

# Russia-Ukraine war and risks to global supply chains

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**Abstract:** In the current economy, supply chain is considered as a very important network to achieve the highest profit of manufacturers and other businesses. Therefore, the flow of goods becomes the biggest concern of companies in the context of volatile market economy due to the Covid-19 pandemic broken out violently, and now especially due to the war between Russia and Ukraine, since this war was followed by the appearance of sanctions between EU countries and Russia, greatly affecting the global supply chain. On that basis, the article studies the current situation of the global supply chain during the war period, thereby providing management implications and solutions to improve the global supply chain. This research is conducted based on information analysis on the actual situation of the global supply chain, thereby providing management implications and proposing some solutions to limit the risks for global supply chain. **Keywords :** war, global supply chain, Russia, Ukraine

## 1. Introduction:

### 1.1. The situation of the war between Russia and Ukraine:

The current Russian-Ukrainian political crisis dates back to the end of the Cold War, closer to 2014 when Russia annexed Crimea, followed by some instability in the Donbass region, to the east. Ukraine - home to two self-proclaimed republics, Donetsk (DPR) and Luhansk (LPR).

Most recently, from the end of 2021 until now, the situation became especially tense when in December 2021, Russia sent to the US and the North Atlantic Treaty Organization (NATO) a security proposal consisting of 8 points, which clearly state security concerns as "red lines", are: 1) Ukraine cannot become a member of NATO; 2) NATO does not continue to expand to the east; 3) NATO returns to the starting point in 1997, that is, before expanding to the east, admitting the countries of Eastern Europe and three Baltic Republics as new members, which Russia considers a serious threat to its security and Russia's strategic interests. After about a month and a half, the US and NATO sent back a response to Russia with suggestions that were not satisfactorily met. According to US and NATO, all sovereign states like Ukraine, if they have security requirements, can apply to join not only NATO but any other organization in line with its own national interests. The response also emphasized that it is unreasonable for Russia to ask NATO to return to the starting point in 1997. This makes Russia think that its legitimate proposals are not valued by the US and NATO.

Revolving around the deployment of large military forces to the border area with Ukraine from the end of November 2021, on February 22, 2022, Russian President announced the decision to recognize the independence of the two self-reclaimed countries (DPR and LPR) and sent troops here to carry out "peacekeeping missions". Facing growing security risk after Ukraine is expected to sign a strategic military agreement with Britain and Poland, on February 24, 2022, Russian President continued to declare the opening

of "special military operation" in eastern Ukraine, in response to an offer of assistance in ensuring security from the leaders of the two countries Donetsk (DPR) and Luhansk (LPR).

In general, the current Russia-Ukraine conflict can basically be explained from two main angles. Firstly, from the perspective of political realism, located on the Eurasian continent, Ukraine is a "natural buffer zone" between East and West. Both Russia and the West believe that the other is a security threat, threatening their existence. According to Russia, Ukraine's application to join NATO will upset the balance of power and security on Russia's western flank, threaten Russia's survival space, lose its strategic buffer zone, and reduce its geo-political influence that existed during the Soviet era, so Russia must act promptly to prevent this security threat to maintain a vital "security buffer" against attempts to expand NATO's influence to the west. Meanwhile, the US and the West interpreted it as what they needed to do to prevent Russia's rise in the region. This would threaten the security of Europe (the traditional US sphere of influence), intra-NATO unity, global leadership, and an international order in favor of the United States. Secondly, from the perspective of constructivism and liberalism, the root of which is the unresolvable conflict between the Anglo-Saxon and Slavic civilizations, is the reaction to geopolitical expansion of Anglo-Saxon civilizations. The Anglo-Saxons under the spreading guise of globalization wanted to dominate all the Europe. The Slavs consider this to be a return to historical space and their place in the world represented by Russia.

Besides, it is possible to mention the element of Russian nationalism with very high national pride. For Russia, the deterioration of the domestic economic and social order and the fact that Russia had to give up influence in many regions of the globe were the consequences of the collapse of the Soviet Union. Russia's heroic past has created a high level of nationalism. Although Russia suffered heavy losses in life and property during the Second World War, Russia's important contributions to maintaining and ensuring world peace and security are the affirmation of its position in the international arena.

In terms of cultural history, analysts believe that the Russian-Ukrainian military conflict partly stems from the high spirit of nationalism in Russia. At the same time, the conflict can also be explained from the liberal hegemony of the US, which causes the US to commit to export and disseminate democratic values to unfamiliar places. This often provokes opposition from nationalists. Russia considers the US intervention and the imposition of democratic values and human rights on Russia as a risk of causing internal political instability.

## **1.2. Global supply chain situation:**

The thought that global governments, businesses and consumers could breathe a sigh of relief when earlier this year, the bottlenecks that caused the global supply chain to be congested in 2021 began to be loosened, but Russia's war in Ukraine and the blockade order to combat the Covid-19 pandemic in China suddenly made things tense again. Economists are concerned that supply chain troubles could drag down global economic growth and drive up inflation in all countries. In the past two years, the trade route between the US and Asia has been hardest hit by the Covid-19 pandemic. But the current global supply chain bottleneck is felt especially strongly in Germany, which is heavily reliant on energy supplies from Russia via Eastern Europe.

### **\* War and Covid- 19 threaten the global supply chain:**

Business confidence in Germany, Europe's largest economy, plunged to a record in March. Factories across the European Union were reeling from a lack of diesel and input components. Cargo trains passing through key North Sea gateways like Bremerhaven were stretched. In addition to the obstacles caused by war, the Omicron outbreak in China is forcing the country to implement a strict blockade in major economic centers, including the city of Shanghai. AP Moller-Maersk A/S, the world's second largest container shipping company, said a few days ago that some warehouses at seaports in China are in a state of indefinite closure. Trucking operations to and from seaports were also severely affected. China's exports are declining from a peak reached in October last year, and this trend could continue for the next few months if Beijing maintains a tough stance in the fight against Sars-CoV-2 virus. The Zero Covid (no Covid) strategy that this country pursues will only increase congestion at seaports, challenges in sourcing goods, and costs for businesses from the US to Europe. According to the supply chain disruption indexes compiled by Bloomberg, pressure on supply chains increased in the US and Europe in February after the situation improved in the previous few months. In March, there was strong evidence that these tensions will not be relieved anytime soon.

## **2. Theoretical basis:**

### **2.1. Supply chain concept:**

The supply chain includes all participating businesses, directly or indirectly, in responding to customer needs, represents a shift of materials throughout the process from the initial supplier to the final customer. Supply chain includes all businesses and departments directly or indirectly involved in meet the needs of customers (Sonil Chopra, 2012). The supply chain is not only about the manufacturers and suppliers, but also the transportation company, warehouse, retailer and its customers. A supply chain consists of many businesses, and each business can participate in many different supply chains. Each different product and service will form and exist in different supply chains.

Supply chain management (SCM) is the management of supply and demand for the entire system of an enterprise, including all logistics management activities, including planning and managing all operations involved in sourcing, manufacturing and logistics operations. Management requires coordination between partners in a comprehensive supply chain to bring satisfaction to customers. All products reach the consumer through some form of supply chain, some larger and some much more complex. With this supply chain idea, it is easy to see that there is only one source of profit for the entire chain, which is the end customer. When individual firms in the supply chain make business decisions without regard to other members of the chain, this ultimately leads to very high prices for the final customer, low levels of supply chain service response. According to the Institute of Supply Management, supply chain management is described as the design and management of cross-cutting processes, creating value for organizations to meet the real needs of the end customer. The development and integration of human and technological resources is a key factor for successful supply chain integration (Institute for Supply management, 2000). Lee and Billington in their research paper define supply chain management as the integration of activities occurring at the network's facilities to generate materials, move them into central products, and then to the final finished product, and deliver the product to the customer through the distribution system (HL Lee and C. Billington, 1995).

A global supply chain is a network that has a worldwide reach. In that network, a business buys or uses goods or services from abroad to provide, produce and distribute a certain product or service. A perfect supply chain requires close cohesion between participating businesses. At the same time, they must also manage the flow of information, products and financial affairs well to avoid losses and maximize profits throughout the chain.

### **2.2. Roles and characteristics of the global supply chain:**

#### **\* Role:**

Supply chains play an extremely important role, directly affecting production and business activities of enterprises. At the same time, the supply chain is also considered an important step in business development. If the supply chain operates effectively, the enterprise will gain a competitive advantage, have a firm foothold in the domestic and foreign markets and increase its ability to reach out further. A product needs to go through many processes before it can reach the consumer. Such processes can transform raw materials into finished products and send them to distributors. Distributors distribute goods to retail locations. All these processes are part of the supply chain. Therefore, the supply chain plays an extremely important role in bringing products and services to consumers in the most convenient and optimal way. A company with high product sales and consistently increasing profits means that its supply chain is doing very well.

#### **\* Characteristics:**

The supply chain must be consistent with the business goals and operational strategy of the company or enterprise. An effective supply chain will need to be associated with the company's strategy in each period, in accordance with the factors of resources, markets, and strengths of the business. In an effective supply chain, a business also needs to create good products, suitable for the market segments that the business targets. At the same time, products and goods must be promptly delivered to customers. The supply chain also needs to incorporate an assessment of the company's own position. For each position, there will be different options for suppliers as well as customers. variation in the supply chain. In the supply chain, companies are forced to adapt to change, the parties will exchange information about each other about the situation of the market and customers. Therefore, in order to have an effective supply chain, enterprises themselves must make timely decisions to change, in accordance with the situation of the market, competitors, customers.

### **2.3. Global supply chain management :**

**Global Supply Chain Management (GSC)** is a term that originated in the mid-2000s. It is a management system of rules, structures and institutions that guide, control and lead the supply chain, through through policies and regulations, with the goal of creating greater efficiency. Operating systems are put in place by different actors, such as international organizations and individual companies, in the global supply chain. A global supply chain is the process of transforming raw materials into a final product, usually occurring in a number of different countries, moving products and services from producer to consumer. Through increased globalization and international finance, this process is expanding. This has led to the idea that a management system is needed to help guide these global supply chains to perform more efficiently. There is not always a distinction between supply chain management and global supply chain management although they are fundamentally different. Supply chain management (SCM) is the actions taken to manage the system from within. It involves the flow of materials through the global supply chain to ensure an efficient production system per capita. Both systems are working to improve the efficiency of the global supply chain, the difference being that SCM is concerned with the products in the system and their efficiency in the system. GSC focuses on the entire system and the interaction between companies. While GSC's goal is to run supply chains to operate efficiently, not all actors implement the same governance models to do this. The main conflicting patterns of governance strategies differ in how they understand the global supply chain. They emphasize different external and internal factors and how these differences affect policy decisions. These policies can present barriers in a variety of ways, such as when trying to integrate policies across different cultures. Although there are barriers to effective GSC, there are also facilitators that help promote it, such as planning for partnerships between companies.

### **3. Analysis of the current situation and risks of the global supply chain:**

#### **4.1. Overview of the global supply chain situation since the Russia-Ukraine war:**

The current military conflict between Russia and Ukraine has cut off many important shipping routes, forced transport companies to suspend service, and soaring air freight rates cause serious disruptions. global supply chain.

#### **4.2. Impact of the Russian-Ukrainian war on the global supply chain:**

##### **4.2.1. Congestion, congestion and costs:**

In an interview with CNBC, the head of services for the Keelvar supply software platform (Ireland) Dylan Alperin said the maritime route in and out of the Sea of Azov, one of the few points of access to road commerce. The sea in Ukraine is now inaccessible because Ukrainian and Russian military forces have blocked the entrance. This has resulted in a significant number of ships waiting to pass through the Kerch Strait. "70% of Ukraine's exports are transported by ships. Congestion is getting worse by the hour," Alperin said. The director of container rental technology platform ContainerxChange (Germany) Christian Roeloffs also shared that the areas around the Black Sea and Sea of Azov are currently very dangerous or impassable. There have been reports of missile attacks on passing commercial ships and crew arrests. The ships that crashed were oil tankers, container ships and cargo ships from Japan, Turkey, Moldova and Estonia. Commodities transported include diesel, rare earths and grains. Many companies in the supply industry have suspended delivery services to and from Russia and Ukraine. Some other companies added that the transport of goods is at a standstill because the seaports in the Ukrainian city of Odessa and the city of Mariupol are closed due to damage from shelling. Container shipping operations have now stalled with a lot of cargo stuck at these ports. The situation of transportation by air is also facing many similar difficulties. Ukraine's airspace is closed to civil flights as well as airlines avoiding flying over Russian airspace, causing air freight rates to skyrocket, significantly reducing the amount of goods moving through this type of transport. download this.

##### **4.2.2. Risks pile up for manufacturing industries:**

More worryingly, the cancellation or reroute of flights could also have a knock-on effect and disrupt supply in other areas, said Jennifer McKeown, an economist at the research firm. Capital Economics market (UK). If input materials and fuels are not supplied in time, such as platinum, aluminum, sunflower oil, crude oil and steel, factories in Europe, Russia and Ukraine are at risk of shutting down. Escalating tensions have also caused energy prices to skyrocket, pushing transportation costs higher than they are now. Besides, Ukraine has long

been the supplier of about 50% neon gas and 40% krypton gas to the world, these are two indispensable by-products in the production of electronic chips. Supply disruptions due to the current war are preventing this item from reaching manufacturers, making them very difficult to deal with component shortages, late deliveries and higher raw material costs. This means that companies that depend on chips, such as automakers, also face production delays. According to some companies in Japan and Korea, they can tap into the reserves, but the rush to find suppliers outside Eastern Europe is causing shortages and increasing prices, not just neon gas but also other industrial gases such as xenon, according to The Nikkei. Finding a supplier of neon gas other than Ukraine is currently difficult, as the gas must be purified to 99.99% purity, a complex process that only a few companies in the world can do, including companies based in the city of Odessa. The growing number of carriers discontinuing service in Russia accounts for about 62% of total international ocean freight capacity, according to FreightWaves.

#### **4.2.3. Alarming shortage of shipping personnel from Russia and Ukraine:**

The International Chamber of Shipping (ICS) recently warned that supply chain disruptions could be made worse by a shortage of shipping crews from Russia - Ukraine due to the impact of the war situation. According to the ICS, Ukrainian and Russian seafarers make up 14.5 percent of the global shipping workforce. Concerns about the safety of the crew and rising insurance premiums to bring ships to Ukraine or Russia have also discouraged shipowners from accepting shipments to these two countries. In addition, the payment of wages for seafarers should also be maintained through the international banking system. However, the United States, Canada and their European allies have simultaneously disconnected major Russian banks from the SWIFT global payment system, which connects more than 11,000 banks and financial institutions in more than 200 countries and territories.

### **5. Management implications and solutions:**

In the context of uncertainties in the world happening with a thicker and unpredictable frequency, Vietnam needs a strategy to build economic institutions, improve the resilience and self-reliance of the economy. In particular, it is necessary to develop an energy security strategy, to ensure enough energy for socio-economic development needs, to make maximum use of renewable, clean and environmentally friendly energy. The socio-economic development strategy needs to supplement views and solutions to improve autonomy, resilience and risk management.

The government, business associations and the business community itself need to learn carefully about the US embargo law, and at the same time conduct an immediate discussion with the US partner to avoid sanctions when violating the embargo measures against the US with Russia.

At the same time, the Government should direct ministries and branches to continue administrative reform, implement solutions to facilitate trade activities, and support to remove difficulties for export enterprises.

#### *Risk prevention in payment*

The State Bank shall urgently guide enterprises participating in import and export activities on forms of payment and measures to prevent risks in payment when signing contracts to remove payment difficulties caused by banks. Russia is excluded from the SWIFT international payment system. In addition, the State Bank needs to study the formation of payment channels with Russian banks and businesses, as well as through non-embargoed means to help domestic enterprises continue to transact. legally with a Russian partner. Research the possibility of doing business in rubles, limit the use of foreign currencies to avoid exchange rate fluctuations, apply methods of clearing in rubles or barter with Russia to limit money transfers through banks.

#### *Ensuring supply and demand for the domestic market, effectively exploiting FTAs.*

The Ministry of Industry and Trade monitors, captures and regularly updates political and diplomatic tensions, changes in economic, trade and investment policies of countries, and provides timely information to ministries, the relevant industry to have a treatment solution.

At the same time, the Ministry of Industry and Trade closely monitors supply and demand fluctuations of sensitive strategic commodities, promptly takes appropriate management solutions, takes advantage of price opportunities for production and export, and ensures supply and demand for the market. domestic school.

Promote effective exploitation of FTAs signed with countries and territories, especially FTAs with the Eurasian Economic Union; countries in the Asia-Pacific region. Diversify import and export markets, ensure a smooth flow of import and export goods. Promote cooperation and connectivity between economies.

*Diversify markets, supply and payment currencies.*

To respond to the Russia-Ukraine crisis, the business community needs to diversify markets and supply and payment currencies; Actively negotiate with partners on freight plans and business methods.

At the same time, businesses need to review contracts and legal documents to ensure proactive in case of disputes.

In addition, enterprises participating in export activities should note to apply risk prevention measures in payment when signing and performing contracts.

The political and economic situation in the world is changing rapidly and unpredictably, with unprecedented fierce sanctions and retaliation, so policies and solutions must be quickly and adjusted as soon as problems arise. In the current context, it is not necessary to issue mid- and long-term policies for 2 or 5 years, but policies and solutions are practical, transparent, and associated with the requirements of real life.

## **6. Conclusion, limitations and future research directions:**

The COVID-19 pandemic has put unprecedented pressure on supply chains, which in turn impacts global trade patterns. Logistics disruptions, shortages and soaring energy prices have all contributed to supply shortages and spiraling transport costs. Against this backdrop, the crisis between Russia and Ukraine has put additional pressure on the already tense global supply chain. Freight rates, especially for sea and rail transport, are already very high and could rise even further due to the negative effects of the conflict.

The impact of food supply disruptions is also inevitable as Russia and Ukraine together account for more than a quarter of wheat exports, 19% of corn exports and 80% of global sunflower oil exports, with Ukraine alone accounting for nearly a quarter. half of sunflower oil exports. Food prices, which have surged to their highest levels in more than 10 years due to disruptions in supply chains during the pandemic, are likely to continue to climb even higher. Russia and Ukraine lead in the production of many metals such as nickel, copper and iron, and also contribute significantly to the export and production of other essential raw materials such as neon, titanium, palladium and platinum - all are both important components for the microchip manufacturing and aerospace industries.

About 90% of the neon, used for the lithography process to produce microchips, is of Russian origin and 60% of this is refined by a company in Odessa, Ukraine. Finding alternative sources of food to raw materials requires long-term investment before it can be supplied to the global market.

Although Russia's role in the world economy is not like that of China, which is a manufacturing power and plays an important role in global supply chains, Russia is like a big "gas station". Once this "gas station" closes, it could be crippling for those who depend on it, especially Europe, which imports nearly 40% of its natural gas and 25% of its oil from Russia. Professor of trade policy at Cornell University, Eswar Prasad, said the impact on trade from financial restrictions could be even greater, as they cut off Russian imports and exports to Russia. almost all major trading partners.

Disconnecting Russian banks from the SWIFT international payment system would also prevent Russian commerce, given the fact that payments often have to be made through the financial system operated by the United States and the United States. Western domination. Depending on what happens in Ukraine, the most significant effects on global trade could be long-lasting. After more than two years of the global supply chain being disrupted by the pandemic, new challenges are "deepening into the links", causing delays in the transportation of goods and higher delivery costs. As a result, goods using the global supply chain have increased in price.

The effect of Russia-Ukraine tensions on global trade is inevitable, as supply chain disruptions jeopardize the flow of goods around the world. The impact from this crisis on each industry will vary and depend on the duration of the stress, but they will certainly have a larger impact on global trade flows and supply chains. The WTO is scheduled to hold a Global Supply Chain Forum on March 21 to find out measures to minimize trade

disruptions, with the participation of WTO members, representatives from shipping companies. sea, trade and logistics globally.

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