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Analysis on the Profit Recovery of China's Budget Airlines after the Epidemic

-- A Case Study of Spring Airlines

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Abstract: The purpose of this paper is to explore the changes in profitability of Spring Airlines, the representative low-cost airline in China, after the epidemic and to explore the reasons behind the changes in profitability. I compared three years of operating income, operating profit and operating cash flow, plotted the time series of passenger number changes for 31 months starting from December 2019, collected from government websites and summarized the national relief policies for the airline industry after the outbreak. I find that both operating income and operating cash flow rise above pre-epidemic levels in 2021, mainly due to the recovery and rise in passenger numbers driven by the improvement in the epidemic and the strong growth forces inherent in the low-cost airline market; however, profits show the opposite trend, mainly because aviation fuel prices bottom out and then rise in 2020, driving up the company's operating costs and compressing its profits; I also explore the impact of policies and find that multi-faceted, aggressive policies do largely reduce the pressure on the company to survive during the epidemic.

Keywords: Spring Airlines, budget airlines, epidemic

1. Introduction

At present, low-cost airlines have a broad market prospect in China. According to the Asia Pacific Aviation Center, over the ten-year period from 2011 to 2020, global low-cost airlines will increase their market share from 27.5% to 35.1% for intra-regional routes and 16.6% for international routes, while Asia Pacific's market share for domestic routes will climb from 20.5% to 31.5% and international routes from 4.6% to 13.3%. The market share of domestic routes in Asia Pacific climbs from 20.5% to 31.5% and international routes from 4.6% to 13.3%. With a market share of 11.1% of domestic routes in 2020, China's low-cost airlines have ample room for future growth and huge growth potential compared to other countries and regions. But the sudden outbreak has added a great deal of uncertainty to the industry's growth. Will low-cost airlines be devastated by the epidemic? Will budget airlines be able to develop further in the midst of the epidemic? Addressing these questions will allow the majority of investors to maintain confidence in the industry's growth at this particular stage.

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Currently, research on the post-epidemic Chinese aviation market is generally focused on the macro level. For example, at the very beginning of the outbreak, some scholars have calculated that on February 13, 2020, at the trough of the epidemic, there were only 3,931 civil aircraft movements, which was about 23% of the pre-epidemic level. But one segment of China's airline industry, the low-cost airline market, is not well studied. A big reason for this is that only one of China's low-cost airlines, Spring Airlines, has gone public, and operating data on other companies is hard to find. Although there is previous literature examining the operations and performance of Spring Airlines [1-3]. However, the epidemic had a great impact on the market of low-cost airlines and changed the previous performance level of Spring Airlines, and research papers on the performance of Spring Airlines after the epidemic are still in a gap. Therefore, studying Spring Airlines' business performance after the epidemic is important to understand the business logic of low-cost airlines through difficult times and to discover the industry highlights and shortcomings highlighted in the epidemic.

This paper examines Spring Airlines' operating conditions in the two years since the outbreak in terms of revenue, operating costs, and cash flow from operating activities, and explains the reasons for the changes in Spring Airlines' operating conditions from three perspectives: changes in passenger numbers, fluctuations in the company's operating costs, and policy support. I identified a mismatch between operating profit and the recovery rate of operating revenue, and thus found that fluctuations in aviation fuel had a significant impact on Spring Airlines' profit; I tracked the change in passenger numbers for 31 months out of Spring Airlines, further confirming the trend that the Chinese low-cost airline market is still expanding; the epidemic was also a rare opportunity to observe the impact of policies on low-cost airlines, and I found that the government's comprehensive and strong policies did help Spring Airlines survive the winter of the epidemic.

2. Literature Review

2.1 China's Airline Industry Performance since the Outbreak

It has been found that wars and pandemics in history had contribute to the vulnerability of the global aviation [4]. In fact, Covid-19 had made a massive knock-on effect on global business and travel and tourism, therefore, pro-longed travel restrictions caused significant financial losses for the airlines all of the world. Right before the Covid-19 breakout in Wuhan, during the Chinese Spring Festival travel season the daily flight number was about 17,000 country wide, about 2 million passengers were ferried daily. However, the number of flight kept decreasing after the Wuhan lock down on January 23rd, reaching the lowest point of 3,931 flights on February 13th, about 23% of the pre-pandemic level. During the pandemic, The State Council of China introduced policies and supporting schemes to help aviation sector reduce their costs. The number of passengers appears a significant recovery during 2020, at February 13th, passenger volume was 0.13 million or 7.5% of the pre-pandemic level, then average daily passenger volume increased to 0.46 million in March, 0.52 million in April, and 0.79 million in May, finally, On June 5th, daily passenger volume reached 1.04 million, about 61.5% of the level in 2019. Average load factor also increased to 70% [5]. Compared to most other countries, the aviation sector in China’s domestic services recovered much faster.

2.2 Current Status of Chinese Low-Cost Airlines

There are two fundamental strategies, the first is the differentiation strategy, which means offering a service at a high quality; the second option is cost leadership, which is based on strict cost savings over the whole of the value chain to offer customers a service at an economic price [6]. The LCCs mainly focus on the last strategy, they prefer create profits by saving input Since the operating costs of an aircraft are quite high [7], but the incremental costs of an additional passenger are very low, one

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of the main objectives of airlines is to achieve a high degree of capacity utilization [8]. uggage or meals and beverages during the flight separately, which can make customers choose and combine the ones corresponding to their personal preferences, which is a typical saving strategy [9,10]. For some low-cost airlines, the seperation mentioned above has already contributed more than one-quarter of total revenue and is steadily increasing [11]. low-cost airlines also do not offer any kind of loyalty program to save costs [12]. But the purpose of other airlines' operation of flyer programs is to retain passengers by offering the possibility to collect miles, which can be used to buy flights or profit from other benefits such as travel class upgrades or VIP lounge access [13]. People also consider that LCCs are doing well at controlling operation costs through using single model fleet and operating short-haul flights. During the initial developing period, LCCs always operate new routes to avoid the competition with FSAs or charter airlines.

Recently, LCCs changed its strategies in many aspects. An opinion polls show that the extremely high baggage fees resulted in high dissatisfaction of clients. So, significant change in pricing of low-cost airlines is the reduction of the immense charges for additional passengers, in order to decrease frustration among customers.

Low cost carriers (LCCs) remains underdeveloped in China, partly because various legacy regulation, especially those related to route entry into congested hub airports and the lack of competition in the input market [14]. Up to now there is only one LCC has gone public in China, which is Spring airlines, and existing researches about China's LCC mainly focus on Spring Airlines. Many researchers has assessed the performance of the Spring Airlines [1-3]. China has developed a mature high-speed rail (HSR)system, and thus the airlines in China face a frequent and fierce competition [15]

2.3 China's Low-Cost Airlines Recover after the Outbreak

Spring Airlines is the first low cost carriers (LCCs) of China, which established in Shanghai City in 2005. At the beginning of operation, Spring Airlines actively launched air routes between tourist cities with non-class I airports, and its network has been transformed from a star structure which concentrated in sector of Shanghai into a complex one with China wide multi-hubs. Before the Covid-19 breakout, Spring Airlines tends to enter larger airports and the time slot control airport, because the passenger of these airport are generally higher and Spring Airlines can benefit from low fares to get more passengers. Spring Airlines also prefer to enter the tourist city, which also indicate that the target passengers of Spring Airlines are mainly price-sensitive passengers. On the route, Spring Airlines expands the route based on the existing service airport in order to utilize the existing resources of the service airport, thereby reducing operating costs and improving economies of scale.

3. Methodology

This paper is a case study of the Spring Airline's business condition The date used in this paper are obtained from the Annual Report of Spring Airlines from 2015 to 2021.I collected the data from the items of The Statement of profit or loss and The statement of cash flows to analyse the change of critical financial indicators in time series in order to summary and predict the tendency of profit changes.

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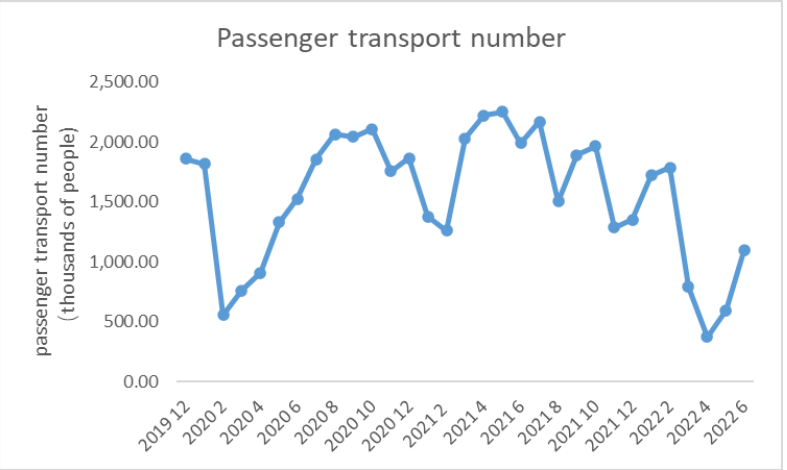

Figure 1: Change chart of spring airlines passenger transport numbers from December 2019 to June 2022.

I plotted the time series of changes in passenger numbers of Spring Airlines before and after the pandemic. As can be seen from the figure, since the outbreak of the Wuhan epidemic in February 2020, the number of Spring Airlines passengers has fluctuated very sharply with a very fast frequency. Since the bottom fell out in February, the tone of passenger numbers throughout the year has been one of recovery, and in August, the number of passengers reached 1,858.03 thousand, higher than the level before the epidemic, and for the next three consecutive months, the number of passengers continued to exceed the 2,000 thousand mark.

And the change in passenger numbers for the whole year 2021 seems unstable and elusive.

Then, the number of passengers of Spring Airlines in the first half of 2022 shows a typical "U" shape change.

Table 1: Key accounting data reflecting operating conditions and profitability.

	2019	2020	compared to 2019	2021	compared to 2019	compared to 2020
sales revenue	14,702,890,815	9,267,097,101	-36.97%	10,777,379,081	-26.70%	16.30%
operating profit	1,575,885,470	-726,766,827	-146.12%	-733,075,041	-146.52%	-0.87%
operating cash flow	1,934,032,259	323,445,688	-83.28%	2,175,614,946	12.49%	572.64%

I have summarized and compared key operating data for three years. In terms of revenues since the outbreak, although operating revenues have rebounded significantly in 2021, the magnitude is not at all sufficient to return to pre-epidemic levels. Profits were even less promising, with the 2021 figures not only not rebounding but also showing a very small decline; however, the company's operating cash flow situation was a surprise to the outside world, with cash flow in 2021 not only increasing nearly five-fold compared to 2020, but also showing a significant increase of more than ten percent over the pre-epidemic figures.

From the government website, I summarized the various policy incentives the government has adopted for the civil aviation industry since the outbreak of the pandemic in 2020 and I find that the range of bail-outs can be summed up in three broad categories. First, the full exemption of airlines

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should pay civil aviation development fund in 2020. Second, the implementation of airport, air traffic control, jet fuel pricing preferential policies. The third is to coordinate the Ministry of Finance to temporarily suspend the pre-payment of value-added tax by branches of aviation enterprises. From the perspective of results, I expressed the reasons for unit cost reduction in the annual report of Spring Airlines, and found that the government's rescue policy did greatly help budget airlines like Spring Airlines to reduce the operating pressure brought by the epidemic.

4. Result

The purpose of this paper is to examine the impact of the epidemic on the business, profitability and strategic choices of low-cost airlines, using Spring Airlines as a microcosm of low-cost airlines. I analyze and interpret Spring Airlines' business situation through three main modules. The first module is a study of passenger numbers, because passenger numbers are the fundamental source of all strategy, revenue, profit and cash for a low-cost airline like Spring Airlines, whose main business is passenger rather than cargo transportation. In the second part I delve into Spring Airlines' financial results. I compare the three main operating indicators and find a mismatch between the changes in operating revenue, operating profit and operating cash flow, especially the extremely pleasing growth in cash flow. Delving into the reasons for this, I can see how Spring Airlines' management has led the airline to break through the difficult circumstances and continue to grow in a bad environment. In the third part, I analyze the policy benefits for the airline industry. A series of strong policies can protect airlines through difficult times in terms of financing, cost savings, and deregulation, etc. The policy has undoubtedly played a big role in Spring Airlines' survival and development.

4.1 A Study of Passenger Numbers

Four consecutive months of higher than pre-epidemic passenger numbers starting in July 2020 reflect the tremendous growth power of China's low-cost airline market. According to the Asia Pacific Aviation Center, China's low-cost airlines will account for 11.1% of the domestic airline market share in 2020, up 1 percentage point from 2019. The number of low-cost airlines is still relatively small in terms of both number and market share, however, the increase in market share during the epidemic shows a rigid trend of structural and differentiated market demand. However, the increase in market share during the epidemic shows the rigid trend of market structure and differentiated demand. And another record ridership in April and May 2021 reaffirms this trend.

However, the recurrence of the outbreak in China has significantly affected the potential upward trend of passengers, as shown by the fact that in the summer of 2021, which is also the traditional peak season of the airline industry, the number of passengers reached a new high in July, but in August the recovery of passengers was hampered by the recurrence of the outbreak in the country due to the emergence of the Delta and Omicron mutant strains.

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the recurring epidemic threatens the survival and safety of these companies, and the future of low-cost airlines will be very bright as long as they survive the current business crisis.

Although I start with the expansion of the low-cost airline market and find that expansion exists and predicts that it will continue in the future, this conclusion still has the limitation that I currently only have data for two and a half years after the epidemic, a short time span, and I do not know the exact extent of the impact of the epidemic on market expansion. I still need to monitor ridership in the future before I can model post-epidemic market growth.

4.2 Spring Airlines' Financial Results

The decline in Spring Airlines' main business revenue in 2020 was mainly due to the significant decrease in passenger numbers caused by the epidemic. Although Spring Airlines, like many airline companies, converted some of its passenger aircraft to freighters during the epidemic and did see an increase in revenue from cargo, due to the excessive share of the passenger segment in the total operating income and the freight business accounting for only 1.61% of the total business, the passenger business decreased by 37.19%,or ¥5,340,254,419.10, compared to 2019, while the freight business rose by 19.89%, or ¥24,545,573.28, with the former rising by 218 times the amount of the latter's decline. Such a decline for low-cost airlines is inescapable, because the operating model of such companies is to focus on passenger transport, the expansion of other business lines to a certain level for such companies is contrary to their cost-saving corporate strategy. The logic behind Spring Airlines' revenue growth in 2021 is equally simple: the recovery of passengers driven by the improvement of the epidemic will lead to a rise in revenue

I can split the change in profit into the change in revenue and the change in cost, and since revenue has been analyzed in the previous paragraph, I will focus on the analysis of cost. The reduction in the company's operating costs in 2020 can be interpreted in three ways. The first is the decline in the number of flights leading to a series of variable costs; the second is the significant reduction in costs due to the plunge in international oil prices; and the third is the government's exemption from the Civil Aviation Development Fund payable by airlines. The fluctuation of international oil prices is the main reason for the change in costs in the two years of the epidemic, where in 2020, the costs reduced by the decrease in oil prices account for 59.75 of the total cost savings; while in 2021, the impact of oil prices is more pronounced, with the increase in costs due to the increase in oil prices accounting for 70.54% of the total increase. From this I can see that the revenue level in 2021 is higher than in 2019, but the profit is an opposite result, the key reason is that the higher oil price pushes up the cost and thus reduces the profit. In addition, policy support does provide a great deal of support for airlines to reduce costs and stabilize profits. In 2020, the reduction in costs due to the exemption of airlines from the Civil Aviation Development Fund (CADF) payable by airlines accounted for 17.76% of the total cost savings; while the removal of the exemption in 2021 also contributed 8.60% of the cost increase, which not only further illustrates the mismatch between profit and turnover growth in 2021, but also confirms that the policy is very strong. The logic of cash flow recovery is also simple, that is, the recovery of the pandemic drives the improvement of liquidity position.

The data I obtain in this section comes from Spring Airlines' financial statements, but the financial statements naturally have unrefined parts, such as our inability to break out what the company's revenue from each business is from operating income, and changes in the company's pricing strategy, all of which prevent us from conducting a more in-depth study of operating results.

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4.3 Policy Analysis

The Chinese government has also played a big role in supporting the airline industry through difficult times. The achievements of the policy are as follows: 1. In 2020, the civil aviation development fund payable by exempted airlines exceeded 5 billion yuan. 2. The preferential price policy of airport, air traffic control and jet fuel has reduced the operating cost of the airline by 3.6 billion yuan within two years. 3. The Ministry of Finance extended the exemption policy of aviation equipment and expanded the exemption. The Chinese government's assistance to the aviation industry is comprehensive. On the operational side, such as reducing aviation fuel fees; on the financing side, eligible airlines are encouraged to issue corporate credit-type bonds; and in the face of the cash flow problems commonly faced by airlines due to the epidemic, airlines are allowed to apply for subsidies from local governments for epidemic prevention and control expenses. These policies are so strong and refined, and combined with the key role of the policies in reducing costs and stabilizing profits for Spring Airlines, as I discussed in the previous paragraph, I can see that the policies are indeed the key reason why China did not see a massive wave of airline industry closures after the epidemic. There is a certain inherent flaw in this part of the study that the relevant statistical departments only publish some of the actual effects of the policies, and I are unable to interpret the full range of the implementation efforts and effects of the policies.

5. Conclusions

The purpose of this study is to investigate the change in operating revenue of Spring Airlines, a representative low-cost airline in China, after the outbreak and the reasons for the change. I explore the changes in Spring Airlines' operations after the outbreak based on quantitative research, mainly a comparative analysis of three-year data; I apply a combination of quantitative and qualitative analysis to analyze the reasons behind the changes in operations, I plot a time series of changes in passenger numbers, and I summarize the government's relief policies for the airline industry by category from government websites. This study finds that after the epidemic, comparing the data in 2020 with 2021, operating income and operating cash flow both rebounded significantly, especially the latter even exceeded the pre-epidemic level, the main reason for the rise of these two figures is the rise in passenger numbers, and such a rise comes not only from the weakening of closure control measures, but also from the strong growth potential of the low-cost airline market; however, operating profit is not However, operating profit was not as satisfactory, mainly due to the rebound in aviation fuel prices in 2021 after bottoming out in 2020, which led to cost expansion and profit compression; policies also played an important role in helping airlines to tide over the difficult times, and this role was mainly reflected in the significant reduction of airline costs.

However, this study also has limitations. Due to the limited access to financial information and the fact that the study covers only two years of the impact of the epidemic, which is relatively short for a study, I were unable to distill the long-term trend in passenger growth after the epidemic and I were unable to explain the reasons for such a large difference in the multiples of cash flow and profit growth. I recommend that subsequent studies continue to track changes in passenger numbers and look more closely at the operations of low-cost airlines such as Spring Airlines from a cash flow perspective.

This study inherits the pre-epidemic scholars' research on the performance of the low-cost airline industry and Spring Airlines, and fills the gap in the post-epidemic research on the development status of the low-cost airline industry and Spring Airlines' collection of the epidemic impact. In addition, due to the all-round strength of the bailout policy at this particular node of the epidemic, it is now more appropriate than ever to study the role of the policy on the development of the industry.

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Therefore, studying the policy and the effect of the policy in these two years can show how big the actual impact of the policy on the enterprises and the industry is.

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