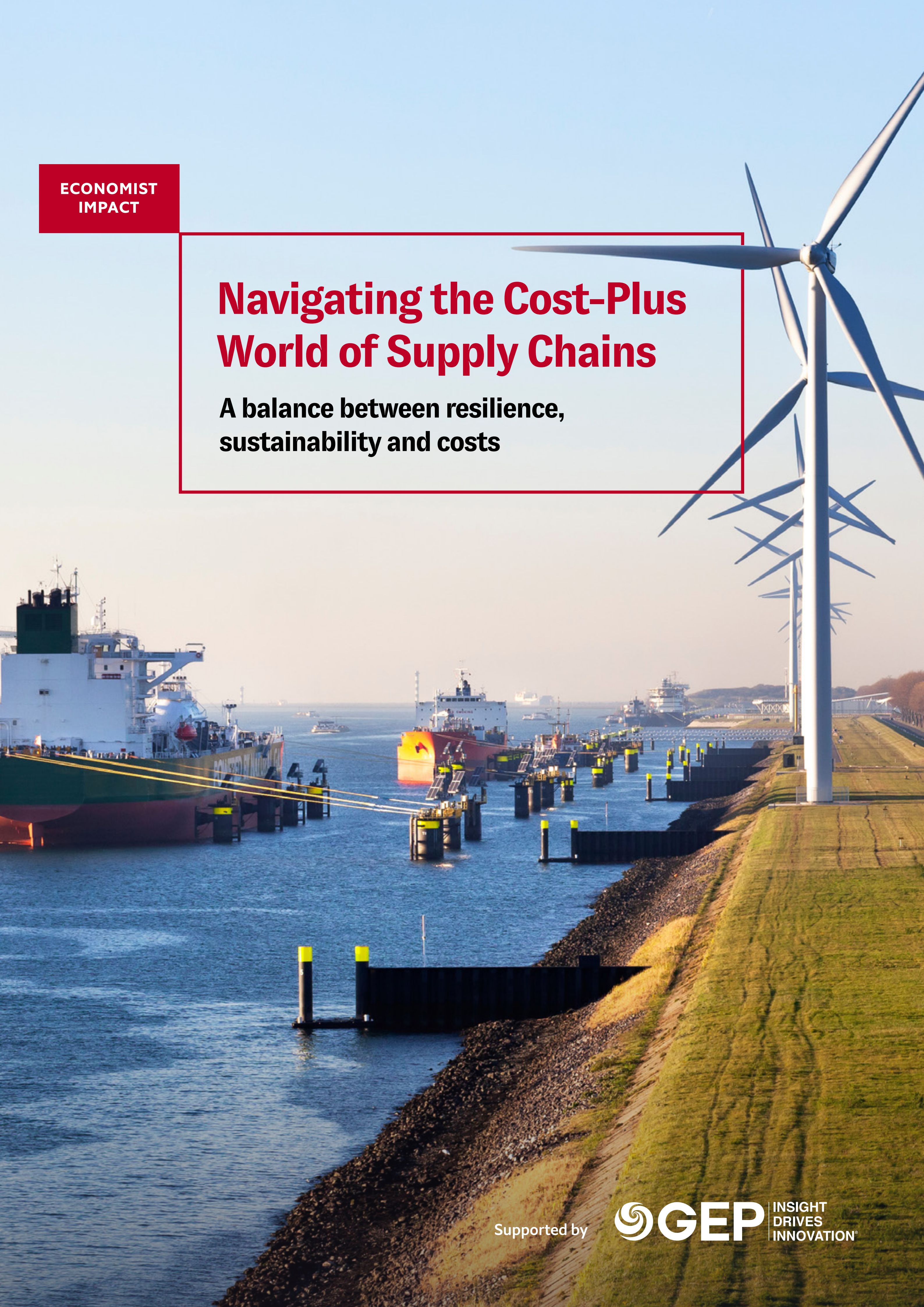
ECONOMIST IMPACT

Navigating the Cost-Plus World of Supply Chains

A balance between resilience, sustainability and costs



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About this report

The 'Cost-Plus World of Supply Chains' is an Economist Impact report sponsored by GEP. It explores the evolving world of supply chain disruption and businesses' response. The report is based on a survey conducted between January and March 2023 of 400 executives in the US and Europe who were familiar with their organisation's supply chain strategy and operations.

Economist Impact is solely responsible for the views expressed in this report, and the content does not necessarily reflect the perspectives of the sponsor.

Economist Impact would like to extend its thanks to the following interviewees for their time and insights:

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- **Pamela Mar**, Managing Director at the Digital Standards Initiative of the International Chamber of Commerce
- **Paolo Montrone**, Senior Vice President of Sea Logistics and Head of Global Trade for Kuehne and Nagel
- **Thomas Newbigging**, Senior Procurement Sustainability Manager at GSK
- **Chris Rogers**, Head of Supply Chain Research, S&P Global Market Intelligence
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Foreword

The latest GEP-Economist Impact study explores the evolving landscape of supply chain risk management strategies. The findings of this study are eye-opening, revealing a notable surge in active approaches to mitigating supply chain risks. This reflects a growing realization among enterprises of the previously underestimated costs associated with maintaining resilience.

The current global business climate poses a formidable challenge to enterprises. Amidst a global economic slowdown and mounting inflationary pressures, enterprises are faced with the tough task of reducing costs. This conundrum demands fresh perspectives and innovative solutions if they are to navigate these turbulent times while ensuring the sustainability of their operations and maintaining market competitiveness.

In addition to the traditional concerns of managing costs and resilience, there is a mounting need for companies to prioritize sustainability and embrace broader environmental, social, and governance (ESG) goals. In acknowledging this shift, enterprises are recognizing the urgency of adopting sustainable practices and contributing positively to their communities and the planet.

This white paper aims to delve into the strategies that enterprises are currently employing, as well as explore untapped possibilities for balancing these three critical priorities - costs, resilience and sustainability. How can enterprises adopt a practical approach to strike a balance across these priorities? What is the winning strategy for today's supply chains?

I invite you to read this paper to gain valuable insights into how enterprises can successfully navigate the complexities of managing costs, resilience, and sustainability, empowering you to make informed decisions and drive positive change within your enterprise.

Binayak Shrestha,
Global Head of Services Delivery
GEP

Executive summary

1. Businesses are pursuing resilience without sacrificing profits and competitiveness. Our survey shows a marked increase in active supply chain risk management strategies, up to 38.5% in 2023 from 30% in 2022, and a surge in strategies in development year-on-year, up to 45.5%, from 28%. Acknowledging the previously unpriced cost of resilience, companies will need to strike the right balance between resilience and cost efficiency to maintain their market competitiveness.
2. To build more resilience, businesses are adopting real-time visibility systems and stress-testing their supply chains, with 57% of business leaders recognising that greater transparency and control over supply chains are needed in 2023. Real-time visibility systems enable companies to minimise disruption-related costs and maintain operational efficiencies, while ensuring long-term competitiveness in the unpredictable Cost-Plus World.

3. Diversification is another principal strategy for building supply chain resilience in 2023. Half of the businesses surveyed identify broadening their supplier networks and operating across more diverse geographies to mitigate risks as a high priority. This approach is driven by business efforts to reduce dependence on offshore suppliers through multi-sourcing, with 54% of US survey respondents finding their supply chains excessively reliant on foreign countries.
4. Although not a universal strategy, an increasing number of companies are focusing on inventory building in their quest to build supply chain resilience. Fifty-six per cent of business leaders consider it a high priority. This approach demonstrates a growing willingness to bear the costs and risks associated with inventories in order to alleviate the costlier impact of disruptions. Besides being one of the strategies allowing for just-in-case supply chain organisation, inventory building also gains businesses valuable time to assess options and observe industry responses before making hard-to-reverse decisions.
5. Strategic partnerships are emerging as a vital and relatively low-cost approach to enhancing supply chain resilience. According to our survey, 53.5% of respondents prioritise enhanced collaboration with suppliers as a means to minimise disruptions, with only 14% not considering it a priority. By fostering stronger relationships with suppliers, companies can improve coordination, control, and visibility, while maintaining a competitive edge in the global marketplace and being able to jointly navigate disruptions.
6. Governments play an increasingly active role in shaping resilient and secure supply chains, driven by national security concerns and broader aspirations for strategic autonomy. In the Cost-Plus World, businesses will benefit from fostering greater collaboration and dialogue with government entities by enabling them to anticipate policy shifts and manage regulatory complexities more effectively thereby securing long-term gains.
7. Sustainability emerges as a paramount goal in global supply chain management, with 72% of businesses placing sustainability and wider ESG goals within their top three priorities, higher than all other factors companies use to benchmark supply chain success. A particular focus on enhanced sustainability across finance and supply chain management functions signifies a broader shift in business attitudes, indicating the critical role of ESG in securing long-term financial success beyond conventional metrics.
8. The primary impediment to sustainability is the increased costs associated with sustainable solutions—37% of businesses indicate it as their main barrier to achieving a more sustainable supply chain. Cost constraints are compounded by limited resources, the complexity of diverse governmental standards, and the lack of global standards that create an uneven playing field for businesses. Strategies such as reusing and refurbishing previously used inventory can reduce the demand for materials, arrest rising prices and lessen the impact on the environment.
9. Balancing resilience and sustainability presents challenges, as diverse sourcing, inventory building, labour costs, and sustainable transportation may pull in different directions, creating trade-offs between these two objectives. However, they can have mutually beneficial goals, such as increasing security of supply, but to achieve them, businesses need long-term vision, planning and transparency.

Introduction

Global supply chains have been fundamental to economic globalisation. Enabled by a period of relative geopolitical stability, they were underpinned largely by the pursuit of cost-minimisation and efficiency.

More recently, different forces have come to strain global trade networks. We have entered a Cost-Plus World of Supply Chains in which supply chain managers seek to harmonise their traditional pursuit of short-term cost minimisation with the increasingly more important long-term goals of resilience and sustainability in manufacturing and distribution operations.

The shift towards a cost-plus world of supply chain management occurs against a confluence of risk factors, including geopolitical tensions, macroeconomic tightening, environmental concerns and various input shortages. Some of the initial impetus came from the imposition of tariffs on Chinese exports by the US.[1,2] The shift was accelerated by the Covid-19 pandemic that disrupted worldwide production and transportation beyond distorting the supply/demand equilibrium for critical goods.[3,4] The ensuing demand for more environmentally sustainable business practices has placed additional pressure on supply chains, while shortages of key inputs, such as semiconductors[5], further strained the global network. Climate-related events have also emerged as critical disruptors[6], exacerbating shipping and logistics uncertainties, while the higher cost of inputs, including raw materials, has added another layer of complexity. In turn, labour shortages have limited workforce availability and hindered production capacity. Infrastructure constraints, such as warehouse shortages, have further compounded supply chain challenges.

Against this backdrop, Russia's invasion of Ukraine has highlighted the inextricable link between geopolitics and global supply chains. The conflict has closed off markets and sent shockwaves through commodity exchanges underlining the interconnected nature of global trade and the many risks businesses now need to navigate in the Cost-Plus World of Supply Chains.

The tangible impact of these factors on supply chain management is evident from recent

1 https://www.matteoiacoviello.com/tpu.htm#data
2 https://carnegieendowment.org/2020/06/24/in-u.s.-china-trade-war-new-supply-chains-rattle-markets-pub-82145
3 [by one of our potential interviewees] https://hbr.org/2020/09/global-supply-chains-in-a-post-pandemic-world
4 https://www.sciencedirect.com/science/article/pii/S0160791X21003225
5 https://www.weforum.org/agenda/2022/02/semiconductor-chip-shortage-supply-chain/
6 https://e360.yale.edu/features/how-climate-change-is-disrupting-the-global-supply-chain

Economist Impact surveys looking at supply chains. In 2022, a mere 34.5% of respondents reported that various events—ranging from Covid-19 to trade protectionism, geopolitics, and climate-related incidents—would have a 'significant' impact on their supply chain operations. In 2023, this percentage has increased to 52.5%, highlighting the growing recognition among supply chain managers of the need to address these challenges.

Increased business awareness of these risks warrants a comprehensive analysis of how supply chain managers can better prepare for, and respond to, the diverse challenges posed by geopolitical tensions, an unpredictable macroeconomic landscape, environmental concerns and other disruptive factors.

This report aims to demonstrate the strategies available to businesses in their effort to strike the right balance between cost-efficiency and resilience, between fostering sustainable growth and maintaining competitiveness. By exploring diverse approaches to supply chain management, we seek to equip supply chain managers and procurement leaders with the knowledge and tools necessary to make better-informed decisions.

Section One: The Cost-Plus Paradigm: Enhancing Resilience Without Sacrificing Profits and Competitiveness

Changes are happening

As supply chains in 2023 face an eclectic mix of risks, it has become increasingly imperative for businesses to make changes. Our survey results from 2023 demonstrate that companies have indeed made significant strides in developing and implementing strategies fit for a world in which supply chain considerations are extending from mere cost-cutting to also encompass long-term risk management. A comparison with 2022 survey results reveals a marked increase in the number of companies with active supply chain risk management strategies. The proportion of businesses that have implemented such strategies has risen from 30% to 38.5%. Even more remarkably, the percentage of businesses with strategies in development has surged from 28% to a staggering 45.5%. This marked escalation in risk management strategies—both implemented and in development—highlights that in the Cost-Plus World of Supply Chains, disruptions are becoming the norm rather than the exception.

"We've all been reminded in the last two years how important supply chain resilience and agility are."

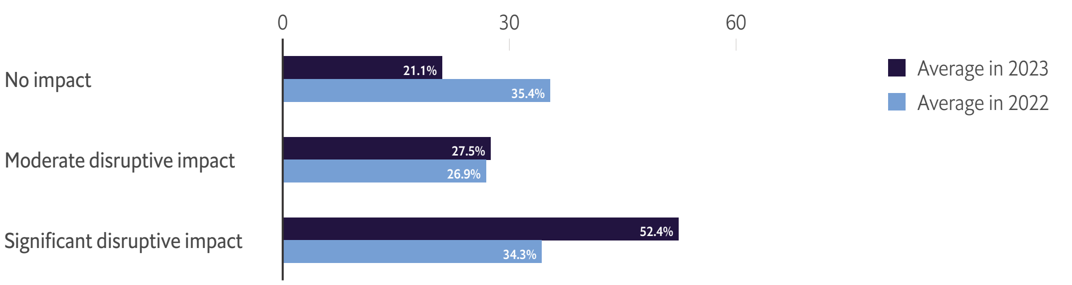
Susan Johnson, EVP & GM at Wireline Transformation and Global Supply Chain at AT&T

Beyond Speed and Efficiency: The Goal of Supply Chain Resilience

The direction of change these strategies are taking is discernible: resilience is a clear priority in the shift global supply chains are undergoing. As Susan Johnson, EVP and GM at Wireline Transformation and Global Supply Chain at AT&T, comments, "we've all been reminded in the last two years how important supply chain resilience and agility are." Nearly half of the

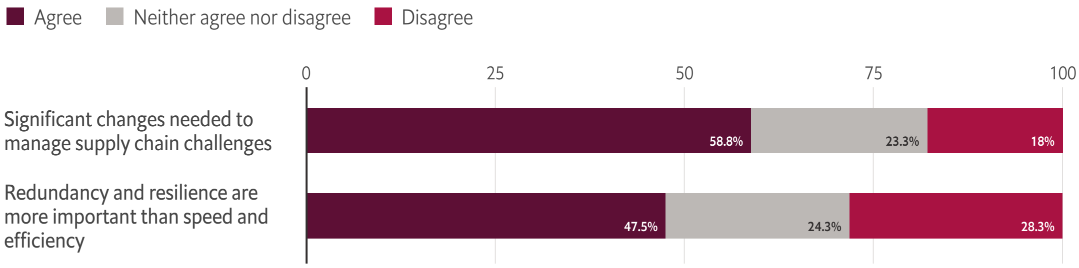
Figure 1. Comparison of Average Impact Levels of Surveyed Issues on Operations in 2022 and 2023

Average in 2023 and Average in 2022



Source: Economist Impact

Figure 2: Sentiments on Supply Chain Challenges in 2023
Question: To what extent do you agree or disagree with the following statements?



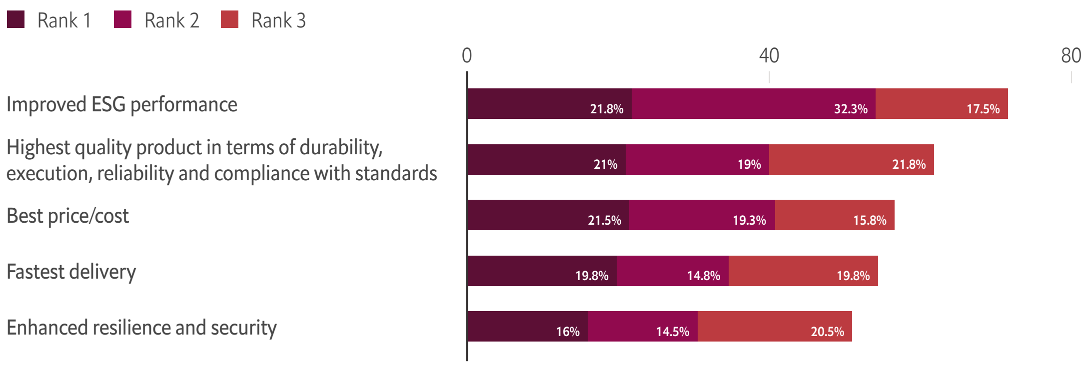
Source: Economist Impact

executives we surveyed are prioritising resilience in their company's supply chain, with less than a third indicating that speed and efficiency remain their chief aim.

Since the imposition of tariffs on Chinese exports by the US followed by the Covid-19 pandemic disruptions,[7] the goal of resilience has propelled supply chain management. In the Cost-Plus World of Supply Chains the need to build supply chains that can resist, adapt to, and swiftly recover from external shocks is affirmed not merely as a short-term concept, but as a long-term priority in supply chain management. Indeed, as companies navigate the complexities of geopolitical shocks, environmental concerns, and macroeconomic factors, they will increasingly need to focus on striking the right balance between resilience and cost efficiency. This balancing act will enable them to maintain operations throughout the many challenges, ensuring that neither resilience nor conventional cost considerations are compromised.

As illustrated in Figure 3, cost considerations remain a crucial factor when thinking about supply chain success. Our survey of business leaders reveals that 56.5% of respondents identify costs as one of their top three metrics in benchmarking supply chain success, while 21.5% rank it as their foremost metric. These percentages are not surprising because, although

Figure 3: Metrics for Benchmarking Supply Chain Success



Source: Economist Impact

[7] https://www.matteoiacoviello.com/tpu.htm#data

"There always was a cost to resilience, but it was unpriced, so people tended to ignore it. In the last couple of years, however, companies recognised there is a cost to disruptions—and if you want resilience, it is not going to be free."

Willy Shih, Professor of Management Practice in Business Administration at Harvard Business School

the world that supply chain managers have to navigate is rapidly changing, certain market fundamentals remain the same. Consumers will continue to seek low prices and companies—due to the pressures of competition—cannot anticipate charging a surplus for making their supply chains more resilient.[8] Businesses, therefore, must strive for resilience without undermining their competitiveness in order to remain successful in 2023.

To achieve this, companies will need to begin factoring in the previously unaccounted-for price of resilience. According to Willy Shih, Professor of Management Practice in Business Administration at Harvard Business School, "there always was a cost to resilience, but it was unpriced, so people tended to ignore it. In the last couple of years, however, companies recognised there is a cost to disruptions—and if you want resilience, it is not going to be free." Given this new reality of the Cost-Plus World of Supply Chains, businesses will need to identify cost-effective solutions to enhance their supply chain resilience to ensure they can withstand disruptions without sacrificing market competitiveness. In Section Two of this report, we consider strategies that pave the way for more resilient global supply chains, expounding a range of approaches businesses can employ without incurring prohibitive costs.

The Evolving Role of Governments in Shaping Resilient and Secure Supply Chains & The Need for Government-Business Synergy

As companies explore various supply chain management strategies to minimise costly disruptions, the focus on resilience is also being encouraged by governments that are taking steps to ensure "strategic autonomy" in certain sectors, such as defence and public health.[9,10] This push has entailed bolstering domestic industries—by providing targeted financial assistance—and curtailing international ones—by restricting exports of the resulting products. In late 2022, for instance, the US enacted its most comprehensive set of export controls on China yet, curtailing that country's access to cutting-edge semiconductor technologies in a bid to constrain its prowess in supercomputing and artificial intelligence.[11] In turn, it unveiled its US$52bn CHIPS and Science Act, aimed at

8 https://hbr.org/2020/09/global-supply-chains-in-a-post-pandemic-world
9 https://www.europarl.europa.eu/RegData/etudes/BRIE/2021/698815/EPRS_BRI(2021)698815_EN.pdf
10 https://www.whitehouse.gov/wp-content/uploads/2022/10/Biden-Harris-Administrations-National-Security-Strategy-10.2022.pdf
11 https://www.bis.doc.gov/index.php/documents/about-bis/newsroom/press-releases/3158-2022-10-07-bis-press-release-advanced-computing-and-semiconductor-manufacturing-controls-final/file

bringing semiconductor manufacturing capacity back home in a direct move to counter reliance on China and other foreign suppliers and shield vital industries from external disruptions.[12] Fifty-four percent of participants in our survey acknowledged that their supply chains are over-reliant on particular countries—a concern stemming not from having a broad network of international suppliers (which remains a desirable strategy) but from being too reliant on particular, troubling jurisdictions. These trends indicate a blend of motivations: a desire for diversification driven by resilience, and an inclination towards more self-reliant supply chains driven by tensions in an ever-changing geopolitical landscape.

The range of goods governments have dependency concerns about has expanded well beyond semiconductors and other defence-relevant merchandise. Last year, Janet Yellen, America's Treasury Secretary, remarked that "[The US] cannot allow countries to use their market position in key raw materials, technologies, or products to have the power to disrupt our economy or exercise unwanted geopolitical leverage."[13] Governments are increasingly recognising the inherent risks associated with over-reliance on foreign sources for critical materials, technologies, and products. Enhancing supply chain resilience, in other words, is not merely a business imperative but a crucial component of national security as well.

A primary concern for Western governments is diversification out of China, the once-celebrated manufacturing powerhouse now embroiled in geopolitical tensions. Despite individual government efforts to secure more crucial sectors such as defence, semiconductors, and critical minerals, a recent report for example on the risks of China's influence over the UK's national security supply chain posits that vulnerabilities are also present in areas where exposure may not be immediately apparent.[14] Indirect exposure to China—through third countries and through China's strong position in the global logistics chain—leaves UK supply chains susceptible to disruptions that are currently overlooked. Additionally, the report argues that the deeply interconnected nature of global supply chains implies disruptions in seemingly unrelated sectors, such as the automotive industry, could have cascading effects on national security across multiple dimensions.

The increasing government involvement in supply chain organisation translates to greater uncertainty for businesses which, in turn, necessitates a heightened level of responsiveness to public affairs.[15] As governments become more concerned with 'strategic autonomy' and new areas of economic activity are deemed within the realm of national security, companies will need to become more adaptive and responsive. In particular, companies will benefit from actively cultivating enhanced dialogue and collaboration with government entities enabling them to anticipate potential policy shifts and handle legislative amendments more effectively.[16] Indeed, adeptly navigating the regulatory complexities arising from growing government involvement in how goods in certain sectors are procured will be key to achieving supply chain resilience, enabling businesses to secure their competitiveness and long-term success in The Cost Plus World.

[12] https://www.whitehouse.gov/briefing-room/statements-releases/2022/08/09/fact-sheet-chips-and-science-act-will-lower-costs-create-jobs-strengthen-supply-chains-and-counter-china/
[13] https://home.treasury.gov/news/press-releases/jy0880#:~:text=We%20cannot%20allow%20countries%20like,it%20will%20take%20resolute%20action.
[14] https://www.evenstarinstitute.com/_files/ugd/e0f713_ef8af6635b7144fc909a0c4a2c539747.pdf
[15] https://www.pinsentmasons.com/out-law/analysis/lieferketten-die-achillesferse-vieler-unternehmen
[16] https://www.oecd.org/trade/resilient-supply-chains/public-private-action-plans/

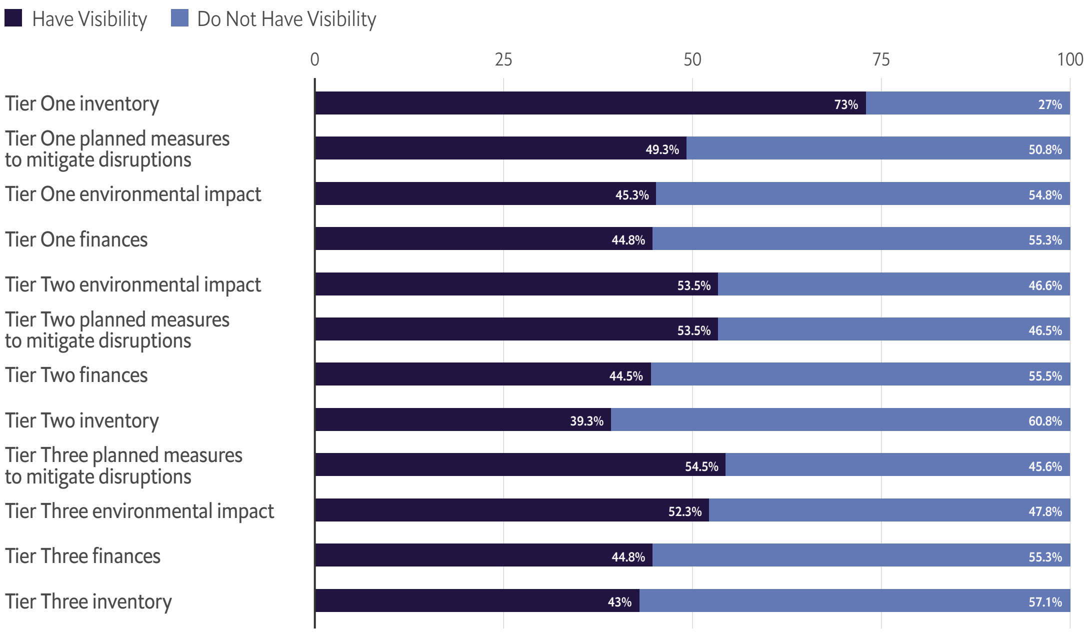
Section Two: Responses to Supply-Chain Disruptions in Perpetuity

Supply Chain Visibility: Swift Detection, Efficient Resolution

The first step towards enhancing supply chain resilience entails companies having an understanding of the networks and systems they operate, coupled with a capacity to identify potential vulnerabilities and an ability to quickly identify complications once they emerge. For this reason, real-time visibility systems are proving vital to supply chain resilience in a world fraught with unpredictability. According to our survey, 57% of business leaders agree that their companies will need greater visibility and control over their supply chain in 2023. Furthermore, 39% of our respondents indicate that their companies are incorporating, or planning to incorporate, data and software to enhance supply chain visibility and control as part of their risk management strategies.[17]

Figure 4: Real-time Visibility into Tier One, Two and Three Suppliers

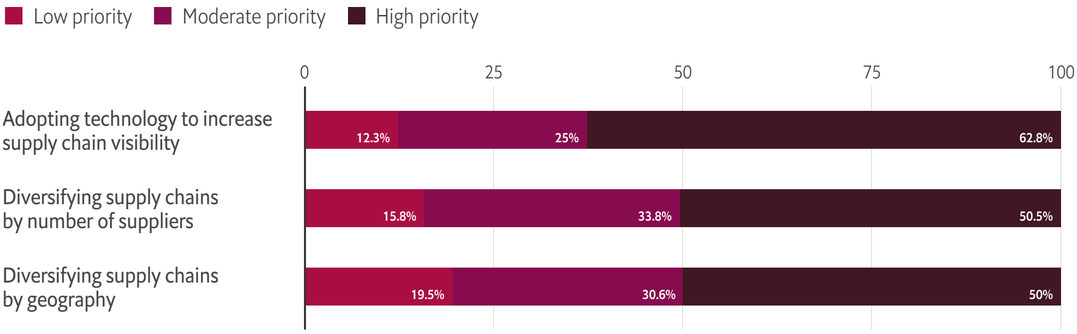
Do you have real-time visibility into your tier one, two and three suppliers across their inventory, finances, environmental and disruptions impact?



Source: Economist Impact

[17] Figure 5 shows the real-time visibility into tier one, two and three suppliers that companies have, according to our survey.

Figure 5.1: Priorities for Mitigating Supply Chain Disruptions, Visibility and Diversification
Priorities/Procurement and Supply Chain Mitigation Strategies



Source: Economist Impact

Companies are right to adopt visibility-enhancing systems: these sophisticated tools provide supply chain managers with continuous and up-to-date information on the status and movement of goods, enabling them to detect disruptions swiftly and, importantly, to implement countermeasures while the associated costs are lower.[18] Indeed, because real-time visibility systems prevent disruption-related costs and ensure operational efficiencies, their implementation is likely to be financially justifiable in the long run, despite 38% of respondents seeing it as a minor and 9% as a major cost increase.

In an effort to increase supply-chain visibility, for example, BMW, the German carmaker, employs digital trackers to monitor parts for its automobiles as they are caught in backlogs at ports or delayed in trucks across Europe. The data obtained is then fed into predictive algorithms—developed in collaboration with various start-ups—to ensure swift detection and resolution.[19]

As a complement to real-time visibility systems, stress-testing supply chains has emerged as a central measure for enhancing resilience. In addition to direct changes in supply chain strategies, such as diversification, the business leaders we surveyed—especially those with supply-chain management roles—promote stress-testing coupled with disruption scenarios to map critical vulnerabilities as central towards dealing with potential procurement risks.

Embracing Diversification: A Dual Supply Chain Strategy to Balance Resilience and Market Potential

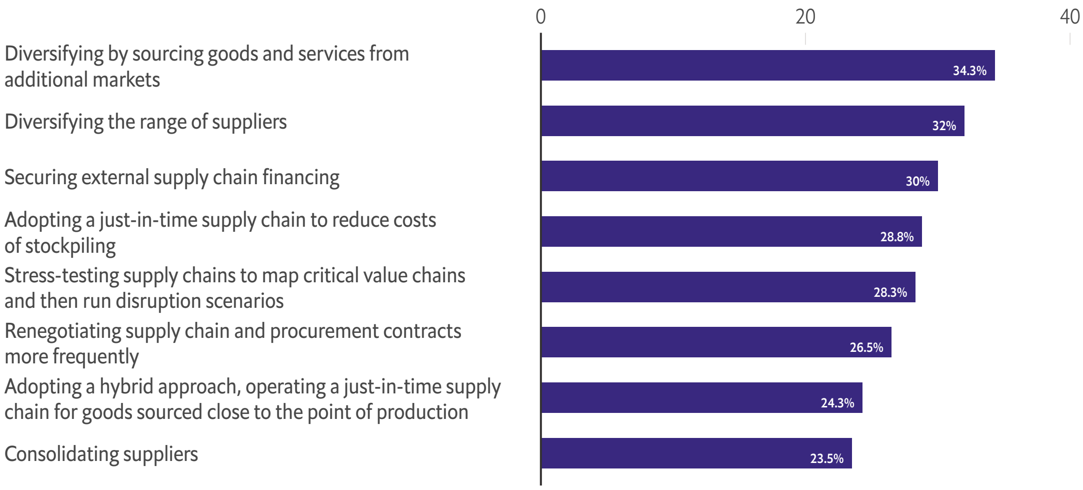
Despite considerable pressures to achieve 'self-sufficiency,' there is little evidence of supply chain managers pursuing outright **reshoring**. In fact, reshoring was not amongst the top three supply chain management strategies of any discernible group within our survey's respondents and was the second least likely approach that business leaders indicated as a means of cutting costs.

With reshoring remaining limited, one general approach towards building resilience that has been widely adopted by businesses is diversifying. Based on our survey, diversification– both in terms of suppliers and geographies–is the primary strategy to make supply chains more resilient in 2023 and a high priority with half of the business leader we

[18] Mubarik, M. S., Naghavi, N., Mubarik, M., Kusi-Sarpong, S., Khan, S. A., Zaman, S. I., & Kazmi, S. H. A. (2021). Resilience and cleaner production in industry 4.0: Role of supply chain mapping and visibility. Journal of Cleaner Production, 292, 126058.
[19] https://www.ft.com/content/8a7cdc0d-99aa-4ef6-ba9a-fd1a1180dc82

Figure 6: Risk Management Strategies Pursued in 2023

Risk Management Strategies



Source: Economist Impact

> **"One definite trend that we're seeing is the trend towards multi-sourcing, rather than single sourcing. That's one sensible way that you can improve your resilience now."**
>
> Chris Rogers, Head of Supply Chain Research, S&P Global Market Intelligence

surveyed. Chris Rogers, Head of Supply Chain Research at S&P Global Market Intelligence, says that "one definite trend that we're seeing is the trend towards multi-sourcing, rather than single sourcing. That's one sensible way that you can improve your resilience now."

The manner in which Western companies are pursuing supply chain diversification, however, is not uniform—it depends on a series of considerations under the enduring 'one size doesn't fit all' principle.[20] This is particularly relevant in relation to China, the former 'Factory of the World'. On the one hand, companies increasingly perceive a need to leave China—as Susan Johnson from AT&T puts it, "Given the geopolitical risk, it's been all about diversification, with a focus on reducing reliance on any one country, including China which has been overweighted historically." On the other hand, some Western companies' cost-benefit analyses lead them to maintain a presence in the Chinese market due to its sheer size and potential for growth. This ambivalence has led to the emergence of dual supply chains: one that capitalises on the opportunities presented by the vast Chinese market and another that has come to be known as "ABC" – "Anywhere But China." In pursuing dual supply chains, businesses can have their cake and eat it too: they benefit from their presence in the Chinese market, while also enhancing resilience through a supply chain that is independent of China and serves the rest of the world.

Navigating Geopolitics and Economic Realities: Balancing Cheaper Labour and Resilience in Supply Chain Strategies

A primary consideration for what supply chain strategy Western firms will adopt lies in the calculation of labour costs. Sixty-five per cent of the business leaders we surveyed identify

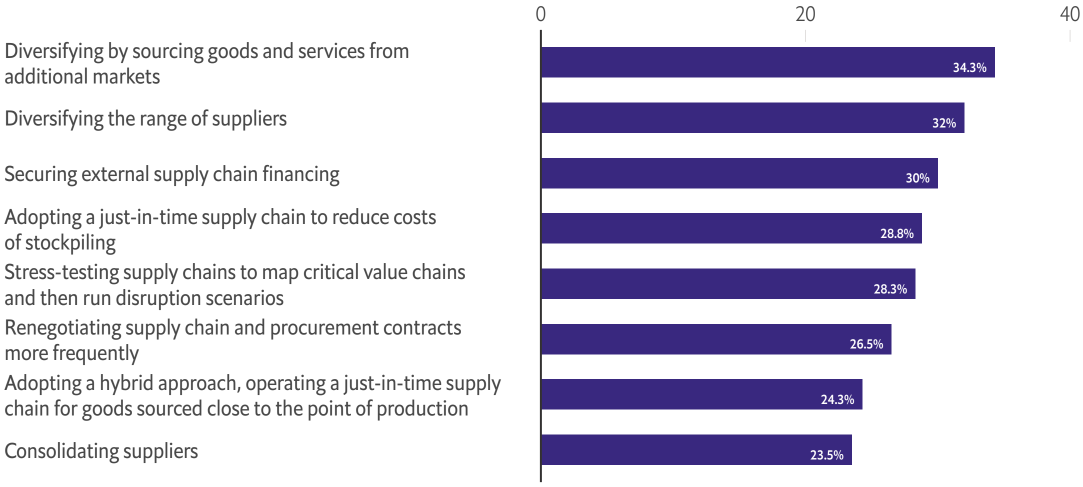
[20] https://www.inderscienceonline.com/doi/abs/10.1504/IJSSCI.2012.051059

sourcing goods from additional markets where the cost of production and/or labour is lower as one of their top three strategies to reduce costs.

Regarding labour costs, China's economic development and the West's increasingly complex relationship with the country are, again, central. Labour costs in the previously inexpensive China have rapidly increased—around five-fold between 1993 and 2015—far surpassing wages in neighbouring Asian countries, such as Vietnam, Indonesia, India, and the Philippines.[21] This has led Western giants, such as Apple, whose successes are partly attributable to adept management of China-based supply chains, to actively pursue relocation to countries such as India and Vietnam.[22] Following a similar logic of seeking lower labour costs and relying on friendly nations, another American giant, Tesla, has chosen to construct a new factory in Monterrey, Mexico—a location boasting not only competitive wages but also the added advantage of proximity to the company's Texan home base.[23] In fact, based on our survey, sourcing goods from markets where the cost of production and/or labour is lower was, by far, the most effective operations strategy to reduce supply chain costs in 2023 (see Figure 7).

In a quest to address labour challenges, companies are also seeking novel solutions. When asked specifically about mitigating labour shortages, 49.5% of respondents to our survey indicate that they are increasing automation in their supply chains to reduce the need for human labour altogether and whilst increasing productivity. According to Professor Willy Shih from Harvard Business School "The baseline equation is that when your labour costs are going up, you will need to do something to drive higher productivity." Indeed, the adoption of technology across their supply chains allows companies to streamline various processes, including manufacturing, warehousing, and transportation, not only to alleviate immediate labour shortages and high wages, but also to enhance operational efficiency and productivity, ultimately leading

Figure 7: Most Effective Operations Strategies to Reduce Supply Chain Costs
Risk Management Strategies

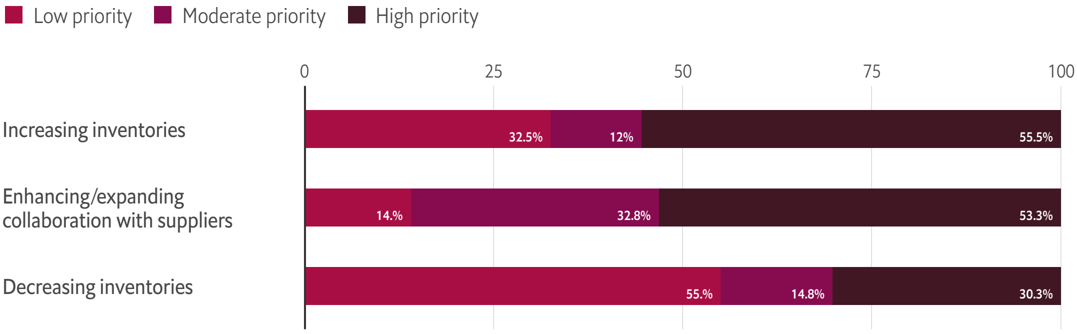


Source: Economist Impact

[21] Huang, Y., Sheng, L., & Wang, G. (2021). How did rising labor costs erode China's global advantage?. Journal of Economic Behavior & Organization, 183, 632-653.
[22] https://www.businessinsider.in/tech/news/apple-eyes-india-vietnam-to-replace-china-as-its-key-manufacturer/articleshow/96988089.cms
[23] https://www.bloomberg.com/news/articles/2023-02-28/musk-s-tesla-to-build-new-electric-vehicle-plant-in-monterrey-mexico-amlo-says

Figure 5.2: Priorities for Mitigating Supply Chain Disruptions, Inventories and Collaboration With Suppliers

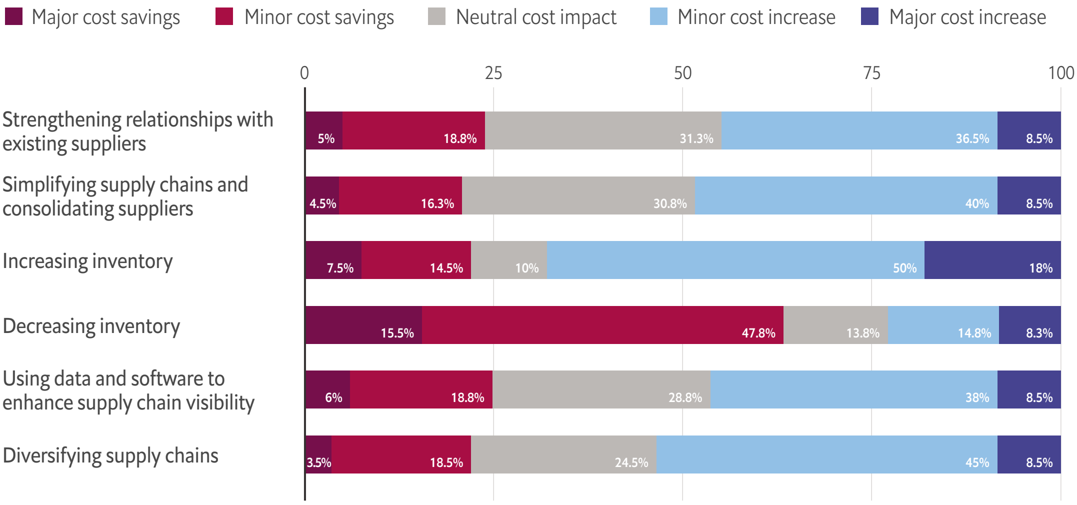
Priorities/Procurement and Supply Chain Mitigation Strategies



Source: Economist Impact

Figure 8: Costs of Strategies to Mitigate Supply Chain Disruptions

How would you rate the cost implications of the following business steps your organisation is taking to mitigate supply chain disruption? Please select one in each row.



Source: Economist Impact

to more resilient supply chains. What's more, the case of a North Carolina-based apparel manufacturing company, R.Riverter, shows how technology adoption can make reshoring financially viable, further contributing to supply chain resilience.[24] The company successfully reshored by embracing innovative manufacturing processes which increased its supply chain efficiency while lowering costs and in turn, enabled greater resilience.

Embracing Increased Inventories for Enhanced Resilience

Our survey indicates that besides diversification, companies are making other changes in their supply chain management to achieve greater resilience. One central change has been increased attention to inventories.[25] In fact, more than half (55.5.%) of business leaders we surveyed indicate building inventories

[24] Hasan, R. (2018). Reshoring of US apparel manufacturing: lesson from an innovative North Carolina based manufacturing company. Journal of Textile and Apparel, Technology and Management, 10(4).
[25] https://www.tandfonline.com/doi/citedby/10.1080/00207543.2018.1504173?scroll=top&needAccess=true&role=tab

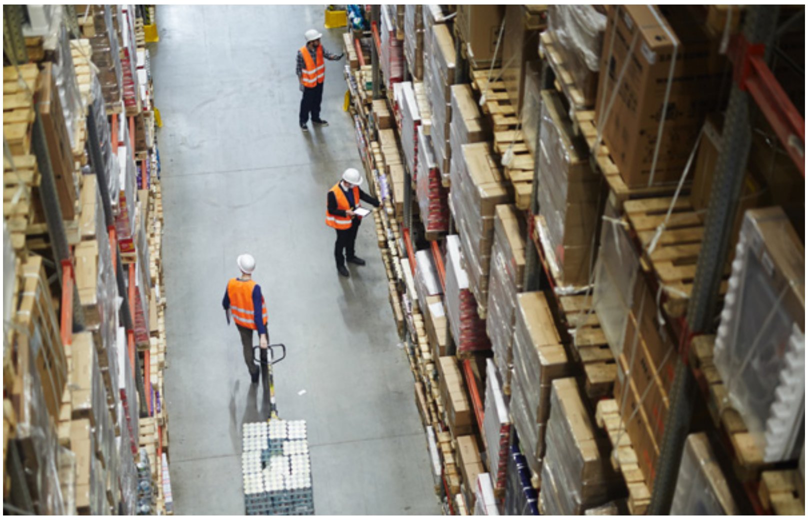
as a high priority, suggesting that companies are increasing their stock of raw materials, intermediate, or finished goods as preparation for unexpected spikes in demand or disruptions of fresh supply. Businesses' willingness to bear the costs and risks associated with building inventories[26]—including storage and opportunity costs, and the risks of obsolescence or damage—indicates that they find the costs of disruptions greater, including diminished revenues, increased prices for scarce resources, and the arduous task of acquiring them in a timely manner.[27] Further, inventory building is also an investment in extra time that allows businesses to evaluate options and observe how others respond before making harder-to-reverse decisions, such as relocating its operations or workforce.

Strategic Partnerships

Another step that supply chain managers are taking to build resilience in their supply chains is to improve coordination and increase control. A relatively cost-efficient way of doing this is by building strategic partnerships: working closely with key suppliers allows joint problem-solving and contingency planning and improves transparency—all towards greater resilience. Furthermore, closer relationships with suppliers can also help companies gain an advantage in a highly competitive global marketplace for suppliers.[28] Only 14% of our respondents did not indicate enhanced collaboration with suppliers as a priority towards mitigating disruptions, with as many as 53.5% prioritising it highly.

A case study of supply chains across India while the country was experiencing lockdowns due to Covid-19 underscores the vital role of strategic partnerships in navigating economic shocks and maintaining a competitive edge.[29] Indeed, companies with more complex supply chains and stronger relationships with fewer, key suppliers exhibited greater resilience in their supply chains due to the joint problem-solving, contingency planning, and transparency the relationships allowed.

[26] https://www.sciencedirect.com/science/article/pii/S0925527321000797
[27] https://hbr.org/2020/09/global-supply-chains-in-a-post-pandemic-world
[28] https://www.sciencedirect.com/science/article/pii/S0969701299000386
[29] https://www.richmondfed.org/publications/research/economic_brief/2022/eb_22-46#:~:text=We%20look%20at%20the%20COVID,-maintaining%20relationships%20with%20their%20suppliers



Vertical Integration: A Balance Between Resilience and Financial Commitment

A harder-to-reverse strategy of enhancing supply chain resilience is vertical integration, a business acquisition, or in-house development of new capabilities in order to own and control multiple stages of its production and distribution. Vertical integration can help a company achieve greater supply chain control while also improving its ability to meet customer demand in a timely and cost-effective manner, ultimately improving resilience.[30] Further, owning or directly controlling multiple stages of the production and distribution processes could allow businesses to maintain JIT practices without the associated risks that could be caused by disruptions with external suppliers.

As expected, however, vertical integration involves substantial financial involvement and commitment. Beyond the initial costs associated with acquiring new facilities, equipment, and skilled personnel, vertical integration involves operational expenses related to the management of multiple supply chain stages. In certain cases, vertical integration can also reduce flexibility, as it constrains companies from exploring other suppliers, potentially reducing their adaptability to new trends and preferences.[31] Indeed, these potential drawbacks underscore some of the key advantages of vertical integration's key alternative. Non-integration is the strategy whereby companies contract out certain production or distribution activities to third-party suppliers in order to maintain operational flexibility and reduce costs through leveraging the specialised expertise and economies of scale provided by external suppliers.

It becomes clear that while vertical integration may indeed prove a judicious approach to enhancing supply chain resilience, it should not be pursued indiscriminately. Companies should evaluate carefully within the context of their specific circumstances the allure of vertical integration's greater supply chain control against its significant financial commitments and reduced flexibility. Vertical integration should be adopted only after deep and careful investigation shows that it clearly aligns with a company's long-term objectives and bolsters its resilience.

Consider the case of Zara, the Spanish fashion retailer, that vertically integrated its supply chain by owning and operating its own production facilities. Beyond allowing it to respond to the latest fashion trends and produce new clothing designs quickly, Zara's vertically integrated supply chain also proved resilient during the COVID-19 pandemic. It was not as impacted by pandemic-related lockdowns as those of other retailers and could scale production more accurately to meet demand.[32,33]

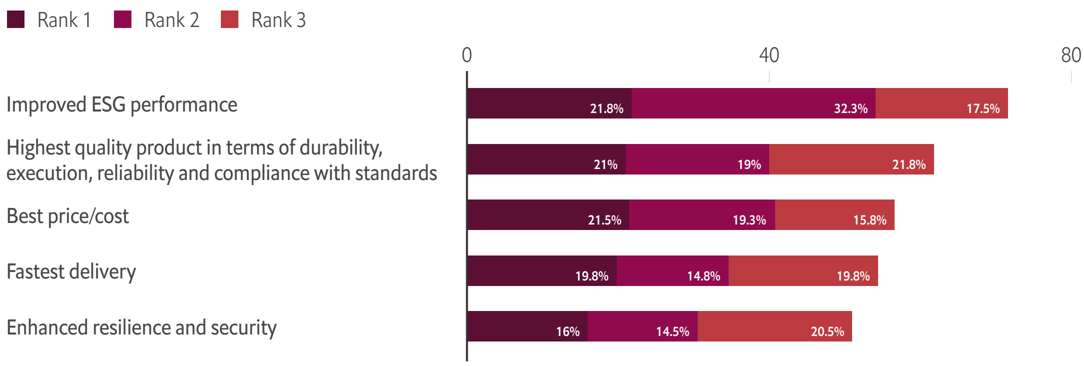
[30] Lotfi, M., & Larmour, A. (2022). Supply chain resilience in the face of uncertainty: how horizontal and vertical collaboration can help?. Continuity & Resilience Review, 4(1), 37-53.
[31] https://hbr.org/1983/01/is-vertical-integration-profitable
[32] https://internetretailing.net/operations-and-logistics/zara-owner-says-supply-chain-flexibility-pivotal-in-reducing-covid-impact-21533/
[33] https://www.inderscienceonline.com/doi/epdf/10.1504/IJTCS.2021.114994

Section Three: Balancing Cost and Sustainability in the Cost-Plus World of Supply Chains

The growing recognition of the need to pursue supply chain goals beyond the previous priorities of efficiency and profit-maximisation now also extends beyond resilience as businesses become increasingly mindful of making global supply chains more sustainable. As Thomas Newbigging, Senior Procurement Sustainability Manager at GSK, says, “The biggest change for us across the last five years regards sustainability: it has actually become a priority when it comes to supply selection, allocation of business, contract length, or all that good stuff.” Indeed, when asked about benchmarking supply chain success, 71.5% of our survey’s respondents included improved ESG performance among their top three priorities, with 22% ranking it as their first metric, while 56.5% selected cost metrics amongst their top three benchmarks. This emphasis on sustainability in benchmarking supply chain success is particularly highlighted by our survey’s finding that respondents in finance-related roles assigned the highest priority to sustainability, underlining the growing acknowledgment of this goal as a cornerstone of long-term financial success.

Nonetheless, our survey results also expose striking differences in sustainability priorities across sectors. For example, the healthcare and pharmaceuticals sector leads in prioritising ESG performance, with 28.8% of respondents ranking it as their top metric; in contrast, the industry sector—encompassing automotive, machinery, chemical and aerospace manufacture—trails at only 15%. These findings highlight the pressing need to weave sustainability considerations into supply chain management across the board. A collective effort by all sectors is imperative to attain the central sustainability goal of curbing CO2

Figure 3: Metrics for Benchmarking Supply Chain Success



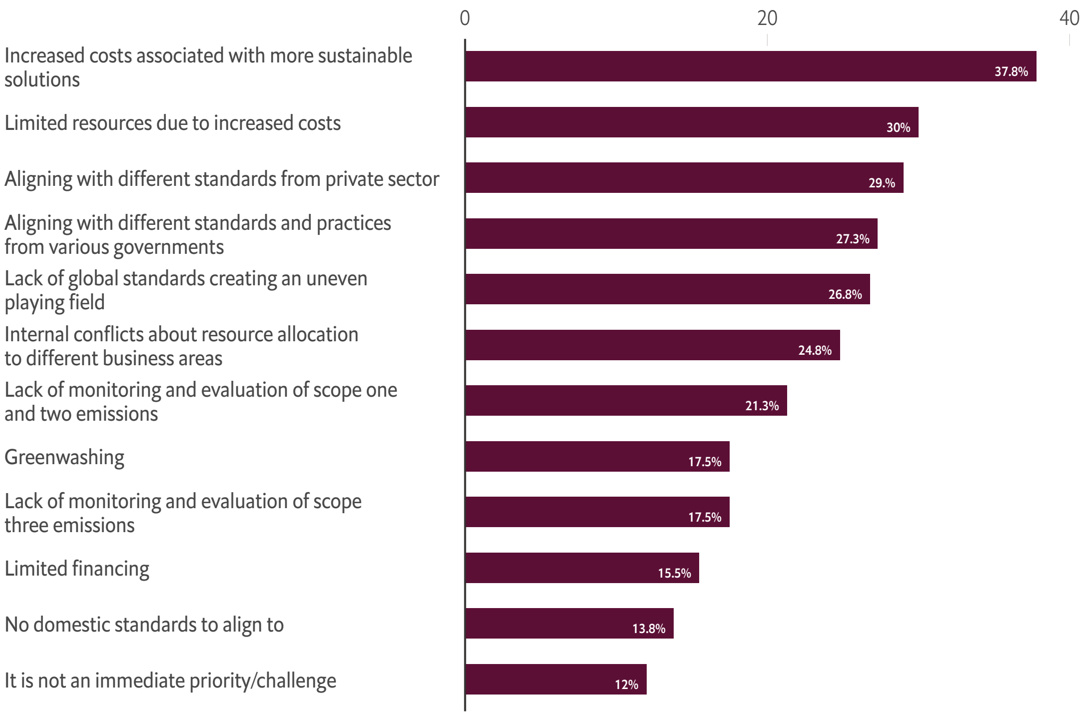
Source: Economist Impact

emissions as without a unified approach the pervasive misconception of minimal impact that deters individual companies from acting will perpetuate inaction. As Paolo Montrone, Senior Vice President of Sea Logistics and Head of Global Trade for Kuehne and Nagel, asserts, "That's the big issue with decarbonisation: everybody contributes a certain percentage to global greenhouse emissions, and that's why every sector needs to pull its weight towards the goal of sustainability."

Sustainability: Drivers and Barriers

The increased focus on sustainable supply chains is underpinned by pressures from various stakeholders. Customers and investors, increasingly attuned to sustainability issues, are demanding more, as evidenced by Thomas Newbigging from GSK, who comments: "Our customers are definitely asking for more sustainability—wanting more transparency, wanting to see progress happening. We see the same across our investors as well". Simultaneously, governments are heightening their scrutiny and enforcement of sustainability standards and bolstering national and international regulatory frameworks.[34] For instance, Germany's recent Supply Chain Due Diligence Act requires companies that are headquartered or have significant operations in the country to conduct a risk analysis to verify, document and monitor supplier compliance with environmental standards.[35] Tristan Smith, Director of the University Maritime Advisory Services, confirms: "There is quite a lot of regulation coming—voluntary business initiatives are certainly just the vanguard, they're not going to do it all on their own."

Figure 9: Ranking of Barriers to Sustainability



Source: Economist Impact

[34] https://www.ey.com/en_gl/tax-guides/keeping-pace-with-sustainability-incentives-carbon-regimes-and-environmental-taxes
[35] https://www.kslaw.com/news-and-insights/germany-becomes-the-latest-country-to-adopt-mandatory-human-rights-due-diligence-legislation

Despite the desired improvements of the burgeoning regulations, the current absence of uniform global standards casts a shadow over attaining genuine sustainability goals. As Thomas Newbigging from GSK puts it, “Because supply chains operate across various locations, you are likely to encounter distinct sustainability standards, which makes it difficult to drive consistency – we have to meet suppliers where they are and engage with them to deliver sustainability improvements.” Respondents to our survey indicate the complexity of aligning with diverse private (29%) and governmental standards (27%) as among their main barriers to achieving a more sustainable supply chain. Furthermore, the absence of global standards yields an uneven playing field which may disincentivise businesses from adopting eco-friendly practices, as those adhering to stricter standards risk being outpaced by less conscientious rivals. Twenty-seven per cent of our survey respondents cited an uneven playing field as a barrier to implementing sustainability.

Case study on Poseidon Principles

> **"The cycle of reuse and repurposing is undoubtedly intensifying."**
>
> Susan Johnson, EVP & GM at Wireline Transformation and Global Supply Chain at AT&T

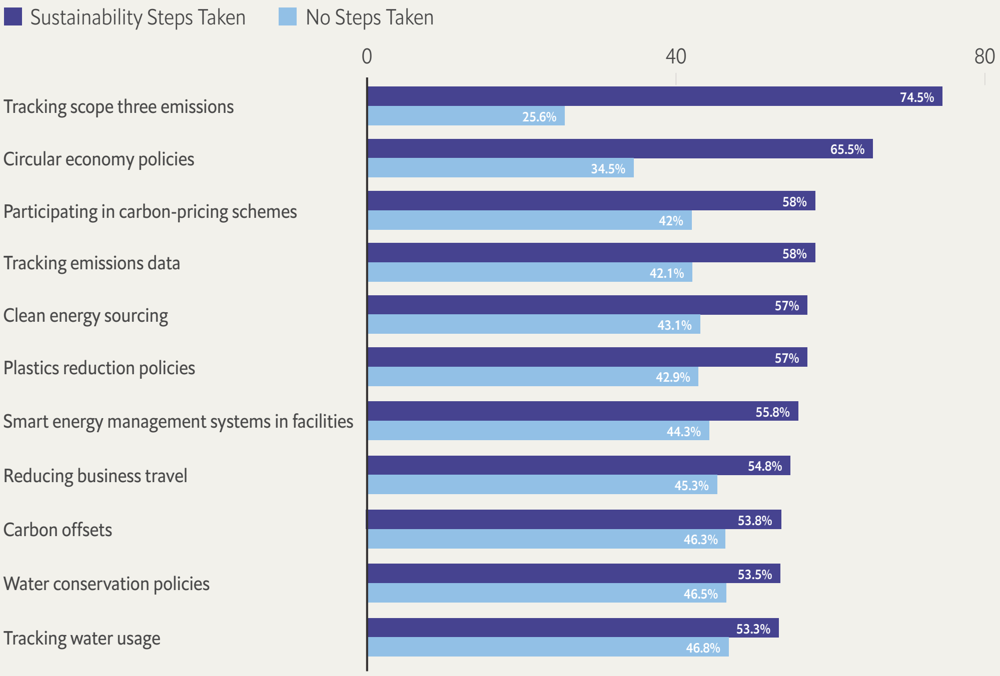
The shipping industry plays a large and pivotal role in global supply chain operations and, as such, is also facing pressure to reduce its carbon footprint. Tristan Smith, Director of the University Maritime Advisory Services, considers the Poseidon Principles—a global framework for assessing and disclosing the climate alignment of ship finance portfolios—"a good step towards a more sustainable shipping industry." Nonetheless, Mr Smith cautions against complacency, reminding stakeholders of the bigger picture: "We need to think about the long-term sustainability of the sector, not just short-term profits." He observes that shipping companies are often reluctant to invest in costly, sustainable technology that does not have immediate returns, yet contends that the long-term environmental and economic benefits of making such investments are undeniable.

Embracing Circular Models: Repurposing and Reusing Materials Amid Inflation Pressures

Despite numerous barriers to sustainability across the board, companies in the US and Europe are making significant progress in 2023 as evidenced by their adoption of various measures across their supply chains. European businesses tend to show a higher commitment to certain measures, such as clean energy sourcing (66% against 48% in the US) and participating in carbon-pricing schemes (62% vs. 45.5% in the US). Adopting a circular economy has also been significant, with 70.5% of European respondents and 60.5% of their American counterparts adopting such measures. As Susan Johnson from AT&T observes, "We're spending a lot more time on: how do we pull the network elements out? Where can they be reused in the network? How can we refurbish them? With commodities experiencing significant price increases, how do we repurpose copper? How do we resell it?" Ms Johnson further notes that under the mounting pressures of inflation, "the cycle of reuse and repurposing is undoubtedly intensifying."

Figure 9: Steps Taken to Improve Sustainability

Is your organisation planning to take any of the following steps to improve your procurement and supply chain sustainability in 2023? Please select one in each row.



Source: Economist Impact

Towards a Unified Strategy: Harmonising Resilience, Sustainability, and Costs

In the Cost-Plus World of Supply Chains, businesses need to adapt their supply chain strategies and practices in order to remain competitive in a constantly changing environment, characterised by economic complexity, geopolitical tensions and an urgent need for sustainability. This has put business leaders at a crossroads, navigating the need to balance cost-efficiency considerations with strategies that, while improving resilience and sustainability, may come with a hefty price.

The volatile global landscape demands that companies prioritise resilience in their supply chain strategies in order to withstand disruptions and ensure long-term viability, even though enhancing resilience often entails higher costs in the short term. Adopting measures such as diversifying suppliers and building buffer inventories, or harder-to-reverse strategies, such as vertical integration, is essential to enhancing resilience that, in the long run, safeguards a company's operations and reputation.

Simultaneously, the emphasis on sustainability continues to increase under mounting pressure from various stakeholders. In 2023, businesses need to acknowledge that although sustainable supply chains can entail higher expenses, the long-term benefits of sustainability and its importance toward attaining decarbonisation goals outweigh the short-term expenses. Besides investment, collaborative efforts are key to overcoming the barriers to sustainable supply chains, with governments, international organisations, and businesses themselves needing to establish uniform global standards and drive widespread adoption of sustainable practices.

It is important to acknowledge that sustainability and resilience may sometimes work in tandem, reinforcing each other simultaneously to create more robust and more sustainable supply chains. However, in other instances, these two long-term goals may diverge, necessitating trade-offs or innovative solutions that reconcile their competing demands. For example, while diversifying suppliers can enhance resilience, the need to have more than one shipping route can be at the expense of sustainability; in turn, choosing less polluting transportation can be sustainable but not always resilient, resulting in longer lead times and providing more opportunities for delays. Therefore, businesses must continually assess and adapt their supply chain strategies, seeking a nuanced understanding of their specific contexts in order to strike an optimal balance between resilience and sustainability that ensures lasting competitiveness in the rapidly changing global landscape.

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