

The Impact of COVID-19 Epidemic on China's Economy

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Abstract

This study investigates the influence of the Covid-19 epidemic on the economy of China. Since the onslaught of the spread of the virus in early 2020, China's economy has faced both short-term and long-term effects such as a decline of the country's economic data, a reduction in the value of its imports and exports and the enterprises in the country have faced a dormant period where the lack of market demand in the country's foreign trade has led to the slow growth of the market demand. The supply chain of China and its foreign trade partners has been affected as production slowed down or stopped due to affected transport and employment numbers in the industries. China's catering industry has been forced to turn to internet technology to try to cater for the people's needs. The imposing of trade and travel restrictions has reduced China's revenue earned from foreign trade and tourism. The economy however has also seen some positive impacts of the epidemic as seen in the increase of the online market growth from the increase in the number of online shoppers. This has happened as a result of curfews being imposed in various cities in China and entire lockdowns.

Keywords

Corona Virus; China; Global economy; Epidemic; Global Supply chain; Foreign trade, Gross Domestic Product (GDP); Enterprises; Market demand; Trade and travel restrictions; Imports and exports.

1. Introduction

At the beginning of 2020, Coronavirus (COVID-19) began to spread within China. After a few months, the virus began to spread globally. The ravages of the virus objectively have a huge impact on people's lives. As of October 24, 2020, the total number of confirmed cases worldwide has reached nearly 42.4 million, and the death toll has exceeded 1.15 million, affecting more than 200 countries and regions. According to the forecast of the International Monetary Fund, the global economy is expected to contract sharply by 3% in 2020. This economic recession is the worst except for the Great Depression of the 1930s.

At the beginning, Chinese people and government did not have any precautions against the sudden virus epidemic, which objectively led to the spread of the virus in China. The rapidly

spreading virus forced the government to take some unconventional measures to limit the spread of the virus. As a result, China's economy was hit hard during the Chinese New Year in 2020. Among various industries, tourism, catering and transportation are almost in a state of paralysis, which has a huge impact on people's lives. According to the Chinese National Bureau of Statistics, China's GDP in the first quarter was 20,650.4 billion Chinese Yuan, decreased by 6.8% from last year. In terms of industries, the added value of the primary industry was 1,018.6 billion Chinese Yuan, decreased by 3.2%; the added value of the secondary industry was 7363.8 billion Chinese Yuan, decreased by 9.6%; the added value of the tertiary industry was 12,268 billion Chinese Yuan, decreased by 5.2%.

Affected by the epidemic, China's economic data in the first quarter of 2020 decreased significantly compared with the same period in 2019. According to the National Bureau of Statistics (NBS), the GDP index in the first quarter was only 93.2 percent compared with the same period in 2019, with a quarter-on-quarter growth rate of -9.8 percent. The total value of China's import and export merchandise trade in the first quarter was 6.6 trillion yuan, down 6.4 percent from the same period in 2019.[2]

In the first half of 2020, although the domestic epidemic has been basically brought under control, no strategic victory has been achieved internationally. Due to the continuous spread of the new crown disease in the global scope, the supply chain of all countries in the world has been severely impacted. Large-scale stop-production, cross-border and even domestic logistics are blocked, and production enterprises are faced with unprecedented challenges in both production, transportation and employment, especially in cross-border manufacturing. With the expansion of the epidemic impact, most enterprises have to enter a short "dormant period", the global supply chain has a short gap, in the global supply chain network layer by layer of amplification, seriously affected the continuous and stable development of integrated large-scale production, easy to lead to the contraction of global trade and the closure of production enterprises.

2. Comparison

In the study of the pandemic's influence on China and even the world's economy, we can't overlook the typical example of the 2003 SARS.

In 2003, there are typically three categories of influence: Highly influenced, influenced, and slightly influenced:

1. Highly influenced: Labor intensive sectors and sectors where panic is easily transmitted, namely transportation/warehousing and postal services, accommodation and catering, and finance. At that time, the real GDP growth rate in the second quarter was nearly 2 points lower than that in the first quarter. Among them, the transportation/warehousing and postal service industry, the accommodation and catering industry and the financial industry had the biggest drag on GDP growth, and the real growth rate in the second quarter was 5.6, 3.6 and 3.6 points lower than that in the first quarter, respectively.

2. Influenced: Capital intensive industries, that is, industry and construction. In the second quarter of 2003, industry and construction fell by 2 and 1.7 points, respectively, compared with the first quarter of 2003.[3]

3. Slightly Influenced: Wholesale and retail industry and real estate industry. In the second quarter of 2003, the growth rate of added value of wholesale and retail industries increased rather than decreased compared with the first quarter, which may be related to the fact that people reduced optional consumption (such as dining out) but increased mandatory consumption (such as cooking at home) and medical supplies purchase. In addition 2003 real estate industry performance is relatively stable.

In terms of industry importance, the three industries with the largest negative impact accounted for about 12.4% of nominal GDP in 2003, the secondary industry with a slightly negative impact accounted for about 52.9%, and the industries with relatively stable performance accounted for about 10%

In fact, we have seen that the industries that were more affected by the epidemic have rebounded significantly since the third quarter of 2003. In the third quarter of 2003, the GDP growth rate of the transportation industry rebounded by 5.3 points and basically recovered to the level of the first quarter. From the relevant data of transportation, both the passenger volume and passenger turnover showed a very obvious rebound. B&B rebounded by 9.5 points over Q1 2003 and 2002. After the epidemic, people relaxed and felt a bit like they had survived the disaster. First, they had dinners and traveled, which led to the greatest flexibility in accommodation and catering. Industrial and construction growth rebounded modestly. The financial and real estate sectors were weak in the third and fourth quarters, which was related to the tightening of monetary policy at that time.

The difference between the 2020 pandemic and the 2003 one.

Compared with 2003, the impact of this epidemic on the industry level will be different in four aspects, mainly because this epidemic mainly affects the Spring Festival golden holiday and the first quarter, so the impact on the industry and construction industry is small, while the culture and entertainment, accommodation and catering, real estate may have a greater short-term impact.

Additionally, the impact of the 2020 corona virus is global, and causing the greatest economic recession since World War II, and reflect its influence on global industrial chain's risk and safety.

3. Research Method

Using related articles. (Key words: Corona Virus, China, Export, Import, Tencent, On-line, games, domestic games, retail sales, industry, revenue, GDP, delivery, fresh food, medicine) Also using government statistics, from website of China's state counsel, Federal Reserve economic data, World inequality data base, China's tax report.

4. Result

4.1. Foreign Trade

As the world's largest trader of goods, China's import and export industries have been particularly affected by the outbreak. According to data from the National Bureau of Statistics, from January to May in 2020, the total value of China's foreign trade was 11.5 trillion yuan, of which the total value of exports was 6.2 trillion yuan, and the total value of imports was 5.3 trillion yuan, down by 4.9% compared with the same period in 2019, of which the total value of exports fell by 4.7%, and the total value of imports fell by 5.2%. In the face of the epidemic, the central government and local governments at all levels have introduced relevant policies to fight the epidemic and help enterprises resume production and work as soon as possible. At the same time, enterprises and individuals have also made great efforts. It is inevitable to defeat the epidemic, but with the continuing of the global epidemic, the import and export industry of China's foreign trade is still facing great challenges.[4]

With the delay of the work resumption, the fulfilment of order was delayed, and because the outbreak of the pandemic is national, restriction on transportation was implemented across the country, to prevent increase in infection. The spring festival holiday was prolonged to February 2nd , and local governments and enterprises have also issued notices about the delay in resuming production and work.

Primarily, Staff cannot arrive in time, the shortage of raw materials and products and the rising price, as well as the insufficient supply of capital chain, make the domestic import and export industry of small and medium-sized enterprises face great challenges in business operation. In terms of export, due to the epidemic itself and the restrictions of epidemic prevention measures, export products are subject to more restrictions in the entry process of trading countries, which not only increases the time cost, but also adds additional economic costs. Orders signed before the beginning of the year have not been completed, delays in delivery are common, and even some orders have to be terminated due to the epidemic situation at home and abroad. Similarly, import has also been restricted to a certain extent. In order to cope with the impact of the epidemic and ensure the normal operation of enterprises, many enterprises have reduced or even cancelled the import orders of unnecessary products and raw materials.

Additionally, the lack of market demand and consumer confidence in the foreign trade import and export industry has affected the growth of market demand, leading to the reduction of some orders or even the cancellation of original orders. Although the domestic epidemic has been basically controlled, with the spread of the epidemic abroad, the international market will shrink to some extent. Under the overall economic environment of sluggish in 2020, the decrease in market demand will inevitably lead to a decrease in import and export orders. Although the European economy has started to pick up, the North American market is still in a downward trend, and the overall market environment is still not optimistic, which will greatly affect the orders originally planned.[5]

Finally, Although the new outbreak was declared as a "public health emergency of international concern" by the World Health Organization (WHO), and the WHO also made it clear that it does not recommend any countries to impose travel and trade restrictions on China, the United States still announced that it would restrict the entry of people from other countries who had visited China, and required China to be listed as an infected country. This makes China's already not optimistic international trade environment even more difficult.

For a long time, China's foreign trade import and export industry has mainly relied on the "order economy". The impact of this epidemic has caused a sharp decline in overseas orders, leading to some enterprises in the first half of the year experienced an embarrassing situation of insufficient order quantity or even no order to do. However, the absence of orders does not mean that there is no demand. Although the epidemic has limited the demand for some categories in the market, it has also generated the demand for others. In the face of the epidemic, whether the import and export industry chooses enterprise transformation or not even determines the future development and survival of enterprises.

In the face of the impact of the epidemic, many enterprises have chosen the transformation of foreign trade categories, through the market demand research, to determine user needs, the right remedy to the case, seize the business opportunities. While other enterprises in the same industry choose to reduce the size of the enterprise "winter", some enterprises expand the supply chain, develop the cloud economy, still steady growth in the harsh market environment. Analyzed from the source of customers acquired by international trade enterprises, the epidemic has cut off the original foreign trade business scenes and sources such as exhibitions and offline negotiations, blocked traffic and supply chain, and the main way for global buyers to find suppliers has changed from "offline" to "online", and the Internet has even become the only channel. Therefore, while the overall development of the foreign trade industry is under pressure, the market procurement trade and cross-border e-commerce in the first half of the year have risen against the trend and the digital transformation of foreign trade has accelerated. Moreover, with the maturation of the online + international trade model, new forms of foreign trade continue to emerge.

Additionally, main components of China's foreign trade industry is one of the traditional processing enterprises, over the years mainly to "OEM", in terms of product quality, can fully meet the market standard, only because does not have its own brand, have to use other brand to the international market, the outbreak period, to optimize development itself, developing local brand is also a very good development. At the same time, China is a large population, has a huge consumer base, the market prospects are broad. Therefore, from export to domestic sales, is a trend, is also an opportunity for foreign trade import and export enterprises

4.2. The Market of Domestic Games

During the Q4-2020 Q1 outbreak in 2019

The main object of domestic hand-

Concentrated in adolescents (according to netizen statistics: age 11-23 years old, and fewer minors), of which 58.8 percent of men

According to the statistics of relevant departments, the number of minors playing games in China exceeds 100 million

According to the online survey, Tencent's revenue growth in the gaming sector grew steadily in 2019-2020, with the growth target (weekly growth rate) rising slowly, while the quarter-on-quarter growth rate declined in the fourth quarter of 2019.

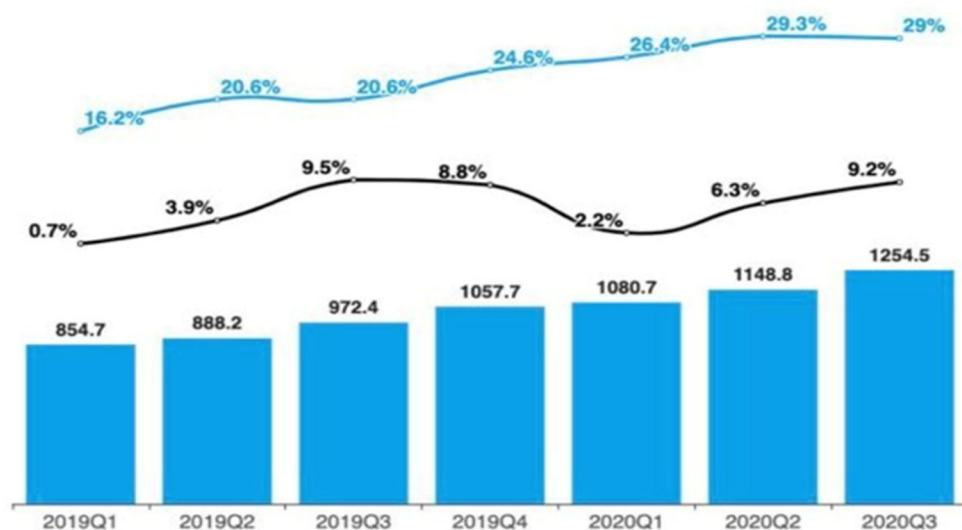


Figure 1. Tencent revenue scale and growth rate

This image is from: <http://www.199it.com/archives/1154716.html>

According to statistics, Tencent Games is one of Tencent's main revenue sources, the following three charts are compared with the past five years and the first half of 19 years Tencent's operating income and income distribution:

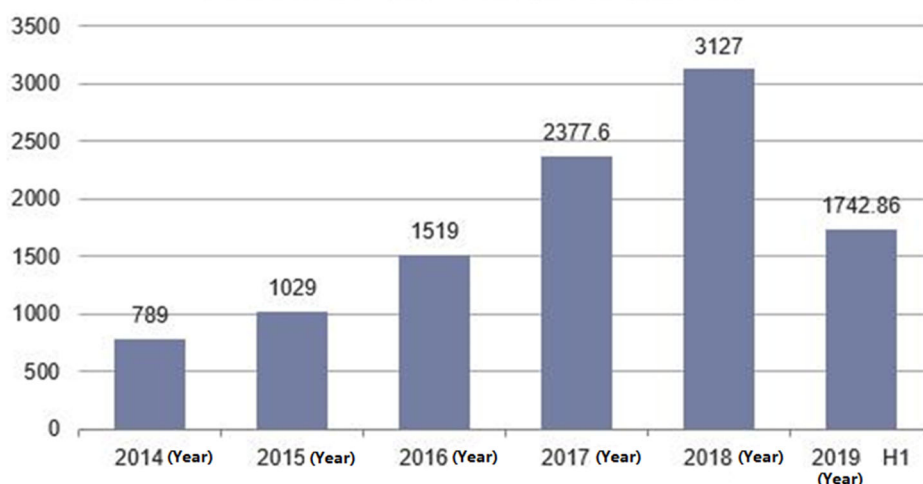


Figure 2. Tencent's total income in the first half of the year

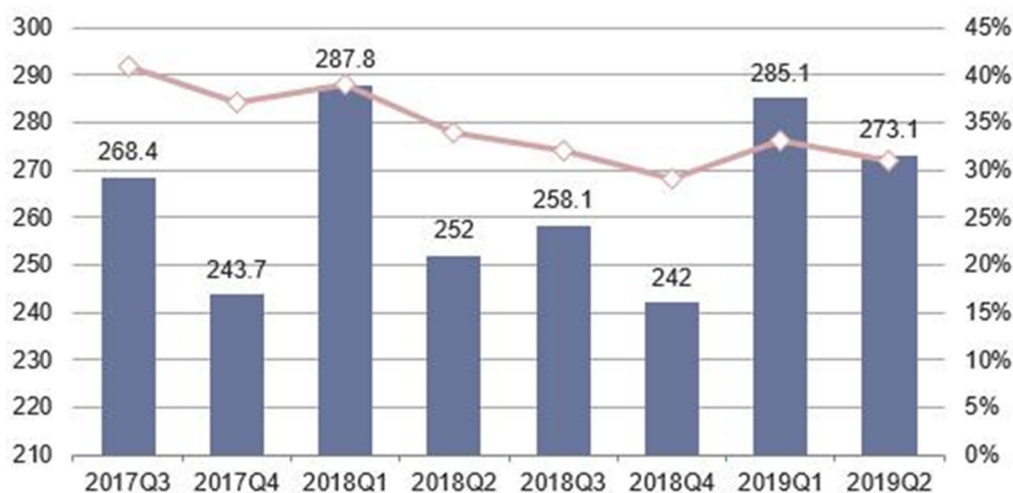


Figure 3. In the first half of the year, Tencent's game revenue proportion

Source: Company Annual Report (https://www.sohu.com/a/334807211_120099903)

Subsequently, Tencent accounted for nearly half of Tencent's gaming revenue in the second quarter of 2020. Tencent reported second quarter 2020 revenue of RMB114.9 billion and net profit of RMB33.107 billion, up 37% YoY. On the gaming side, Tencent's total smartphone game revenue and PC client gaming revenue in the second quarter were RMB35,988 million and RMB10,912 million, respectively.

Tencent said that in China, the number of users of smartphone games increased year-on-year, but declined month-on-month due to seasonal and re-employment factors. King's Glory has increased user activity by releasing a number of top skins during its annual event, the May 5 Black Festival. "Peace Elite" celebrates its first anniversary with new content and game modes that enhance the player's competitive gaming experience. In addition, we teamed up with Tesla to launch Tesla's skins in July in the Peace Elite game, which is popular with players. In the second season, we launched the strategy game "War Song Arena" in China, the action game "Under One Man" based on the popular Chinese comic IP, and "Wild Fight" developed by Supercell. Wilderness topped the iOS China download charts in June, further extending its global leadership in fast-paced 3v3 MOBA-type games.

By 2020, the mobile gaming market will account for 75.7% of China's real sales revenue.

From January to June 2020, according to the research and development classification, the proportion of products developed by listed and non-listed enterprises was 36% and 64%, respectively, and the proportion of flowing water was 45.5% and 54.5%, respectively. According to the distribution classification, the proportion of products issued by listed and non-listed enterprises was 43% and 57%, respectively, and the proportion of running water was 48.7% and 51.3%, respectively.

From January to June 2020, according to the research and development classification, the proportion of new products developed by listed and non-listed enterprises was 35.7% and 64.3%, respectively, and the proportion of flowing water was 19.8% and 80.2%, respectively. According to the issuance classification, the proportion of new products issued by listed and non-listed enterprises was 46.4% and 53.6%, respectively, and the proportion of running water was 40.5% and 59.5%, respectively.

(The above data are from : <https://it.chinairn.com/news/20200812/175553456.html>)

5. Conclusion

1. Game enterprises should pay attention to the preferences of young people, they as the main consumer, to meet their needs can bring more
2. Choose the right time to launch activities to attract people to spend, launch new skins during the holidays, such as: the anniversary of the glory of the king, peace elite and Tesla jointly designed car skins, can attract consumers to
3. Need to sell or update the game according to the actual situation of the market, such as: because the mobile phone configuration in the market does not fully fit the new game or updated game caused by the decline in consumption is noteworthy,
4. Simplifying the content of the game and improving the picture quality of the game is also an indispensable factor, according to the survey, more than 30% of young players due to the game picture quality and more than 50% of minors due to operational difficulties and

Note: The second conclusion above is suitable for students during the holiday period, during the outbreak of students at home Online class period and normal students winter and summer vacation at home similar situation, students can use mobile phones and during the outbreak students at home Internet classes, during the holiday many students to take remedial classes, and so on

5.1. Delivery Industry

In order to prevent the continuous decline of the economic level, the Chinese government has adopted a series of measures to prevent the spread of the virus. The most effective policy is to force people to quarantine and reduce the way the virus spreads. The policies implemented by the Chinese government have objectively affected the economy and people's lifestyles. Since people cannot shop in person, but their demand for daily necessities has not weakened, most people tend to choose online shopping because this method can reduce the circulation of people and inhibit the spread of the virus.

With the outbreak of the epidemic in countries around the world, countries have taken measures such as closing their borders, strictly controlling the entry and exit of air and sea transportation, canceling meetings, and even taking measures such as "city closure" and curfew, which to a certain extent restricted the flow of people and logistics, and objectively affected consumption and investment.

From January to November 2020, the total online retail sales in China was 10,05374 billion yuan, an increase of 11.5% year-on-year. Among them, the online retail sales of physical goods increased by 15.7%, accounting for 25% of the total retail sales of consumer goods.

According to relevant data from the National Bureau of Statistics of China, from January to November 2020, China's catering industry revenue was 3,457.8 billion yuan, a year-on-year decrease of 18.6%. Under the influence of the epidemic, the catering industry as a labor-intensive service industry has been directly affected. Many catering companies have closed their doors. Even relatively large-scale catering companies are facing the dilemma of capital fracture and even bankruptcy. The epidemic has forced the traditional catering industry to accelerate its transformation to online, and has promoted a richer and more diverse food delivery market. According to the "Chinese Take-out Merchants Research Report during 2020 New Crown Epidemic" released by iiMedia, after the outbreak, 78.0% of catering merchants had takeaway as their main business, an increase of 63.1 percentage points from before the outbreak.

5.2. Positive Effect

From the aspect of international business, with the lack of competition, lead to a short-term burst in China's export business, helping China to leave the bog land of corona virus. And with the development with online business as well as delivery industry further expanded China's economic potential. The impact of the epidemic is temporary, but how to deal with such emergencies is a problem that every foreign trade enterprise should think about for a long time. In the face of this epidemic, enterprises should re-examine their organizational structure and business model, make full use of Internet technology, timely build digital business model, and promote the transformation of enterprises to digital business model. At the same time, we should establish and improve the internal emergency management system in the face of major events, strengthen the protection of employees' rights and interests, and build a community of employees and enterprises, so as to optimize the enterprise management structure.

6. Discussion

The weakness of this paper: the data within the major nation's data base is still incomplete, and the analysis toward those data might be misleading. Also, the papers which we studied is still relatively new, for corona is still an on-going contemporary issue. Additionally, the area we've studied is limited to mainly three: export business, game industry, on-line economy as well as delivery, which made the conclusion not thorough enough to reflect the entire Chinese economy.

References

- [1] Xu, S, Liu, Q, Lu, X. Shock effect of COVID-19 infection on environmental quality and economic development in China: causal linkages (Health Economic Evaluation), *Environ Dev Sustain*, 2021, 1-16.
- [2] Wang, Z, Zhang, Z, Zhang, Q, Gao, J, Lin, W. COVID-19 and financial market response in China: Micro evidence and possible mechanisms, *PLoS One* 2021; 16(9)
- [3] Hu, Y, Wang, J, Nicholas, S, Maitland, E. The Sharing Economy in China's Aging Industry: Applications, Challenges, and Recommendations, *Journal of medical Internet research*, 2021, 23, e27758.
- [4] Wang, Y, Fang, Z, Gao, W. COVID-19's impact on China's economy: a prediction model based on railway transportation statistics, *Disasters*, 2021, 33538045.
- [5] Chen, J, Guo, Y, Su, H, Ma, X, Zhang, Z, Chang, B. Empirical analysis of energy consumption transfer in China's national economy from the perspective of production and demand, *Environmental science and pollution research international*, 2021, 28, 19202-19221.