

The Aviation Industry: Tackling the turbulence caused by COVID-19

Deborah Tay¹, Katherine Du¹, Josephine Ho¹, Feng Liu¹, Christie Chan¹, Cheng Cao^{2*}

¹Business School, University of Sydney, Sydney, NSW 2006, Australia

² Business School, University of Sydney, Sydney, NSW 2006, Australia

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Abstract: The COVID-19 pandemic that appeared in December 2019 has affected the aviation industry both positively and negatively. The unprecedented panic has forced governments and businesses to respond in novel ways. This study compared COVID-19 to SARS and the Spanish flu in terms of government and business response to operating in an environment with the pandemic. We identify the key factors that allow certain airline carriers to fare better than other airlines based on their domestic market and government response. There are also repercussions of the pandemic to the aviation industry in the short term and long term. We offer prospective insights into addressing these short- and long-term repercussions and propose frontier directions of academic research that should be conducted.

1 INTRODUCTION

On 31 December of 2019, China reported a cluster of cases of pneumonia of unknown cause in Wuhan, Hubei Province, where it was later identified as a novel coronavirus. Officially named COVID-19 by the World Health Organisation on the 12th of February 2020, COVID-19 then rapidly appeared in other countries of the world. The World Health Organisation (WHO) declared it a global pandemic on March 11th, 2020. The virus was hard to detect at the beginning and has a high death rate, particularly life-threatening to vulnerable groups in the population, like the elderly and children. As of 29th May 2020, the virus spread to 213 countries with a total of 5,905,415 cases of coronavirus, with a total of 362,024 deaths (Worldometer, 2020). The United States, one of the hardest-hit countries with the highest number of infections, has a total of 2,116,144 cases and a total of 116,813 deaths to date (Worldometer, 2020). Italy was another country that was highly impacted by the virus, with 33,846 deaths as of 7th June 2020, while the United Kingdom had 40,4065 deaths (Worldometer, 2020).

COVID-19 pandemic brings wide-ranging political and economic implications for governments all over the world. Countries went into lock-down and social distancing measures were put in place. In multiple countries, people who arrived from overseas were forced into 14-day quarantine periods. Economically, unemployment and bankruptcy of business have been widespread globally. The United States (US) is the hardest-hit country with 33.3 million people or 20% of its workforce making jobless claim applications and business bankruptcy filings increasing by 26% compared to 2019 (Cheung, 2020; Miller and Berk, 2020). Such trends are also seen in the rest of the world, where 38 million workers have claimed unemployment insurance among countries in North America and Europe (Rothwell, 2020). Thus COVID-19 has brought huge disruptions to society economically.

Public policies represent priorities for societies, and many governments have used public policies in response to the pandemic. Governments have implemented various policies to curtail the

further spread of the virus, such as lock-down measures, widespread testing for the virus and implementing social distancing measures. National borders were closed, travel curtailed, and tourism facilities were shut down. As of early April 2020, 91 percent of the world's population lived in countries that restricted the entry of non-citizens and non-residents (McKinsey Insights, 2020). The pandemic also prompted governments all over the world to adopt emergency financial measures and develop aggressive stimulus packages to keep the economy afloat. The US has implemented the largest fiscal measures in the world, with three phases of congressional stimulus working out at US\$483 billion, US\$2.3 trillion and US\$8.3 billion (IMF, 2020) They also implemented monetary measures of reducing the interest rate to almost zero, printing money and buying debt.

The COVID-19 pandemic has had massive impacts on everyday life for people and businesses all over the world, where every industry has been disrupted. Businesses today are facing uncharted waters as they look to navigate the impacts of the pandemic. The aviation industry is one of the industries that has been badly disrupted by COVID-19 and are facing serious risks. The global aviation industry has played a vital role in globalisation, increasing the interconnectedness of the global economy. The rising number of air cargo and passenger flights have led to the strong financial performance of the industry, where between 2009 and 2017, the revenue of the global aviation industry grew at a compound annual growth rate (CAGR) of approximately 5.9 percent, reaching 754 billion U.S dollars in 2017 (Mazareanu, 2020a). Despite the positive growth in the past decade, the industry still faces major challenges – one of which is public health threats, which not only affects profitability but also the sustainability of the industry. The emergence of the COVID-19 pandemic has proved to be a serious threat to the industry, where the loss in revenue due to the pandemic is expected to be 314 billion U.S dollars (Mazareanu, 2020b). As a major economic force not only in terms of its own operations but also in terms of its impact on other related industries such as aircraft manufacturing and tourism, the aviation industry drives substantial global economic and social progress (Belobaba, Odoni & Barnhart, 2016). Hence, it is important that through a thorough analysis of the current COVID-19 pandemic and learning from similar past public health threats, suitable solutions for airline carriers are proposed so that one of the most important industries in the global economy does not fail, bringing about even greater repercussions.

Due to the rapidly evolving nature and recency of the COVID-19 pandemic, a risk management analysis for the global aviation industry has not been conducted in the International Business (IB) scholarly community. As airline carriers look at the urgency and complexity of navigating their business in a completely different landscape, our report identifies opportunities of reinvention that airlines can employ to tackle this unprecedented crisis. In order to provide holistic and realistic recommendations to the global aviation industry, our report will first briefly discuss the implications of COVID-19 on political and economic landscapes followed by the impacts of the COVID-19 pandemic in the aviation industry this far. This will provide a broad and full picture of the situation. To further direct our recommendations, we will compare the evolution of COVID-19 to the severe acute respiratory syndrome (SARS) in 2003 and identify the possible trajectory of COVID-19. We then conduct a future projections analysis, looking at the positives and negatives for the airline industry that could emerge out of the pandemic. Finally, we offer insights and propose strategic long-term and short-term solutions that the aviation industry can employ to overcome this health pandemic.

2 THE AVIATION INDUSTRY

2.1 The aviation industry

Airlines being at the center of the aviation ecosystem is the key to the whole supply chain. COVID-19 has not only greatly disrupted the aviation industry but also generated wider catalytic negative impacts on complementary industries such as tourism, hospitality and the food and beverage (F&B) industry (Baum & Hai, 2020). In the tourism industry, The World Travel and Tourism Council projects an aggregate loss of 75 million jobs and \$2.1 trillion in revenue (Becker, 2020). Third-party travel agencies like Expedia have also begun their retrenchment process, planning to lay off around 3000 “redundant” employees to reduce the cost of staffing (Rosoff, 2020). This serves as an example of how COVID-19 has derailed an entire industry and related ones too. The current academic literature relating COVID-19 to the aviation industry is very limited. Much of the current literature focuses on the clinical aspect of the pandemic as seen in Zhou et al. (2020) and Ruan, Yang, Wang, Jiang & Song (2020). Other academic literature comprises largely quantitative papers, tracing the possible trajectories of the COVID-19 pandemic as seen in Liu et al. (2020) and Tuite et al. (2020). Hence, our focus in this paper will be examining airline carriers with respect to COVID-19. Our paper contributes to existing literature by analysing the impact that COVID-19 has on the global aviation industry and proposing solutions and recommendations to tackle current challenges and how the industry could prepare for future health threats.

2.2 Infectious diseases and pandemics and the aviation industry

Infectious diseases and pandemics have always been a serious threat to the aviation industry, bringing about great uncertainty. The rapid pace of urbanization has led to a greater risk of the spread of infectious diseases, where airports are viewed to be a hotbed of contagion (IATA, 2018). In the 1960s, many infectious diseases were thought to be under control, but the emergence of new threats such as severe acute respiratory syndrome (SARS), Middle East respiratory syndrome (MERS) and most recently COVID-19 have proven otherwise, where the impacts of COVID-19 have surpassed all the diseases before. To curb the spread of COVID-19, countries all over the world have taken drastic measures such as quarantines and border closures, leading to virtually no air travel. This sharp and sudden decrease in the demand for air travel is unprecedented. The impact of COVID-19 on global travel-sector revenues is much worse than the combined impact of the September 11 attacks in 2001 and the 2008 financial crisis, where the loss in revenue due to the pandemic is expected to be 314 billion U.S dollars (Mazareanu, 2020b, McKinsey Insights, 2020). The effects of COVID-19 in the aviation industry have been felt across the board, by both traditional/legacy and low-cost carriers.

2.3 Comparing airlines

There are some airlines that continue to fare better than others despite the COVID-19 situation. This is due to having a stronger financial position pre-COVID-19, size of the domestic market, level of governmental support, and governmental regulations. Identifying and understanding these factors will help to effectively identify the airlines most at risk due to this pandemic. Firstly, carriers who have stronger balance sheets are more likely to fare better than those who do not (Reed, 2020). For carriers with weaker balance sheets, cash reserves are run down quickly and airlines quickly come into excessive debt. Multiple have already been forced to file for bankruptcy – British low-cost carrier Flybe filed for bankruptcy protection in early March while Virgin Australia did the same in

April (Fonda, 2020). More airlines are expected to follow, where CAPA, the centre for aviation has warned that most airlines face the prospect of bankruptcy by May if left without governmental assistance (CAPA, 2020). Most of the airlines that are struggling are European budget airlines, due to struggling balances and a fragmented European aviation market (The Economist, 2020). Carriers with stronger balance sheets are able to first turn to short-term measures such as tapping into revolving cash resources, step up emergency cost-saving measures and deplete untapped liquidity in the credit market, keeping themselves in the market (Fonda, 2020). Examples include temporarily ceasing or reducing operations, forced to ground the global fleet as well as cut jobs or lay off their workforce. Airlines are also scaling back purchases of new aircraft, and leasing companies. Carriers with stronger balance sheets can then move into longer-term measures such as finding new sources of leverage and borrowing (Fonda, 2020). In the short run, having a stronger balance sheet is beneficial as it lowers the vulnerability of airline carriers to this pandemic.

Secondly, the size of the domestic market contributes to the sustainability of airline carriers. The closure of international borders leaves airlines with only the operation of a limited number of domestic routes. These domestic flights account for airline carriers' revenue stream COVID-19 (Marcus, 2020). The airlines with larger domestic markets have been observed to perform better. Chinese and American airlines are amongst those that continue to survive COVID-19, as they serve a vast domestic market. On the other hand, the European Union's aviation markets are fragmented, with member states put up barriers, resulting in an inability to profit off regional flights (The Economist, 2020). As the pandemic continues to worsen, domestic flights have also been restricted, hence, this factor will no longer contribute to better performance for carriers.

Thirdly, the level of governmental support and regulations are crucial for differentiation between surviving and suffering airlines. Due to the disruptions in cash flow and demand for flights, governmental support in terms of cash bailouts, are crucial in the maintenance of flights and aeroplanes (Ng, 2020). It is also beneficial for governments to support their national airlines as they provide essential services such as food and medical resources. Governments have also adapted flight regulations such as waiving rules that require valuable landing and take-off slots to be used at least 80% of the time (The Economist, 2020). The importance of governmental support is seen through the survival of Chinese airlines, that are often state-owned, and owe their survival to governmental support. Wealthy shareholders of airline carriers can also make a difference by providing airlines with the financial resource needed to weather through this crisis.

3 COVID-19 AND SARS

The current outbreak of COVID-19 would remind many of the SARS epidemic back in 2002-2003. SARS infected over 8000 people and led to 774 deaths in over 37 countries (Liu et al., 2020). The two outbreaks, SARS and COVID-19, are similar in many ways: both are zoonotic viruses and epidemiologically similar, with both being respiratory illnesses caused by the coronavirus (Liu et al., 2020). Hence, the mild symptoms and transmission modes for both epidemic/pandemic are similar. Symptoms include fever, coughing, body aches and pains while transmission includes droplet transmission and by touching the surface of infected patients. Importantly, for both outbreaks, there is no specific treatment or vaccine. With the similarities between the two, there are learning points from the SARS epidemic that can be leveraged to help with this current pandemic.

3.1 Learning from SARS

The global community today is much better prepared to tackle COVID-19. SARS led to an increase

in emphasis on governmental collaboration across countries and with international organizations such as the Centers for Disease Control and Prevention (CDC) and World Health Organisation (WHO) to ensure that outbreak response is accelerated. Some preventive measures include proper hand hygiene, isolation of infected individuals in properly ventilated hospitals (negative pressure rooms) and preventing direct contact with suspected animal reservoir hosts.

Quicker dissemination of vital virus information can also be seen when the Chinese Ministry of Health shared the genetic sequencing of the COVID-19 virus just 8 days after isolating the virus (10 January), allowing other countries to quickly diagnose the virus by utilizing rapid testing methods (Khanna & Cicinelli, 2020). The virus sequencing and the availability of diagnostic assays were made available much faster for COVID-19, and diagnostic tests were available globally within two weeks of reports of cases from China (Wilder-Smith, Chiew & Lee 2020). Additionally, it took the government from 31 December, when the Wuhan Health Commission announced the outbreak, until 8 January for the government to publicly declare the novel coronavirus was the cause (Page, Fan, & Khan, 2020). This showed that the global community had learnt the valuable lessons from SARS and actively sought to implement it.

Despite the similarity between the two viruses, there are also important differences in terms of infectivity in the community, transmissibility and clinical severity. COVID-19 is significantly more infectious largely attributed to its higher transmissibility rates and spreadability. Approximately 80 percent of people infected with COVID-19 only experience mild symptoms, where some may be unaware that they are sick, others may be asymptomatic, a carrier for the virus, but showing no symptoms (Wilder-Smith, Chiew & Lee, 2020). This increases the chances of the virus spreading silently to others as detection and implementing isolation become difficult. Despite COVID-19's infectivity, cases tend to range from mild to severe while SARS saw significantly more severe cases, being more deadly with an approximate mortality rate of 10 percent (Paules, Marston & Fauci, 2020). These significant differences would mean that the trajectory prediction of COVID-19 based on the SARS epidemic is hard to predict. A study conducted by Yue et al. (2020) compared the duration of SARS with COVID-19 to predict how long the virus would continue affecting people. The study argues that when the number of suspected cases increasing per day equals the number of cases increasing daily, the condition stabilizes and reaches the inflection point. The inflection point was predicted to be 8 February 2020. The key point for COVID-19 was calculated to be 19 February 2020. This research showed that even statistically sound predictions can result in inaccurate assessments, and thus the key point date for COVID-19 is highly uncertain.

3.2 Possible trajectories of COVID-19

COVID-19 is unlikely to disappear completely. While SARS wiped out within a year, it might take longer for COVID to cease as experts are drawing parallels to the Spanish Flu Pandemic which spread very far and long (Sherryn Groch, 2020). Both the pandemic influenza and the COVID-19 virus spread via droplets people exert when coughing or sneezing and can pass between infected people with no symptoms (World Economic Forum, 2020). World studies suggest scenarios for the duration of COVID-19. The first scenario: COVID-19 could last between 18-24 months and would not be halted until 60% to 70% of the population is immune, with the virus clearing out in one wave (World Economic Forum, 2020). The second scenario for how COVID-19 will progress is that a second, larger wave of infections will appear in the coming months in the fall or winter of 2020 (in the northern hemisphere), and smaller subsequent waves will follow in 2021. This mirrors what happened during the 1918 Spanish influenza pandemic. The third scenario is that a repetition of smaller waves would occur, with a lower number of infections. They would persist over a one to

two-year period, gradually diminishing in 2021 - this is the “slow burn” of ongoing transmission and new cases. Each of these scenarios could be influenced by the development of a vaccine. However, the chance of a vaccine being provided during the pandemic is slim.

3.3 Scenarios

Due to the uncertain trajectory of the pandemic, with the possibilities of three different scenarios, our paper puts forth that airline carriers need to prepare for a variety of different scenarios. In particular, we have identified two possible scenarios: an optimistic scenario and a pessimistic scenario. In the optimistic scenario, the spread of the virus is effectively controlled, mirroring scenario 1. In this scenario, strong government interventions are made, and they are effective. Travel bans start lifting the moment the number of cases drops and the demand for air travel mimics pre-COVID-19 level as airlines ramp up their operations. In the pessimistic scenario, which mirrors scenario two, the virus sees a resurgence, with second and third waves which lead to governments maintaining travel bans for longer, where long-term mobility restrictions remain. In this scenario, air travel demand drops by 60-70 percent in 2020 and does not recover to the pre-crisis level until 2023 or even later (McKinsey Insights, 2020). While the trajectory of these two scenarios is vastly different, airlines must realise the importance of sustained preparedness and take effective countermeasures to prepare themselves for either scenario.

4 FUTURE PROJECTIONS FOR THE AVIATION INDUSTRY

The COVID-19 pandemic has completely changed the landscape for the airline industry. Airlines could lose \$133 billion in sales in 2020 according to IATA (Androniceanu, 2020). For the carriers who do make it through the turbulence, there will not only be negative impacts but also positive impacts. We project that the negative impacts will have a much larger and lasting impact on the aviation industry. As the current pandemic circumstances are still constantly evolving, future academic research should be conducted after the completion of the current pandemic. This will help fill the existing knowledge gaps and form a complete analysis of the impact of the COVID-19 pandemic on the aviation industry.

4.1 Positive projection: Less competition in the long run

With the growth of the aviation industry in the last decade, many more carriers have entered into the industry, looking for a portion of the profits, especially seen by the entrance of many low-cost carriers. Airlines across the globe have also been steadily increasing aircraft capacity over the years. In 2019, airlines increased their total airline fleet by 5.1% and it was predicted that this was to increase by 7.5% in 2020, causing fares to be increasingly competitive, where air tickets today are 62% lower than in 1998 (Mishra, 2019). Airline carriers, especially in regions like Europe and Southeast Asia, have been struggling with this excess in airline capacity, where revenues are being strained. The benefit for the carriers that do make it through the pandemic is that they will enjoy less crowded skies and more pricing power. Weaker carriers are forced out of the industry or are acquired – this reduces the overcapacity in the industry, allowing existing carriers to have more control over fare prices. The carriers that stand to benefit from this the most would be legacy carriers and national carriers who have stronger financial depth and are most likely to receive government support, tiding them through this crisis. Once the economy picks up again, carriers will experience a fall in competition and enjoy increased ticket pricing power.

4.2 Negative projection 1: Stricter Air travel restrictions

In the hope of curtailing the spread of COVID-19, air travel restrictions have been put in place. Such travel restrictions were effective in dealing with the early stages of the pandemic. The initial lockdown from Wuhan's travel quarantine had reduced case exports by nearly 80 percent and had a greater effect on the international scale (Chinazzi, et.al, 2020). However, these strict air travel rules would pose significant problems to airlines (Nicola et al., 2020), most of which are already struggling with the decreasing demand for air travel. To date, as the spread and severity of the virus in certain countries have been beginning to ease, governments have been discussing the possibility of implementing "green lanes" for travel in the COVID-19 environment. A "green lane" has already been set up between Singapore and China whilst many other countries such as Australia and New Zealand have been discussing such lanes (Goh, 2020). Although this would mean that airlines would see some pick up in demand for travel, because air travel is limited to bilateral agreements between governments for the foreseeable future, it still greatly reduces air travel. Additionally, most people are currently cautious about the idea of travelling on a plane (Schlangenstein, 2020) and it seems that the panic brought about by the pandemic would outlast the virus itself. This panic has the possibility to be protracted long into the future, where passengers may rethink about flying for leisure or reduce the frequency of travelling for leisure (Whitley, 2020). The regulated new air travel health regulations such as temperature checks and wearing masks on flights could further discourage customers from flying for leisure, all affecting the demand for air travel negatively.

4.3 Negative projection 2: Excess supply of planes

With travel restrictions in place, airlines are unable to operate at their usual capacity. Another consideration airline companies face is the excess supply of aircraft caused by a significant drop in air cargo demand. Middle Eastern airspace has seen the most dramatic reduction - Emirates and Etihad have grounded all their aircraft, while Qatar struggles to operate at 75% of its fleet, mainly catering to cargo transport and repatriation flights (Ellwood, 2020). Airline companies across the world are trying to reduce their operating costs while the majority of their aircraft are stationed on the ground. For the most part, the cost-cutting measures range from retiring old aircraft and putting aircraft crew on furlough schemes. This has led to an overcrowding of aircraft parked in airports all over the world. In addition, this also impacts the maintenance, repair and overhaul (MRO) sector in the aviation industry as well (Abdullah, 2020). With most MRO services cancelled or postponed, many small to medium-sized companies are at risk of bankruptcy or shutdown, as airline companies are looking to consolidate their services in the long run and perform MRO activities in-house (Abdullah, 2020).

5 DISCUSSION

We believe that with the right strategies, the aviation industry will be able to bounce back. The industry has a cyclical nature, prone to downturns and periods of strong growth that are closely linked to the world economic climate. Just like how the industry has overcome the events of 9/11 and the SARS epidemic - they can also recover from the current pandemic. In order to recover, the aviation industry must be ready for a post-COVID-19 world and be prepared to alter industry practices to better fit this new landscape. Strategic agility is important for business enterprises and organisations to successfully deal with this challenge (Liu, Y, et. al, 2020). Our report puts forth both short-term and long-term strategies for the aviation industry to employ to reinvent, recover and rebuild from this crisis. Additionally, our strategies will be able to direct the strategies of airlines

whether the optimistic or pessimistic scenario unfolds.

The dramatic decline of consumer demand caused by the global COVID-19 crisis has been serious. Looking forward, airlines need to first and foremost look to strategically rebuild demand levels while reassuring passengers on the safety of air travel. In order to do this, airline carriers should understand the changes in passengers' sentiment and behaviour caused by the COVID-19 pandemic through analysing the market as a whole and by segments such as passenger segments divided by business, leisure, short or long haul (Molenaar et al, 2020). One of the biggest changes in consumer sentiment is the drastic fall in consumer confidence regarding air travel. Airlines should shape their reassurance strategy around guidelines set by the relevant public authorities such as the IATA guidelines which work to mitigate the risk of transmission of COVID-19 during the travel process (IATA, 2020). Additionally, as airlines step up cleaning regiments and enhanced measures such as fogging disinfectants, they must also continually convey to passengers through effective marketing campaigns about the extremely stringent measures they are adopting to reduce all likelihood of contagion on flights. Simple gestures like providing masks on a flight can all aid in building up passenger confidence again, encouraging more people to start flying. Hence, reassurance is the main strategy in which the airline industry can employ to reassure passengers about air travel – at least until a vaccine is made available.

In the short term, as airlines look to reopen certain routes, they should look to the staggering approach, which is defined as opening more popular routes first and moving to less popular routes later. This is done to reduce overhead costs and exploit economies of scale, through large demands for a particular route. Demands for overseas destinations continue to remain weak and are predicted to be the slowest area to rebound (Davies and Suhartono, 2020). Tactically, it is beneficial for airline companies to pay more attention to short-haul or domestic travels due to the health concerns and insufficient confidence of the passengers in the early stage after the pandemic. When international borders eventually open, in a similar fashion, airlines can focus on popular international routes before moving into other less popular routes. Different American airlines have taken unique approaches to slowly opening up new routes. American resumed service to six international cities, Dallas-Fort Worth to Amsterdam, Paris and Frankfurt, Germany; Miami to Antigua; and Chicago O'Hare and New York JFK to London but delays additional foreign routes by a month (Tate, 2020). The staggering approach will aid airline carriers transition back to full operations in the most efficient manner and all carriers should prepare to adopt such measures. However, it is important to note that the decision to open up borders is also heavily influenced by political decisions. The Chinese government eased its ban on foreign airlines in response to Trump's demands. This concession from Chinese happened in the backdrop of tensions between the US and China rising, with foreign flights given clearance to land in 37 Chinese cities, including Beijing, Shanghai and Wuhan. As the global political landscape continues to look uncertain, this could have either positive or negative implications for the airline industry.

A long-term strategy for the airline industry is to focus on enhancing relations with local governments. This would increase the likelihood of government intervention to support the industry when disruptions strike. Government intervention is crucial in ensuring the survival of the aviation industry, where it is a systemically important industry. For example, the federal government in Australia has waived \$75 million worth of fees and charges for domestic airlines as the Australian aviation industry suffers from COVID-19 (Sullivan, 2020). The government has also worked with Qantas and Virgin Australia to maintain some scheduled international flights, including to Los Angeles and London. In the US, the airlines would operate as public utilities where US agencies set prices ensuring carriers cover their costs (Tully, 2020). Oneworld, Skyteam and Star Alliance represent 60 airlines around the world and have sought government and stakeholder intervention due

to COVID-19. These airlines will ensure the ongoing movement of flights which are central to these economies. Looking forward, enhancing relationships with the government is key to ensuring that airlines who do not enjoy the privileges of being a national carrier are able to also receive intervention when needed.

It is unlikely that the aviation industry will recover quickly from this pandemic. Going forth, it is crucial that the aviation industry takes precautions to brace itself in the event of imminent pandemic or crises that might befall in the future. Airline companies that survive the economic shocks of COVID-19 will have to recover their losses over time. On the financial side of matters, airline companies need to improve their liquidity position to pay off liabilities during times of need. Although international airline carriers stand to benefit from government stimulus and funding, many smaller and weaker airline carriers have to start appraising their assets to tide through months of losses. Ongoing capital projects and expenditures should also be reviewed. Instead, airline companies might have to resort to selling some of their assets and consider leasing planes through Sale and Lease Back (SALB) deals. SALB deals can offer them a regular, steady stream of cash flow and improve balance sheet statements (Maes, 2020). This can help ensure the financial viability of airline carriers.

6 CONCLUSION

Public health threats have always been a threat to the aviation industry. It has been almost 16 years since the outbreak of SARS, and the world has reverted back to treating health and hygiene matters in a cavalier fashion (Tambyah, 2003). COVID-19, however, has brought about unprecedented disruptions, larger disruptions than any previous public health threats, which threatens the future sustainability of the aviation industry. Due to the principal nature of the aviation industry to the world economy, our paper identifies that it is important to ensure the sustainability of the industry. There has been no prior research conducted which focuses on analysing the aviation industry in relation to the current evolving pandemic. We undertook this conceptual paper to fill the gap in the existing literature and provide a holistic and integrative study of the COVID-19 pandemic in relation to the aviation industry. We do this by firstly examining the differences in performance of different airline carriers, identifying the key elements that allow certain carriers to perform better than others. The past experiences with SARS have prepared the industry to better deal with public health threats. While there were positive learning points, the current COVID-19 pandemic situation remains highly volatile and unpredictable and airlines must be prepared for both optimistic and pessimistic scenarios to unfold. We have also hypothesised the possible projections that airlines would face, mainly being negative. Based on our projected scenarios and hypothesis, we have identified key short term and long-term measures that airline carriers can adapt to tide through this pandemic and future public health threats. Further research is needed once the COVID-19 pandemic ends to deepen the understanding and get the full picture of the impacts of COVID-19 on the aviation industry and the transformations that the pandemic has brought about for the industry.

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