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A Comparative Study of Chinese and American Stock Markets in the Context of the COVID-19

- A Comparative Analysis of Several Crises

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Abstract: In the context of COVID-19, this paper compares the stock market performance and financial policies between China and the United States, as well as the similarities and differences of SARS in 2002, the U.S. subprime mortgage crisis in 2008, the U.S.-China trade frictions in 2018 and the COVID-19 in terms of these events' impact on stock markets. By reviewing literature and event studies, this paper conducts a cross-sectional comparison and a longitudinal comparison of the Chinese and U.S. stock markets respectively. The study shows that the impact of COVID-19 on China is far less than that of the U.S. China adopted a more accommodative and longer-lasting financial policy which increased the stock market's independence significantly through sudden crisis events. The findings will help scholars to understand the performance of the U.S. and Chinese stock markets under several crisis events and the changes in the Chinese stock market over time.

Keywords: COVID-19, crisis events, stock market, event study, policy

1. Introduction

The outbreak of COVID-19 has had a significant negative impact on human survival and development, both economically and financially. As the number of confirmed cases skyrocketed per day around the world, all kinds of measures such as lockdowns and home quarantines were implemented, and the people's fear increased dramatically. The situation severely affected people's spending power. The mood swings and investor expectations caused the volatility of the stock market in a short period of time [1]. Faced with the severe situation of the COVID-19, different countries have adopted different public health policies. For example, China adopted strict quarantine prevention and control measures to contain the spread of the COVID-19 outbreak. The U.S. and some other countries underestimated the spread risk and did not take imperative measures at the beginning of the epidemic [2], which led to the different performance of the Chinese and the U.S. stock markets during the COVID-19.

The current global epidemic is still uncertain and long-term [3], and its impact on the world stock market should not be underestimated. The U.S. stock market has experienced three meltdowns and a

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plunge. China has also experienced a stock market crash and RMB devaluation, with Hubei Province being the hardest hit and its economic activity almost coming to a halt [4].

The main task of this paper is to compare and analyze the Chinese and American stock market performances and financial policies under the COVID-19, as well as three major crisis events in the 21st century: the 2002 SARS, the 2008 U.S. subprime mortgage crisis, and the 2018 U.S.-China trade friction. Therefore, the research results not only have important theoretical and practical implications for financial regulators to maintain financial market stability and prevent the impact of external emergencies from affecting the stock market, but also can provide economic countermeasures for stabilizing the stock market and hedging risks for future crisis events.

2. Literature Review

2.1. Overview of Several Crisis Events

Research on crisis events has been a hot topic in the academic field, with social and economic security events as the main focus, public health events as the second, and natural disasters and accidents and catastrophes less frequently studied. Specifically, among the studies on social security events, Cai et al. regarded countries or regions with frequent terrorist attacks as research objects to investigate the impact of terrorist attacks in host countries on Chinese enterprises' outward foreign direct investment (OFDI), and then to explore whether the level of transportation development can play a role in mitigating Chinese investment risks [5]. Liang and Yu explored the impact of the Asian financial crisis and the global subprime mortgage crisis on corporate capital investment in 11 Asian countries (regions) and the role played by state-owned equity in them [6]. Among the studies related to public health events, Zhang et al. studied the impact of SARS on the Chinese stock market [7]. David et al. compared financial sentiment during H1N1 and COVID-19 [8]. Ho et al. synthesized the impact of a series of health epidemics of SARS, H1N1, MERS, Ebola, and Zika virus on the crash of company stock price risk [9].

2.2. Financial Effects of Crisis Events

Nowadays, many studies on the financial effects of crisis events have focused on the stock market. Gong and Huang found that the violent shocks in the U.S. stock market triggered by the subprime mortgage crisis were contagious to the mainland stock market and exacerbated the volatility of the mainland stock market [10]. Bhuyan et al. also found that the SARS outbreak caused a significant co-integration and dynamic synergy between stock market returns of the infected countries through empirical tests [11]. Yu et al. and Wang et al. argued that the stock market linkage between the U.S. and China increased significantly after the U.S. subprime crisis in 2008 [12, 13]. Lanfear et al. analyzed that unexpected events can generate abnormal perturbations in stock returns and illiquidity, which has a huge impact on the stock market [14]. Feng and Li found that the impact of COVID-19 on the stock market was much higher than that of SARS [15]. Yan et al.'s study shown that U.S.-China trade frictions reduce the stability of the Chinese stock market, and the greater the intensity of the trade friction event, the more pronounced the impact of the event [16]. Wang's study shown that the volatility spillover effect of A-shares on U.S. stocks was the strongest during the crisis period of the COVID-19 in 2020, which is about four times that of the U.S. subprime crisis period in 2008 and two times that of the U.S.-China trade friction in 2018 [17]. Some other research focused on the bond market. A study by Zaremba et al. shown that the spread of the COVID-19 severely affected the sovereign bond market, with the growth of confirmed cases significantly widening the term spread of treasury bonds [18], while the government's response to COVID-19 helped stabilize the sovereign bond market, reducing uncertainty and lowering the volatility of sovereign bonds [19].

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Currently, the impact of the COVID-19 is not over, but some countries or regions have started to adopt standing prevention and control measures. It is a hot topic in academia to study the similarities and differences between the impact of the COVID-19 and other crisis events on the stock market. This paper will focus on the impact of two types of crisis events, namely public health events and economic crisis events. Based on the existing literature, the main innovations of this paper are as follows. On the one hand, we adopt a cross-sectional comparison of event analysis to explore the similarities and differences in the performances and policies of the U.S. and Chinese stock markets under the COVID-19, and extract the factors that affect the stock market. On the other hand, the longitudinal comparison of the three crisis events in history is synthesized to summarize objective patterns, which makes this study inherited.

3. Comparison of the U.S. and Chinese Stock Market Performance in the Context of COVID-19

3.1. Comparison of the U.S. and Chinese Stock Market Performance at the Beginning of the COVID-19

Under the influence of the global COVID-19, the global stock markets plunged and financial markets in the U.S. and China were hit hard. As the two largest economies in the world, the stock markets of China and the U.S. were both severely affected at the beginning of the outbreak, as the Chinese stock market was in the doldrums and the U.S. stock market experienced four meltdowns in 10 days.

However, along with the spread of the epidemic, the Chinese stock market has been more independent and resilient than the U.S. and Europe, with a stronger recovery capacity and higher stability. First, the Chinese stock market did not experience a large drop during the epidemic, and foreign investors showed a positive attitude in the Chinese bond market. After a one-time release of market panic, the Chinese stock market gradually returned to its pre-epidemic level by the end of February. However, the U.S. stock index experienced an unprecedented four meltdowns in 10 days, oil futures were negative, and the Dow Jones index reached its lowest trough, falling nearly 30% in 30 days. Since then, it has fallen below 20,000 points, which can be said that the negative impact of the current round of the epidemic on the U.S. stock market has been very significant. Second, the average value of the Chinese stock market was larger than the average value of the U.S. stock market during the epidemic spread period, and the level of index returns and growth trends of the Chinese stock market can be initially judged to be relatively better than those of the U.S. stock market [20]. Third, the volatility leverage effect is always present in the U.S. stock market and it diminishes after the epidemic outbreak, while there is no significant volatility leverage effect in the Chinese stock market [21].

3.2. A Comparison of the U.S. and Chinese Financial Policies During the COVID-19 Outbreak

After the COVID-19 occurred in 2020, China and the U.S. simultaneously adopted aggressive easing macro policies to hedge against the huge external shock. First, the fiscal deficit expanded. The deficit rate in China exceeded 3% for the first time in 2020, reaching 3.6%, increasing the deficit size to 3.76 trillion yuan. A phased large-scale tax cut and fee reduction reduced the burden for market players by more than 2.6 trillion yuan for the year. In contrast, the U.S. deficit for the fiscal year 2020 is $3.1 trillion, accounting for 15.2% of GDP, which is the largest percentage since 1945 and the rapid introduction of several rounds of fiscal stimulus bills. By the end of March 2021, the combined fiscal stimulus amounted to nearly $6 trillion. Second, the level of benchmark interest rates was depressed. In response to the epidemic shock, China cut interest rates by a total of 30 basis points twice in a row in the first half of 2020, and cut the medium-term lending facility (MLF) rate and open market

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operation rate by a cumulative 35 basis points. China also increased money supply and provided funding and liquidity support to various entities, as well as extremely innovative policy tools that reach the real economy directly [22]. In contrast, the Federal Reserve restarted its zero interest rate policy in March 2020, lowering the federal funds target rate by 150 basis points to 0-0.25% in a two-week period.

However, due to the different national conditions and the different degree of impact of the epidemic in China and the U.S., the intensity, scope, manner and easing degree of policy implementation are also different [23]. China is moderately progressive and camera-optimistic. With the relevant departments turning optimistic about economic expectations, the need for macro policy hikes in China declined. After the end of May 2020, interbank market rates lifted and monetary policy gradually returned to normality in the second half of the year. In contrast, the U.S. has been bold and unprecedented in its intensity. The U.S. policymaking authorities significantly shortened the time chain of policy formulation and implementation, and took swift action at the beginning of the spread of the epidemic, cutting interest rates to zero within two weeks and launching a fiscal stimulus and bailout program with a scale of nearly $6 trillion, with unprecedented stimulus intensity and speed.

4. Comparative Analysis of the COVID-19 and Three Other Crises

4.1. Similarities and Differences Between the COVID-19 and the SARS in 2002

The COVID-19 was not the first large-scale public health event to occur in China with SARS, a severe epidemic, breaking out in China in late 2002. First, from the perspective of stock price impact, both outbreaks caused short-term impact on air transportation, tourism and other service industries. What's different is that the impact of the COVID-19 on biopharmaceutical industry stock prices was later than that of SARS, and the excess return phase was shorter than that of SARS. Due to the background of the 21st century information era, the city closure policy in the context of COVID-19 outbreak greatly promoted the development of China's Internet industry, causing its share price to rise. Second, from the perspective of the epidemic scope, SARS mainly affected China and lasted only 8 months, ending in July 2003, while COVID-19 has influenced the whole world and it continues to this day. Third, in terms of prevention and control policies, China did not adopt strict and large-scale population movement restrictions during the SARS period, while various effective and strict restrictions were implemented during the COVID-19 period. Fourth, in terms of the economic environment, the macroeconomic context and international political situation have changed in 2019 compared to 2002, and international influence has increased significantly.

At present, China's prevention and control of the COVID-19 has entered a normal phase. Looking back at the stock market performances after the two epidemics, the Chinese stock market reacted to the shock of COVID-19 more quickly and recovered quickly in the short term, while the response to SARS lasted longer and was lighter.

4.2. Similarities and Differences Between the COVID-19 and the 2008 U.S. Subprime Crisis

Unlike SARS, which occurred in China, the subprime crisis occurred in the U.S. and the financial risks spread to the Chinese stock market based on stock market contagion. Before the subprime crisis, the U.S. and China stock markets had only a weak positive association. When the subprime crisis occurred, the financial risk contagion increased [24]. A similar effect exists for the COVID-19, which significantly increases the contagion of financial risk across countries and regions. In particular, China's external spillover effects increased significantly after January 23. As the epidemic continued to develop, the contagion effect of international financial risks grew significantly [25].

In addition, before the subprime crisis, the U.S. stock market is a whole exhibited risk contagion dominance. During the subprime crisis, the risk contagion effect between the Chinese and the U.S.

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stock markets was symmetric. During the COVID-19, the U.S. stock market continued to maintain risk contagion dominance and a one-way risk contagion to the Chinese stock market emerged [26].

4.3. Similarities and Differences Between the COVID-19 and the U.S.-China Economic and Trade Friction in 2018

The U.S.- China trade friction that began in 2018 have brought negative shocks to both economies. The trade friction led to a plunge in the U.S. stock market, a rise in production costs for enterprises, and an increase in the cost of living for consumers. The repeated imposition of tariffs by the U.S. on China made enterprises' exports less competitive, which in turn affected investors' investment expectations, who became pessimistic about the stock market, ultimately affecting the overall stock market performance [27]. The escalation of trade friction has impacted China's import and export trade, the RMB exchange rate against the U.S. dollar has seen a relatively large oscillation trend of rising, then falling and then rising again, and the stock market has seen a large volatility trend of rising and then falling.

However, unlike the U.S.-China trade friction, the Chinese stock market became significantly more independent during COVID-19, and the volatility of the Chinese stock market was no longer a result of the volatility of the U.S. stock market [28]. And the linkage of stock market return volatility between the two countries increases significantly as the increasing intensification of trade friction.

5. Conclusion

5.1. Conclusion, Limitations and Future Directions

This paper compared and analyzed the stock markets performances and financial policies of Chinese and the U.S. at the beginning of COVID-19. This paper also reviewed the similarities and differences between the Chinese and U.S. stock markets in the context of SARS in 2002, the subprime mortgage crisis in 2008, the U.S.-China trade friction in 2018 and the COVID-19.

The final results are as follows. First, the impact of COVID-19 on the Chinese stock market is weaker than that of the U.S. stock market, both in terms of timing and extent. Second, due to the different impact degree of COVID-19, China adopted a less aggressive easing policy and returned to normalization in the short term, while the U.S. adopted a bottomless quantitative easing policy that extends in time to the present. Third, compared with SARS, although COVID-19 had a greater degree of impact on the Chinese stock market, the response was fast and the market performance recovered quickly in the short term thanks to strict restrictions. Fourth, from the subprime mortgage crisis in 2008 to the U.S.-China economic and trade friction in 2019, and then to the COVID-19 in 2020, the Chinese stock market has become significantly more independent and is no longer vulnerable to the volatility of the U.S. stock market.

The limitations of this paper are mainly in the following areas. First, this paper focuses on the macro-level impact of several crisis events, but lacks micro-level impact mechanism analysis. Second, because the epidemic situations in many countries were still very serious at the time of writing, there is no comparison of stock market performances during the normalization of the epidemic. Third, because it has been less than three years since the outbreak of the COVID-19, this paper lacks empirical analysis of the impact effect of several crisis events due to data limitations.

Future research directions can be developed in the following aspects. First, they can compare the performances of the U.S. and Chinese stock markets at the end of COVID-19 or during the normalization of epidemic prevention and control. Second, they can compare the performances of the U.S. and Chinese stock markets under other crisis events, such as the Russia-Ukraine conflict, the U.S.-Russia sanctions war in the military and political fields, and the monkeypox epidemic in public health events. Third, they can compare the performances of the U.S. and Chinese stock markets in

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the context of new crisis events in the future. Fourth, they can compare the stock market performances of other countries or regions under crisis events.

5.2. Implications for Future Crisis Events

Strengthen monitoring and early warning capabilities. Against the backdrop of highly connected global financial markets, it is increasingly important to strengthen the monitoring and prevention of cross-contagion of financial risks. China's stock market is easily infected by the risks of overseas stock markets, so it is important to improve monitoring and early warning capabilities to prevent imported risks.

Strengthen cooperation between Chinese capital markets and international capital markets. Facing the external challenges to international relations, promoting the internationalization of the RMB and further expanding the influence of China's capital markets will help China's stock market to get rid of the passive position of risk contagion.

Take COVID-19 as a mirror and formulate strategies for dealing with crisis event in advance. According to this paper's comparison of the policies of China and the U.S. at the beginning of COVID-19, it is clear that strict preventive and control policies can promote economic recovery faster than financial policies. Therefore, based on the COVID-19, in view of different types of crisis events in the future, preparing multiple coping strategies in advance will help the economy to recover rapidly.

References

[1] *Wang Jing, Wang Zhongli, Li Shixue & Xue Fuzhong. (2020). Short-term impact of the "new crown pneumonia" epidemic on the price volatility of Chinese stock market. Review of Economy and Management (06), 16-27.*

[2] *Sun Jisheng. (2020). The New Coronary Pneumonia Epidemic and Global Governance Change. World Economics and Politics (05), 71-95+157-158.*

[3] *Jiang Hai, Wu Wenyang & Wei Shiwei. (2021). A study on the impact of the new crown pneumonia epidemic on global stock market risk--a cross-market test based on ESA method. Studies of International Finance (03), 3-13.*

[4] *Wu Z.Y., Zhu H.M. & Zhu J.S.. (2020). The impact of the new crown pneumonia epidemic on financial operations and policy recommendations. Economic Review Journal (03), 1-6+137.*

[5] *Cai Weiyi, Chen Minhao, Sun Chuanwang. Terrorist activities, transportation and Chinese outward foreign direct investment[J]. The Journal of World Economy,2021,44(02):75-101.*

[6] *Liang Q., Yu F. Y.. Financial crisis, state-owned equity and capital investment[J]. Economic Research Journal,2014,49(04):47-61.*

[7] *Zhang Y, Liu Yanhui, Xu Shanying, Wang Shouyang. (2003). An empirical analysis of the impact of SARS on the Chinese stock market. Management Review (05),3-7+63.*

[8] *Valle-Cruz, D., Fernandez-Cortez, V., López-Chau, A. et al. (2022). Does Twitter Affect Stock Market Decisions? Financial Sentiment Analysis During Pandemics: A Comparative Study of the H1N1 and the COVID-19 Periods. Cogn Comput 14, 372–387.*

[9] *Ho, K.-C., et al. (2022). "Modern health pandemic crises and stock price crash risk." Economic Analysis and Policy 74: 448-463.*

[10] *Gong, Park & Huang, R.B. (2009). An empirical analysis of the impact of subprime mortgage crisis on Chinese stock market - Based on the linkage analysis of Chinese and the U.S. stock markets. Management Review (02), 21-32.*

[11] *Bhuyan, R., et al. (2010). "Asian stock markets and the Severe Acute Respiratory Syndrome (SARS) epidemic: implications for health risk management." International Journal of Environment and Health 4(1): 40-56.*

[12] *Yu, Z. & Xu, X. M. (2014). Are China and the U.S. financial markets more connected after the "subprime crisis". Economist (09), 87-95.*

[13] *Wang, Donghua & Zhang, Yuheng. (2018). A study on the mutual excitation effect of large stock market fluctuations in China and the U.S. based on Hawkes process. Chinese Journal of Management Science (07), 32-39.*

[14] *Lanfear, M. G., et al. (2019). "Market anomalies and disaster risk: Evidence from extreme weather events." Journal of Financial Markets 46: 100477.*

[15] *Feng, Y. and X. Li (2022). "Causal estimation of COVID-19 and SARS on China's stock market: evidence from a time series counterfactual prediction." Economic Research-Ekonomska Istraživanja 35(1): 1734-1751.*

DOI: 10.54254/2754-1169/10/20230481

[16] Li, Y., et al. (2020). "Analysis of the impact of Sino-the U.S. trade friction on China's stock market based on complex networks." The North American Journal of Economics and Finance 52: 101185.
[17] Shanshan Wang & Wenli Wang. (2021). New features of stock market volatility spillovers in China and the U.S. under the crisis of the new crown pneumonia epidemic - A comparison based on several crisis events. The Journal of Quantitative Economics (02), 73-94.
[18] Zaremba, A., et al. (2022). "Term spreads and the COVID-19 pandemic: Evidence from international sovereign bond markets." Finance Research Letters 44: 102042.
[19] Zaremba, A., et al. (2021). "Volatility in International Sovereign Bond Markets: The role of government policy responses to the COVID-19 pandemic." Finance Research Letters 43: 102011.
[20] Pan, Qunxing & Xu, Rentong. (2021). A study on the volatility and cross-country risk spillover effects of Chinese and U.S. stock markets under the impact of the new crown epidemic. China Circulation Economy (21), 144-147.
[21] Shen, L.Q., Zhang, J., Ye, Yumeng, Wang, Q.L. & Pan, Q.X.. (2022). An empirical study of volatility leverage effect and linkage - Evidence from the Chinese and the U.S. stock markets under the impact of the new crown epidemic. China Circulation Economy (09),128-131.
[22] Sheng, Liu-Rong & Tan, Y-Xi. (2021). Epidemic response: a comparative analysis of fiscal and monetary policies in China and the U.S.. International Finance (08), 67-75.
[23] Wu, Yanxia. (2021). Analysis of monetary policies implemented by central banks in the U.S. and China during the epidemic. Journal of Jilin Financial Research (03), 27-30.
[24] Zhu, C. & He, Gen-Q. (2015). Crisis shocks, market time-varying linkages and risk cross-country contagion pathways - An empirical study based on sample data from the U.S. and Chinese stock markets. Journal of Central University of Finance & Economics (05), 32-37.
[25] Qian, Dongping. (2020). Did the new crown pneumonia epidemic exacerbate international financial risk contagion? Journal of Contemporary Financial Research (05), 22-31.
[26] Zheng Yanting, Luan Xin & Huang Feng. (2022). Analysis of risk contagion effects in the U.S. and China stock markets--based on correlation structure decomposition. Journal of Beijing Technology and Business University (Social Sciences) (03), 85-97.
[27] Yin, C.-C., Lu, H.-Z. & Pan, B.-X. (2020). The impact of the U.S.-China trade war on Chinese stock market - An analysis based on event study method. Journal of Management (01), 18-28.
[28] Li, Lin. (2020). The impact of the new crown epidemic on stock market linkage between China and the U.S.--an analysis based on Granger causality test. China Circulation Economy (30),149-151.