Mechanisms of the Impact of COVID-19 on Financial Risk and Governance Responses in China Based on Big Data

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Abstract. COVID-19 has a serious impact on China's economy and China's financial system. In order to clarify the impact of COVID-19 on China's financial risk, this paper first analyzes the impact mechanism of COVID-19 on China's financial system, and then combines statistical analysis of key indicator data to provide an in-depth analysis of it, financial institutions and financial markets from three aspects, including money flow, lending credit and investment sentiment. It is found that: the liquidity of the financial system will be tight in the short term due to the impact of COVID-19, the cost of foreign aid of commercial banks and the further deterioration of credit quality make bank profits drop significantly, bank fundamentals will suffer a short-lived shock, and market expectations and investor sentiment will also tend to be conservative due to COVID-19. On this basis, this paper puts forward relevant recommendations on the prevention of financial risks during COVID-19, namely, increasing fiscal support, implementing proactive fiscal policy and appropriately flexible monetary policy; strengthening policy synergy, mastering the direction and strength of macro policy regulation; doing a good job of COVID-19 prevention and control, reshaping confidence and expectations in economic and financial development; strengthening international financial cooperation, and building a community of human destiny, with a view to helping "hold the bottom line of no systemic risk".

Keywords: COVID-19 outbreak · financial risk · governance response · financial markets

1 Introduction

The global economic and financial system is under pressure to collapse, the epidemic is only the trigger, the root cause is the long-accumulated economic and financial vulnerability. The U.S. and European countries rely excessively on ultra-loose monetary policy, ultra-low interest rates and rising debt leverage to make this market crisis an "accidental necessity". In the background of the market surrounded by "gray rhinoceros", the "black swan" on the market impact is stronger. On the surface, the epidemic is a "black swan" impact on the global financial markets and economic fundamentals, but the root cause is the global economy against globalization, sluggish growth, high debt and asset

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bubbles “gray rhinoceros”. “Black swan” event is difficult to predict, but vulnerability can be measured and judged, no “gray rhinoceros” “with”, “black swan Without the “cooperation” of the “gray rhinoceros”, the “black swan” cannot fan the big storm. The new crown epidemic invaded many countries, but the probability of a financial crisis in countries with robust financial systems and low levels of financial vulnerability is much smaller. To deal with the impact of the “black swan” event, the key is to counter financial vulnerability and eliminate the hidden points of financial risk.

2 Review of the Literature

Since the outbreak of the New Coronavirus, scholars at home and abroad have widely discussed, judged and predicted the impact of COVID-19 on economic development, and their research focuses on the following three aspects, one is the exploration of the impact of COVID-19 on macroeconomic operations. Global economic growth will face high uncertainty due to the impact of the New Coronavirus COVID-19, and global economic growth is expected to be revised downward by 0.5%–2.4% in 2020 [1]; Ning Jizhe (2021) points out that the New Coronavirus COVID-19 will have a transient impact on China’s macroeconomy, but the long-term positive development trend of China’s economy remains unchanged [2]; Yang Zihui (2022) and others point out that COVID-19 would have a transient impact on China’s macroeconomy [3]; and He Chengying et al. (2020), who found that the New Coronary Pneumonia COVID-19 would cause a reduction in output, consumption, and investment through comparative analysis [4]. Zhao Zhongxiu and Yang Jun (2021) measured the impact of the global COVID-19 on the industrial chain in Shandong using a general equilibrium model and found that the global economy would have a significant negative impact on the industrial chain in Shandong [5]; Wang Ruolan (2020) pointed out that COVID-19 would have a considerable impact on the “triangular trade” supply chain in East Asia and would expose the world economy to recession [6]. Wang et al. (2022) suggest that the “cut-off” pressure caused by COVID-19 will temporarily stop the tourism chain and put the whole tourism industry to a severe test [7]. Huang Qunhui (2022) shows that COVID-19 will have a strong impact on the supply side of China in the short term through macro data analysis [8]. Yin (2020) points out that in order to cope with the impact of the risk on the global economy, countries around the world should work together under the concept of human destiny community to fight against the danger [9]; Wang Yonggui (2020) suggests that in the face of the New Coronary Pneumonia COVID-19, we should “turn crisis into opportunity” and make every effort to promote China’s economic development towards digitalization, intelligence, and consumerization [10]. In order to alleviate the serious impact of COVID-19 on farmers’ income, Cheng Guoqiang and Zhu Mande (2020) point out the need to target the problem and adopt a package of policies to help farmers increase their income [11]; Wei Houkai and Lu Qianwen (2022) point out that the prevention and control of COVID-19 should be coordinated with the “three rural areas” and efforts should be made to complete the work of the remaining poor. “work and strive to complete the work of poverty alleviation for the remaining poor farmers [12]; Chen Yan (2020) pointed out that the government should increase investment to improve China’s public health service system and thus activate the vitality of private investment [13].

Throughout the above studies, most of the current literature focuses on the impact of COVID-19 on the economy in terms of macroeconomics, industries, and enterprises, while the current academic community has not yet paid higher attention to the impact of COVID-19 on financial risks. As the blood of the real economy, finance plays an important role in promoting economic development. At the same time, 2020 is the closing year of the "battle to prevent and resolve financial risks", and the sudden outbreak of COVID-19 has made it more difficult to prevent and control financial risks; moreover, five ministries and commissions, including the CBRC and the Central Bank, have jointly issued a series of financial support policies to support small and medium-sized enterprises, which indicates that the impact of COVID-19 on financial risks has attracted high attention from regulators. Therefore, it is necessary to study the impact of COVID-19 on China's financial risks and make relevant policy recommendations on this basis, so as to help us "guard the bottom line of no systemic risk" and maintain the overall situation of stable social and economic development.

3 COVID-19 Dynamics and the Mechanism of Its Impact on Financial Risk

Under the impact of COVID-19, people need to maintain social distance, practice home isolation and reduce congregate activities, some enterprises face shutdown due to the inability of employees to return to work and order cancellation, and some are unable to produce due to supply chain disruptions, all of which directly or indirectly affect China's industrial, production and consumption systems and transmit risks to the financial system.

As shown in Fig. 1, the outbreak of COVID-19 caused a serious impact on the macro economy, squeezing both the supply and demand sides, resulting in a rapid decline in the production output of the primary, secondary and tertiary industries on the supply side, and a significant decline in consumption, investment and exports on the demand side due to COVID-19. The impact of COVID-19 on both the supply and demand sides caused a contraction in the real economy, with the output value of upstream, midstream and downstream enterprises falling in tandem due to the shutdown of production, and the

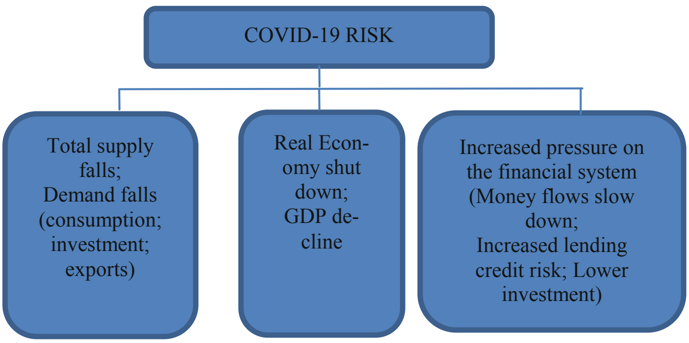

Fig. 1. Mechanisms of the impact of COVID-19 on financial risk

business risks of enterprises escalating, which were transmitted to the financial system, negatively affecting the liquidity of the Chinese financial system, lending credit and investment sentiment.

4 Impact of the New Crown Pneumonia Outbreak on Financial Risk

4.1 Negatively Impacted Liquidity in the Chinese Financial System

As shown in Fig. 2, from 2013 to July 2022, the year-on-year growth of M0 in China is very large, from 4.4% in January 2013 to 22.5% in January 2014, but then fluctuates up and down until 2018, when it will be -13.8%, then rebound in 2019, but after COVID-19 in 2020 The year-on-year growth of M1 in China also fluctuates up and down, but the magnitude is not as obvious as the year-on-year growth of MO, maintaining a downward trend overall, reaching a minimum level of 0.4% in 2019 during the financial crisis and 6.7% in July 2022; while the year-on-year growth rate of M2 in China basically maintains a steady decline magnitude, in response to the transient impact of COVID-19 on the liquidity of the Chinese banking system, the Chinese central bank conducted 1.2 trillion open market reverse repo operations in 2020 to put in funds and achieved a net injection of 150 billion yuan on the same day, these countercyclical operations effectively eased the pressure of liquidity bias in the financial system, reaching a level of 12% in July 2022.

On the other hand, M1/M2 ratio is a structural indicator that examines the monetary liquidity of the market, which reflects the amount of money being put on the market. As shown in Fig. 3, the M1/M2 ratio shows a clear decline during COVID-19 period, standing at 31% in January 2013, and then it has been declining, remaining low between 27.22% and 27.64% in 2020, reaching 26% in July 2022. This indicates that the current COVID-19 has had a significant impact on China's monetary liquidity, but this impact

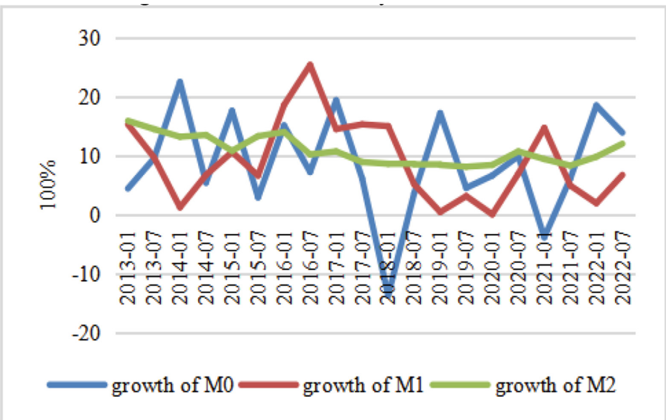

Fig. 2. 2013–2022 Year-on-year growth of Chinese currency

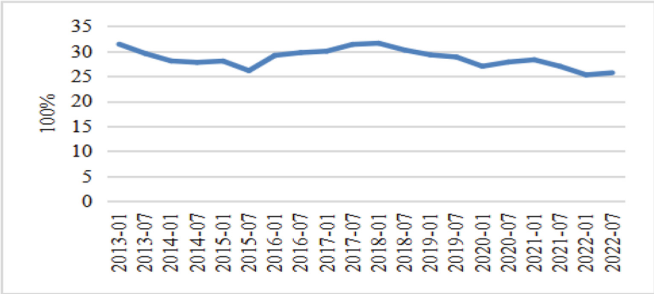

Fig. 3. Trend graph of M1/M2 ratio (100%)

will be effectively mitigated with the implementation of China's proactive monetary policy. It is foreseeable that the central bank will also inject monetary funds into the market in a phased manner in the coming period to hedge against the impact of COVID-19 while adhering to supply-side structural reforms and making countercyclical adjustments.

4.2 Market Tends to Be Conservative, Deposits Increase

The impact of COVID-19 on financial markets is mainly manifested in investor sentiment. As shown in Fig. 4, the amount of domestic and foreign deposits has been on an upward trend since January 2019, rising from 1,807,904,035 billion yuan in January 2019 to 2,523,760,696 billion yuan in August 2022; at the same time, financial bonds have increased from 6,633,400 million yuan to 1,131,282 million yuan; while the market currency in circulation has only increased from 87470.62 billion yuan to 97231.03 billion yuan. This shows that the market is still very unpromising and uncertain to increase.

While COVID-19 in China is turning around, COVID-19 overseas is spreading and spreading. The global economic downturn due to the severe global COVID-19 situation, coupled with the Saudi Arabia's crude oil price war in March 2020, caused oil prices to plummet, which in turn caused international stock indices to fall sharply from March to April (see Fig. 8), causing severe shocks in international financial markets, which were severely affected by COVID-19. This inevitably had a negative impact on China's

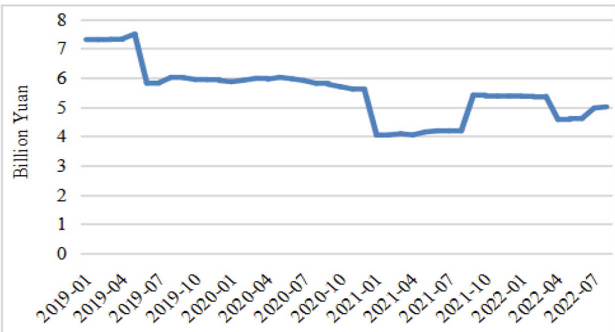

Fig. 4. Trend chart of various deposits (in billions)

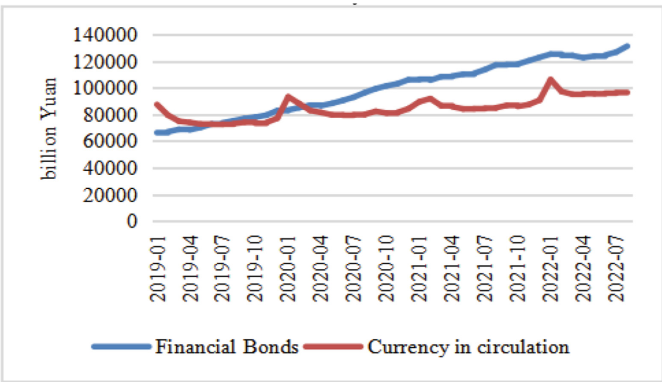

Fig. 5. Trend chart of Financial Bonds and Currency in Circulation (in billions)

financial markets. In response to the impact of COVID-19 on global stock markets, countries have adopted quantitative easing and interest rate cuts to hedge against the impact of COVID-19. At this time, China should pay close attention to the global COVID-19 situation and the impact of international financial market volatility on the domestic financial market, and beware of the spread of pessimism in the international financial market that could lead to mood swings among investors in the domestic financial market, which could lead to volatility in the Chinese financial market (Fig. 5).

5 Policy Recommendations

In terms of the impact of a "black swan" event on China's financial security, it should be more important than forecasting. The occurrence of a "black swan" event implies a sharp increase in risk, which could trigger a full-blown economic and financial crisis. China's economy has great resilience and potential, and as long as the response is effective, the probability of a financial crisis can be minimized and turned into an opportunity to improve the safety of China's financial system.

5.1 Increasing Counter-Cyclical Macroeconomic Policy Adjustments

When the economy thrives, finance thrives. The best way to reduce financial risks and prevent the outbreak of financial crises is to keep the economy on an even keel.

The normal reduction in interest rates is not a flooding, but a reasonable measure of counter-cyclical adjustment of macroeconomic policy, and market-based measures to guide interest rates downward can greatly reduce the cost of funds for the real economy.

In terms of investment, previous investments have focused on hard infrastructure such as "railways and public transport", but these "old investments" have been surplus to requirements in areas of population outflow, and the multiplier and spillover effects of reinvestment have been small. The "new investment" should focus more on the population inflow of metropolitan areas or city clusters, there is still a lot of room for investment, otherwise it will restrict the high-quality development of these areas.

2019 China's urbanization rate of 60.6%, the average developed countries about 80%, China still has a lot of space, and the urbanized population will flow more into the Yangtze River Delta, Guangdong, Hong Kong, Macao and Beijing-Tianjin-Hebei and other cities. Guangdong, Hong Kong, Macao and Beijing-Tianjin-Hebei and other urban clusters, these population inflow areas of rail transportation, intercity railways, education, health care and other infrastructure still have a large shortage, can be implemented for these areas a new round of infrastructure investment. The "new investment" should also be directed towards soft infrastructure, including the Internet of Things, the Internet, cloud computing, big data, artificial intelligence and 5G technology.

5.2 Maintaining the Determination to Continue to Adhere to the Principle of "No Speculation in Housing"

The stability of the real estate market is about financial stability, and it accounts for a high proportion of the overall national economy and drives a long upstream and downstream chain, so the general policy is neither to stimulate nor to pierce.

On the one hand, the guiding ideology of "no speculation in housing" is based on the main contradictions in the operation of the real estate market, and is a "bottom-up" policy to prevent and resolve risks in the real estate financial market and to crack the "squeezing effect" of high housing prices on the consumer market. The "bottom of the barrel" policy should not be easily changed. The policy of stimulating housing prices in order to cope with the impact of the epidemic is not conducive to sustainable economic development and the transformation and upgrading of the economic structure. On the other hand, in order to alleviate the pressure on the capital chain of real estate enterprises caused by the epidemic, consideration can be given to making phased and marginal adjustments in financing to meet the reasonable financing needs of real estate enterprises and avoid the shocks in the real estate market from having a greater impact on the financial market. Therefore, the current government should be based on stabilizing housing prices rather than suppressing them, with the goal of making them neither too high nor too low, and maintaining.

5.3 Building an Open, Transparent and Regulated Capital Market

For China, the establishment of a financial system that can both reduce financial risks and allocate financial resources effectively, and also allow investors to share the wealth effect of economic growth, is a matter of China's economic development and financial security. After 30 years of development, China's capital market has made great achievements, but it is still far from the goal of a modern financial system, and needs to increase the efforts of opening and reform.

Promoting the two-way opening of the capital market can help promote Foreign institutional funds continue to flow in. Second, the transparency of the capital market should be strengthened. Transparency is the core issue in regulating the order of the capital market, and the truthfulness and timeliness of information are the basic guarantee for the healthy development of the market. Improving capital market transparency can effectively reduce the information asymmetry between supply and demand, and the quality of information disclosure of listed companies is the basis for maintaining market transparency. False information, insider trading and market manipulation undermine the principles of openness, fairness and impartiality in the capital market and require greater penalties.

5.4 Promoting the Internationalization of the RMB to Safeguard China's Financial Security

The first is to provide financial support in RMB to the countries concerned. The Belt and Road Initiative was proposed by China, and a considerable number of countries with serious epidemics are key node countries of the Belt and Road, and China needs to provide the necessary help and find opportunities for RMB internationalization in the process. Second, we should accelerate the development of Shanghai as an international financial centre. Third, we attach importance to the construction of a cross-border RMB payment system (CIPS). The purpose of establishing CIPS is to centralize channels and resources to promote and fully integrate cross-border RMB settlement business, which will significantly improve China's financial security and independence, provide important support for RMB internationalization, and is an important infrastructure for promoting RMB internationalization.

6 Conclusion

On the basis of the global risk, China should maintain a positive attitude to deal with it. Starting from Increasing counter-cyclical macroeconomic policy adjustments, maintaining the determination to continue to adhere to the principle of "no speculation in housing", building an open, transparent and regulated capital market and promoting the internationalization of the RMB to safeguard China's financial security, it is believed that the currency crisis can be prevented.

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