



The Impact of Economic Depression Brought by COVID-19 on Airline Industry to the National Economic Situation in China

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Abstract. A serious and frustrating pandemic happened in Wuhan, China. Millions of people are locked at home without going outside for nearly three months, and lockdowns continue after months, lasting for three years. The pandemic does extreme harm to the economic development of one nation, especially in China, where the virus was first found. Primarily, the tourism industry in China is hurt the most since people do not travel any more due to the fear of being infected and lockdowns. Relating closely to the tourism industry, the airline industry in China is supposed to have one of the greatest impacts on the national economy since tourism always plays an important role in the national economy in many countries. Quantitative data from the official annual reports of two main airline companies in China which are China Southern Airline and China Eastern Airline is gathered. And one graph is made showing all the data this study needs, and three line graphs are created to show the relationships between variables. Through data and graph analysis, it can be concluded that the airline industry is not an influential part of the depression of the Chinese national economy.

Keywords: Airline industry · Economy Depression · Pandemic · Covid-19 · Gross Domestic Product

1 Introduction

Covid-19, lasting more than three years until 2022, is the key to discovering the depression in the world-wide economy during these years. As Richard Baldwin and Beatrice Weder di Mauro [1] claim, the Covid-19 pandemic is both a shock to aggregate demand as well as aggregate supply, which can lead to a sharp decrease in real output which is gross domestic product (GDP). A decrease in GDP causes a negative gap economically, therefore, a depression in the economy. In fact, the pandemic situation can affect the economy in many aspects. As claimed by Debata and other scholars [2], the pandemic leads to depressive effects on the economy through slowing down the development of some industrial factors, such as tourism, agriculture, and retail.

Moreover, the tourism economy is affected seriously by the Covid-19 pandemic because the nation-wide lockdown makes people restricted from traveling to prevent the spread of the virus. As Archer [3] states, tourism is quite a huge part that can be

accounted for the economy of one nation, such as Bermuda. And the importance of the airline industry as one kind of economy that is closely related to the tourism economy whose economic growth is severely affected is supposed to be researched [4]. Tourism is quite a significant part of the economy not only in other countries but also in China. Tourism plays an essential part in China's national economy since it encourages people to start businesses and fosters "regional economic development" [5].

Thus, the economic situation in China should be hurt most notably by the Covid-19 pandemic.

However, even though a few papers focus on the depression in the economic situation in China as a whole and the airline industry as part of it, there is still a gap that is lack of research on how much the economic effects on the airline industry can be accounted for those on the overall economic situations in China, which means the importance of airline industry for the economy of China. This study, therefore, focuses on the strength of economic power of the airline industry in the economy as a whole. Quantitative data will be gained from the official websites of two main airline companies in China which are China Southern Airline, and China Eastern Airline, and the data will be compared with other parts included in calculating the gross domestic product to illustrate the impact of the depression on the airline industry's economic situations on the national economy during the pandemic.

2 Literature Review

Whether the airline industry accounts for an influential part or just a small part of the overall economy decides how much attention is supposed to be paid to this problem. And this problem should be figured out as soon as possible because few people can deny that economy is related to every person, every people, and every nation.

Thanks to enough attention paid to the economic depression during the Covid-19 pandemic, a few studies have been done related to this topic. It is indicated that China has been through hard times with economic issues, and economic growth is slowing down much more since the production and consumption are both ruined by lockdowns [6] More notably, the depression can be shown in the drastic decrease in China's GDP growth rate. According to China Data [7], the GDP growth rate, which can be the best representation of a country's economic growth, decreases drastically from 6.75% in 2018 to 2.30% in 2020.

Furthermore, due to such long-time lockdowns, tourism in China is especially affected. As Hoque [8] states, the tourism industry, which contributes a significant amount to the overall economy in China, should be influenced negatively by the Covid-19 pandemic; This pandemic causes people's fear of being infected from within as well as the seemingly-endless lockdowns for billions of people in almost all cities in China, which eventually leads to a sharp decline in economic growth in the tourism industry in China.

It is worth considering whether the airline industry that is closely associated with the tourism industry is affected by the Covid-19 pandemic as an influential part of the national economy, as indicated that the causation between airline seat capacity and the number of visitors creates a critical link between the tourism industry and airline industry

[9]. However, limited studies have been done related to the importance of airline industry depression for the national economy in China during the pandemic.

This study focuses on researching how much negative impact on the national economy is brought by economic depression in the airline industry led by the Covid-19 pandemic in China with the hypothesis that the economic issues of the Chinese airline industry brought by Covid-19 do have a great impact on the national economy. Quantitative data on the total comprehensive income per year of three airline companies (CSA & CEA) in 2020 which is included in the GDP calculation and leads the whole airline industry in China will be given from the official website of them each. Compared with the reduced percentage in the growth rate of gross domestic product of China from 2017 (no pandemic) to 2021 (increasing lockdown time), the importance of the airline industry for the national economy can be revealed.

What's more, if this hypothesis is supported by this study, the Chinese government devoting to recovering the national economy in China can pay much attention to the airline industry and come up with some solutions to relieve this situation. However, even though the hypothesis is refuted, this study can still be beneficial to the research field related to the recovery of the economy during a pandemic since it can give scholars a clear instruction that the economic decline in the airline industry does not account for too much in China's national economic issues. This can save more time for scholars to research other aspects that can influence the national economy the most during a pandemic.

3 Methodology

In this study, data analysis through creating line graphs is employed. The type of data used for drawing the line graphs is secondary quantitative data. All of the data was gathered from each airline companies' annual financial reports for 2018, 2019, 2020, and 2021. In each financial annual report, the total annual profits of each airline company were checked. As well, the GDP growth rate was gained from authentic China's government data website.

Form the line charts created, it can be indicated whether economic depression in China has something to do with the total annual profit or loss of two main airline companies in China. The basic idea of this approach is that if the depressed aviation industry can account for a larger share of China's national economic problems caused by the Covid-19 pandemic than other aspects such as agriculture or construction, then the data will show that the annual profit and loss of the two major companies follows similar trends in different years representing the development of the Covid-19 pandemic.

4 Results

All the data were from the official annual financial report of each airline companies [7, 10, 11]. In Table 1, the basic data needed for calculations in this study is shown. From numerical data, it can be seen that the total annual profit of the two airline companies was decreasing while the loss was increasing exponentially in the years 2020 and 2021 when the Covid-19 pandemic outbreak the worst. However, even though the GDP growth rate

Table 1. Annual Profits (Loss) of the Two Main Companies in the Airline Industry And GDP in Corresponding Years

Airline Company Annual Profits (Loss) /(millions)	2018	2019	2020	2021
CSA (China Southern Airline)	2,244	1,722	(11,483)	(12,103)
CEA (China Eastern Airline)	2,958	3,464	(11,835)	(12,214)
Total	5,202	5,186	(23,318)	(24,317)
Gross Domestic Product Growth Rate	6.7%	5.9%	2.3%	8.1%

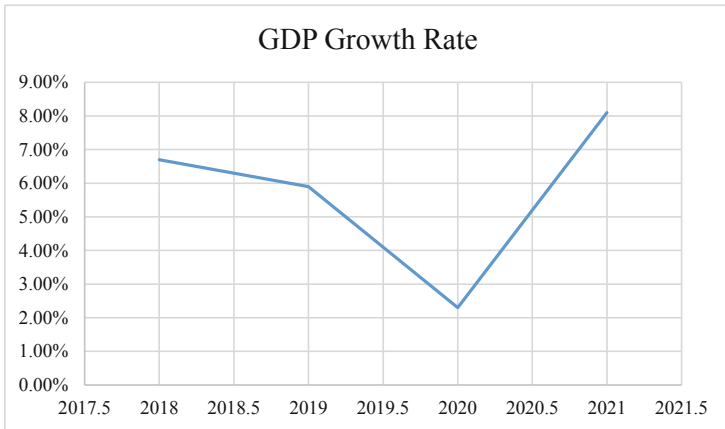


Fig. 1. Line Representing the Annual Growth Rate of GDP of China through 2018 to 2021.

decreases from 2019 to 2020, it increases after 2020 and reaches the highest point in 2021, which has not corresponded to the change in the total profit of the two leading airline companies in China.

More explicitly, from Fig. 1 and Fig. 2, the same trend is shown. As well, from Fig. 3, the line does not show a clear linear or nonlinear relationship between the total annual profit (loss) of the two main airline companies in China and the GDP growth rate of China from the year 2018 to 2021. Thus, it can be supported that the economic depression of the airline industry does not have great importance on the Chinese national economy since there is no association between the total annual profit or loss of the main companies in the airline industry and the GDP growth rate of China during the Covid-19 pandemic period.



Fig. 2. Line Representing the Total Annual Profit (Loss) of two Leading Companies in China Airline Industry through 2018 to 2021.

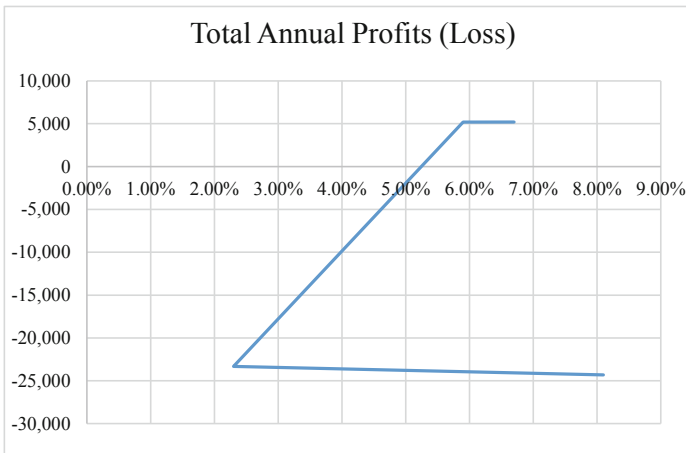


Fig. 3. Line Representing Relationship Between the Total Annual Profit (Loss) of two Leading Companies in China Airline Industry and the Annual Growth Rate of GDP of China in same years (2018–2021).

5 Conclusion

In this study, the hypothesis that the economic problems posed by Covid-19 on China’s aviation industry did have a significant impact on the national economy was refuted by evidence. The evidence shows no clear relationship between the annual gross profit and loss of the two designated major airlines, Chinese airlines and China’s annual GDP growth rate from the non-pandemic period to the pandemic period.

A few limitations can exist in this study, and future suggestions are given. Firstly, even though it is shown that no clear relationship between the airline industry's economic depression and national economic emergency during the pandemic periods, which means the airline industry economy does not account for an influential part of the national economic depression during Covid-19 in China, the data does not show the strength of association, which means maybe there is a little relationship but not indicated. Future studies can focus on testing the strength of relationships using the SPSS program, more comprehensively. Moreover, since the Covid-19 pandemic has lasted for two years, not so much data can be gained, so the results can be not comprehensive enough. On this point, future research can gain more data for later years. Or, fortunately, the Covid-19 pandemic problems are solved, data during other pandemic periods can be gathered for further research as well.

Nonetheless, even though limitations are stated in this study, the finding in the data gathered that the airline industry economy does not account for an influential part of the national economic depression during Covid-19 in China cannot be ignored and it can support that the decline of the Chinese airline industry does not contribute too much to the depression of the national economy brought by Covid-19 pandemic.

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