

Analysis on the Airlines' Responses to Covid-19 Pandemic in the Domestic Passenger Markets——Take All Nippon Airways and China Southern Airlines as Examples

Tianshu Liang

zbliangtianshu@gmail.com

University of Manchester. Manchester, Greater Manchester, UK

Abstract — Airlines suffered huge losses and a serious decrease in demand as a result of the pandemic. The domestic passenger market is recovering fast in China's mainland, but the Japanese airline industry is recovering slowly. Using the case studies of All Nippon Airways (ANA) and China Southern Airlines (CSN), which are the largest airlines in China and Japan respectively, this paper analyses their measures responding to the Covid-19 between March 2020 and March 2021 with respect to government aid, service patterns and preventative measures against coronavirus. With the data from IATA, CAAC and the official website of two airlines, the article aims to identify the difference of measures between two airlines and the effectiveness of measures in reducing losses and increasing demand. The conclusion shows that the recovery of the aviation industry requires joint efforts of government, companies and passengers, with the supplement of technology and the internet.

Keywords: All Nippon Airways, China Southern Airways, Covid-19, service pattern, preventative measures

1 INTRODUCTION

Until March of 2020, Covid-19 has become a global pandemic, causing 0.51 million confirmed cases and 23 thousand deaths [3]. To further restrain the rapid spread of the virus, governments have imposed compulsory measures, such as lockdowns and restrictions on entry, and airlines have suspended most domestic and international flight plans, inevitably resulting in a significant reduction in revenue and demand. This paper aims to take a comparative analysis on how ANA and CSN respond to Covid-19 against domestic passenger revenues and demand, and whether these measures are effective. Many researchers completed case studies on what measures a particular airline company took to increase domestic passengers and revenues, such as Virgin airlines and Russian Airlines. Meanwhile, some measures that were commonly adopted by most airlines were studied using empirical analysis. However, the choices of study districts primarily

focused on Europe. Besides, there is no comparative analysis on ANA and CSN which are the largest airlines in their respective countries. According to IATA [4], China has the second fastest speed on recovering domestic passenger markets in Asia, but Japan recovered slowly. Thus, by comparatively analyzing them, the specific measures they implemented under different national conditions and company backgrounds may be suggestive for other countries.

Following the introduction, the paper briefly introduces the national conditions of Japan and China, and the operating conditions of two airlines during the pandemic in section 2. The comparative analysis, including measures, influence factors and effectiveness of measures, are presented in section 3. Finally, the paper concludes what effective measures on restoring revenues and demands airlines can in the future in response to a global disaster like the Covid-19 pandemic and what upgrading the aviation completed. There is a notice that the data about CSN in this paper are all focus on China's mainland.

2 OVERVIEW OF ANA AND CSN

As a major pillar of economy, the aviation industry experienced significant economic losses during the pandemic and thus the whole economy. The turnover volume of passenger traffic of China's domestic airlines in 2020 is 5868.87 (100 million passenger-km) dropping by 31.1% compared to 2019 and domestic passenger traffic decreased by 30% [6]. With the decline of various indicators, the airline's profits decreased to -79.446 billion yuan, falling 42% from 2019 [6]. In terms of CSN, with a strong focus on both domestic and international markets, is the largest airline in China. It not only has subsidiaries such as Xiamen Airlines and Zhuhai Airlines, which are mainly involved in domestic passenger transportation, but also has close cooperation with foreign airlines such as British Airways and Qatar Airways. The data of Fig1 are collected from CSAIR and ANAHD and it shows the net income belongs to parent company, domestic RPK, domestic ASK and the revenue from domestic passenger market [7][9]. Until December 31, 2020, the annual report of CSN reported a \$7 billion loss, about 5 times the positive profits in 2019[7]. Moreover, the domestic revenue passenger kilometers (RPK) declined from 195.24 billion in 2019 to 140.14 billion in 2020 [7]. The seating capacity of mainland routes demonstrated the same rate of decline as the RPK.

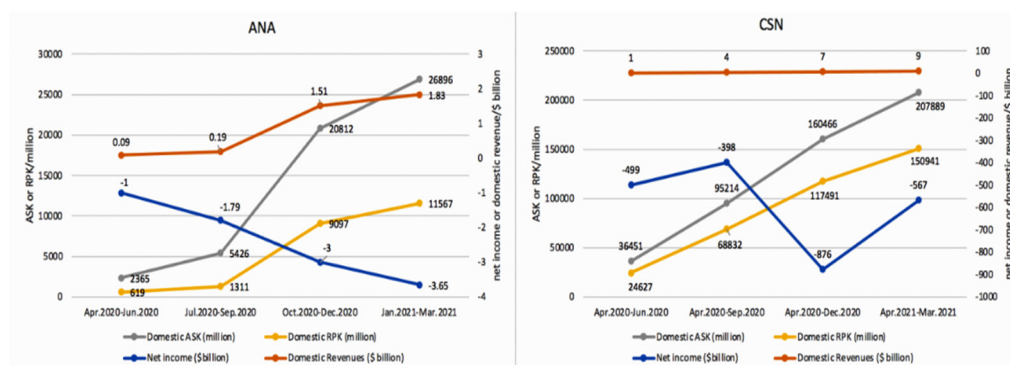


Figure 1. The data of net income from parent company, domestic revenue, domestic RPK and domestic ASK in ANA and CSN

Although the impact of the pandemic on the aviation industry in Japan started later than in China, it was more severe than in China. Almost one-third of the domestic airlines market in Japan is dominated by ANA, whose air transportation group companies are ANA, Air Japan, ANA Wings and Peach Aviation Limited. However, ANA's domestic passenger service losses did not reduce because of its leading position in the airline industry in Japan. As shown in Fig1, the total net income of ANA was \$-3.65 billion in the 2020 fiscal year. The revenue from the domestic market was \$1.83 billion (reduced 70.1% year-on-year) and domestic RPK is 11.57 billion passenger kilometers (reduced 70.7% year-on-year).

The above figures are already the result of aggressive actions taken by two airlines in the first year of the outbreak of covid-19 to salvage the situation, some of which have made a significant difference and they continue to explore ways to bring the domestic market back as soon as possible.

3 RESPONSES TO COVID-19

3.1 Government Aid

Government support plays a vital role in maintaining the connectivity of the domestic airline network and alleviate the cash crunch. In July 2020 the Japanese government offered subsidies of up to 50% to domestic tourism and related industries in order to boost the economy. Subsidies provided discounts not only on hotels and travel services, but also on airline services like ANA tickets. Financial results published in the Investor Relations section of the ANA's website shows that after domestic passenger demand reached the bottom in May, the year-on-year in PRK and ASK (Available Seat Kilometers) was increasing from July onwards though still negative [9]. Also, the year-on-year scale of the operation was 60.4% in the third quarter of 2020 [9]. In other words, domestic passengers demand rebounded significantly due to this Japanese government subsidy plan called the 'Go To Travel' Campaign. Besides, the Government of Japan authorized the ANA to reduce taxes, and defer landing and navigation charges, which improved financial liquidity [9]. As for China, the Chinese government subsidized airlines that did not stop flying during the pandemic, as the act of airlines providing flights in the face of the sudden decline in demand had a significant impact on the connectivity of the aviation network. According to the incentive standard that airlines received an incentive of 0.0528 yuan and 0.0176 yuan per seat kilometer on routes dominated by one airline and multiple airlines respectively, CSN obtained a subsidy of 177 million yuan in total between 23 January 2020 and 3 March 2020 [13]. Moreover, airlines did not need to pay for the 'Civil Aviation Development Fund' administrated by the government [13]. The direct beneficiaries of the Chinese government subsidy and the two governments' fee exemption were the airlines, while the direct beneficiaries of the Japan 'Go to Travel' Program were the customers. The former relieves cash flow to ensure regular flight operations and thus maintain connectivity, while the latter attracts customers and thus increases demand.

According to Abate, Christidies and purwanto's [14] studies, the differences in the size and probability of government assistance depend on the number of domestic airlines in a country, government ownership of the airlines, and countries' degree of dependence on international passenger markets. In this case, because China has the second-largest domestic aviation market in the world and the Chinese government expects to ensure employment, the government is

inclined to provide assistance and Chinese airlines receiving the support are 51% owned by the government. On contrary, the Japanese aviation industry has a balanced distribution of international and domestic markets and Japanese airlines that received government aid are 0% owned by the government. Thus, governments hold different attitudes towards supporting airlines. In addition, Fig2 shows that the year-on-year domestic PRK in China has increased to -1.4% in October 2020 and the decline of domestic RPK growth increased from -65.5% to -2.6% from March 2020 to March 2021 under the case that both the data in March 2020 and in March 2021 are versus the same month in 2019, while the domestic RPK growth in Japan was always more than -40% lower in 2020 compared with 2019, indicating that having a larger domestic market is more conducive to the resumption of the aviation industry [4]. However, rapid recovery of the domestic passenger market in Japan is also possible on the premise of raising domestic airfares to compensate for international losses [14].

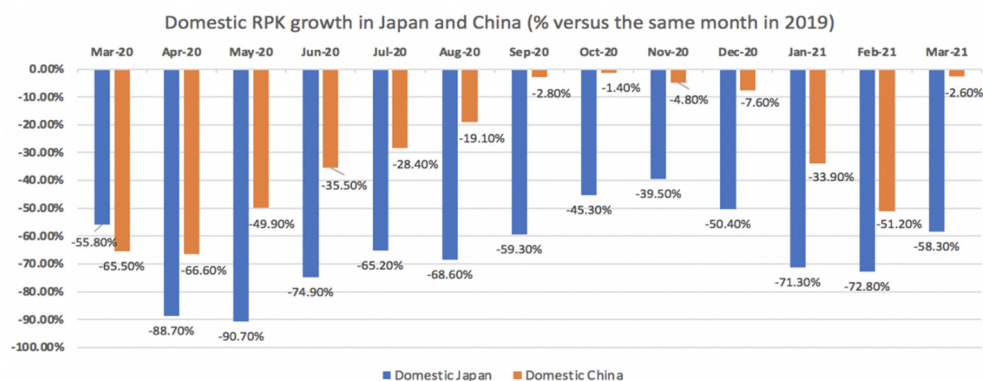


Figure 2 . Domestic RPK growth in Japan and China (% versus the same month in 2019)

Government support is inevitable for the maintenance of airline network connectivity. Government subsidies are highly pragmatic, although short-lived. Other forms of government support, such as nationalization, have prolonged effects on the structure of the company, but if state-owned enterprises receive excessive preferential treatment may trigger distortions in the competitive landscape, such as higher airfares [14]. Therefore, government intervention should be moderate or incur additional costs.

3.2 Featured Products Upgrade of Service Pattern

The plummet in domestic passenger demand stimulated the transformation and upgrading of service patterns, which in turn boosted demand. Firstly, features products launched domestically attracted consumers. CSN introduced a new 'Fly Happily' deal allowing consumers to pay a one-off fee of 3,306 yuan for unlimited domestic flights until January 6, 2021[15]. Due to the preference for domestic travel caused by the pandemic, the 'Fly Happily' program successfully restored CSN's domestic flights to 80% of pre-Covid-19 level [15]. Meanwhile, similar to 'Fly Happily', the 'Fly to nowhere' by ANA was one of the approaches to attract consumers. 300 passengers were selected by lottery to enjoy a Hawaiian holiday in the sky [5]. In other words, no landing for the whole trip and the place for taking off and landing are the same. The reason why these featured products had effects on the growth in domestic passenger demand is that the

gradual relaxation of the short-term strict intervention policy led to retaliatory consumption [11]. Although retaliatory consumption led to high demand for the 'Fly to nowhere and an increase in customer confidence, the routes are relatively homogeneous and not conducive to being used as a long-term stimulus for demand. In addition, CSN's promotional fares will inevitably increase in the future [2]. Therefore, it is necessary for airlines to make proper upgrading of service patterns to adapt to the new normal that the pandemic may bring.

The development of online service patterns is beneficial to airlines to pay close attention to the market changes and quickly respond to demand changes. Airline mobile apps, such as CSN's 'China Southern e-travel' application and ANA's 'ANA' application, have become the mainstream pre-Covid-19, making it convenient for passengers to book tickets, seats and hotels online. Online check-in has also become increasingly viable since Covid-19. Furthermore, taking advantage of the rapid expansion of live streaming platforms in China, CSN has become the first airline in China to launch a live streaming business on the WeChat mini-programs. CSN uses live streaming to advertise and sell experiential products and 'Fly Happily' deal, resulting in a cumulative viewership of 2 million in 2020 [10]. Thus, live streaming contributes to the increase in demand and thus the recovery of the domestic passenger market. On the other hand, ANA did not take the method of live commerce. Whether live commerce is applicable in Japan may depend on the development of the Japanese live streaming industry, people's habits and the digital capacity of the Japanese social software ecosystem. These changes in service patterns are brought about by changes in passenger demand, because passenger demand has shifted from business travel to leisure travel and visiting friends and relatives [8]. Airlines should seize opportunities during this transformation period as well as the customers' retaliatory spending period. Thus, the combination of a short-term hot product and data-based tools causing changes in people's habits and behavior patterns is more effective.

3.3 Preventative Measures Against Coronavirus

One way to restore demand is to strengthen consumer confidence in biosecurity by implementing strict precautionary measures. The common measures are taken by ANA and CSN, including the limitation of seats and provisions of protective clothing, N95 masks and gloves for flight attendants, are the most basic and necessary [12]. These protections are the most basic measures to prevent the spread of viruses and increase customer confidence. Moreover, the ANA developed an ANA Care Promise Program that performed better than what public health officials recommended [9]. Although in the short term, these measures can guarantee the normal operation of flights, but at the early stage of the pandemic prevention materials shortage and high prices put pressure on companies' finances. Even ANA donated \$0.2 million to medical personnel and CSN contributed 30 thousand masks and 10 thousand protective clothing to Wuhan at the beginning of the pandemic [7][9]. With the increase in the production of prevention materials and the decrease in prices, the costs incurred by the purchase of materials were no longer worth mentioning. But these basic prevention measures play a limited role in the long term.

Considering the financial limitations of the above measures and consumer expectation of social distance, airlines have chosen to adopt the alternatives-contactless services, such as electronic bag tags (EBTs), self-service baggage drop machines and mobile check-ins [1]. First time adopted by CSN in 2019, the EBTs, which are alternatives to paper baggage tags, allow passengers who have applied for an electronic boarding pass through the CSN APP to transfer

personal data to the electronic baggage tag via Bluetooth on their cell phones [7]. On the other hand, ANA uses a machine called a self-service baggage drop machine, which is similar to EBT. People who have completed check-ins can drop off bags by themselves, but the baggage tags are on paper. Although both EBTs and self-service bags drop machines decrease human exposures and infections, the latter are less environmental and less cost-effective. Most importantly, with regulated social distance facilitating the application of EBTs, CSN mainly places EBTs in Beijing and Guangzhou hubs and 233 airports in China have achieved paperless flying for domestic flights [7]. Consequently, CSN has achieved zero infections for passengers and employees on all international and domestic flights by 2020, thus the measures above were effective in controlling the spread of the virus [7]. However, there are only five airports in Japan having ANA self-service bags drop machines [9], indicating that the popularity of self-service machines has not reached a high level. Therefore, the value of these self-service baggage handling systems will not be realized until when airlines and airports cooperate fully and when machines are accepted and used by the public on a large scale.

4 CONCLUSION

The pandemic has resulted in a slowdown in global economic growth and the aviation industry, which is an important economic support for countries. China was the fastest to regain its domestic passenger market, but Japan embarked on its recovery in June 2020. The above analysis shows that the ANA has outperformed the CSN through government support measures. But for CSN, its efforts to upgrade service patterns and stringent preventative measures had lessons for other companies. This paper mentions three main measures to reduce losses and increase demand, involving government support, upgraded service patterns and strict preventative measures. Firstly, the government support eased corporate cash flows and guaranteed employment, but the magnitude and effective timing of different types of government support vary. Furthermore, the degree of nationalization, the number of national airlines and the dependence on the domestic market determine the scale and the possibility of government support. Secondly, the introduction of featured products is beneficial to short-term demand recovery, but in the long run airlines should focus on the integration with the internet and technology to achieve an upgrade of the service patterns. For strict preventative measures, on the one hand, the most basic physical and chemical protection must be in place, though it is financially infeasible. On the other hand, contactless services and paperless services become realizable because of electronic technology. Moreover, these services significantly reduce the cost of paper purchasing and printing, and are also environmentally friendly. Therefore, the recovery of revenue and demand in the airline industry requires the joint efforts of government, companies and travelers, as well as the development of the internet and technology.

CSN and ANA provided examples of how Chinese and Japanese airlines responded to Covid-19. Meanwhile, they provided a warning of how companies with similar backgrounds might respond to similar situations in the future. However, along with the virus continuing to vary and the duration of the pandemic continuing to extend, the aviation industry continues to adjust measures to the new market environment. In this way, future research could focus on more empirical evidence and explain how the continuous improvement of measures in the context of the pandemic is leading to a new normality in the aviation industry.

REFERENCE

- [1] GAO. (2021). Preliminary Observations on Efforts toward and Factors Affecting the Aviation Industry's Recovery. GAO Reports, 1-13.
- [2] Rimmer, P. J. (2020). Aviation and the COVID-19 Pandemic: Flying to the 'Next Normal'. *Journal of International Trade, Logistics and Law*, 6(2), 119-136.
- [3] WHO. (2020). Coronavirus disease 2019 (COVID-19) situation report-67. Available at: https://www.who.int/docs/default-source/coronaviruse/situation-reports/20200327-sitrep-67-covid-19.pdf?sfvrsn=b65f68eb_4
- [4] IATA. (2020) Air Passenger Market Analysis. Available at: <https://www.iata.org/>
- [5] Whitley, A. (2020). Airlines invent wild ways to make money with borders closed; New revenue; From flights to nowhere to frozen dinners. Available at: <https://www.bloomberg.com/news/articles/2020-09-03/airlines-invent-wild-new-ways-to-make-money-with-borders-closed>
- [6] CAAC. (2020). Statistical bulletin on the development of the civil aviation industry in 2020. Available at: <http://www.caac.gov.cn/XXGK/XXGK/TJSJ/202106/P020210610582600192012.pdf>
- [7] CSAIR. China Southern Airlines Official Website- Investor Relations. Available at: <https://www.csair.com/cn/about/investor/>
- [8] Garrow, L., & Virginie, L. (2021). How COVID-19 is impacting and reshaping the airline industry. *Journal of Revenue and Pricing Management*, 20(1), 3-9.
- [9] ANAHD. ANA HOLDING INC. Official Website. Available at: <https://www.ana.co.jp/group/en/>
- [10] CAAC. (2020). China Southern was awarded the "2020 Digital Government and Livelihood Pioneer" award. Available at: http://www.caac.gov.cn/XWZX/HYDT/202103/t20210316_206824.html
- [11] Meng, F., Gong, W., Liang, J., Li, X., Zeng, Y., & Yang, L. (2021). Impact of different control policies for COVID-19 outbreak on the air transportation industry: A comparison between China, the U.S. and Singapore. *PLoS One*, 16(3).
- [12] Suk, Minho., Kim, Wonjoon. (2021). COVID-19 and the airline industry: crisis management and resilience. Volume 76, Issue 4.
- [13] Czerny, A. I., Fu, X., Lei, Z., & Oum, T. H. (2021). Post pandemic aviation market recovery: Experience and lessons from China. *Journal of Air Transport Management*, volume 90, 101971.
- [14] Abate, M., Christidis, P., & Purwanto, A. J. (2020). Government support to airlines in the aftermath of the COVID-19 pandemic. *Journal of air transport management*, volume 89, 101931.
- [15] Anonymous "Airlines flog 'all you can fly' deals to fill empty seats," *Telegraph.Co.Uk*, 2020. Available at: <https://manchester.idm.oclc.org/login?url=https://www-proquest-com.manchester.idm.oclc.org/newspapers/airlines-flog-all-you-can-fly-deals-fill-empty/docview/2428270263/se-2?accountid=12253>