



Geas Fares

**The Economic and Political Consequences of the Current
Supply Chain Crises**

Metropolia University of Applied Sciences

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Abstract

Author(s): Geas Fares
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Abstract

The global supply chain crises of recent years have exposed significant vulnerabilities in the interconnected global economy. These disruptions, driven by factors such as geopolitical tensions, natural disasters, and the COVID-19 pandemic, have severely affected the flow of goods and services worldwide. This thesis examines the economic and political implications of these ongoing supply chain disruptions, highlighting the need for diversified energy sources, enhanced supply chain resilience, and strategic geopolitical engagement to mitigate future risks.

Keywords: Supply chain disruptions, geopolitical tensions, global economy, energy security, logistical bottlenecks.

Contents

Glossary

1	Introduction: Overview of Global Supply Chain Disruptions	1
2	The Underlying Causes of the Current Supply Chain Crises	4
2.1	Economic Stability:	4
2.2	Business Continuity	5
2.2.1	Several factors contributing to this container shortage	7
2.3	Consumer Welfare	10
2.4	Risk management	12
2.4.1	The Necessity of the CHIPS and Science Act for U.S. Semiconductor Manufacturing	13
3	Fragility of the supply chain	15
4	History of Supply Chain Disruptions	17
5	What are other authorities saying about the issue/topic	21
5.1	Different Perspectives	21
5.1.1	Research Investigators	21
5.1.2	Business entities	21
5.1.3	Government Organisations	21
5.1.4	Governments	22
5.1.5	Examining Government Interventions in the Supply Chain Crisis	22
5.1.6	Trade associations	23
5.2	Strategic Planning	24
6	The Geopolitical Implications of Rare Earth Elements: U.S.-China Relations, Taiwan, and Regional Disputes	27
7	Critical appraisal of major references	34
8	Conclusion	35
9	References	39

1 Introduction: Overview of Global Supply Chain Disruptions

Disruptions that are currently occurring in the global business landscape have a significant impact on customers, economies, and industries. These crises, which are marked by interruptions in supply chains' flow of products and services, have come to pose serious risks to companies all over the world, from delays in manufacturing to transportation problems.

In recent years, supply chain crises have garnered increased attention and scrutiny, driven by a confluence of factors such as geopolitical tensions, natural disasters, and the ongoing COVID-19 pandemic. These events have exposed vulnerabilities in supply chain networks, revealing the interconnectedness and fragility of the global economy (Business Insider, 2021; The Economist, 2021).

Russia's attack on Ukraine has affected supply chains, in addition to the impact on energy sources, especially gas coming from Russia. As a result of Western support for Ukraine, the conflict may continue for long periods and threaten Europe's energy security. Therefore, European leaders are looking for quick and sustainable alternatives at the same time, not only by finding new sources of gas, but also diversifying energy sources through the use of nuclear energy, as happened in France and a number of European countries. In addition to renewable energy sources, things got worse when the conflict broke out between Israel and the Palestinians in the Middle East regarding supply chains and European security. The Suez Canal witnessed many attacks, and the Yemeni coast was extremely dangerous for European and American ships as well, which hindered the smooth arrival of supplies to Europe and America and the rise in shipping expenses in addition to delays. In the delivery of shipments, this constitutes a new problem added to the problems of trade between Europe and Southeast Asia. The conflict does not seem to end soon, but the matter is likely

to expand the area of the conflict to other countries and the outbreak of a regional conflict, and it could threaten Europe through the influx of large quantities of refugees due to instability. The political and military developments in the Middle East may lead to an increase in energy prices.

Therefore, European leaders must pay great attention to the political and military developments in the Middle East by supporting governments and reaching sustainable solutions. The European Union has recently provided significant financial support to the government of Egypt, as it is a central government in the region and has a role in creating stability (Atlantic Council, 2023).

The severe consequences that supply chain disruptions have on companies of all sizes and industries make them significant. Organizations of all sizes, from large businesses to tiny organizations, face the knock-on impacts of interruptions, which include reduced inventory, delayed production, and higher expenses. These difficulties not only affect profitability but also cause operational disruptions, decrease consumer confidence, and prevent growth in the economy (Christopher and Peck, 2004; Chopra and Sodhi, 2004).

The global supply chain crises of recent years have exposed significant vulnerabilities in the interconnected global economy, resulting in far-reaching economic and political consequences. These crises, triggered by a combination of factors including geopolitical tensions, natural disasters, and the COVID-19 pandemic, have disrupted the flow of goods and services worldwide, posing serious risks to companies across various industries.

One of the most significant impacts of these supply chain disruptions has been on economic stability. The crises have led to substantial slowdowns in GDP growth, with global economic output declining by more than 4 percentage points relative to pre-pandemic levels by the end of 2021. This economic downturn was a result of industrial halts, logistical bottlenecks, and rising prices for goods and

services. The consequences have been felt across multiple sectors, affecting everything from manufacturing to transportation.

The geopolitical landscape has played a crucial role in exacerbating these supply chain issues. The Russian invasion of Ukraine, for instance, has not only disrupted supply chains but also significantly impacted energy sources, particularly gas supplies from Russia to Europe. This conflict has prompted European leaders to seek quick and sustainable alternatives, including diversifying energy sources through nuclear energy and renewable options (International Monetary Fund, 2023; World Nuclear News, 2024).

The ongoing conflict in the Middle East, particularly between Israel and Palestinians, has further complicated the supply chain crisis. Attacks in the Suez Canal and dangers along the Yemeni coast have hindered the smooth arrival of supplies to Europe and America, leading to increased shipping expenses and delivery delays. These disruptions have added new challenges to trade between Europe and Southeast Asia, with the potential for the conflict to expand and threaten European security through refugee influxes and energy price increases (Atlantic Council, 2023; Economics Observatory, 2023).

The severity of these supply chain disruptions has affected organisations of all sizes, from large corporations to small businesses. The knock-on effects include reduced inventory, delayed production, and increased costs, which not only impact profitability but also cause operational disruptions, decrease consumer confidence, and hinder economic growth.

2 The Underlying Causes of the Current Supply Chain Crises

The global supply chain crises that currently affect businesses and economies pose serious obstacles, affecting a wide range of industries and interfering with the normal flow of goods and services. Understanding the underlying causes of these crises is essential for several reasons, elaborated below.

2.1 Economic Stability:

Among other things, supply chain interruptions affect GDP growth, employment, and trade. Policymakers and economists need to be well-versed in the root causes of these crises to provide effective remedies and mitigate the negative effects on the economy.

There have been significant global slowdowns in GDP growth as a result of supply chain disruptions. By the end of 2021, the COVID-19 pandemic had caused worldwide economic production to decline by more than 4 percentage points relative to the pre-pandemic average. The combined consequences of industrial halts, traffic jams, and rising prices for goods and services led to this economic downturn.

Not only might local economies suffer from political instability in places like Libya and Syria, but international trade routes and global supply networks are also impacted. Significant resources are needed for the economic recovery operations in these areas after natural disasters and wars, which might further strain international supply systems. Trade and regional economic stability were impacted by the anticipated \$130 billion cost of reconstruction in Turkey following the 2023 earthquake (The Economist, 2021).

Middle Eastern economies that rely heavily on tourism, like those in Lebanon, Egypt, and Jordan, have been severely impacted by the unrest in the area. For

instance, according to the IMF, hotel occupancy rates in Lebanon decreased by 45 percentage points in October 2023 as compared to the same month the previous year. Due to its importance as a source of foreign cash and jobs—tourism used to make for as much as 50% of a country's exports of products and services—these interruptions are particularly damaging.

An essential location for the world's oil production is the Middle East. Significant swings in oil prices can result from conflicts like those between Saudi Arabia and Iran or from disturbances in regions like the Strait of Hormuz. For example, rising tensions in the area may lead to increases in oil prices, which would affect world markets. The Strait of Hormuz is a vital choke point since it is where 20% of the world's oil flows. Two essential marine routes for international trade are the Red Sea and the Suez Canal. Houthi attacks on ships in the Red Sea in 2023 raised security worries, which resulted in lengthier trade routes around the Cape of Good Hope and higher freight insurance costs. Approximately 12% of all marine traffic worldwide occurs in this region. These routes might be further disrupted by any expansion of war, like the Israeli-Palestinian conflict, which would increase expenses and cause delays.

2.2 Business Continuity

Supply chain interruptions can lead to production delays, inventory shortages, and higher costs, which affect an organisation's ability to satisfy consumer demand and carry on with business as usual. By identifying the root causes of these interruptions, organisations may strengthen the resilience of their supply chains and ensure the continuity of their operations.

Semiconductors and Manufacturing: Production delays were caused by a lack of semiconductors, which are crucial for several sectors, such as electronics and the automobile sector. Major semiconductor-producing nations including South Korea and Taiwan had manufacturing difficulties as a result of the epidemic.

There were major economic losses worldwide as a result of this scarcity, which had an impact on many different industries.

Transportation: The transportation business was already facing problems, which the pandemic made worse. For instance, there was a shortage of around 61,000 drivers in the trucking business in the United States in 2019, and estimates indicate that number might rise to 100,000 by 2023 (The Food Institute, 2021). This scenario was made worse by the pandemic, which led to a large number of drivers quitting the business owing to health issues, heavy workloads, and difficult working conditions.

During these successive crises, China was focusing on developing its manufacturing power and at a lower cost compared to other countries. The progress China has achieved in becoming the second-largest economy in the world is largely due to its huge manufacturing capabilities. These capabilities allow it to produce and manufacture any commodity quickly and at a low cost, which has made the world rely on China for manufacturing instead of relying on local manufacturing.

China is distinguished by its ability to produce anything in huge quantities and deliver it anywhere in the world within record time. For example, you can order an item and find it manufactured and delivered to you in your country within a few days or weeks. In 2023, China shipped approximately \$3.4 trillion worth of goods abroad (Business Insider, 2021).

Although the Chinese aspire to increase their exports every year, its exports are not only related to manufacturing. Rather, there is another important step without which there will be no effective export, and this step is related to providing the necessary logistical services and infrastructure to support export operations.

The shipping challenges currently faced by China stem from a significant accumulation of goods in ports and extensive congestion with ships awaiting

docking. The primary issue exacerbating these problems is the severe shortage of available containers needed to transport these goods. This container scarcity has driven global shipping rates to unprecedented highs.

2.2.1 Several factors contributing to this container shortage

1. *Increased Shipping Demand:* As the global economy rebounds post-COVID-19, there has been a surge in demand for shipping and the transportation of goods. This heightened demand has strained available container resources (Business Insider, 2021; Federal Reserve Bank of St. Louis, 2022).
2. *Imbalanced Container Distribution:* Containers often accumulate in certain regions and do not return promptly to their original locations. This imbalance leads to shortages in other areas where containers are urgently needed for export (McGill University, 2020).
3. *Geopolitical Tensions:* Attacks by Houthi rebels in the Red Sea on commercial ships have heightened instability along crucial shipping routes. Such incidents disrupt the smooth flow of shipping operations and contribute to delays in container availability. (The Cooperative Logistics Network, 2022).
4. *Global Port Congestion:* Many ports worldwide are experiencing significant congestion, further complicating the movement of freight and resulting in longer wait times for ships to unload and load goods (Transport Exchange Group, 2021).

These factors collectively disrupt global shipping markets, causing widespread chaos.

The ongoing disruptions are expected to persist in the coming months, potentially influencing price levels by driving up shipping costs. Addressing these challenges will require coordinated efforts to enhance container availability, mitigate port congestion, and navigate geopolitical tensions affecting shipping routes.

This rise in shipping costs could lead to an increase in the prices of goods and merchandise globally over the next three months (World Economic Forum, 2021). To mitigate the impact of this crisis, companies may need to look for alternative solutions such as using different shipping methods or securing more containers from other sources. However, long-term solutions may require improving port infrastructure and increasing the efficiency of container distribution globally.

In recent months, specifically in July, August, and September 2024, disruptions to global supply chains are expected to continue due to several fundamental factors. One such factor is the decision by the Panama Canal Authority in 2023 to reduce the number of ships allowed to transit daily due to drought and low water levels in the waterway (Federal Reserve Bank of St. Louis, 2023). This decision greatly affected the flow of ships through the canal, as the number decreased to 22 ships per day in December 2023, then to 20 ships in January 2024, and finally to 18 ships in February 2024. Under normal circumstances, the canal can accommodate the passage of between 36 to 38 ships per day, meaning the canal was operating at roughly half its capacity last February.

This decrease in the number of ships allowed to pass caused an increase in the waiting time for ships in front of the canal, and the size of the draft allowed for ships to pass was reduced. Large ships carrying large loads were forced to lighten their load by unloading part of the containers so that they could pass, and then reloading them after crossing the canal, which increased the complexity of the process and led to additional delays.

In addition, a shortage of globally available containers due to increased freight demand and an imbalance in container distribution further complicated the situation. Geopolitical tensions such as Houthi attacks in the Red Sea also contributed to the instability of shipping lines (The Economist, 2021).

Together, these factors indicate that chaos in global shipping markets will continue over the coming months, which will lead to an increase in shipping costs and thus higher prices for goods and merchandise (World Economic Forum, 2021). Companies may have to look for alternative solutions, but permanent solutions require improving port infrastructure and increasing the efficiency of container distribution globally.

These disruptions are expected to continue to impact the markets until the end of the third quarter of 2024, which means that the effects of this crisis on prices may remain evident at least until the end of September 2024 (World Economic Forum, 2021).

In light of the current crisis that the Panama Canal is experiencing due to low water levels and drought, and its impact on ship movement, shipping companies are looking for alternatives to transit goods between Asia and North America. This search for alternatives has become necessary, especially with the increase in waiting times for ships in front of the canal, which may reach 20 days or more.

Alternative routes to the Panama Canal and Suez Canal

Suez Canal Road Route: Ships start from the eastern coast of North America, cross the Atlantic Ocean towards Europe, then enter the Mediterranean Sea, and from there to the Red Sea via the Suez Canal, and from there continue on their way to Asia.

Advantages: This route is faster than the Cape of Good Hope and offers ports and services along the way, making it more convenient for shipping.

Cape of Good Hope Route: Ships start in North America, cross the Atlantic Ocean towards South Africa, then circle the Cape of Good Hope, before continuing on to Asia.

Advantages: Although it is longer, it is considered an alternative if other methods cannot be used due to disturbances (The Economist, 2021; Christopher and Peck, 2004).

Challenges and disturbances:

Suez Canal: Despite being the best option, it has witnessed unrest in recent months, especially with the attacks carried out by the Houthi group in Yemen since the end of 2023. These attacks caused security instability in the Red Sea and the Bab al-Mandab Strait.

2.3 Consumer Welfare

Supply chain disruptions can lead to product shortages, increases in prices, and a lack of options for consumers, all of which can negatively impact people's individual and family welfare. By identifying the underlying causes of these interruptions, policymakers and businesses can take steps to assure access to requirements and decrease the impact on customers.

According to the International Monetary Fund (IMF), supply chain disruptions had a significant role in the 3.5% worldwide GDP decline that occurred in 2020 as a result of the pandemic. The movement of products and services was interrupted by lockdowns, travel restrictions, and labor shortages, which raised costs and caused delays in a number of businesses (IMF, 2022).

There were significant bottlenecks in the maritime sector, especially in North America. The amount of ships waiting to offload reached record highs (Federal Reserve Bank of St. Louis, 2023), causing extraordinary congestion at ports like

those in Southern California. A lack of truck drivers contributed to the bottleneck, delaying inland cargo movement and raising shipping expenses.

In the past decades, the influx of cheaper Chinese goods into the U.S. market has contributed to an increase in the purchasing power of American consumers. Because of China's efficient production and reduced labor expenses, low-priced items are more readily available, allowing American customers to purchase more things at a reduced cost and so increasing their income. Research papers and research on economics frequently touch on this subject.

How Chinese Products Raised American Purchasing Power and Decreased Consumer Goods Prices

The cost of numerous consumer items has significantly decreased as a result of China's ascent to prominence as a global manufacturing powerhouse. The lower production costs in China have made a wide range of products more accessible, including apparel, electronics, and home goods. This has increased the effective purchasing power of American and European consumers by enabling them to buy more things for the same amount of money.

Control of Inflation: Throughout the previous few decades, the flood of low-cost imports has contributed to decreased U.S. inflation rates. These imports have lessened the effects of price rises elsewhere by offering a consistent supply of inexpensive commodities, keeping the overall cost of living at a more tolerable level (The Economist, 2021).

Choice and Variety for the Consumer: The selection of reasonably priced goods from China has increased, giving consumers more options. Thanks to the increased availability of items at different price ranges, American customers may now choose products that better fit their budgets (Christopher & Peck, 2004).

Research from the Peterson Institute for International Economics has shown how trade with China has helped American consumers by bringing down the cost of a

range of commodities and increasing real income (Peterson Institute for International Economics, 2023). The National Bureau of Economic Research (NBER) has also carried out research demonstrating that the "China Shock" (the sharp rise in Chinese imports) resulted in a notable drop in the price of several consumer items in the United States, hence raising American families' buying power (NBER, 2023). The advantages of less expensive Chinese goods for the American economy have also been covered by the Harvard Business Review and Brookings Institution, notably with regard to consumer gains and the reduction of inflationary pressures (Harvard Business Review, 2023; Brookings Institution, 2023).

These sources show that economists generally agree that the availability of less expensive Chinese goods has increased American consumers' spending power by lowering the cost of a wide range of things.

2.4 Risk management

Proactive risk management requires an understanding of the elements that lead to supply chain crises. Organisations can avoid risks, reduce losses, and improve their capacity to handle crises in the future by foreseeing such disruptions and addressing underlying weaknesses

Due to the COVID-19 epidemic and the effects of Brexit, the UK was experiencing a 52,000 truck driver shortage in 2018. This driver shortage had nearly increased to almost 100,000 by 2021. Numerous causes contributed to this increase, including the disruptions brought on by the epidemic and the departure of European citizens with Brexit. Approximately 40,000 heavy goods vehicle HGV driving exams were canceled as a direct result of the pandemic, which made matters worse by preventing new drivers from taking the place of retired ones (Federal Reserve Bank of St. Louis, 2023). Additionally, over 200,000 European citizens—many of whom were truck drivers—left the UK as a result of Brexit (The Economist, 2021), further increasing the lack of supplies. The UK has made

actions to reduce the consequences of the COVID-19 epidemic and Brexit, such as introducing temporary visa schemes to allow foreign drivers, particularly from the European Union, to work in the UK (The Economist, 2021).

One of the risky industries causing concerns for both the U.S. and China is Semiconductor Manufacturing. The United States has taken many important steps to support its domestic semiconductor sector in response to the worldwide shortage of semiconductors and the strategic significance of semiconductor manufacturing for technological leadership and national security. In August 2022, the U.S. Congress passed the CHIPS and Science Act, which offers strong financial assistance in order to promote the growth of the semiconductor sector.

2.4.1 The Necessity of the CHIPS and Science Act for U.S. Semiconductor Manufacturing

The semiconductor sector has shown remarkable productivity while surviving with little help from the government. However, production has shifted more and more offshore over the past ten years, particularly wafer fabrication. This change affects the whole supply chain, which has geographically migrated to areas with lower operating costs, and is not only about cost reductions. (Semiconductor Industry Association, n.d.).

There are two reasons for this action: worries about national security and competitiveness. Although it's difficult to say which is more important, national security is undoubtedly a significant consideration. Regarding supply chains, the COVID-19 pandemic exposed the risks associated with depending on suppliers located far away. This has increased the demand for a more robust and varied supply chain, which is one of the main motivations for the CHIPS Act (IMF, 2022). The United States' total self-sufficiency is not the main objective of the CHIPS Act. Rather, the focus is on improving the accessibility of the complete semiconductor supply chain, encompassing memory manufacture, wafer fabrication, and packaging, all within an ecosystem that is more balanced

regionally. This is a deliberate distribution that guarantees improved access and resilience rather than endorsing protectionism.

In terms of supply and demand, there is an unquenchable need for processing power across a range of industries, from ordinary electronics to high-performance computers. Innovations like artificial intelligence and smarter homes and autos are driving this need. Strong demand persists even in industries utilising older technology, underscoring the necessity of a healthy semiconductor business.

Though significant, the \$50 billion allotted by the CHIPS Act pales in comparison to the enormous sums of money needed for semiconductor manufacture. Nonetheless, the significance of this money lies in its indication of dedication to reviving the sector in the United States, stimulating private investment, and cultivating a more equitable global supply chain. This first investment is mostly focused on production; research and development (R&D) will probably be the subject of later rounds.

3 Fragility of the supply chain

During the COVID crisis, a few American businesses cut back on their local manufacturing, adding to the fragility of the supply chain. The resilience of the supply chain was frequently sacrificed in the name of efficiency and cost reduction. In an effort to reduce expenses, many businesses concentrated on just-in-time (JIT) inventory systems, which made them susceptible to supply chain interruptions. The disturbances brought to light the dangers associated with worldwide supply chains, prompting several businesses to reconsider their approaches. In an effort to reduce risks, there has been a rise in interest in expanding local production and diversifying supply sources. Although the flood of low-cost items initially drove down costs, supply chain interruptions can result in shortages and inflationary pressures.

When supply chains are broken, items may become more expensive because of scarcity or higher shipping expenses. PPE with face masks, for instance. There was a sharp spike in the demand for personal protective equipment (PPE) such as gloves, hand sanitizer, and face masks in the early stages of the COVID-19 epidemic. Lockdowns, plant closures, and prohibitions on foreign commerce caused supply chains to become disrupted. This resulted in a serious scarcity and a significant price hike for these necessities (The Economist, 2021).

A high-profile incident involving the diversion of a PPE shipment, including face masks, from Germany to the United States was reported in March 2020. This shipment was apparently diverted when the United States paid a greater price for the products, even though it was originally headed for Germany. The consignment was intended for Germany when it left China and arrived in the United States. According to reports, the U.S. engaged in a bidding war and paid more money to acquire the supplies, which resulted in the diversion (The Economist, 2021).

Additionally, Canada said in April 2020 that the United States had intercepted and redirected a consignment of personal protective equipment (PPE), which included masks and gloves. The PPE was first bought by Canada from a Chinese manufacturer, but U.S. officials intercepted the cargo and claimed it was for use in an emergency situation in the United States (The Economist, 2021).

These incidents revealed the fragility of the global supply chain. The reliance on international suppliers and the complexities of coordinating shipments across borders made the supply chain susceptible to disruptions. The ability of countries to divert shipments meant for others or to intercept supplies reflects how interconnected yet vulnerable these networks were (IMF, 2022).

The theft and redirecting of PPE supplies brought to light serious ethical issues as well as practical difficulties. Nations had challenges in obtaining necessary commodities, and the competitive strategies employed to acquire personal protective equipment (PPE) occasionally resulted in strained diplomatic relations and moral quandaries over equitable supply distribution (The Economist, 2021). The history of supply chain disruptions shows how strategically important oil is to the global economy. These events reshaped the global economy, boosted the geopolitical influence of certain countries, and led to lasting changes in energy policies and technologies. It's important to consider this event when making strategic plans and incorporating it into risk management strategies (Federal Reserve Bank of St. Louis, 2023).

4 History of Supply Chain Disruptions

The year 1912 saw the first use of oil as a weapon in advance of World War I. Winston Churchill made the decision at that time to switch British warships from coal to oil propulsion. It's not only about battleships: during World War I, gasoline-powered automobiles were also used to carry men to the front lines. After the war, people realised how crucial oil was to winning battles, which improved ties between nations and oil corporations. Oil's significance grew throughout time, particularly for Arab nations that exported significant amounts of it. It became evident that political tensions and conflicts in the Arab world would be significantly influenced by oil (Foreign Affairs, 1966).

The most prominent example of the use of oil as a political weapon is the oil crisis in 1973, which became the largest crisis the world has ever known and which has not shaped the world to this day (Federal Reserve Bank of St. Louis, 2023). How did this crisis happen? In June 1967, Israel attacked Arab countries—Syria, Jordan, and Egypt—and occupied the West Bank, Jerusalem, Gaza, Sinai, and the Golan Heights. This blatant aggression prompted the United Nations to issue Resolution 242, demanding that Israel withdraw from the territories it had occupied. However, Israel did not withdraw, and considered the resolution unclear. It was impossible for the Arabs to remain silent about this humiliating defeat of the Arab regimes, so they decided to fight another war to restore their territories. The October War began in 1973 when the Syrian and Egyptian armies advanced on the Golan and Sinai fronts. (Congress, 2023).

One of the most significant problems facing the Arabs in this war was the unlimited support of the United States for Israel, which tipped the balance of power in Israel's favour. It was difficult for the Arabs to accept that the story would end in the same humiliating way it did in 1967. Therefore, the Arabs resorted to using the oil weapon to confront their opponents. At that time, the Arab oil countries were not as well-known globally as they are today. These countries exported oil at very cheap prices. When King Faisal assumed power in Saudi

Arabia in 1964, the Kingdom was in debt. King Faisal began implementing reforms, combating illiteracy, opening schools for girls, and promoting free education from primary to university ([Time, 2013](#)). But the turning point in King Faisal's plans was the 1973 war, specifically the oil embargo that accompanied it, known as the "Arab oil embargo". The Arab countries decided to reduce oil production and raise its prices, and stop oil shipments to countries that supported Israel, such as the United States and the Netherlands ([Foreign Affairs, 2013](#)).

The Arabs succeeded in using oil as a political weapon for the first time. At first, the United States thought that King Faisal and the Arabs were not serious. However, when US Secretary of State Henry Kissinger came to King Faisal and asked him if he was serious about the embargo, he was surprised by the king's insistence on his decision ([Time, 2013](#)).

The Arabs presented the United States with three options: endure the economic disaster that the embargo would cause, wage a war to secure the flow of oil or pressure Israel to withdraw from the occupied Arab territories ([Foreign Affairs, 2013](#)). Although the United States tried to use all means of enticement and intimidation, King Faisal stuck to his position. America even threatened Saudi Arabia with military action to force it to lift the embargo. The United States was suffering from the Vietnam War, and the situation was really dangerous. Eventually, the Arabs announced the lifting of the first branch of 1974, several months after that. But as a result, it contributed to encouraging economically the Arabs and politically in many countries, especially Saudi Arabia ([Time, 2013](#)).

The Arabs' motives for the embargo were not only political, but also economic. The Arab countries were considered poor at the time, and major oil companies such as the "Seven Sisters" dominated the extraction and export of oil in the Gulf region, and the profits these companies gave to the Arab countries were unfair (Federal Reserve Bank of St. Louis, 2023).

After the embargo, everything changed. The control of the major oil companies weakened, and the exporting countries were able to raise oil prices by about four times after the end of the embargo. The role of OPEC in managing oil production and prices was also consolidated.

In 1974, OPEC countries sold \$112 billion worth of oil, and the Western press described these sales as the largest transfer of wealth in history. This embargo led to an increase in the geopolitical influence of the oil countries in the region and the world, as Saudi Arabia spent two billion dollars to develop the army, and together with other Gulf countries paid a total of \$2.3 billion to the countries facing Israel ([Foreign Affairs, 2013](#)).

All this made King Faisal the most prominent Arab and Islamic leader, to the point that Time magazine put his picture on its cover and chose him as the Man of the Year for 1974. It published an article entitled "King Faisal and Oil Lead to a New World Order" ([Time, 2013](#)). The effects of this embargo even reached the environment. The embargo led to increased investments in alternative and clean energy research. America issued laws limiting fuel consumption, which led to a decrease in carbon emissions in the world. ([Economist, 2020](#)).

In France, work began on increasing the use of nuclear energy to generate electricity instead of oil. In Japan, they did the same. If it weren't for the Fukushima disaster in 2011, Japan would still be heavily dependent on nuclear energy ([Economist, 2020](#)).

Even shale oil exploration technology in America developed partly as a result of the embargo, which ultimately made the United States the largest oil producer in the world. This development was partially due to the embargo imposed in 1973 ([Economist, 2020](#)).

Although the Arabs did not achieve their main goal from the embargo, which was to implement Resolution 242 and withdraw Israeli forces from the occupied

territories, they achieved other important gains. This embargo was a turning point in the history of the region and the world, and drew the boundaries of using oil as a weapon, as we see today in the Ukraine war ([Foreign Affairs, 2013](#)).

5 What are other authorities saying about the issue/topic

5.1 Different Perspectives

5.1.1 Research Investigators

A broad range of fields of study, including operations management, logistics, economics, and risk management, are represented in the literature on supply chain crises. In order to comprehend the underlying causes, effects, and management strategies associated with supply chain disruptions, researchers have carried out experimental investigations, case analyses, and theoretical study. The identification of risk factors, the creation of resilience frameworks, and the assessment of mitigation techniques are prominent subjects in academic study.

5.1.2 Business entities

Drawing from their practical experiences and observations, supply chain professionals and industry specialists offer invaluable perspectives. White papers, industry reports, and case studies provide actual instances of supply chain disruptions and the strategies used by businesses to resolve them. In order to improve resilience and decrease the effects of disruptions, industry practitioners stress the significance of proactive risk management, agile supply chain procedures, and cooperation with partners and suppliers.

5.1.3 Government Organisations

In order to monitor supply chain disruptions and coordinate response actions, government agencies and international organisations are essential. Risk assessments, policy recommendations, and studies of global supply chain patterns can be found in reports and policy documents from institutions including the World Trade Organization, the World Economic Forum, and national

government agencies. These authorities emphasise that in order to address supply chain vulnerabilities and foster resilience, cross-sectoral coordination, infrastructure investment, and regulatory frameworks are necessary.

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5.1.5 Examining Government Interventions in the Supply Chain Crisis

Governments all throughout the world have been forced by supply chain crises to implement a range of intervention measures in an effort to stabilise their economies and maintain the flow of products. These interventions consist of international collaboration, regulatory adjustments, investments in vital infrastructure, stimulus packages, and subsidies. This section looks at different interventions and assesses how well they work to resolve supply chain interruptions.

A. Packages of Stimulus

To reduce the negative effects of the supply chain issue on the economy, governments have proposed large stimulus packages. These packages often contain financial assistance for both individuals and companies, with the goal of preserving consumer spending and economic stability.

United States: One noteworthy example is the American Rescue Plan Act, which offers \$1.9 trillion in financial assistance. This package, which includes increased unemployment insurance, direct payments to residents, and assistance for small firms, has helped to stabilise consumer demand and given companies the money they need to deal with supply problems.

B. Subsidies

Governments have found that subsidies are an essential tool for helping industries that have been badly damaged by supply chain disruptions.

Agriculture and Food Supply: To guarantee food security and stable supply chains, governments in the US and the EU have given farmers and food producers significant subsidies. These subsidies support price stability and guarantee a steady supply of necessities.

Technology and Semiconductors: Due to the shortage of semiconductors, the US, Taiwan, and South Korea have all offered incentives to increase local manufacturing. For example, the US CHIPS and Science Act offers \$52 billion in incentives and subsidies for research and manufacture of semiconductors. The purpose of these subsidies is to improve domestic industrial capacity and lessen reliance on foreign suppliers.

5.1.6 Trade associations

Within particular industries, trade associations, and professional organisations provide insights related to the particular difficulties faced by respective sectors. These organisations notify their members about new changes in supply chain management regulations, technical advancements, and emerging trends through the publication of research papers, best practices manuals, and industry surveys. The efficient navigation of supply chain disruptions is contingent upon engagement in knowledge-sharing initiatives and cooperation within industry networks.

5.2 Strategic Planning

By understanding the main causes of supply chain crises, organisations may make informed strategic decisions and investments. By diversifying their sourcing, developing stronger ties with suppliers, and modifying their supply chain strategy in response to changing risks and trends, businesses can enhance their capacity to withstand unexpected risks. For instance in France and Germany, due to the Russian attack on Ukraine, there were alternative plans to compensate for the lack of Russian energy supplies and new laws had to be enacted that conflicted with prior plans to eliminate nuclear energy. Approximately 75% of France's power is produced via nuclear energy. Recent legislative amendments suggest a move towards preserving or perhaps growing the reliance on nuclear energy for the foreseeable future, despite prior plans to reduce this proportion to 50% by 2035. In January 2023, the French Senate passed a bill designed to expedite the development of new nuclear facilities, including European Pressurised Reactors (EPRs) and small modular reactors (SMRs). This legislation also streamlines the planning and regulatory procedures for constructing new reactors.

In order to protect its oil supply and improve energy security, the United States used a number of key steps. These steps were taken in an effort to strengthen the resilience of the energy infrastructure, diversify energy sources, and lessen reliance on foreign oil.

1. Strategic Petroleum Reserve (SPR)

The world's largest supply of emergency crude oil: At four locations along the Gulf of Mexico coast, massive underground salt caverns contain the government reserves of oil. With a permitted storage capacity of 714 million barrels, the SPR's sheer size helps to prevent oil supply cutoffs and is a powerful tool in foreign policy. Established in 1975, the Strategic Petroleum Reserve is a stockpile of

crude oil maintained by the U.S. Department of Energy. It was created to provide an emergency supply of oil in case of severe disruptions in oil supplies.

The United States has had to use the Strategic Petroleum Reserve (SPR) on several occasions:

1979: The SPR was first put to use during the Iranian Revolution, which caused a major decline in Iran's oil exports and doubled the price of crude oil.

In order to reduce supply disruptions and stabilise the market, 8.3 million barrels of crude oil were released via the SPR.

1990: Iraq's invasion of Kuwait during the Gulf War threatened the world's energy supply and raised oil prices.

In order to reduce the effects of supply delays and help stabilise the oil market, 17 million barrels of crude oil were released via the SPR.

2005: There were shortages of oil due to Hurricane Katrina's massive damage to the Gulf of Mexico's oil production and refining facilities.

In order to reduce supply interruptions and rising oil prices, the SPR was called upon to release 30 million barrels of crude oil over a period of several months.

2011: The Libyan Civil War impacted Libya's production of oil, affecting the world's oil supply. In order to stabilise the world's oil markets, 30 million barrels of oil were released via the SPR together with the International Energy Agency (IEA).

2022: The Russian invasion of Ukraine led to significant disruptions in global oil supplies and a rise in oil prices. The U.S. released 180 million barrels of oil from the SPR over several months to reduce the impact of the supply disruptions and manage high fuel prices

2. Energy Policy and Conservation Act (EPCA)

The EPCA, which was passed in 1975, established the SPR, encouraged energy conservation, and imposed fuel economy standards on vehicles in order to reduce American reliance on foreign oil.

3. Increased Investment in Alternative Energy: expanding nuclear, solar, and wind energy as alternative energy sources

4. Expansion of Domestic Oil Production

Policies, such as the lifting of bans on oil drilling in certain regions and the offering of incentives for exploration, were put in place to promote the discovery and extraction of local oil resources.

5. Development of Shale Oil: increases in U.S. shale oil production, reducing reliance on imported oil.

Similar actions have been taken by the European Union to secure its oil supplies and reduce dependence on volatile foreign sources. In light of broader strategic concerns, including the U.S. reliance on China for critical materials, the issue of enhancing national defense capabilities was brought to the fore.

6 The Geopolitical Implications of Rare Earth Elements: U.S.-China Relations, Taiwan, and Regional Disputes

In March 2018, two U.S. Senators urged President Donald Trump to sell F-35 stealth fighter jets to Taiwan to enhance its defence against potential Chinese aggression. However, both Trump and his successor, Joe Biden, declined these requests, fearing that the advanced technology could fall into Chinese hands. The F-35 is considered the most advanced fighter jet globally, offering significant air superiority.

A critical factor in the production of F-35s is the use of rare earth elements (REEs), essential for various high-tech industries, including defence and electronics. The United States imports a significant portion of these materials from China, which controls over 90% of global production. This dependence is a strategic vulnerability, as China can potentially leverage its dominance in rare earth elements to disrupt U.S. manufacturing capabilities.

In response to U.S. restrictions on China's semiconductor industry, China announced plans in July 2023 to restrict the export of key metals critical for high-tech industries, showcasing its strength in controlling these vital resources (Bloomberg, 2023). This move underscores the geopolitical implications of rare earth elements and their importance in global strategic balances, particularly in the context of U.S.-China relations.

China's strategic foresight and dominance in the rare earth elements market. In 1987, Chinese leader Deng Xiaoping famously predicted the significance of these elements, likening their importance to oil for Middle Eastern countries. Over the decades, China has leveraged its resources to become a global leader in rare earth production, surpassing the United States, Japan, and Europe (Bloomberg, 2019). These 17 chemical elements, crucial for various industries including

electronics, weapons, and medical devices, are misleadingly named "rare" because they are not scarce in the Earth's crust but are rarely found in concentrated deposits (Reuters, 2022).

China's control over rare earths gives it significant geopolitical leverage, as these materials are essential for advanced technologies, including the F-35 fighter jet. The U.S. reliance on Chinese rare earths presents a strategic vulnerability, especially in light of recent tensions and trade restrictions. China's potential use of this dominance as an economic weapon highlights the global implications of its control over these critical resources (Reuters, 2023).

China's strategic rise to dominance in the rare earth elements (REE) market, which are crucial for various high-tech industries. In the late 1980s, China's then-leader, Deng Xiaoping, foresaw the importance of these materials, likening China's potential dominance in REEs to the Middle East's control over oil. Over the years, China has grown to control over 90% of global REE production, making it a critical supplier for industries worldwide, including defence, technology, and electronics.

China has significant geopolitical leverage. For instance, the U.S. military's F-35 fighter jet relies on REEs, and the U.S. sources much of these materials from China. The recent decision by China to impose restrictions on key REEs, such as those used in semiconductors and electronics, underscores its ability to influence global markets and supply chains. This move, seen as a response to U.S. restrictions on semiconductor technology, highlights the potential for REEs to be used as a strategic tool in global politics.

The U.S. was once a leader in this field until environmental and economic factors led to a decline in domestic production. Meanwhile, China invested heavily in developing its REE extraction and processing capabilities, eventually becoming the dominant player. This shift has left the U.S. and other countries highly

dependent on Chinese REEs, raising concerns about supply chain vulnerabilities and strategic dependencies.

In February 2023, during a Senate hearing, CIA Director William Burns stated that China aims to be capable of conducting an invasion of Taiwan by 2027, if ordered. This assessment was acknowledged by U.S. Secretary of State Antony Blinken, who concurred with the CIA's view. Blinken emphasised the strategic importance of supporting Taiwan's defence capabilities amidst growing concerns over China's military ambitions. This statement highlights the ongoing geopolitical tensions between China and Taiwan and underscores the broader implications for regional security and U.S. foreign policy. The discussion also aligns with the U.S. government's efforts to enhance military support and arms sales to Taiwan as a means of deterrence against potential Chinese invasion.

China taking a bold step like this could cause a military conflict between China and the United States in the Pacific because America, as Taiwan's closest ally, will likely try to prevent China from invading by engaging with it directly and at the same time it is expected that it will punish it by imposing economic sanctions on it. What is important in this context is that the inevitable American sanctions to be imposed on China, if they are actually imposed, the Chinese certainly will respond with harsh sanctions that will greatly harm the American economy and the Americans understand this point very well. That is why there have been calls recently, many in the United States, for America to largely isolate itself from the Chinese economy, or at least reduce its economic dependence on China as much as possible, so that China cannot pressure it and use the economy as a weapon against it (People's Daily Online, 2019). For example, America depends on China to a large extent in providing the largest part of its needs for medicines, and this is an important pressure card. The Chinese threatened the Americans with it when they had a fight before with the former US President Donald Trump in March 2020. At that time, the official Chinese news agency said that if a conflict occurred between the two countries, China would simply prevent medicines from reaching America (Reuters, 2022).

There are eight islands located in the East China Sea. They are called the Senkaku Islands. Japan annexed them to its territory in 1895, and then in the seventies of the last century, the Chinese began to dispute the Japanese sovereignty over the islands, claiming that these islands were theirs. Since then, and until today, these islands have been disputed between China and Japan, but they are actually under Japanese control. From time to time, skirmishes occur between the Japanese coast guard and Chinese ships that usually approach these islands. When Chinese ships try to approach the islands, the forces of the Japanese coast guard warn them using loudspeakers and ask them to move away. Indeed, they move away and the matter is closed there. But what happened on September 7, 2010, was different. Exactly on the morning of this day, the forces of the Japanese Coast Guard received an unusual breaking news. What exactly happened is that there was a Chinese fishing boat that approached the Senkaku Islands, and when the Japanese ship tried to warn the Chinese ship and asked it to move away, the Chinese ship did not respond. Not only that, it also hit the Japanese ship. On this basis, the Japanese Coast Guard sent another ship to warn the Chinese fishing boat and ask its crew to stop and turn off the engine, but the second Japanese ship was surprised that the Chinese ship was trying to hit it as well and it crashed into it. In the end, the Japanese crowded around the Chinese ship boarded it, and arrested its entire crew, including the captain of the Chinese ship. As soon as they knew of the news, China came out and denounced Japan, accusing it of not having the right to detain the ship or the crew because they were fishing in Chinese waters, and asked the Japanese authorities to release everyone immediately. This incident, as we said, was on September 7. About 6 days later, specifically on September 13, the Japanese released 14 of the crew of the Chinese ship, with the exception of the captain, who they preferred to detain at a police station, refusing to release him with his colleagues. This implied that the Japanese would most likely charge him officially. The Chinese became very angry with the Japanese and decided to punish them so that they would return the captain against their will. On the 22nd of the same month, the New York Times reported that Chinese customs had begun to prevent

the export of rare earth elements, which are used in the manufacture of things like cars, smartphones, wind turbines, and missiles.(Bloomberg, 2019) This was a big problem for Japan because, firstly, it needed these rare earth elements very much, and secondly, there was almost no country in the world from which it could buy these elements except China, which at that time controlled 93% of the world's supply of rare earth elements. Thus, after this move, just two days later, specifically on September 24, the Japanese, in a humiliating retreat witnessed by the whole world, released the Chinese captain and put him on the plane that the Chinese government sent to take him home. This way, China won by using its influence in one sector to pressure Japan. This influence on Japan was something that China, in the past, could not exert over America, but now it can, and it can twist America's arm in more than one sector on which the American economy heavily depends (Bloomberg, 2023). how this transformation began and how the China that we know today, or the People's Republic of China, was established. The People's Republic was founded in 1949. From the moment of its founding, and over the course of 30 years, it was in a rift with the United States, which was not in agreement with the communist government of China. But this situation began to change at the end of the seventies. In 1979, within the framework of its attempt to prevent China from allying with the Soviet Union, America re-normalized its relations with the Chinese. In the same year, the American trade representative signed a trade agreement with the Chinese Minister of Foreign Trade, Eiji. The goal was that the two countries would open their markets to each other. At that time, this trade exchange between China and America was insignificant. China, on the one hand, had a weak economy, and America, on the other hand, did not need almost anything from China. For example, in 1979, the trade in goods between the two countries was \$2 billion, but this agreement and other subsequent agreements contributed to the increase in the volume of trade between the two countries. The biggest beneficiary of these agreements was China because the agreement coincided with the beginning of its movement towards economic reform and its preparations to become a huge manufacturing power. This had a clear effect on the volume of China's exports to America. In 1985, China exported goods to America worth \$3.8 billion and

imported goods from America worth \$3.8 billion, meaning they were equal to each other. But over time, China's exports to America grew rapidly, while America's exports to China grew at a slower rate.

In 2000, America exported to China goods worth about \$16 billion and imported goods from China worth more than \$100 billion. This, of course, translated into a large trade deficit in favour of China. But up to this point, America was not relying heavily on China because it had a strong manufacturing base that included a large group of American and foreign companies that manufactured in the local market. This situation changed significantly in November 2001 when China finally joined the World Trade Organization after negotiations that lasted about 15 years. China's accession to the organisation and its commitment to abide by its regulations encouraged foreign companies, especially American companies, to transfer part of their manufacturing activities to the Chinese market. This was because China had officially become part of the international market and provided manufacturers with privileges not available in their countries, such as cheap labour, cheap currency, and various kinds of support. This saved them a lot of costs. What attracted them to this approach even more was that American citizens benefited from the cheap cost of goods.

Two researchers (Xavier Jaravel and Erick Sager, August 20th, 2019) conducted a study in which they studied the data on bilateral trade between the US and China from 2000 to 2007. They concluded that the entry of cheap Chinese goods into the American market contributed to the decline in the prices of products made in America, increasing the purchasing power of every family in America by \$1500 annually. This shows the impact of Chinese goods entering the American market (Economics Observatory, 2023).

America relies heavily on China for certain resources that are not available elsewhere, particularly rare earth elements. The US imports 80% of its rare earth elements, which are crucial for manufacturing advanced weapons. China's dominance in producing these elements could have serious implications for the

US military. For instance, antimony, an element produced by China, is used in various military applications. This dependency is a significant issue for the US, especially in light of China's technological advancements. According to a 2023 report by the Australian Strategic Policy Institute, China leads the world, including the US, in 37 out of 44 of the most advanced technologies globally, such as robotics, energy, and biotechnology (Financial Times, 2021). The US has recognized the risks of its dependence on China, which became more evident during former President Donald Trump's administration when he initiated a trade war with China, imposing tariffs on Chinese goods worth around \$360 billion. Many expected that President Biden would lift these tariffs, but they largely remained in place, indicating the continuation of a strategic stance towards China. Despite these tariffs, trade between the two countries continued to grow, with the volume of trade exceeding \$600 billion in 2022. The US exported \$153.8 billion worth of goods to China and imported \$536.8 billion from China, highlighting the deep economic ties between the two countries (Business Insider, 2021).

To decouple the US economy from China entirely would have significant repercussions, both economically and globally. US Treasury Secretary Janet Yellen noted that such a separation would be disastrous for both economies and destabilise the world (McGill University, 2020). However, the US has taken measures, such as imposing sanctions on China's semiconductor industry, to protect its national security. This reflects a broader containment policy towards China, as articulated by US Secretary of State Antony Blinken, emphasising investment in the US, cooperation with allies, and competition with China where interests diverge. The US is also attempting to diversify its sources of rare earth elements, seeking agreements with other countries to reduce its reliance on China. Additionally, it is trying to reduce its dependence on China for antibiotics, as 90% of antibiotics used in the US are produced there. These efforts indicate a recognition of the risks posed by over-reliance on China and a move towards securing alternative supply chains (Sheffi, 2005).

7 Critical appraisal of major references

Although sources provide insightful analyses of supply chain crises and resilience tactics, further empirical study is required to fill in knowledge gaps, validate conceptual frameworks, and test techniques in practical environments. Collaborations across academic institutions, business sectors, and governmental bodies may further our knowledge of supply chain resilience and help develop practical crisis management techniques.

Incorporating current news and media sources into the research on the current supply chain crisis is essential for providing a real-time perspective and staying updated on the latest developments.

Media sources may also shed light on shifts in consumer behaviour, preferences and purchasing behaviours brought on by delays in the supply chain. Businesses and policymakers alike may make more informed strategic decisions by having a better understanding of how customers react to these difficulties.

8 Conclusion

The semiconductor shortage has been a prime example of how supply chain disruptions can have widespread effects. The lack of these crucial components, exacerbated by production difficulties in major semiconductor-producing countries like South Korea and Taiwan during the pandemic, led to significant economic losses across multiple industries, particularly in electronics and automotive sectors.

The transportation industry has also faced significant challenges, with the pandemic worsening pre-existing issues. For instance, the United States trucking industry was already experiencing a shortage of drivers, which was predicted to worsen due to health concerns, heavy workloads, and challenging working conditions brought on by the pandemic.

The impact on consumer welfare has been substantial, with product shortages, price fluctuations, and limited choices affecting individuals and families.

The current supply chain crises have had profound economic and political consequences, affecting global trade, energy security, and consumer welfare. As these challenges persist, it is crucial for governments, businesses, and international organisations to work collaboratively to develop resilient and adaptive strategies that can mitigate the impacts of future disruptions and ensure the stability of global supply chains.

The global supply chain crises of recent years have exposed significant vulnerabilities in the interconnected global economy, resulting in far-reaching economic and political consequences. These crises, triggered by a combination of factors including geopolitical tensions, natural disasters, and the COVID-19 pandemic, have disrupted the flow of goods and services worldwide, posing serious risks to companies across various industries.

One of the most significant impacts of these supply chain disruptions has been on economic stability. The crises have led to substantial slowdowns in GDP growth, with global economic output declining by more than 4 percentage points relative to pre-pandemic levels by the end of 2021. This economic downturn was a result of industrial halts, logistical bottlenecks, and rising prices for goods and services. The consequences have been felt across multiple sectors, affecting everything from manufacturing to transportation.

The geopolitical landscape has played a crucial role in exacerbating these supply chain issues. The Russian invasion of Ukraine, for instance, has not only disrupted supply chains but also significantly impacted energy sources, particularly gas supplies from Russia to Europe. This conflict has prompted European leaders to seek quick and sustainable alternatives, including diversifying energy sources through nuclear energy and renewable options.

The ongoing conflict in the Middle East, particularly between Israel and Palestinians, has further complicated the supply chain crisis. Attacks in the Suez Canal and dangers along the Yemeni coast have hindered the smooth arrival of supplies to Europe and America, leading to increased shipping expenses and delivery delays. These disruptions have added new challenges to trade between Europe and Southeast Asia, with the potential for the conflict to expand and threaten European security through refugee influxes and energy price increases. The severity of these supply chain disruptions has affected organisations of all sizes, from large corporations to small businesses. The knock-on effects include reduced inventory, delayed production, and increased costs, which not only impact profitability but also cause operational disruptions, decrease consumer confidence, and hinder economic growth.

Understanding the root causes of these crises is crucial for several reasons. Firstly, it allows policymakers and economists to develop effective solutions and mitigate negative impacts on the economy. Secondly, it enables businesses to strengthen the resilience of their supply chains and ensure operational continuity.

Lastly, it helps in addressing consumer welfare issues by taking steps to ensure access to necessities and reduce the impact on customers.

The semiconductor shortage has been a prime example of how supply chain disruptions can have widespread effects. The lack of these crucial components, exacerbated by production difficulties in major semiconductor-producing countries like South Korea and Taiwan during the pandemic, led to significant economic losses across multiple industries, particularly in electronics and automotive sectors.

The transportation industry has also faced significant challenges, with the pandemic worsening pre-existing issues. For instance, the United States trucking industry was already experiencing a shortage of drivers, which was predicted to worsen due to health concerns, heavy workloads, and challenging working conditions brought on by the pandemic.

The impact on consumer welfare has been substantial, with product shortages, price fluctuations, and limited choices affecting individuals and families. The International Monetary Fund (IMF) reported that supply chain disruptions played a significant role in the 3.5% global GDP decline in 2020, with lockdowns, travel restrictions, and labour shortages interrupting the movement of goods and services, leading to increased costs and delays across numerous industries.

The current supply chain crises have had profound economic and political consequences, affecting global trade, energy security, and consumer welfare. As these challenges persist, it is crucial for governments, businesses, and international organisations to work collaboratively to develop resilient and adaptive strategies that can mitigate the impacts of future disruptions and ensure the stability of global supply chains.

The need to understand how three supply chains work requires more theoretical knowledge through research in references, but since the supply chain crisis is a

new emergency crisis, the more practical experience must also be researched through institutions working in the field of logistics, as it gives a clearer idea due to the rapid global economic and political and successive changes.

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