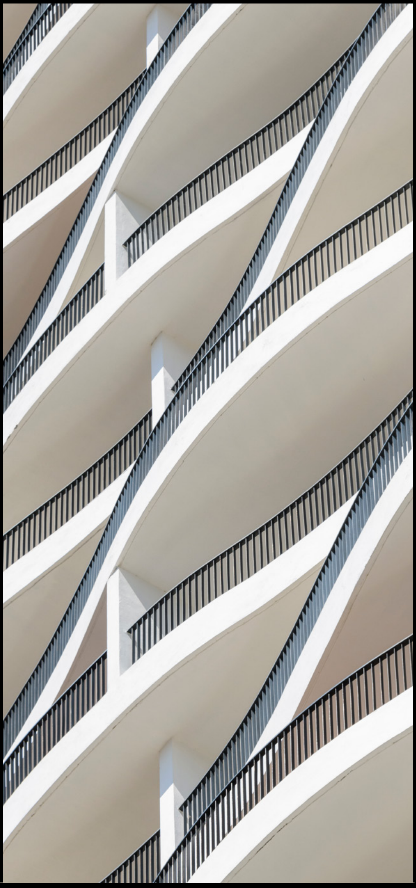
See the Big Picture

2024 Supply Chain Outlook: Delivering resilience in adversity



A look ahead to the key strategic trends and opportunities expected to drive the supply chain narrative through 2024 and beyond.

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Contributors

Chris Rogers, Head of Supply Chain Research, S&P Global Market Intelligence

Mark Fontecchio, Research Analyst – Internet of Things, 451 Research, S&P Global Market Intelligence

Amy Chang, Lead Analyst, Panjiva, S&P Global Market Intelligence

Emilee Nason, Data Scientist, Panjiva, S&P Global Market Intelligence

Adapting to the new normal

Global supply chains have faced a decade of disruptions. The most significant have included the US-China trade war, the COVID-19 pandemic-era consumer goods boom and the Russia-Ukraine war. Supply chain disruptions have also included a variety of natural disasters, financial failures and operational difficulties.

Supply chain activity has normalized in operational terms during 2023, but there are significant risks across the industrial policy, labor action and environmental policy implementation spheres heading into 2024.

Supply chains need to be more resilient, but questions remain over whether corporations and their investors are willing to make the investments necessary to fortify them.

The Take

Global supply chains largely normalized in 2023 after years of disruption, and the need for resilience is clear. The willingness of corporations to build that resiliency is not.

Falling operating margins and higher interest rates may be leading companies to cut their inventory balances and reverse recent supplier diversification increases.

There is no shortage of technology available to enable supply chain resilience, with generative AI as the latest example. Most companies need to see short-term returns on investment, and recent experiences with blockchain, for instance, are leaving some hesitant.

Organizational alignments are necessary to ensure continuing supply chain resilience. Tools for success include increased engagement with labor unions, geographic diversification with an eye to mitigating operational risk, closer tracking of environment profiles, reshoring and enhanced supplier engagement to manage tariff and geopolitical risk.

Paying for resilience in a high-cost environment

S&P Global Market Intelligence data indicates that gross operating profit margins for manufacturers globally are expected to fall to 10.4% of sales in 2024 from 10.7% in 2022. The decline is expected to be particularly stark for the computing and electronics sector and domestic appliance manufacturing. At the same time, capital expenditures are forecast to exceed gross operating profits by 5% in 2024 after being equal to them in 2022. Reinvesting in capital stock may take priority over spending on supply chains.

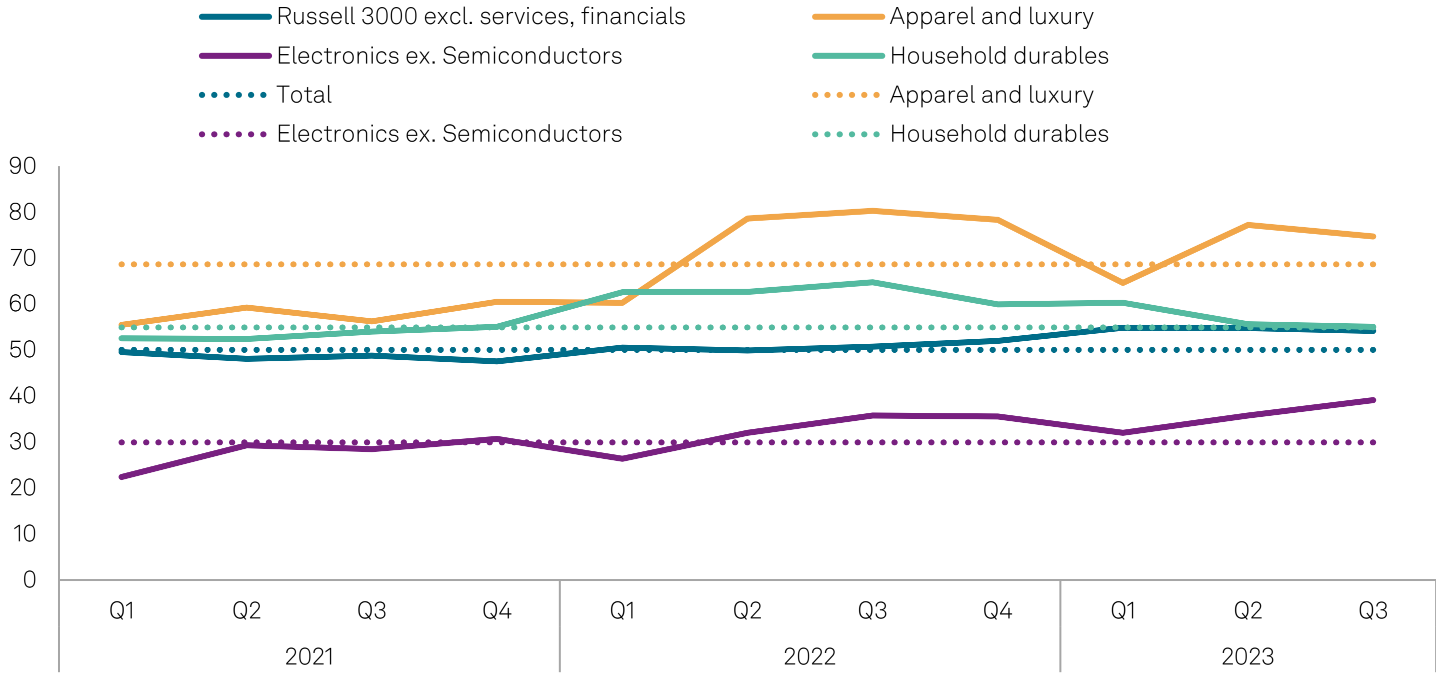
Empty shelves were one of the most tangible signs of supply chain challenges during the pandemic era. The shortage of inventories, whether of toilet paper or computer chips, led many companies to over-order and subsequently cut stock levels in late 2022 and into 2023.

Data from the S&P Global Purchasing Managers' Index (PMI) indicates that manufacturing stocks of finished goods were in retreat for eight of the first nine months of 2023. Destocking has been particularly notable in computing, which has been going on for 27 months while the downturn in consumer goods has been more sporadic.

The evidence from corporate financial data is mixed. The inventory-to-sales ratio for the Russell 3000 group of manufacturers and retailers of goods was 54.1% on a trailing three-month basis as of Sept. 30 compared to 50.1% on average for the 2016 to 2019 period. The elevated level is not necessarily evidence of a change in inventory patterns, as it is below the 54.8% peak reached in March.

Corporate financial data shows inventories still elevated in some sectors (%)

Inventory-to-sales ratio, sector last 3 months reported (dotted line 2016–2019 average)



Data compiled October 4, 2023.
Sources: S&P Global Market Intelligence; S&P CapitalIQ Pro.

The increase is also caused by just a handful of sectors. The apparel sector has an inventory-to-sales ratio of 74.7% versus 68.6% historically, while electronics excluding semiconductors stands at 39.1% versus its historical average of 29.9%.

Sectors with longer sales cycles are closer to balance. In the case of household durable goods, the inventory-to-sales ratio of 55.0% in September is well below the 64.7% peak of a 2022 and in line with the 54.9% historic average.

Diversification of suppliers and reshoring are not the same thing. Both can reduce the inherent risk of a supply chain, and they often go hand-in-hand. However, diversification of suppliers can come in and out of fashion depending on the need for cost reductions.

With a focus on cost cutting in 2024, there may be less diversification as companies seek to shorten their supplier lists by pushing more orders to fewer suppliers to get better prices.

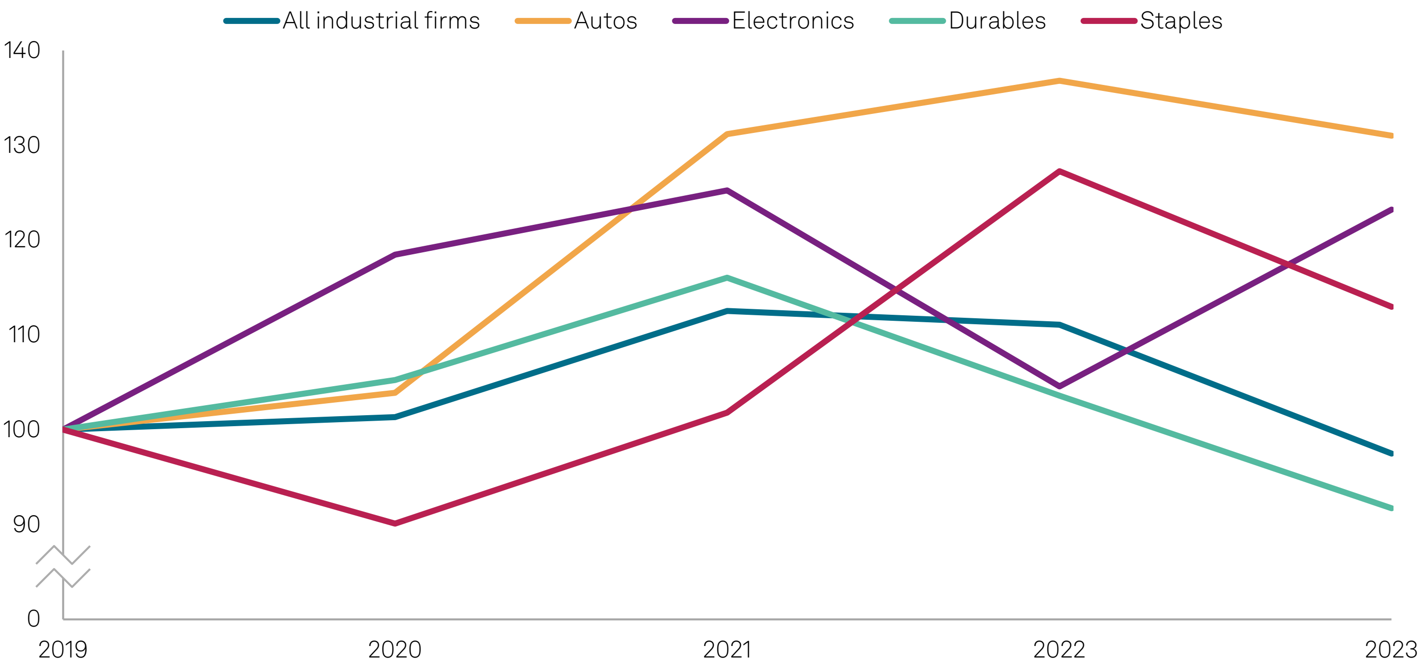
The number of suppliers per ultimate consignee for US seaborne imports for all industrial companies — nonfinancial, logistics or services — among the top 500 US importers increased by 13% in 2021 compared to 2019, indicating the use of more suppliers to deal with disruptions.

That increase in suppliers broadly started to reverse in 2022 and fell below pre-pandemic levels in the 12 months through Sept. 30, 2023. At a sector level, consumer goods companies registered one of the steepest drop-offs in suppliers. Similarly, the pool of suppliers for consumer durables companies — including furniture, appliances and leisure goods — expanded through 2021 but has contracted since then, dropping below pre-pandemic levels.

The auto industry's supplier pool has crested but remained elevated, potentially reflecting the secular shift to electric auto production while maintaining internal combustion engine production. Electronics has also remained elevated after a drop in 2022.

Pandemic-era supply chain diversification reverses in most sectors

Shippers per ultimate parent consignee, rebased 2019 = 100



Data compiled Oct. 10, 2023.
Sources: S&P Global Market Intelligence; Panjiva.

Technology toolkit for enabling resilience

Deploying technology to enable supply chain resilience requires close attention to return-on-investment. While some large enterprises have the resources to take gambles on emerging technologies, most players in the supply chain space will not spend for digital transformation without a near certainty of return on their investment in a reasonable period.

There are numerous drivers of digital transformation among supply chain companies, with financial impact being key. More than three in 10 respondents to 451 Research's Supply Chain Digital Transformation Enterprise Survey 2023 said new revenue opportunities or cost savings are the biggest drivers of digital transformation in their organizations.

Generative artificial technologies are attracting a great deal of attention. While AI cannot prevent supply chain disruptions, if deployed in the correct manner it could provide predictive probabilities of future disruptions.

AI also may be able to shorten recovery times by indicating where there should be inventory redundancies based on historical data. Other uses include assisting with scenario planning operations and providing optimal distribution routes and alternates based on past and real-time asset data.

Just over one-third of supply chain organizations have AI and machine learning deployed today, with an additional three in 10 saying they have deployment in the proof-of-concept stage. Among these companies, it is considered the third-most important technology supporting digital transformation efforts, behind cloud computing and internet of things connectivity.

But supply chain companies have become more hesitant about new technologies based on questionable promises. Blockchain and autonomous vehicles, which could still bring significant return on investment (ROI) to supply chain companies down the road, are examples of technologies that were widely hailed as revolutionary but have yet to yield big returns. Generative AI likely will not have a large impact on supply chain firms any time soon.

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Fuel efficiency and sustainability also can support supply chain resiliency.

Among commercial transportation companies, fuel efficiency is one of the most important digital transformation projects, while sustainability is the least. The primary goal of fuel efficiency for commercial transportation firms is cost savings. That can increase a company's cash on hand, which may provide a safety net during supply chain disruptions. ROI in fuel efficiency can also give supply chain companies the opportunity to invest in other projects to improve supply chain resilience.

Delivering supply chain resilience through organizational agility

Building a robust supply chain is a long-term process, whether through adapting inventory policy and adopting new technologies or fundamentally retooling sourcing via supplier choice or international diversification.

In the case of reshoring, it may take three to five years to fully implement any changes from inception to completion. The baseline assumptions behind such decisions are often based on operational disruptions, labor relations, government policies and geopolitical events that can change and revert again in a period of months.

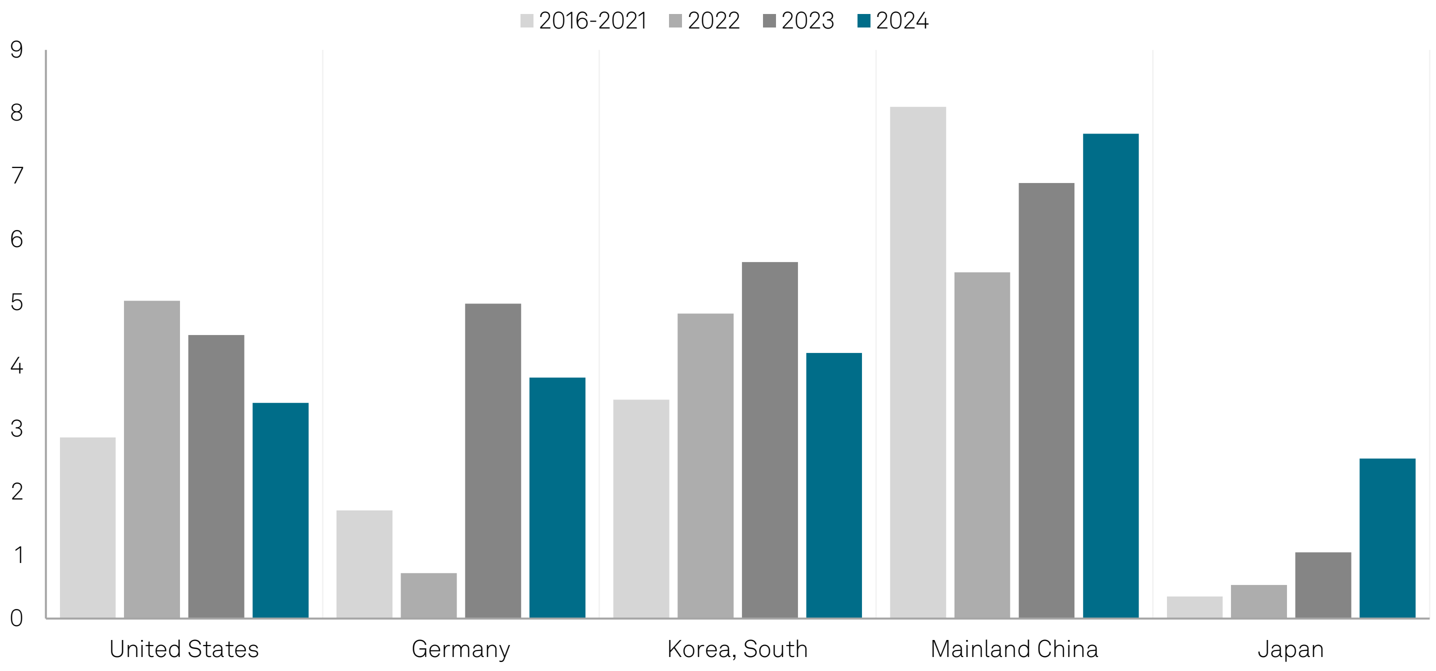
2024 looks no different in that regard, with world events requiring companies to build organizational agility even as they develop longer-term resilience plans. After a period of relative calm for labor relations during the pandemic, elevated inflation in 2022 and 2023 has led to increased pay demands from unions, leading toan increase in strike actions. That generates short-term disruptions and can increase long-term costs.

S&P Global Market Intelligence forecasts call for a 4.5% year-over-year increase in US manufacturing labor compensation in 2023, followed by a 3.4% rise in 2024. Wages in Germany, South Korea and mainland China are all expected to increase at a faster rate in both 2023 and 2024.

Companies that maintain close, ongoing relations with workers may have more inherent resilience than some of their competitors.

Wage growth set to slow; US set to be slower than most manufacturing peers (%)

Annualized change in manufacturing compensation per hour, measured in local currency



Data compiled Oct. 12, 2023.
Sources: S&P Global Market Intelligence; Pricing and Purchasing Service.

Operational disruptions to supply chains often result from long-term trends crystallizing into short-term events.

Water shortages stemming from impacts of climate change are coming to bear. Low water levels are hindering transits through the Panama Canal as well as the Amazon, Mississippi and Rhine rivers. In 2024, the El Niño pattern will continue to disrupt rainfall.

Migration at the US-Mexico border has caused disruption for both road and rail transportation, with as much as $2 billion of products per day being held up in the third quarter. Uncertainty around border crossings may increase heading into the US and Mexican elections in 2024.

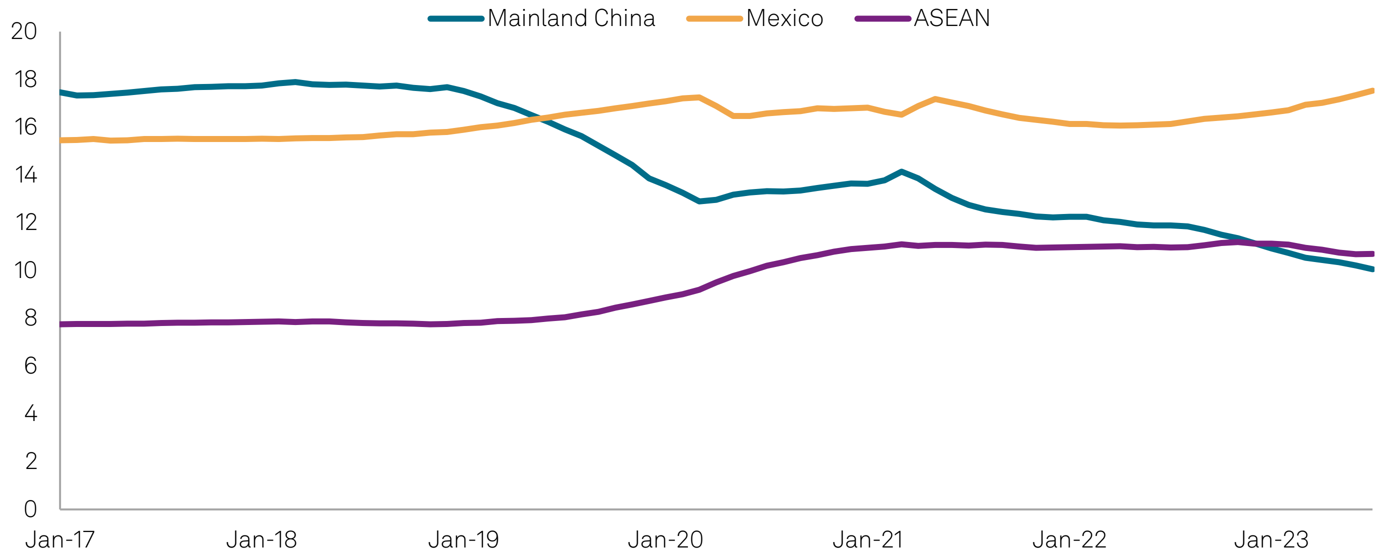
Conflicts in Ukraine and the Middle East provide important reminders that peace is important in supply chain planning. It is not just commodities at risk either, with electronics and industrial parts also potentially facing disruptions. Key shipping routes, including the Suez Canal and Straits of Hormuz, face threats.

Geographic diversification can help provide resilience against disruptions to sourcing, transportation and optionality. Such decisions need to be taken dynamically and with an eye to future disruptions in areas that may currently seem peaceful or well-provisioned.

Environmental policy also becomes more relevant to supply chain decision-making in 2024, with three major EU policy initiatives — the Carbon Border Adjustment Mechanism, Emissions Trade Scheme and Deforestation Free Regulation — set to start exerting costs directly and inducing policy change in other countries.

Mexico, ASEAN gain from mainland China's loss of share in tariff-affected goods (%)

Share of US imports of products covered by Section 301 tariffs applied to mainland China, trailing 12-month total basis.



Data compiled Oct. 13, 2023.
ASEAN is the Association of Southeast Asian Nations. Member countries are Brunei, Cambodia, Indonesia, Laos, Malaysia, Myanmar, the Philippines, Singapore, Thailand, and Vietnam.
Source: S&P Global Market Intelligence.

Regulation plays a significant role in reshoring decisions for companies looking to build resilience. The main area of government policy affecting supply chains in the late 2010s revolved around tariffs and trade deals, while the early 2020s have been more focused on industrial policy. The coming two years may see a reemergence of tariff-driven disruptions, providing a new round of volatility for supply chain decision-making.

The backdrop comes from over 70 national elections that create high-level policy uncertainty, including the US later in the year. It can take 12 to 18 months for policy to be enacted, creating sustained uncertainty for supply chain planners.

The impact of tariffs, when added to underlying reshoring drivers, can be significant. China's share of US imports of tariff-afflicted products fell to 10.1% in the 12 months to July 31, from 17.7% in 2017, Market Intelligence analysis shows. Mexico's share rose to 17.5% from 15.5%, and the Association of Southeast Asian Nations' share rose to 10.7% from 7.8%. Many products have shown even wider swings in sourcing patterns.

One answer to addressing tariffs is reshoring, but corporations also need to work on short-term, flexibility-based solutions such as burden-sharing with suppliers and customers, redirecting resources within global supply chains, and using alternate components.

Resilience still needed, spending not guaranteed

Supply chain resilience will be just as important in 2024 as it was in the past three years, with the nature of risks shifting to geopolitics and tariffs from operational challenges. Yet, corporate willingness and ability to invest in inventory management and multisourcing may be limited by falling profits and high financing costs.

Companies that can continue investing, particularly in technology, and deliver organizational change through enhanced engagement with labor and suppliers should maximize their chances for supply chain success.

CONTACTS

Americas: +1 800 447 2273
Japan: +81 3 6262 1887
Asia-Pacific: +60 4 291 3600
Europe, Middle East, Africa: +44 (0) 134 432 8300

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