Research on the Solutions for Chinese Corporation Financial Risk Management under COVID-19

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ABSTRACT

COVID-19 has influenced nearly all countries in the world since 2019. The widespread and prolonged dissemination of COVID-19 has created global financial losses. Consequently, many corporates are under huge risks. China is the first country that experiences the mass dissemination of COVID-19, and the first country that recovers from COVID-19. This paper mainly focuses on the Chinese corporation financial risk management under COVID-19. The author divides the development of COVID-19 in China into three periods, and analyzes different financial risks for each period. Finally, in the solution part, the author introduces three ways of risk management, including the multi-core industrial distribution pattern, leverage ratio, and market risk measurement that could help Chinese corporates minimize the risks.

Keywords: *COVID-19, Risk Management, Finance, Corporation.*

1. INTRODUCTION

When the financial development of the whole world tends to be mature, the economic structure and financial risk also become far more stable than before. However, in some emergency situations, lots of new financial risks will appear in society. For example, the financial crisis in 2008 disturbed the United Market and reconstructed the financial structure in the U.S. in a particular aspect. The 2008 financial crisis also brings systematic risks into the market. In the article "Systemic Risk: It's Not Just in the Financial Sector", the author mentions the one percent shock with the example of Amazon, "The simulated 1-percent shock leads to estimated firm losses of $1.4 billion, but to more than $77 billion in total losses throughout the economy" [1]. The spread of disease will severely disrupt the constant financial environment as well. In 2003, when SARS appeared in Asia, especially in China, it brought a shock to the financial market in China with lots of uncertainty at that time. Therefore, risk management is especially important for corporates to minimize their losses under the unexpected risk. According to Kumar and Gregory, "risk can make industrial investment more or less attractive and can drive companies to shift their activities and assets in case of investment failure" [2]. The proper risk management of a corporate can help it minimize its losses and even create wealth in the risk. After SARS, the next large-scale disaster in China is COVID-19. Although SARS does not interrupt the whole financial market in China for its relatively short period of spreading and the excellent developmental environment of finance in 2003, COVID-19 has a far more profound influence on the corporates in China. By researching the financial risk management strategy under COVID-19, this paper offers some help for corporates in China and elsewhere in managing their risks and creating their profits under the extremely uncertain environment.

2. ANALYSIS ON CHINESE CORPORATION DEVELOPMENT UNDER COVID-19 RISK

To understand the reasons why COVID-19 influences the financial market in China and how to reduce the risk that the disaster brings, the author divides the developmental progress of COVID-19 into three periods. Thefirst period is from the beginning of 2020 to March. At this period, basically only China got influenced, and because of the lack of medicine, market-panic started to appear in China. The second period is from March 2020 to June 2021, when COVID-19 started to spread through other countries and kept spreading to nearly the whole world. In this period, panic kept growing, and the panic started to drive the market of other countries except China. The situation kept deteriorating, and many countries began to shut down the international trade, and the financial market started to be shocked formally. After this chaotic period, COVID-19 still gets repeated a few times, but the chaos will basically not appear again, and it is devided as the third period, which is from June 2021 until now. Because of the different characteristics of these three periods, the influence of COVID-19 on corporate will be different.

2.1 Impacts of COVID-19 on Chinese corporations during the first period

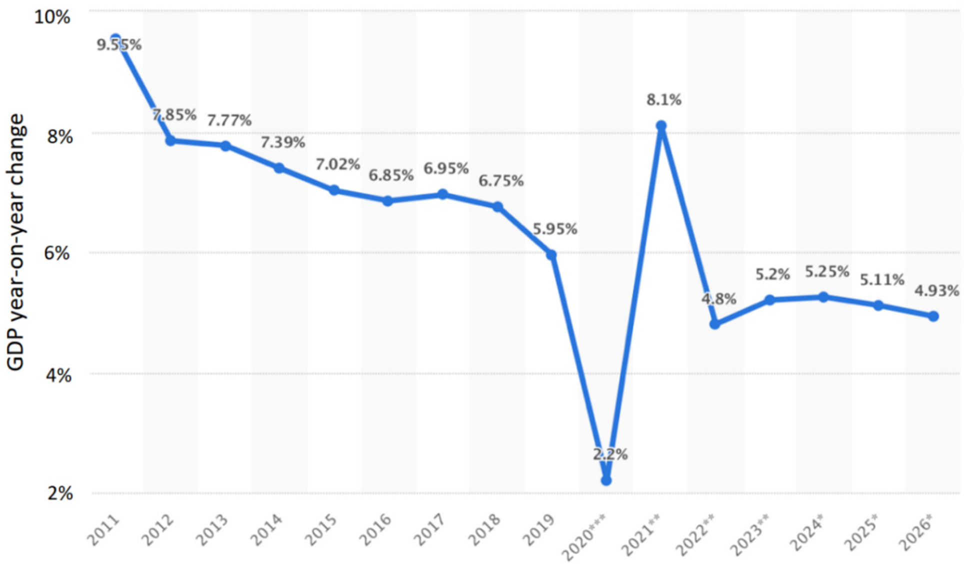

Figure 1 Growth rate of real gross domestic product (GDP) in China from 2011 to 2021 with forecasts until 2026 [3].

Figure 1 shows the GDP of China in recent years. It can be clearly seen that there is a severe unstable vibration since the first quarter of 2020. After the first quarter, GDP slightly recover and get a turning point in fourth quarter in 2020; after the first quarter of 2021, GDP began to smoothly come back to the average level before COVID-19. In general, Gross Domestic Product (GDP), or value added, is the value of the goods and services produced by the nation's economy minus the value of the goods and services used up in production. It reflects the consumption level of residents and shows the social production situation and market value in a certain period. In this first period, because of the uncertainty of COVID-19, people did not make timely preparation to the breakout. In this period, many industries are influenced because of two reasons: first, their workers get infected with COVID-19; second, their workers are stuck in panic. Both reasons seriously influence the normal operation of corporates. Therefore, in first period, GDP in China decreases sharply. Besides, the seemingly uncontrollable breakout also leads to many citizens' unnormal actions, for example, stockpiling food and medicine, which directly leads to the acute development of some fields. In the first period, the extreme insecurity of citizens to a certain degree stimulated the development of Agriculture, Forestry, Animal Husbandry, and Fishery. At the same time, the requirement for chemical industries sharply increases, which will also falsify its value to increase. For example, Biotest (code688767) is a corporate that is mainly devoted to chemical and medicine; net profit in the first quarter of 2021 increased 1441.5% compared with the first quarter of 2019 [4]. In the first period, only China gets influenced. All influences are inside China and only the domestic production is affected.

2.2 Impacts of COVID-19 on Chinese corporations during the second period

In the second period, because of the experience In SARS, the adequate buffer time and unique management tools, GDP in China has largely recovered and even comes to a new peak while other countries' situation became more serious. However, although the overall GDP has recovered in the second period, different industries still receive varying degrees of impact. And the relationship between the balance sheet and the income statement will be used to explain the business operation through time. The structure and quality of assets determine the profit form, quantity, and quality. Comparing profits and the cost of support will determine whether a company is creating value [5]. In the second period, the breakout in China was still severe, but it had spread through other countries. This needs to be analyzed with the consideration of the global situation. In other words, the financial risk to corporates in China will still be focused on, but only considering more about the worldwide influence. In the second period, all factories, corporates, and schools were closed because of the government policy. However, the service and tourism industry was influenced the most in this period, while other fields such as Real Estate and Mining industries are not affected as seriously. To explain this, it is necessary to introduce a concept called "value chain" [6].

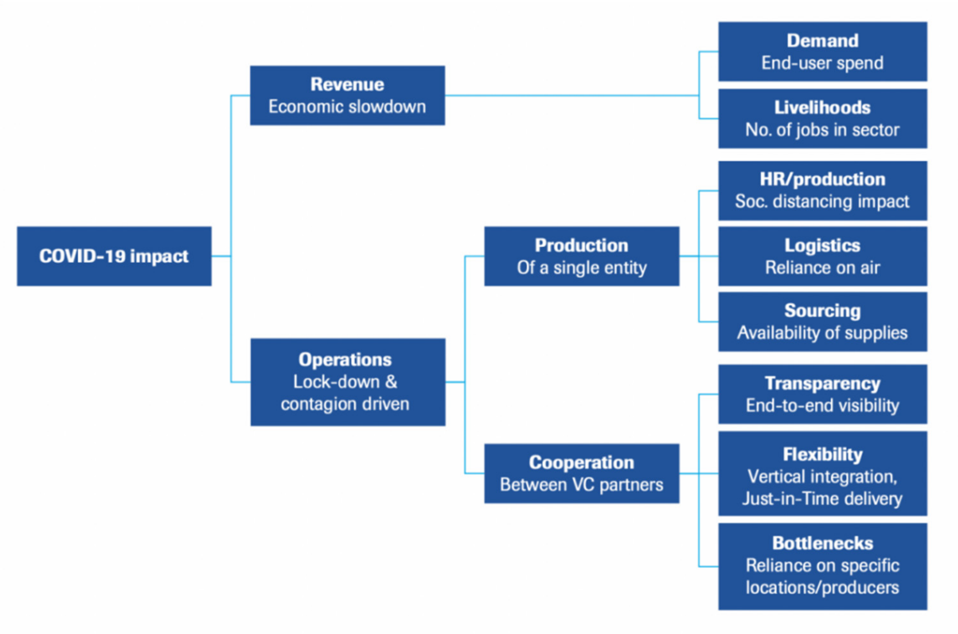

Figure 2 Overview of the economic impact of COVID-19 [6].

In can be seen from Figure 2 that a value chain is a chain reaction that happens after an event. When COVID-19 happened, there were influences on two aspects; one was due to the slowdown of the economy, the other was because of the government regulation. It is worth pointing out that Value Chain effectiveness will not happen right after the event occurs. It needs some time to ferment. For example, once the government published the policy that everyone cannot go out, the restaurant is the first one to get influenced, then the Garment industry, and finally the industries such as Real Estate. Because of this kind of delay effect, the market has time to react to the shock and decides what to do next. In a macroscopic view, the corporates that can respond fastest to the change will recover from the COVID-19 fastest under this chain. In addition to the Value Chain, the global international trade has also been influenced seriously. Therefore, besides the industry differences, area differences also exist under COVID-19. In China, the development of coastal cities depends on the import and export of the goods; however, the COVID-19 cuts off transportation and directly disrupts the typical trading environment in cities such as Guangzhou and Shanghai. Therefore, if the corporates highly depend on the export or import transportation, they will be influenced seriously under COVID-19. After the second period, the oscillation tends to be smooth.

2.3 Impacts of COVID-19 on Chinese corporations during the third period

In the third period, the global breakout situation tends to be moderated, and the enterprise has also been adapted. Although China still bans on the international interoperability in tourism, its policy gradually allows the international trade. Therefore, although the international tourism industry is still being affected, the other industries have basically recovered. In this period, because of the excellent Epidemic Prevention Policy, the international trade has gradually recovered, and the global epidemic situation is also getting eased.

3. SOLUTIONS FOR CHINESE CORPORATES TO MINIMIZE THE RISK

After analyzing the situation China has met during COVID-19, the corporates need to reflect on what they can do to reduce the risk under COVID-19, and guarantee their basic profits in an emergency. During COVID-19, although many corporations sustain huge losses, it is worth noticing that not all corporates get enormous losses on their benefits. Some corporates even earn money during the breakout. The core logic lies in the differences in the structure and capabilities of the regional financial industry. Although the benefit of the corporate has been affected by some objective reasons, the corporate's management also contributes a large part to their loss. There are a few ways for corporates to minimize their risks.

3.1 Multi-core industrial distribution pattern

During a global event that influences nearly all industries in an uncertain period, transforming the company's core industries will be a helpful method to minimize its losses. This theory can also be called “Don't Put All Your Eggs in One Nest: Spread Them and Cut Time at Risk” [7]. This theory is a fundamental financial strategy in choosing stocks and can also be helpful in a corporate dilemma. Usually, the Multi-core industrial strategy will increase the speed for a corporate to adapt to a new area and help them collect experience, therefore increasing their survival rate in disruption. In their article, Malte Andersson and Matti Ahlund mention a model where "*s*", the daily probability of nest survival, equals to 0.97. The expected offspring production is 2.5 times higher with maximal spreading than with all eggs in one nest. The same model can be used in the COVID-19 situation, where "*s*" refers to the survival rate of corporates in the outbreak. For example, when researching the corporates that are the least influenced in COVID-19, the Tech-Bank Food Corporate can be found. This corporation owns aquatic feed, biological products, pig farming, fresh food, and engineering construction industries. The Tech-Bank Food Corporate's spread of industries helps it minimize the risk during COVID-19.

3.2 Leverage ratio

In the article Sizing Up Corporate Restructuring in the COVID-19 Crisis, the unemployment rate has a special relationship with the leverage rate; when the leverage rate is high, it usually brings a high unemployment rate to the whole corporate during the outbreak. Also, the high unemployment rate usually leads to a high rate of bankruptcy [8]. A leverage ratio is any one of several financial measurements that assesses the ability of a company to meet its financial obligations. The leverage ratio can also be understood as a debt-to-equity ratio. It reflects the composition of the financial chain of a corporate. Therefore, when a corporation has a high leverage rate, it usually depends on the loans and investment to support its operations. However, this high dependency will force the corporate into a rather passive situation when some emergencies happen because of the breakage of the financial chain. There are lots of ways to reduce the corporate debt-to-equity ratio. First, corporates should use a positive strategy to earn hopeful profits and reduce their debts. The second is the debt restructuring [9]. J.B. Maverick mentions that "If a company is largely paying relatively high-interest rates on its loans, and current interest rates are significantly lower, the company can seek to refinance its existing debt." In this way, interest expenses will be reduced, and cash flow will be increased. With these two methods, the corporate's profits will increase, and loans will decrease. With the combination of both, the company's debt-to-equity ratio and the leverage rate will decrease significantly. When the leverage rate keeps low, the unemployment rate and bankruptcy rate will also stay low. Therefore, the risk for the corporate will get controlled.

3.3 Market Risk Measurement

To control risks, corporates should first measure how risky they are. Here are some models to help corporates make risk measurements. For example, the VAR (Value at Risk) and CVAR (Conditional Value at Risk) models. To compute VAR, institutions need to collect the market data for corporates. The risk manager can use the data to build the probability density function of profits and losses over the risk horizon [10].

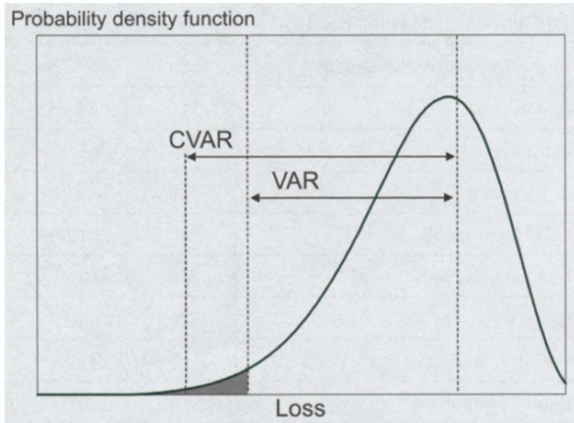

Figure 3 Corporate Losses When the Difference Between CVAR and VAR Gets Too Large [10].

The VAR model is easy to calculate and is used widely; therefore, corporates can easily find their risk level over the whole market and adjust their corporate operation promptly. Unlike VAR, which is general but lacks specificity, CVAR can depict the expected losses and profits more specifically. Jame Chen gives a formula of CVAR in his article, as shown in Figure 4 [11].

$$CVaR = \frac{1}{1-c}\int_{-1}^{VaR} xp(x)\,dx$$

where:

$p(x)dx =$ the probability density of getting a return with value "x"

$c =$ the cut-off point on the distribution where the analyst sets the VaR breakpoint

$VaR =$ the agreed-upon VaR level

Figure 4 Conditional Value at Risk (CVaR) Formula [11].

Usually, the result between VAR and CVAR will not be too different; when CVARs increase greater than VAR, the risk for a corporate also sharply increases. As shown in Figure 3, in this rare situation, the loss of the corporate will also get increased. This kind of risk may not certainly be a bad thing, but it will be better for the corporate operator to minimize the value of VAR and CVAR if the corporate operator is a risk avoider.

4. CONCLUSION

This paper discusses the influence of COVID-19 on the financial market in China. According to the developmental stage of COVID-19, the author divides the breakout period into three stages. In the first stage, only China experienced COVID-19. Because of the citizens' panic and the increasing number of illnesses, China's financial market was first influenced. Services and Tourism are the two industries that were influenced the most. Besides, due to the COVID-19, many international corporates are considering the disinvestment from China, which leads to the loss especially in coastal cities. In stage two, COVID-19 became a globally disaster. China published the policy to cut international transportation, and all factories, corporates, and schools were closed. Under this strict policy, the breakout in China has gradually recovered. Due to the Value China effect, Tourism and Services were shocked severely in COVID-19, while the other industries are not that serious. Because of the breakout, the international trade is paused, which makes the coastal cities sustain more loss than the mainland cities. In the third period, the breakout in other countries gradually recovers, and slowly comes back to the situation before COVID-19.

The author also summarizes the risk management strategy under COVID-19. First is the multi-core industrial distribution pattern, which enables the corporates to easily transform its allocation in different industries and can therefore minimize the risk. Second, the author mentions the leverage ratio. The higher the leverage ratio will lead to a higher risk for corporates. To minimize the leverage ratio, corporates should reduce the dependence on banks or investors, and focus on their own products and create value. Third, the market risk measurement is introduced. The VAR (Value at Risk) and CVAR (Conditional Value at Risk) are both models of risk-calculating for corporates. Corporates can use these two models to calculate their risk level and therefore control the risk as early as possible. Its worth pointing out that although these strategies are useful to most corporates that already have certain scale, to those small corporates, the theory may still different from the practice to a certain extent. Since many small corporates also went bankrupt during COVID-19, future research can consider more for those corporates that do not have a large scale.

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