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The Relationship Between Geopolitical Risks and Stock Market Volatility

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Abstract: In the globalized economic system, geopolitical conflicts are increasingly prominent as an important factor affecting stock market volatility. This essay delve into deeply explore the complex relationship between geopolitical risks and stock market volatility, and comprehensively analyze this area from a macro perspective through the combination of theory and empirical methods. First, this essay defines geopolitical risks systematically and explores various sources. Further, this essay analyzes the broad impact of geopolitical risks on the global economy and economic financial system. With regard to the stock market volatility, this essay introduces the measurement method of stock market volatility. In order to fully understand the impact of geopolitical risks on the stock market volatility, this essay conducts deep analysis from two dimensions of market sentiment and capital flows. In order to more specifically illustrate the impact of geopolitical risks on stock market volatility, this essay conducts an in-depth analysis using the Russian-Ukrainian war as a case study. This case not only shows the direct impact of geopolitical conflicts on stock market volatility, but also reveals the deep economic and financial logic behind it. The research in this paper not only helps to deeply understand the mechanism of the impact of geopolitical risk on stock market volatility, but also provides a useful reference for investors and policy makers. In the face of geopolitical risks, investors should pay more attention to relevant information in order to make more informed investment decisions. Policy makers should strengthen real-time monitoring of geopolitical risks and take corresponding risk prevention measures to maintain the stability of financial markets.

Keywords: Geopolitical risk, Stock market volatility.

1. Introduction

In recent year, the global political and economic pattern are witnessing challenges. In particular, the year of 2024 is known as a super election year, with approximately 76 countries or regions around the world holding elections, such as United States, South Africa, Sri Lanka, etc. The result of election is usually accompanied by some changes of political pattern to some extent. For example, elections in the United States have a great impact on the strength of political parties and the direction of policies. At the same time, regional conflicts and inter-state tensions still exist, such as the Russia-Ukraine war, conflicts in the Middle East and Eastern Europe, etc. The complexity of global political pattern has increased further. On this background, scholars at home and abroad have already has some profound research. Scholar Feng Zhoqi conducted research on the stock market from the perspective of volatility spillover effect, revealing how geopolitical risks spread in the international stock market, which is of great significance for the understanding of global stock market and how to manage risk across borders. Zinan Hu and Sumuya Borijigin also studied the impact of geopolitical risks, economic policy uncertainty and climate risks on the volatility spillover effects at different stages of the cycle from the perspective of spillover effects. At the same time, some scholars focus on the impact of geopolitical risks on the stock market in particular region. Scholar Khan Nasir used non-parametric quantile causality method to study the relationship between geopolitical oil price and stock market returns and volatility for the Pakistani stock market. Scholars such as Bossman Ahmed made asymmetric analysis of the tension between Russia and Ukraine, and Bouri Eile and other scholars studied the stock market of Gulf Cooperation Council countries. However, there is no universal definition and interpretation of the term geopolitical risk. Dario Caldara and Matteo Iacoviello defined geopolitical risk as the treat, realization and escalation of adverse events related to war, terrorism and any tensions [1]. Robert F. Engle and Susana mentioned that geopolitical risk is broadly defined as the exposure of one or more countries to political risk actions in other countries, based on volatility stocks to a wide range of financial market price [2]. At the World Economic Forum in Davos in 2015, geopolitical risk was defined as a global risk, including violent conflicts between nations, civil unrest in important countries, large scale terrorist attacks and failure of global governance and so on. Some typical cases were also discussed, such as US-Russia sanctions and geopolitical risk between Russia and Ukraine. For the term stock market volatility, Glen defined volatility as the frequency and magnitude of price movements [3]. Bhatia, A., and Binny mentioned in the article that volatility is the degree of uncertainty or risk of the magnitude of change in the value of a security [4]. In this paper, we define geopolitical risk as the risk associated with wars, terrorist acts and tensions between states that affect normal and peaceful course of international relations. At the same time, we define the stock market as changes in price and volume. This change can be a sharp fluctuation in the short term or a slow change in the long term. On this basis, this paper will deepen the research on influcing factors of stock market volatility, discuss the influcing mechanism of stock market from different forms of geopolitical risk. At the same time, this paper will help investors analyze and understand stock market volatility from different perspectives, so as to better manage risks, predict future stock prices and make long-term investment plans.

2. An Overview of Geopolitical Risks

2.1. Main Source of Geopolitical Risks

International investment theory mainly includes monopolistic advantage theory, internalization theory and product life cycle theory, which mainly focus on the behaviour of transnational corporations in international direct investment and international indirect investment. On the basis of these theories, transnational corporations may invest internationally in order to pursue maximum profits, maintain their own business advantages and obey international agreements and regulations. This paper will analyze the source of geopolitical risks from the perspective of international investment theory. First, the change in international political environment. In the theory of international investment theory, transnational corporations will be affected by international political environment when making international investment. The stability of political relation, bilateral political relation and policy transparency will directly or indirectly have an impact on strategies of transnational corporations when they operate. For example, in 2012, subtle changes have taken place in China-US relations, which have had a certain impact on some areas, like politics, culture and economy. At the same time, China strictly monitored the basic network security of the internet, the security of important networking information system and the security of the public network environment, as well as China’s strict control of foreign investment, the rise of the domestic internet and other complex political environment factors, Google announced its withdrawal from the Chinese market. Second, resource contention. The theory of monopolistic advantage indicates that monopolistic advantage is the determining factor of outward foreign direct investment. According to RZ. Caves’s classification, some of these static advantages of knowledge assets include raw material advantages. Therefore, transnational corporations always take some proactive strategies to obtain scarce resources in order to make sure their dominant position, such as natural gas, petroleum and ore resources. These resource contentions often accompany with geopolitical risks. For example, the military activities of the United States, Russia and other countries in the MIddle East are largely aimed at competing for the rich resources. Third, political uncertainty and changes in political system, which include change of government, political conflicts and unstable social environment. In the theory of product life cycle, American scholar Johnson points out part of location factors that lead to international direct investment and believes that they are sufficient conditions for the formation of foreign direct investment, one of which is government policy. The political uncertainty makes it difficult to do the risk management when transnational corporations make investment decisions. Forth, economic cyclical change. In the theory of development stages of international direct investment, scholar Ozawa Terutomo comes up with international direct investment model. Its theoretical core is the influence of characteristics of the world economic structure on economic operation, especially investment. When the world economic cycle is in a downward trend, geopolitical risks gradually increase significantly. Because economic instability is easy to cause conflicts between countries, and then increase the investment risks of transnational corporations. All of the above four sources have a negative impact on the operation of transnational corporations, which in turn results in the increase of geopolitical risks.

2.2. The Potential Impact of Geopolitical Risks on The Global Economy and Financial Markets

First, the growth of geopolitical risks may lead to financial market turbulence and investor confidence decline. To be exact, it affects investors’ decision making decisions, delay consumption by investors and delay investment by corporations [5, 6]. Because investors are sensitive to the uncertainty. When geopolitical events happen, they typically manage risk and turn to safe haven assets such as gold and dollar, leading to capital market fluctuation. For example, after the Paris attacks of 2015, the chief executive officer of Siemens, Joe Kaeser expressed concern and caution about the investment environment in Europe following the terrorist attacks [7]. Geopolitical risks were depressing investment plans of corporations and triggered concern about slowdown in global economic growth. Second, rising geopolitical risks may lead to restricted capital flows and a shift to regionalization of globalization [8]. For example, higher geopolitical risks depresses economic activities, lowers stock returns and determines major changes in international capital flows. Following higher geopolitical risks, investors pull capital out of emerging economies and move towards advanced economies, including the United States [9]. However, the limitation of investment flows not only leads to shortage of capital and a slowdown in economic growth, but also exacerbates regional economic imbalances. Third, stock market volatility. Political instability, the treat of war and diplomatic conflict can make investors nervous, thereby triggering a wave of selling in the stock market. For example, during the Russian-Ukrainian conflict, investor sentiment had been badly affected due to an escalation of geopolitical tensions, leading to a global selling spree. Under these circumstances, the A-share market had not been immune, with significant decline. In addition, European stock market also fell dramatically due to political instability caused by conflict between Russia and Ukraine.

3. A Measure of Stock Market Volatility

3.1. Standard Deviation

The most common measure of stock market volatility is standard deviation, which is based on historical prices and is used to measure the degree of dispersion of data. Financial economists believe that standard deviation is useful, because it summarizes the probability of an extreme return value. When standard deviation is large, the probability of a large positive or negative return is greater [10]. Figure 1 plots the monthly return of Shanghai Composite Index from 2019 to the present. The chart shows peaks in February '19, July' 20 and September '24. In February 2019, substantial progress was made in the China-US economic and trade consultations, which enhanced market confidence. For example, US President Donald John Trump announced a delay in raising tariff on Chinese imports to the United States, which was beneficial to allay concern about trade war. At the same time, the RMB exchange rate rose slightly. In July 2020, governments adopted a series of economic measures to improve economic recovery. Simultaneously, average rate of return of private equity was high, especially stock long and short products were outstanding. This excellent performance of private funds has further boosted the stock market. In September 2024, the People's Bank of China has provided sufficient liquidity support to the market by cutting the required reserve ratio and adjusting the OMO and MLF interest rates. At the same time, after a period of downturn in A-share market, market sentiment has been effectively repaired.

Figure 1. Monthly return of Shanghai Composite Index from 2019 to the present

Figure 2 plots the standard deviation of monthly returns of Shanghai Composite Index from 2019 to the present, which is used the rolling window method to calculate a fixed window every three months. As shown in the figure, the index peaked in July-September 2024.

Figure 2. Standard deviation of monthly returns of Shanghai Composite Index from 2019 to the present

First, from a market and financial perspective, to increase counter-cyclical monetary policy adjustment efforts to support stable economic growth, the central bank has embarked on extraordinary monetary policy, lowering the deposit reserve ratio of financial institutions by 0.5 percentage points, indicating that the attitude of the top decision-making organs and the real power organs towards the stock market has changed significantly. The trade after the operation of the policy was basically completed, and the index entered a seesaw intensive trading area, leading to increase stock market volatility.

Second, from the perspective of macroeconomics and market sentiment, from July to August, the credit scale fell significantly compared with previous month, lower than market expectations. In July, household loans decreased by 210 billion yuan, of which short-term loans and medium - and long-term loans increased by -215.6 billion yuan and 10 billion yuan, respectively. This phenomenon reflected that residents' concerns about their future income and employment prospects. The People's Bank of China survey showed that in the second quarter, urban savers' confidence in future income and employment expectations fell by 1.4 and 1.8 percentage points respectively from the first quarter. In the content of increasing economic uncertainty, residents preferred to save more and consume and invest less. But into September, market sentiment was gradually recovering. The rally in the last week of September took the Shanghai Stock Exchange out of 3,000 points, and market sentiment was greatly improved.

Third, from the perspective of market structure, there was a divergence within A-shares, with some sectors rising sharply, such as real estate, while small and medium cap stocks have fallen significantly. This structure increased uncertainty for investors and thus increased market volatility.

All of the above shows that the higher the standard deviation, the higher the volatility of the stock, the greater the degree of potential risks and potential benefits.

3.2. Daily Return Rate

In recent year, daily return rate is a vehicle to measure stock market volatility. Figure 3 plots the daily return rate of Shanghai Composite Index from 2019 to the present.

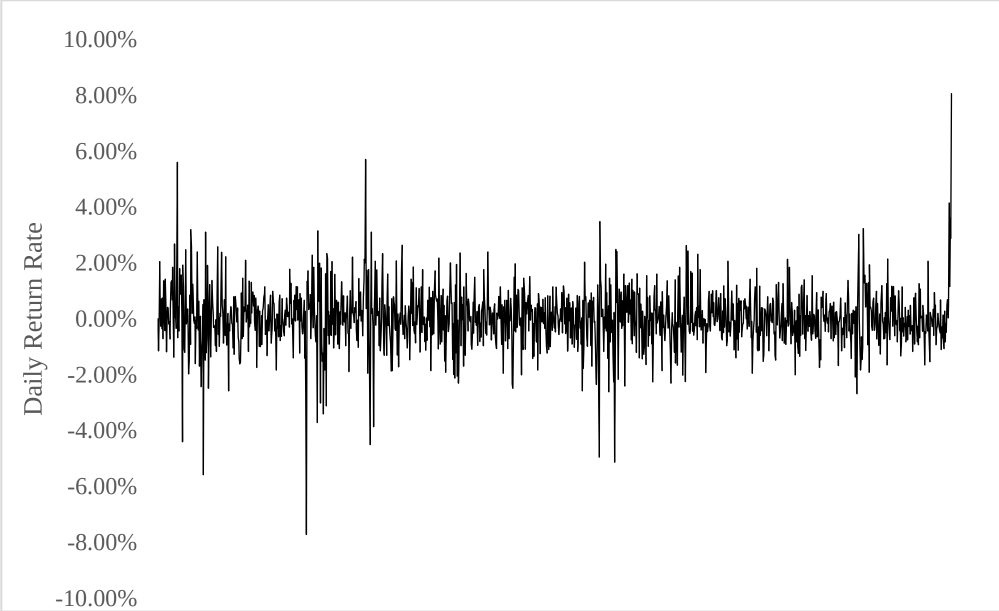

Figure 3. Daily return rate of Shanghai Composite Index from 2019 to the present

First, On February 25, 19, July 6, 20 and September 30, 24, it reached four peaks of 5.60%, 5.71% and 8.06%, respectively. The central bank implemented reduce deposit reserve ratio policy to release liquidity through lowering reserve ratio at the beginning of 2019. This policy cut the reserve requirement ratio by 0.5 percentage points in January 15 and January 25 respectively, releasing about 1.5 trillion yuan in accumulated funds and providing enough liquidity for the stock market. It was beneficial for stock market to increase trading activity and investor confidence. At the same time, the international trade situation turned around, and RMB continued to appreciate, and more international funds flowed into the A-share market. A combination of factors contributed to the surge in daily returns on February 25,2019, which also reflected significant volatility in the stock market. With the results of epidemic prevention and the promotion of policies, economic data has gradually improved. For example, China's manufacturing purchasing manages' index and non-manufacturing business activity index have showed a rebound. At the same time, in the trading on July 6,2020, the weighted sectors like banks, brokerages and estate performed significantly, driving the rise in Shanghai Composite Index. In September 24, some industry policies implemented. For example, the estate sector interest rate pricing mechanism led a sharp growth under the boost of policy. The central bank improved mortage interest rate pricing mechanism and some first-tier cities adjusted property market policy, such as Guangzhou completely withdraw from the purchase restriction policy, Shanghai and Shenzhen adjusted the down payment, which is formed a positive influence for the estate industry. Second, daily return rate reached three extreme values on May 6, 19, February 3, 20, and April 25, 22, at -5.58%, -7.72%, and -5.13%, respectively. On May 5,2020, Donald John Trump made comments on Twitter, announced it would raise the current tax on 200 billion dollars of Chinese imports from 10 percent to 25 percent from May 10. The comments sparked concern in global stock market and created new uncertainty in the trade relationship between China and United States. At the same time, from the beginning of 2019 to the beginning of May, the Shanghai Composite Index was in the raising stage. Based on some technical indicators, such as relative strength index and the evaluation of random indicators, there was a demand of a correction. The combination of factors led to the considerable fall of the Shanghai Composite Index on May 16, 2019, and also reflected the sharp fluctuations of the stock market. At the beginning of 2020, the outbreak of the novel cornavirus in Wuhan, China, has had a huge negative impact on the economy and financial market. The government has implemented strict measures, shutting down entertainment venues such as shopping malls and labor-intensive places like factories, which have restricted economic activity and hit market confidence. And in the background of global integration, other countries and the entire financial market had a linkage effect. That caused great swings in stock market around the world. And the Shanghai Composite Index plunged on February 3. The central bank announced to cut the reserve requirement ratio by 0.25 percentage points in April 2022 tp free up liquidity and lower corporate funding costs. At the same time, northbound funds (that is, foreign funds flowing into A-share through Shanghai-Shenzhen-Hong Kong stock connects) also showed an outflow trend. In April 2020, major indexes such as the Shanghai Composite Index, Shenzhen Composite Index, and GEM Index all fell sharply, which also reflects the poor performance of A-shares as a whole and their volatility. All of the above shows that higher daily returns usually mean bigger gains in the market; A low or negative return on the day could signal a market decline or correction. Daily returns are a good indicator of stock market volatility.

4. The Influence Mechanism of Geopolitical Risk on Stock Market Volatility

4.1. Investor Sentiment

According to the content of efficient market hypothesis, everyone is a rational economic person in the market [11]. The concept of rational economic person refers to the fact that individuals seek to maximize their own interests when making economic decisions and make decisions depending on available information. In the efficient market hypothesis, this assumption means that investors evaluate the value of stocks and securities in the market based on available information, and make buying and selling decisions. However, the assumption of the rational economic person in the efficient market hypothesis is not without controversy. When faced with a complex and uncertain economic environment, people are often unable to deal with the information rationally. For example, emotion, cognitive bias and overconfidence are likely to lead to irrational bad decisions [12, 13]. Behavioral finance indicates that irrational sentiment can affect stock market volatility [14]. Gallup, the world's leading business survey consulting corporation, regularly carries out investors surveys to understand investors' viewpoints on the economy, politics and geopolitics. According to a 2017 Gallup survey, 75 percentage of Americans are increasingly concerned about the impact of political military conflict on investment. In the survive, Goldman Sachs finds that geopolitics is seen as one of the biggest risks facing markets and the global economy. These findings all show that investors are increasingly worried about the impact of geopolitics on global economy. At the same time, they also show that geopolitics can affect stock market performance by influencing investor sentiment. For example, in A-share market, geopolitical risks will increase investment risks to a certain extent, leading to pessimism among investors. Owing to the large base of investors in China and the popularity of the internet, the spread of information among investors makes sentiment contagious, resulting in herd behaviour in the stock market, which indirectly or directly affects stock market fluctuations [15].

4.2. Capital Flow

In 2008, the outbreak of political conflicts between geographies gradually increased and their impact gradually amplified. For example, in August, Russia and Georgia fought military in the South Ossetia region. In November, a president selection has been held in the United States and democration candidate Barack Obama has been successfully elected as the first African-American president of the United States. At the same time, financial crisis happened.

First, financial crisis led to a whole contraction in the total amount of capital flows in the market, especially the across-border scale of emerging market countries has been impacted. With the gradual reduce in impact of the financial crisis, monetary policy in developed countries has increased the amount of capital in the market and the majority of the capital entered emerging marketing economy. Geopolitical risks have a huge impact on net cross-border capital inflows. Investors may reduce their exposure to risker countries, leading to lower capital inflows to those countries. At the same time, geopolitical risks may lead to a redistribution of capital between different countries, resulting in making some countries safe havens for capital, while others face with capital outflow pressure. They also have a positive impact in enhancing capital refuge countries such as the United States and Japan [16]. Therefore, this phenomenon exerts an influence on stock market volatility from the stock price volatility and market liquidity. When capital flows into a certain stock or the whole stock market, the demand of stock will increase, thereby promoting the rise in stock price. In contrast, when capital outflows, the relative increase in the supply of stock causes stock price to fall. At the same time, when a large amount of capital flows into the market, the market liquidity strengthens. Investors can buy and sell stock easily; it is beneficial to the stable functioning of the market. However, when capital outflows, liquidity may decrease. It is difficult for investors to buy or sell stock, thus sharping market volatility.

Second, financial crisis leads to fluctuations in exchange rates and interest rates. From the perspective of exchange rates, during this period, the dollar rose sharply almost every major western currency expect the yen. For example, the euro was down 22% against the dollar, the Australian dollar was down 38% and the British pound was down 27%. The change in exchange rates had a huge impact on transnational corporation. The depreciation of the yuan enhances the competitiveness of export-oriented companies and increase their profitability, which has a positive impact on their share prices. From the perspective of interest rates, during this period, the central banks around the world conducted interest rate reduction policy. For example, the Federal Reserve cut interest rates to 1%, a postwar low, on October 29th; The European Central Bank slashed rates by 50 basis points and the Bank of England by 150 basis points on November 6th. The People's Bank of China also announced its biggest interest rate cut in 11 years on Nov. 26, lowering the benchmark one-year deposit and lending rates by 108 basis points. The growth of interest rates increases the financing cost of companies, leading to a decrease in net profit, thereby making a negative impact on stock price. At the same time, compared with stock, fixed income financial products such as deposits and bonds become more attractive. Investors may shift money into these fixed income products, causing stock market turnover to shrink and share prices to fall.

5. Case Study

As an important external strengthen affecting global and national stock market, geopolitical risks can be quickly reflected in stock market volatility quickly, especially in the particular case of conflict between Russia and Ukraine. Geopolitical risks not only draw the attention of international society, but also have an impact on global stock market dynamics. There is a close correlation between geopolitical tensions and stock market reactions. In this context, this essay will delve into how does the geopolitical change caused by the conflict between Russia and Ukraine specifically affect the stock market volatility and analyze it from the stock market trading data and macro trading data. Considering that the Russia-Ukraine conflict officially broke out on February 24, 2022, and the initial stage had a significant impact on the market. Therefore, this paper selects to analyze from the data of the outbreak of the conflict to one month after it. In this way, this essay can obverse the sharp initial reaction of the market and the possible subsequent process.

First, from the perspective of stock market trading data, Table 1 lists the daily opening price, closing price and volume of the NASDAQ index in trading days within a month after the outbreak of the conflict between Russia and Ukraine. Overall, the NASDAQ index opened at 12600 on February 24 and closed at 13500, showcasing a certain upward trend. After a month, the opening price was 14000 and the closing price was 14200 on March 24. This showed that the NASDAQ index exhibited an upward trend during the given period. From the perspective of price fluctuations, both the opening and closing price of the NASDAQ index showed a volatile upward trend, although there was some small correction in the middle, the whole trend was up. In the short run, the NASDAQ index fell more then 3.5 percentage points in February 24, showing the great negative impact of the outbreak of the conflict on stock market volatility. In the long run, the range rose as much as 8.85 percentage points, showing the rapid rebound of the stock market and significant signs of economic recovery during the given period.

Table 1. daily opening price, closing price and volume of the NASDAQ index

Date	Opening price	Closing price	Volume of business
2022/2/24	12,600	13,500	6.180 billion
2022/2/25	13,500	13,700	4.629 billion
2022/2/28	13,600	13,800	5.928 billion
2022/3/1	13,700	13,500	6.131 billion
2022/3/2	13,600	13,800	5.246 billion
2022/3/3	13,800	13,500	5.093 billion
2022/3/4	13,500	13,500	5.344 billion
2022/3/7	13,300	12,800	6.195 billion
2022/3/8	12,800	12,800	6.684 billion
2022/3/9	13,100	13,300	5.397 billion
2022/3/10	13,100	13,100	5.071 billion
2022/3/11	13,200	12,800	5.288 billion
2022/3/14	12,800	12,600	5.877 billion
2022/3/15	12,700	12,900	5.440 billion
2022/3/16	13,100	13,400	6.552 billion
2022/3/17	13,400	13,600	5.612 billion
2022/3/18	13,600	13,900	8.149 billion
2022/3/21	13,900	13,800	5.674 billion
2022/3/22	13,900	14,100	5.445 billion
2022/3/23	14,000	13,900	5.024 billion
2022/3/24	14,000	14,200	5.150 billion

Table 2. the daily opening price, closing price and volume of the Shanghai Composite index

Date	Opening price	Closing price	Volume of business
2022/2/24	3474.377	3429.96	488354912
2022/2/25	3445.34	3451.41	377542560
2022/2/28	3450.32	3462.31	345838400
2022/3/1	3471.36	3488.83	326001664
2022/3/2	3478.29	3484.19	329367680
2022/3/3	3495.93	3481.11	412594304
2022/3/4	3459.98	3447.65	393526592
2022/3/7	3438.56	3372.86	393588992
2022/3/8	3372.55	3293.53	415926752
2022/3/9	3303.71	3256.39	466285568
2022/3/10	3312.18	3296.09	378336384
2022/3/11	3259.32	3309.75	384067136
2022/3/14	3271.89	3223.53	337968672
2022/3/15	3192.36	3063.97	465037152
2022/3/16	3107.67	3170.71	444667200
2022/3/17	3215.01	3215.04	420813440
2022/3/18	3207.15	3251.07	373035616
2022/3/21	3255.62	3253.69	354228480
2022/3/22	3249.54	3259.86	361196160
2022/3/23	3264.79	3271.03	349875360
2022/3/24	3256.06	3250.26	329006656

Table 2 lists the daily opening price, closing price and volume of the Shanghai Composite index in trading days within a month after the outbreak of the conflict between Russia and Ukraine. In the short run, the opening price was 3474.377 and the closing price was 3429.96 on February 24, fell below the key level of 35000, and continued to fall in the following trading days. This phenomenon indicated that the stock market reacted to the conflict quickly, and investors were concerned about the global economy and geopolitical situation to adjust their positions and take a series of hedging measures. At the same time, the Shanghai Composite index fell sharply and rebounded many times, and the degree of fluctuation was relatively large during the given period. In the long run, although the index fell in early March, it began to rebound in late March, which indicated that a gradual return of confidence in economic market.

Second, from the perspective of macro trading data, this essay will analyze the two countries directly involved in the conflict between Russia and Ukraine.

With regard to Russia, according to the Federal State Statistics Service, Russia's gross domestic product fell by 2.1 percent in 2022. This data directly reflected the poor performance of the Russia economy in 2022. Because of geopolitical conflicts that led to widespread sanctions by Western countries, Russia was struggle to obtain access to key technologies and market. Russia’s oil exports to the EU as a percentage of total exports fall to 24 percent in the first nine months of 2022. This indicated that its energy export market was changing, further affecting its economic growth, as well as falling corporate incomes, weighing on the stock market. Russia’s bond yield was 10.36% in 2022. This suggested that Russia’s bond market could be at greater danger during this conflict. At the same time, Russia’s central bank raised its benchmark interest rate to deal with the inflation and capital outflows. The central bank of Russia announced that it would raise the benchmark interest rate to 20% on February 28,2022.

With regard to Ukraine, in the first quarter of 2022, Ukraine’s GDP grew by 3.5% year-on-year, but in the second quarter of 2022, the year-on-year growth rate shifted to -4.1%, and the overall contraction in the first half of the year was 0.4%. A decrease in GDP could trigger investors concerns about the economic market, resulting in stock market volatility. Inflation stood at 9.2% in February 2022, peaking at 17.8% in April, before gradually falling to 14.3% in August. High inflation could lead to lower purchasing power for consumers and higher costs for business, hurting corporate incomes and stock market performance. Therefore, the central bank was forced to take proactive measures to control inflation, including raising interest rates. Ukraine’s central bank sharply raised its key interest rate from 10 percent to 25 percent on June 2,2022, but a high interest rate environment could depress the stock market, because it increased the financing costs of business and reduced investment returns for investors. At the same time, the RTS index of Ukrainian stocks fell off a cliff in late February 2022, but then began to rebound. With February 24,2022 as the starting data, as of October 18,2022, the RTS stock index performed even between then the S&P 500 index in the United States.

Through the analysis of the Russia-Ukraine conflict and its geopolitical background, it is concluded that the geopolitical risks have a direct huge impact on the stock market volatility. At the same time, geopolitical risks bring a series of chain reactions, such as inflation, economic structure changes and so on.

6. Conclusion

In conclusion, this paper reveals the far-reaching impact of geopolitical risks on the global economy and financial markets through in-depth macro analysis of the sources of geopolitical risks. This paper also uses standard deviation and daily return rate to measure the stock market. Through further analysis, the paper explains how geopolitical risks have an impact on stock market volatility through mechanism such as affecting investor sentiment and capital flows. In the case analysis part, a representative geopolitical event, the Russia-Ukraine conflict, is selected to analyze the specific impact to the stock market, which further confirms the close relationship between geopolitical risk and stock market volatility. Looking forward to the future, the research can further analyze the dynamic relationship between geopolitical risk and stock market volatility, including the difference and timeliness of the impact of different geopolitics on stock market volatility. At the same time, the scope of research can be broadened to other financial market, such as the bond market and the foreign exchange market, so as to have a more comprehensive understanding.

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