Supply Chain Monitor

October Update

While external pressures are decreasing, this is the time companies should evaluate their supply chain configuration

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We're still seeing the same geopolitical tensions and climate change risks highlighted in our last issue and the impact and exposure for supply chains remains dynamic, but, overall, the first half of 2024 has seen a relief in pressure. While labor shortages are still vast and specific industries are exposed to increased pressure on the supply chains (e.g. defense industry), generally, quantities for goods and inventory have begun to level out and transportation has shifted to steadier states. This indicates that, at this moment, organizations have somehow learned to live with today's unpredictable geopolitical landscape. We see this recalibration as an optimal time for companies to move their supply chains from reactive to proactive and to focus on strategic transformation of critical supply chain functions.

The supply chain monitor

This is the October update of our supply chain monitor. Central to this is the supply chain heatmap, which we first published at the end of 2022 in our report Rebuilding Supply Chains. This heatmap shows, along the lines of various indicators (freight, production, demand, prices and uncertainty), where the pressure on Dutch supply chains has increased or decreased since the start of the Covid-19 pandemic.

PwC Supply Chain Heatmap: Q1 & Q2-2024 update

Category	Indicators	2020-Q1	2020-Q2	2020-Q3	2020-Q4	2021-Q1	2021-Q2	2021-Q3	2021-Q4	2022-Q1	2022-Q2	2022-Q3	2022-Q4	2023-Q1	2023-Q2	2023-Q3	2023-Q4	2024-Q1	2024-Q2
Global supply chains	Global supply chain pressure index (NY Fed)																		
	World trade monitor (CPB)																		
Uncertainty	World Uncertainty Index																		
	World Trade Uncertainty Index																		
Shipping	Baltic Dry index - cost of shipping raw bulk materials (Eikon)																		
	Global port container throughput (index - RWI/ISL)																		
	Northern European port container throughput (index - RWI/ISL)																		
	Chinese port container throughput (index - RWI/ISL)																		
	Port of Rotterdam throughput (IHS Markit)																		
Air freight	Total air freight volume from NL (Eurostat)																		
Road freight	Total road freight volume from NL (Eurostat)																		
Rail freight	Total rail freight volume from NL (Eurostat)																		
Inventories	Stock of finished products, NL (CBS)																		
Production	Manufacturing purchasing managers' index, NL (NEVI)																		
	Percentage of manufacturing firms experiencing shortage of materials, NL (EC)																		
	Percentage of manufacturing firms experiencing shortage of labour, NL, EC																		
	Observed production trend in recent months in manufacturing, NL (EC)																		
	Assessment of current production capacity in manufacturing, NL (EC)																		
	Current level of capacity utilization in manufacturing, NL (EC)																		
	Construction confidence, NL (EC)																		
	Retail confidence NL, (EC)																		
	Services confidence, NL (EC)																		
	Warehousing and support activities for transportation confidence indicator, NL (EC)																		
Demand	Economic sentiment indicator NL (EC)																		
	Consumer confidence, NL (EC)																		
	Consumer confidence for major purchases, NL (EC)																		
	Percent change in consumption of goods by households, NL (CBS)																		
	Percent change in consumption of durable goods by households, NL (CBS)																		
	Percent change in consumption of services by households, NL (CBS)																		
	New orders in recent months in manufacturing, NL (EC)																		
	Assessment of order book levels in manufacturing, NL (EC)																		
Costs	World materials price index (HIS Markit)																		
	Fuel prices, HWWI (CPB)																		
	Primary commodities excluding fuels, HWWI (CPB)																		
	Monthly labour costs per quarter, NL (Eikon)																		

Sources: Freightos, Port of Rotterdam, Thomson-Reuters, NY Fed, Kiel Institute, European Commission, CBS, CPB, OECD, HIS Markit, WUI, ECB, PwC Analysis.

The heatmap shows Z-scores, computed by subtracting the mean from the observation at time t and dividing the difference by the standard deviation. The mean and the standard deviation are computed for as large historical samples as possible. Observations marketing with "-"are not yet available. The color grading goes from -3 (green), 0 (mean, yellow) to 3 (red) standard deviations.
*Approximate standardization.

The time is now to invest and improve resilience

This period of relief in supply chain pressure is not new. In our first SC Monitor issue, the same general trend of relief was visible. There are many commonalities between Q1 of 2023 and now, like the non-consumer confidence levels, world trade levels, and total freight volumes. However, there are currently also different underlying patterns of relieved pressure.

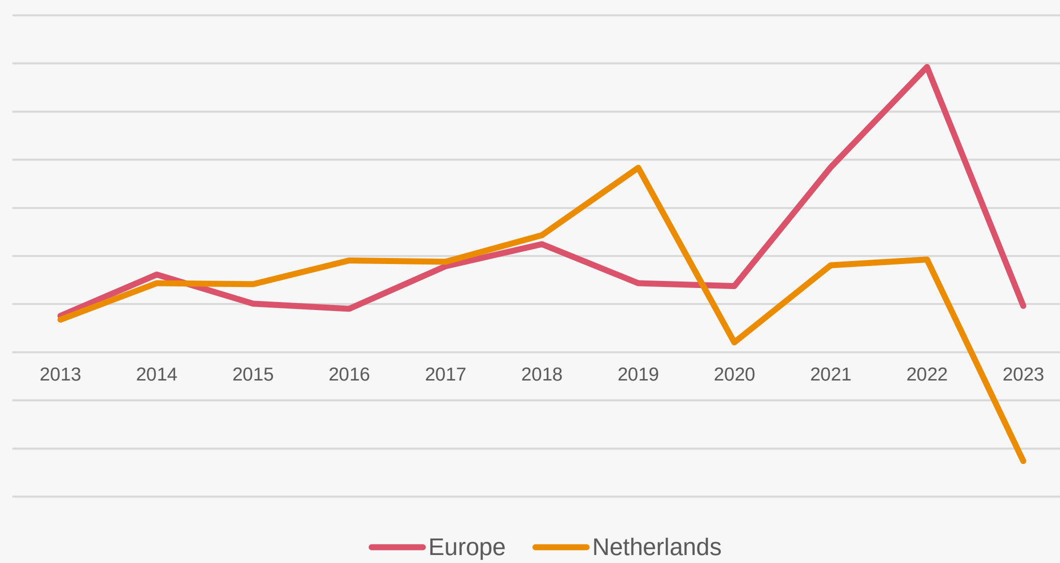
First, there is a distinct difference in transportation modes visible. Since the end of the Covid-19 pandemic, shipping volumes have drastically increased, at the cost of air transport (more on transportation later).

Second, both the world uncertainty and the world trade uncertainty indices display that the overall perceived uncertainty is low, which is remarkable, given the current threatening of escalations in the Middle East region.

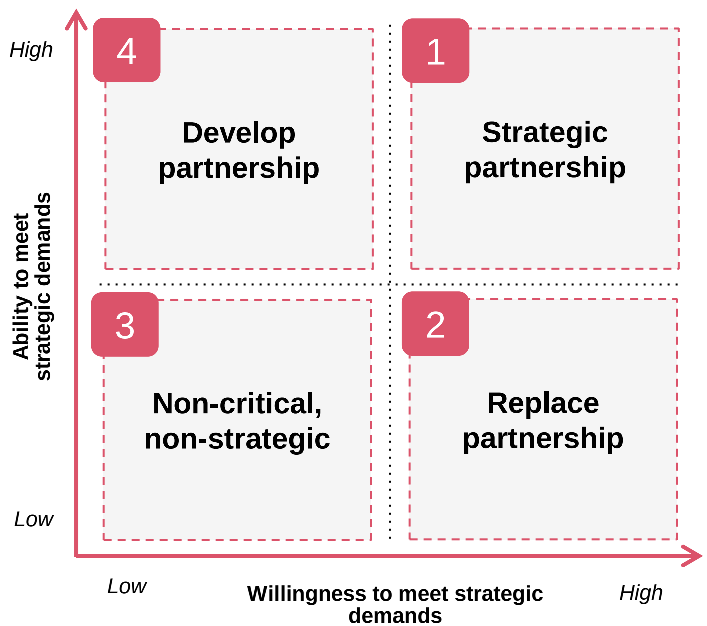
Third, not all industries are experiencing the same level of pressure. Where in Q1 2023, the automotive, healthcare, and semiconductor industries were amongst the heaviest impacted, different industries seem to experience pressure on their supply chain now. Examples are in the food, aerospace, and defense industries.

Changes in inventories

Inventories are stocks of goods held by firms to meet temporary or unexpected fluctuations in production or sales, and "work in progress.“
Data are in current U.S. dollars. Source: worldbank



Lastly, interesting patterns are visible within manufacturing. Although consumer confidence is higher than in Q1 2023, order book levels and new orders have declined over the last periods. Consequently, manufacturers experience significantly less shortages of materials compared to Q1 2023. Production appears to be more in control of their planning, since inventories have decreased too. This might indicate that the current relief of pressure is caused by more predictable 'general' economic stagnation, instead of global disruptions.



As mentioned above, inventory levels are an example of this change. Just a year ago, companies were experiencing either a shortage or an overabundance of materials in their warehouses going obsolete. In the past 6 months, that has started to change: Companies have regained control of inventory, opening up the opportunity to reevaluate their sourcing, planning, and production strategies.

Due to the aftermath of the pandemic, companies were viewing nearly every supplier in their pool as critical to their business. But, by design, a portion of a company's supplier pool should be transactional, not critical. With more availability of materials and a more stable purchasing environment, procurement departments can use this time to take a thoughtful look into their supplier pool, grouping the suppliers into strategic segmentations. This allows companies to understand where redundancy in supply is required and where an in-depth risk evaluation needs to take place, to make strategic and proactive sourcing decisions. The parameters in which companies segment suppliers differ based on their needs and goals, but a few common examples we see are - willingness and ability to meet strategic demands, size and capabilities to meet expanding demand expectations, innovation and commitment to bringing top tier products to the market, and in the simplest terms, the value of a supplier as compared to the spend required by the supplier.

Changes in transportation modes require robust networks

Transportation has been a topic of concern for the past year: geopolitical and environmental disruptions, fuel price fluctuations, increasing container freight rates, labor shortages resulting in driver and operating staff shortages, and an increasingly complex regulatory environment. These concerns have led to the ever-changing needs of the transportation function and, in turn, companies' network design.

Since the peak of the Covid-19 pandemic, the volume of goods transported by air has decreased, while volumes of goods transported by road and rail have increased over the last year. This shift is due to a few factors, but one of the most impactful being that companies can finally take a breath since the pandemic period. Supply and demand has started to level out and planning accuracy has improved, all leading to less urgency of (emergency) shipments and dispersion in modes of transportation. This allows companies to focus on reducing costs and achieving sustainability goals. While pandemic-level uncertainty is challenging to predict, companies can leverage this historical data to redesign a network built for resilience and sustainability.

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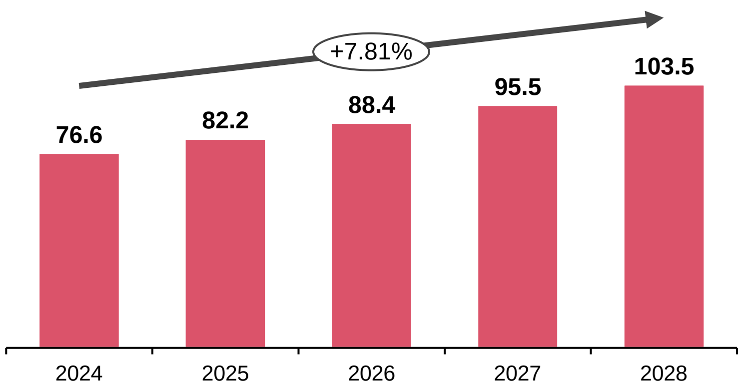
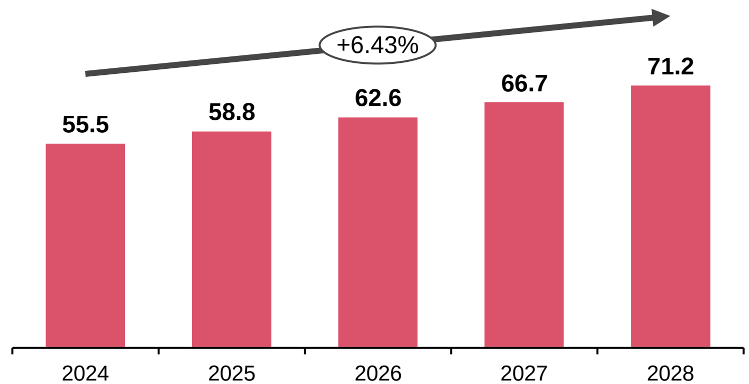
Looking to the future, we see more developments that call for network redesign. The transportation industry is set to grow and as demand grows, we notice how small changes in the network result in large impacts for companies. Therefore, the time is now to quantify the risk and impact of supply chain uncertainty the network faces and incorporate those factors into the network design. In total, the global transportation industry is set to grow at a CAGR rate of 5.38% in the coming 5 years. While air transportation is expected to slightly grow at a CAGR of 4.32% between 2023 and 2028 which is a decrease from the past rate of 10.8%. However, rail and road transportation are experiencing an accelerated growth phase with a CAGR of 7.6% and 6.3% respectively for the period 2023 to 2028. This phase is fueled by innovation to improve efficiency as well as increased use of greener modes of transportation.

Rail Transport – market size and forecast 2024 to 2028 in billion USD



Road Transport – market size and forecast 2024 to 2028 in billion USD



Source: Technavio

The art is in being able to shift between modes

Considering the various uncertainties supply chains are currently facing – geopolitical, financial, supply and demand, and regulatory challenges – companies often seek cost saving opportunities when these pressures ease. It is recommended to seize this period of relief to recalibrate supply chains from reactive to proactive and invest in resilience. Although underlying patterns for the relief might differ, the need for re-evaluation of supply chains remains the same. Organizations need to explore embracing automation and advanced technologies such as advanced planning solutions, prioritizing supplier segments, redesigning current networks, and integrating operations across business units and geographic borders.

Investing in resilience does not mean that supply chains are not reactive at times, but the art is in being able to shift between modes: is your supply chain resilient enough to be reactive, in responding to challenges, and proactive, in profiting from new opportunities, at the same time?

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