



## Positioning for the changes in Asia's supply chains



### Supply Chains

**Global supply chains will become more diversified as companies seek greater resilience and face pressures from rising nationalism and heightened geopolitics. Moving out of China will not be an easy or inexpensive decision, although other parts of Asia can be viable alternatives. Competitive costs, proximity to China and rising regional growth are Asia's key advantages today. As Asia continues to build on these advantages, it will need to incorporate greater climate considerations and more automation to continue to play a key role in the supply chains of tomorrow.**

Following supply disruptions of everything from pasta to masks to 5G phones, the COVID-19 outbreak has accelerated a rethink of how companies should configure their global supply chains. While cost and quality have historically been key considerations, supply chain resilience will become increasingly important.

Building supply chain resilience is more about diversification, rather than localisation. Supply chain disruptions, after all, are not limited to a particular country. Disruptions caused by Hurricanes Irma in the US and Maria in Puerto

Rico (in 2017) had also resulted in billions of dollars of losses.

### CHINA – STILL THE WORLD'S FACTORY?

China has played a central role in global supply chains. China's competitive advantage, according to Eastspring's Shanghai-based research team, lies not only in its cheaper labour costs and high productivity. China has, over the decades, built a comprehensive supply chain eco-system, which reduces logistical and coordination costs, making production far more economical than other countries. It is estimated that one Chinese worker can manufacture about the same value of goods as four workers from Asean combined<sup>1</sup>.

It is therefore not surprising that China currently accounts for a quarter of the world's manufacturing value add. See Fig. 1. In a recent call with analysts, Apple CEO Tim Cook remarked that the speed at which China's supply chain recovered after the initial COVID-19 related disruption, demonstrates its durability and resilience. Apple currently still relies on China for the final assembly of many of its key products, although Vietnam, Taiwan, India, and the US could become increasingly important.



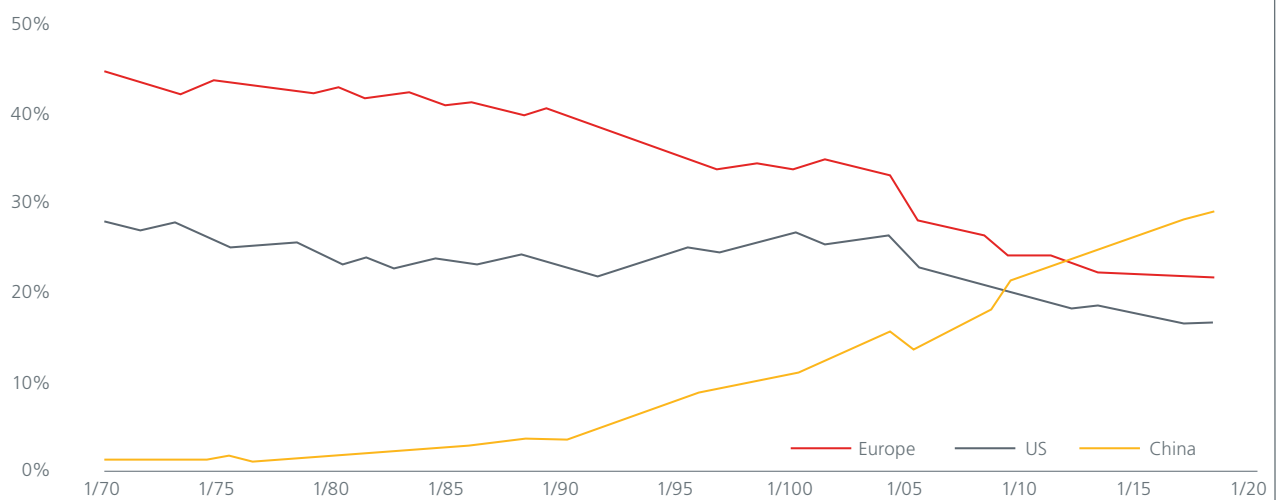
## ASIAN ALTERNATIVES

The quest for greater diversification, concerns over US-China trade tensions, heightened geopolitics and intensifying nationalism may nonetheless compel some companies to move part of their supply chains out of China. Should this occur, other Asian economies offer viable production locations.

Recent findings by BofA suggest that Southeast Asia will be one of the biggest beneficiaries of the realignment of supply chains as companies perceive it to be a viable alternative to China. See Fig. 2.

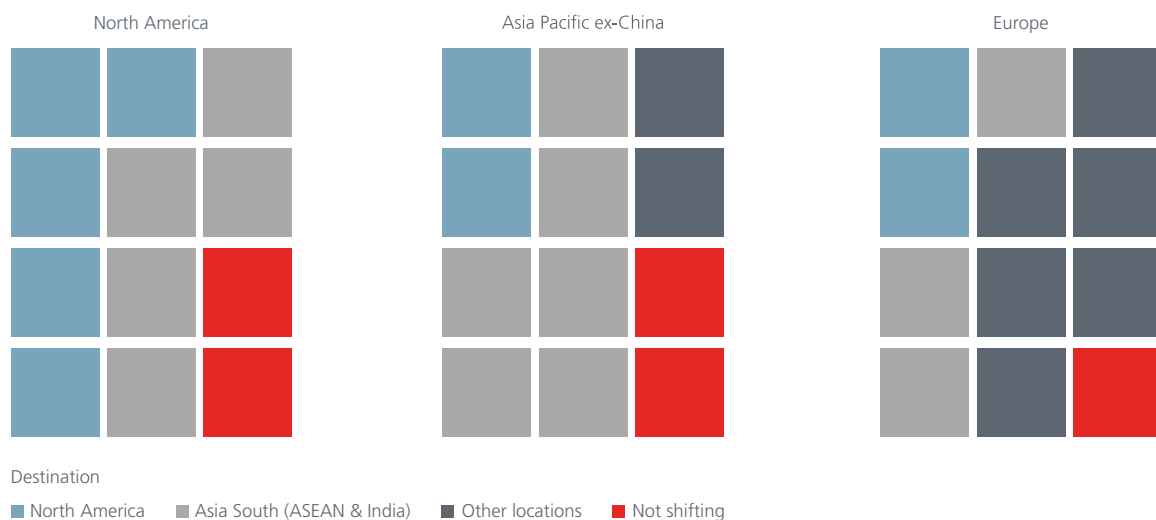
The Institute of International Finance believes that countries with similar production intensity within the same sectors are better positioned to capture

**Fig 1: Manufacturing value add as % of world<sup>2</sup>**



Source: United Nations.

**Fig 2: Companies' preferred choice for relocation<sup>3</sup>**



Source: BofA Global Research

existing production from China. Fig. 3 shows the concentration of local value-add or the share of each country's domestic contribution to their total exports in the different sectors<sup>4</sup>.

Vietnam and India appear well placed to compete in textile exports. In fact, Vietnam's textile exports rose 10% in 2019 during the US-China trade dispute<sup>6</sup>. Besides textiles however, India could become more important for labour-intensive production such as iPhone assembly. Vietnam is also poised to become a major production hub for Apple peripherals such as AirPods and Apple Watch. While Fig. 3 suggests that Indonesia's and Malaysia's competitiveness lies in producing lower end consumer goods, **Lilian See**, Eastspring Malaysia's Head of Research begs to differ. She points to the recent manufacturing facilities set up by Lam Research and Smith + Nephew as a testament to Malaysia's ability to move up the value chain.

Lam Research, a US company that designs and manufactures semiconductor processing equipment recently added Penang to its list of global production locations which include the US, South Korea and Austria<sup>7</sup>. Meanwhile, the first batch of production for Smith + Nephew, a British multinational medical equipment manufacturing company, from its Penang plant is expected sometime in 2020<sup>8</sup>. In Lilian's view, Malaysia's ability to meet the stringent demands of the highly regulated medical devices industry showcases the country's robust and high-quality supply chains.

Meanwhile, Korea and Taiwan seem to be the only two economies which can compete in higher end manufacturing. Taiwan may become a critical location for global tech giants' Research & Development given Google's and Apple's recent investments in Taiwan for datacenters, system

**Fig 3: Value added intensity of selected Asian economies across major tradable products<sup>5</sup>**



Source: WIOD, UNCTAD, IIF. The darker the colour, the higher the local production intensity for the indicated industry in the corresponding country.

Source: <sup>4</sup>China Views. Supply Chains in China. Institute of International Finance. October 2019. <sup>5</sup>WIOD, UNCTAD, IIF. The darker the colour, the higher the local production intensity for the indicated industry in the corresponding country. <sup>6</sup>Haver. Institute of International Finance. Data includes Jan – August 2019. <sup>7</sup><https://www.penangcatcentre.my/lam-research-to-invest-rm1bil-on-plant-expansion-in-penang/> <sup>8</sup><https://themalaysianreserve.com/2020/04/08/british-companies-eye-regional-hub-in-malaysia/>

integration, new display technology, chipset and optical electronics. Meanwhile, Thailand, well known for its food supply chain, appears to have few contenders in that segment.

Besides manufacturing capabilities, the ease of doing business, government policies, the quality of infrastructure and labour are also other important considerations. The 2019 Global Competitiveness Report shows that Asian economies in general are ranked in the top 50% among 141 countries, with a number of economies ranked within the top 30. See Fig. 4.

**Eastspring Vietnam's Head of Fixed Income** believes that Vietnam's edge lies in its relatively large and young labour force, competitive wages, political stability and supportive policies. She expects the trend of moving production out of China, which had started as a result of rising US-China trade tensions, to continue.

Meanwhile **Dr Somjin Sornpaisarn**, TMBAM-Eastspring's CEO believes that plans to build out Thailand's high-speed rail network, ports and airport as part of the Eastern Economic Corridor (EEC) development, will help lift the country's competitiveness. The EEC aims to revitalise Thailand's Eastern Seaboard, which has been the












country's industrial production powerhouse for the last 30 years. Dr Somjin sees the EEC as a viable production base for companies looking to diversify their supply chains.

## ROBOTICS AND AUTOMATION

Diversifying supply chains can be a costly exercise, especially for companies looking to diversify out of China. Robotics and automation will play a big role in trying to keep costs down as companies re-orientate their supply chains to countries with higher wages. Artificial intelligence will make it easier (and more cost effective) to relocate production, track supply chains, perform automated manufacturing (lights out manufacturing) and produce on demand.

According to the Robot Industries Association (RIA), a standard robotic system, over the course of its 15 year cycle, delivers total savings of about USD3.5 mn versus an initial outlay of USD250k plus operational costs of USD187k. BofA forecasts that the global installed base of industrial robots can hit 5 mn units by 2025, doubling 2019 levels as robots become more affordable, flexible and autonomous. While the auto industry is currently the biggest user of robotics, research indicates that the food & beverage, life sciences, electronics and logistics

**Fig 4: Global Competitiveness Index (2019 Ranking – out of 141 countries)<sup>9</sup>**

Country	Global Competitive Index (2019 ranking)	Utility infrastructure	ICT adoption	Future orientation of government	Labour market
 Singapore	1	5	5	8	1
 Japan	6	11	6	17	16
 Taiwan	12	40	11	47	15
 S Korea	13	22	1	16	51
 Malaysia	27	51	33	25	20
 China	28	65	18	28	72
 Thailand	40	90	62	77	46
 Indonesia	50	89	72	68	85
 Philippines	64	96	39	60	88
 Vietnam	67	87	41	40	83
 India	68	103	120	15	103

Source: Global Competitiveness Report 2019. World Economic Forum.



industries will be the next high growth areas<sup>10</sup>. This trend may benefit Japan, the world's largest manufacturer of industrial robots.

Meanwhile, as semiconductors are the backbone behind our computing power, Asia's semiconductor and related industries will also likely benefit from the higher penetration of factory automation and robotics going forward. Asia is home to top semiconductor packaging companies in China (Read "The chips that matter") as well as leading semiconductor manufacturing companies in Taiwan and Korea.

## CLIMATE CONSIDERATIONS

Global consumers are increasingly favouring sustainable products. Going forward, efforts to reduce carbon footprint, uncertainty regarding the future quality and availability of raw materials, as well as concerns over worker welfare will have greater influence over where companies source and manufacture their products.

According to the World Health Organisation, International Labour Organisation and United Nations Development Programme, productivity losses from heat-related disruption and injury could rise above USD2 tr by 2030. The Germanwatch Global Climate Risk Index 2020 which measures exposure and vulnerability to extreme climate events ranks Philippines, Thailand and Vietnam among countries which have been most impacted by physical climate risk.

Asia also faces other climate challenges – It is more reliant than most developed countries on fossil fuels. Nonetheless Southeast Asia has ambitious plans to grow the share of renewables in its electricity production mix to 20% by 2040. Vietnam is also targeting to increase the share of renewables to 25% by 2030.

## TOMORROW'S SUPPLY CHAINS

Global supply chains will become increasingly diversified, although the pace of change will differ across industries. There will be a rising preference for critical goods with high social utility such as medicine and medical equipment, to be manufactured closer to home or by strategic allies. Countries may also start to view selected technology products as strategic.

The incremental costs from supply chain moves, which includes higher depreciation and operating expenses for new sites, higher labour costs before fully leveraging on automation and robotics are likely to be borne by both companies and consumers. This could have longer term implications for profits and inflation.

As China is the second largest consumer market in the world, the desire to be "close to the customer" may help keep production lines in Asia. Given rising income levels in Asia, firms are also building self-contained regional supply chains just to service Asian markets<sup>11</sup>. Meanwhile, supply chain diversification may not be a losing proposition for China – China has been increasingly moving up the value chain and transforming its economy to be more focused on services.

Competitive costs, proximity to China and rising regional growth are Asia's key advantages today. As Asia continues to build on these advantages, it will need to incorporate greater climate considerations and more automation to continue to play a key role in the supply chains for tomorrow.

**This is the first of six articles in our Asian Expert Series which explores the future of Asia post-covid.**

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