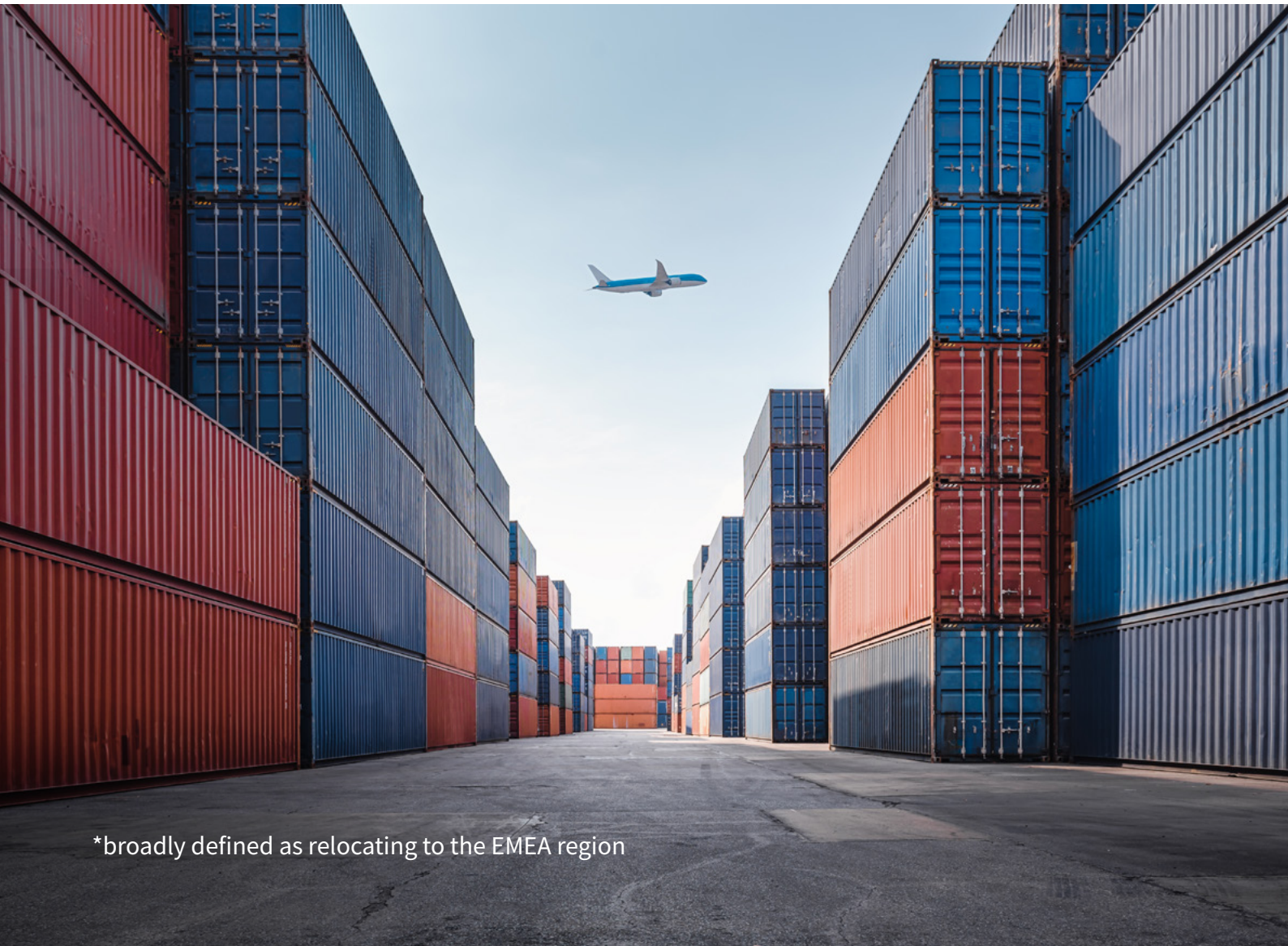
September 2022

Uncovering potential in a reshoring* EMEA

New markets emerge from changing distribution patterns



*broadly defined as relocating to the EMEA region

Key points

Corporate strategies are focusing on diversifying production and suppliers, through reshoring to reduce reliance on dominant suppliers, resource countries, and maintain stock levels in Europe.

A recent survey conducted by BCI Global shows that as much as 60% of US and European companies are planning to bring some of their production from Asia back to their own region.

A breakdown in distribution networks during the pandemic that created severe bottlenecks at ports and airports has made reshoring a priority for companies needing to address supply chain disruptions.

In addition to technological, decarbonization, and sustainability solutions, expanding the list of suppliers and sourcing goods from countries closer to or within Europe can help safeguard supply chains.

Early indications of current reshoring efforts point to Romania, Turkey and Morocco as alternatives to production in Ukraine and Asia.

Established transport networks from North Africa (by ship) and southeast Europe (by lorry) define current and future pan-regional and European distribution corridors.

Based on current reshoring patterns, markets situated along Europe's traditional "Blue Banana" and the emerging "Black Sea Banana" corridors will see an increase in demand from 3PLs over the next few years.

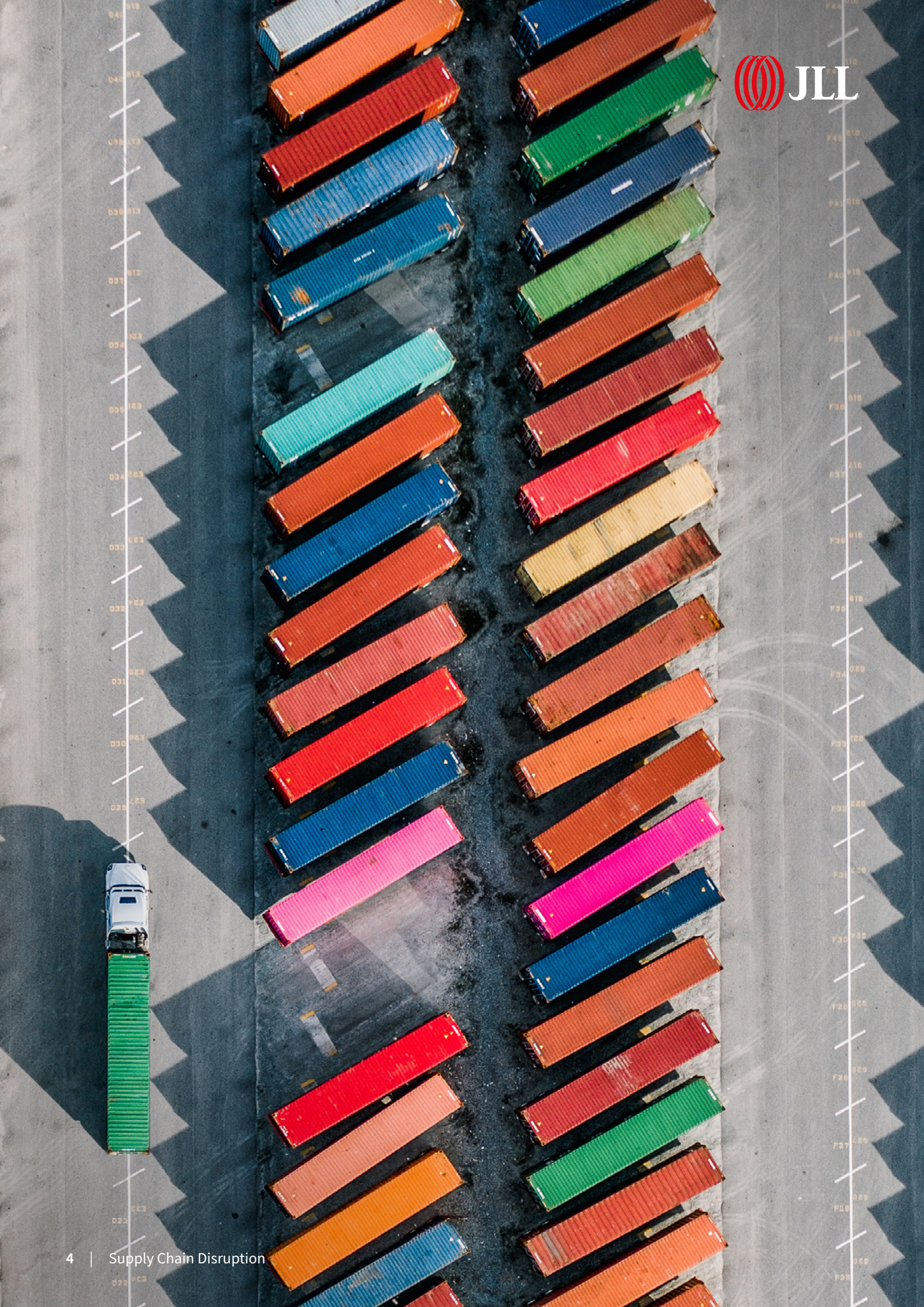
Lack of land and labour shortages are likely to push demand from primary to strategically-located secondary and tertiary markets.

Introduction

In recent years, challenges to the logistics sector, such as Brexit, Covid-19 lockdowns and the war in Ukraine, have caused a ripple effect through global and regional supply chains. As we look ahead, we can anticipate that climate change, trade wars, and geopolitical shocks will continue to contribute to supply chain disruptions, which are growing more frequent and substantial. For companies, supply chain delays and bottlenecks can have an existential impact on costs. Unsurprisingly, a growing number of businesses are proceeding with, or accelerating, reshoring plans to limit their exposure to these risks.

Solutions that can effectively safeguard inventories focus on diversification of inventory quantity and location. Rather than shutting down plants or ending contracts with suppliers in offshore locations, companies are adding additional plants and suppliers closer to or within Europe. Just-in-time (JIT) inventory management is gradually being replaced by a just-in-case (JIC) approach which involves holding more inventory closer to customers or manufacturing facilities. Together with a growing trend to reshore to the EMEA region, JIC inventory management means that warehouse requirements will increase closer to end-customers as well as to new production and supplier locations.

According to a recent survey conducted by BCI Global, as much as 60% of US and European companies are planning to bring some of their production from Asia back to their own region. Based on current case studies of retailers and manufacturers that have already decided to reshore part or all of their production, the primary beneficiaries of reshoring are Central Europe, Romania, Turkey and Morocco. Considering established transportation networks and gateways, markets along two of Europe's distribution corridors - the traditional "Blue Banana" (a banana shaped metropolitan axis stretching post-Brexit from Benelux to Milan with a population of around 111 million) and an emerging "Black Sea Banana" - are most likely to experience rising demand from 3PLs (i.e. Third Party Logistics Operators). Severe supply constraints in prime markets along these corridors will push demand to strategically located secondary and tertiary markets along these same corridors.



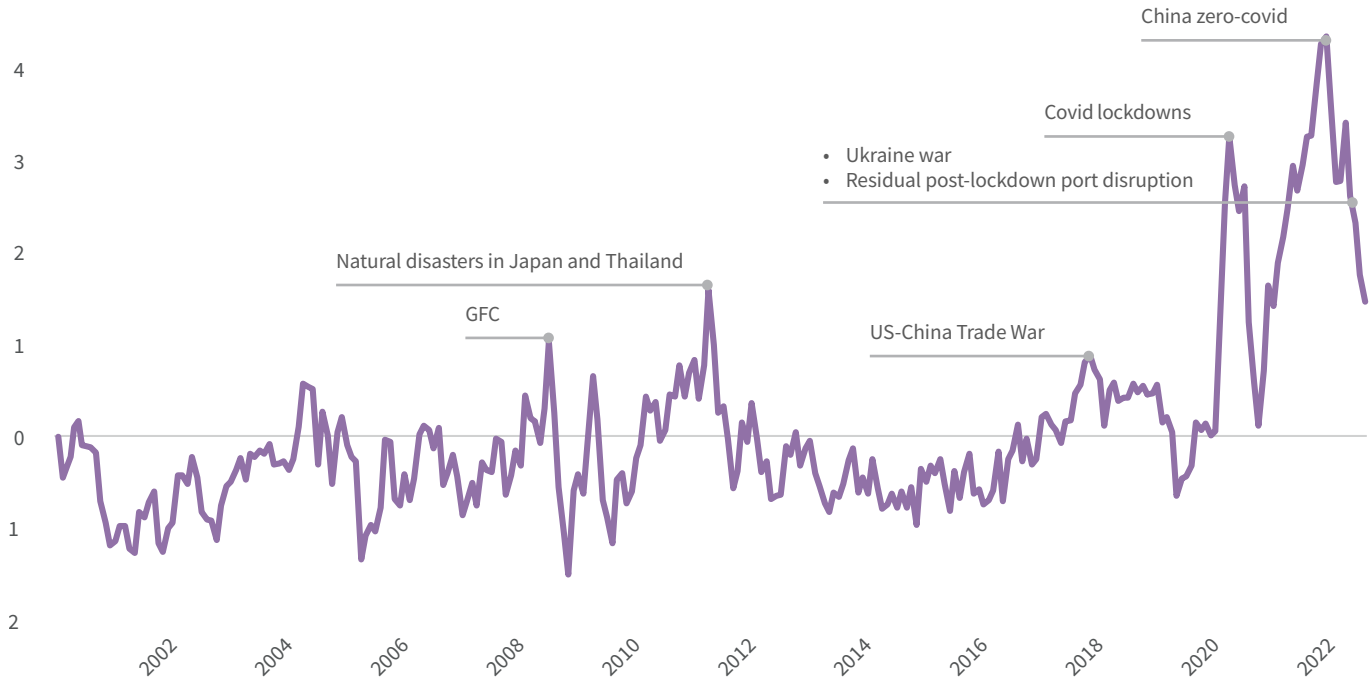
Supply chain uncertainty and disruption

Global supply chains were already under scrutiny before the global pandemic. Rising wages in low cost manufacturing locations, rising supply chain costs, an increased frequency of adverse weather events, strikes and accidents (such as the Suez Canal blockage), have fuelled discussions of reshoring and supply chain diversification over the past decade.

However, risk versus cost scenarios in combination with the consequent loss of manufacturing infrastructure in Europe after large parts of manufacturing had moved to Asia, have continued to favour Asian markets as trading partners and manufacturing bases for a large range of products. As a result, reshoring of manufacturing to Southeast Europe and North Africa along with supplier diversification has, until recently, remained marginal.

Two years of a global pandemic and the Russian-Ukrainian war are starting to change this picture by highlighting risks and resiliency gaps that outweigh cost considerations for all types of businesses (retailing, manufacturing, and logistics/transport).

Global Supply Chain Pressure Index (GSCPI)



Source: Federal Reserve Bank of New York, updated to August 2022.

An elevated risk of disruption due to unexpected events associated with climate change, shifting trade agreements, and geopolitical unrest has always been a challenge for global supply chains. However, lockdowns during the pandemic put unprecedented pressure on production and distribution networks created by plant shutdowns and bottlenecks at gateway ports that are still driving up costs today.

The Global Supply Chain Pressure Index (GSPI)[1], a measure of international supply chain disruption created by the Federal Reserve Bank of New York, shows that supply chain pressure soared during the first lockdown period of the Covid-19 pandemic. Although it briefly fell back as countries re-opened, it subsequently shot up again to a new high as reopening caused demand to accelerate but supply couldn't keep up. Factories remained shuttered or only partly operational, workers were forced to isolate, and international ships and containers were in the wrong place, or unable to dock and load/unload. China's zero-covid has policy continued to cause city-wide lockdowns in 2022, even as the rest of the world vaccinated and moved on, keeping international supply chain dirsuption (and the index) high. Only as new shipping capacity has come online and operators have found work-arounds has supply chain pressure eased. Yet it remains elevated and volatile by historic standards.

Reliance on only a small number of major suppliers based in Asia is a risk that can be addressed through reshoring or nearshoring other suppliers closer to plants and customers in Europe. Without disrupting production by moving plants closer to home, in the short term businesses can mitigate the risk of supply shortages through diversifying the number of suppliers and geographic locations to build greater agility and resilience into their supply chains.

1 The Global Supply Chain Pressure Index (GSCPI) measures risk based on a combination of global transportation costs, and supply chain related components (delivery times, backlogs and purchased stocks).

Supply chain disruptions play out at Europe's container ports

Around 90% of the world's goods are transported by sea, with global container traffic volumes increasing by nearly 150% over the last 20 years.

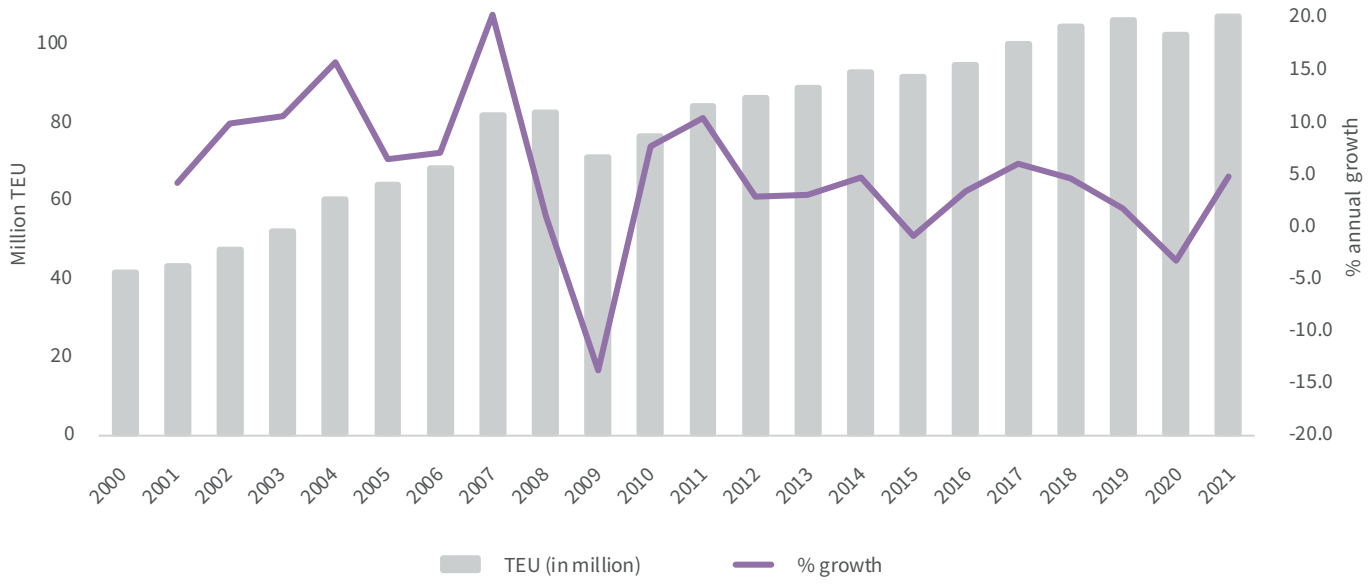
Total TEU volumes in Europe rose from just over 40 million in 2000 to over 100 million annually since 2018. During this 18-year period, significant global or regional events such as the Global Financial Crisis (GFC) and the Eurozone monetary crisis, resulted in temporary throughput fluctuations.

However, during the global pandemic, more severe disruptions played out at Europe's gateway ports. TEU volumes initially dropped by 3.5%, only to rebound sharply during H2 2020 and last year. Not reflected in this fluctuation, are the delays and therefore temporary disruption of manufacturing and increased costs related to rising congestion in ports globally and increased journey times between major ports in Asia and the U.S. and Europe.

Based on the Container Freight Rate Index, over a two year period, starting in January 2020, container costs from Asia to Europe increased almost four-fold. While coming down slightly since January 2022 (20%), container costs remain at a record high level.

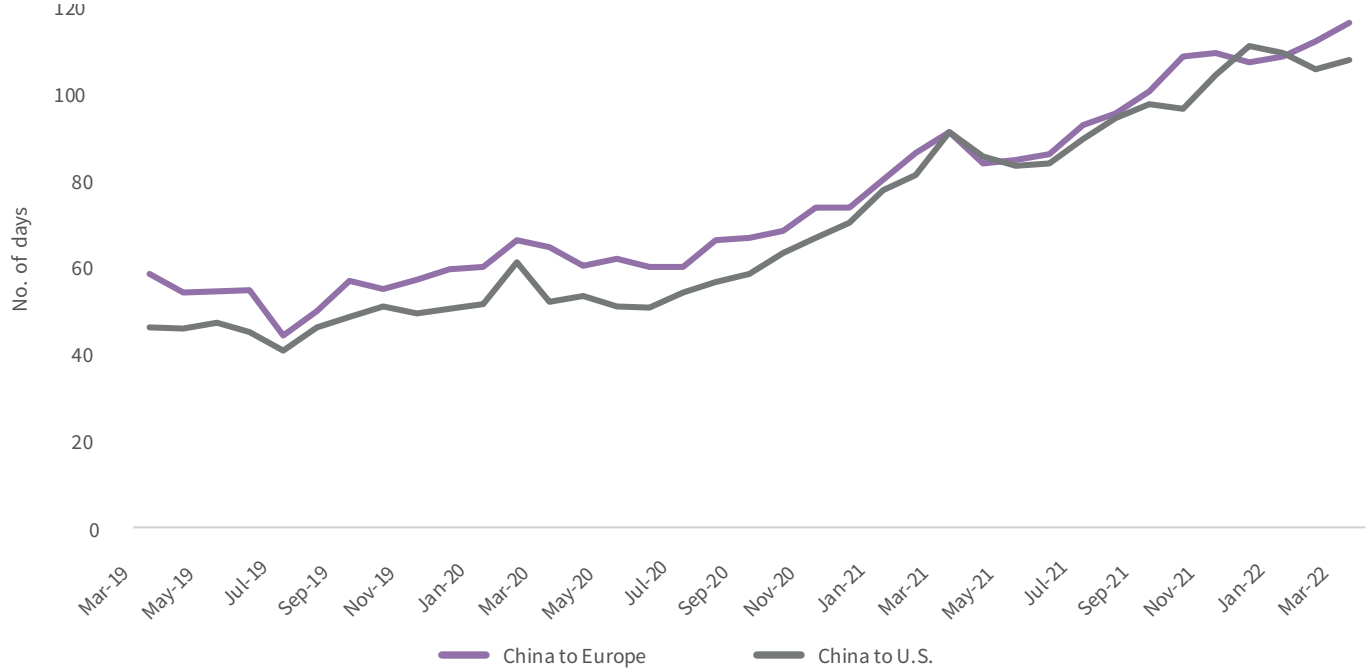
Container port traffic European Union

(European container port throughput in millions of twenty-foot equivalent units)



Source: World Bank, Statista

Ocean carrier journey times: Shipping from Asian ports to Europe and the US



Source: Flexport

By the end of March 2022, the average container ship journey from Asia to Europe took around 115 days, up from 60 at the start of 2019. This has caused inventory pile ups in storage as well as inventory shortages on both sides of the supply chain.

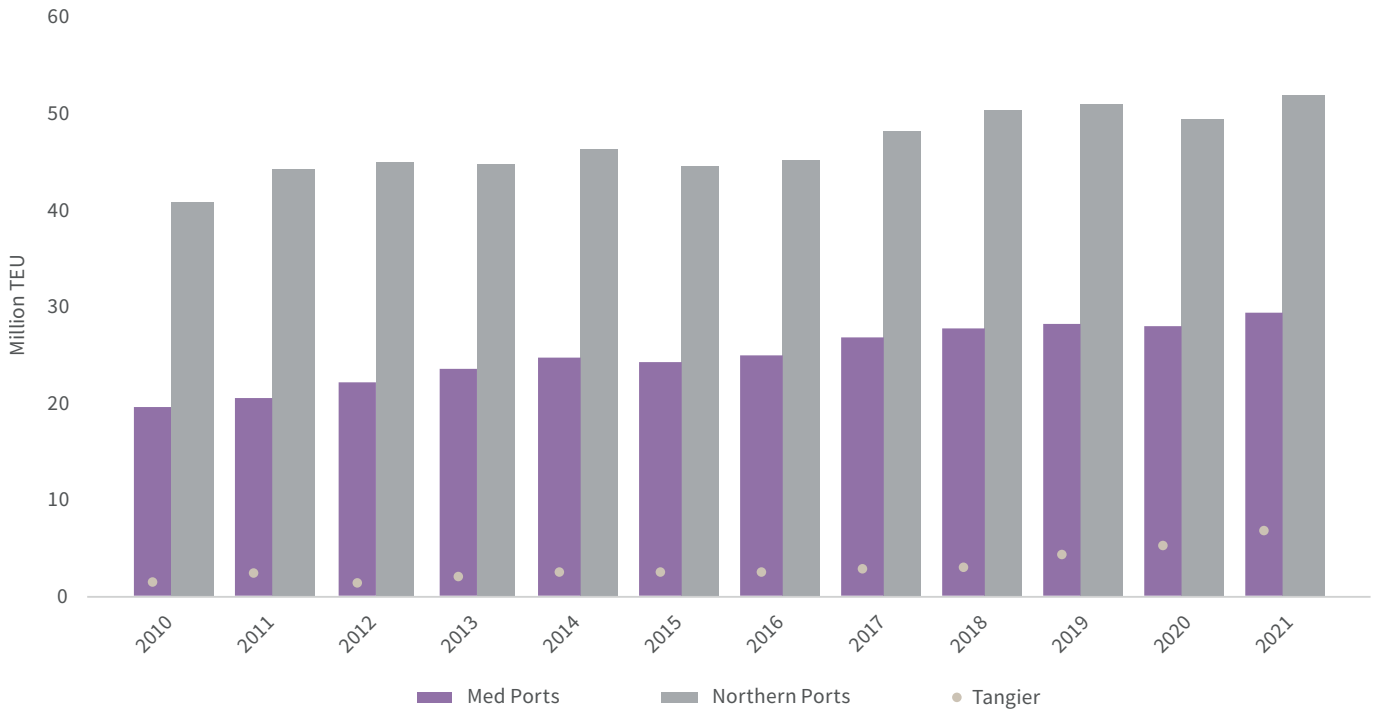
During Q1 2022, TEU volumes declined at two of Europe's two largest gateway ports - Rotterdam down by 1.4% and Antwerp down by 11.6% with only a modest increase of 1.8% at the port of Hamburg. Sanctions and additional disruptions associated with the Russian-Ukraine war appears to have had an immediate impact on freight levels moving through these ports which we expect will continue for the foreseeable future.

Europe's southern ports still playing catch up to north

Despite being strategically located to capture shipping traffic from reshoring countries in Southeast Europe and North Africa, Mediterranean ports continue to lose out to their northern neighbours. For instance, the ports of Marseille and Genoa, although connected to Europe's "Blue Banana" distribution corridor, do not offer comparable ship efficiencies, ship capacities, nor service levels to match Northern European ports.

Trade from Morroco's port of Tangier typically enters Europe through the port of Rotterdam, whilst goods produced in Romania and Turkey are transported to Western Europe by lorry rather than by the shorter and cheaper sea-based routes.

Container Port Traffic: Mediterranean, Northern European and Tangier Seaports

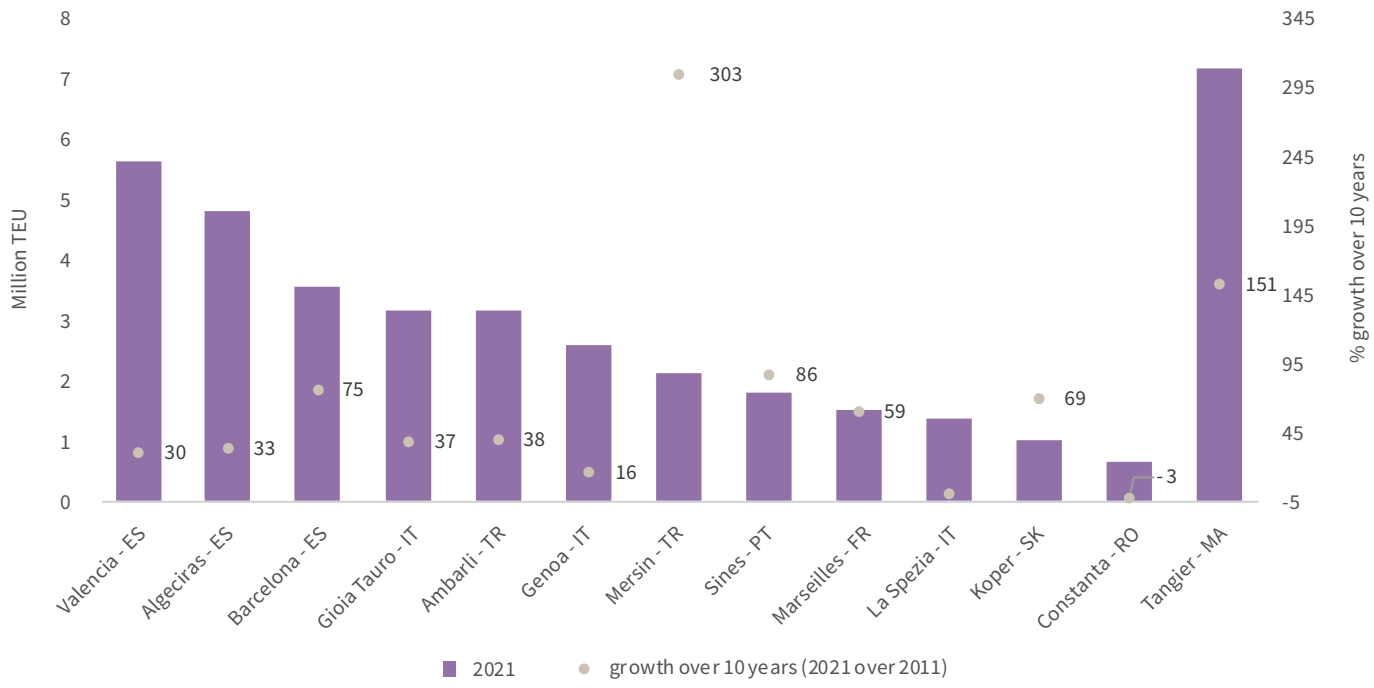


Source: Port Authorities

Over the past ten years, significant investment to modernise and enlarge terminals Med I and II and more recently, reshoring to Tangier's free trade zone have contributed to 150% increase in TEU volumes at the port that totalled to 7.1 million in 2021, outpacing growth at the port of Valencia, Europe's largest Mediterranean port.

Generally, increasing container volumes at Europe's top 10 Mediterranean ports can be attributed to a rise in transshipment activity at these ports connected to China's silk road initiative. Coming from a lower base compared to northern ports, over the past ten years, TEU volumes increased at Mediterranean ports by 43%, whereas northern port traffic rose by 17% over the same period. However, as in the case of the port of Genoa, ongoing investment to increase gateway capacity is an indication that some Mediterranean ports recognise their potential to become key regional distribution hubs.

Container Port Traffic: Mediterranean TEU throughput in 2021 and growth over the past 10 years



Source: Port Authorities

Diversification to safeguard inventories

In exposing supply chain vulnerabilities, the pandemic served as a catalyst for rapid change. For many companies, several new strategies have moved up the agenda: a geographically-broader supplier network with higher inventory levels and longer-term contracts; diversified manufacturing through the creation of regional hubs; and investment in technology.

Whilst these are longer-term considerations, there are several diversification tactics that can be put in place in the short term to safeguard supply chains.

Reshoring

Several recent surveys confirm that the trend to reshore is a reality for a growing number of companies. According to Ernst & Young's recent survey, 88% of respondents in Europe stated they consider reshoring, while still 61% said they seek to reduce reliance on China. Meanwhile, a survey by BCI Global conducted with senior level executives of 125 companies showed that over 60% of European and U.S. manufacturing companies expect to reshore part of their Asia production. Respondents confirm that in the short-term, the lion's share of manufacturing will remain in Asia and that starting production closer to or within Europe will be gradual, beginning with small volumes of critical parts and products.

> ***"The pharmaceutical strategy for Europe, adopted at the end of 2020, highlights the EU's aim to 'develop the EU open strategic autonomy and ensure robust supply chains'. Among other moves, the EU has imposed temporary vaccine export restrictions, signalling its willingness to directly intervene in the market in order to secure the supply of vital medicines for its citizenry."***

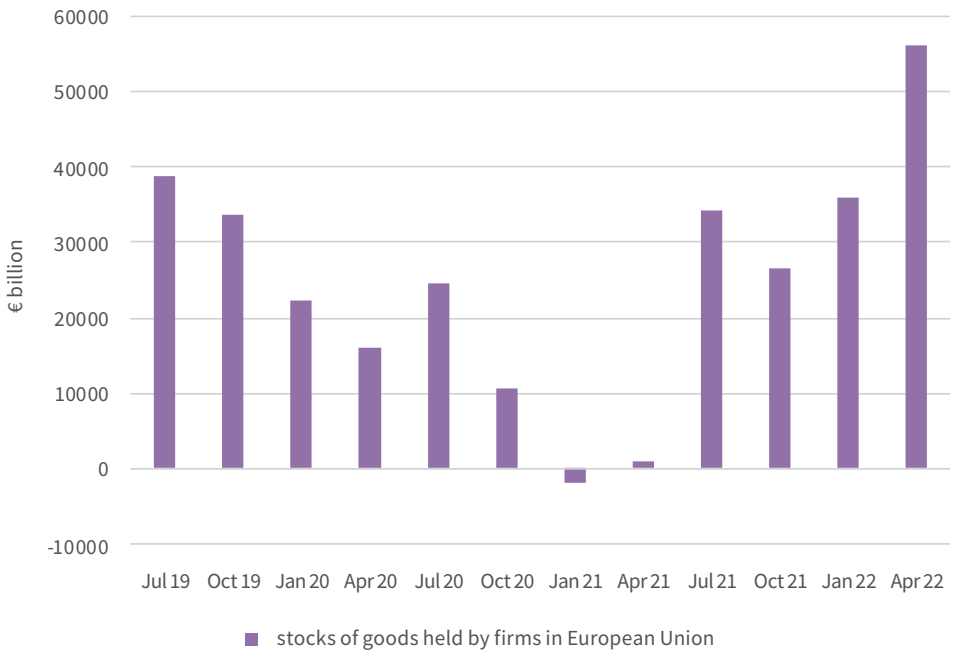
Source: Ernst & Young, 2022

Moving from JIT to JIC inventory management

Having been caught off-guard by severe supply chain shortages, many companies from manufacturers to retailers, are rethinking their approach to JIT (just in time) supply chains. Over the past few decades, most companies have implemented JIT models, keeping inventory to a minimum and using short-term, flexible contracts to allow them to quickly adjust to changes in demand and, above all, keep costs at a minimum. However, strategies that emphasis low-cost suppliers which require very long global supply chains and do not factor in risk are currently being challenged. As a result, more companies are contemplating a switch to JIC (just in case) inventory management, which implies increasing inventory levels closer to end-customers and regional production lines to limit supply shortages and outages.

Combined with reshoring initiatives, JIC is expected to increase demand for warehouse space to hold “safety stocks” either close to production in Morocco, Turkey, CEE countries, Eastern Europe, Spain, Portugal or Ireland or along distribution corridors from these countries to end-customers in Western Europe.

Changes in inventory levels, EU total (in € billion)



Source: Trading.com / Eurostat

Air cargo is now a viable and reliable transport option

Port shutdowns (especially in Chinese ports which have experienced severe delays since the start of the pandemic) coupled with a sharp rise in container rates for maritime transport, make air cargo and, until recently due to the war in Ukraine, sanctions, and deteriorating EU-Russia relations, rail freight more competitive alternatives to shipping. Air cargo's high rates and low capacity mean that a major shift from sea to air transport is unlikely. However, for high value, low volume products, air cargo is quickly becoming the preferred mode of transport from Asia to Europe.

Confirming a rise in air transport in response to continued delays at Europe's largest gateway ports, Lufthansa reported a 57% increase in the group's air cargo related EBIT to €495 million during Q1 2022 (up from € 315 million in Q1 2021). Expecting demand to continue rising, the company announced plans to expand its air cargo capacity, adding ten new air cargo planes over the next few years.

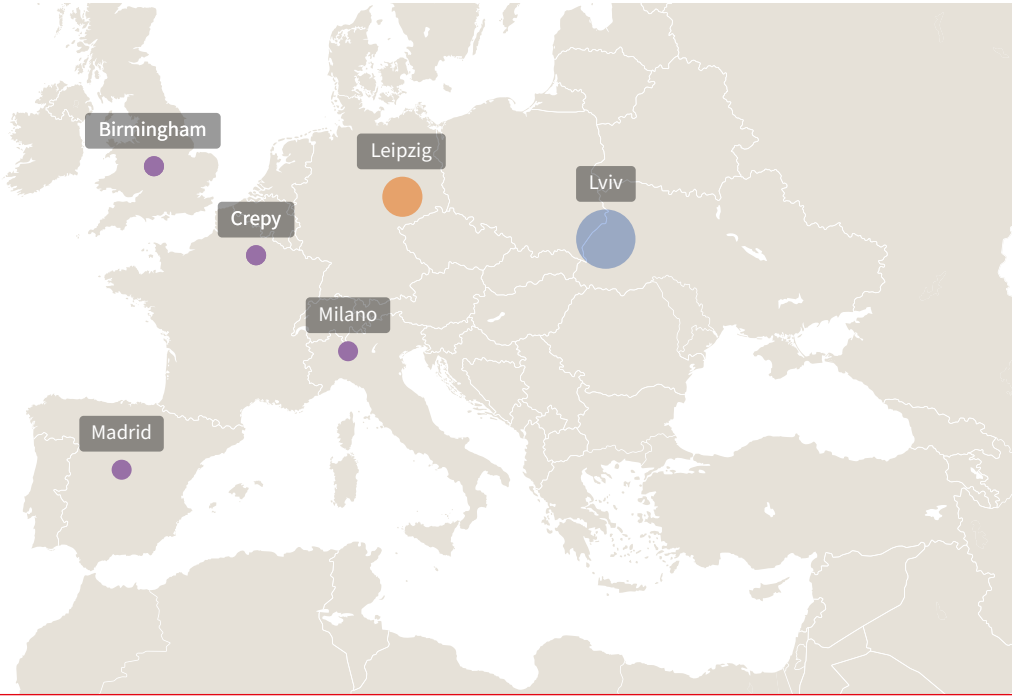
Miebach Consulting GmbH assesses supply chain impact

Prior to implementing any reshoring strategy, an analysis of the proposed production footprint changes, distribution centre locations and gateway locations is necessary to be able to achieve a cost/service/risk balance. JLL's global supply chain consultancy partner, Miebach Consulting GmbH, evaluates various reshoring scenarios in this way by also considering operational costs (production and logistics), several 'soft' factors including lead time, operational buffers, supply chain risks associated with a particular location, local taxes, and corporate-specific requirements relating to customer relations.

To demonstrate how they assess changing supply chains within the context of reshoring, Miebach ran a series of scenarios for a hypothetical automotive supplier forced to reshore after closing a single plant in the Ukraine. Using a supply chain optimisation model, Miebach evaluates three possible solutions to determine the optimal cost/service/risk balance based on a particular company's objectives.

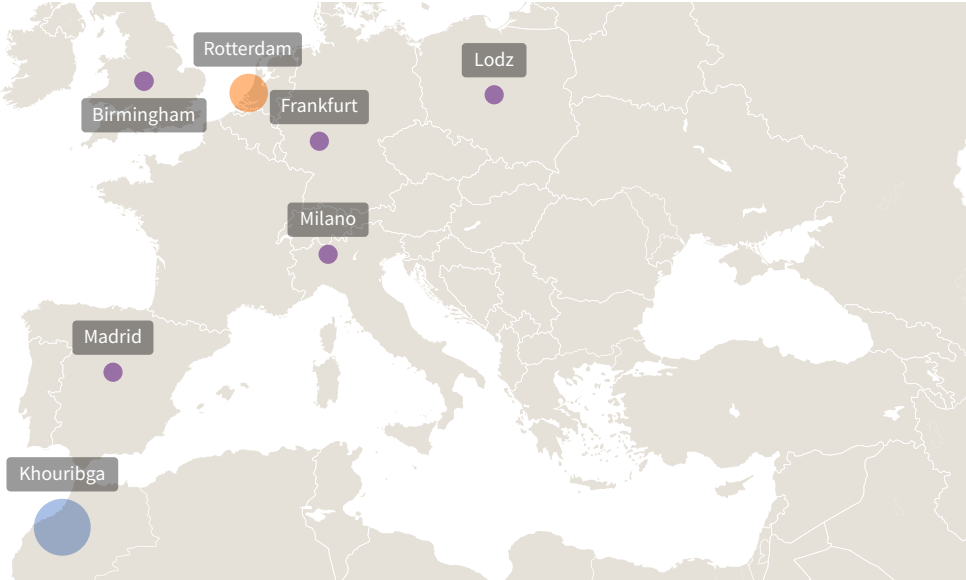
Baseline
Production 100% Ukraine

Production in western Ukraine with parts shipped by lorry to automobile plants in CEE region and Germany. The main distribution centre is in Leipzig, Germany.



Scenario 1
80% from China – 20% Africa

Relocation of operations to existing sister plants in China (80%) and Morocco (20%). Parts manufactured in both countries would be shipped to Europe via the port of Rotterdam. Miebach's model shows that this scenario requires longer lead times for parts produced in China but diversifying sourcing to two regions, the risk of disruption is reduced. Model results are based on locating a pan-European distribution centre in the Netherlands.

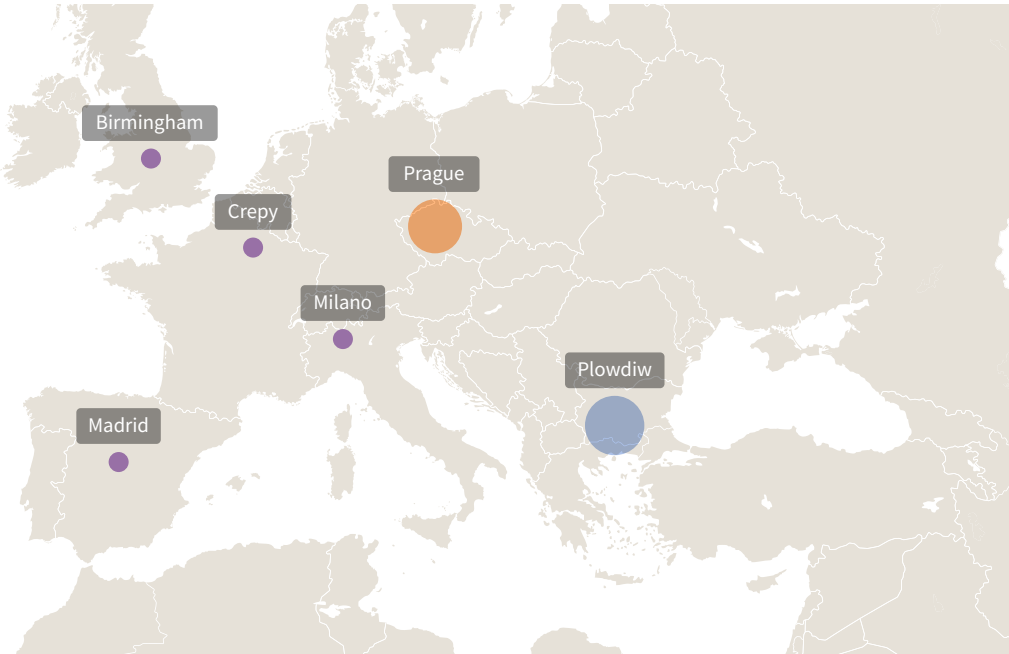


Scenario 2
Production
100% Africa

Reshoring 100% of production to Morocco from either Asia or the Ukraine. Like scenario 1, parts would enter Europe through the port of Rotterdam, but since lead times would be shorter, the exposure to disruptions is significantly reduced. Once again, the best cost/service/risk balance is achieved with pan-European distribution situated in the Netherlands.

Scenario 3
Production
100% Romania

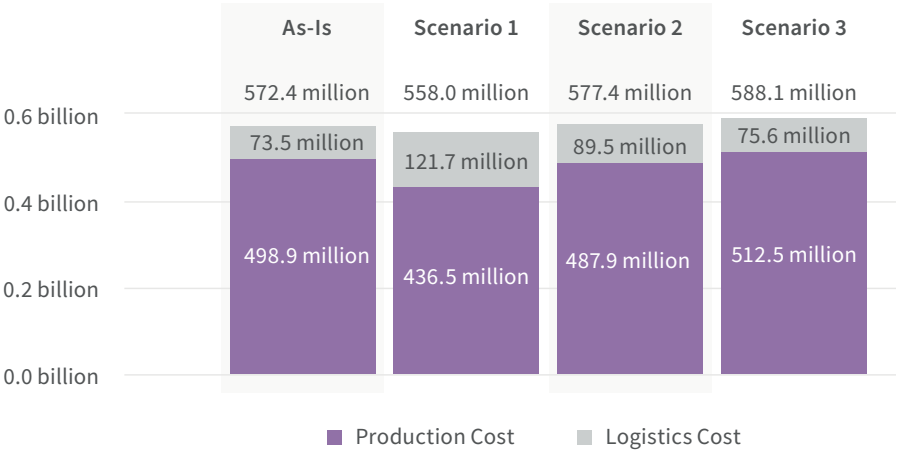
Reshoring 100% of production to Romania. Since in this case, parts would be transported by lorry from Romania through Hungary and Bratislava to automobile plants in the Czech Republic, Germany, and Poland. Miebach's model identifies Prague as the optimal location for a distribution centre.



Implications on Cost, Service and Risk

Operational cost base Scenario

This comparative summary shows that in the case of scenario 3, operational costs are higher but in an unpredictable environment, shorter and more reliable shipments reduce risk of unexpected costs associated with disruptions. While scenario 3 seems to offer the optimal balance between cost/service/risk and lead time, customising decision making to include other factors may determine that another scenario is preferable.



Risk	High	Medium	Medium	Low
Lead time	7	29	14	8
Operational Buffers	medium	high	very high	medium
Time to solution	–	long	long	short
Preference (1 highest)	–	2	3	1

The above assessment is an essential part of any reshoring decision making to achieve cost/service/risk objectives. While Miebach's model determines optimal locations for warehousing especially within the context of multiple supply chains arising from diversifying reliance on one region or country, thorough property market analysis is necessary to understand space availability and occupational costs. Considering the markets in the Netherlands and Prague as identified by the model in this example, vacancy rates are currently below 3%, indicative of severe supply constraints. Furthermore, during the first half of 2022, rents grew by 10% and 43% respectively. Labour cost and availability are also a priority for warehouse site selection. Property market experts can identify alternative markets offering available space that can also meet a company's labour and occupational cost requirements.

For more insight on successful solutions for network structures, processes, and facilities along the complete supply chain, please contact JLL.

Case Studies

Company:
German fashion retailer

Original location:
Southeast Asia

Reshoring:
20% of production in Asia to existing plants in Turkey (Izmir), Germany, Poland, and Italy.

Objective:

- Minimise inventory shortages and delays
- Reduce shipping costs
- Decrease reliance on Southeast Asia
- Create a competitive advantage

Company:
Semiconductor chip manufacturer

Original location:
East Asia (still operational)

Reshoring:
to East Germany, Ireland, and Italy

Objective:

- Diversification across multiple geographic locations
- Reduce exposure to supply chain disruptions
- Maintain semiconductor inventory levels closer to European automobile manufacturers

Company:
Electric cables for German car manufacturers such as Volkswagen, Porsche, Audi and Skoda

Original location:
closed plants in Western Ukraine (Pidryasne)

Reshoring:
production diverted to existing plants in Morocco and Romania

Objective:

- Assure a stable supply of electric cables to safeguard European automobile manufacturing.
- Main competitors also forced to close Ukrainian plants and divert manufacturing to existing plants in SE Europe and North Africa.

Beyond Europe's "Blue Banana": uncovering market potential

Reshoring strategies currently being implemented rely on existing transportation networks that already navigate infrastructure inadequacies, service discrepancies, cost differentials, and geopolitical risks. These networks are defining current and future distribution corridors connected to established inbound gateways from reshore countries. For this reason, markets along two of Europe's pan-European distribution corridors, the "Blue Banana" and the "Black Sea Banana" are locationally well-positioned to transition from local to regional and/or pan-European distribution hubs.

Markets along the traditional "Blue Banana" corridor include some of Europe's top pan-European distribution locations. Over the past ten years, pan-European distribution centres in the Netherlands, Belgium, Germany, France and northern Italy have been getting bigger (ranging between 35,000 and 100,000 square metres), to be able to store and manage larger inventories arriving at the ports of Rotterdam, Antwerp and Hamburg. For this reason, land is extremely scarce in prime locations in these countries. Unable to find space in these markets in recent years, more companies are being forced to make compromises, locating their warehouses in secondary and tertiary markets along the Blue Banana.

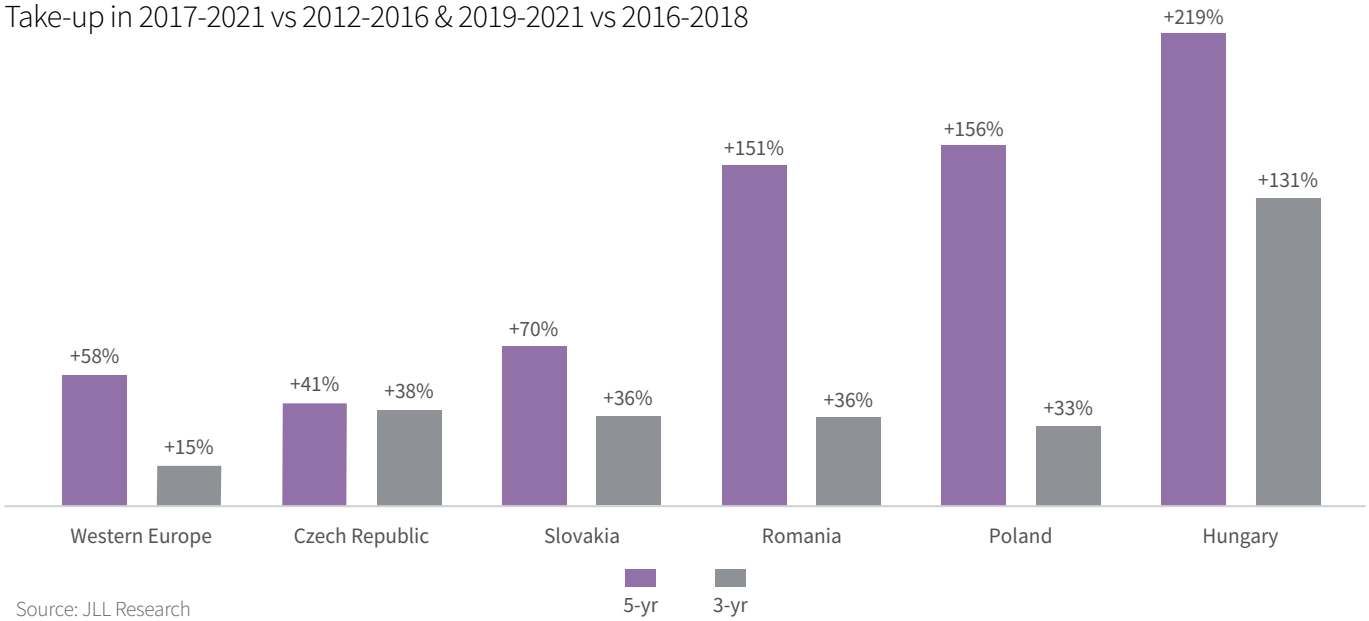
Pan-European distribution corridors

Though less established, the Black Sea Banana continues to evolve as an important corridor for transporting goods and parts produced in Romania and Turkey. Both countries have attracted substantial reshoring interest due to their ample and skilled labour pools and proximity to Western Europe. The preferred mode of transportation from Turkey and Romania to Western Europe is by lorry. Emerging markets in Bucharest, Sofia (in Bulgaria) and along the Hungarian/Romanian border with ample land and labour as well as improving infrastructure networks, have the potential to develop into new regional or pan-European hotspots. Like prime markets with proximity to northern gateway ports, established Central European markets further up the Black Sea Banana (Prague, Brno, Budapest and Bratislava) are contending with land scarcity and shrinking and more expensive labour pools. This makes emerging locations in Hungary, Romania and Bulgaria more attractive to occupiers who have reshored suppliers or parts of their production to these countries or Turkey.

Therefore, it is not surprising that over the last five years and the last three years in particular, occupier activity has picked up significantly in CEE markets that sit on or near the Black Sea Banana corridors. The sharp rise in take up in Hungary and Romania, where demand had been subdued since the Global Financial Crisis, is noteworthy.

Logistics occupier activitiy: Growth dynamics in CEE

Take-up in 2017-2021 vs 2012-2016 & 2019-2021 vs 2016-2018



Source: JLL Research

Conclusion

Diversification strategies are essential for maintaining optimal inventory levels in Europe. Stress testing supply chains and global footprints is a proven strategy to keep finding efficiencies and cost reductions. Service levels versus delivery lead times against cost levels are the key criteria.

Solutions such as reshoring mean more complex supply chains and therefore more warehouses to manage. Digitalisation makes these solutions possible through advanced tracking and communication systems. More resilient supply chains means that companies can focus on coordinating supply chains, inventory management, warehouse operations and transportation to achieve greater efficiencies. Therefore, less time and effort is necessary to fix problems arising from disruptions.

Finding space and ample labour in prime markets along the “Blue Banana” and “Black Sea Banana” distribution corridors is currently challenging. Anticipating the impact of reshoring and the shift to JIC inventory management on distribution patterns identifies strategically-located secondary and tertiary markets with the potential to transition to regional and pan-European hubs.

It is important to note that the specific advantages and limitations of markets (infrastructure networks, land management and planning, labour skills and costs, service levels at ports and airports, and ease of doing business) will also determine how well a market will be able to meet changing occupier requirements over the longer term.

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