

GLOBAL DISRUPTIONS AND THEIR IMPACT ON INTERNATIONAL LOGISTICS

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Abstract

There have always been delays in international transport, losses and disruptions to logistics chains, but the 2020-2026 period has put great pressure on transport and logistics companies, activating force majeure mechanisms more and more often.

From COVID-19 pandemic to the war in Ukraine, the Suez Canal incident, the Panama Canal water shortage, to the Gulf conflict, all these disruptions have led to increased transport costs and insurance premiums and ultimately, to higher prices for products traded globally.

This article aims to explore the effects of these crises on international logistics, highlighting the economic losses suffered through increased costs and increased delivery times. At the same time, we want to identify some possible solutions or alternatives to these critical problems in international transport and goods supply.

Key words: international logistics, trade, supply chain, transport systems

JEL Classification: F14, F62, R40, R41, E32

Discussion

Carrying out international trade transactions is a complex process, characterized by a succession of interdependent stages — production, processing, packaging, transport, logistics, storage, lotting, marketing and use — which never proceed in a linear manner. However, this mechanism can be deeply disrupted by exogenous factors, as demonstrated by the two major crises of the last five years: the Covid-19 pandemic and the military conflict in Ukraine. In parallel, secondary crises have also occurred, less visible to the general public, either because of their relatively low impact or because of the way they were covered in the media. The complexity of the operational chain varies depending on the capacities and quality of the actors involved — producers, intermediaries, traders — as well

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as the existence of their own logistical resources. These secondary crises include the container crisis, the blockade of the Suez Canal, the semiconductor crisis and the energy crisis. However, the most significant recent development is the crisis of the development model based on internationalization, triggered by the change of the American administration.

Internationalization is not just a strategic aspiration, but a concrete alternative to carrying out activities exclusively on a national level. In this context, the behavior of the actors involved must be based on proactivity, an offensive attitude, continuous adaptation and systematic monitoring of results. The analysis of internationalization processes takes on new valences in the conditions of increasingly frequent paradigm shifts, and ignoring these transformations becomes impossible for decision-makers of organizations active in the global economy.

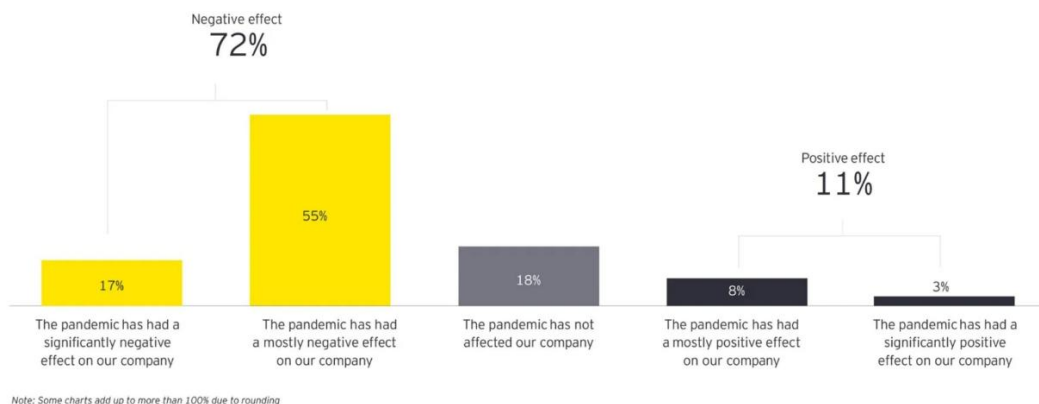
The new international economic framework, until recently marked by a dichotomous structure — between the temptation of emerging protectionism and the challenges generated by the consolidation of the quaternary sector — exposes economic actors to unprecedented pressures, which require the development of adaptation mechanisms similar to organizational “antibodies”.

Achieving performance in cross-border business requires a rigorous decision-making process. To capitalize on the opportunities offered by foreign markets, companies must adopt coherent strategies for entering international markets, identify effective ways to reach local consumers, develop flexible supply chains, and choose organizational structures that maximize the benefits of international expansion. These decisions, based on the regulatory and technical framework of the target markets, can lead to the emergence of new organizational architectures, the adaptation of existing ones, or the formation of strategic partnerships. Entering the global arena requires a thorough understanding of the determinants of the international business environment: economic factors (including the dynamics of the balance of economic and trade forces, trade regionalism, foreign direct investment trends, and access to resources), demographic and cultural factors, technological factors (especially the role of innovation, digitalization, and technology transfer), legal and institutional factors.

The challenges generated by the multipolar of the global trading system, the intensification of competition from actors that efficiently exploit the advantages of economies of scale and diversification, as well as the transition to an economic model based on knowledge, sustainability and human capital development, force organizations that want to remain competitive to adopt behaviors adapted to target markets and explore new ways of approaching internationalization.

The COVID-19 pandemic represented a global disruption across trade, economy, health businesses and societies like few others in the past 100 years. In a EY survey from 2023, only 2% of companies who responded to the survey said they were fully prepared for the

pandemic. Serious disruptions affected 57%, with 72% reporting a negative effect (17% reported a significant negative effect, and 55% mostly negative).



Source: EY report- How COVID-19 impacted supply chains and what comes next, 2023

The same survey shows that COVID-19 accelerated many preexisting trends, and supply chain was no exception, 45% of supply chains are expected to be mostly autonomous (e.g., robots in warehouses and stores, driverless forklifts and trucks, delivery drones and fully automated planning).

But simply utilizing digital technologies does not mean an autonomous supply chain — it also needs connected supply chain technologies across planning, procurement, manufacturing and logistics that work beyond the organization.

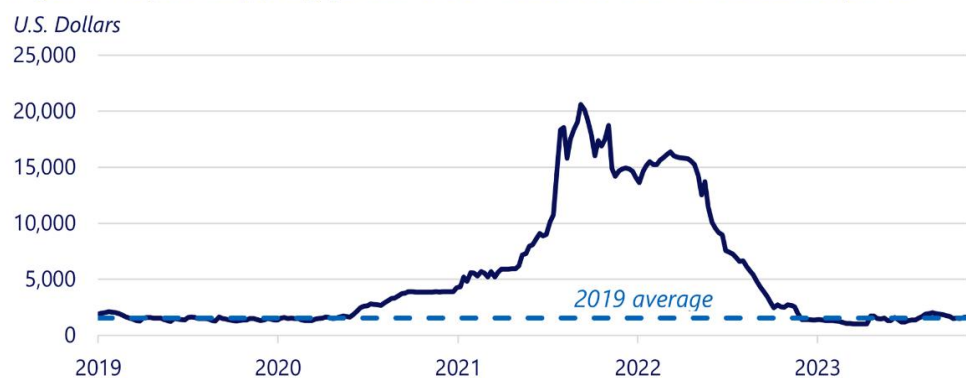
The implementation of artificial intelligence in the supply chain must be carried out in a strategic manner, considering not only the potential to increase operational efficiency and stimulate innovation, but also the technological and organizational vulnerabilities specific to each process or department. Such an approach allows for a balanced assessment of benefits and risks, facilitating the sustainable integration of AI-based solutions into the operational architecture of the enterprise. In the context of an increasingly volatile business climate, the redefinition of the foundations of competitiveness and the adoption of integrated approaches to production and marketing processes, supplier selection is a critical element for the efficient functioning of supply chains. Each product involves a specific set of benefits and risks in the supplier - customer relationship, which gives the decision-making process considerable complexity. In evaluating a supplier, customers typically consider variables such as price, quality, punctuality of deliveries, payment terms, the level of necessary investments and the technical capabilities of the supplier. Given the inherent difficulty of this process, the integration of artificial intelligence (AI)-based solutions can significantly contribute to optimizing and objectifying supplier selection, by increasing the accuracy of assessments and reducing decision-making uncertainties.

Beginning with February 2020, many countries announced travel restrictions to mitigate transmission of COVID-19, and passenger travel and freight were severely impacted.

To protect their staff's health, many companies have introduced new protocols on social distancing at warehouses, disinfecting work areas, or giving staff unlimited unpaid time off, all these measures had a massive financial impact on production and logistics.

Shipping container leasing rates have increased by as much as +300 and higher in the first six months of 2020, coupled with global price increases of many commodities and raw materials, as well as shipping prices worldwide.

Figure 1. Spot shipping prices from China to U.S. West Coast ports



Council of Economic Advisers

Source: Freightos, Bloomberg, CEA calculations.

Note: Uses nominal dollars.

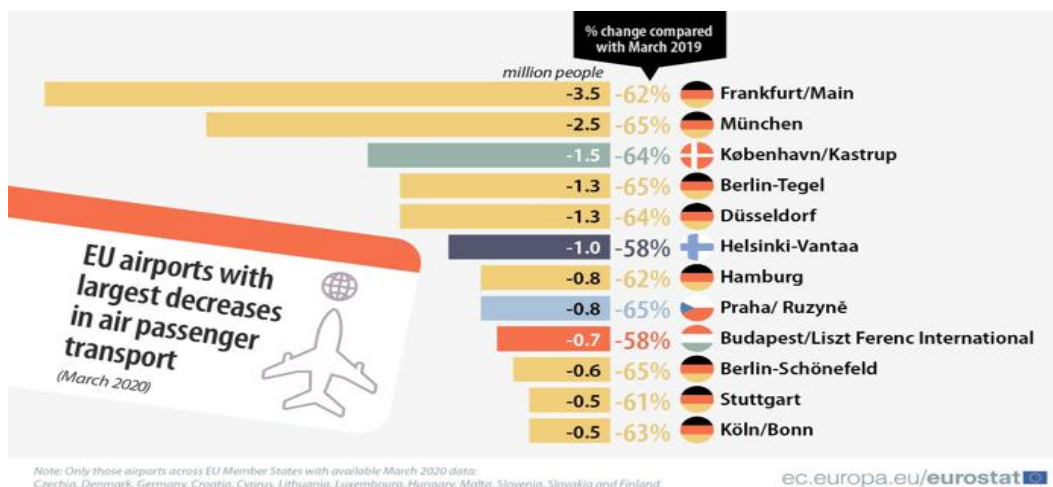
As of November 21, 2023 at 11:21 p.m.

Rates that were once 1.300 USD increased to 15.000 USD to over 20.000 USD/container on the spot market. Global manufacturing, especially in Asia, faced a huge demand that it wasn't equipped to ship all at once.

Also, with lockdown and global restrictions, millions of empty containers were stuck in the wrong regions, this created an artificial scarcity in the market. The UN Conference on Trade and Development (UNCTAD) calculated that the surge in container freight rates alone added 1,5% to global consumer price inflation.

The bubble burst in 2022 when pandemic restrictions were lifted, and simultaneously, the influx of new container ships ordered during the boom began to hit the water, creating an oversupply.

The immediate consequence of COVID-19 restrictions was a severe contraction in transportation capacity across all means of transportation. Although air transport had a severe drop in passengers transport, after the initial shock companies changed the business model and converted passenger planes into temporary freighters.



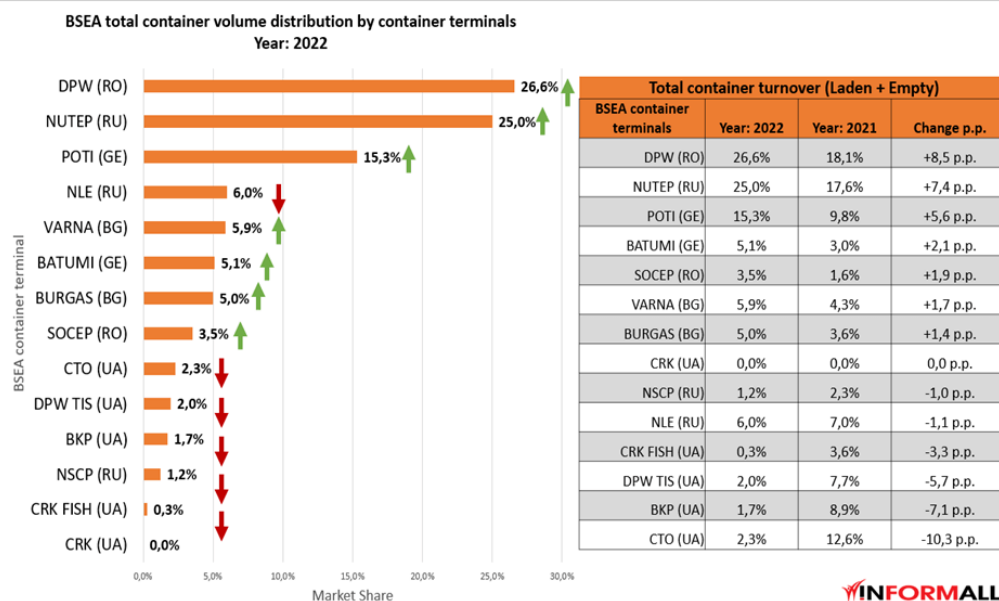
Air travel experienced the most severe contraction, with global passenger volumes dropping over 60% initially. The multi-billion-dollar losses triggered layoffs, airline restructurings and heavy debt accumulation.

While freight rates for companies have largely normalized from their pandemic spikes, the actual cost of operating a freight network remains permanently higher due to structural changes.

Also, the pandemic triggered early retirements and mass burnout among truck drivers and mariners. To attract and retain talent, companies had to raise wages and improve benefits.

Shortly after the logistics and business world breathed a sigh of relief that we had reached the end of the pandemic and could resume some of our old business practices, the war in Ukraine has triggered the most significant restructuring of European and global logistics since the end of the Cold War. What began as a shock has evolved into a “new normal” characterized by permanent route changes, structural labor shortages, and a massive shift in infrastructure investment towards Eastern Europe.

Ukraine has successfully bypassed the defunct “Black Sea Grain Initiative” by using its own corridor hugging the coastlines of Romania and Bulgaria, but the shipping tariffs across the region remain significantly higher than pre-war and insurance premiums are volatile. At its peak in 2023, Constanta port hit a record 92,5 million tonnes of total cargo, with Ukrainian grain accounting for over 14 million tonnes [1].



Source: Informall Business Group

It is noteworthy that Constanta took first place by total container turnover among the Black Sea terminals, handling 26.6% of the total regional container traffic in 2022. This achievement is an indication of the increasing significance of the Port of Constanta as a major hub for container shipping in the region and beyond.

Although road transport increased by over 40% at borders with Poland and Romania, it could not immediately take over the loads from the railway transport, and there it proved to be a great challenge because the gauges are different and significant time was lost with the transshipment of the loads, which also translates into lost money [2].

Before the conflict, the New Silk Road rail network through Russia and Belarus was a booming alternative to ocean freight for China-Europe trade. But after the first sanctions package, European freight forwarders largely abandoned the trans-Russian rail links to avoid sanctions and ethical liabilities.

Also, the closure of Russian airspace to “unfriendly” nations has permanently altered the economics of air cargo between Europe and Asia, rerouting of flights meant 3-4 hours lost, which translated into fuel consumption up to 20%.

Longer flights mean aircraft must carry more fuel, which directly reduces the maximum allowable weight for commercial cargo. This restriction reduced by approximately 10% to 20% of air freight capacity on critical Eurasian lanes, driving up cargo rates globally.

Cargo shifted heavily toward road freight causing severe bottlenecks at the Ukrainian-Polish and Ukrainian - Romanian borders, with trucks occasionally facing multi-week wait times because of customs procedures.

In 2026, the logistics situation remains highly fluid. Ongoing naval activity and mining the Black Sea have driven up maritime insurance costs to prohibitive levels, dampening commercial shipping traffic to Romanian and Bulgarian ports.

The Danube River is not a reliable backup route due to water level volatility; the weather fluctuated between flooding and very high temperatures that reduced the depth.

Currently, member states along the eastern border are experiencing higher inflation and slower GDP growth. Because Eastern European manufacturing and logistics clusters are more energy intensive and dependent on old supply chains, the soaring costs of fuel, labor and warehouse utilities are severely influencing the profit margins of logistics providers.

According to a policy document released by the European Commission (Communication on the Eastern External Border, 2026), we can see a 75% to 80% collapse in rail freight volumes previously tied to Russian transit.

Baltic ports reported reduced volumes of freight because traditionally they relied on Russian and Belarusian cargo (30%-40% of all cargo). To survive, Baltic logistics had to pivot and focus more on Western Europe and Scandinavia. Currently, they are working on Rail Baltica, a massive railway project designed to connect the Baltics to Poland and Central Europe.

Also, with Ukrainian air space closed and neighboring regions impacted by military operations, drone incursions and missile defensive risks, consolidated the position of some airports such as Leipzig, Liege or Budapest.

Russia has heavily modernized its own air freight infrastructure to survive sanctions. Has integrated air cargo hubs with rail and road networks to create intermodal corridors toward Asia.

Inside Ukraine, the financial toll is immense. Upwards of 25.000 km of roads, hundreds of bridges, and key rail hubs have been damaged or destroyed. According to United Nations (2026), Ukraine would need 588 billion USD for reconstruction and recovery overall, and 24% should be dedicated to building new transport infrastructure.

In another part of the world, the Panama Canal is slowly recovering from a two-year drought that crippled global trade routes. The canal operates using fresh water from Gatun Lake, and each ship transit flushes approximately 50 million gallons of water into the ocean.

In normal climate conditions, the canal will be transited by 36-38 ships, but during 2023-2025 the situation changed completely, only 18-22 ships/day could transit the canal. Also, ships were forced to carry less cargo to reduce draft, making every ship less efficient.

At the peak of the crisis, over 160 ships were queued at once, with some waiting up to three weeks to cross the canal.

Many bulk carriers and LNG tankers abandoned the canal entirely, opting for 10-14 days longer journey around Cape Horn or through the Suez Canal. Shipping companies began

“bidding” for the few available slots, one company paid a record of 4 million USD just for the right to skip the line (on top of the standard 1 million USD transit fee) [3].

The ACP (Suez Canal Authority) estimated a revenue loss of nearly 800 million USD to 1 billion USD for the 2024 fiscal year alone due to fewer transits. Although now the Panama Canal is operating at full capacity, the ACP is investing 1,6 billion USD into a new dam project on the Rio Indio to ensure this doesn't happen again when the next dry cycle hits.

To economically incentivize water efficiency and fund infrastructure, the ACP levies a “freshwater fee” on transiting vessels, which scales dynamically based on the real time water levels of Gatun Lake.

Meanwhile, in a recent announcement [4], the Panama Canal Authority has told ship agents, owners and operators that it will reduce the maximum authorized draught at its neopanamax locks to 14.94 m, in tropical fresh water from July 24. A further reduction to 14.78 m will follow on August 15.

This is not a severe restriction like the one during the 2023-2024 drought, when daily booking slots were slashed and many operators were forced to reroute. But it is a clear signal that the canal is again moving into defensive water management before the next dry season.

Another solution that has been tested is to use the Panama Canal Railway when draft limits drop. Mega-ships can offload a part of their cargo on one side, transit the canal lighter, and reload the containers via rail on the other side. Of course, this implies longer time with transshipments and more costly operations.

The crisis caused by the obstruction of the Suez Canal by the ship Ever Given for 6 days in March 2021 (23-29) showed the vulnerability of dependence on a single route and mode of transport. Of course, alternative options exist, but they are longer and more expensive and require reorientation with other types of transport, including combined transportation.

The ship was travelling from Tanjung Pelepas, Malaysia, to the Port of Rotterdam, Netherlands, and the crew being entirely of made of Indian nationals (23 members). Is owned by a Japanese company and operated by the Taiwanese company Evergreen Marine. Ever Given can hold 20,000 containers and is 1,300 feet (400 meters) long and 193 feet (59 meters) wide. (Empire State Building is shorter - 1,250 feet or 382 meters).

Around 12% of global trade or 30% of international containers pass through the Suez Canal, and 30% of the world's container traffic was delayed. The delay also meant that intermediate products for production were missing, and other products could no longer be sold or could only be sold at a discount

About 400 ships were affected by the accident. Nearly 19,000 ships passed through the canal during 2020, for an average of 51.5 per day, according to the Suez Canal Authority.

Lloyd's List estimates that more than \$9 billion worth of goods passes through the 120-mile waterway each day, translating to around \$400 million per hour. The direct costs amount to at least 1 billion EUR in total. Allianz estimated the losses triggered by the blockade of the Suez Canal at up to 10 billion USD per week [5].

Unfortunately, the accident hit maritime transport at a time of strained transport chains. In the short term, as an alternative, one could have tried to switch to container trains traveling from China to Europe via the Eurasian Land Bridge. But their capacities were limited.

The existing railway connections of the Eurasian land bridge run through Russia. China has recognized the strategic dependence and is trying to develop alternative solutions, like the route south of Russia via Iran and Turkey as part of the Belt and Road Initiative.

Air freight – certainly an alternative for high-value goods – is also very busy. Even before the Ever-Given disaster, there were significant delays. Due to the current sanctions against Russia, the country has closed its airspace to airlines from the EU and many other countries. This shows how vulnerable individual modes of transport are and how important it is for international supply chains to have alternatives.

Currently, the infrastructure and operational integrity of the Suez Canal are facing multiple crises. While the infrastructure has seen technical upgrades, its utility as a global maritime artery is severely compromised by a combination of regional conflict, geographical bottlenecks and vulnerabilities in the digital and physical networks that support it.

After the Ever-Given incident, the Egyptian authorities aimed at widening and deepening the narrowest parts of the canal to increase navigational safety by a reported 28%. Especially that undersea fiber-optic cables passing through these shallow waters are highly vulnerable to being dragged by ships' anchors or targeted by hybrid warfare or sabotage.

But the obstruction of the Suez Canal was not to be the most important event to affect the region, the conflict in Gaza has triggered a massive disruption in global logistics, primarily by turning the Red Sea, especially Babel-Mandeb Strait and the Suez Canal into a high-risk zone.

Because of this, ships were circumnavigating the entire continent of Africa, and this added roughly 3.500 to 4.000 miles and 10 to 15 days to the journey.

Also, because ships spent two weeks longer at sea, they couldn't turn around and start new voyages as quickly. That detour absorbed 5% to 7% of global container fleet capacity, tightening shipping availability worldwide [6].

Standard maritime insurance policies exclude war risk. Obtaining a policy that endorses war risk for regional transit has become very expensive, often costing between 150.000 USD and 500.000 USD per single voyage, or 0,5% to 1 % of the total cargo value.

Spot rates for containers on the Asia-to-Europe Lane have seen spikes of 30-40%, with some specific surcharges reaching up to 4.000 USD per container. Some insurers have withdrawn coverage entirely for the Persian Gulf and Red Sea [7].

The prolonged conflict has made clear that the era of cheap, highly predictable global shipping is over and companies must adapt to the new realities.

Companies with time-sensitive goods shifted to air freight, but this caused air cargo rates on certain international routes to surge by as much as 70%. Major transit hubs like Dubai and Amman have faced congestion because of airspace closures and safety protocols.

And again, when the logistics world believed that the end of the conflict in the Gaza Strip would bring peace and a return to international trade without restrictions and at affordable costs, the recent conflict in the Gulf and the blockade of the Strait of Hormuz completely disrupted international trade, especially industries related to the petrochemical and energy sectors.

The Strait of Hormuz is called the world's most important oil chokepoint, but now the region is experiencing a severe escalation in conflict, creating the largest disruption to global energy and logistics since the 1970's.

Daily transits have plummeted from a normal average of 60 ships per day to fewer than 3 on some days. Limited exemptions have been granted to vessels from countries like India, China, and Turkey.

The disruption of this single point of failure has sent shockwaves through the global economy. Crude oil (Brent) surged past 100-120 USD per barrel, and the strait carries 21% of the world's oil supply and 25% of global LNG [8].

The Middle East is a primary exporter of fertilizers as well; the blockade has caused a spike in global agricultural input costs. Also, high concentration of refined aluminum and petcoke originate in the Gulf, and because of this, many industries in Asia and Europe are reporting "force majeure" due to the instability and scarcity of raw materials.

War-risk insurance for any vessel entering the Arabian Peninsula has multiplied by 12-15 times, making the voyages economically unviable even if physical passage were possible.

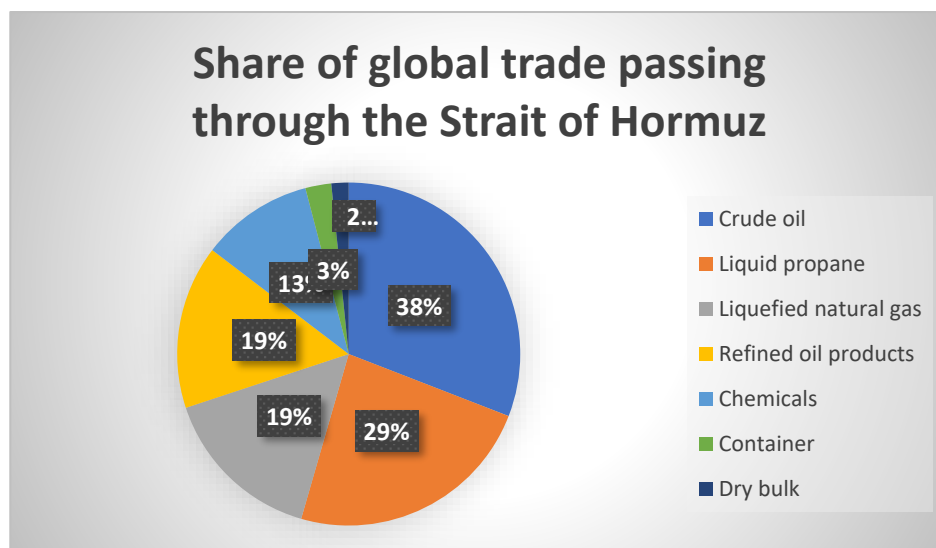
With both the Strait of Hormuz restricted and the Suez Canal/Red Sea route still considered high-risk due to Houthi activity, ships are forced into the Cape of Good Hope detour. Major hubs like Jebel Ali and Dammam are effectively cut off from sea-bound container traffic, leading to a massive backlog of goods and canceled stops across global schedules.

The Houthi launched their maritime campaign in November 2023, claiming to target Israeli linked vessels, but soon after included US and British vessels, and over time vessels with no discernible ties to Israel or its allies were attacked.

These almost 200 attacks had an important economic impact, companies rerouted vessels to avoid attacks, but this led to increases in fuel consumption, and longer transit time.

For Arab and Middle East nations, the impact was severe. Reduced market access and logistics bottlenecks caused a projected 104 billion USD drop in exports over the duration of the crisis, alongside a 20 billion USD increase in the cost of their own imports.

This shift towards the Cape of Good Hope increased port activity, bunkering and maritime services for South African ports, Namibia’s Walvis Bay and Mauritius. However, the unexpected congestion severely strained local infrastructure, forcing a massive push toward digitizing customs and upgrading loading/unloading infrastructure.



Source: UN Trade and Development - statistics based on average lows during the week before the military escalation

The ongoing conflict impacting the Strait of Hormuz choked off vital products from the Gulf region, like fertilizers. Countries like Sudan, Somalia, Kenya are heavily impacted. Sudan already was under a lot of pressure economically and logistically because of their internal unrest, and Port Sudan became a contested, bottlenecked lifeline for the country. The war disrupted the transit of humanitarian aid, fuel and vital food into neighbors like Chad and the Central African Republic.

On top of these major disruptions that took place between 2020-2026, cyber-attacks against freight forwarders, third-party logistics providers, and ocean carriers surged by a staggering 965% between 2021 and 2025.

According to Supply Chain Exchange (2026), state-sponsored actors launched coordinated digital assaults alongside physical harassment—such as widespread GPS jamming in the Baltic Sea. These actions blinded maritime navigation systems and put 15% of global cargo shipping at risk.

According to Everstream Analytics, cyberattacks on ports and logistics infrastructure may seem unpredictable, but their cascading effects on supply chains follow recognizable patterns. Companies can mitigate this risk by implementing advanced supply chain risk

monitoring platforms that can work with thousands of risk variables across global logistics networks, providing companies with a key first-mover advantage.

The same publication shows that global infrastructure requires \$106 trillion of investment through 2040, with \$36 trillion needed for logistics and transport alone. Port disruptions from infrastructure maintenance and systems outages are trending upward.

Overall, between 2020 and 2026, while logistics disruptions were global phenomena, Asia-Pacific and Europe were the most affected by supply chain and transport shocks, but for different reasons.

Asia-Pacific was affected because of manufacturing lockdown and bottleneck, container disparities, as containers became stuck in North America and European ports, and extreme weather impacting important hubs in China, Taiwan and India.

Europe was affected by a severe geopolitical situation and energy-related crisis that impacted logistics providers as well. Also, Europe is the most geographically exposed transit destination.

Potential approaches and conclusions

The era of predictable global trade is over, and to survive and thrive in these challenging times, logistic companies must shift from reactive crisis management to proactive resilience.

Supply chains were already structurally sensitive due to post pandemic reconfigurations, and proved to be highly vulnerable to geopolitical shocks, such as recounting around conflicts.

Shippers and logistics providers are spending significantly more money on redundancy, regionalized networks, and technology simply to achieve the same level of stability they had before the pandemic.

One of the approaches for crisis mitigation could be the **new technological wave**, that can act as a buffer and absorb the shock of a crisis by decoupling productivity from physical presence. Solutions like Digital Twins, where companies create a virtual mirror of their entire supply chain and run “what if” simulations to find alternative routes before the crisis hits, Autonomous Last-Mile Deliveries using drones and small sidewalk robots, or Automated Warehousing systems, all can become long term solutions supervised by people.

Carriers and shippers could implement real time AI and predictive analytics to reroute vessels long before they reach active conflict zones or congested hubs.

But as we said earlier, cyberattacks have increased in recent years and modern facilities, based on operational technology are more exposed to this risk. Hackers exploit the trusted digital portals shared between shippers, external contractors and carriers to bypass firewalls entirely.

Multimodal transport should be used in a more agile version. For example, the North American Land Bridge has become a vital transport artery. Ships coming from Asia bypass the Panama Canal entirely discharging their cargo at US West Coast ports. The containers are immediately loaded onto intermodal rail or long-haul trucks to cross to the Gulf area or East Coast destinations.

Also, the **Just-in Case logistics** has seen a massive resurgence lately. After decades of Just-in Time, efficiency being the gold standard, global volatility has taught us that being “lean” can sometimes mean being fragile. Maintaining higher inventory for critical components and raw materials can act as a shock absorber against sudden demand spikes, prices increase or transport delays. Of course, this approach works for short periods, if you have cash, and if those components or raw materials do not expire quickly and do not lose value.

Another potential solution identified by us would be **more investments in strategic infrastructure**, having alternative routes such as the Middle Corridor (combining rail and ferry across the Caspian and Black Seas), or expanding deep-water ports outside the immediate chokepoint zones (like ports in Oman or the UAE facing the Arabian Sea).

For example, in early 2026, the Port of Constanta moved to take over the Giurgiulesti Port in Republic of Moldova, a move aimed at streamlining the entire Danube-Black Sea corridor.

This is a strategic move for Eastern European logistics, as Giurgiulesti is uniquely equipped with both narrow and wide-gauge railway lines, and now Constanta owns a direct translator node, and can offer solutions for consolidated cargo.

A recent initiative, lunched at the industrial summit held in Antwerp in 2026, talks about “**Made in Europe**”. At its core, it introduces binding "European preference" and low-carbon requirements for public procurement and subsidies in strategic sectors, and to decrease dependencies on foreign powers like China and the U.S.

Furthermore, "Made in Europe" framework directly targets logistical and supply chain crises by replacing long, fragile global shipping routes with regionalized, "bulletproof" logistics network infrastructure. By forcing the localization of key components (like requiring 70% of electric vehicle parts or solar panels to be made in the EU), the policy fundamentally reduces Europe’s exposure to maritime chokepoints.

This shifts logistics from high-risk, long-haul freight to more agile, cross-border European logistics. Transit times will drop from months to days, reducing the amount of capital tied up in inventory in transit.

Although on paper seems very good, it won’t happen overnight. Logistics providers and manufacturers would have to re-engineer and optimize supply chains, adjust to strict new compliance and invest in low-carbon vehicles and technologies.

In our opinion, negotiation is a determining factor in supply chain management, constituting an essential competence with a direct impact on operational performance and long-term

strategic success. It influences critical decisions such as supplier selection, establishing contractual conditions, determining prices, defining guarantees, allocating responsibilities and dispute resolution mechanisms, thus becoming a central tool in aligning the objectives of the parties involved and in mitigating risks in a global environment characterized by complexity and volatility.

Negotiation activity is a fundamental strategic tool, capable of amplifying both the reactivity and efficiency of the supply chain. Strategic negotiation allows organizations to anticipate and effectively manage challenges such as supply disruptions, inflation, price volatility, demand fluctuations or quality issues, facilitating the adoption of precise and agile actions without compromising relationships with trading partners. Beyond technological advances, cultural intelligence has become an essential element of modern supply chain negotiations. Relational factors such as trust, commitment and reciprocity also shape the dynamics of negotiations. The importance of maintaining a balance between supply chain performance and strategic planning in achieving competitive advantage is critical. The integration of supply chain processes and strategic adaptability contributes decisively to achieving competitive advantage by improving internal collaboration, strengthening relationships with external partners and increasing resilience to changes and disruptions in the global environment. Strategic planning in supply chain management, increasingly important in the context of its complexity and globalization, contributes to efficiency, resilience and long-term competitive advantage.

With the increasing complexity and global footprint of supply chains, broader risks are emerging, which can be identified and managed in a differentiated manner. Reducing the negative effects generated by the materialization of risks depends on the application of advanced procurement strategies, used by professionals in the field both in decision-making processes with a high degree of rationality and in situations characterized by significant irrational components. Risk mitigation strategies effectively contribute to reducing the exposure of organizations to supply chain-specific risks.

A universal mechanism applicable to all companies to ensure, at any time, a minimum level of risk exposure cannot exist. Flexible approaches are needed, adapted to the operational context and the particularities of each supply chain.

The response of companies to the plethora of systemic shocks in recent years (coronavirus pandemic, energy crises, geopolitical and military tensions, protectionist trade policies, etc.), have imposed the need to adapt, by implementing nearshoring or friendshoring strategies. These supply chain strategies, designed to increase resilience and reduce risk in response to global disruptions, aim to replace vulnerable, remote supply chains with more secure and reliable networks. Companies' concerns about the digitalization and sustainability of supply chains are key elements in responding to current and future challenges.

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