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The Impact of Geopolitical Risks on Global Supply Chains - The Example of the Palestinian-Israeli Conflict

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ABSTRACT

Geopolitical risk is an international risk that transcends the borders of a single country, and in response to the diversity and suddenness of the types of geopolitical risk-causing indices, there are all kinds of uncertainties in the process of global supply chain management affected by geopolitical risk, which makes the main body of the supply chain affected by the risk. With the development of globalisation, more and more enterprises extend their production and supply chains to all parts of the world, which makes geopolitical risk one of the important challenges that they must pay attention to and deal with. Factors such as regional political instability caused by the Israeli-Palestinian conflict, disruptions in the transport of goods, the impact on regional supply chains, and volatility in financial markets all pose challenges to the stability and reliability of global supply chains.

KEYWORDS

Geopolitical risk; Palestinian-Israeli conflict; Supply chain; Financial markets

1. INTRODUCTION

The global geopolitical landscape is in a crisis situation due to the ongoing and uncontrollable proliferation effects of the Israeli-Palestinian conflict, resulting in global supply chains always being at risk, and thus turbulence and unrest may be a challenge that global trade and supply chains will always face in the future. Current research on the impact of geopolitical risks on supply chains is relatively insufficient, especially for the supply chain impact of specific regional conflicts. [4] Therefore, by deeply analysing the impact of the Palestinian-Israeli conflict on the supply chain, it can provide a reference for multinational enterprises to formulate a more flexible and effective supply chain strategy, which can help to reduce the uncertainty brought by geopolitical risks, while guaranteeing the sustainability of the business and improving the competitiveness within the industry.

2. LITERATURE REVIEW

The impact of geopolitical risk on supply chains is considered an increasingly important topic on a global scale, and in this regard, it is interesting to analyse how the literature review of previous scholars on supply chain risk management (SCRM) and disruption has evolved its arguments over the last few years. Firstly, a Federal Reserve study entitled Measuring Geopolitical Risk defines geopolitical risk as 'the risk arising from events that affect the normal and peaceful conduct of international relations, such as wars, terrorist attacks, and interstate tensions'. Geopolitical risk includes risks resulting from these events, as well as new risks arising from these events, escalations, and escalations. [1] While David K. Bohl, et al (2017) defines geopolitical risk as a trend of political and economic change that is potentially disruptive to human well-being, arguing that geopolitical risk

stems from three interrelated risks: first, political risk arising from competition for power among geopolitical actors, which manifests itself most intensely in the form of violent conflict, but may also include other forms of destructive competition ; two, economic risks arising from global or regional economic and financial turmoil; and three, natural risks arising from changes in the non-human environment, such as water scarcity due to climate change. [2] In its 2015 Global Risks Report, the World Economic Forum in Davos defined geopolitical risk as a global risk that is systemic, trans-geographical and trans-sectoral, covering violent inter-state conflict, civil strife in key countries, large-scale terrorist attacks, the proliferation of weapons of mass destruction and the failure of global governance. In the Global Risk Report 2022, several more geopolitical risks are analysed such as geo-economic confrontation, breakdown of interstate relations, competition for geopolitical resources, interstate conflict, state collapse, collapse of multilateralism, terrorist attacks, etc. Dario Caldara (2022) explores geopolitical risk as a threat associated with war, terrorism, and unfavourable events affecting international relations, realisation and escalation risks. [3] This definition not only builds on historical usage, describing the practice of states controlling and competing for territory. Table 1 summarises the above literature and gives relevant information.

In the existing literature, domestic and foreign scholars mostly adopt macro analysis, which has conducted extensive and in-depth research on the relationship between geopolitical risk and supply chain management, but lacks in-depth case studies on the impacts of specific geopolitical events, such as the Israeli-Palestinian conflict, on supply chains, and at the same time, there is a lack of industry-specific analyses of the risk impacts of the risks involved, which means that we have an insufficient understanding of the sensitivities of different industries to geopolitical risks and their responses of different industries. In addition to this, most studies have insufficient systematic research on the long-term impacts of geopolitical risks, as well as insufficient empirical research on coping strategies, all of which limit our in-depth understanding of geopolitical risk management and lack of validity. In order to fill some of the gaps, firstly, this paper will take the Palestinian-Israeli conflict as an in-depth case study, and unfold it by exploring its specific impacts on specific supply chains, and in doing so, further unfold the impacts of geopolitical risks on supply chains. The paper will also discuss how to cope with the long-term impact of geopolitical risk on supply chains, including relevant business strategies to discuss the effectiveness of different coping strategies in actual supply chain management. The value of the research is that this paper will provide empirical data to analyse the impact of geopolitical risk impacts on global supply chains through case studies. This study enhances the understanding of geopolitical risk management and provides enterprises with strategic planning and risk management references based on empirical studies. Through these studies, we are not only able to better understand the impacts of geopolitical risks on supply chains, but also provide practical insights and recommendations for firms and policy makers to improve the resilience and sustainability of supply chains in the context of globalisation [5].

3. GEOPOLITICAL RISK TRANSMISSION TO GLOBAL SUPPLY CHAINS

In the process of globalisation, modern enterprises face unprecedented challenges in supply chain management. Globalisation has enabled firms to efficiently access raw materials, resources and technologies from all over the world, especially key resources such as energy and minerals. However, this global allocation of resources has also made firms extremely sensitive to geopolitical upheavals. Geopolitical risks such as political conflict, trade sanctions or regime change can trigger supply chain disruptions that can have a direct negative impact on a firm's production line. Geopolitical instability has a direct impact on supply chains. Geopolitical events, such as transport disruptions and port blockades due to tensions, directly affect the logistics chain, which in turn leads to disruptions in supply chain operations. [6] This impact is particularly significant at key nodes in the supply chain, where there is a high degree of concentration and the stability of the entire supply chain can be threatened if affected. Firms' dependence on key resources, such as energy and minerals, and disruptions to the supply chain of these resources are the most direct impacts of geopolitical instability

on firms. The uncertainty and suddenness of geopolitical risks not only increase the difficulty of managing a firm's supply chain, but also make firms vulnerable to geopolitical risks due to the difficulty of predicting and avoiding them, especially if there is a high concentration of key nodes in the supply chain. This makes it difficult for firms to adequately predict and prevent risks, increasing supply chain vulnerability. Second, geopolitical events have a destabilising effect on financial markets, which in turn affects firms' financial chains. Geopolitical tensions usually cause instability in financial markets, leading investors to withdraw from risky assets, stock markets to fall, bond prices to rise and capital flows to become unstable. Financial market instability affects the financial chain of firms, weakening their risk tolerance in the supply chain and further amplifying the risks to which they are exposed.

4. IMPACT OF THE PALESTINIAN-ISRAELI CONFLICT ON THE SUPPLY CHAIN

4.1. Traffic Congestion

The Red Sea crisis continues to fester. The Palestinian-Israeli conflict has resulted in the threatening of important regional energy transport corridors. Currently, about 12% to 15% of the world's international trade, 30% of container traffic and 12% of seaborne oil, 8% of liquefied natural gas and 8% of coal depend on Red Sea traffic. As an important shipping corridor, being affected by conflict or its expansion will directly affect the smooth flow of the global supply chain. This would lead to increased uncertainty in global energy markets. To avoid attacks, Red Sea vessel traffic has decreased by 85 per cent, forcing ships to find alternative routes. Most shipping companies have diverted to a longer east-west route through the southern tip of Africa and around the Cape of Good Hope. This has led to a two-week increase in transit time, which has had a serious impact on shipping fuel and freight rates. [7] In addition to its direct impact on shipping rates, the traffic jam has multiplied insurance costs. Insurance companies are charging 10 times the extra premium for voyages to Israel, equivalent to between 0.15 and 0.2 per cent of the value of a ship, or tens of thousands of dollars, up from 0.0125 per cent previously, putting pressure on shipping companies geometrically. Notably, container freight volumes have also been hit hard, plummeting some 65 per cent, well below expected levels.

Meanwhile, dollar revenues from Egypt's Suez Canal were down 40 per cent at the start of this year compared to 2023. Moreover, compared to the same period last year, ship traffic sailing through the Suez Canal significantly decreased by 30% between 1 January and 11 January, from 777 to 544 vessels. Data released by the Shanghai Stock Exchange showed that the latest SCFIS Europe was at 3,140.7 points, a jump of 49.7 per cent from the previous period. [8] The economic impact of the Red Sea situation is spreading globally, creating a domino effect especially in the supply chain, putting global trade under strain. According to Bernstein's data, freight rates have risen sharply by 138 per cent since the attacks broke out. Since the beginning of December, freight rates have tripled, including on key routes [9, 10].

According to Danish Maritime Intelligence, the weekly capacity index for Red Sea shipping fell by 57 per cent in December last year compared to the annual average, surpassing the 47 per cent drop seen in March 2020 at the start of the new Crown outbreak. The report found that the frequent attacks on merchant ships in the Red Sea have had a severe impact on the global supply chain, surpassing the impact on the global supply chain at the beginning of the New Crown epidemic.

UNCTAD data shows that as of 26 January, container ship transits in the waterway were down 67 per cent compared to a year ago. The most affected are LNG carriers, which have been completely suspended since 16 January. This compares to the two to three gas carriers that normally passed through the region every day before the Red Sea crisis. UNCTAD estimates that trade through the Suez Canal has fallen by 42 per cent in the past two months.

4.2. Asia-Europe Trade Volume Impact

According to the German KIEL agency1 forecast, in December 2023, the global trade in goods decreased by 1.3% compared with November. Among them, the size of EU imports and exports fell by 3.1 per cent and 2 per cent respectively, Germany by 1.8 per cent and 1.9 per cent, and the US by 1 per cent and 1.5 per cent. Regions affected by the Red Sea crisis include Europe, Central Asia and North Africa 21.5% of refined oil imports, 13.1% of crude oil imports, 24% of organic chemicals imports, 22.3% of flat-rolled steel imports, the United States 91.5% of palm oil imports, 86.5% of rice imports, 87.6% of grapes imports, about 50% of solar cell imports, and 41.3% of global trade in automobiles and 20.8 per cent in auto parts.

In addition to energy sources such as crude oil and natural gas, a significant portion of the commodities traded through the Suez Canal are end-use products such as electronics, clothing and toys. When it comes to the transport of this part of the cargo, analyst Zheng Jingwen believes that the impact will not be too great, because shipping companies keep the freight by bypassing the route, and for high value-added products, they will also be transported by air or China-European liner. In addition, the dry bulk cargo transported by the shipping lane also caused concern. Some analysts believe that in the dry bulk market, it may affect the transport of grain in the Black Sea region, such as Ukraine. Analyst Chen Zhen also believes that there will be a certain degree of impact, mainly in Europe and the United States food shipments to Indonesia, Saudi Arabia, Jordan and other Southeast Asia and the Middle East shipping lanes are blocked. However, the impact is relatively limited, the current CBOT soybean, corn, wheat prices are basically stable.

4.3. Import and Export Disruptions

The global crude oil market is highly dependent on the supply of crude oil from the Middle East. The Middle East region occupies an important position in the global crude oil supply. About 60 per cent of global undeveloped oil reserves are located in the Middle East, including Saudi Arabia, Iran and other countries. The Palestinian-Israeli conflict has led to geopolitical tensions in the Middle East, making the region a key vulnerable node in the global energy supply chain. In addition to this, Israel is one of the world's leading bases for semiconductor manufacturers. It is home to numerous semiconductor companies and research and development organisations. These include internationally renowned companies such as Intel and Nvidia, as well as local companies such as Hightower Semiconductor. These companies have production bases, R&D centres and offices in Israel, providing a link in the global semiconductor industry chain. Meanwhile, Israel is also a global potash exporter. Israel has an annual production capacity of about 4 million tonnes of potash across the country, equivalent to 8% of the global potash market. As two of the world's largest potash suppliers, Israel Chemicals Corporation (ICL) and Jordan Potash Company (APC) are both affected by the Dead Sea area where they are located.

The widening conflict and escalating fighting has led to the closure of several Israeli ports, including the strategically important port of Ashkelon. The port is served by a 254-kilometre oil pipeline from Eilat to Ashkelon, known as the Trans-Israel Pipeline, which runs from the Gulf of Aqaba on the Red Sea to the Mediterranean Sea and is operated by the Israeli pipeline company Eilat Ashkelon. The port of Ashkelon is uniquely situated just over 10 kilometres from the Gaza border strip. On top of that, on 22 January 2024, Haifa, Israel's largest port city in the north facing the Mediterranean Sea, claimed to have been suddenly struck by a number of long-range cruise missiles. Now, Israel's ports to the Mediterranean Sea have also begun to be hit, and Israel's northern access to the sea has been hit hard. As a result, Israel's normal imports and exports have been blocked, affecting supply chains across the globe.

4.4. Employee Shortage

Israel's defence mobilisation operations have also had a significant impact on the domestic semiconductor industry. The massive mobilisation operations of the IDF have had a profound impact on the domestic economy, particularly on the high-tech industry. The normal functioning of the semiconductor industry, which is an important part of the Israeli economy, has been challenged as never before. The IDF's mobilisation order resulted in the call-up of a large number of reservists, including employees and executives of numerous semiconductor companies. For example, NVIDIA CEO Jen-Hsun Huang revealed in an internal email that nearly 400 of the company's employees in Israel have been drafted into the army. This phenomenon has not only affected the company's day-to-day operations, but has also had an impact on employees' personal lives. In addition, Israel's blockade of the Gaza Strip has further exacerbated the employee shortage. The blockade has resulted in the closure of all border crossings, preventing many employees living in border areas from travelling to their workplaces on a regular basis. This combination of geographic and political factors puts additional pressure on semiconductor companies' human resource allocation and production schedules. Semiconductor companies are now taking a series of contingency measures in the face of the dual challenges of employee shortages and operational disruptions. Samsung's Israel R&D centre has shifted to a work-from-home mode due to its geographical location near the border, and has activated an emergency communication network with its headquarters. lG electronics, on the other hand, has ensured business continuity by regularly checking on staff safety and keeping a close eye on developments. In addition, NVIDIA cancelled its annual AI Summit offline meeting scheduled to be held in Tel Aviv to safeguard the safety of employees and participants. The impact of Israel's defence mobilisation operations on the semiconductor industry is multifaceted, ranging from human resource shortages to adjustments in production schedules to shifts in business operating models. Going forward, as the situation evolves, the semiconductor industry may need to further adapt its strategy to the changing external environment.

5. ENTERPRISE RESPONSE STRATEGIES

Take China PV as an example. First, PV chooses to design a flexible logistics programme and selects alternate logistics channels or modes of transport. In view of the fluctuating geopolitical situation, Chinese PV export enterprises need to establish a more flexible supply chain logistics network. On the one hand, the development of flexible transport plans, according to geopolitical changes, at any time to adjust the trade route, in the Red Sea waters are adversely affected, you can quickly switch to the alternate programme, choose to avoid the Red Sea alternative routes, such as bypassing the Cape of Good Hope or through the China-European Union liner transshipment, etc.. At present, the passage of piece cargo ships (which can carry containers) with Chinese background is not affected, and they can continue to pass through Suez Canal, and their voyage to the Mediterranean area takes only more than 20 days, which is at least 30 days shorter than the bypassing option, with obvious advantages.

Secondly, China PV has established a risk management team, strengthened information sharing and research and judgement, and responded to emergencies quickly. Through the risk assessment and real-time monitoring mechanism, PV enterprises can obtain the latest information about the security of the Red Sea region and changes in European shipping in a timely manner, which provides the basis for the development of response strategies. At the same time, it is also necessary to synchronise the preparation of contingency plans to cope with unfavourable situations that may arise at any time.

In addition, it is also necessary to establish a close co-operative relationship with liner companies to face the challenges together and cope with the impact of the Red Sea crisis on the global supply chain. At present, many head photovoltaic enterprises and liner companies have established close cooperation in the form of strategic partners, not only limited to the signing of LTA preferential freight rates, but also in global warehousing, third place booking, end-to-end supply chain,

digitalisation and other aspects, to launch in-depth cooperation. For example, after LONGi Green Energy became a strategic partner with COSCO Shipping Group, during the epidemic period when the U.S. routes were bursting, LONGi Green Energy's demand for space from its base in Vietnam to the U.S. was fully guaranteed by COSCO Shipping, and there was never a case of container dumping or shortage of containers.

Firms need to continue to learn and adapt to new challenges. By analysing the coping strategies of Chinese PV companies, other companies can better understand how to remain competitive in the face of geopolitical risks and prepare for future uncertainties. The successful practices of Chinese PV companies in coping with geopolitical risks not only safeguard their own stable development, but also provide an important reference for the resilience and sustainability of global supply chains. Other enterprises should learn from this experience and establish a more resilient and adaptive supply chain management system to jointly cope with the uncertainties and challenges in the global economy.

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