



# Measuring geopolitical risk in China

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## ABSTRACT

This paper extends the research of Caldara and Iacoviello (2022) and constructs new geopolitical risk indices more suitable for China based on newspapers in mainland China. First, we construct a broad-scope China-Total Geopolitical Risk Index, which measures both Chinese direct geopolitical risks and the indirect risks of geopolitical events in other countries. Then we further decompose the China-Total GPR Index and construct China-Direct GPR Index to measure direct Chinese geopolitical risks and China-Non-Direct Geopolitical Risk Index to measure the risks brought by geopolitical events not directly related to China. Compared to China-Total GPR Index, China-Direct GPR Index can more sensitively capture specific geopolitical risk events in China, such as the Taiwan Strait crisis and the South China Sea issue. And indices we construct are better at capturing geopolitical conflicts that are closely related to China, which is not fully reflected in geopolitical risk indices constructed based on English newspapers. Furthermore, through VAR analysis, we find that an increase in Chinese geopolitical risk has significant short-term negative impacts on China's financial market and GDP. The results highlight the potential threat of geopolitical risks to China's economic development and social stability and provide forward-looking references for policy-making.

## 1. Introduction

Economic research has pointed out that geopolitical risks have a profound impact on the economic system. From a macro perspective, they not only affect economic growth and financial market stability (Gkillas et al., 2018; Phan et al., 2022; Smales, 2021; Salisu et al., 2023; Liu and Zhang, 2024; Behn et al., 2025; Jia et al., 2025; Lai et al., 2025), but also have multiple effects on the real economy, affecting various aspects such as corporate investment, financing environment and managerial behavior (Lee and Wang, 2021; Lee et al., 2023; Nguyen and Thuy, 2023; Adra et al., 2023; Wang et al., 2024; McQuade et al., 2025; Tang and Huang, 2025; Taran-Bozbay et al., 2025). The construction of geopolitical risk index and related researches are of crucial significance to China. As a country with a huge economic scale, diverse geopolitical interests, China faces geopolitical challenges from multiple directions. At the global level, China is the world's largest trading nation in goods and an important foreign investment powerhouse. The fluctuation of geopolitical risks will have a significant impact on China's overseas investment, energy supply, and international trade. From a domestic perspective, China is currently in a critical period of economic structural adjustment, the uncertainty of geopolitical risk may have a chain reaction on domestic economic stability. An accurate geopolitical risk index can not only effectively evaluate these

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geopolitical risk factors, and make strategic planning in advance, but also provide forward-looking references for macroeconomic policies, reducing the impact of geopolitical risk on the domestic economy.

Caldara and Iacoviello (2022) constructed a universal geopolitical risk index using leading newspapers published in the United States, the United Kingdom, and Canada and made pioneering contributions to the study of measuring geopolitical risk. However, there are certain issues when using this index to measure China's geopolitical risk. Firstly, Caldara and Iacoviello (2022) constructed geopolitical risk indicators using English language newspapers. Although these newspapers focus on global geopolitical events, they may overlook many local factors when applied to China. Bondarenko et al. (2024) pointed out that local factors play an important role in the construction of geopolitical risk indices, and using local newspapers for index construction can better reflect the perception of local entities towards geopolitical risk. Secondly, although Caldara and Iacoviello (2022) developed country specific indicators by adding countries and relevant capitals as keywords in search query. However, these indicators only reflect the views of the three countries from which newspapers are sourced (the United States, the United Kingdom, and Canada) on China's geopolitical risk, and may be inconsistent with the attitudes of local governments and entities towards geopolitical risk in China. This will affect the accuracy of the index in measuring the degree of China's geopolitical risk, as well as the robustness of subsequent conclusions on the relationship between geopolitical risk and China's financial system and real economy.

In this paper, we extend the seminal work by Caldara and Iacoviello (2022) and construct new, robust Chinese geopolitical risk indices using 33 mainland Chinese newspapers. In news media coverage, the Chinese geopolitical risks are broadly categorized into two types. The first type involves directly China-related geopolitical risk events, such as China's territorial or maritime rights disputes with neighboring countries, as well as political conflicts and trade frictions with other nations. The second type comprises non-directly China-related geopolitical events, where China is neither a leading nor a direct participant. Nonetheless, out of a sense of global responsibility, the Chinese public and media actively follow and report on such events. Furthermore, these risks may indirectly affect Chinese geopolitical risk environment through channels such as global trade networks and economic interdependencies. Building on this distinction, we firstly construct the broad-measure China-Total Geopolitical Risk Index, which encompasses both the first and second types of risks. Additionally, to enable a more granular analysis, we further decompose the index and construct the narrow-measure China-Direct Geopolitical Risk Index, which specifically quantifies risks arising from events in which China is directly involved.

Firstly, following Caldara and Iacoviello's method, we construct a wide-scope Chinese geopolitical risk index (China-Total GPR Index). We find that Iraq war, Pelosi's visit to Chinese Taiwan Incident, Russia-Ukraine conflict and the Middle East geopolitical conflicts are all important geopolitical risk events of concern to Chinese media. Secondly, we further disaggregate the China-Total GPR Index by employing the dictionary-based method to identify geopolitical risk events directly involving China, thereby constructing the narrow-measure China-Direct GPR Index. Analysis reveals that events such as Pelosi's visit to Chinese Taiwan Incident, South China Sea Arbitration, and Diaoyu Islands dispute have exerted significant impacts on this index. And compared to China-Total GPR Index, China-Direct GPR Index can more sensitively capture specific geopolitical risk events in China, such as the Taiwan Strait crisis and the South China Sea issue. Although China-Direct GPR Index is more sensitive, both indices we construct are better at capturing geopolitical conflicts that occur in China or are closely related to China, which is not fully reflected in the Geopolitical Risk Index constructed based on English newspapers. In addition, we construct the historical Chinese GPR indices, dating back to 1949, which marking the establishment of the People's Republic of China. We also decompose the China-Total GPR Index, dividing the dictionary into a threat section and an action section, and calculate the two types of indices separately. And further divide them into eight categories to construct specific geopolitical risk indices for War threats, Peace threats, Nuclear threats, Terrorist threats, Military buildup, Beginning of war, Escalation of war, Terrorist acts. We also further explore the geographical structural characteristics of China-Total GPR Index by constructing China's neighboring and non-neighboring geopolitical risk indices, and analyze the regional and national structure of China-Total GPR Index. Then, we examine the validation of the index. We check whether the significant peaks of indices correspond to recognized major geopolitical risk events to confirm that the indices can capture historical perceived geopolitical risk peaks and ensure the plausibility of the index. And we compare China-Total GPR Index with related economic and geopolitical indicators and find that our GPR index is more meaningful and accurate for China. Finally, we estimate a vector autoregressive (VAR) model using our index and macroeconomic variables. And find that an increase of Chinese geopolitical risk has significant negative impact on Chinese stock returns and GDP, indicating the geopolitical uncertainty has important effects on the macroeconomics, which are consistent with other researches.

Our paper contributes to two strands of literature. First, it expands the research on uncertainty index construction, especially Caldara and Iacoviello's (2022) study, and constructs a more suitable index for capturing Chinese geopolitical risk by using local Chinese newspapers. Baker et al. (2016) developed a new index of economic policy uncertainty based on 10 leading newspapers from the United States. Considering the media censorship issue, Huang and Luk (2020) constructed a more robust China EPU index using 10 mainland Chinese newspapers, which can better fit the actual situation in China. Caldara and Iacoviello (2022) developed a new measure of adverse geopolitical events based on main papers from the US, the United Kingdom, and Canada, this index captures important information about geopolitical events that is not reflected in the previous indicators. Following Caldara and Iacoviello's work, many researchers have made improvements to this index. Dieckelmann et al. (2025) constructed a bank level indicator of geopolitical risk by combining the Caldara and Iacoviello (2022) country level indexes and ECB supervisory data. Sethi and Dash (2025) proposed a firm level geopolitical risk index by computing the average of GPR indices sourcing from Caldara and Iacoviello (2022) across subsidiary countries. Szafranek et al. (2025) provided a new geopolitical uncertainty measure by using daily dictionary-based data for over 180 countries. Some researchers also attempted to construct geopolitical risk indices for specific countries using other sources of information. Bondarenko et al. (2024) constructed a geopolitical risk index for Russia relying on local newspaper, and found that the local index can identify geopolitical risk shocks that English-language news sources do not. Wang et al. (2025) used

Baidu Index to measure Taiwan Strait-related geopolitical risk in Chinese mainland.

Indexes such as Caldara and Iacoviello (2022), constructed from English-language newspapers, may fail to capture China-specific risk narratives, including those surrounding Taiwan Strait issue, the South China Sea issue, and Chinese interpretations of US-China trade tensions, resulting in cognitive bias and decontextualization. Alternative measures based on Baidu Index are susceptible to sudden media events and fail to differentiate sub-dimensions such as military conflicts, trade disputes and so on. Our paper develops the first Chinese geopolitical risk index built from mainstream Chinese newspaper text, thereby addressing gaps in cognitive fit, historical coverage, and semantic precision of existing measures, and providing a measurement tool more aligned with Chinese institutional context for understanding geopolitical risk perceptions.

Second, our paper deepens the understanding of the sources of China's geopolitical risk, and provides inspiration for further exploration of the impact of China's geopolitical risk on the real economy and financial system. Some researchers explore the impact of geopolitical risks on macroeconomics. By applying the TVP-SV-VAR approach, Jia et al. (2025) found that geopolitical risks have a significant impact on metal prices and global supply chain pressure, and intensifying economic uncertainty. Caldara et al. (2026) found that geopolitical risks foreshadow high inflation, and higher geopolitical risks also relate to higher inflation uncertainty. Chang et al. (2025) found geopolitical risks greatly weaken the resilience of global supply chains. There are also some literature exploring the impact of geopolitical risks on financial markets. Some literature suggests that geopolitical risks can disrupt financial stability (Gkillas et al., 2018; Phan et al., 2022; Salisu et al., 2023; Behn et al., 2025). Some literature studies the impact of geopolitical risks on the stock market. Lai et al. (2025) found that GPR can significantly reduce stock price informativeness and proposed herding behavior as a potential mechanism. Neto (2025) found that adverse geopolitical events significantly amplify the far right tail positive returns of the ten major European and U.S. defense companies. There are also some studies that focus on the impact of geopolitical risks on other markets such as futures markets and cross-border markets (Dai et al., 2025; Niepmann and Shen, 2025). Some researchers are also concerned about the impact of geopolitical risks on microeconomic entities such as companies. Some studies focus on the impact of geopolitical risks on corporate investment decisions (Lee and Wang, 2021; Wang et al., 2024; McQuade et al., 2025; Wang and Wang, 2025). Meanwhile, geopolitical risks worsen the financing environment for businesses (Lee et al., 2023; Tang and Huang, 2025). Geopolitical risks also have impact on management decisions. Taran-Bozbay et al. (2025) found that GPR significantly increases earnings management in companies from low- and middle-income countries. Findings of Su (2025) suggest that geopolitical risks significantly exacerbate corporate violations, driven by weakened financial regulation, increased firm-specific idiosyncratic risk.

The constructed Chinese geopolitical risk index offers a measure more aligned with Chinese institutional logic, providing a foundation for research on how geopolitical risks transmit to the macroeconomy, financial intermediaries, and micro-level firms within Chinese institutional context. Moreover, comparative analysis between this index and those constructed by Caldara and Iacoviello (2022) and others can help differentiate between global commonalities and China-specific characteristics in geopolitical risk research. And in this paper, we not only deeply analyze the reasons for the fluctuations in Chinese GPR Index, but also conduct VAR analysis to explore the impact of the China's geopolitical risk on national production, employment, and stock market returns using the index we construct, in order to illustrate the impact of geopolitical risk on the real economy and financial market.

In the rest of the paper, we first describe the construction of the Chinese GPR index, and divide the index into different categories to show the specific types of geopolitical risk. Next, we check the validation of the Chinese GPR index. Then, we conduct a VAR analysis to access the real effect of geopolitical uncertainty on the Chinese economy. Finally, we conclude our paper.

## 2. Measuring GPR in China<sup>2</sup>

### 2.1. Construction of Chinese GPR indices

Following Caldara and Iacoviello's work, we construct our Chinese geopolitical risk indices by using a dictionary-based method. To construct the indices, we count the number of articles relating to geopolitical risk events each month, then divide it by the total number of published articles in that month from our selected Chinese leading newspapers. For the convenience of comparison and analysis, the mean of the index during the sample period is normalized to 100.

Following Wang et al. (2025), our sample contains articles published in the 33 leading local financial and comprehensive newspapers in China. Based on the main themes of the newspapers, we select four types of newspapers: securities, economics, pan economics, and comprehensive newspapers. Securities newspapers mainly disclose information about the Chinese capital market. Economic newspapers have a broader scope, including all news related to the economy. Pan economic newspapers are also related to the economy, but limited to a smaller topic such as real estate. Comprehensive newspapers report various comprehensive news on policies and various topics. Multiple sources of newspaper text information can prevent political risk events from being missed or lost, ensuring the comprehensiveness of the information. The specific names of newspapers are shown in Appendix A.1. The recent Chinese GPR indices are constructed using these 33 newspapers, which start in 2000 and ends in 2024. Considering the establishment time of other newspapers, we construct the historical Chinese GPR indices, dating back to 1949, only using *People's Daily*.

We use a dictionary-based method to construct our Chinese GPR indices. Firstly, we construct a Chinese geopolitical risk dictionary in Appendix A.2 referring to Caldara and Iacoviello's definition and dictionary of geopolitical risk. We further improve the dictionary to make it more applicable to the Chinese context (Caldara and Iacoviello, 2022). Our dictionary contains topic sets and threat/act sets.

<sup>2</sup> The Chinese GPR indices data can be found on the website of Daoping Wang (<https://wangdaoping.pages.dev/>) or by contacting the authors.

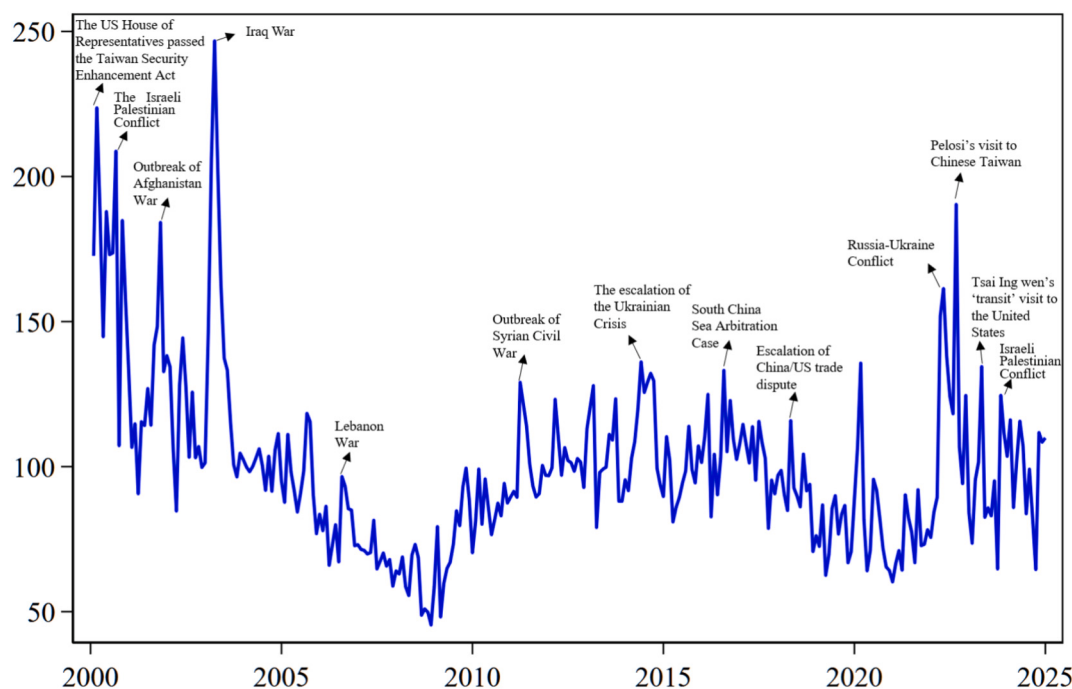


Fig. 1. The Evolution Trend of the recent China-Total Geopolitical Risk Index.

The topic sets systematically compile and include keywords related to the core of geopolitical risk, which cover six categories of topics, namely war, peace, nuclear, terrorism, military and conflict. The threat/act sets capture the state and dynamics of geopolitical risk, where the threat sets directly express geopolitical threats or negative states, and the action sets describe specific geopolitical actions. Specifically, the threat sets contain words for war, peace, nuclear and terrorism topics and the act sets contain words for military, war, conflict and terrorism topics. The detailed words or phrases in each set are displayed in Appendix A.2. As mentioned in the introduction, the geopolitical risk index constructed based on the above dictionary is the geopolitical risk index China concerns, whose keywords include terms for geopolitical risk events directly related to China, such as the Korean War, the South China Sea dispute, and the Taiwan Strait crisis. At the same time, since Chinese newspaper media also pay attention to and report on some geopolitical risk events not directly related to China, such as 9/11 incident, the India Pakistan conflict and the Russia-Ukraine conflict. The index constructed based on the above lexicon also incorporates these events. Therefore, to extract a geopolitical risk index directly related to China and conduct a comparative analysis with the geopolitical risk index of China's concerns, we further constructed a lexicon of China's direct geopolitical risk events, which includes terms that can identify geopolitical risk events in which China has participated directly as the main actor from 1949 to the present. The detailed words or phrases of this lexicon are displayed in Appendix A.3.

Apart from geopolitical events directly related to China, those in other countries may also impact China's economy, society, and other aspects. Therefore, we first construct a broad-scope geopolitical risk index that China is concerned about (China-Total Geopolitical Risk Index). We search for articles that contain either two words, one topic word and one its corresponding threat/act word in the same sentence. And we count the number of these articles each month, then divide it by the total number of published articles from our selected newspapers in that month to get the China-Total Geopolitical Risk Index. And for the recent GPR index, we normalize the mean of the index to 100 throughout the 2000–2024 period. And for the historical GPR index, we normalize the mean of the index to 100 throughout the 1949–2024 period. Then, to isolate the impact of geopolitical events directly related to China from the index, we further decompose the China-Total Geopolitical Risk Index and construct a geopolitical risk index directly related to China (China-Direct Geopolitical Risk Index). Specifically, we further include the lexicon of China geopolitical risk events, i.e., we search for entries containing three words in the same sentence, one topic word, one corresponding threat/action word, and one Chinese geopolitical risk event word. The rest is consistent with the construction of the China-Total Geopolitical Risk Index. Likewise, using entries containing topic words and corresponding threat/action words but not containing Chinese geopolitical risk event words, we can construct China-Non-Direct Geopolitical Risk Index. To enable direct comparison with the China-Total GPR Index, the China-Direct GPR Index, the China-Non-Direct GPR Index, and the neighboring and non-neighboring geopolitical risk indices constructed in Section 2.7 are normalized using the mean of the China-Total GPR Index as the scaling factor. For all other sub-indices constructed in this paper, including the threat and act indices, the eight component indices, and the region- and country-specific indices, the mean of each respective index during the sample period is independently normalized to 100.

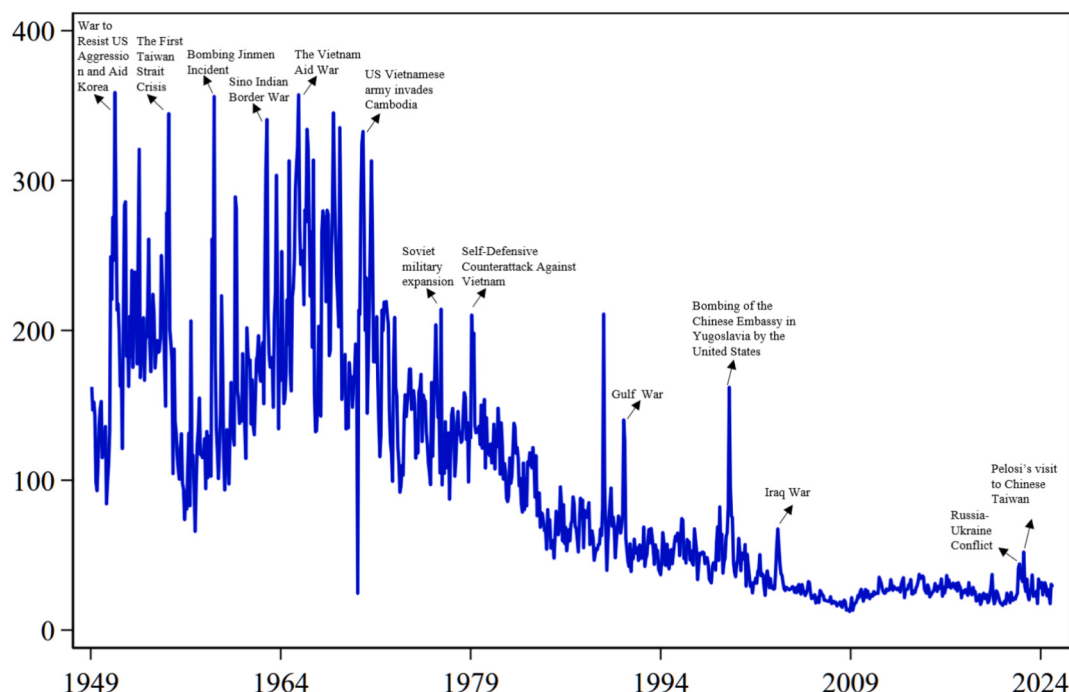


Fig. 2. The Evolution Trend of the historical China-Total Geopolitical Risk Index

## 2.2. The China-total geopolitical risk index

The evolution trend of broad-scope China-Total Geopolitical Risk Index is shown in Fig. 1. The geopolitical risk China is concerned about between 2000 and 2025 exhibits phased characteristics. Before 2004, the geopolitical risk index represents a high level and experienced multiple extreme peaks. During this period, the armed conflicts in the Middle East were incessant. Terrorist forces were also highly active during this period. The occurrence of the 9/11 attacks further triggered the Iraq War, causing the index to reach its highest point in March 2003; From 2005 to 2009, the index shows an overall downward trend and reaches a historical low in 2007. On the international front, the development of economic globalization led to relatively stable relations among major powers. Meanwhile, regional conflicts were also relatively mitigated during this period. Although the Middle East region has many destabilizing factors, no large-scale conflicts emerged; From 2010 to 2020, the index level has increased but remains relatively stable overall. Although localized surges triggered by events such as the Syria crisis, the South China Sea tensions and the China/US trade dispute, the overall index fluctuates around the long-term average of 100 and doesn't show extreme peaks. It is not until the outbreak of the Russia-Ukraine conflict and the Pelosi incident in 2022 that the index has once again reaches extreme peaks.

To trace historical geopolitical risk in China, we further construct the historical Chinese geopolitical risk index starting from 1949, that is, from the founding of the People's Republic of China. However, most Chinese newspapers were established after China's reform and opening up (1978), so when constructing the historical geopolitical risk index, we only used news articles sourced from *People's Daily*.

Fig. 2 shows the trend of the historical China-Total Geopolitical Risk Index. Overall, China-Total Geopolitical Risk Index represents significant fluctuations in the early days of the founding of the People's Republic of China, followed by a downward trend, and remains at a stable low level after 2003. During 1949–1970 period, China faced a complex and severe international political situation. The world was in the Cold War structure during this period. There was a global confrontation between the capitalist camp led by the United States and the socialist camp led by the Soviet Union. Wars such as the War to Aid Korea and the War to Aid Vietnam caused China to suffer heavy casualties and economic losses. At the same time, China also had maritime rights and interests disputes with some neighboring countries. Domestically, in the early days of the founding of the People's Republic of China, the economic foundation was weak and there were many weak links in military defense, which also brought adverse factors to China's geopolitics; During 1970–2003 period, the index fluctuates, but overall shows a downward trend. During this period, the international situation saw the gradual disintegration of the Cold War pattern and the accelerated development of world multi-polarization. China seized this opportunity to actively promote friendly cooperation with countries around the world and successfully resolved some historical issues and border disputes with neighboring countries, effectively alleviating the geopolitical tensions. However, this period was not without challenges. For example, the Gulf War accelerated the end of the bipolar pattern, while the Iraq War cast an uncertain shadow over the global economy, which had a certain impact on China's development and received widespread attention from Chinese media. After 2003, the index remains at a stable low level. China actively participated in regional cooperation during this period, which enhanced mutual trust with neighboring countries, and increased China's influence worldwide. What's more, the comprehensive reform and opening up

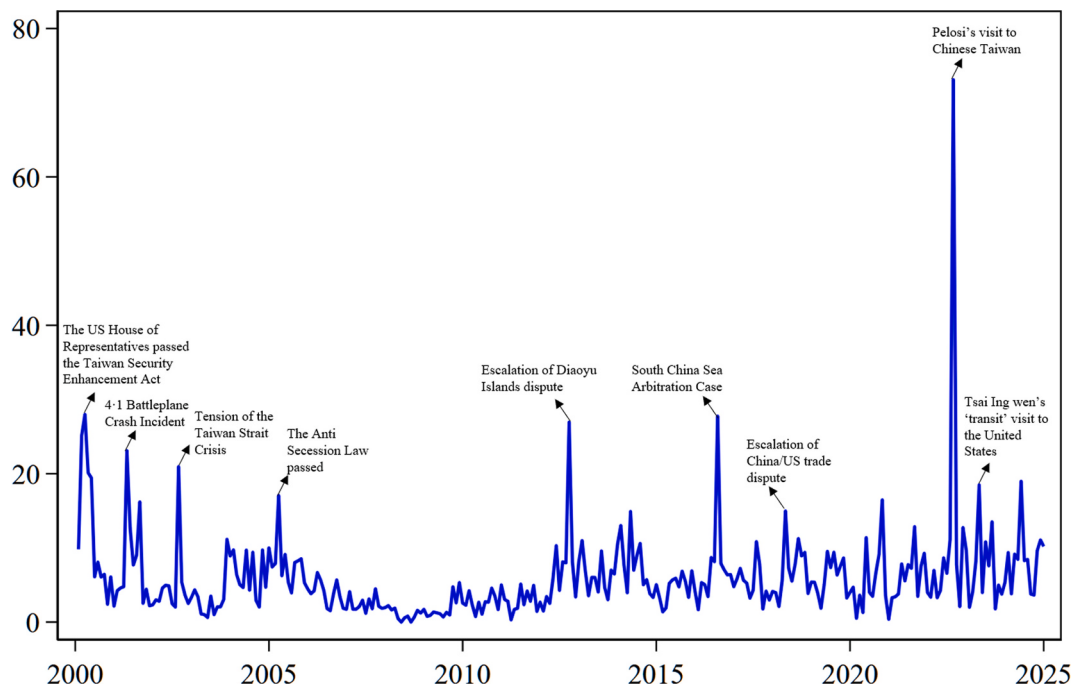


Fig. 3. The Evolution Trend of the recent China-Direct Geopolitical Risk Index.

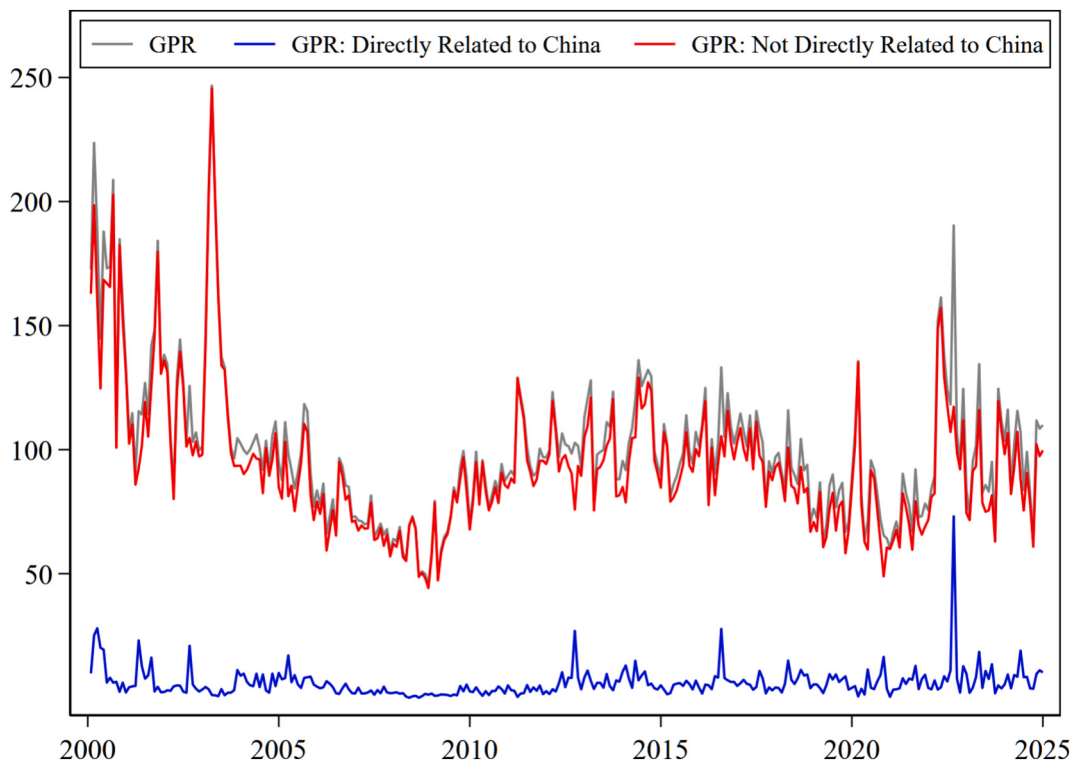


Fig. 4. The Comparison among the recent China-Total Geopolitical Risk Index (Gray), China-Direct Geopolitical Risk Index (Blue) and China-Non-Direct Geopolitical Risk Index (Red). (For interpretation of the references to colour in this figure legend, the reader is referred to the web version of this article.)

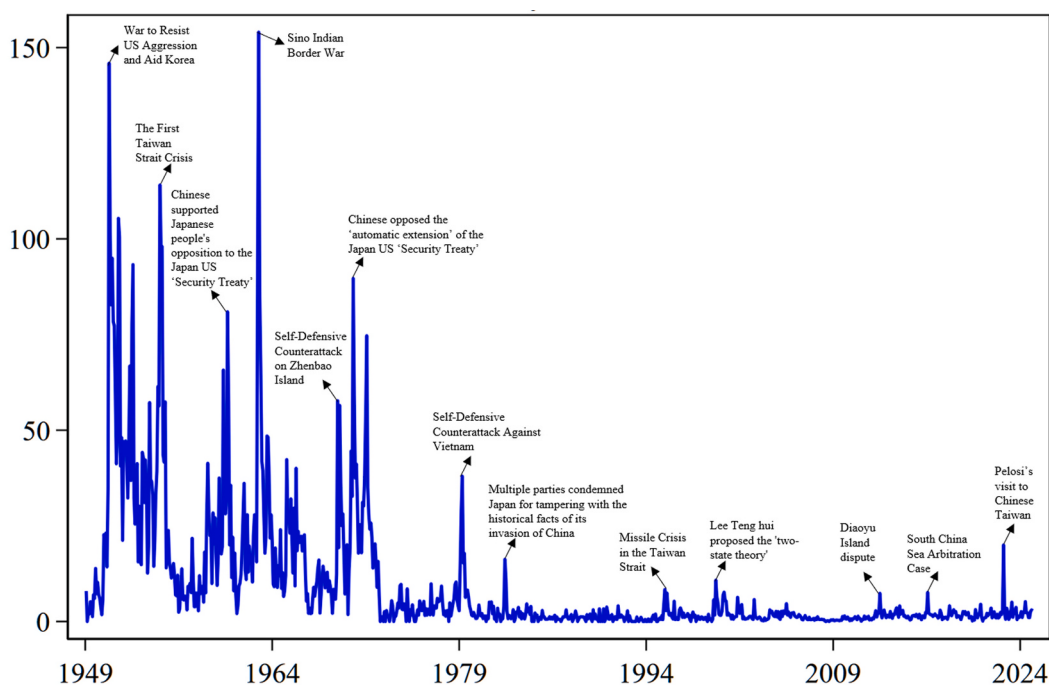


Fig. 5. The Evolution Trend of the historical China-Direct Geopolitical Risk Index.

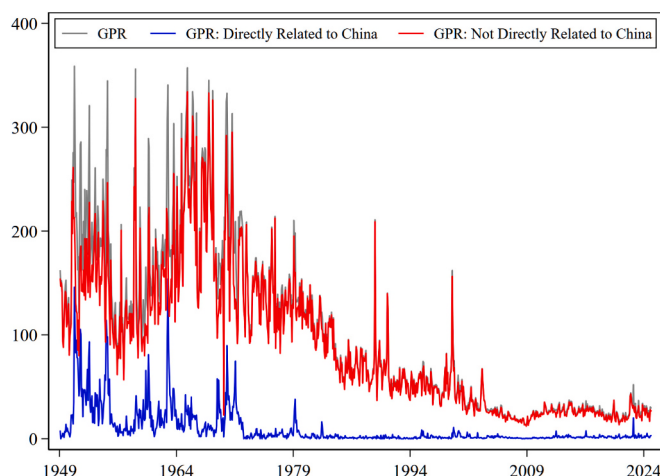
have also significantly improved Chinese economic level and military strength, providing security for the geopolitical situation during this period. However, the outbreak of the Russia-Ukraine conflict has brought new global geopolitical risk. And the Pelosi's visit to Chinese Taiwan Incident also brought uncertainty to the situation in the Taiwan Strait for China.

### 2.3. The Narrow-scope China-direct geopolitical risk index

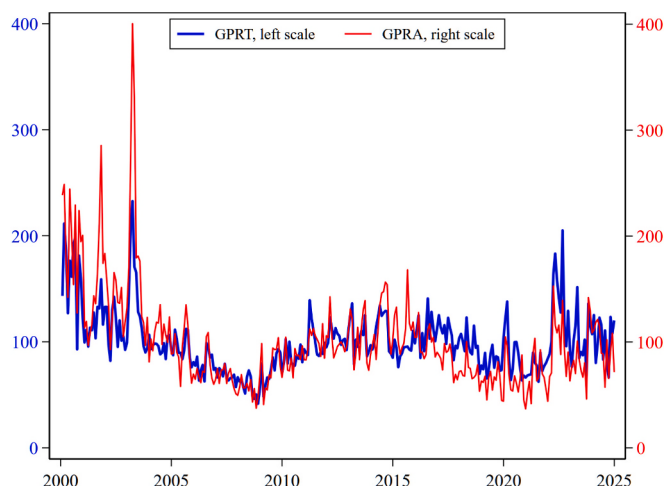
In this section, we present the evolution trend of China's direct geopolitical risk indices and compare with the China's total geopolitical risk index. Fig. 3 shows the evolution trend of the recent China Direct Geopolitical Risk Index. The recent narrow-scope China-Direct Geopolitical Risk Index shows overall low-level stability but features localized peaks. During the period from 2001 to 2005, China-U.S. relations exhibited a complex interplay of cooperation and friction. Notably, the United States significantly increased arms sales to Chinese Taiwan during this time, which markedly heightened structural tensions in the Taiwan Strait. Events such as the U.S. House of Representatives passing the Taiwan Security Enhancement Act and the 4.1 Battleplane Crash Incident drive Chinese direct geopolitical risk to localized peaks. After 2005, the index remains at a low level and even approaches zero at some point. It was not until after 2011 that issues such as the escalation of the Diaoyu Islands dispute, South China Sea tensions, and China-U.S. trade friction caused minor fluctuations in Chinese direct geopolitical risk, though overall risk remained relatively low. However, the Pelosi's visit to Taiwan incident in 2022 rapidly pushes the index to a high level. This incident seriously violated the One-China principle and the three China-US joint communiques, impacting the bilateral relationship between China and the U.S. and exacerbating Chinese direct geopolitical risk. The Chinese government expressed strong opposition to the event and implemented multiple countermeasures.

Furthermore, a comprehensive comparison of the China-Total Geopolitical Risk Index, China-Direct Geopolitical Risk Index, and China-Non-Direct Geopolitical Risk Index reveals that the trends and levels of the China-Total Geopolitical Risk Index and the China-Non-Direct Geopolitical Risk Index are largely aligned, while the level of the China-Direct Geopolitical Risk Index is significantly lower than the other two, as Fig. 4 shows. This indicates that over the past two decades, geopolitical risk events not directly related to China have constituted the majority of China's media focus. To some extent, this reflects that Chinese direct geopolitical risk level has been lower than the global average since 2000. After 2000, the world experienced multiple major shocks such as the "9/11" incident, the Iraq War, and the Russia-Ukraine War. Many regions (e.g., the Middle East, America, Europe) were directly involved in high-intensity geopolitical conflicts, with a frequency and intensity far exceeding those in China's surrounding areas. And the relatively stable direct geopolitical risk during this period is attributed to China's dual efforts in both foreign strategy and domestic development. In terms of diplomacy, China widely conducted friendly cooperation with countries around the world. Through initiatives such as the Belt and Road, China has strengthened its economic ties and political mutual trust with the countries along the routes, effectively easing geopolitical tensions. Domestically, China's economy maintained steady growth, and its comprehensive national strength significantly enhanced, providing a solid material basis for dealing with geopolitical risk events.

Then we observe the historical China-Direct Geopolitical Risk Index. As Fig. 5 shows, before 1970, similar with the China-Total Geopolitical Risk Index, the index represents relatively large fluctuations, but the boundaries between peaks and valleys of the



**Fig. 6.** The Comparison among the historical China-Total Geopolitical Risk Index (Gray), China-Direct Geopolitical Risk Index (Blue) and China-Non-Direct Geopolitical Risk Index (Red) (For interpretation of the references to colour in this figure legend, the reader is referred to the web version of this article.)



**Fig. 7.** China-Total Geopolitical Risk Threat Index and the China-Total Geopolitical Risk Action Index

China-Direct Geopolitical Risk Index are clearer, indicating that the China-Direct Geopolitical Risk Index is more events-specific. Unlike the China-Total Geopolitical Risk Index, after 1970, the China-Direct Geopolitical Risk Index doesn't go through a decline but directly returns to a stable low level (although individual geopolitical events cause the index to rise briefly), indicating that after 1970, geopolitical risk events directly related to China occurred at a lower frequency and had limited impact. In terms of event types, since the founding of the country, geopolitical events directly related to China mainly include the War to Resist U.S. Aggression and Aid Korea, the Taiwan Strait crises, the South China Sea issue, the Sino-Indian and the Sino-Vietnamese border conflict. Comparing the historical China-Total Geopolitical Risk Index, China-Direct Geopolitical Risk Index, and China-Non-Direct Geopolitical Risk Index, we can get a similar conclusion as before. Chinese direct geopolitical risk is lower than the global average, and the types of geopolitical risk events faced globally are more numerous and complex, while the types of risk faced directly by China are concentrated, with higher correlation among events. (See Fig. 6.)

Overall, our total geopolitical risk indices are capable of capturing significant geopolitical risk events on a global scale. However, the direct geopolitical risk indices are better at capturing geopolitical conflicts closely related to China, such as the Taiwan Strait Crisis, China-Indian border conflict and China-Vietnam border conflict, which are not reflected in the index of [Caldara and Iacoviello \(2022\)](#). And the results also demonstrate that domestic media have a higher sensitivity to the specific geopolitical risks faced locally, which in turn supports the rationale of this paper in constructing Chinese geopolitical risk indices based on local Chinese newspapers rather than English-language based newspapers.

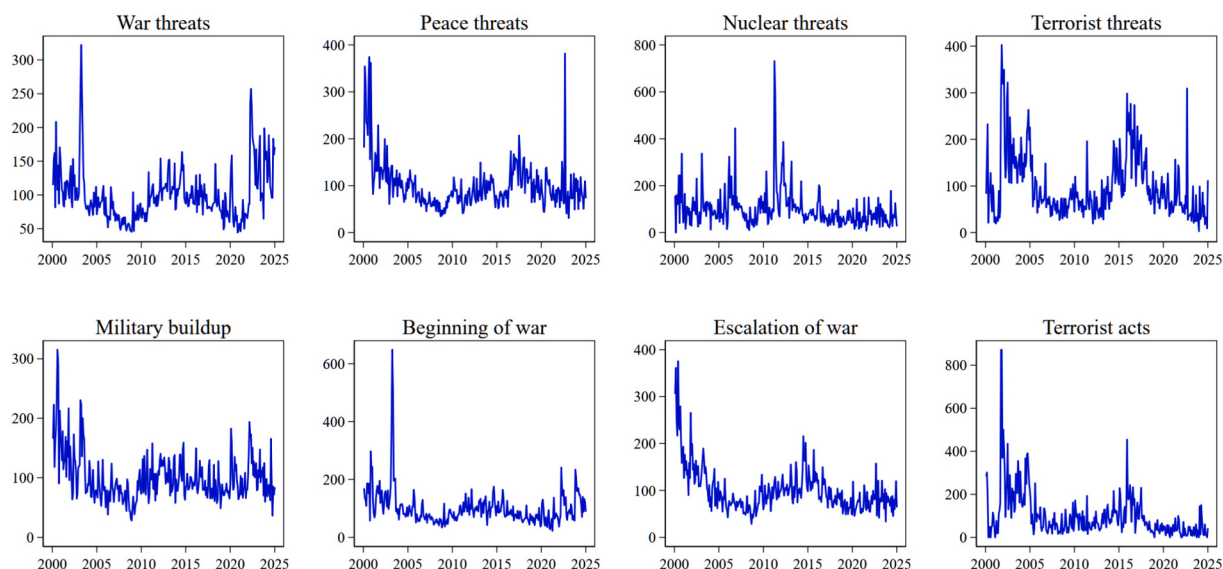


Fig. 8. Different Components of China-Total Geopolitical Risk Index

#### 2.4. Geopolitical threats and geopolitical acts

The dictionary used to construct the Chinese GPR Indices contains both a set of threat words that express geopolitical threat or negative states, and a set of specific geopolitical action words. The former focuses more on the threat, planning of geopolitical actions, or concerns about the occurrence of future geopolitical conflicts, while the latter focus more on the description of actions in geopolitical conflict events. Therefore, to capture the differences between the threat and act patterns in constructing the indices, we decompose the China-Total Geopolitical Risk Index and separately construct the China-Total Geopolitical Risk Threat Index (GPRT Index) and the China-Total Geopolitical Risk Action Index (GPRA Index). The former index uses words contained in 'War threat', 'Nuclear threat', 'Terrorism threat' and 'Peace threat' sets, and the latter uses words contained in 'Military buildup', 'Beginning of war', 'Escalation of conflict' and 'Terrorism act' sets. The construction method is consistent with the description in [section 2.1](#).

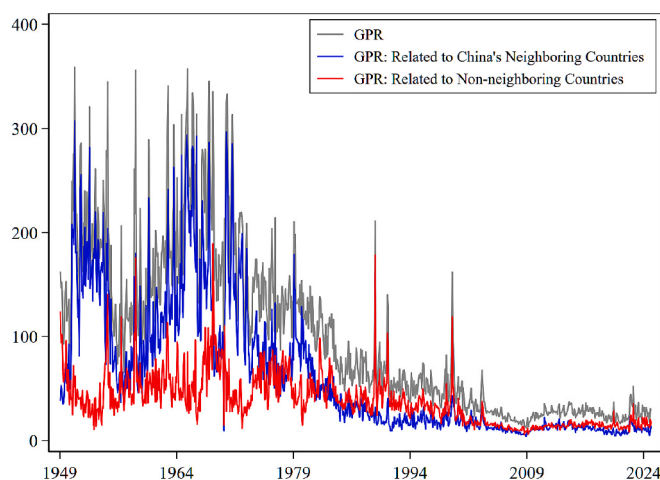
[Fig. 7](#) illustrates the trends of the Chinese GPRT Index and GPRA Index. While the overall trends of the two indices are generally consistent, there are significant differences in many of their peak values, which reflects the different sensitivities of the GPRT and GPRA indices to geopolitical risk events. During the Israeli-Palestinian Conflict, the Afghanistan War and the Iraq War, the GPRA index is higher than the GPRT index. Both of these events involved actual warfare or violent conflicts, and the actual conflicts were resolved within a relatively short period of time. In contrast, during events such as South China Sea Arbitration, the China/US trade dispute, and Pelosi's visit to Chinese Taiwan, the GPRT index is higher than the GPRA index. Most of these incidents did not result in actual armed or violent conflicts, but may indicate potential threat of further conflicts or wars. And these events often have phased and complex nature, and last longer. In terms of time range, before 2015, the Chinese geopolitical risk index is mainly based on GPRA, while after 2015, it is mainly based on GPRT. Before 2015, China faced a more conflicting geopolitical risk environment with frequent direct military frictions. After 2015, the risk of direct war has decreased, and the risk has transformed into threatening, mainly through strategic games, trade frictions, and maritime disputes.

In summary, the GPRT Index and the GPRA Index derived from the China-Total Geopolitical Risk Index are capable of capturing different types of geopolitical risk events. The GPRT Index is more adept at capturing events that evolve over the long term or those that do not involve severe armed conflicts. In contrast, the GPRA Index is better suited to capturing events characterized by short-term armed conflicts, which are often unpredictable.

#### 2.5. Different components of China-total geopolitical risk index

To gain a more in-depth understanding of the driving factors behind global geopolitical risk environment China is concerned about, we further construct eight sub-indices of China-Total Geopolitical Risk Index. When building the geopolitical risk Chinese dictionary, we categorize phrases into eight specific types based on the core issues of geopolitical risk events and the manifestations of the risk, that is 'War threat', 'Nuclear threat', 'Terrorism threat', 'Peace threat', 'Military buildup', 'Beginning of war', 'Escalation of conflict' and 'Terrorism act'. Based on the words covered by each sub-item, we recalculate the eight sub-indices using the same method in [section 2.1](#).

[Fig. 8](#) shows the trends of each sub-index from 2000 to the present. The war threat sub-index indicates that war threat peaked around the 2003 Iraq War and then returned to a stable level, but the Russia-Ukraine conflict causes the war threat index to rise rapidly again. The peace threat sub-index is high at the beginning of 2000 due to frequent local wars and violent conflicts and then fluctuates



**Fig. 9.** Comparison among China-Total Geopolitical Risk Index (Gray), China-Neighboring Geopolitical Risk Index (Blue) and China-Non-neighboring Geopolitical Risk Index (Red) (For interpretation of the references to colour in this figure legend, the reader is referred to the web version of this article.)

around the mean. In 2022, Pelosi ignored China's repeated solemn warnings and insisted on visiting Chinese Taiwan, which seriously damaged the peace and stability of the Taiwan Strait. The peace threat index also reached an extreme peak during this period. The nuclear threat index has local fluctuations before 2011, with long-term debates on North Korea's nuclear issues in the early 21st century, and the 2011 Fukushima nuclear power plant leak pushes the nuclear threat index to a peak, after which the index remains at a stable low point. The terrorism threat index shows a phased cyclical characteristic, with the index at an extremely high peak around the 9/11 event, then the terrorism threat index decreases, but starting from 2015, the terrorism threat index begins to rise again, during which the threat from Al-Qaeda and ISIS spread, and the international community faced a severe challenge from terrorism. The outbreak and escalation of the Russia-Ukraine conflict and the Palestinian Israeli conflict in 2022 also further triggered fears of terrorist attacks. The military buildup index trend is similar to the war threat index trend, but the peak appears slightly earlier than that of war threat index, which may convey that when military preparedness is intensified, it often makes the public feel that war threat is increasing. The trend of the war beginning action index is also very similar to the war threat index, but the Russia-Ukraine conflict does not bring a significant increase in the war beginning index, because the Russia-Ukraine conflict does not belong to the concept of war, so it is not possible to clearly define the start time of the war. The war escalation index focuses more on long-term evolving geopolitical conflict events, such as after 9.11 incident, when the index rises significantly. The terrorism action index has a similar trend to the terrorism threat index, except for the period around 2022, but the terrorism threat index returns more slowly, indicating that after the end of terrorist actions, the panic they bring to the public continues to spread.

Overall, the trends of war threat and terrorism threat align most closely with the China-Total Geopolitical Risk Index. This indicates that the global geopolitical risk environment faced by China is primarily dominated by the negative impacts triggered by wars and terrorist activities. In recent years, the upward trend in war threat and military buildup indices suggests that geopolitical conflicts such as the Russia-Ukraine conflict and the escalation of the Middle East situation have also posed certain challenges.

## 2.6. The geographic structure of Chinese geopolitical risk

To further explore the geographical structure of the global geopolitical risk China is concerned about, we construct three geographically specific measures of geopolitical risk by counting joint occurrences in newspapers of geopolitical terms and the relevant names of the countries. For instance, to measure the Japan relevant Chinese geopolitical risks, which means geopolitical risks related to Japan of concern to China, we count the share of articles that meet the criterion for construction in original China-Total Geopolitical Risk Index and that contain the words "Japan", then we use the same standardization method. The geographical disaggregation can help us identify which regions or countries are the main sources of geopolitical risk that China faces or is concerned about, thus enabling us to have a more structured and systematic understanding of Chinese geopolitical risk.

### 2.6.1. China's neighboring countries and non-neighboring countries

Firstly, we constructed China-Neighboring Geopolitical Risk Index and China-Non-neighboring Geopolitical Risk Index. When constructing China-Neighboring Geopolitical Risk Index, we search for geopolitical risk articles that include the names of China's 14 land-based neighbors and 6 maritime neighbors (North Korea, Russia, Mongolia, Kazakhstan, Kyrgyzstan, Tajikistan, Afghanistan, Pakistan, India, Nepal, Bhutan, Myanmar, Laos, Vietnam, South Korea, Japan, Philippines, Brunei, Malaysia, and Indonesia). Geopolitical risk articles containing names of other countries are used to construct China-Non-neighboring Geopolitical Risk Index.

Fig. 9 shows the comparison among China-Total Geopolitical Risk Index, China-Neighboring Geopolitical Risk Index and China-Non-neighboring Geopolitical Risk Index. It can be seen that before the 1980s, the global geopolitical risk environment faced by

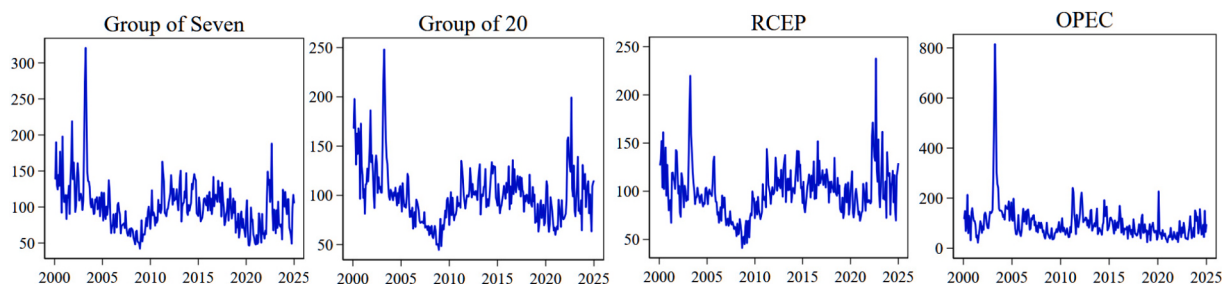


Fig. 10. Regional Structure of China-Total Geopolitical Risk Index

China was mainly contributed by geopolitical risk events related to Chinese neighboring countries. During this period, China engaged in the Korean War, and there were frequent border conflicts between China and India, as well as between China and Vietnam. After the 1980s, it was mainly contributed by geopolitical risk events related to non neighboring countries. During this period, against the backdrop of China's independent foreign policy of peace and the significant increase in national strength brought by reform and opening up, the friction between China and neighboring countries was alleviated. However, during this period, wars and armed conflicts such as the Afghanistan War, the Iraq War, and the Israeli Palestinian Conflict occurred frequently. At the same time, comparing with the previous China-Direct Geopolitical Risk Index, China-Neighboring Geopolitical Risk Index is most similar to that, indicating that China-Neighboring Geopolitical Risk Index can better capture geopolitical risk events directly related to China, which is also consistent with intuitive expectations.

### 2.6.2. Regional structure of Chinese geopolitical risk

Then, we examine the regional structure of China-Total GPR Index, which capture geopolitical risks related to specific kinds of regions that China concerns. Specifically, In the process of filtering geopolitical risk articles, we include the names of member countries from some key regional organizations and construct Region-Related GPR Indices using the methodology outlined in Section 2.1. Regarding the selection of regional organizations, we have chosen the Group of Seven (G7) based on political considerations, and the Group of 20 (G20), Regional Comprehensive Economic Partnership (RCEP), and Organization of the Petroleum Exporting Countries (OPEC) based on economic considerations. This structured approach allows us to systematically uncover the primary geopolitical pressures China encounters in distinct realms, including political-system divergence, global economic situation, and energy security.

Fig. 10 illustrates the regional structure of China-Total Geopolitical Risk Index (Region-Related GPR Indices). The G7 is an organization comprising seven industrialized nations, the United States, Germany, the United Kingdom, France, Italy, Canada, and Japan, whose members are grounded in Western democratic values. The regional index for G7 largely mirrors the trend of China-Total GPR Index but exhibits heightened sensitivity to geopolitical events predominantly led or significantly involving G7 members, such as the Iraq War and the Syrian crisis. Conversely, its capacity to capture events centered on China-specific geopolitical issues is comparatively weaker than that of China-Total GPR Index. The G20 serves as the premier forum for international economic cooperation, encompassing member states that represent approximately two-thirds of the global population, 85% of global GDP, and 80% of world trade. Owing to its broad and inclusive composition, the trend of its corresponding regional index aligns most closely with that of China-Total GPR Index. The RCEP consists of 15 member states: China, Japan, South Korea, Australia, New Zealand, and the ten member states of ASEAN. While the index's trend also parallels the China-Total GPR Index, it is more adept at capturing events related to the Taiwan Strait crisis and the South China Sea issues. This high sensitivity is attributed to the geographical location factors of its main member countries. The OPEC is composed of major oil-producing nations across Asia, Africa, and Latin America, with its core mandate being to coordinate and unify petroleum policies among its members to maintain stability in international oil prices. Consequently, the index is more effective in identifying geopolitical events that impact global oil supply or price stability, such as the Iraq War, the Libya War, and the Syrian crisis.

In summary, the analysis of the regional structure of China's geopolitical risk reveals that political conflicts and geographic boundary problem are the primary drivers of changes in geopolitical risk. In addition, oil and energy security concerns tend to amplify the risk during specific periods or under particular circumstances.

### 2.6.3. National structure of Chinese geopolitical risk

We further explore national structure of the global geopolitical risk China is concerned about. In the process of filtering articles on geopolitical risk, we include the names of major countries as keyword filtering criteria, in order to build geopolitical risk indices of other countries that China is concerned about (Country-Related GPR Indices). This can help us identify which countries' geopolitical risks are of greatest concern to China or have the greatest impact on China.

Fig. 11 shows the national structure of Chinese Geopolitical Risk. These country level indices can well capture the geopolitical conflict events that occur in the country itself, as well as those closely related to the country's interests. For example, during the Ethiopia-Eritrea war at the beginning of 2000, as one of the warring parties, Ethiopia's geopolitical index is significantly higher than that of other countries. Similarly, during the 9/11 event and the Russia-Ukraine conflict, the geopolitical risk indices of the United States and Russia rose significantly, respectively. Many countries participated in or were deeply affected by the Iraq War, with the

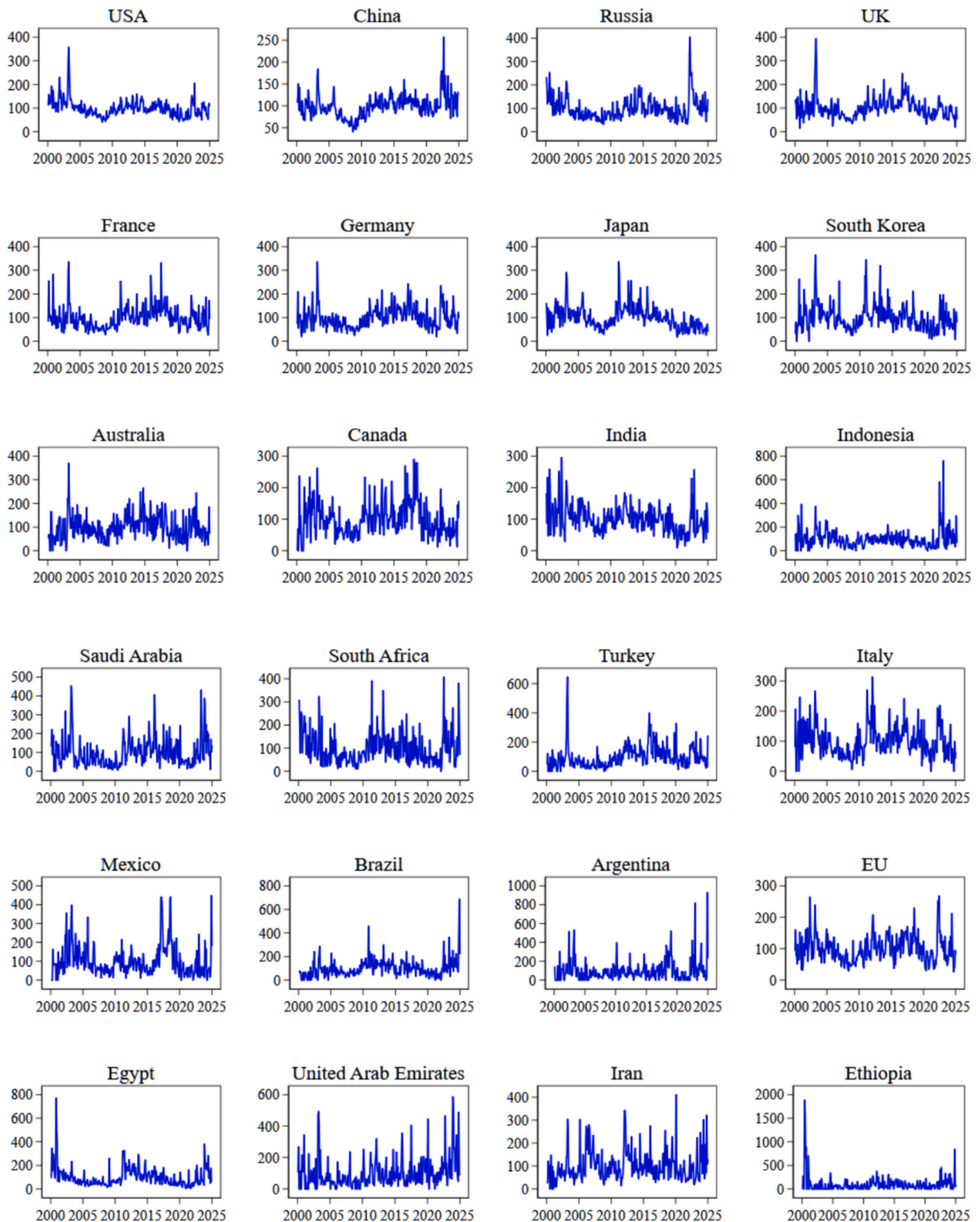


Fig. 11. National Structure of China-Total Geopolitical Risk Index

United States, as the initiator of the war, seeing a significant increase in its geopolitical risk index. The United Kingdom and Australia, as important allies of the United States, participated in the war, while France and Germany were the main forces opposing the U.S. military intervention in Iraq, thus their geopolitical risk indices also rise significantly during this period. And As neighbors of Iraq, the

**Table 1**  
Largest Geopolitical Shocks to China-Total Geopolitical Risk Index.

| Panel A. Shocks to China-Total Geopolitical Risk Index                          |      |       |       |                                                                                                                                                                                     |
|---------------------------------------------------------------------------------|------|-------|-------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Month                                                                           | Rank | GPR   | Shock | Event                                                                                                                                                                               |
| 2000 m5                                                                         | 10   | 187.9 | 40.0  | The Israeli military withdrew from the “safe zone” and ended its 22 year occupation of southern Lebanon; Ethiopia announced the end of Ethiopia Eritrea War                         |
| 2000 m8                                                                         | 7    | 208.7 | 49.4  | The tense situation between Palestine and Israel continued to brew                                                                                                                  |
| 2000 m10                                                                        | 5    | 184.8 | 61.3  | The escalation of the Israeli Palestinian conflict                                                                                                                                  |
| 2001 m10                                                                        | 6    | 184.2 | 50.6  | The US military launched attacks on terrorist organizations and Taliban targets within Afghanistan, leading to the outbreak of the Afghan War                                       |
| 2003 m1                                                                         | 9    | 145.9 | 45.0  | The United Nations weapons verification team submitted a report on Iraq's weapons verification issues to the Security Council                                                       |
| 2003 m2                                                                         | 2    | 206.1 | 79.9  | The United States intended to promote the Iraq War on the grounds that Iraq possessed lethal chemical weapons                                                                       |
| 2003 m3                                                                         | 1    | 246.7 | 80.7  | The Iraq War broke out                                                                                                                                                              |
| 2011 m3                                                                         | 11   | 129.1 | 37.7  | Outbreak of Syrian Civil War                                                                                                                                                        |
| 2020 m2                                                                         | 13   | 135.7 | 36.5  | Large scale epidemic of COVID-19                                                                                                                                                    |
| 2022 m3                                                                         | 4    | 151.9 | 62.9  | Russia launched comprehensive attack on Ukraine                                                                                                                                     |
| 2022 m4                                                                         | 15   | 161.4 | 34.7  | Russia and Ukraine continued to carry out military operations, and the conflict continued to escalate                                                                               |
| 2022 m8                                                                         | 3    | 190.4 | 73.7  | Nancy Pelosi, house speaker of the United States Congress, visited Chinese Taiwan                                                                                                   |
| 2023 m4                                                                         | 12   | 134.5 | 37.3  | Tsai Ing wen's ‘transit’ visit to the United States                                                                                                                                 |
| 2023 m10                                                                        | 8    | 124.6 | 47.7  | The Palestinian Islamic Resistance Movement launched the “Al Aqsa Floods” military operation against Israel, leading to the outbreak of a new round of Israeli Palestinian conflict |
| 2024 m10                                                                        | 14   | 111.7 | 34.8  | Iran launches large-scale missile attacks on military targets in Israel, exacerbating tensions in the Middle East                                                                   |
| Panel B. Shocks to the threats component of China-Total Geopolitical Risk Index |      |       |       |                                                                                                                                                                                     |
| Month                                                                           | Rank | GPR   | Shock | Event                                                                                                                                                                               |
| 2000 m10                                                                        | 5    | 181.3 | 62.5  | The escalation of the Israeli Palestinian conflict                                                                                                                                  |
| 2003 m2                                                                         | 1    | 207.8 | 86.2  | The United States intended to promote the Iraq War on the grounds that Iraq possessed lethal chemical weapons                                                                       |
| 2003 m3                                                                         | 3    | 232.7 | 72.7  | The Iraq War broke out                                                                                                                                                              |
| 2022 m3                                                                         | 4    | 163.7 | 67.6  | Russia launched comprehensive attack on Ukraine                                                                                                                                     |
| 2022 m8                                                                         | 2    | 205.0 | 78.5  | Nancy Pelosi, house speaker of the United States Congress, visited Chinese Taiwan                                                                                                   |
| Panel C. Shocks to the acts component of China-Total Geopolitical Risk Index    |      |       |       |                                                                                                                                                                                     |
| Month                                                                           | Rank | GPR   | Shock | Event                                                                                                                                                                               |
| 2000 m5                                                                         | 4    | 56.9  | 101.9 | The Israeli military withdrew from the “safe zone” and ended its 22 year occupation of southern Lebanon; Ethiopia announced the end of Ethiopia Eritrea War                         |
| 2000 m10                                                                        | 5    | 56.5  | 96.7  | The escalation of the Israeli Palestinian conflict                                                                                                                                  |
| 2001 m10                                                                        | 3    | 469.6 | 103.1 | The US military launched attacks on terrorist organizations and Taliban targets within Afghanistan, leading to the outbreak of the Afghan War                                       |
| 2003 m2                                                                         | 2    | 133.3 | 125.1 | The United States intended to promote the Iraq War on the grounds that Iraq possessed lethal chemical weapons                                                                       |
| 2003 m3                                                                         | 1    | 293.8 | 173.8 | The Iraq War broke out                                                                                                                                                              |

geopolitical risks of Saudi Arabia, Turkey, and Iran also increased.

For China, after further adding country name as keywords for filtering, the trend of the index is similar to the China-Total Geopolitical Risk Index. However, it is more sensitive to geopolitical risk events occurring in China, such as Pelosi's visit to Chinese Taiwan. Therefore, by analyzing the geopolitical risk indices of different countries, we can clearly capture the occurrence place of geopolitical risk events and the involved countries during different periods.

### 3. Validation of the Chinese GPR index

#### 3.1. Largest spikes in the GPR index and important geopolitical events

We first examine the ability of our Chinese GPR Indices to capture key changes in geopolitical risk by identifying and analyzing the major shocks in the indices time series. We regress the monthly China-Total Geopolitical Risk Index, China-Total Geopolitical Risk Threat Index, China-Total Geopolitical Risk Action Index and China-Direct Geopolitical Risk Index on their own three lags and define the regression residuals as the shocks to geopolitical risk, that is, the unexpected changes.

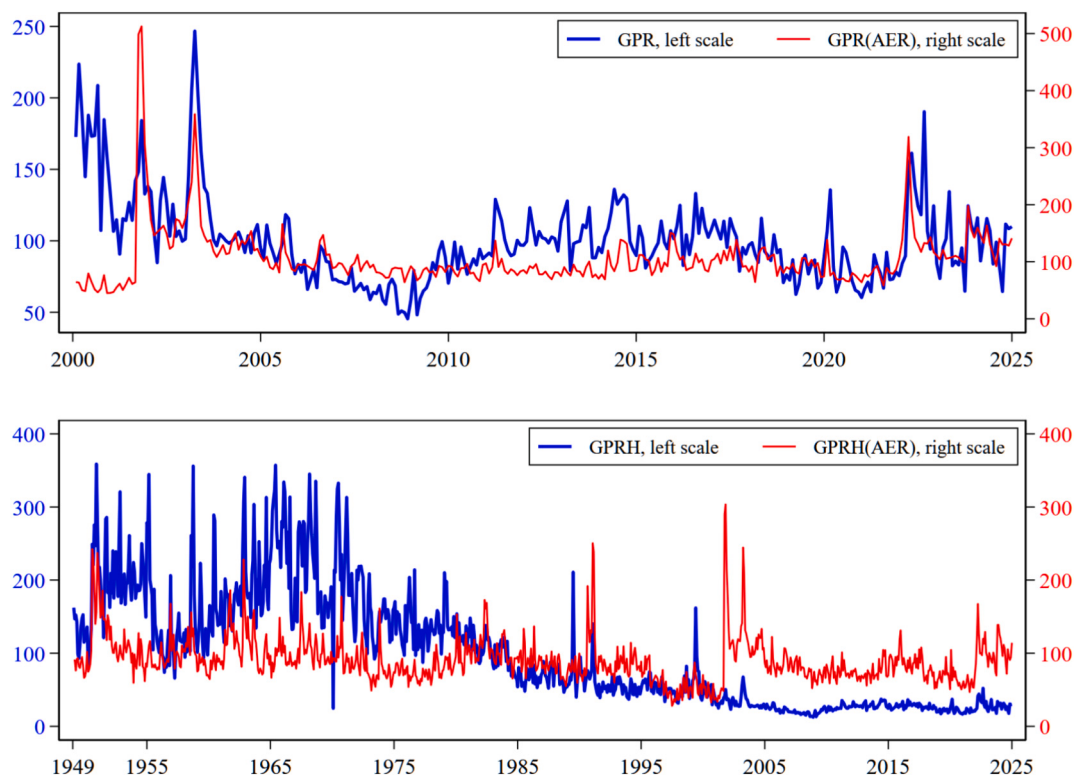
Table 1 presents the top 15 monthly positive shock values of China-Total Geopolitical Risk Index, the top 5 monthly positive shock values of China-Total Geopolitical Risk Threat Index and China-Total Geopolitical Risk Action Index. We also show the key geopolitical events that occurred in or had a significant impact on those months during the sample period. We can observe that the Iraq War, Pelosi's visit to Chinese Taiwan, Russia-Ukraine Conflict, and Afghanistan War are the primary factors causing severe shocks to China-Total Geopolitical Risk Index.

Firstly, the Iraq War brought the largest shock to China-Total Geopolitical Risk Index from 2000 to the present. In March 2003, the Iraq War officially broke out, bringing the first-largest shock to the index. And on February 5, 2003, the U.S. Secretary of State Powell held up a small vial of white powder at a UN Security Council meeting, claiming it was evidence of Iraq's development of chemical

**Table 2**

Largest Geopolitical Shocks to China-Direct Geopolitical Risk Index.

| Month    | Rank | GPR    | Shock  | Event                                                                                                                                                                                                                                                                       |
|----------|------|--------|--------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 2000 m4  | 13   | 337.0  | 131.3  | The United States released a list of weapons sold to Chinese Taiwan                                                                                                                                                                                                         |
| 2001 m4  | 4    | 387.1  | 298.8  | 4.1 Battleplane Crash Incident between China and US                                                                                                                                                                                                                         |
| 2001 m8  | 11   | 271.2  | 145.3  | Chinese hostages kidnapped and killed in the Philippines                                                                                                                                                                                                                    |
| 2002 m8  | 5    | 351.0  | 273.4  | Chen Shui-bian made inappropriate remarks about 'one country on each side'                                                                                                                                                                                                  |
| 2005 m3  | 9    | 285.8  | 170.4  | The Third Session of the Tenth National People's Congress passed the Anti Secession Law                                                                                                                                                                                     |
| 2012 m9  | 3    | 451.4  | 347.8  | Japan's unauthorized nationalization of the Diaoyu Islands violated China's territorial sovereignty, and the Diaoyu Islands dispute continued to escalate                                                                                                                   |
| 2014 m4  | 12   | 249.8  | 141.8  | The Director of the US Environmental Protection Agency visited Chinese Taiwan                                                                                                                                                                                               |
| 2016 m7  | 2    | 465.0  | 362.1  | The Chinese government released a white paper, emphasizing once again that China's territorial sovereignty and maritime rights in the South China Sea are not affected by arbitration awards under any circumstances. China didn't accept or recognize the so-called ruling |
| 2018 m4  | 10   | 251.0  | 162.4  | The United States announced the imposition of high tariffs on various products imported from China, further escalating the trade conflict between China and the United States                                                                                               |
| 2020 m5  | 14   | 190.7  | 124.4  | Indian troops crossed the border into Chinese territory, intentionally provoking incidents                                                                                                                                                                                  |
| 2020 m10 | 8    | 276.1  | 171.5  | US Secretary of State Pompeo promoted 'China threat'                                                                                                                                                                                                                        |
| 2022 m8  | 1    | 1225.2 | 1101.7 | Nancy Pelosi, house speaker of the United States Congress, visited Chinese Taiwan                                                                                                                                                                                           |
| 2023 m4  | 6    | 310.0  | 214.2  | Tsai Ing wen's 'transit' visit to the United States                                                                                                                                                                                                                         |
| 2023 m8  | 15   | 226.3  | 122.3  | Biden signed executive order restricting investment in China, limiting investments in key areas such as semiconductors and AI                                                                                                                                               |
| 2024 m5  | 7    | 318.0  | 212.7  | Lai Qingde delivered the "5.20 Inaugural Address"                                                                                                                                                                                                                           |

**Fig. 12.** Comparison between China-Total GPR Index and Caldara and Iacoviello's GPR Index.

weapons, in an attempt to pave the way for military action against Iraq. The intention to wage war on Iraq brings the second-largest shock to the index. Secondly, Pelosi's visit to Chinese Taiwan Incident caused the third highest peak of China-Total Geopolitical Risk Index. On August 2, 2022, U.S. House Speaker Nancy Pelosi insisted on visiting Chinese Taiwan, seriously undermining stability in the Taiwan Strait and impacting China-U.S. relations. Then, the Russia-Ukraine Conflict has the fourth largest impact. On February 24, 2022, due to the eastward expansion of NATO and the Donbas conflict, Putin announced the launch of a 'special military operation', and the Russia-Ukraine conflict officially broke out. Subsequently, Russia launched a full-scale offensive against Ukraine. Geopolitical frictions in the Middle East in the early 21st century also has a significant impact on the index, especially the outbreak and continuous

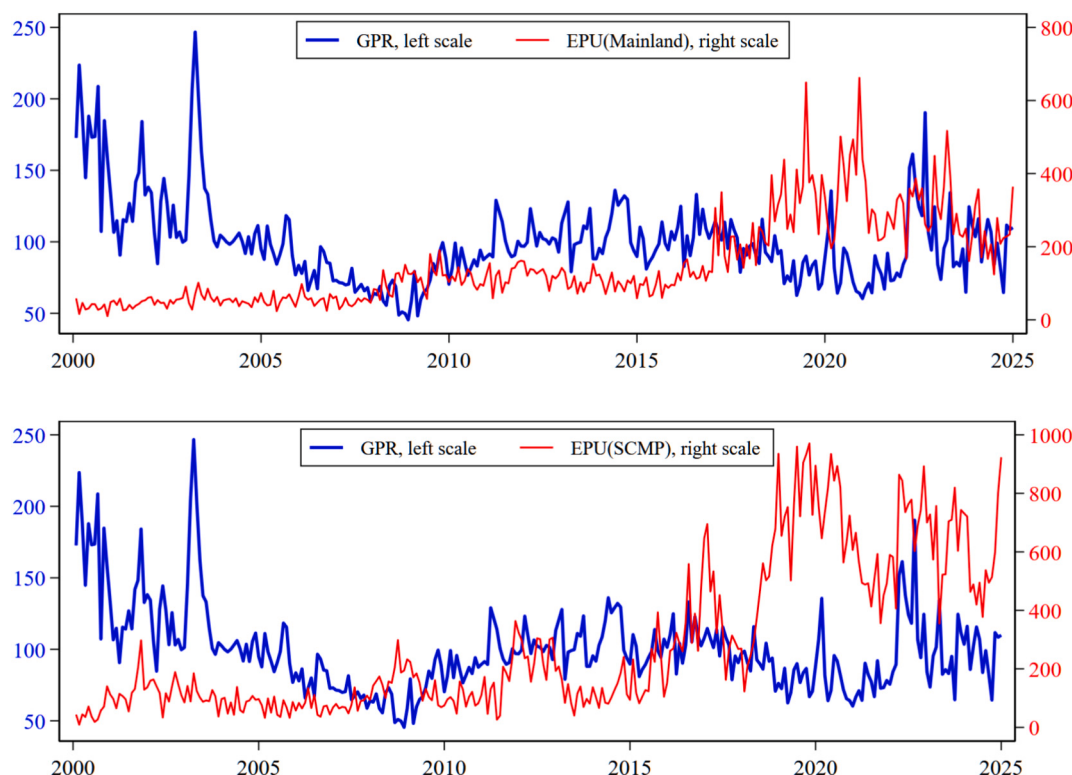


Fig. 13. Comparison between China-Total GPR Index and China Economic Policy Uncertainty Indices.

escalation of the Israel-Palestine Conflict.

In terms of the threat and action sub-indices of China-Total Geopolitical Risk Index, the geopolitical threat shocks caused by the US's intention to promote the Iraq War and Pelosi's visit to Chinese Taiwan Incident rank first and second respectively. The geopolitical action shocks caused by the break out of Iraq War and Afghan War rank first and third respectively. Consistent with the characteristics displayed in the trend charts of the GPRT and GPRA in the previous section, the GPRT Index is more sensitive to intent or threat events, while the GPRA Index is more sensitive to actual conflicts events or wars.

Then we turn to China-Direct Geopolitical Risk Index. Table 2 shows the top 15 monthly positive shocks of China-Direct Geopolitical Risk Index. For this index, Taiwan Strait crisis and maritime rights disputes are primary factors causing severe shocks to China-Direct Geopolitical Risk Index.

Firstly, Pelosi's visit to Chinese Taiwan Incident brought the largest shock to China-Direct Geopolitical Risk Index. This event also brought a large spike to China-Total Geopolitical Risk Index. Secondly, "South China Sea Arbitration" brought the second largest shock. The "South China Sea arbitration" is the so-called arbitration initiated by the Philippines unilaterally regarding the maritime status of eight Nansha islands and reefs. It attempted to undermine China's territorial sovereignty and maritime rights and interests in the South China Sea. Essentially, it is a political farce disguised in the guise of law. Meanwhile, Diaoyu Islands dispute and China-India border conflicts also had significant and direct impact on China's geopolitical risk.

### 3.2. Comparison with related indexes

The GPR Index constructed by Caldara and Iacoviello based on English-language newspapers is similar to our China-Total GPR Index (Caldara and Iacoviello, 2022). The first part of Fig. 12 compares the recent China-Total GPR Index constructed in this paper with the GPR Index constructed by Caldara and Iacoviello during the same period. The second part compares the historical China-Total GPR Index with the GPR Index constructed by Caldara and Iacoviello during the same period.

In terms of correlation, the China-Total GPR index constructed in this paper has a correlation coefficient of 0.403 with the index constructed by Caldara and Iacoviello, indicating that both capture a portion of geopolitical events. The first and second parts of Fig. 12 show that the upward and downward trends of the indices constructed by both largely coincide, but the degree of response to specific periods differs. The index of Caldara and Iacoviello is more sensitive to geopolitical events occurring in the United States or led by the United States, such as Gulf War, the 9/11 event and Iraq War. In contrast, our indices can keenly capture geopolitical events occurring in China, such as the South China Sea issue and Pelosi's visit to Chinese Taiwan. This supports the view of Bondarenko et al. (2024) that local newspapers have a stronger and more sensitive perception of the geopolitical risk faced by their own country.

Furthermore, we compare the Chinese GPR Index constructed in this paper with the China Economic Policy Uncertainty Index

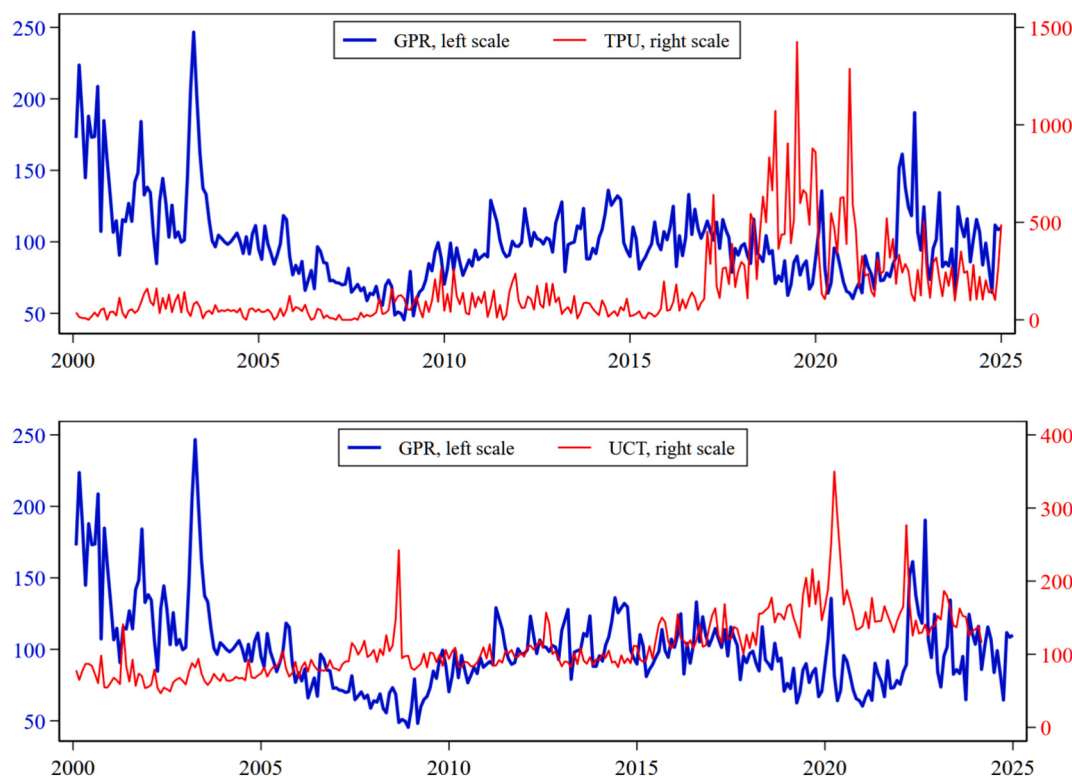


Fig. 14. Comparison among China-Total GPR Index, Trade Policy Uncertainty Index and U.S.-China Tension Index.

constructed by Davis et al. (2019). The upper half of Fig. 13 shows the comparison between the China Economic Policy Uncertainty Index, based on two Chinese mainland newspapers, the *People's Daily* and *Guangming Daily*, and the China-Total GPR Index. The lower half presents the comparison between the China Economic Policy Uncertainty Index, based on the *South China Morning Post*, and the China-Total GPR Index.

The results of the correlation analysis show that the correlation coefficients between the two EPU indices and the China-Total GPR Index are  $-0.219$  and  $-0.139$ , respectively. This may indicate that the types of events captured by the two types of indices differ significantly, resulting in a negative correlation.

Further analysis reveals that, firstly, before 2008, the trends of the two EPU indices are relatively stable, while the China-Total GPR Index exhibits fluctuations. This is likely because the EPU indices are more adept at capturing fluctuations in the domestic macroeconomic policy environment, but are not sensitive to geopolitical conflicts that do not cause significant changes in the domestic economic environment. Prior to the financial crisis, China's economy was in a phase of robust growth, and the EPU indices were relatively stable. However, major geopolitical conflicts such as Iraq War occurred before 2008, which were not captured by the EPU indices. Secondly, the EPU indices sometimes show peaks when the GPR index is relatively stable. This may stem from adjustments in domestic economic policies or reforms in the market system. These adjustments can introduce economic policy uncertainty but do not necessarily lead to geopolitical conflicts.

In summary, this comparison indicates that the geopolitical risk index constructed in this paper focuses more on geopolitical conflict risk triggered by wars, terrorist attacks, nuclear threats, etc., while the EPU index primarily measures the uncertainty of the domestic macroeconomic policy environment. Compared to the EPU indices, the GPR Index we construct can more accurately measure China's geopolitical risk.

In addition, we compare the China-Total GPR Index constructed in this paper with the China Trade Policy Uncertainty (TPU) Index constructed by Davis et al. (2019) and the U.S.-China Tension (UCT) Index constructed by Rogers et al. (2024). Fig. 14 presents the comparison results.

The correlation analysis shows that the correlation coefficients between the China-Total GPR Index and the TPU Index, as well as the UCT Index, are  $-0.201$  and  $-0.266$ , respectively. This indicates that the three indices capture different types of events. From the comparison between the China-Total GPR Index and the TPU Index, it can be seen that the TPU Index only shows significant fluctuations around 2018, corresponding to the U.S.-China trade conflict. During this period, although the China-Total GPR Index also experiences local peaks, they are not as pronounced as the shocks caused by geopolitical events such as Iraq War and Pelosi's visit to Chinese Taiwan. The U.S.-China Tension Index only has sharp increase around the outbreak of the 2008 financial crisis and during the U.S.-China trade conflict. This implies that during 2008 and around the time of the U.S.-China trade conflict, tensions between the U.S. and China intensified due to reasons such as trade frictions and Taiwan Strait issue. However, the index is unable to capture the impact

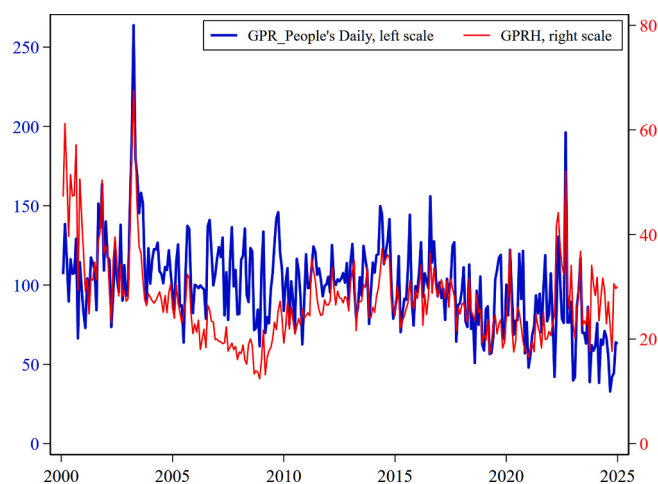


Fig. 15. Comparison between China-Total GPR Index and GPR Index based on *People's Daily*.

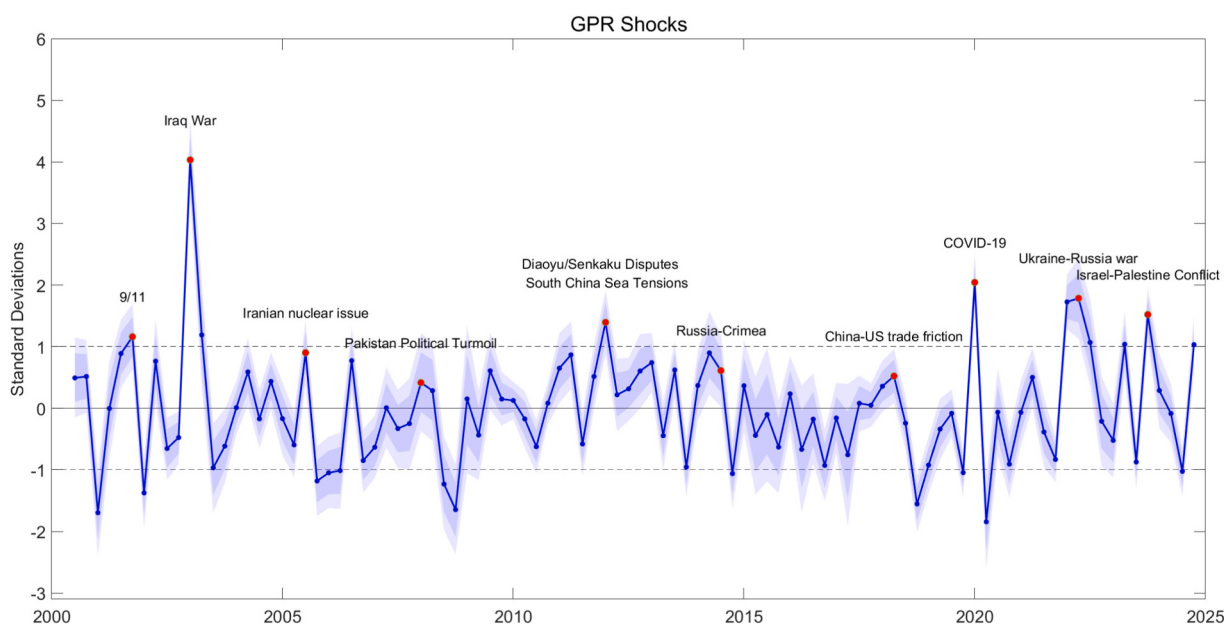


Fig. 16. Time Series of the VAR-identified Geopolitical Shocks.

of geopolitical conflicts not involving the U.S. and China on China's geopolitical risk.

In summary, the TPU index primarily measures the uncertainty of trade policy itself, such as uncertainties regarding tariffs and trade negotiations. The U.S.-China Tension Index, on the other hand, is used to measure the degree of tension in U.S.-China bilateral relations. Although both indices can partially capture the geopolitical uncertainty that China faces due to international trade or U.S.-China relations, compared to the GPR Index, they exhibit significant limitations.

To verify the rationality of the construction of the China-Total GPR Index in this paper, we retain only the *People's Daily* as the source of newspapers and reconstruct the index according to the method described in Section 2. The *People's Daily* is the official newspaper of the Central Committee of the Communist Party of China, the largest newspaper in China, and an authoritative newspaper for obtaining major central decision-making deployments and important international events. Fig. 15 shows the comparison chart of the GPR Index constructed using the *People's Daily* and the historical China-Total GPR Index in this article. It can be seen that although the GPR Index constructed using the *People's Daily* has higher overall volatility, the overall trend of the two indices basically coincides. This also illustrates the rationality of constructing the geopolitical risk index using local Chinese newspapers.

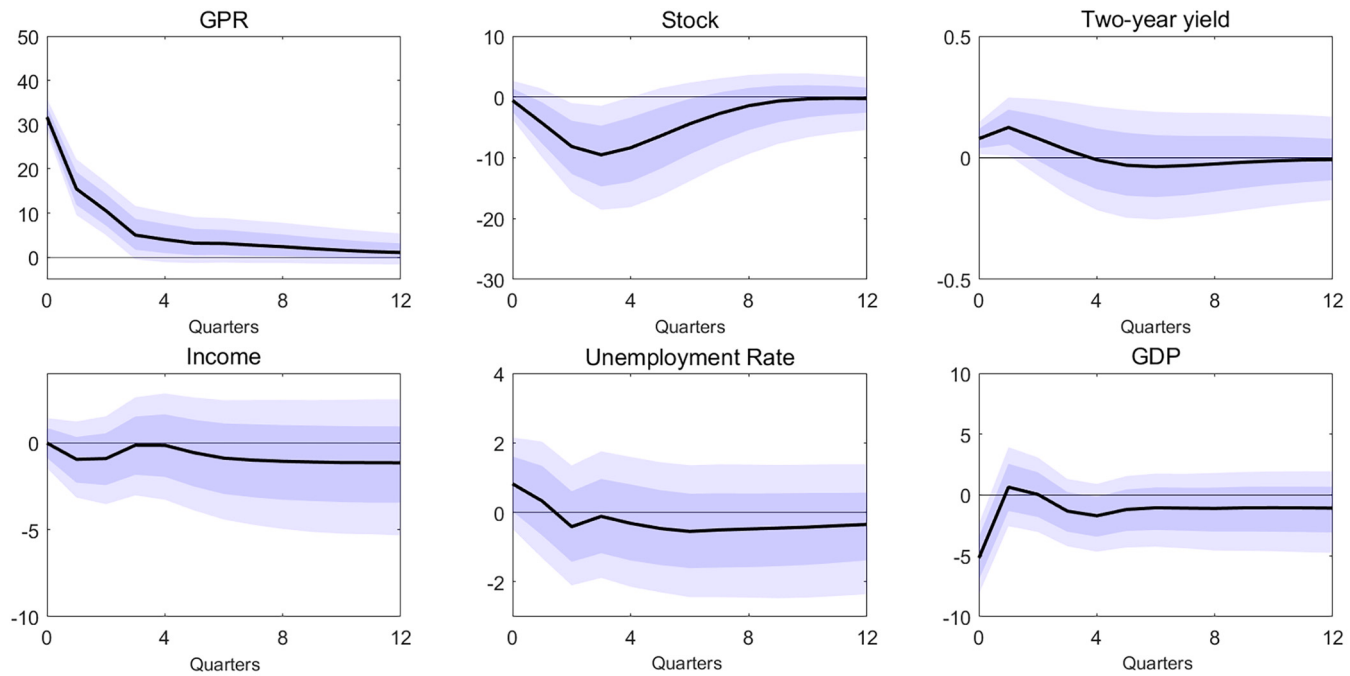


Fig. 17. The Impact of Increased China-Total Geopolitical Risk

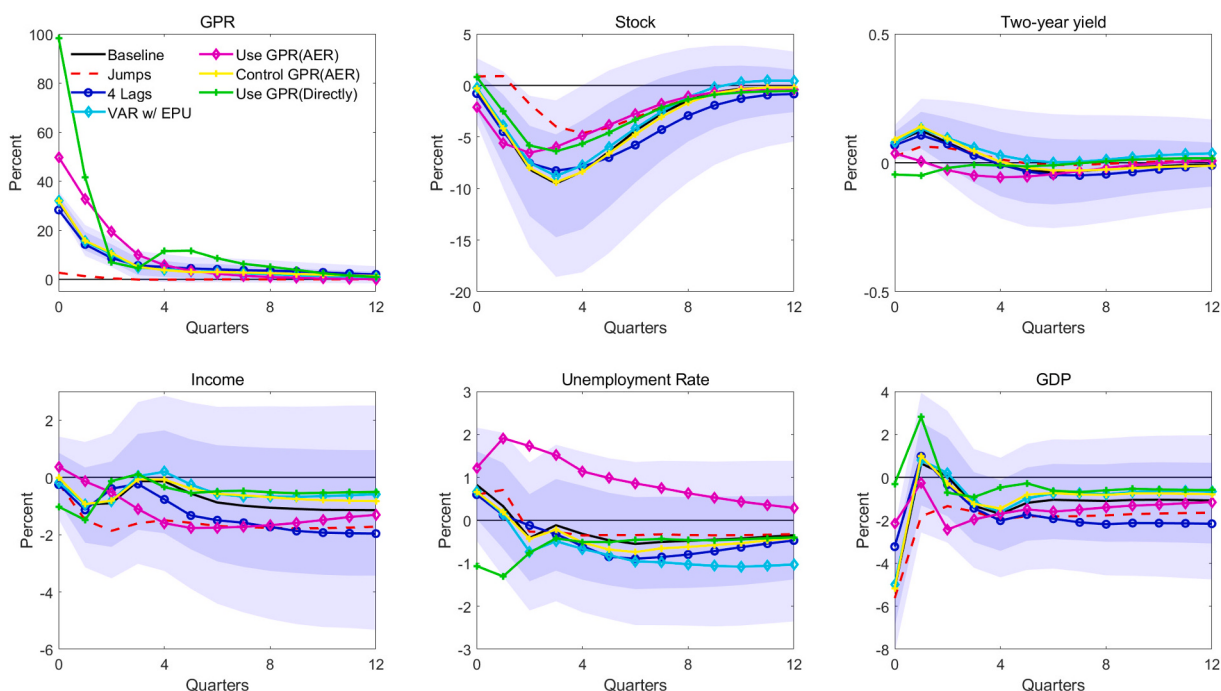


Fig. 18. Robust Tests for VAR Analysis.

#### 4. VAR evidence on the effects of China geopolitical risk

To examine the impact of the China-Total GPR Index constructed in this paper on macroeconomic variables, we employ the index and a series of macroeconomic variables to conduct the VAR analysis. Specifically, we estimate a structural VAR model using two lags specification and quarterly data from China for the period 2000–2024. The main macroeconomic variables involved are as follows: Chinese stock market index; the two-year fixed deposit rate; disposable income of residents; unemployment rate; and GDP. Specifically, the Chinese stock market index uses the Shanghai Composite Index, which consists of stocks listed on the Shanghai Stock Exchange (A-shares and B-shares). The two-year fixed deposit rate uses the two-year fixed deposit interest rate published by the People's Bank of China. Disposable income of residents refers to the seasonally adjusted monthly disposable income of residents. The unemployment rate is based on the urban survey unemployment rate published by the National Bureau of Statistics. GDP uses nominal GDP published by the National Bureau of Statistics. All the above macro variable time series are from the CEIC database.

##### 4.1. Aggregate economic effects

Employing the same approach as [Caldara and Iacoviello \(2022\)](#), we first identify a GPR shock by using a Cholesky decomposition of the covariance matrix of the VAR reduced-form residuals. [Fig. 16](#) presents the median time-series results of the Chinese GPR shocks. It can be observed that the peaks of the GPR shocks identified using the VAR method largely coincide with the geopolitical conflict events matched in [Section 3](#). This not only validates the rationality of the Chinese GPR Index constructed in this paper but also provides support for the subsequent VAR analysis.

[Fig. 17](#) illustrates the impact of increase in China's geopolitical risk on China's macroeconomic variables, as analyzed using the VAR model. The solid lines in the figure represent the median impulse responses of the variables following a two-standard-deviation shock to the Chinese GPR index. The results indicate that the impact of an elevated Chinese GPR persists for nearly three quarters before gradually dissipating to zero. The increase in Chinese GPR has the most pronounced effect on the financial market. Following a rise in GPR, the return on the Chinese share price index significantly declines, reaching its lowest point after two quarters, and then gradually recovers. While the increase in GPR has no statistically significant effects on interest rates, income, and the unemployment rate. Additionally, the rise in GPR has a certain negative impact on GDP. In summary, China's geopolitical risk exhibits short-term persistence and has significant negative impacts on the financial market and GDP.

##### 4.2. Robust tests for VAR analysis

We also test the robustness of the VAR analysis by changing the model specifications and using other indices. Specifically, we conduct the following robustness tests: (1) Replacing the Chinese GPR Index with a dummy variable that equals the Chinese GPR index

when it is at its ten largest peaks, and zero otherwise (Jumps); (2) Increasing the number of lags in the VAR analysis from 2 to 4; (3) Adding the China EPU Index to the VAR; (4) Conducting VAR analysis using the geopolitical risk index constructed by [Caldara and Iacoviello \(2022\)](#); (5) Controlling for the GPR index constructed by [Caldara and Iacoviello \(2022\)](#); (6) Conducting VAR analysis using the China-Direct GPR Index. [Fig. 18](#) presents the results of the VAR robustness tests. Compared with other measures, within a very short period after the increase of China-Direct GPR, the interest rate and unemployment rate decrease significantly, but the long-term impact is similar to the benchmark. Moreover, the impulse response trends of other indices are similar to the benchmark, indicating that our VAR analysis is relatively robust.

## 5. Conclusion

This paper constructs new geopolitical risk indices more suitable for China based on newspapers in mainland China and analyzes the impact of geopolitical risk on China's macroeconomy. We firstly construct broad-scope China-Total Geopolitical Risk Index, which measures both Chinese direct geopolitical risk and the indirect risk of geopolitical events in other countries. We find that Iraq war, Pelosi's visit to Chinese Taiwan Incident, Russia-Ukraine conflict and the Middle East geopolitical conflicts are all important geopolitical risk events of concern to Chinese media. Then we further decompose the China-Total GPR Index and construct Chinese-Direct GPR Index to measure direct Chinese geopolitical risk. Compared to China-Total GPR Index, China-Direct GPR Index can more sensitively capture specific geopolitical risk events in China, such as the Taiwan Strait crisis and the South China Sea issue. And both indices we construct are better at capturing geopolitical conflicts that are closely related to China, which is not fully reflected in geopolitical risk index constructed based on English newspapers. The analysis of the geographic structure of Chinese geopolitical risk reveals that political conflicts and geographic boundary problem are the primary drivers of changes in Chinese geopolitical risk. Furthermore, through VAR analysis, we find that increasing in Chinese geopolitical risk has a significant negative impact on China's financial market and GDP, with this impact exhibiting short-term persistence.

The study implies that the potential threat of geopolitical risk to China's economy cannot be ignored. In the context of globalization, as the world's largest goods trading nation and an important outward investment powerhouse, fluctuations in geopolitical risk may have a significant impact on China's overseas investments, energy supply, and international trade. From a domestic perspective, China is currently in a critical period of economic structural adjustment, and the uncertainty of geopolitical risk may trigger a chain reaction affecting domestic economic stability. Therefore, accurately assessing geopolitical risk factors and engaging in strategic planning in advance is crucial for mitigating the impact of geopolitical risk on China's economy.

## CRedit authorship contribution statement

**Xinyan Shen:** Writing – review & editing, Writing – original draft, Software, Methodology, Formal analysis, Data curation. **Daoping Wang:** Writing – review & editing, Writing – original draft, Supervision, Software, Project administration, Methodology, Funding acquisition, Formal analysis, Conceptualization. **Chen Wu:** Writing – review & editing, Writing – original draft, Methodology, Formal analysis, Data curation. The authors are the co-first authors and contribute to the work equally.

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## Appendix A. Appendix

### A.1. News articles sources

| Type                     | Name                                                                                                                                                                                                                                              | Chinese name                                                                        |
|--------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Comprehensive newspapers | <i>People's Daily, Guangming Daily, Hubei Daily, Jilin Daily, Jiefang Daily, Nanfang Daily, Wenhui Daily, China Reform Daily, China Energy News, China Quality Daily, Beijing Daily</i>                                                           | 《人民日报》、《光明日报》、《湖北日报》、《吉林日报》、《解放日报》、《南方日报》、《文汇报》、《中国改革报》、《中国能源报》、《中国质量报》、《北京日报》      |
| Securities newspapers    | <i>Shanghai Securities News, China Securities Journal, Securities Daily, Securities Times, Financial News</i>                                                                                                                                     | 《上海证券报》、《中国证券报》、《证券日报》、《证券时报》、《金融时报》                                                |
| Economics newspapers     | <i>21st Century Business Herald, China Business News, Economic Information Daily, Economic Daily, China Economic Herald, China Economic Times, China Financial and Economic News</i>                                                              | 《21世纪经济报道》、《第一财经日报》、《经济参考报》、《经济日报》、《中国经济导报》、《中国经济时报》、《中国财经报》                        |
| Pan economics newspapers | <i>International Business Daily, China's insurance quote, China Real Estate News, China Market Regulation News, China Business Times, ZHONGGUO GUOMEN SHIBAO, China Trade News, China Business Journal, Beijing Business Today, Futures Daily</i> | 《国际商报》、《中国银行保险报》、《中国房地产报》、《中国市场监管报》、《中华工商时报》、《中国国门时报》、《中国贸易报》、《中国经营报》、《北京商报》、《期货日报》 |

## A.2. Chinese GPR index dictionary (with translations to English)

| Type                                                                 | English                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Chinese                                                                                                                                                                                                                                         |
|----------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Panel A Topic Sets</b>                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                 |
| War_words                                                            | war, conflict, military operations, hostility, military conflict, armed conflict, exchange of fire, chaos of war, war zone, front line, civil war, proxy war, total war, local conflict, border conflict, maritime conflict, aerial conflict, cyber warfare, information warfare, hybrid war, hot war, Cold War, military confrontation, military standoff, military friction, armed intervention, armed confrontation, military showdown, escalation of military confrontation, brink of war, flames of war, artillery fire, beacon fire, come to blows, military mutiny, rebellion, uprising, military coup                                                                                                                                                                                                                                                                                                                | 战争、冲突、战事、敌对、军事冲突、武装冲突、交火、战乱、战区、前线、内战、代理人战争、全面战争、局部冲突、边界冲突、海上冲突、空中冲突、网络战、信息战、混合战争、热战、冷战、武力对抗、军事对峙、军事摩擦、武装干涉、武装对抗、军事摊牌、军事对抗升级、战争边缘、战火、炮火、烽火、兵戎相见、兵变、叛乱、起义、军事政变                                                                                    |
| Peace_words                                                          | peace, ceasefire, armistice, truce, peace treaty, treaty, agreement, communiqué, declaration, joint statement, peace talks, dialogue, consultation, mediation, conciliation, reconciliation, easing of tensions, diplomatic solution, peace process, peace initiative, memorandum of understanding, peace agreement, ceasefire agreement, peace framework                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 和平、停火、停战、休战、和约、条约、协定、公报、宣言、联合声明、和谈、对话、协商、斡旋、调停、调解、缓解紧张局势、外交解决、和平进程、和平倡议、谅解备忘录、和平协议、停火协议、和平框架                                                                                                                                                    |
| Nuclear_words                                                        | nuclear war, nuclear weapons, nuclear bomb, atomic bomb, hydrogen bomb, neutron bomb, nuclear arsenal, nuclear force, nuclear capability, nuclear testing, nuclear proliferation, Treaty on the Non-Proliferation of Nuclear Weapons (NPT), nuclear non-proliferation, nuclear deterrence, mutually assured destruction (MAD), nuclear blackmail, nuclear intimidation, nuclear threshold, nuclear retaliation, nuclear counterattack, nuclear umbrella, nuclear attack, nuclear crisis, nuclear security, nuclear materials, enriched uranium, plutonium, nuclear facilities, nuclear reactor, nuclear submarine, dirty bomb, nuclear terrorism, International Atomic Energy Agency (IAEA)                                                                                                                                                                                                                                  | 核战争、核武器、核弹、原子弹、氢弹、中子弹、核武库、核力量、核能力、核试验、核扩散、防止核扩散条约、核不扩散、核威慑、相互确保摧毁、核讹诈、核恫吓、核门槛、核反击、核报复、核保护伞、核攻击、核危机、核安全、核材料、浓缩铀、钚、核设施、核反应堆、核潜艇、脏弹、核恐怖主义、国际原子能机构                                                                                                  |
| Terrorism_words                                                      | terrorism, terrorist, terrorist gang, terrorist organization, terrorist activity, violent terrorism, counter-terrorism, extremism, radicalism, religious extremism, political extremism, violent extremism, terrorist network, terrorist leader, terrorist attack planner, terrorist financing, terrorist propaganda, terrorist training camp, radical organization, lone-wolf attacker, foreign terrorist fighter, jihadi, separatist forces, fundamentalism, paramilitary terrorist organization                                                                                                                                                                                                                                                                                                                                                                                                                           | 恐怖主义、恐怖分子、恐怖团伙、恐怖组织、恐怖活动、暴恐、反恐、极端主义、激进主义、宗教极端主义、政治极端主义、暴力极端主义、恐怖网络、恐怖头目、恐怖袭击策划者、恐怖融资、恐怖宣传、恐怖训练营、激进组织、独狼式袭击者、外国恐怖作战人员、圣战分子、分裂势力、原教旨主义、准军事恐怖组织                                                                                                    |
| Military_words                                                       | military, army, military use, troops, armed forces, national defense, military side, military strength, soldier, military personnel, officer, general, headquarters, general staff, naval port, missile, nuclear warhead, conventional warhead, weapon, arms, armament, military supplies, ammunition, combat, exercise, military drill, joint military exercise, military patrol, strategic patrol, combat patrol, combat aircraft, bomber, fighter, early warning aircraft, reconnaissance aircraft, transport aircraft, warship, aircraft carrier, destroyer, frigate, cruiser, submarine, amphibious assault ship, tank, armored vehicle, artillery, rocket launcher, air defense system, radar system, military technology, military equipment, military budget, defense expenditure, military industry, military-industrial complex, special forces, marine corps, paratroopers, strategic support force, rocket force | 军事、军队、军用、部队、武装力量、国防、军方、兵力、士兵、军人、军官、将领、司令部、参谋部、军港、导弹、核弹头、常规弹头、武器、军火、军备、军需、弹药、作战、演习、军事演练、联合军演、军事巡逻、战略巡航、战斗巡航、战机、轰炸机、战斗机、预警机、侦察机、运输机、军舰、航空母舰、驱逐舰、护卫舰、巡洋舰、潜艇、两栖攻击舰、坦克、装甲车、火炮、火箭炮、防空系统、雷达系统、军事技术、军事装备、军事预算、国防开支、军工企业、军工复合体、特种部队、海军陆战队、空降兵、战略支援部队、火箭军 |
| Conflict_words                                                       | ally, allied country, alliance, adversary, hostile force, enemy country, potential adversary, hypothetical enemy, Axis powers, Allied powers, military bloc, rebel, anti-government armed group, armed faction, armed militant, guerrilla, militia, mercenary, private military contractor, navy, army, air force, marine corps, special forces, rocket force, paramilitary force, resistance organization, liberation organization, separatist                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 盟友、盟国、联盟、敌方、敌对势力、敌国、潜在对手、假想敌、轴心国、同盟国、军事集团、叛军、反政府武装、武装派别、武装分子、游击队、民兵组织、雇佣兵、私人军事承包商、海军、陆军、空军、海军陆战队、特种部队、火箭军、准军事部队、抵抗组织、解放组织、分裂分子                                                                                                                  |
| <b>Panel B Threat/Act Sets</b>                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                 |
| War_threat_words/<br>Nuclear_threat_words/<br>Terrorism_threat_words | threat, warning, alert, admonition, concern, worry, anxiety, apprehension, risk, danger, crisis, challenge, unsettling, tension, deterioration, exacerbation, escalation, intensification, shadow, hidden danger, uncertainty, instability, turmoil, upheaval, severe, complex, pessimistic, negative, passive, trigger, flashpoint, on the brink, on edge, imminent, on the verge, storm brewing, brewing, early warning, signal, sign, indication, trend, uncertain prospects,                                                                                                                                                                                                                                                                                                                                                                                                                                             | 威胁、警告、警示、告诫、担忧、担心、忧虑、顾虑、风险、危险、危机、挑战、令人不安、紧张、恶化、加剧、升级、激化、阴影、隐患、不确定性、不稳定性、动荡、震荡、严峻、复杂、悲观、负面、消极、导火索、引爆点、一触即发、剑拔弩张、迫在眉睫、箭在弦上、山雨欲来、酝酿、预警、信号、迹象、苗头、趋势、前景不明、高度警惕、戒备、防范、可能性、潜在、恐将、或将、濒临、边缘政策、擦枪走火                                                       |

(continued on next page)

(continued)

| Type                                              | English                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Chinese                                                                                                                                       |
|---------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------|
| Peace_threat_words                                | high alert, vigilance, prevention, possibility, potential, likely to, may, on the verge of, brinkmanship, accidental conflict threat, sabotage, damage, erode, obstruct, resist, tear up, withdraw, interrupt, shelve, stagnate, deadlock, stalemate, rupture, condemn, protest, refute, accuse, diplomatic dispute, diplomatic friction, diplomatic crisis, recall ambassador, expel diplomats, sever diplomatic relations, downgrade diplomatic relations, violate agreement, break promise, breach resolution, unilateral action, final warning, provoke                                          | 威胁、破坏、损害、侵蚀、阻碍、抵制、撕毁、退出、中断、搁置、停滞、僵局、僵持、破裂、谴责、抗议、驳斥、指责、外交争端、外交摩擦、外交危机、召回大使、驱逐外交官、断交、降低外交级别、违反协议、违反承诺、违反决议、单方面行动、最后警告、挑衅                        |
| Military_buildup_words                            | assembly, deployment, troop reinforcement, military mobilization, combat readiness, state of emergency, martial law, military exercise, strategic deterrence, deterrence patrol, military enhancement, military permanence, military base, military alliance, blockade, embargo, sanctions, no-fly zone, ultimatum, military pressure, military intervention, military threat, military preparedness, possibility, military involvement, dispatch, increase in defense budget, accelerate arms race, show of force, flexing muscles                                                                  | 集结、部署、增兵、军事动员、战备状态、紧急状态、戒严、军事演习、战略威慑、威慑巡航、军事加强、军事永久化、军事基地、军事联盟、封锁、禁运、制裁、禁飞区、最后通牒、军事压力、军事干预、军事威胁、军事准备、可能性、军事介入、派遣、提升国防预算、加速军备竞赛、炫耀武力、秀肌肉       |
| Beginning of war_words                            | erupt, begin, declare war, issue, take military action, fire the first shot, ignite the flames of war, war has begun, open fire, attack, assault, raid, blitz, preemptive strike, cross the border, air raid, ground troops advance, amphibious assault begins, missile attack begins                                                                                                                                                                                                                                                                                                                | 爆发、开始、宣战、发布、采取军事行动、打响第一枪、点燃战火、战端已开、开火、进攻、攻击、突袭、闪击、先发制人、越境、空袭、地面部队推进、登陆作战开始、导弹袭击开始                                                             |
| Escalation of conflict_words                      | offensive, attack, assault, strike, bombing, artillery attack, strafing, air raid, invasion, aggression, occupation, capture, control, encircle, siege, fierce fighting, battle, exchange of fire, confrontation, conflict, counterattack, counteroffensive, resistance, defensive operation, ambush, raid, special operation, decapitation strike, cleanup operation, encirclement and annihilation, mopping-up operation, outbreak of military conflict, occurrence of military conflict, continuation of military conflict, casualty report, prisoner of war, shoot down, sink, destroy, paralyze | 进攻、攻击、袭击、打击、轰炸、炮击、扫射、空袭、入侵、侵略、占领、夺取、控制、包围、围攻、激战、战斗、交火、对抗、冲突、反击、反攻、抵抗、防御作战、伏击、突袭、特种作战、斩首行动、清剿行动、围剿、扫荡、军事冲突爆发、军事冲突发生、军事冲突持续、伤亡报告、战俘、击落、击沉、摧毁、瘫痪 |
| Terrorism_act_words                               | attack, explosion, bombing, car bomb, roadside bomb, suicide bombing, shooting, indiscriminate shooting, hijacking, kidnapping, assassination, massacre, arson, poisoning, biochemical attack, cyber attack, targeted elimination, decapitation, create panic                                                                                                                                                                                                                                                                                                                                        | 袭击、爆炸、炸弹袭击、汽车炸弹、路边炸弹、自杀式爆炸、枪击、滥射、劫持、绑架、暗杀、屠杀、纵火、投毒、生化袭击、网络攻击、定点清除、斩首、制造恐慌                                                                     |
| <b>Panel C. Excluded words</b><br>Exclusion words | show, movie, TV series, novel, sports, competition, entertainment, gossip, reception, game, commemoration, book, publication, natural disaster, financial report, performance, stock market, market trend, tourism, travel, cultural exchange, technological breakthrough, product launch, crime, trial                                                                                                                                                                                                                                                                                              | 演出、电影、电视剧、小说、体育、赛事、娱乐、八卦、招待会、游戏、纪念、图书、书籍、自然灾害、财报、业绩、股市、行情、旅游、旅行、文化交流、科技突破、产品发布、犯罪、审判                                                          |

### A.3. Chinese geopolitical events dictionary (with translations to English)

| Year      | China Geopolitical Events                       | English Translation                                                                                                                   | Chinese Keywords                        |
|-----------|-------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------|
| 1950–1953 | War to Resist US Aggression and Aid Korea       | Inchon Landing, the War to Resist US Aggression and Aid Korea, 38th Parallel, cross the Yalu River                                    | 仁川登陆, 抗美援朝, 三八线, 跨过鸭绿江                  |
| 1955      | Battle of Yijiangshan Islands                   | the Battle of Yijiangshan Island, Yijiangshan Island                                                                                  | 一江山岛战役, 一江山岛                            |
| 1958      | Bombing Jinmen Incident                         | the Jinmen Artillery Battle, the Bombing Jinmen Incident                                                                              | 金门炮战、炮击金门                               |
| 1959      | 1959 Sino-Indian Border Conflict                | 1959 Sino-Indian Border Conflict, Sino-India border, Sino-Indian boundary                                                             | 1959中印边境武装冲突, 中印边境, 中印边界                |
| 1960–1964 | Sino-Soviet Debate                              | Sino-Soviet Debate, Open Letter of the Central Committee of the Communist Party of the Soviet Union, Soviet Union recalls experts     | 中苏论战, 苏共中央公开信, 关于国际共产主义运动总路线的论战, 苏联召回专家 |
| 1962      | Sino-Indian Border Self-Defensive Counterattack | Sino-Indian Border Self-Defensive Counterattack, Sino-Indian border, Sino-Indian boundary, Self-Defensive Counterattack Against India | 中印边境自卫反击战, 中印边境, 中印边界, 对印自卫反击战          |
| 1967      | 1967 Sino-Indian Border Conflict                | 1967 Sino-Indian Border Conflict, Sino-Indian border, Sino-Indian boundary                                                            | 1967年中印边境冲突, 中印边境, 中印边界                 |
| 1969      | Self-Defensive Counterattack on Zhenbao Island  | Self-Defensive Counterattack on Zhenbao Island, Zhenbao Island                                                                        | 珍宝岛自卫反击战, 珍宝岛                           |

(continued on next page)

(continued)

| Year           | China Geopolitical Events                           | English Translation                                                                                                       | Chinese Keywords               |
|----------------|-----------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------|--------------------------------|
| 1974           | Self-Defensive Counterattack on the Xisha Islands   | Self-Defensive Counterattack on the Xisha Islands, Xisha Islands, Xisha Self-Defensive Counterattack, Xisha Naval Battle  | 西沙群岛自卫反击战, 西沙群岛, 西沙自卫反击战, 西沙海战 |
| 1979           | Self-Defensive Counterattack Against Vietnam        | Self-Defensive Counterattack Against Vietnam, Sino-Vietnamese border, Sino-Vietnamese boundary                            | 对越自卫反击, 中越边境, 中越边界             |
| 1980–1984      | Faka Mountain Battle                                | Faka Mountain Battle, Sino-Vietnamese border, Sino-Vietnamese boundary, Faka Mountain                                     | 法卡山战役, 中越边境, 中越边界, 法卡山         |
| 1984–1989      | Two-Mountain Rotational Battles                     | Two-Mountain Rotational Battles, Sino-Vietnamese border, Sino-Vietnamese boundary, Mountain Zheyin                        | 两山轮战, 中越边境, 中越边界, 者阴山          |
| 1987           | 1987 Sino-Indian Border Conflict                    | Sino-Indian Border Conflict, Sino-Indian border, Sino-Indian boundary                                                     | 中印边境冲突, 中印边境, 中印边界             |
| 1988           | Nansha Naval Battle                                 | Nansha Naval Battle, March 14th Naval Battle, Chigua Reef Naval Battle, Nansha Islands                                    | 南沙海战, 3·14海战, 赤瓜礁海战, 南沙        |
| 1995–1996      | Missile Crisis in the Taiwan Strait                 | Missile Crisis in the Taiwan Strait, Taiwan Strait Crisis, Taiwan independence, Lee Teng hui's visit to the United States | 台湾海峡导弹危机, 台海危机, 台独, 李登辉访美      |
| 2001           | 4-1 Battleplane Crash Incident between China and US | 4-1 Battleplane Crash Incident between China and US, China-U.S. aircraft collision, 81192                                 | 4·1中美南海撞机事件, 中美撞机, 81192       |
| 2012           | Sino-Japanese Diaoyu Islands dispute                | Sino-Japanese Diaoyu Islands dispute, Diaoyu Islands, Yasukuni Shrine, Militarism, Taiwan-related                         | 中日钓鱼岛争端, 钓鱼岛, 靖国神社, 军国主义, 涉台   |
| 2012           | Huangyan Island Incident                            | Huangyan Island                                                                                                           | 黄岩岛                            |
| 2013–2016      | The so-called South China Sea Arbitration           | the so-called South China Sea Arbitration, Nine-Dash Line                                                                 | 南海仲裁案, 九段线                     |
| 2016           | THAAD deployment in South Korea                     | THAAD deployment in South Korea, South Korea deploys THAAD                                                                | “萨德”入韩, 韩国部署“萨德”               |
| 2017           | 2017 Sino-Indian Border Conflict                    | 2017 Sino-Indian Border Conflict, Sino-Indian border, Sino-Indian boundary, Dong Lang Village                             | 中印边境洞朗对峙事件, 中印边境, 中印边界, 洞朗     |
| 2018 until now | China-U.S. Trade War                                | China-U.S. trade war, China-U.S. trade friction, Entity List                                                              | 中美贸易战, 中美贸易摩擦, 实体清单            |
| 2020           | 2020 Sino-Indian Border Conflict                    | 2020 Sino-Indian Border Conflict, Sino-Indian border, Sino-Indian boundary                                                | 中印加勒万冲突, 中印边境, 中印边界            |
| 2022           | 2022 Sino-Indian Border Conflict                    | Sino-Indian border, Sino-Indian boundary                                                                                  | 中印边境, 中印边界                     |
| 2022           | Pelosi visits Taiwan                                | Pelosi visits Taiwan, the tension in the Taiwan Strait situation                                                          | 佩洛西访台, 佩洛西窜台, 台海局势紧张           |

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