf, Rome-Fiumicino, Helsinki, Dublin, and Stockholm-Arlanda are all trailing by 3 percentage points (-64% to -61%, 122-196K fewer flights).

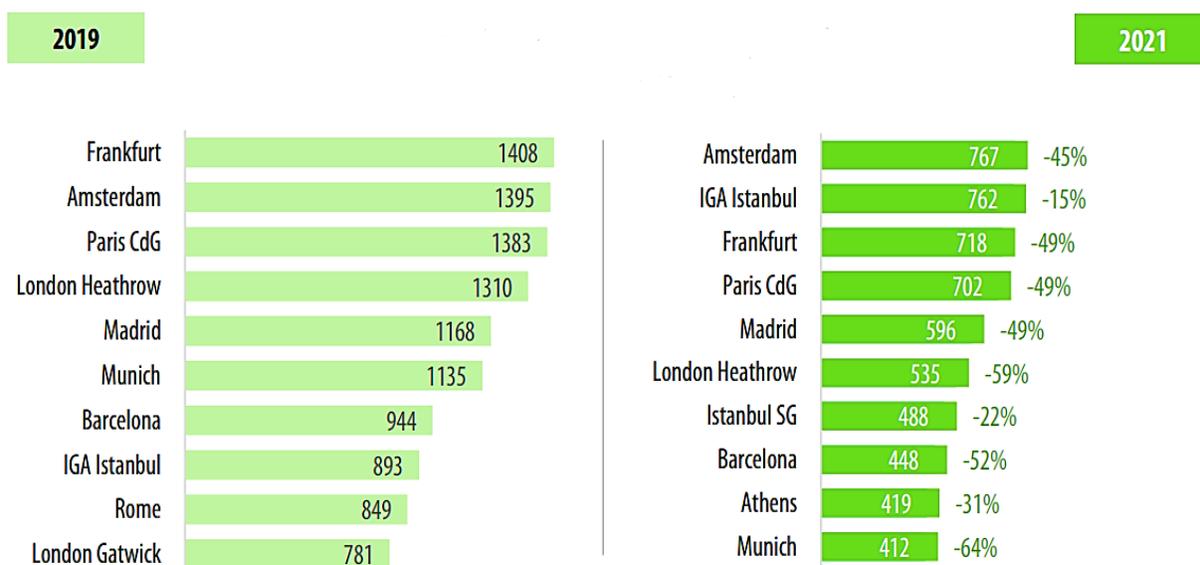


Fig. 6. Europe -Top 10 Airports (2021 vs. 2019)

Source (Eurocontrol, 2022)

COVID-19's consequences on African airports have been determined by comparing capacity in May and October 2020 with capacity in 2019. Although African airports experienced seat-offer losses ranging from 56% to 96% at the commencement of the outbreak, the majority of them are showing signs of recovery as of October. Depending on their traffic in-flows, the touristic traffic-based airports have demonstrated numerous optimization patterns. Zanzibar had the smallest initial effect (-56%) amongst airports, and its October performance was one of the best (only beaten by Addis Ababa). Sharm El-Sheikh, on the other hand, has been one of the most impacted airports, with October data worsening from May. As Europe is already facing the second wave of COVID-19). Similarly to Sharm El-Sheikh, the international centres of Addis Ababa and Casablanca suffered a significant reduction in their offer during the lockdown. All have improved their condition as international border restrictions have been eased. This is particularly true of Addis Ababa, which has largely regained its regional sector, which accounts for a significant portion of its offerings. Abidjan and Kigali, on the other hand, have made more headway as regional hubs due to the quicker recovery of regional and inter-regional sectors. At the beginnings of COVID-19, the gateway airports simultaneously encountered significant traffic losses. According to the data, capacity decreased by 64% to 96% in May compared to the same month of 2019. This drop was caused by their connectivity network and the way each traffic segment was impacted. Accordingly, its recovery has been influenced by such a circumstance. Depending on the location, they have recovered from 41% to 64% of their October 2019 capacity by October. Airports that rely on inter-regional, regional, and domestic traffic will recoup their previous year adequately implemented since they are the traffic segments that recover faster (Airports Council International, 2020).

4.9. Top 15 Airline Groups (Ranked by RPKs)

In terms of RPKs, the Top 15 airline groups accounted for 58.4% of global RPKs in 2020, dropping -63% year on year. All of the Top 15 airlines experienced contractions, which was 7.3% worse than the global average RPK decrease. Disproportionate effect of recurrent outbreaks on air transportation recovery across countries, the Top 15 ranking changed. China Southern, Air China, and China Eastern maintained their top 3 spots and showed the greatest tenacity amongst

Top 15, though with some moderation. Hainan Airlines moved up one spot to 8th place while keeping the same amount of traffic. American Airlines, United Airlines, Delta Airlines, and Southwest Airlines were ranked 4th to 7th, respectively, with YoY traffic declines ranging from -58% to -67%. Southwest Airlines ascended one spot to 7th place, outperforming the other three US carriers. The increase of COVID-19 cases, along with the more stringent procedures that came with it, generated a further degradation in traffic recovery across Europe. Five airlines in the area were placed 9th through 13th. AF-KLM plummeted two places to ninth, but the republican field remained reasonably unchanged. Emirates and LATAM re-entered the Top 15 for the first time since April 2020, ranking 14th and 15th, respectively (ICAO, 2021), as clarified in Fig. 7.

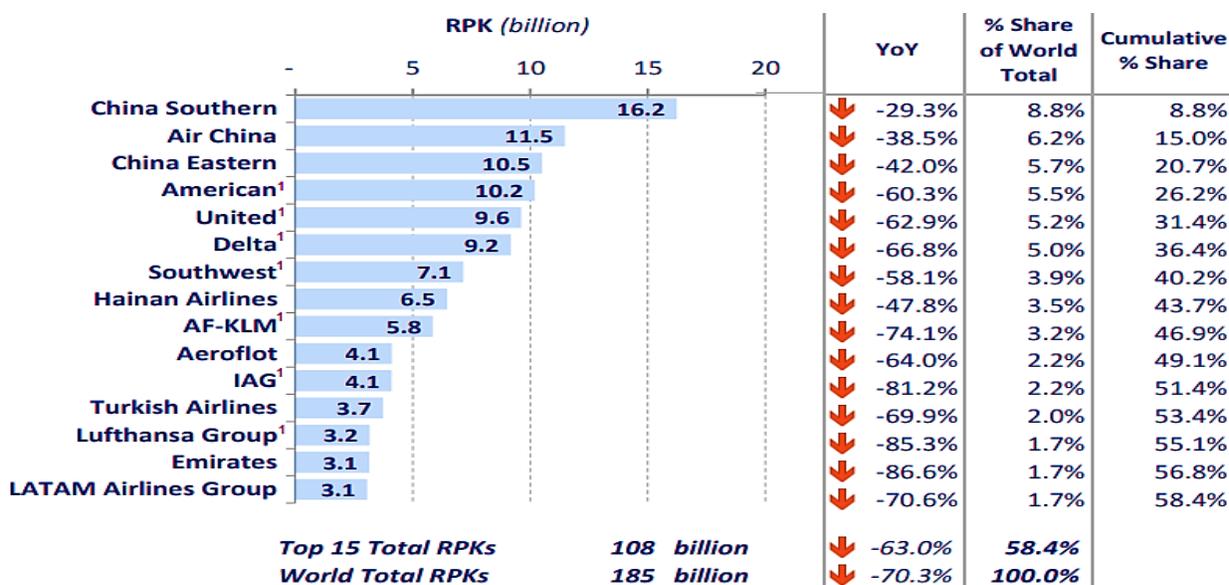


Fig. 7. Airline Groups-NOV 2020 (Ranked by RPK)

Source: (ICAO, 2021)

5. Conclusion

The aviation industry is in the crosshairs of potentially disastrous financial disasters as the COVID-19 pandemic continues to send economic shockwaves around the world. Short-haul flight recovery is predicted to be faster than long-haul flight recovery, with 2019 levels unlikely to be achieved until 2024. Consequently, passenger numbers will recover more quickly than traffic measured in revenue passenger kilometers (RPKs) or revenue passenger miles (RPMs). However, from 2023 to 2024, recovery to pre-COVID-19 levels will also be hampered. Net industry losses are expected to reduce to \$11.6 billion in 2022, after a \$51.8 billion loss in 2021, while the forecast net loss for 2020 has been boosted to \$137.7 billion (from \$126.4 billion). The total industry losses in 2020-2022 are expected to reach \$201 billion when these losses are combined together. Overall demand (measured in RPKs or RPMs) is predicted to be 40% lower in 2022 than in 2019, rising to 61%. The overall number of passengers is expected to surpass 2.3 billion in 2021. Total passenger numbers are expected to reach 2.3 billion in 2021, rising to 3.4 billion in 2022, which is comparable to 2014 levels but drastically lower than the 4.5 billion passengers in 2019. Air freight demand is forecast to remain robust, with demand expected to be 7.9% higher in 2021 than in 2019, rising to 13.2% higher in 2022. Average passenger load factors (PLFs) are expected to rebound to 75.1%, a level that had been exceeded every year since 2005 until the COVID-19 pandemic, and considerably below the all-time high of 82.6% achieved in 2019. Global GDP is expected to increase by 5.8% in 2021, with a further 4.1% expected in 2022.

Bibliography

- Adrienne, N., Budd, L., & Ison, S. (2020). Grounded aircraft: An airfield operations perspective of the challenges of resuming flights post COVID. *Journal of Air Transport Management*, 89, 101921. <https://doi.org/10.1016/j.jairtraman.2020.101921>
- AFRAA (2020^a). Annual Report AFRAA 2020. Available at https://afraa.org/wp-content/uploads/2020/11/Annual-Report_2020_web.pdf, [Retrieved July 20, 2021].
- AFRAA (2020^b). Press Release: AFRAA releases COVID 19 Impact Assessment on African Airlines. Available at <https://afraa.org/press-release-afraa-releases-covid-19-impact-assessment-on-african-airlines/>, [Retrieved December 18, 2021].
- Airports Council International (2021^a). The impact of COVID-19 on the airport business and the path to recovery. Available at <https://aci.aero/2021/03/25/the-impact-of-covid-19-on-the-airport-business-and-the-path-to-recovery/>, [Retrieved August 23, 2021].
- Airports Council International (2021^b). Economic Impact and Recovery Analysis Bulletin. Available at <https://aci.aero/wp-content/uploads/2021/03/210325-Econ-Impact-and-Recovery-Analysis-Bulletin-FINAL.pdf>, [Retrieved December 25, 2021].
- Airports Council International (2020). The impact of COVID-19 on the airport business. Available at <https://aci.aero/wp-content/uploads/2021/10/20201208-Advisory-Bulletin-The-impact-of-COVID-19-on-the-airport-business.pdf>, [Retrieved May 25, 2021].
- ALG (2020). Covid-19 aviation briefing. Available at <https://algnewsletter.com/aviation/covid-19-aviation-briefing-african-aviation-industry/>, [Retrieved September 17, 2021].
- Andersen, K. G., Rambaut, A., Lipkin, W. I., Holmes, E. C., & Garry, R. F. (2020). The proximal origin of SARS-CoV-2. In *Nature Medicine*, 26(4), 450–452. <https://doi.org/10.1038/s41591-020-0820-9>
- ATAG (2018). Aviation Benefits Beyond Borders. Available at https://aviationbenefits.org/media/166344/abb18_full-report_web.pdf, [Retrieved September 12, 2021].
- Baker, P. (2020). The Impact of COVID-19: Reflections on the Transport and Logistics Sector. Available at https://www.tradeeconomics.com/iec_publication/impact-covid19-transport-logistics/, [Retrieved June 20, 2021].
- Chinazzi, M., Davis, J. T., Ajelli, M., Gioannini, C., Litvinova, M., Merler, S., Pastore y Piontti, A., Mu, K., Rossi, L., Sun, K., Viboud, C., Xiong, X., Yu, H., Elizabeth Halloran, M., Longini, I. M., & Vespignani, A. (2020). The effect of travel restrictions on the spread of the 2019 novel coronavirus (COVID-19) outbreak. *Science*, 368(6489), 395–400. <https://doi.org/10.1126/science.aba9757>
- CNBC (2020). World Health Organization declares the coronavirus outbreak a global pandemic. Available at <https://www.cnn.com/2020/03/11/who-declares-the-coronavirus-outbreak-a-global-pandemic.html>, [Retrieved May 25, 2021].
- Donthu, N., & Gustafsson, A. (2020). Effects of COVID-19 on business and research. *Journal of Business Research*, 117, 284–289. Elsevier. <https://doi.org/10.1016/j.jbusres.2020.06.008>
- Eurocontrol (2022). Charting the European Aviation recovery: 2021 COVID19 impacts and 2022 outlook. Available at https://www.eurocontrol.int/sites/default/files/2022-01/eurocontrol-think-paper-15-2021-review-2022-outlook_0.pdf, [Retrieved February 15, 2022].
- FAA (2020). The Economic Impact of Civil Aviation on the U.S. Economy. Available at https://www.faa.gov/sites/aa.gov/files/about/plans_reports/2020_nov_economic_impact_report.pdf, [Retrieved December 05, 2021].
- Fan, D., Li, Y., Liu, W., Yue, X. G., & Boustras, G. (2021). Weaving public health and safety

- nets to respond the COVID-19 pandemic. *Safety Science*, 134, 105058. <https://doi.org/10.1016/j.ssci.2020.105058>
- Gössling, S., Scott, D., & Hall, C. M. (2020). Pandemics, tourism and global change: a rapid assessment of COVID-19. *Journal of Sustainable Tourism*, 29(1), 1–20. <https://doi.org/10.1080/09669582.2020.1758708>
- Gudmundsson, S. V., Cattaneo, M., & Redondi, R. (2021). Forecasting temporal world recovery in air transport markets in the presence of large economic shocks: The case of COVID-19. *Journal of Air Transport Management*, 91, 102007. <https://doi.org/10.1016/j.jairtraman.2020.102007>
- Huang, C., Wang, Y., Li, X., Ren, L., Zhao, J., Hu, Y., Zhang, L., Fan, G., Xu, J., Gu, X., Cheng, Z., Yu, T., Xia, J., Wei, Y., Wu, W., Xie, X., Yin, W., Li, H., Liu, M., ... Cao, B. (2020). Clinical features of patients infected with 2019 novel coronavirus in Wuhan, China. *The Lancet*, 395(10223), 497–506. [https://doi.org/10.1016/S0140-6736\(20\)30183-5](https://doi.org/10.1016/S0140-6736(20)30183-5)
- IATA (2022). Strong December Performance Contributes to Stellar Year for Air Cargo in 2021, Year-on-year Demand up 18.7%. Available at <https://www.iata.org/en/pressroom/2022-releases/2022-25-01-01/>, [Retrieved February 06, 2022].
- IATA Monthly Statistics (2021). Air Passenger Market Analysis. Available at <https://www.iata.org/en/iata-repository/publications/economic-reports/air-passenger-monthly-analysis---december-2021/>, [Retrieved February 21, 2022].
- IATA (2020^a). Aviation Relief for African Airlines Critical as COVID-19 Impacts Deepen. Available at <https://www.iata.org/en/pressroom/pr/2020-04-23-02/>, [Retrieved November 10, 2021].
- IATA (2020^b). COVID-19 Impact on Asia-Pacific Aviation Worsens. Available at <https://www.iata.org/en/pressroom/pr/2020-04-24-01/>, [Retrieved August 09, 2021].
- IATA (2020^c). European Air Transport COVID-19 Impacts and Recovery to be Worse than other Regions. Available at <https://www.iata.org/en/pressroom/pr/2020-12-10-01/>, [Retrieved June 03, 2021].
- IATA (2020^d). Impact of COVID-19 on European Aviation and Economies (December 2020). Available at <https://www.iata.org/contentassets/7dc1ea282f944da29dc3fa62bfe57067/december-european-covid-impacts.pdf>, [Retrieved June 13, 2021].
- IATA (2020^e). Relief is Critical for Middle East Airlines as COVID-19 Impact Deepens. Available at <https://www.iata.org/en/pressroom/pr/2020-04-23-01/>, [Retrieved July 06, 2021].
- ICAO (2022). Effects of Novel Coronavirus (COVID-19) on Civil Aviation: Economic Impact Analysis. Available at <https://www.icao.int/sustainability/Documents/COVID-19/ICAO%20COVID%202022%2001%2012%20Economic%20Impact%20Toru%20Hasegawa.pdf>, [Retrieved February 09, 2022].
- ICAO (2021). JAN 2021: Air Transport Monthly Monitor. Available at https://www.icao.int/sustainability/Documents/MonthlyMonitor-2021/monthly_monitor_Jan_2021.pdf, [Retrieved July 02, 2021].
- IFC (2020). The Impact of COVID-19 on Airports: An Analysis. Available at https://www.ifc.org/wps/wcm/connect/26d83b55-4f7d-47b1-bcf3-01eb996df35a/IFC-Covid19-Airport-FINAL_web3.pdf?MOD=AJPERES&CVID=n8lgpkG, [Retrieved July 15, 2021].
- Khan, K., Arino, J., Hu, W., Raposo, P., Sears, J., Calderon, F., Heidebrecht, C., Macdonald, M., Liauw, J., Chan, A., & Gardam, M. (2009). Spread of a Novel Influenza A (H1N1) Virus via Global Airline Transportation. *New England Journal of Medicine*, 361(2), 212–214.

- <https://doi.org/10.1056/nejmc0904559>
- Lai, C. C., Shih, T. P., Ko, W. C., Tang, H. J., & Hsueh, P. R. (2020). Severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) and coronavirus disease-2019 (COVID-19): The epidemic and the challenges. *International Journal of Antimicrobial Agents*, 55(3), 105924. Elsevier. <https://doi.org/10.1016/j.ijantimicag.2020.105924>
- Liu, J., Qiao, P., Ding, J., Hankinson, L., Harriman, E. H., Schiller, E. M., Ramanauskaite, I., & Zhang, H. (2020). Will the Aviation Industry Have a Bright Future after the COVID-19 Outbreak? Evidence from Chinese Airport Shipping Sector. *Journal of Risk and Financial Management*, 13(11), 276. <https://doi.org/10.3390/jrfm13110276>
- Maneenop, S., & Kotcharin, S. (2020). The impacts of COVID-19 on the global airline industry: An event study approach. *Journal of Air Transport Management*, 89, 101920. <https://doi.org/10.1016/j.jairtraman.2020.101920>
- McKinsey (2020). Coronavirus: Airlines brace for severe turbulence. Available at <https://www.mckinsey.com/industries/travel-logistics-and-infrastructure/our-insights/coronavirus-airlines-brace-for-severe-turbulence>, [Retrieved September 15, 2021].
- Pigott, D. M., Golding, N., Mylne, A., Huang, Z., Henry, A. J., Weiss, D. J., Brady, O. J., Kraemer, M. U. G., Smith, D. L., Moyes, C. L., Bhatt, S., Gething, P. W., Horby, P. W., Bogoch, I. I., Brownstein, J. S., Mekaru, S. R., Tatem, A. J., Khan, K., & Hay, S. I. (2014). Mapping the zoonotic niche of Ebola virus disease in Africa. *ELife*, 3, e04395. <https://doi.org/10.7554/eLife.04395>
- Poletto, C., Boëlle, P. Y., & Colizza, V. (2016). Risk of MERS importation and onward transmission: A systematic review and analysis of cases reported to WHO. *BMC Infectious Diseases*, 16(1), 1–13. <https://doi.org/10.1186/s12879-016-1787-5>
- Proparco (2016). Air Transport, A Vital Challenge for Africa. Available at <https://www.proparco.fr/en/ressources/air-transport-vital-challenge-africa>, [Retrieved November 10, 2021].
- Semenza, C., & Luzzatti, C. (2014). Combining words in the brain: The processing of compound words Introduction to the special issue. *Cognitive Neuropsychology*, 31(1–2), 1–7. <https://doi.org/10.1080/02643294.2014.898922>
- Sun, X., Wandelt, S., & Zhang, A. (2020). How did COVID-19 impact air transportation? A first peek through the lens of complex networks. *Journal of Air Transport Management*, 89, 101928. <https://doi.org/10.1016/j.jairtraman.2020.101928>
- The African Development Bank Group (2020). An Effective Response to COVID-19 Impacts on Africa's Aviation Sector. Available at https://www.afdb.org/sites/default/files/2020/11/26/afdb_aviation_covid_19_recovery_conference_draft_background_paper_nov2020.pdf, [Retrieved June 10, 2021].
- Yue, X.-G., Shao, X.-F., Li, R., Crabbe, M., Mi, L., Hu, S., Baker, J., & Liang, G. (2020). Risk Management Analysis for Novel Coronavirus in Wuhan, China. *Journal of Risk and Financial Management*, 13(2), 22. <https://doi.org/10.3390/jrfm13020022>



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الآثار الاقتصادية لجائحة كورونا COVID-19 على صناعة النقل الجوي العالمي

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المخلص

لقد أثارت جائحة كورونا ظاهرة صحية عالمية غير مسبوقه والتي أدت إلى حدوث تغيرات جوهرية في كافة نواحي الحياة المعاصرة، وما ترتب عليها من مجموعة متنوعة من الآثار الاقتصادية على صناعة النقل الجوي عالمياً. وبناءً على ذلك، تهدف هذه الدراسة إلى تحليل ودراسة الآثار الاقتصادية لجائحة كورونا COVID-19 على صناعة النقل الجوي. ولقد كشفت نتائج الدراسة صعوبة تقدير التداعيات التي أحدثتها جائحة كورونا على صناعة النقل الجوي بشكل فعلي، كما أن استعادة حركة النقل الجوي لما كانت عليه قبل حدوث الجائحة عام ٢٠١٩ ما يزال يكتنفها الغموض. وفيما يتعلق بسيناريوهات عودة صناعة النقل الجوي لما قبل عام ٢٠٢٠، تشير التقديرات إلى أنه من المتوقع أن تتجاوز إيرادات صناعة النقل الجوي ٤٣٢ مليار دولار في عام ٢٠٢٢، والذي يمثل ٦٥٪ من إيرادات عام ٢٠١٩. من عام ٢٠٢٢ حتى عام ٢٠٢٨. ومن المتوقع أيضاً أن تنمو صناعة النقل الجوي بمعدل نمو سنوي مركب (CAGR) بنسبة ٨,٩٪، بقيمة إجمالية قدرها ١,٠٩ تريليون دولار. علاوة على ذلك، من المتوقع أن تصل إيرادات صناعة النقل الجوي إلى ما يقارب ٨٠٪ من مستويات ما قبل حدوث الجائحة بحلول عام ٢٠٢٤، بقيمة إجمالية قدرها ١,٤ تريليون دولار، أي ما يقارب ذروة إيرادات ما قبل حدوث جائحة كورونا عام ٢٠١٩ والتي بلغت ١,٤٣ تريليون دولار.

معلومات المقالة

الكلمات المفتاحية

جائحة كورونا؛ متلازمة
الالتهاب التنفسي الحاد
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