

Discussion on Economic Situation of China During COVID-19 Pandemic in 2020

Macro Analysis of the Impact of Covid-19 on China's Economy

Youdan Zhang

University of Liverpool

*Corresponding author. Email: Y.Zhang380@student.liverpool.ac.uk

ABSTRACT

The outbreak of COVID-19 in 2020 has brought great external impact to China's economy, which is facing complex internal and external environmental challenges. The pandemic has caused direct losses to the aggregate supply and demand in the macro-economic area, and brought indirect negative effects to the long-term economic development. In this paper, panoramic scanning is carried out from two levels: macro aggregate and industry structure through analysis of the previous researches and data analysis and comparison. The data are processed hierarchically and divided according to the general form and the corresponding industrial structure. The severity of COVID-19 -19 is reflected in the dual impact of supply and demand, and a simple and clear answer can be obtained from the data of Chen et al. for further analysis by establishing the AD-AS economic model[1]. Using the quantitative comparison method, the negative impact of COVID-19 on manufacturing and service industry is obvious. But for the health care industry, e-commerce, and online game industry, it has benefited. The seriousness of COVID-19 is reflected in the double impact on supply and demand, and a simple and clear answer can be obtained by using the total supply and demand curve. The negative impact on most industries is obvious, but some industries get benefits.

Keywords: COVID-19; China's economy; Aggregate supply and demand; Macro-economic; Negative impact.

1. INTRODUCTION

Affecting millions of people, the COVID-19 pandemic has now spread to more than 200 countries and regions and has a main influence on China and the global economy. COVID-19 pandemic in 2020 has a large impact on China's economy. China was in economic trouble in the first part of 2020 when COVID-19 swept China and China was not well-prepared. In the second part of 2020, China was recovered in pandemic control and there were few lockdown cities and China's economy was also recovering. China's GDP only increased 2.3% in 2020 which was the weakest expansion in 44 years, but still made it the only major economy to avoid contraction as other industrial powers battled the pandemic[8] (ABC News, 2021). Several delta variant COVID-19 outbreaks in China in 2021 have caused local lockdowns in several cities but it has a little negative impact on nationwide economic recovery. This paper aims to study the economic situation of China during the COVID-19

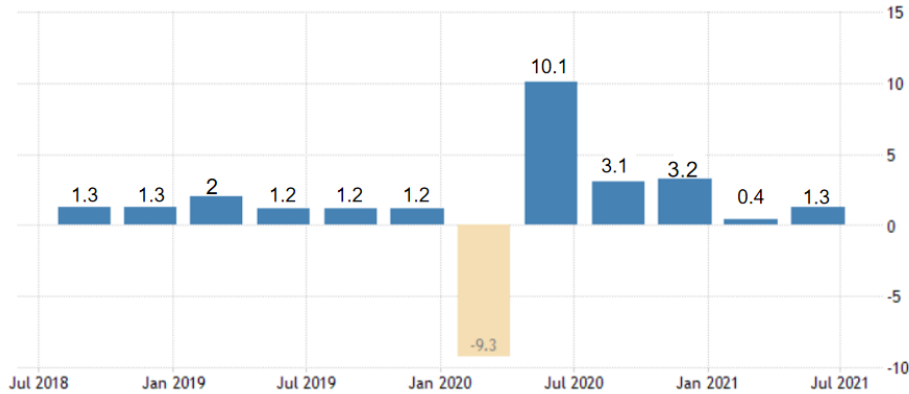
pandemic in 2020 when China suffered most from the pandemic. This study can provide a reference for policy-makers of both domestic and foreign countries to recover the stricken economy. GDP and other macroeconomic indicators are the focus of this study. The argument is that the decline of aggregate supply and demand is inevitable which drags down GDP and other macroeconomic indicators, and many industries suffer from decline; however, there are also other industries that benefit from the pandemic. The research helps industries to understand the special situation and figure out the solutions to some extent.

2. NATIONAL-LEVEL ECONOMIC IMPACTS

As shown in Figure 1, the GDP of China is heavily stricken in the first quarter of 2020, to -9.3%. The outbreak of the pandemic is a typical exogenous shock to the macroeconomy [1]. According to Chen et al. [1], COVID-19 reduced 19.4% of the real income of China

in the first quarter of 2020, and the real income declined in 272 out of 315 cities and Wuhan experienced a drop of 60.4%. Generally speaking, it can be analyzed simply and intuitively within the framework of aggregate demand and supply. Since the output is a function of variables such as technology, capital and labor, the pandemic control and prevention measures, whether they are the spread of workers or the delay in starting work under isolation conditions, actually reduce the

input of labor and capital. In this case, output inevitably shrinks and the aggregate supply curve shifts upward to the left. Aggregate demand during a pandemic is suppressed similarly, people are unable to invest and consume as they normally would, and the aggregate demand curve shifts to the left. The decline of aggregate demand and supply is inevitable in this way, leading to a worse macro economy.



SOURCE: TRADINGECONOMICS.COM | NATIONAL BUREAU OF STATISTICS OF CHINA

Figure 1 GDP of China (Source: Tradingeconomics, 2021)

Obviously, COVID-19 has an influence on China's supply and demand at the same time. According to Liu [3], in general, at the peak of the crisis in February 2020, many different indicators have fallen by more than 20%, and have fallen by more than 30% compared with the pre-crisis trend. There are great differences between regions and industries. These negative impacts range from business investment to retail sales. In particular, the service industry was greatly affected, and Internet sales were negligible. From the perspective of production functions on the supply side, first of all, COVID-19 directly affects labor. It is a factor of production including the health of workers and the number of deaths. It directly reduces labor input and leads to shrinking production and supply. Second, COVID-19 directly affects capital formation, reduces capital use efficiency and asset turnover, reduces output, and affects the aggregate supply curve. Third, the lockdown method is adopted for the prevention and control of COVID-19, and logistics is greatly blocked. It is difficult for normal production and business activities to continue to advance, which directly leads to a reduction in total supply. This study simply analyzes the impact of the COVID-19 shock on the entire Chinese macro economy within the framework of aggregate demand and supply curves. As shown in Figure 2, the aggregate demand curve D also shrinks toward D' and the aggregate supply curve S shrinks toward S' after COVID-19 occurs. The original equilibrium point moves from (Q, P) to (Q', P') . The overall total output has a significant drop and the price changes. Whether it falls or rises relies on the relative contraction of the total

demand and supply curve and elasticity (slope). The price will rise (P') if the contraction of aggregate demand is small relative to aggregate supply, and inflation will occur. The price will fall (P'') on the contrary.

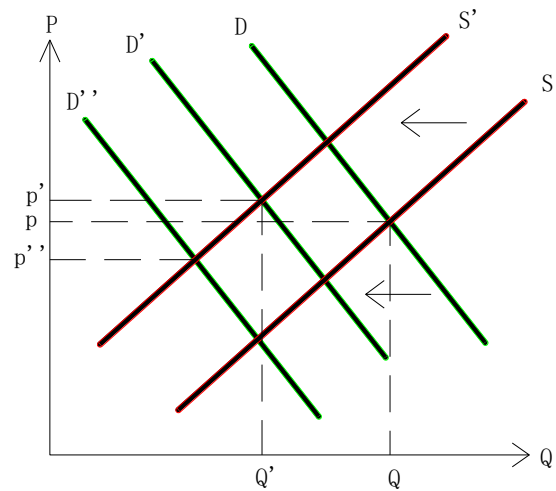


Figure 2 Supply-demand curve of China's economy under COVID-19 pandemic in 2020

3. INDUSTRIAL-LEVEL ECONOMIC IMPACTS

COVID-19 has different impacts on different industries, industries and different types of enterprises. The impact of COVID-19 on the primary and secondary industries is mainly due to the decrease in demand.

COVID-19 has the greatest impact on the tertiary industry.

From the perspective of manufacturing investment, on the one hand, due to the time limit of resuming work, the slow rework of employees, inadequate protection conditions in resuming production, etc., industrial production activities are passively postponed and investment is correspondingly reduced. On the other hand, transportation is blocked, the delivery of manufacturing orders is delayed, the production of

upstream and downstream enterprises in the industrial chain cannot be synchronized, and the prices of raw materials may rise sharply after the pandemic, resulting in a decrease in investment activities due to production stagnation. Most of China's manufacturing industry is order-driven, as shown in Figure 3. After the pandemic, the PMI new order index dropped sharply to 40, which was much lower than 52 before the pandemic. Therefore, the investment demand of manufacturing industry could not be avoided.



Figure 3 China Caixin Manufacturing PMI (Source: Tradingeconomics, 2021)

Under the impact of the pandemic, the most affected industries are the service industries with the flow and gathering of people as the main line, such as transportation, tourism, catering and accommodation, cinema, film and television, etc. The pandemic continued for a long time, causing some small and medium-sized enterprises to close down. At this time, the economy and industrial chain ecology are irreversible. China's service industry is mostly order-driven, as shown in Figure 4. After the pandemic, PMI new order index dropped sharply to 26, which was much lower than 54 before the pandemic. Therefore, the investment demand of the service industry could not avoid a sharp drop. The revenue of the catering and hospitality industry which is one of the industries hardest hit by COVID-19, dropped significantly in the first quarter compared with the same period of 2019. Statistics from the National Bureau of Statistics show that China's catering service industry achieved operating income of 602.6 billion yuan from January to March, down 44.3% year-on-year; the industry revenue was 183.2 billion yuan in March alone, down 46.8% year on

year [11]. With the disappearance of the pandemic in China, the catering industry has begun to recover, but business owners still face many challenges. In March, the rate of returning to work in the catering industry increased sharply, but the income growth was limited. More than 90% of the catering enterprises in China had their income decreased by more than 50% year-on-year, and 94.61% of restaurants had less than half of last year's passenger flow [11]. The main challenges faced by catering providers are the shortage of funds, the complicated approval procedures of employees' applications for returning to work, and the lack of consumer consumption ability and confidence. Affected by the pandemic, almost all tourism and business trips have been postponed, and the number of tourists and hotel occupancy rates have dropped significantly, resulting in a huge loss of income. The number of domestic tourists in China was 3.94 billion in 2020, down 34.97% year-on-year; it is estimated that China's total tourism revenue is 3.92 trillion yuan in 2020, down 39.83% year-on-year [11].

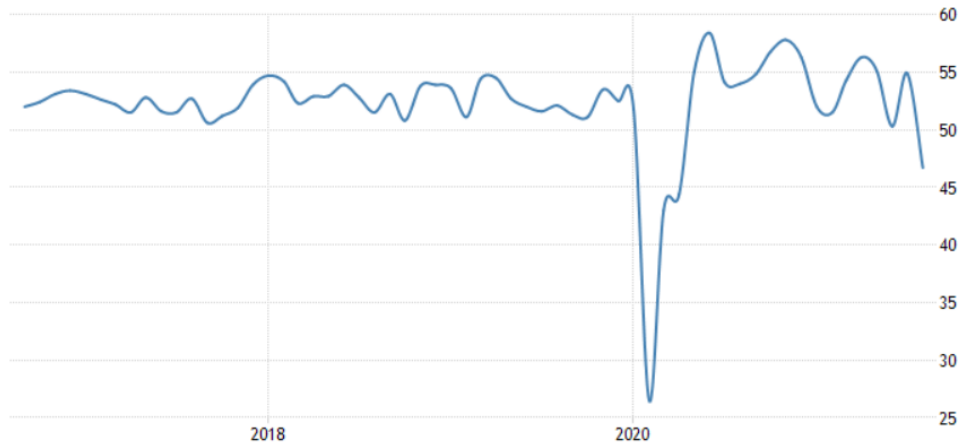


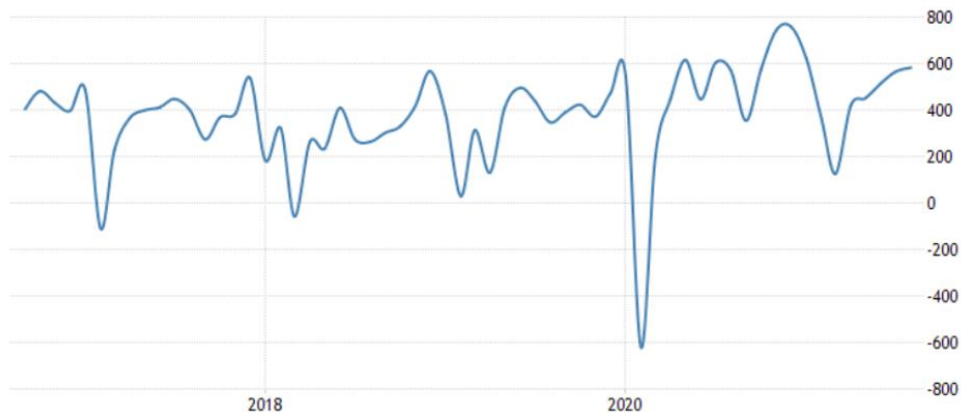
Figure 4 China Services PMI (Source: Tradingeconomics, 2021)

The impact of the pandemic has greatly increased the demand for medical and health products, and the entire medical and health industry has ushered in a relatively obvious positive impact. The production lines of the healthcare industry are still operating at full capacity through many industries in China that fell into a downturn during the COVID-19 pandemic. The pandemic has provided an opportunity for China's healthcare industry to enter the international market because the strong production capacity of Chinese manufacturers can help meet the global needs for medical supplies including ventilators, masks, monitors and protective clothing as COVID-19 continues to rage around the world.

The online industry that provides support and convenience for life, work, education, etc. during the pandemic period has reversed development. In line with the life and work patterns during the pandemic prevention and control period, the demand for remote office, online education, e-commerce, online games, online entertainment and film and television, mobile games and other industries increase significantly, and the industrial chain related to these industries also appear staged prosperity. For example, as the demand for online products increased during the COVID-19 pandemic, the global video game industry has seen growth. Financial reports from major Chinese gaming companies reveal the growing demand in the mobile gaming industry. The growth rate of new game users slowed to 2 million in the first quarter of 2020, an increase of only 0.31% from the previous quarter, but the Chinese game market features revenue increased by 25.22% from the previous month 73.2 billion yuan [11]. With the extension of holidays and the pandemic, people are encouraged to work from home, and online

game players and purchases have risen sharply, and the video game industry has experienced a short-term boom.

Due to the impact of the pandemic, a large number of companies have delayed the start of operations, and the country and the world have been sealed off by mail, which has seriously disrupted the original production arrangements and economic order. During the peak period of China's export orders, the flow of people and logistics caused by the new crown pneumonia pandemic inevitably affect the fulfillment of new orders. In addition, due to factors such as the Sino-US trade war, the external environment for China's economic development before the outbreak was already quite severe. As shown in Figure 5, China's export faces difficulties. In terms of industry, China is highly dependent on the supply of products from some key countries. The obstacles to trade and navigation caused by the pandemic caused a short-term interruption of the international industrial chain, which in turn affected the progress of some industries. Affected by the global spread of the new coronavirus pneumonia pandemic, global demand has shrunk sharply, and a large number of Chinese companies have to cancel export orders in a short period of time. Many Chinese exporters have turned to cross-border e-commerce to gain more transactions and open up new markets under such circumstances. Cross-border e-commerce has played an irreplaceable role during the pandemic as a new way for Chinese companies to expand into the international market. China's cross-border e-commerce has been growing rapidly though COVID-19 has had a serious impact on the traditional foreign trade industry. The cross-border e-commerce retail import and export volume in the first two months of 2020 was 17.4 billion yuan, a year-on-year increase of 36.7% according to data from the National Bureau of Statistics [11].



SOURCE: TRADINGECONOMICS.COM | GENERAL ADMINISTRATION OF CUSTOMS

Figure 5 China Balance of Trade (Source: Tradingeconomics, 2021)

4. CONCLUSION

The COVID-19 outbreak in 2020 has brought great external strikes to the Chinese economy exposed to complex external and internal threats. The high level of uncertainty and contagion of the pandemic has caused direct losses to the aggregate supply and demand levels of the macroeconomic area, and has an indirect negative influence on China's economic development in both short run and long run. This paper conducts a panoramic scan from two levels of macroscopic total volume and industry structure. A simple and clear answer can be obtained by using the total supply and demand curve. The impact of most industries is obvious. Some industries that rely heavily on the gathering and movement of people, such as transportation, catering and tourism, are severely impacted. Some industries are benefiting. Although pandemic has brought huge direct losses to the Chinese economy in the short term and has the possibility of gradually expanding indirect losses in the long-term development, overall, the Chinese government has sufficient room for monetary and fiscal expansion to limit the impact of COVID-19 on the economy. However, given the possibility of new large-scale delta variant COVID-19 outbreaks abroad, external demand may pose a risk to China's growth prospects. In the further study, the relevant data which maybe provided by industries will be discussed, as well as the policy which shown by the government will support the China's economy.

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