

The Specific Impact of COVID-19 on China's Macro Economy: Taking Sichuan Province as an Example

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Abstract: The outbreak of the new crown pneumonia epidemic at the end of 2019 has brought a huge impact on the development of the world economy. In order to analyze the direction and extent of the impact of the epidemic on the macro economy, this paper analyzes the impact of the epidemic on GDP, unemployment rate, residential expenditure, livelihood and tourism in Sichuan Province, China, based on the actual development of the province, combined with data. The results of this paper show that the outbreak of the epidemic had a significant negative impact on the macroeconomic development of Sichuan, and the economic situation in Sichuan Province showed a significant decline during the epidemic, which reveals that the local government needs to formulate policies that are consistent with the economic recovery of Sichuan Province, such as stimulating local consumption and investment, which has important practical implications for the better development of Sichuan Province in the post-epidemic era. This has important practical implications for Sichuan's development in the post-epidemic era.

1. Introduction

1.1. Research Background and Motivation

In 2019, the outbreak of COVID-19 in China swiftly sweeps the world, bringing immense casualties. Of international concern, the WHO declares a public health emergency on 30th January 2020 [1]. The epidemic is caused by the severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), which patients have a chance to endure severe pneumonia and end up having with acute respiratory distress syndrome (ARDS), septic shock and multiple organ failure, fatal damage which easily leads to death [2]. As the first country enduring the outbreak of the pandemic, China takes the first significant economic hit of COVID-19 [3]. China's economy is closely related to global trade, investment, and tourism, so that any slowdown or long-term travel and transportation restrictions end up dragging down the global supply chain and possibly create international economic fallout [4]. Therefore, looking into the effects that COVID-19 creates to the economy is essential. This research uses data of Sichuan's economy to indicate the economic impacts of COVID-19 to China due to the high similarities. Being next to Hubei, Sichuan is the second earliest province to endure the strike of COVID-19. However, Sichuan initiates epidemic prevention and control policy as early as January 21st, one of the earliest provinces to conduct such strict measurements, which perfectly reflects the economy of China under COVID-19 [5]. In addition, as one of the major agricultural regions in China, the vegetation produced in Sichuan Province constitutes the main part of GRP (Gross Regional Product), and its products mainly include sugarcane, wheat, rice, rapeseed, etc. Sichuan contains a well-developed industry sector and rich in natural resources, which help Sichuan become the most industrialized province in Northwestern China [6]. As a result, Sichuan holds high economic significance in China. In terms of epidemic status, lockdown policy, population density, level of

development, and urban rural pattern, Sichuan contains almost 85% similarities with mainland China [7]. Thus, with high economic significance and similarities to mainland China, Sichuan's data can more accurately represent COVID-19's effects in China.

1.2. Literature Review

Despite the public-health impact, the COVID-19 crisis also shakes the world's economy severely. Because of quarantine measurements, most of the countries in the world lockdown to control the spread of the virus, which disrupts the normal international trade order.

suggests that the negative effects of the epidemic on macroeconomic throughout the world have been constantly expanding because the COVID-19 has generated a deglobalization process [8], which blocks the exchange of goods, labor, and capital and also the business production operation because of lock-down policies among borders. Affecting severely in both the supply side and the demand side, COVID-19 epidemic impedes aggregate trade flows greatly through international supply chain distortions and manufacturing distress [9]. In North Africa and Middle East, border closures caused by COVID-19 fluctuates oil price, damage value chain and hinder travels and tourism which are backbone industries for local economy [10]. What's more, not only countries from the third world, the biggest economies in the world also experience a harsh time. The G7 economies in the world, including China, the United States, Italy, France, Germany, Japan, and the United Kingdom, which construct 65% of world manufacturing and 60% of world GDP endure skyrocket COVID-19 cases and all ranks top 10 of most severely affected countries [11]. In EU, the prevention of cross border travel due to the pandemic results in major economic disruption [12]. Although much research has conducted on COVID-19's economic impact on the global economy and the major continents, few studies focus specifically on China, the second largest economy in the world. Therefore, this research investigates the economic impact of COVID-19 by the reflection of Sichuan's economy.

1.3. Research Contents and Framework

This article focuses on the actual development of Sichuan Province, analyzes the main macroeconomic indicators of Sichuan Province after the outbreak of the epidemic, and attempts to explore the impact of the epidemic on the macroeconomics of Sichuan Province and summarize the negative effects of the epidemic on China's economic development. The framework of this article is as follows. The first part is the introduction, which mainly includes the research background and literature review. The second analysis is the data analysis. A quantitative analysis of economic development was carried out. The third part is the results and discussion, and finally the conclusion.

2. Methodology

To address the key objective, this paper utilizes quantitative research to further measure the impact of the COVID-19 epidemic on the macro economy: Taking Sichuan Province as an example. In order to collect credible data, this research chose secondary archival data from some formal database, which represents at different levels, the changes in economic data to support the quantitative research. Through the difference of the annual rate of economic growth of the gross domestic product (GDP), unemployment situation, resident's expenditure, livelihoods, and even tourism of Sichuan province, it is clear to see the huge economical changes in Sichuan's economy caused by the epidemic after deeply analyzing the data collected.

2.1. GDP

With the widespread of COVID-19 in 2020, the economy of Sichuan province was greatly affected. According to figure 1 [13], Sichuan province reported a GDP of 55,472.000 yuan in 2019, while it reported an increasing GDP of 58,126.000 yuan in 2020. It is clearly indicated in figure 2 [14], compared with a growth rate of 7.4 percent from 2018 to 2019, Sichuan only reached a 3.8 percent annual growth of GDP from 2019 to 2020 due to the epidemic. In order to boost the depression economy, government implemented a series of strong economic policies and emergency measures.

In this case, GDP, an essential indicator of the economic strength of a country, accurately represents the unquestionable economic changes brought by the epidemic to Sichuan Province from a digital perspective.

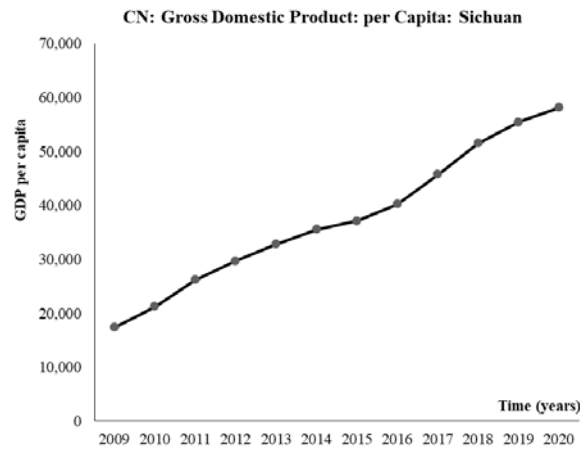


Figure 1. China’s Gross Domestic Product (GDP): per Capita: Sichuan from 1953-2020

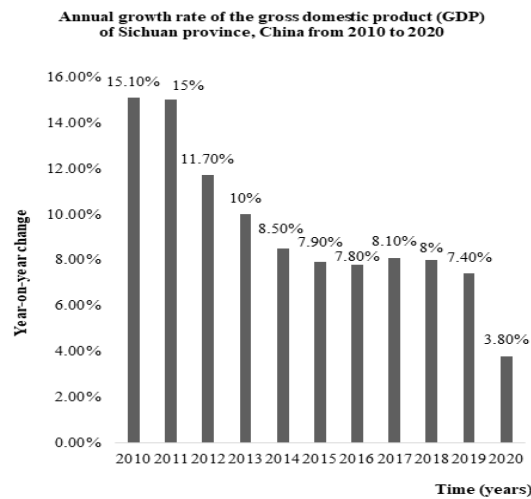


Figure 2. Annual growth rate of GDP of Sichuan province from 2010-2020

2.2. Unemployment

From a larger scale, the surge in unemployment rate caused by the epidemic is also inevitable from a national perspective. Based on figure 3, the whole nation China only had 3.62% unemployment in 2019, which is the lowest point, 3.62% in the past decade [15]. While COVID-19 outbreaked in 2020, the unemployment rate as expected became the highest point, 4.24%. Even with powerful government intervention, the rate could only recover to 2018’s level, from an extremely high point 4.24 percent in 2020 to 3.8 percent in 2021, which implies the fact that the labor market has regressed for approximately two years. It also confirms the serious damage of the epidemic to unemployment in China. Luckily, according to the table from Statista, it is good to see that the prediction of unemployment rate in the following years will be more likely to continue falling, even reaching the lowest point in the past decades, 3.6 percent, but the real situation still needs further observation and research.

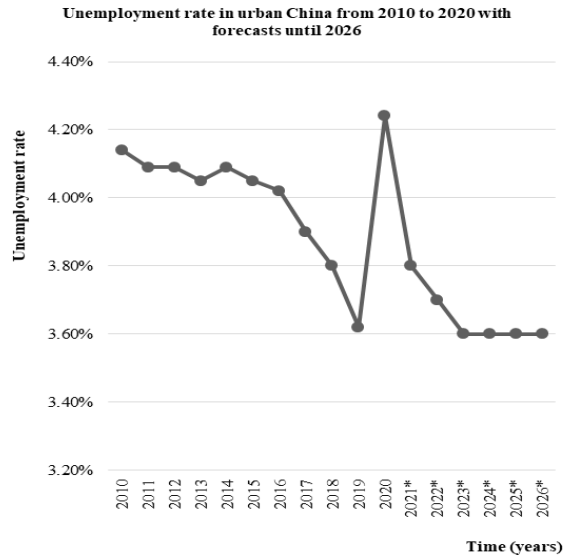


Figure 3. Unemployment rate in urban China from 2010-2020 with forecasts until 2026

To be more specific, take Sichuan province as an example, a more detailed analysis of the impact of COVID-19 on the unemployment rate will be more credible. Based on figure 4, it points out that before the epidemic, specifically from 2016 to 2019, there is an obvious downward trend that it dropped from 0.563 percent to 0.504 gradually [16]. While due to COVID-19, the unemployment in Sichuan in 2020 increased significantly, which in figure 3 is 0.544. This data effectively reflects the hard strike of the epidemic to the employment rate, which is consistent with the above conclusion.

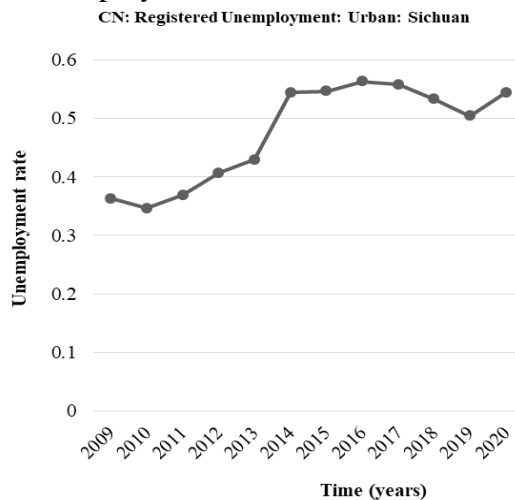


Figure 4. Unemployment rate in Sichuan from 1980-2020

2.3. Resident's Expenditure

As can be seen from the trend change graph in figure 5, household expenditures were on the rise before the outbreak. The figure 4 shows an apparent upward slope before 2020, increasing from 9054.000 to 24562.872 [17]. Due to the epidemic's impact that occurred at the end of 2019, the consumption expenditure falls to 22975.000. The data effectively reflects the hard strike of the epidemic to the household's expenditure. Under the epidemic's impact, plenty of workers were forced to stop their job, and countless laid-off employees even lost the guarantee to make a living.

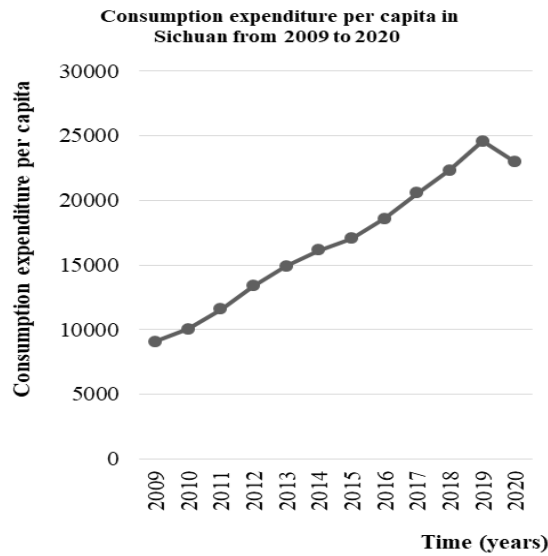


Figure 5. The consumption expenditure per Capita in Sichuan from 2009-2020

2.4. Fixed Asset Investment

The figure 6 reveals that before the epidemic, from 2010 to 2018, although the growth rate of tourists was always at the decreasing rate, the fixed asset investment was still positive [18]. However, due to the impact of the epidemic, in 2019, the fixed asset investment rate dropped dramatically to negative to -10.700. The data effectively illustrate the negative impact of the epidemic on fixed-asset investment. In 2020, after the recovery of the epidemic, as we can see from table 6, the slope started to upward, leading the fixed asset investment rate back to positive. The impact of the epidemic is horrible.

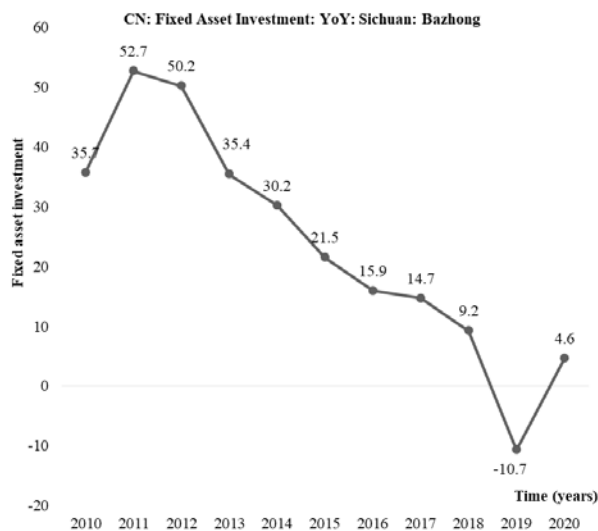


Figure 6. The fixed asset investment in Sichuan from 2010 to 2020

2.5. Tourism

The figure 7 reveals that before the epidemic, specifically from 2016 to 2019, although the growth rate of tourists was relatively decreasing, the person-times of domestic tourists were still increasing [19]. While due to COVID-19, the year 2020 registered 2.88 billion domestic tourists, down by 52.1 percent over that of the previous year. Of this total, there were 2.07 billion tourists from urban areas, a decrease of 53.8 percent, and 810 million tourists from rural areas, 47.0 percent. Domestic tourism revenue was 2,228.6 billion yuan, down by 61.1 percent. Of this total, tourists from urban areas spent 1,796.7 billion yuan, down by 62.2 percent, and tourists from rural areas spent 432.0 billion yuan, down by 55.7 percent, which means under the suffering of the epidemic, people started not to go

outside. As we can see from table 6, the person-times of domestic tourists drop sharply, especially during 2019 and 2020. The epidemic causes the livelihood of citizens suffering.

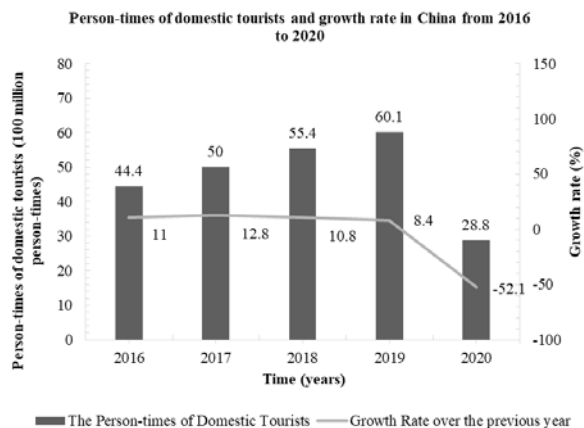


Figure 7. Person-times of domestic tourists and growth rate in China from 2016 to 2020

3. Results and Discussion

GDP, same as its name, is a widely used measurement of the total market value of all goods that produced in one country within a time period, which effectively plays a reference role for the national economics. As a powerful reflector of economic indicators, any change of GDP can intuitively represent the status of the economy and growth rate in a certain period. In this case, based on figure 1 and figure 2, they both show that before 2019, GDP and its annual growth rate in Sichuan province were growing substantially and steadily, while in 2019 and 2020, Sichuan's economic growth had plummeted, which also reflected in the performance of GDP effectively. This section effectively shows the unprecedented hit caused by the epidemic, which needs a long time to recover. Closely related to people's livelihood issues, unemployment rate is a really important factor for social stability, serving the common interests of the people by creating a peaceful, equitable, and compassionate society. As the basic guarantee of people's lives, any slight changes in the unemployment rate can cause social chaos. Under such conditions, in the 2.2 part, the surge of unemployment rate even rose from 3.62% to 4.24% in one year. Even though this number may seem inconspicuous, the consequences behind it are really terrible. It represents countless bloody examples in daily life. Under the impact of the epidemic, so many companies went bankrupt, which means that countless laid-off employees lost the guarantee to make a living. In this case, the COVID-19 epidemic requires to bear the inescapable responsibility for the sudden rise in the unemployment rate. If the situation cannot be solved in time, it will cause an unimaginable disaster. COVID-19 also has a significant impact on people's daily lives. In previous years, 2009-2019, the expenditure of households is at an increasing rate, increasing from 9054.000 to 24562.872; however, due to the epidemic's impact that occurred at the end of 2019, the consumption expenditure fell to 22975.000. The drop rate is tremendous and can indirectly reflect the fall in GDP and unemployment. People spend less and less money on their daily uses, which represents a hard strike of the epidemic to the household's expenditure. Due to the epidemic's impact, tons of people lost their jobs, were cut off their wages, and even were jobless, which could not sustain their lives. The fixed-asset investment is the critical factor representing the wealth and people's life quantity. Before the epidemic, from 2010 to 2018, although the growth rate of fixed-asset investment was constantly decreasing, the fixed asset investment was still optimal (positive); however, due to the impact of the epidemic, in 2019, the fixed asset investment rate dropped dramatically to negative to -10.700. A massive drop in people's investment effectively reveals the damage of the epidemic on fixed-asset investment. Based on table 6, after the recovery of the epidemic in 2020, the situation started to recover, leading the fixed asset investment rate back to positive. The impact of the COVID-19 is terrible. Although the situation recovered a bit, it still required a long time to recover to the old days. Tourism is another important

factor that could reveal people's living. Before the epidemic, even though the growth rate of tourists was relatively decreasing, the person-times of domestic tourists were still increasing, which is optimal for the country's economic and people's life quantity. Nevertheless, due to COVID-19, 2020 registered 2.88 billion domestic tourists, down by 52.1 percent over that of the previous year. Of this total, there were 2.07 billion tourists from urban areas, a decrease of 53.8 percent, and 810 million tourists from rural areas, 47.0 percent. Domestic tourism revenue was 2,228.6 billion yuan, down by 61.1 percent. Of this total, tourists from urban areas spent 1,796.7 billion yuan, down by 62.2 percent, and tourists from rural areas spent 432.0 billion yuan, down by 55.7 percent. The suffering of the epidemic is tragic. People started not to travel and go outside anymore. Figure 7 also shows that the person-times of domestic tourists drop sharply, especially during 2019 and 2020. The epidemic makes things very serious, making people's lives broad and limited. If the situation cannot be recovered on time, the consequence will be unimaginable.

4. Conclusion

In conclusion, COVID-19 epidemic in 2019 had caused an irreversible impact on the economy of the world, which even last to the present. Therefore, it is essential for people to better understand the relationship between epidemic and economy from this case, which can be a big help for government's work in the future. This article mainly taking Sichuan Province in China as an example, specifically studies the economic impact of the epidemic on five aspects, including GDP, unemployment, resident's expenditure, fixed asset investment, and tourism. After comparing and analyzing the exact data from formal databases, it turns out that the economic impact of COVID-19 this time is complex and mutually influencing. In terms of GDP, this epidemic caused the GDP, which originally rose, instead to drop severely. Not only that, the unemployment rate went up unexpectedly and became a weakness of social stability. As the unemployment rate increased, a sharp decrease in the resident's expenditure just happened naturally. Even for the government, the impact of this epidemic is also difficult to overcome. During this period, the fixed asset investment in Sichuan Province unsurprisingly fell to the lowest point in the past decades. And it even does not need to mention the huge damage COVID-19 caused to the tourism industry. Not only the number of tourists drastically reduced, but the tourism revenue was also meager. These data and results mentioned above are all consistent and effective proof of the specific economic impact of COVID-19, which warns economists, sociologists, and government workers to fully gain experience from this epidemic, in order to better improve the economic knowledge system and well prepare for future government work. The study mainly tested on several important aspects of the province of Sichuan, so that the study might not be very comprehensive. The serious COVID-19 problem is still ongoing; the future study will focus on later updating the data of different aspects of the Sichuan province in China.

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