



DISRUPTION, DIGITISATION, RESILIENCE:

The future of Asia-Pacific
supply chains



Written by:

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Economist

INTELLIGENCE
UNIT

PREFACE

The covid-19 pandemic continues to disrupt trade flows and supply chains. From supply-related shocks and shortages to production stoppages worldwide, as well as policies which restrict the movement of goods, the pandemic has shone a spotlight on supply-chain resilience.

It is also accelerating trends that were already under way before the health crisis. Faced with an operating environment characterised by geopolitical tensions, increasing labour costs and heightened uncertainty, businesses were already considering diversifying and shifting their supply chains in response to these factors.

Businesses and governments alike are therefore assessing the best way forward in this new normal. There is a pivot taking place from supply-chain optimisation towards one more characterised by resilience.

This is critical for Citi's clients. Whether it be shortening supply chains by localising or reshoring to move closer to end-markets, or expanding into new markets to reduce costs and diversify their supply chains, one thing is clear—there is a need for better balance between resilience and growth.

Findings from this research report support this observation. Industries are responding differently to the range of challenges they have faced, with a common goal in mind—making supply chains more resilient.

In this quest to ensure resilience, the report also points to some interesting insights on supply chains in the region. Among them is that an extensive overhaul of supply chains is not necessarily taking place in Asia-Pacific or not to

the extent one might imagine, suggesting a more considered approach to the pandemic's supply-chain impacts in the region as well as a more bullish view on globalisation, and an increasing appetite for investments in technology to manage supply chains.

As a global bank with a presence in close to 100 markets, we know that the composition of globalisation is changing, but we believe it will endure despite the short-term challenges. The world is increasingly connected, and technology is a critical enabler.

For supply chains, technology can greatly help improve resilience. By digitising capabilities and different components of the supply chain, businesses can make strides in various areas including trade facilitation, forecasting and predicting, inventory management as well as manufacturing processes.

In the future, there will need to be greater role for collaboration amongst multiple parties—businesses, governments, policymakers, development banks and insurers—as we all have a collective role to play in making sure we are better prepared for the future.

Leveraging our global network, advisory capabilities and local expertise, we are committed to advancing a post-pandemic future that benefits all stakeholders and we continue to partner with our clients closely as we navigate changing supply chains.



Rajesh Mehta,
Asia Pacific Head, Treasury
and Trade Solutions, Citi

ABOUT THE RESEARCH

This report by The Economist Intelligence Unit, and sponsored by Citi, explores flexibility and resilience within supply chains in the Asia-Pacific region. It is based on extensive desk research and a survey of 175 supply-chain managers. The report was written by Siddharth Poddar and edited by Chris Clague.

We would like to thank the following contributors for providing additional insights:

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- **Jan Nicholas**, partner, PwC Hong Kong and Mainland China
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EXECUTIVE SUMMARY

Covid-19 has had obvious implications on supply chains, but despite the disruption witnessed in the months immediately following the outbreak, supply chains in Asia-Pacific have proven to be more resilient than initially expected.

Shifts in supply chains were already under way, owing to geopolitical and economic factors, and covid-19 has accelerated some of them. Recent outbreaks of the virus—driven by the delta variant—mean that we have not seen the last of supply-chain disruptions yet, as economic activity across Asia-Pacific continues to be hampered.

The pandemic has resulted in a desire to rethink and reshape supply chains. A third of them are preparing to completely overhaul their supply-chain strategy, according to our latest research, although these changes are geared towards the long term. Additionally, how supply-chain managers based in Asia are thinking about their supply-chain strategy differs markedly from their counterparts in North America and Europe.

Shifts in supply chains were already under way, owing to geopolitical and economic factors, and covid-19 has accelerated some of them.

Other key findings from the research include:

Sector supply chains have not been impacted equally by the pandemic. Some sectors are witnessing both a demand and supply shock to

supply chains, such as automotives, and others predominantly supply-related bottlenecks, such as food and beverage. Similarly, all industries have not responded equally, with some—such as high-end manufacturing—finding it much harder to make dramatic shifts to their supply chains owing to sophisticated processes, high sunk costs and the need for specialised production facilities, which cannot be easily established in a new location.

Supply-chain challenges differ significantly between managers based in Asia-Pacific and those based in North America and Europe—resulting in a range of responses.

First, all supply-chain managers surveyed in North America and Europe are either conducting a complete overhaul of their supply-chain strategies or making some changes to it, while a third in Asia-Pacific are not. Second, 48% of supply-chain managers in North America and 40% in Europe say their top strategy at this point is diversifying their supply chains to source from a range of suppliers or to sell in a wider range of markets, while this share in Asia is just 24%. These differences suggest there has been less panic among Asian supply-chain managers and that North American and European firms could be taking a step back from long and very global supply chains to add more resilience through regionalisation and diversification. They also imply that the reshoring rhetoric we have seen in the past 18 months may not just be rhetoric.

How companies are responding also depends on their size. Larger companies are keen to diversify supply chains and move away from “single sourcing” to reduce supply-chain dependence. Meanwhile, smaller companies—

likely constrained by the relative paucity of resources—prefer localising their supply chains and shortening them.

Asia-Pacific supply-chain managers are far more bullish about the prospects of globalisation and international supply chains than their counterparts in North America and Europe. Supply-chain managers in Europe and North America responsible for decisions relating to Asian supply chains are far more concerned about the breakdown in global trade (both 52%) than those in Asia (9%), and the next economic/financial crisis (36% and 28% respectively) compared with just 10% in Asia, suggesting that covid-19 has not dampened the region’s economic prospects in the eyes of supply-chain managers based in the Asia-Pacific.

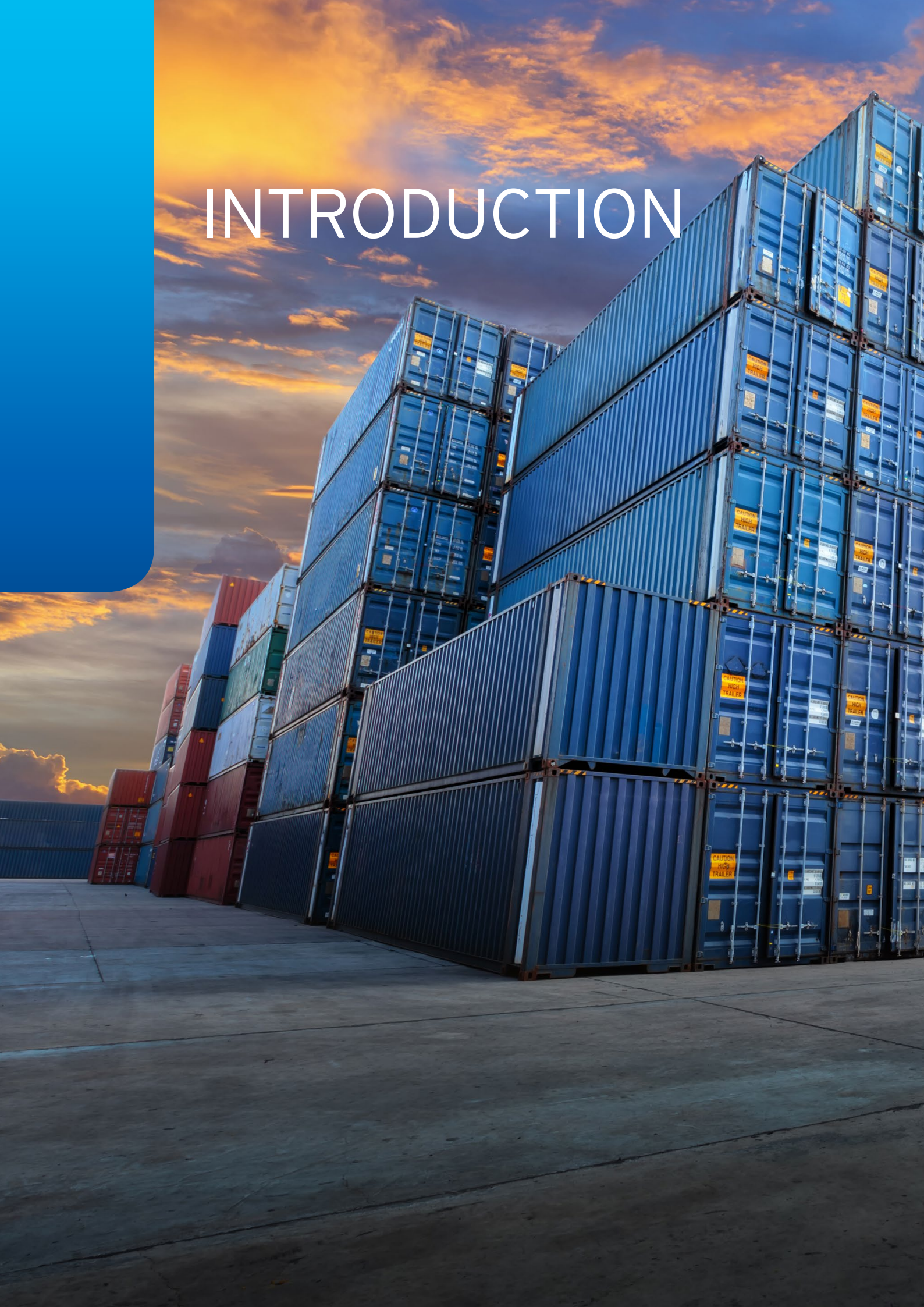
Asia-Pacific supply-chain managers are investing more greatly in the digitalisation of their supply chains.

Asia-based supply-chain managers also differ from their North American and European counterparts in their views on supply-chain resilience and reliability. While 56% and 52% of supply-chain managers in North America and Europe say increased concerns over the resilience and sustainability of existing supply chains is the top factor driving their firms’ Asia-Pacific supply-chain strategies, just 3.2% of Asian managers say so.

Asia-Pacific supply-chain managers are investing more greatly in the digitalisation of their supply chains. Forty-one percent of them have increased investment in digital tools and processes by more than 50% to manage their supply chains, while only 8% and 16% of supply-chain managers in North America and Europe have done so. Asian supply-chain managers have primarily invested in digital tools to enhance customer service and for inventory management.

The next pandemic is more concerning than the current one. Almost three in ten supply-chain professionals chose “the next pandemic” as the future shock to supply chains they are most concerned about, followed by one in five picking “a breakdown in the global trade system”. Again, these numbers mask large differences between supply-chain managers based in Asia and elsewhere. While almost 40% of supply-chain managers in Asia are most concerned about the next pandemic, the numbers for both European and North American managers was 4%.

INTRODUCTION



Last year, in the early months of the pandemic, shortages in consumer goods and medical materials gripping countries around the globe were interpreted by many journalists, economists and not a few executives as portending a broader collapse in supply, particularly in essential consumer goods. Shelves in supermarkets, pharmacies and big box retailers, while not barren, became much barer as global supply chains were disrupted by the pandemic and the various responses to it.

Those fears were not unfounded. Some industries struggled then and continue to struggle now. However, much of the shortages first experienced with the covid outbreak were not sustained. Retail shelves, physical and virtual, were once again full only a few months later.

The swift recovery in supply of most consumer goods came with considerable effort from all participants in global supply chains, but it wasn't evenly felt by all sectors. "It's very hard to generalise [about supply chains holding up]," says Stephen Olson, senior research fellow at the Hinrich Foundation, a non-government organisation focused on trade. "You have to look at it on a sector-by-sector basis." To that end, The Economist Intelligence Unit, sponsored by Citi, surveyed global supply-chain managers, or those responsible for supply decisions in the region from a range of industries, to understand the extent of the disruptions caused by the pandemic, what they are doing in response and how that may—or may not—change the shape of supply chains (see box out for survey demographics).

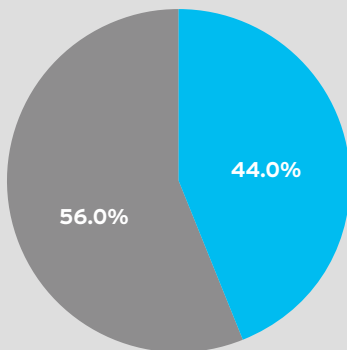
SURVEY DEMOGRAPHICS

The survey was conducted in February and March 2021 comprising 175 supply-chain managers, or executives with responsibility for supply-chain decisions. Of the respondents, 125 were based in Asia, 25 in North America and 25 in Europe, with most respondents from Asia as this was the focus of the research. The respondents in North America and Europe were screened for their involvement in and/or oversight of supply-chain decisions in the region. Of the 175 respondents, 90 were c-suite level (CEO, president, chief financial officer,

chief supply-chain officer, chief procurement officer or other c-level executives) and 85 were senior managers or above.

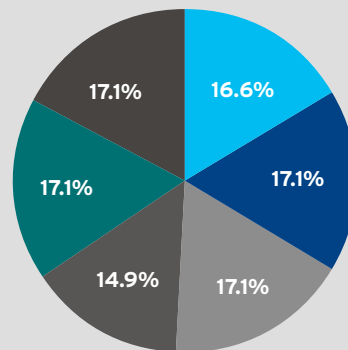
The sample was split across six primary industries: automotive, footwear and apparel, food and beverage, manufacturing, IT/tech/electronics and healthcare/pharmaceuticals/biotech. In terms of firm size, as measured by reported annual revenue, 77 respondents worked at firms with under US\$500m in revenue and 98 were from companies where revenues stood at over US\$500m.

Annual revenue in US dollars



- Under US\$500m
- Greater than US\$500m

Primary industry



- Automotive
- Footwear and apparel
- Food and beverage
- Manufacturing
- IT/tech/electronics
- Healthcare/pharmaceuticals/biotechnology

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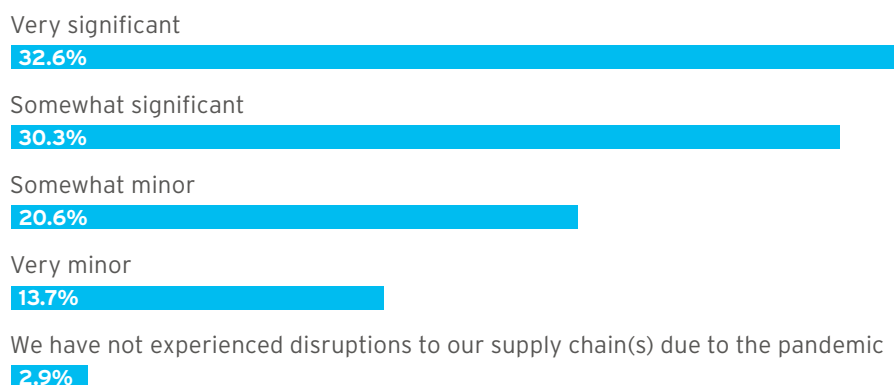
DISRUPTIONS BIG AND SMALL



During the most severe pandemic in more than a century, supply chains in the world’s densest, most interconnected region stood up surprisingly well. Only 32.6% of supply-chain managers either in the Asia-Pacific region—or overseeing it from afar—reported “very significant” disruptions (Figure 1). For those who did experience disruptions, the leading cause was production stoppages, which 36.4% of respondents ranked first among a slate of nine options (Figure 2).

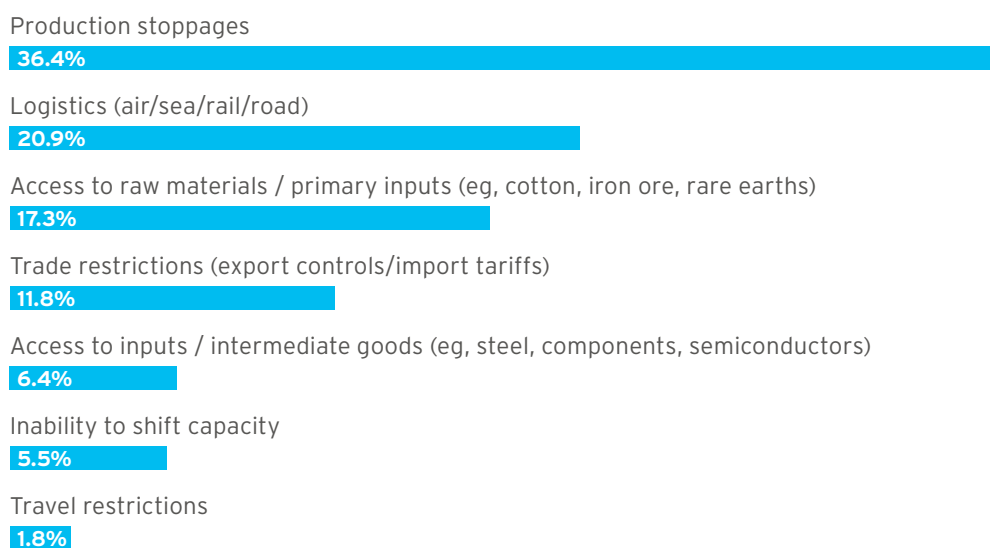
A halt to supply chains was an understandable—and unsurprising—challenge for Asian firms, since the virus hit that region first, catching governments by surprise and leaving businesses scrambling to respond to the first of many lockdowns instigated since. “In the beginning, there was a huge supply shock,” says Jan Nicholas, a Hong Kong-based partner at PwC, a consultancy, and a vice-chair of the trade and investment committee at the American Chamber

Figure 1:
Big hit to supply chains
 Significance of pandemic disruptions to a firm’s supply chain



Source: The Economist Intelligence Unit

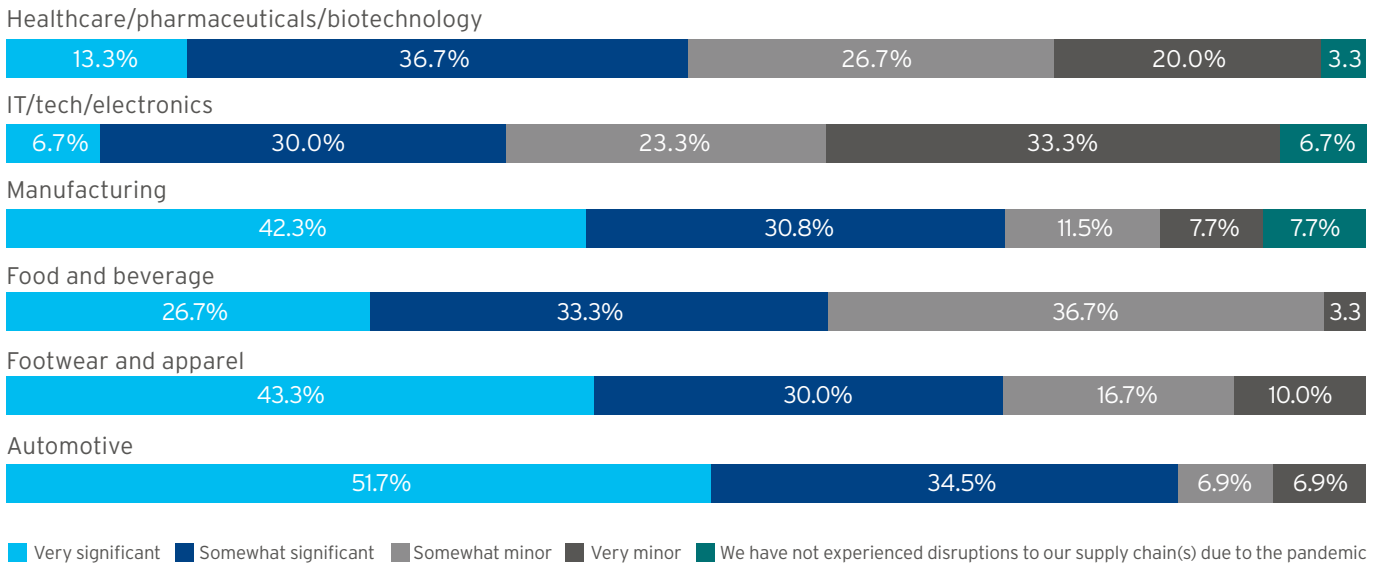
Figure 2: Disrupted by production stoppages
 Causes of pandemic disruption to supply chains (% of respondents ranking #1)



Source: The Economist Intelligence Unit

Figure 3: Disrupted industries

Significance of disruptions to supply chains by industry



Source: The Economist Intelligence Unit

of Commerce in Hong Kong. “In China you couldn’t get people into factories, you couldn’t get raw materials into factories.” And with most of the final assembly for firms’ supply chains still located in China, that had a cascading effect throughout the region.

Similarly, in India, “during the first lockdown last year, we saw a lot of challenges in distribution of goods, last mile in supplies, sourcing for our manufacturing plants, and employee access to the plants and distribution centres,” says Momchil Jeleu, head of strategy and supply chain for government affairs and policy, Asia-Pacific, Johnson and Johnson.

Among the industries covered by our survey, the one that has struggled the most, at least in Asia, is the automotive industry (Figure 3). Fifty-two percent of automotive supply-chain managers answered that covid-related disruptions have been “very significant”, 9% more than their counterparts in footwear and apparel

and in manufacturing, and far above managers from the healthcare, pharmaceutical and biotechnology sectors (13.3%) and amongst technology and electronics firms (6.7%).

In the beginning, there was a huge supply shock. In China you couldn’t get people into factories, you couldn’t get raw materials into factories.

Jan Nicholas, a Hong Kong-based partner at PwC

The top reason cited for supply-chain disruptions in the automotive industry was production stoppages (48%), followed by trade restrictions such as export controls (24%) and access to raw materials or primary inputs (12%).

The automotive industry's problems are somewhat unique in regards to supply of technology, and are arguably the result of poor planning. The semiconductor shortage facing the automotive industry has received significant attention partly because it might have been avoided. Mark Liu, the president of TSMC, the world's third-largest chip manufacturer, seemed to say as much in an interview with US weekly news programme 60 Minutes claiming that carmakers cancelled or delayed orders early in the pandemic.² Mr Nicholas, who also spent time in the semiconductor industry, shares Mr Liu's view on the subject. "They [the carmakers] dialled down orders," he says, "because they thought they would have idle capacity and they wanted to reduce working capital."

The automotive industry's problems are somewhat unique with regard to supply of technology, and are arguably the result of poor planning.

When the industry recognised the mistake, it was too late. The capacity had already been committed elsewhere.

There are a number of reasons that capacity had been committed elsewhere. One was that demand for personal computers and other consumer electronics surged during the lockdowns as more

people worked from home and increased their spending on devices in lieu of dining out, going to the movies and other forms of entertainment.³ Another was stockpiling by tech firms, which reportedly occurred on a massive scale.⁴ Even before the pandemic, these firms recognised that semiconductors were fast becoming a focal point in US-China trade tensions, potentially making them much dearer, if not impossible to come by at some point in the not-too-distant future. This concern was especially acute among Chinese firms like Huawei, a manufacturer of smartphones and network equipment that purchased two years' worth of supply in March 2020.⁵

Access to raw materials/primary input was a key source of disruption in the food and beverage sector, and the healthcare/pharmaceuticals/biotechnology sectors. In the food sector, access to raw materials shared the top spot with logistics, both picked as the top reason for the supply-chain disruption by 27.8%.

Anirban Mullick, director of business development at Unilever International and responsible for the company's food and refreshments category, says "we had supplies coming out of China, India, which were disrupted; out of Europe, there were insignificant disruptions." This happened at the same time "there were some demand spikes in the food segment, because people were staying at home—and we have quite a large portfolio of retail foods—which saw a significant rise in demand because people were cooking more at home and staying more at home."

2 Chip Shortage Highlights U.S. Dependence on Fragile Supply Chain." 60 Minutes. 2 May 2021. Available online at <https://www.cbsnews.com/news/semiconductor-chip-shortage-60-minutes-2021-05-02/>

3 "Why there's a chip shortage that's hurting everything from the PlayStation 5 to the Chevy Malibu." CNBC. 10 February 2021. Available online at <https://www.cnbc.com/2021/02/10/whats-causing-the-chip-shortage-affecting-ps5-cars-and-more.html>

4 "Why We're in the Midst of a Global Semiconductor Shortage." Harvard Business Review. 26 February 2021. Available online at <https://hbr.org/2021/02/why-were-in-the-midst-of-a-global-semiconductor-shortage>

5 "Huawei builds up 2-year reserve of 'most important' US chips." *Nikkei Asia*. 28 May 2020. Available online at <https://asia.nikkei.com/Spotlight/Huawei-crackdown/Huawei-builds-up-2-year-reserve-of-most-important-US-chips>

Through early 2020, as country after country started witnessing a spike in the number of covid infections, several governments tightened the exports of masks and medical equipment,⁶ and raw materials used in pharma production.⁷

Access to raw materials and primary input was a key source of disruption in sectors such as food and beverage, and healthcare and pharmaceuticals.

Mr Jelev says that “during some of the more severe lockdowns last year, we saw countries using export restrictions very aggressively—for instance, in India and China. This year we have seen similar measures mainly specific to vaccines, with the EU and US restricting both consumables for vaccine manufacturing, as well as the export of finished vaccines.” According to him, the biggest issue for vaccine manufacturers is the shortage of raw materials and consumables related to vaccine manufacturing.

The focus on vaccines, in turn, could result in impacts on the supply of other consumables used for other healthcare products over the next year or so.

6 OECD. *The face mask global value chain in the COVID-19 outbreak: Evidence and policy lessons*. 4 May 2020. Available online at <https://www.oecd.org/coronavirus/policy-responses/the-face-mask-global-value-chain-in-the-COVID-19-outbreak-evidence-and-policy-lessons-a4df866d/#section-d1e338>

7 “API Supply: COVID-19 Industry Update.” *Contract Pharma*. 5 March 2020. Available online at https://www.contractpharma.com/contents/view_Content-microsite/2020-03-05/api-supply-covid-19-industry-update-506334/

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CHANGES IN STRATEGY



This has resulted in changes in supply-chain strategy over the past 18 months in Asia-Pacific among the vast majority (77%) of respondents (Figure 4). Four in ten (45%) managers said their strategy has changed, “but the primary strategy remains the same”. A third of managers surveyed, meanwhile, said they “have conducted/are conducting a complete overhaul” of their supply-chain strategy for the Asia-Pacific region, with 22.9% reporting no change.

It might first appear surprising that a third of supply-chain managers in Asia-Pacific say they “have not made/are not making any significant changes” to their supply-chain strategies in the region, as compared with North America or Europe, where all respondents reported some kind of change.

But there are very different perceptions over the severity of supply-chain disruptions, and the extent of change required in supply-chain strategy and the main drivers for these changes. For example, for 56% and 52% of supply-chain managers based in North America and Europe, concern over the resilience of their existing supply chains is the main driver of their firms’ current Asia-Pacific supply-chain strategy, compared

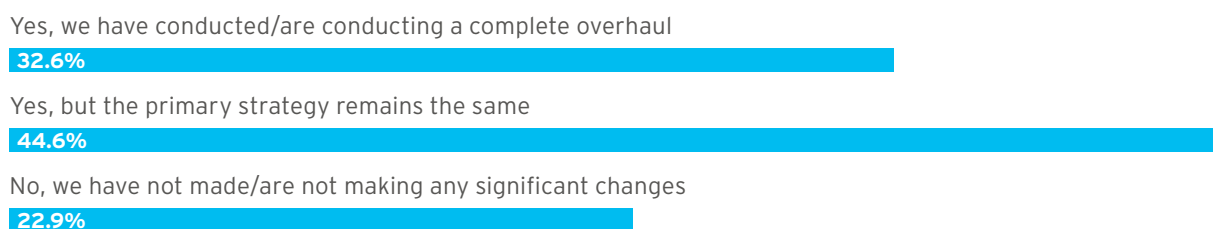
with just 3.2% of those based in Asia. Among Asia-Pacific managers, 46.4% picked the ongoing impact of the pandemic as the driver of their supply-chain strategy.

A far greater share of managers based in North America and Europe have pursued diversification and regionalisation of their current supply-chain strategies compared with counterparts based in Asia.

Moreover, a far greater share of managers based in North America and Europe have pursued diversification and regionalisation of their current supply-chain strategies compared with counterparts based in Asia. While 24% and 19% of supply-chain managers in Asia said their firms have pursued diversification and regionalisation, the numbers for North America are 48% and 32%, and for Europe 40% and 28% respectively.

Figure 4: Shifting supply chains

Changes in supply-chain strategy in the Asia-Pacific region over the past 18 months



Source: The Economist Intelligence Unit

This perhaps indicates there was less panic among managers based in Asia-Pacific, either because they understood the extent of disruption caused by the pandemic better or because they have dealt with major supply-chain disruptions before and know how to deal with them, or both. Some events in the past decade that threw regional supply chains into disarray include the Tohoku earthquake and Fukushima nuclear disaster of 2011,⁸ the Thailand floods later that year⁹ and the Tianjin port explosion in 2015.¹⁰

Jayant Menon, visiting senior fellow, ISEAS-Yusof Ishak Institute, feels this could also be owing to the fact that, notwithstanding the recent Indian experience, Asian economies have managed the pandemic well generally, especially compared with the US and Europe. But this advantage is being eroded by a combination of new and highly contagious variants—delta in particular—and relatively slow vaccination rollouts, he adds.

For many products, we managed to create a resilient source, which was in a different geography, just to keep our position more hedged.

Anirban Mullick, director of business development at Unilever International

One other factor this divide could be attributed to is the length of supply chains. European and North American supply chains have expanded globally over the past 20 years.

Now they're pulling back and trying to add more resilience through greater regionalisation and diversification. This could be about European and North American firms taking a slight step back from long and very global supply chains and reshoring some production, while this may not be the case for Asian supply chains that mainly service the Asian market. This may also indicate that the widely held optimism around trade in Asia is reflected at the industry level as well.

When asked what approach characterises their firm's primary supply-chain strategy in the Asia-Pacific region, the leading choice among five options was "diversification" (30%). To the extent possible in the circumstances, supply-chain managers are adapting their supply chains to source from a wider range of suppliers and/or looking to sell into a wider range of markets. For Mr Mullick at Unilever the focus was on building resilience. "For many products, we managed to create a resilient source, which was in a different geography, just to keep our position more hedged."

Supply-chain strategy preferences also clearly depend on the size of companies. Smaller companies want to localise supply chains, while larger companies want to diversify them. In our survey, 33% of companies with an annual revenue under US\$500m picked localisation as their primary supply-chain strategy, compared with just 11% of companies with revenue higher than US\$500m. On the other hand, 38% of large companies picked diversification as their primary supply-chain strategy, compared with 20% in smaller companies. The larger companies seem keen to diversify supply chains and move away from

8 "Japan Disaster Shakes Up Supply-Chain Strategies." *Working Knowledge*. 31 May 2011. Available online at <https://hbswk.hbs.edu/item/japan-disaster-shakes-up-supply-chain-strategies>

9 "FACTBOX-Thai floods crimp global supply chains." *Reuters*. 28 October 2011. Available online at <https://www.reuters.com/article/thailand-floods-supply-chain-idUSSGE79R00E20111028>

10 "Tianjin Port Explosion, August 2015." *HFW Briefings*. Accessed on 14 June 2021. Available online at <https://www.hfw.com/Tianjin-Port-explosion-August-2015>

“single sourcing” for critical inputs to reduce dependence on one (or very few) suppliers. Smaller companies—likely constrained by the relative paucity of resources—prefer localising and shortening their supply chains.

Diversification was followed by regionalisation (22.3%) and localisation (20.6%—this refers to companies that have sought to either move their supply chains to or within countries that surround their primary markets and end-users (Figure 5).

It also depends who you speak to, even within the same companies. Mr Nicholas says that it is profit and loss (P&L) leaders talking about localisation as they are more concerned about policy, and not cost. On the other hand, “your average supply-chain manager isn’t really invested in policy,” he says. “It is the P&L owner, the business unit owner, the CEO, that’s looking at the risk to revenue, and the risk to the customer base and saying ‘I’ve got to localise.’”

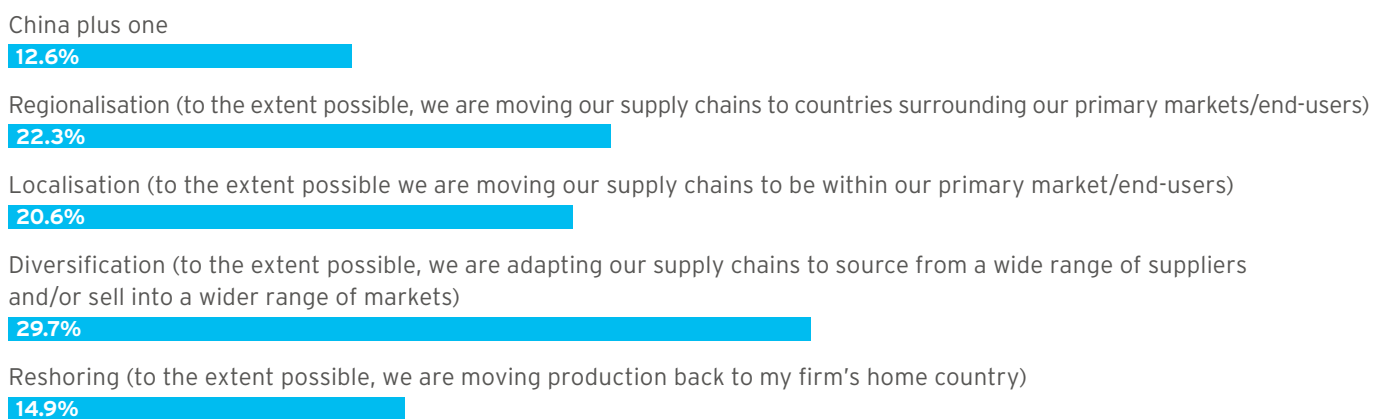
That there is far more at play in terms of shifting supply-chain strategies than just the pandemic’s impacts, emerges as an interesting finding from the research. While many supply-chain managers surveyed are naturally concerned about the immediacy of their requirements from a supply-demand perspective, most experts interviewed insist on the importance of taking a broader view that underpins long-term supply-chain strategy decisions. These include longer-term trends relating to global trade, and factor in geopolitical considerations that continue to impact trade policy at a national level.

Mostly business as usual

At a sector level, the IT/ tech/electronics industry has the smallest share (16.7%) of companies conducting a complete overhaul of their supply-chain strategy, compared with the survey average of 32.6%. This compares with 48.3% in the automotive sector, 40% in footwear and apparel,

Figure 5: Supply-chain strategies

What actions firms are taking in Asia-Pacific region



Source: The Economist Intelligence Unit

and 33.3% in both the food and beverage and the healthcare and pharma sectors.

In fact, the IT and electronics sector has seen less change in supply-chain strategy than other sectors in the past 18 months. Forty percent of supply-chain managers in the sector said they have not made or are not planning to make any material changes to their supply-chain strategies (compared with the average of 22.9% and higher than in all other sectors).

This is to be expected, given manufacturing in this sector is highly specialised, often requiring specialised production facilities, and the co-location suppliers, for example.¹¹ In other words, specialised tech manufacturing supply chains cannot shift easily because of their sophistication relative to other industries, which necessitates a completely new production ecosystem be established in a new location.

While some diversification of the supply-chain in this space has happened in the past 18 months or so, the pandemic-induced lockdowns and production slowdowns brought the supply of components down to a trickle, complicating matters further.

According to Mr Menon, whether or not supply chains can shift easily or not is also a function of the share of sunk versus variable costs and how divisible the technology is. "In clothing, footwear, textiles, technology is highly divisible and sunk costs are low; but in say, precision machinery or some other heavy machinery, where sunk costs are high, technology is not that divisible, the shifting of supply chains is that much more difficult."

He provides the example of much clothing manufacturing moving to either Bangladesh or the Mekong region from China, but not more sophisticated machinery and equipment.

At the other end of the spectrum is the automotive sector, where almost half the supply-chain managers (48%) say they have either conducted or are conducting a complete overhaul of their supply-chain strategies, compared with just 3% who say they are not making any material changes. This could well be owing to the lack of chips referred to earlier, which resulted in some of the world's largest automakers such as Fiat, Ford, Nissan and Toyota cutting production.¹² Given demand for personal computers and other consumer electronics, the chip shortage is not likely to dissipate any time soon, and with increasing demand from the rapidly growing electric vehicle industry, auto manufacturers are compelled to consider an overhaul of their supply chains to keep up with production requirements.

In the broader manufacturing sector, "China plus one" emerges as the primary supply-chain strategy for managers based in China, with 47.4% of them choosing this option. This is to reduce reliance on suppliers in a single country in the event there is another disruption of the kind witnessed early last year in China.

Locating supply

Differences between strategies adopted by supply-chain managers based in Asia and those based elsewhere also manifest in the locations they have either invested in over the past 12 months or are planning to in the next year. While

¹¹ "Electronics supply chains are stuck between a pandemic and a trade war. Where do they go from here?" *Supply Chain Dive*, 23 July 2020. Available online at <https://www.supplychaindive.com/news/electronics-supply-chains-coronavirus-pandemic-trade-war-tariffs/582130/>

¹² "Semiconductor Shortage Causes Major Automakers to Cut Production." *Industry Europe*, 11 January 2021. Available online at <https://industryeurope.com/sectors/transportation/semiconductor-shortage-causes-major-automakers-to-cut-production/>

the Philippines, India, China, Singapore, Vietnam and Japan emerge as favourites among managers in North America and Europe, the picture is more mixed in Asia.

India has got both high-skilled workers as well as low-cost, low-skilled labour

**Jayant Menon, visiting senior fellow,
ISEAS-Yusof Ishak Institute**

There is far greater diversity in terms of locations Asia-Pacific supply-chain managers are interested in investing—while the usual suspects are no doubt popular, many other markets such as Indonesia, Bangladesh, Australia, Hong Kong, South Korea, Myanmar, Malaysia and Sri Lanka are also on their radar. This illustrates there is already far greater diversification among supply chain managers in Asia-Pacific when it comes to Asian supply chains. This is because they understand the region better, including its economies, trends and risks. They have a more nuanced understanding of Asian markets than their peers based in North America and Europe.

One in five managers globally have invested or are looking to invest in the Philippines and India in the next 12 months as part of their supply-chain strategy. Cheap labour costs and young populations in both these countries are important factors in this choice. Separately, the Philippines has witnessed strong economic growth of more than 6% per annum on average from 2010 to 2019,¹³ providing a consumption boost in a large domestic market.

In late 2020, the Philippines government launched “Make it Happen in the Philippines”, a campaign to attract manufacturing investment in sectors such as electronics, automotive, aerospace, health and IT and to get companies to establish a local base in the country.¹⁴

More than a third (35%) of supply-chain managers in the automotive sector picked India as one of three Asian locations their firm has either invested in or plan to invest in over the next 12 months, the highest score for any country across any sector. “India has got both high-skilled workers as well as low-cost, low-skilled labour,” says Mr Menon. India is among the largest automotive manufacturing economies globally, and more importantly, a rapidly growing automotive market, so the choice seems logical. India became the fifth-largest auto market in 2020, selling a combined total (passenger and commercial vehicles) of about 3.49 million units, with the sector expected to reach US\$282.8bn in sales by 2026.¹⁵

No wonder then that 28% of respondents in the automotive sector picked “access to key markets” as the top reason that made their preferred market attractive for their companies.

Almost one in three (32%) North American supply-chain managers and 20% of those based in Europe picked Singapore as one of three markets they’ve either invested in the past 12 months or looking to invest in as part of their supply-chain strategy. This is not surprising, given Singapore is uniquely positioned as a trade and financial hub that also acts as a gateway to much of the ASEAN—and indeed Asian—market.

¹³ The World Bank

¹⁴ “PH remains key market for manufacturing investment.” *Philippine News Agency*, 27 May 2021. Available online at <https://www.pna.gov.ph/articles/1141736>

¹⁵ India Brand Equity Foundation. *Automobile Industry in India*. Last updated on 14 June 2021. Available online at <https://www.ibef.org/industry/india-automobiles.aspx>

Many western companies have their regional headquarters in Singapore, which throws into the spotlight its role as a conduit for capital inflows into other regional markets. Additionally, Singapore remains an attractive draw for investments in the high-tech sector (with 26.7% of all supply-chain managers in the IT/tech/electronics sector choosing to invest in Singapore as part of their supply-chain strategy).

There are various reasons why companies look to tweak their supply chains or revamp them completely.

Vietnam, picked by 14% of supply-chain managers, is the most popular pick in the food and beverage (23%) sector, and the manufacturing (23%) sector (along with India and China). The results indicate that the pre-covid popularity of Vietnam as a highly sought after “plus one” destination has not subdued. Vietnam’s proximity to China benefits Vietnam, and both Chinese and non-Chinese companies continue to relocate some manufacturing to Vietnam to get around US tariffs on Chinese imports. Moreover, manufacturing infrastructure in Vietnam is attractive and labour costs remain relatively low. And importantly, Vietnam continues to adopt a trade-friendly stance as its participation in trading agreements such as the Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP), EU-Vietnam FTA, UK-Vietnam FTA and the Regional Comprehensive Economic Partnership (RCEP) illustrate.

But such shifts are not without challenges, predominantly because of China’s centrality in regional supply chains. In 2019, for example, Japanese video game manufacturer Nintendo shifted the manufacturing of its Switch gaming consoles from China to Vietnam in anticipation of US tariffs on Chinese products. Following the outbreak of the covid-19 virus, however, it faced production bottlenecks in Vietnam as the supply of component parts from China was hit by the pandemic, impacting its manufacturing unit in Vietnam.¹⁶

There are various reasons why companies look to tweak their supply chains or revamp them completely. “Labour costs” (28%), “geographic location” (25%) and “access to key markets” (16%) were picked as the most important reasons (Figure 6).

Labour costs continue to remain a primary factor in investment decisions for companies across sectors (28%), pandemic or otherwise. It was picked as the top factor by 35% of respondents in the wider manufacturing sector, 33% of respondents in the food and beverage and footwear and apparel sectors, and by 30% in the healthcare/pharma sector.

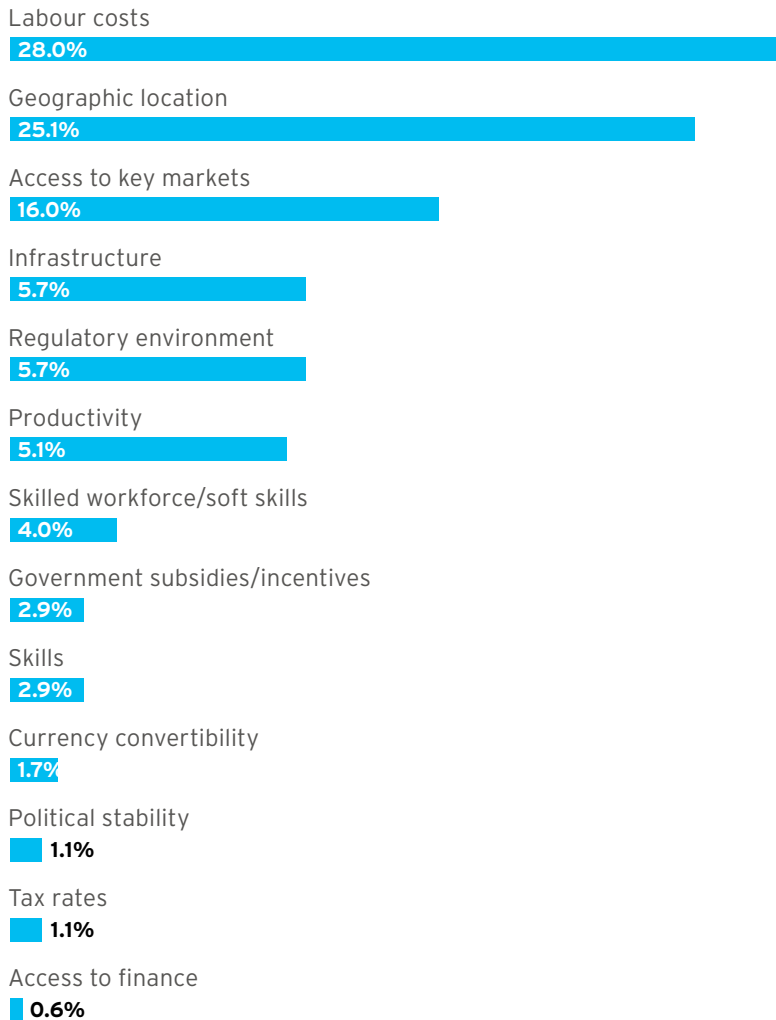
Labour costs continue to remain a primary factor in investment decisions for companies across sectors, pandemic or otherwise.

In some instances, political relations between countries—usually directly correlated with economic ties—may also influence supply-chain

¹⁶ “Nintendo Is Likely to Suffer Global Switch Shortages From Virus.” *Bloomberg*. 17 February 2020. Available online at <https://www.bloomberg.com/news/articles/2020-02-17/nintendo-is-likely-to-suffer-global-switch-shortages-from-virus>

Figure 6: People and location are priorities for investment

Characteristics that make a country attractive for investment in the last 12 months and next year (% of respondents ranking #1)



Source: The Economist Intelligence Unit

decisions. In the survey, 26% of supply-chain managers based in China picked Sri Lanka as one of the top three countries in which they have or are likely to invest—considerably higher than managers based in other countries.

The economic relationship between China and Sri Lanka has deepened considerably over the past

decade.¹⁷ China is now among Sri Lanka's biggest investors and creditors and is its largest export and import partner. Additionally, labour costs in Sri Lanka remain considerably low, and make it well suited for low-tech, labour-intensive manufacturing. This confluence of factors likely has a role in making Sri Lanka an attractive investment destination for supply-chain managers based in China.

17 "The Economics of the China-India-Sri Lanka Triangle." *The Diplomat*. 1 May 2021. Available online at <https://thediplomat.com/2021/05/the-economics-of-the-china-india-sri-lanka-triangle/>

But making changes to well-established and entrenched supply chains takes time. Only 16% of supply-chain managers expected to have completed changes to their supply chain by the end of June 2021 (Figure 7). Four in ten (41%) expect to complete these changes by the second half of 2021, while 27.8% expect the process to run well into 2022.

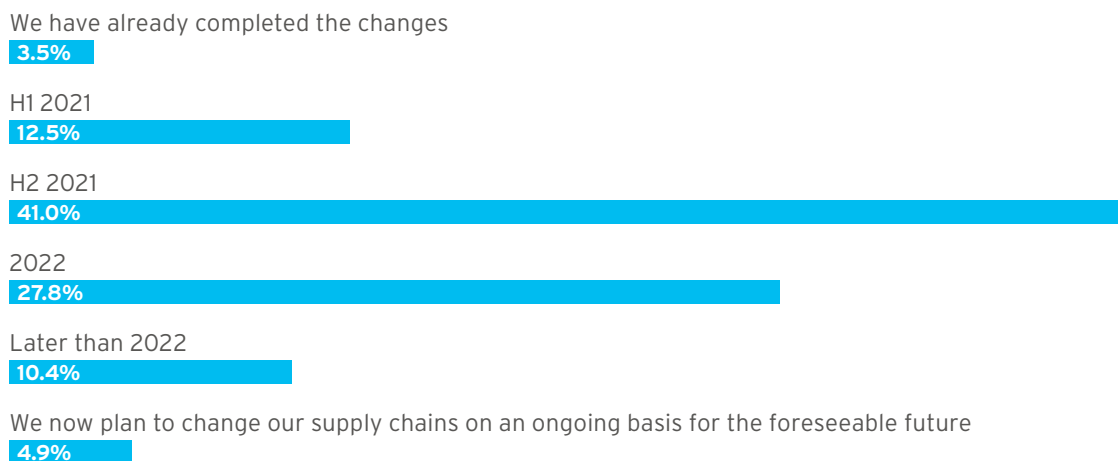
The difference between small and large companies is also telling in this respect, with

bigger companies being able to make changes to their supply chains more quickly.

Among the companies making changes to their supply chains, only 8% of those with annual revenue under US\$500m would have completed changes to their supply chain by June 2021, compared with 21% of bigger companies. Similarly, 45% of smaller companies are likely to complete the change in 2022 or later, as compared with 34% of larger companies.

Figure 7: Reimagining supply chains

Timeframe in which respondents expect to complete changes to their supply chains



Source: The Economist Intelligence Unit

3

RESILIENCE AND SUSTAINABILITY OF OPERATIONS



When asked which operational considerations in their supply chain they are most focused on, the sustainability of suppliers was picked as the top consideration (among five) by a third of supply-chain managers (Figure 8).

Eighty percent of those surveyed in North America and 76% in Europe picked the sustainability and reliability of suppliers as the top consideration in their supply chain. It is a sign that while supply chains have been reconfigured to some extent owing to covid-19, the more far-reaching changes are related to long-term supply-chain strategy.

Moreover, only 13% picked logistics/product accessibility as the top consideration they are focused on. This goes to show that by and large, supply-chain disruptions in the wake of the pandemic have not greatly altered supply-chain decision-making. Yes, the pandemic had obvious immediate and short-term implications on how supply

chains were being reshaped and thought of, but most decisions seem to be targeted at the long term.

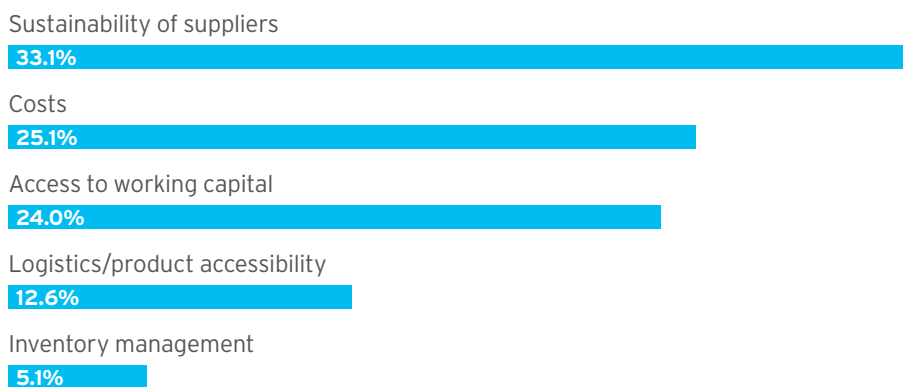
Mr Menon thinks as much. He says the work he has done in the area “actually suggests that it’s not so much the pandemic but the US-China trade war that’s had the much bigger impact on the restructuring of supply chains, particularly in this region and out of China.”

Among the sectors covered in our study, the one key difference is in the IT/tech/electronics sector, where 43% have picked access to working capital as their top consideration in making supply-chain decisions.

Making supply chains more sustainable and durable is picked by 21.7% of all supply-chain managers as the most important measure in making supply chains better prepared for future shocks (Figure 9), while 52% in North America and 64% in Europe pick this option.

Figure 8: Focused on sustainable suppliers

Operational considerations in supply-chains respondents are most focused on (% of respondents ranking #1)



Source: The Economist Intelligence Unit

Figure 9: Responding to disruption

Measures taken to make supply chains more resilient against shocks (% of respondents ranking #1)



Source: The Economist Intelligence Unit

In the Asia-Pacific, however, the top choices differed markedly—only 7% picked making their supply chains more sustainable as the top action to better prepare for future shocks.

Meanwhile, 23.2% said the top measure they are looking to undertake is to carry excess inventories or to request their suppliers to do so, followed by 22.4% who said their top measure would be to localise production. This ties in with other findings from our survey, which indicate that Asian supply-chain managers are perhaps less panicked about their supply chains and have taken these disruptions in their stride—which helps explain why the top measure picked to strengthen their supply chains was simply to carry excess inventories or to ask their suppliers to do so, rather than something more transformational.

Inventory management is important. Mr Nicholas refers to Huawei's recent actions in this context.

When Huawei started seeing the actions against it, the company went out and bought as much capacity and as many chips as it possibly could, to pile up, he says. As did Apple, with processors and some communication chips.

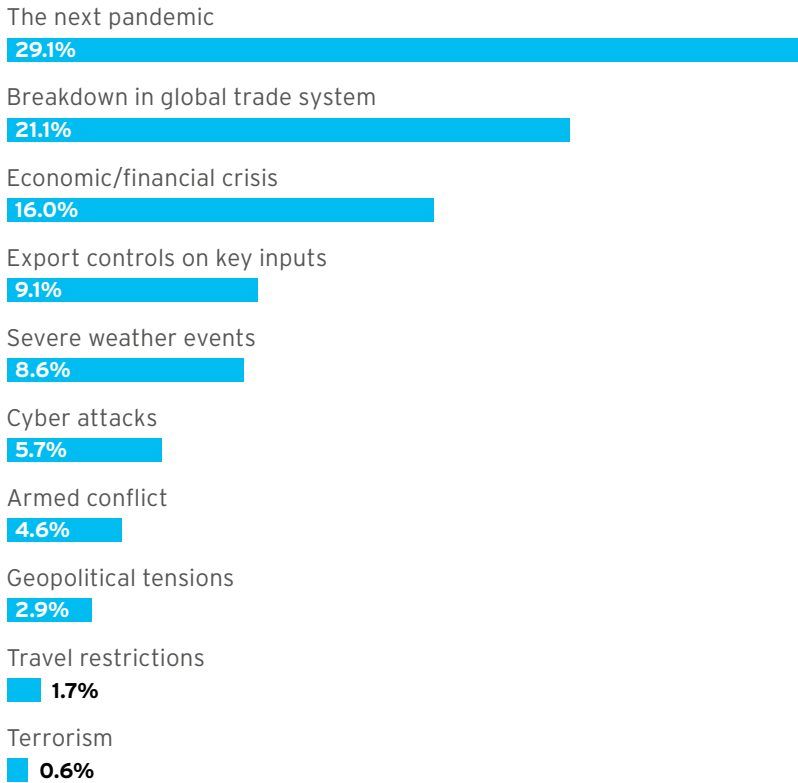
Businesses across sectors sought to do the same thing not only on supply chain, but also on finance. Mr Nicholas says that at the beginning of the pandemic, smart companies drew down their lines on credit to become cash-rich to be able to survive the impacts of the pandemic. "Everybody had this bunker mindset at the beginning."

Preparing for this crisis and the next

Strong recency bias is in evidence when supply-chain managers are asked to reflect on the future shocks to the supply chain they are most concerned about, with 29.1% picking "the next pandemic"

Figure 10: Worrying about what comes next

Future shocks to supply chains respondents are most concerned about (% of respondents ranking #1)



Source: The Economist Intelligence Unit

as the top option among ten choices (Figure 10). This was followed by 21.1% picking a “breakdown in global trade system” as the top concern.

But just 4% of supply-chain managers in Europe and North America say “the next pandemic” is the shock they are most worried about, compared with 39% of those based in Asia-Pacific.

More than half (52%) of the respondents in each of North America and Europe rank a breakdown in the global trade system as the top supply-chain shock they are concerned about, while just 9% of

respondents in the Asia-Pacific region give it the same degree of importance.

Through 18 months of this pandemic, governments have on occasion acted in their own self-interest, even if this puts them at odds with the rules-based trading system overseen by the World Trade Organisation (WTO). “If your citizens are literally facing life and death situations, you’re going to do what you feel is best to do, and you’re not going to be particularly worried if it violates the provisions of the WTO, or bilateral, or regional trade agreement that you’ve got,” Mr Olson says.

Mr Jelev echoes these sentiments, referring to the embrace of localisation and onshoring by governments as worrying. It is a growing challenge, he says, for large companies with global supply-chain networks to address these concerns of government “to make sure you’re in line with their agenda, but at the same time, to also make sure they understand that a resilient supply chain is not necessarily an onshore supply chain that is as close to you as possible”.

If your citizens are literally facing life and death situations, you’re going to do what you feel is best to do, and you’re not going to be particularly worried if it violates the provisions of the WTO, or bilateral, or regional trade agreement that you’ve got

**Stephen Olson, senior research fellow,
Hinrich Foundation**

The second trend, in contrast to the first, has more to do with Asia’s perceived love affair with free trade. Several Asian economies have benefitted immensely from export-oriented growth over the past few decades and the region has come to be one of the big proponents of free trade. This reflects in the views of supply-chain specialists based in the region, very few of whom fear the global trading system is imminent.

Even through the pandemic, Asian economies have largely remained committed to greater—not less—economic integration, as enthusiasm for large trade deals such as the RCEP and CPTPP illustrate.

An economic/financial crisis was picked by 16% as the supply-chain shock managers are most concerned about—with 28% and 36% of those in North America and Europe, respectively, putting it in top place.

4

INVESTING IN TECHNOLOGY



The pandemic has led to an increase in investment in digital tools and processes to manage supply chains, almost across the board (96% of companies).

Five percent have more than doubled investment in digital tools and processes, while 27.4% have increased investment by between 50% and 99% (Figure 11). The increased focus on digital tools and processes is more evident in Asia, where a far greater share of companies is investing in them. While 8% and 16% of supply-chain managers in North America and Europe have increased investment by more than 50%, the corresponding number for supply-chain managers in Asia-Pacific is 41%.

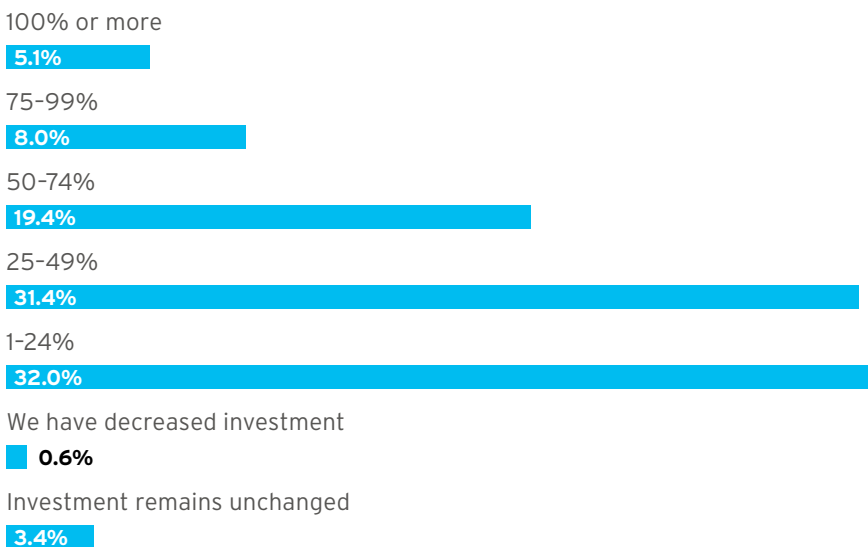
The top reasons for investing in digital tools and processes differs across regions. Asian

supply-chain managers have primarily invested in digital tools to enhance customer service and for inventory management. The two goals of investment in digital processes for their counterparts, on the other hand, are manufacturing forecasting and supply and demand forecasting.

Asian economies are taking the lead in the digitalisation of trade. This can be seen in the recently concluded digital economy agreement discussions between jurisdictions like Singapore, Australia and New Zealand, and ongoing discussions between Singapore and South Korea. This work is impacting companies. According to our survey, 25% of supply-chain managers in Asia whose companies have increased investment in technology, state trade facilitation is one of two primary goals. In November 2020, Steven Beck,

Figure 11: Betting on technology to manage supply chains

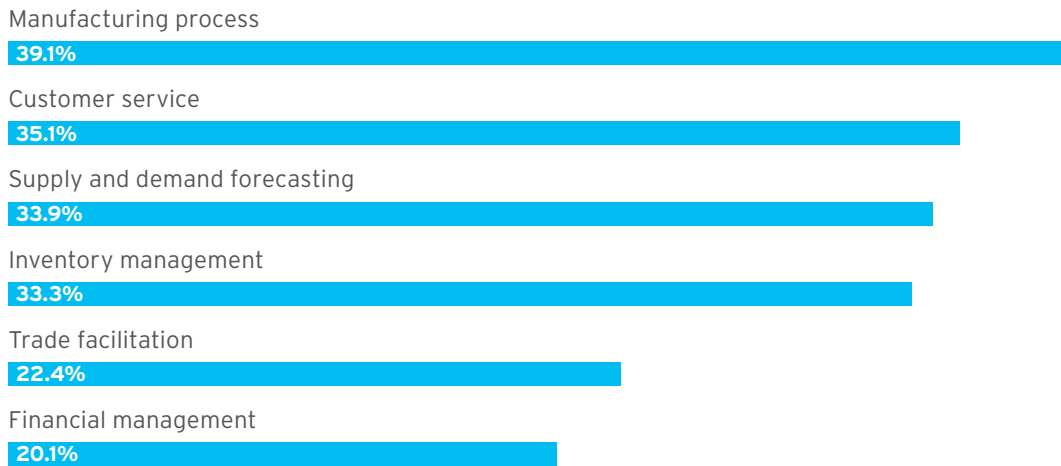
Extent to which respondents have increased investment in digital tools/processes to manage their supply chain(s) as a result of the pandemic



Source: The Economist Intelligence Unit

Figure 12: Benefits of investing in tech

Primary goal for respondents investing in digital tools/processes



Source: The Economist Intelligence Unit

the Asian Development Bank's head of trade and supply chain finance, said in an interview: "The advances that have happened in the last five months or so would be the equivalent of what would have happened over the course of a few years."¹⁸

Many businesses are investing in digital tools and processes as they look to adapt their supply chains (Figure 11). The IT and electronics sector leads in this respect, with half the companies in this sector having increased tech investments to support their supply chains by 50% or more, considerably more than the 33% average across the survey. In the footwear and apparel industry, on the other hand, just 13% of companies have increased tech investments to the same extent.

And what are the investments being made for? In what is a near-even split, 39% of supply-chain managers surveyed picked improving the manufacturing process as one of the two top

reasons when asked about their primary goal for investing in technology (Figure 12). This was closely followed by customer service (35%), supply and demand forecasting (34%) and inventory management (33%).

There are big differences across sectors in this context. Inventory management is the joint top area of tech investment for supply-chain managers in the food and beverage, general manufacturing and healthcare/pharmaceutical/biotechnology sectors.

But in a sector like automotives, investment in the manufacturing process remains of paramount importance for 66% of supply-chain managers, followed by supply and demand forecasts at 45%. Both numbers are higher than in all other sectors. Given the extent to which auto manufacturing has been caught short by production challenges and a failure to plan for the surge in demand for critical components, it is not hard to see why.

¹⁸ Asia: Taking the lead on digital trade." *Global Trade Review*. 2 November 2020. Available online at <https://www.gtreview.com/supplements/gtr-asia-2020/asia-taking-lead-digital-trade/>

CONCLUDING REMARKS: SUPPLY CHAINS FOR THE FUTURE



That the covid-19 pandemic severely disrupted supply chains in Asia-Pacific and beyond is undisputed, but it is evident the impacts of the disruptions began to wear off fairly quickly in the region, and that companies with supply chains cutting through Asia responded swiftly and deftly to make sure the disruptions did not hamper operations for long.

We let the pendulum swing a little bit too far in the direction of trying to reap economic efficiencies, at the expense of stability and resiliency in our supply chains. I do expect to see the pendulum start to swing back a little bit.

**Stephen Olson, senior research fellow,
Hinrich Foundation**

As a result, there hasn't been a fundamental shift in, or restructuring of, supply chains in Asia-Pacific. In the short-term, we've seen a range of responses from companies to manage their supply chains better. While smaller companies have focused on localising their supply chains, larger firms are looking to diversify them further to reduce dependence on a limited number of sources. And where there is a considerable focus on regionalisation and diversification among supply-chain specialists in North America and Europe, there is less of a focus on this in Asia.

There clearly seems to be less panic among Asian supply-chain managers, who are more bullish about the prospects of globalisation, while supply-chain managers in the West could be pulling back from very long and very global supply chains that have developed over the decades.

An extensive overhaul of supply chains may not have eventuated, but covid-19 has nonetheless brought about a renewed focus on resilience. Changes are afoot to make supply chains in the region more resilient to future shocks with a view towards securing the sustainability of business operations in the long term. This is important, given the full impact of the trade and tech tensions between China and the US is not yet known and broader uncertainty remains. To support this endeavour, the vast majority of companies are investing in technology, and digital tools and processes.

Industries are responding differently to the range of challenges they've faced over the past 18 months, but all with a common goal in mind—making supply chains more resilient.

Mr Olson points to this shift to resilience as probably the most important takeaway from the pandemic: "we let the pendulum swing a little bit too far in the direction of trying to reap economic efficiencies, at the expense of stability and resiliency in our supply chains. I do expect to see the pendulum start to swing back a little bit."

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