



IJEAST

INTERNATIONAL JOURNAL
OF ENGINEERING APPLIED SCIENCE
AND TECHNOLOGY



VOLUME : 7 ISSUE : 01 Print / Issue Publication Date: 07-Jul-2022



ISSN : 2455-2143



DOI : 10.33564/IJEAST.2022.v07i01.004

Indexed In



WWW.IJEAST.COM

editor@ijeast.com



IMPACT OF COVID19 ON AVIATION INDUSTRY

Rubeen Akhter, Javaid Anwar, Shabbir Hussain, Muhammad Fahaf Ayub, Jawad Ahmad
Superior University
Lahore, Pakistan

Abstract—Most governments are currently debating whether and how to release lockdowns and travel prohibitions as a result of the outbreak. The purpose of this article is to provide light on the effect of the COVID-19 epidemic on international aviation. First, a short assessment of the literature on other aviation disasters in recent decades is offered. PEST (Political, Economic and Socio-Cultural and Technological aspects) study is then used to examine how the pandemic affects the airline sector. A fresh wave of adjustment is on the way for the aviation industry, with the potential of several airlines going bankrupt and others being forced to restructure or merge with or be acquired by bigger companies in the field. It seems that the aviation industry's recovery will be a protracted and drawn-out one. This means that airlines may be forced to change their business models to accommodate the shift toward unmanned and contactless service delivery. For airlines, the paper concludes with ideas for short- and long-term growth in air travel.

Keywords— Airways; Aviation; Covid; Pandemic; World Health Organization

I. INTRODUCTION

SARS and MERS outbreaks, the September 11th terrorist attacks, or the ash clouds from the Indonesian volcanoes have all had a significant impact on the aviation business during the past two decades. Every one of these events was unique, yet they all had an impact on the industry. In addition, the COVID-19 Pandemic is a shock. Coronavirus-induced disease COVID-19 was first reported in December of this year in Wuhan, China. An international crisis has resulted from its rapid spread. On March 12th, 2020, the World Health Organization labelled the outbreak a pandemic. On November 30th, 2021, Johns Hopkins University's COVID-19 Report stated that there were 262,208,788 confirmed cases globally, 5,207,855 deaths, and 237,041,329 recoveries. In addition to having a significant impact on public health, the COVID-19 pandemic has also impacted a wide range of companies and sectors. The aviation industry has been one of the hardest hit by this pandemic. In response to countries' international flight bans and border restrictions, dozens of airlines have had to ground thousands of planes [1]. There will be no passenger flights between March and April 2020 in nearly every country.

Flight bans have been gradually shifted around the world. In response to a spike in cases and mutations, some countries have reimposed flight prohibitions throughout the winter months. The impact on international air passenger traffic, airports, airlines, tourism, trade, and the global economy has been profound because of this pandemic [2].

Many businesses have been forced to shut down because of the current pandemic of COVID-19, which has generated a humanitarian disaster. In an effort to keep the virus from spreading further, many countries throughout the world have implemented severe restrictions, which might differ from country to country. Commercial and operational activity have been severely curtailed, and air traffic has dropped dramatically [3]. Only the airport industry will lose €2 billion in passenger income in the first quarter of 2020, according to an ACI Europe estimate of a decrease in passenger numbers of 100 million.

There has never been anything like the COVID-19 pandemic catastrophe in the history of civil aviation when it comes to damaging the sector. These damages have already occurred, and it will be tough to fix them. While the outbreak was confined in China in February 2020, IATA estimated the loss of the aviation sector in that country to be \$113 billion. In March, it was \$252 billion, and in April, it was \$314 billion. There has been a dramatic surge in the sector's negative impact since COVID-19 epidemic began. The projected decline in international passenger traffic is expected to be 50 percent, with airport revenues decreasing by \$97 billion, revenue from a passenger per kilometre decreasing by approximately 48 percent, revenues from international tourism increasing by between \$300 and \$450 billion, and the volume of global merchandise trade decreasing by between 13 percent and 32 percent.

In 2020, the global aviation industry was expected to have another year of strong growth across the board. This was in the context of a recent period in which the cargo, passenger, and revenue numbers for the sector as a whole have all grown steadily. As a result of this, numerous airlines have made significant investments and purchases of new aircraft, propelling aircraft manufacturers like Airbus and Boeing and resulting in a significant backlog in new aircraft deliveries. Prior to the coronavirus outbreak, the International Air Transport Association (IATA) predicted an increase in revenue passenger kilometres (RPKs) of 4.1 percent and a rise in freight tonne-kilometres (FTKs) of 2.0 percent for 2020 [4]



In light of the fact that COVID-19 would have a significant impact on the growth of the aviation sector, IATA altered its industry predictions multiple times. For the first time in history, the aviation industry has had a worldwide impact.

The financial health of many airlines has deteriorated recently. Qatar Airways, Emirates, Delta Air Lines, American Airlines, Southwest Airlines, United Airlines, China Southern and China Eastern Airlines, Ryanair, EasyJet, Lufthansa, and Turkish Airlines are only few of the major worldwide airlines affected by this issue. COVID-19 Pandemic affected the aviation sector as a whole, as both low-cost and flag carriers were affected [5]. The COVID-19 Pandemic is predicted to cause these worldwide airlines to lose billions of dollars in revenue, as noted in the above paragraph.

II. LITERATURE REVIEW

Passenger demand declined by 9.3% and freight demand dropped by 17.4% during the H1N1 influenza pandemic in 2009 compared to the same period prior year. The number of passengers flying out of Mexico decreased by roughly 40% [6]. WHO's swift action and the fast development of specialized medicines, vaccinations, and other treatments. Despite the fact that 216 nations were eventually infected, the worldwide death rate from H1N1 was just 0.001% -0.007%. With fewer news stories about the H1N1 virus making headlines, passenger trust in the airline industry has waned. All areas except the Middle East saw an improvement in August in demand. H1N1's impact is lessening, despite the fact that profits have not returned.

There are several ways that aviation contributes to the economy, including supplying millions of employment throughout the world and making a big impact on the global economy. GDP change is the primary driver of air service dynamics and the crisis of air services has largely impacted the United States, Europe, and Japan [7].

Despite being one of the fastest-growing businesses, the aviation industry experienced negative growth and massive losses during the financial crisis of 2008. After comparing data from 41 international airlines in four regions (Europe and Russia; North America; China and the Asia-Pacific; Africa and the Middle East) in 2005, researchers found that low-cost airlines are more efficient than full-service airlines and that large airlines benefit from economies of scale. Despite the fact that airlines immediately adjusted their capacity and cost base in response to the 2008 economic crisis, Profits for many airlines have been slow to recover after the 2001 financial crisis. Since the 2008 financial crisis, there has been a widening gap between successful and failing company practices [8].

World economies are now intertwined because of forces such as technology advancements, changes in population and other socio-demographic factors as well as geopolitical upheavals. As a process of international integration, globalization is dependent on the aviation sector, and the aviation industry in

turn helps to enable continued growth [9]. In addition to the benefits that come with globalization, there are also many drawbacks. Deindustrialization is becoming increasingly common in industrialized countries, with tertiary industry now accounting for 80 percent or more of the economies of numerous European countries, Australia, and the United States. As a result, certain nations' income levels have been dropped and its low-skilled labour population has been left out in the cold. This has been referred to as "premature deindustrialization." Aviation stock values are unaffected by fluctuations in crude oil prices or changes in the oil pricing system, according to research. Certain airlines, on the other hand, have felt the effects of both crude oil prices and the instability of the crude oil production system more keenly. To put it another way, large global events have a significant impact on airline inventory risk due to the extraordinary sensitivity of the risk to crude oil volatility and oil systems.

III. PROPOSED METHODOLOGY

A qualitative approach is taken in this study, which utilizes the PEST (Political, Economic, Sociological, and Technological Aspects) model as an acceptable research instrument for the airline industry's strategic planning. When it comes to macroenvironmental variables, PEST analysis provides a framework for examining, evaluating, and analyzing four distinct areas that might have an impact on the aviation sector in order to improve strategic planning. Multiple databases and affiliated websites provided the data for this study. Main sources of information include reports from IATA, The World Bank, and the International Labor Organization (ILO), as well as working papers and real situations, such as Aljazeera and BBC News.

The research relies on data from a variety of sources, including databases and linked websites. Additionally, working papers and real situations as well as online business periodicals and magazines, such as Aljazeera and BBC News, are used as primary data sources for the study.

IV. RESULTS

4.1. Economic aspects

Quantitative easing with no end in sight (QE). The US stock market's circuit breaker was set off four times between March 9 and March 18, 2020. The Federal Reserve enacted a variety of financial and monetary actions in try to stabilise the stock market. It is argued by some economists that the US dollar has depreciated due to the massive quantity of US money flowing into the stock market as a stimulant akin to epinephrine [10]. This has resulted in an increase in operational expenses for businesses as a result of the monetary policy aspects. US dollars are the primary currency used for commodities trading and financial settlements in global commerce at the moment. Quantitative easing may mask inflation and spread it to all nations save the United States since it is a kind of 'creating money'. Global QE and negative interest rates after the 2008



financial crisis have long-term consequences. The widening of the wealth divide and the rise of populism, for example, have had significant implications. UK government fiscal austerity strategy has been alleged to have negatively affected the level of life and has resulted to a lack of policy flexibility and currency ammunition in the event of crisis [11]. In addition to raising prices for consumers, today's QE has also prompted airlines to raise their costs. One of the most devastating effects of the "Great Depression". Since its inception, demand for air travel has been very cyclical, with years of boom and drop in air passenger traffic alternately occurring. The yearly growth rate of passenger traffic is typically between 7 and 9 percent. Following the 2008 financial crisis, the global aviation sector had its first decline in growth, as all airlines were affected by the global economic slump. Until then, there had been the Great Depression of 1929, when the stock market collapsed and a great number of Americans became indebted. Due to the worldwide adoption of the "gold standard," the Great Depression extended to every country in the world. As a result of the present epidemic, there have been financial shocks all across the world. There has been a significant decrease in the global economy and the number of jobless Americans hit a record high of 20.5 million in April 2020 as a result of this. There was also an increase in internet ecommerce as many brick-and-mortar retail establishments went out of business. Many retail jobs will not return, although the number of employment that ecommerce can supply is far fewer than the offline retail business. The virus's ongoing spread might thwart any real recovery, resulting in a global economic downturn that would last for years. The price of crude oil. One of the most important factors influencing global oil prices is the location and capacity of storage facilities. Because to the lack of readily accessible ships and vast deposits in the centre North Sea, Brent crude oil is more expensive, while the U.S. reserves of WTI crude oil are more restricted and geographically isolated. Because WTI must be physically delivered and traders must remove crude oil from the warehouse before contracts expire, there is a pricing differential between the two products. In contrast, other benchmark crude oils of the same quality, such as Brent crude oil, do not need this. However, much like the stock market, the price of crude oil cannot decrease indefinitely. In anticipation of a revival in oil demand, the market has already begun to ease the oil embargo in many countries. In addition, Russia and OPEC have agreed to limit supply. The price of Brent crude oil once again jumped to US\$ 30.97 per barrel under the twin stimulation of rising demand and lower supply. There has been a huge fall in the price of Brent crude oil as of March 2020. The price of crude oil is projected to rise much more if the core cause of the issue is discovered.

4.2. Sociological aspects

Travel apprehensions. It will be difficult to calm public anxiety about the viral spread in the near future. Many people, both residents and visitors, are afraid of travelling or interacting

with foreigners because of the widespread dissemination of misleading information. People were having difficulty getting lodging in Pakistan's tourist attractions because terrified hotel operators were evicting them. Additionally, eateries and cabs stopped providing services [12]. They have cancelled their initial plans due of these outstanding issues. Investors are in a panic. There are a slew of investors, and Warren Buffett is just one. Investors, on the other hand, are in a state of utter terror. If there is a lot of negative news, a panic sell-off might occur much like a panic bank run. Every investor knows that the pandemic will have a negative effect on tourism and the aviation business. Share prices of airlines in many nations are not projected to return back to their 2019 levels, despite monetary policy (such as unrestricted QE) or government bailout measures assisting airlines to avoid insolvency and sustain basic operations.

V. CHALLENGES

Macroeconomic and political issues have an impact on the operating environment of airlines. It is impossible to predict the future of the aviation business with any certainty, but there are a few things we can be sure of. Following the outbreak, airlines will have to deal with a slew of new issues, as shown by a careful examination of the industry's present position, current legislation, and the overall health of the economy. Setting up guidelines for personal hygiene and health protection. The COVID-19 outbreak is a natural catastrophe that was not caused by humans. The Ebola and Zika outbreaks of recent years are examples of such situations. Nearly two decades ago, on September 11, 2001, terrorists attacked the World Trade Center's Twin Towers, causing major damage to the aviation sector. United States rapidly approved the "Aviation and Transportation Security Act," which led to airports and airlines throughout the world tightening their security procedures after 9/11. More stricter security restrictions were accepted by most members of the public, either actively or passively. The World Health Organization and other organizations have urged governments to work together to check travelers before they leave or enter Ebola-infected areas [13][14]. The 'Aviation and Virus Quarantine Safety Act' must be enacted in order to avoid a fast spread of any pandemic in the future, so that necessary hygiene rules and regulations may be established.

VI. CONCLUSION

This conclusion may be reached by using the results of the PEST analysis in light of the recent pandemic-related occurrences and the lockdown measures implemented in reaction to them. Aviation safety laws is likely to be implemented in post-pandemic nations to prevent future epidemics. The economic downturn and trade tensions are expected to send the aviation sector into a decline cycle. Traveler trust in air travel has been damaged by the epidemic, which is predicted to have a long-term negative impact on the aviation industry's recovery cycle. Many airlines will be forced



into bankruptcy, mergers, or takeovers as a result of this new cycle. It's possible that new company models that are more suited to current trends may emerge, whilst those who cling to their old methods may suffer. Cross-border e-commerce may contribute to a steady but moderate expansion in the air freight transport industry, which is likely to enter a recession cycle in the near future.

VII. REFERENCE

- [1] Bureau A T. (2020). Effects of novel coronavirus (COVID-19) on civil aviation: economic impact analysis. International Civil Aviation Organization (ICAO), Montréal, Canada.
- [2] Suau-Sanchez, P., Voltes-Dorta, A., Cugueró-Escofet N., (2020) An early assessment of the impact of COVID-19 on air transport: Just another crisis or the end of aviation as we know it?. *Journal of Transport Geography*, 86, 102749.
- [3] Yamin M., (2020). Counting the cost of COVID-19. *International Journal of Information Technology*, 12(2), 311-317.
- [4] Zhang, L H., Wang K., Bian L., Zhang X., (2021). The impact of COVID-19 on airline passenger travel behavior: An exploratory analysis on the Chinese aviation market. *Journal of Air Transport Management*, 95, 102084.
- [5] Silveira P., de Mello J C C S., (2021). Efficiency evaluation of Brazilian airlines operations considering the Covid-19 outbreak. *Journal of Air Transport Management*, 91, 101976.
- [6] IATA, "Traffic Volumes Improve, but Costs Rising - Profitability Remains Distant", International Air Transport Association. Available at: <https://www.iata.org/en/pressroom/pr/2009-09-29-01/> [Accessed March 2,2021].
- [7] Terry M., "Compare: 2009 H1N1 Pandemic Versus the 2020 Coronavirus Pandemic", BioSpace. Available at: <https://www.biospace.com/article/2009-h1n1-pandemic-versus-the-2020-coronavirus-pandemic/> [Accessed March 2,2021].
- [8] IATA, "IATA Economics' Chart of the Week Passenger confidence key to the postCOVID-19 recovery in air travel", IATA. Available at: <https://www.iata.org/en/iatarepository/publications/economicreports/passenger-confidence-key-to-the-post-covid-19-recovery-in-air-travel/> [Accessed March 2,2021].
- [9] Dobruszkes F., Van Hamme G., "The impact of the current economic crisis on the geography of air traffic volumes: an empirical analysis", *Journal of transport geography*, 19(6), 1387-1398.
- [10] Barbot C., Costa A., Sochirca E., "Airlines performance in the new market context: A comparative productivity and efficiency analysis", *Journal of Air Transport Management*, 14(5), 270-274.
- [11] Franke M., John F., "What comes next after recession?—Airline industry scenarios and potential end games", *Journal of Air Transport Management*, 17(1), 19-26.
- [12] Dwyer L., "Globalization of tourism: Drivers and outcomes", *Tourism Recreation Research*, 40(3), 326-339.
- [13] Rodrik D., "Premature deindustrialization", *Journal of economic growth*, 21(1), 1-33.
- [14] Nandha M., Brooks R., Robert F A., "Oil, oil volatility and airline stocks: a global analysis", *Accounting and Management Information Systems*, 12(2), 302.

IJEAST

INTERNATIONAL JOURNAL
OF ENGINEERING APPLIED SCIENCE
AND TECHNOLOGY

ABOUT IJEAST

International Journal of Engineering Applied Science and Technology (IJEAST) is a peer-reviewed, open access journal that publishes high-quality research papers in the field of Engineering, Applied Science and Technology.

IJEAST aims to provide a platform for researchers, academicians, and professionals to share their innovative ideas, research findings, and practical experiences with the global scientific community.

FOCUS AREAS

- Engineering
- Applied Science
- Technology
- Innovation & Development
- Interdisciplinary Studies



PEER REVIEWED

All submissions are rigorously peer reviewed to ensure quality.



OPEN ACCESS

Free and unrestricted access to research for all.



GLOBAL REACH

Connecting researchers and professionals worldwide.



TIMELY PUBLICATION

We ensure a swift and efficient publication process.



For more information, visit our website

www.ijeast.com



INTERNATIONAL JOURNAL
OF ENGINEERING APPLIED SCIENCE
AND TECHNOLOGY

✉ editor@ijeast.com

🌐 www.ijeast.com

📍 India



2455-2143