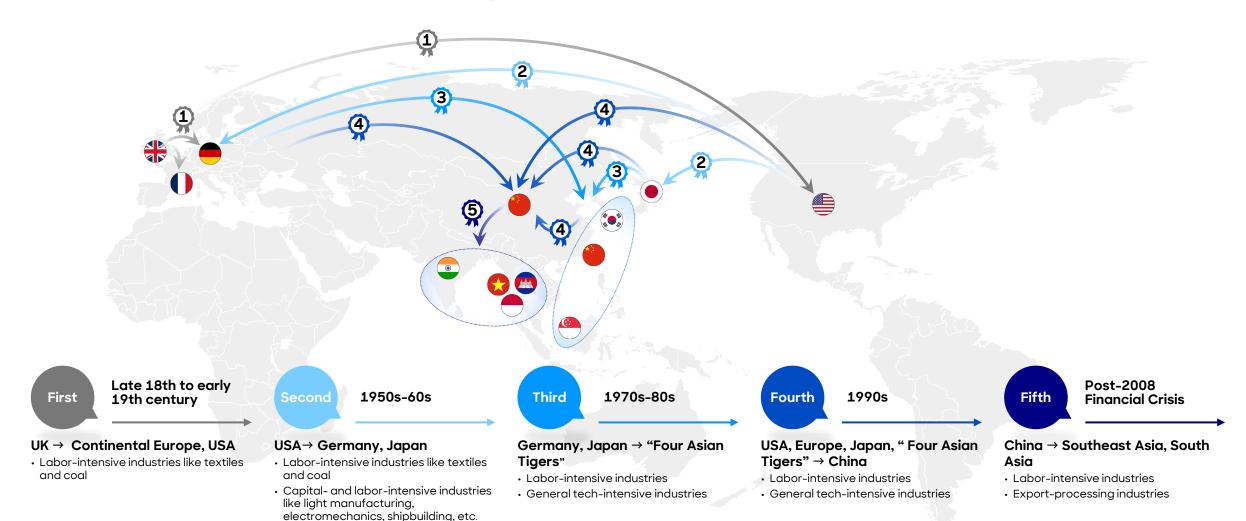


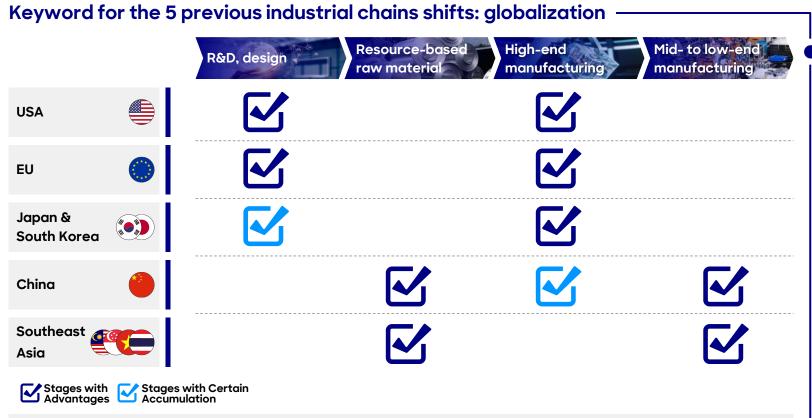
Roland Berger

Since the Industrial Revolution, five major industry shifts driven by globalization have profoundly reshaped the global supply chain



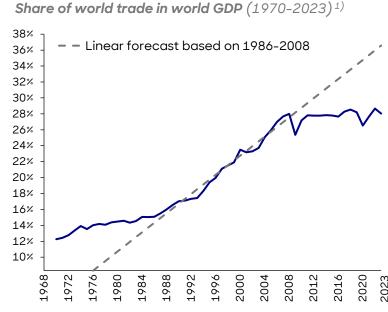
Source: Guosen Securities; Roland Berger | 2

Previous industry shifts created a highly integrated Global SC which is now transitioning towards deglobalization due to macroeconomic changes



- USA, Europe, Japan and Korea dominate high-value segments such as R&D, design, high-end Mfg and SC services
- **China**, as the "world's factory," is working to integrate into high-end Mfg but still holds an advantage in mid- to low-end Mfg
- · Southeast Asia focuses on low-value segments like mid- to low-end Mfg and raw material supply

Keywords for the 6th industrial chain shift: regionalization, localization



- After 2008, the global supply chain entered a phase of structural adjustment
- Around 2019, driven by trade disputes, geopolitical conflicts, and natural disasters, the world entered an era of deglobalization and regionalization

Source: WDI; Roland Berger Roland Berger 1 3

¹⁾ Based on constant US \$;

Traditional Global SC no longer meets the resilience needs of regions, prompting Europe, North America, and Asia to build their own systems, a 'multi-polar SC'

The multi-polar competitive structure of the Europe, North America, and Asia



Europe: Re-industrialization

- "National Industrial Strategy 2030 (Germany, 2019)", strengthening government guidance and support for industries
- The "CBAM (2021)" legislative draft, imposing carbon tariffs on high-carbon imported products
- "EU Chips Act (2022)", supporting the development of the local semiconductor industry
- "Net Zero Industry Act (2024)", aimed at increasing the EU's domestic capacity for green technologies

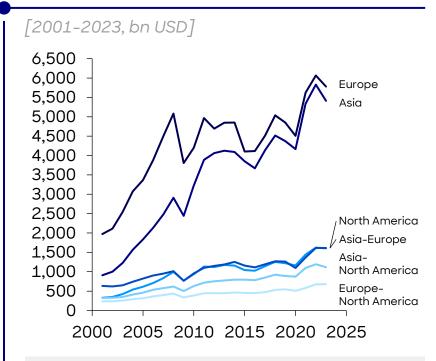
Asia: Complete Value Chain Development

- RECP signed in 2020
- China: Establishing the dual circulation strategy (2020); Supporting foreign investment in mid- to high-end mfg, high-tech, and the transformation of traditional industries (2021); Focusing on new quality productive forces (2024)
- Japan: Industrial policy focused on "strategic autonomy" and "strategic indispensability" (since 2020)
- South Korea: "K-Chips Act (2022)"

North America: Mfg Reshoring

- Obama Administration: "A Framework for Revitalizing American Manufacturing (2009)", "Manufacturing Enhancement Act (2010)"
- Trump Administration: "Strategy for American Leadership in Advanced Manufacturing (2018)"
- Biden Administration: "CHIPS and Science Act (2022)", "Inflation Reduction Act (2022)"
- Trump 2.0: Tariffs used as a tool to promote reshoring of manufacturing activities (2025)

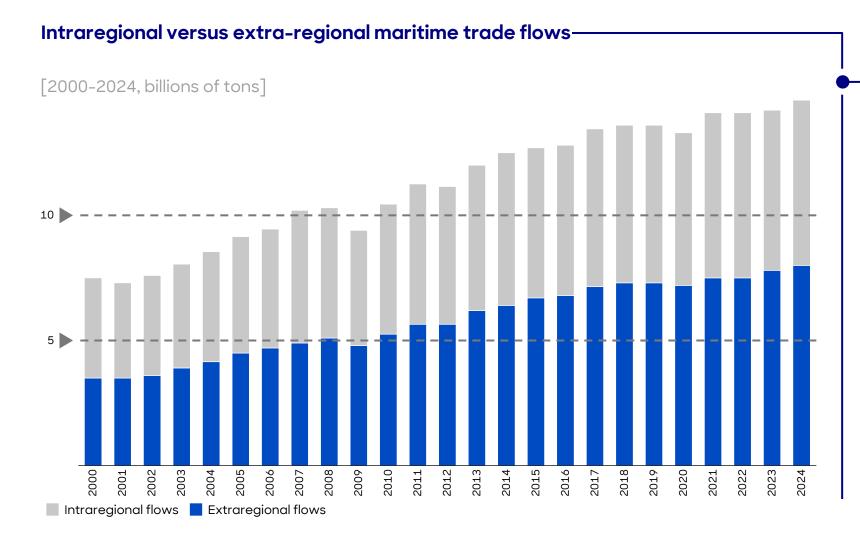
Trade value within and between regions



 Since the COVID-19, deglobalization has become more pronounced, trade within the three major regions—Europe, Asia, and North America—has surged, while intra-regional trade has grown more slowly

Source: Trademap: Roland Berger Roland Berger 1 4

Multi-polar SC results in more regionally interconnected and globally distributed maritime trade flows - increasing complexity for maritime players



Keywords for multi-polar SC: globally distributed and supply chains diversification

Geography of trade flows is evolving

- · Share of non-mainline flows rising driven by increase in South-South trade such as trade links between East Asia and Latin America, Africa and East Asia
- Expansion of non-mainline East-West flows supported by expanding trade between East Asia and the Indian subcontinent



Reconfiguration of global supply chains to continue

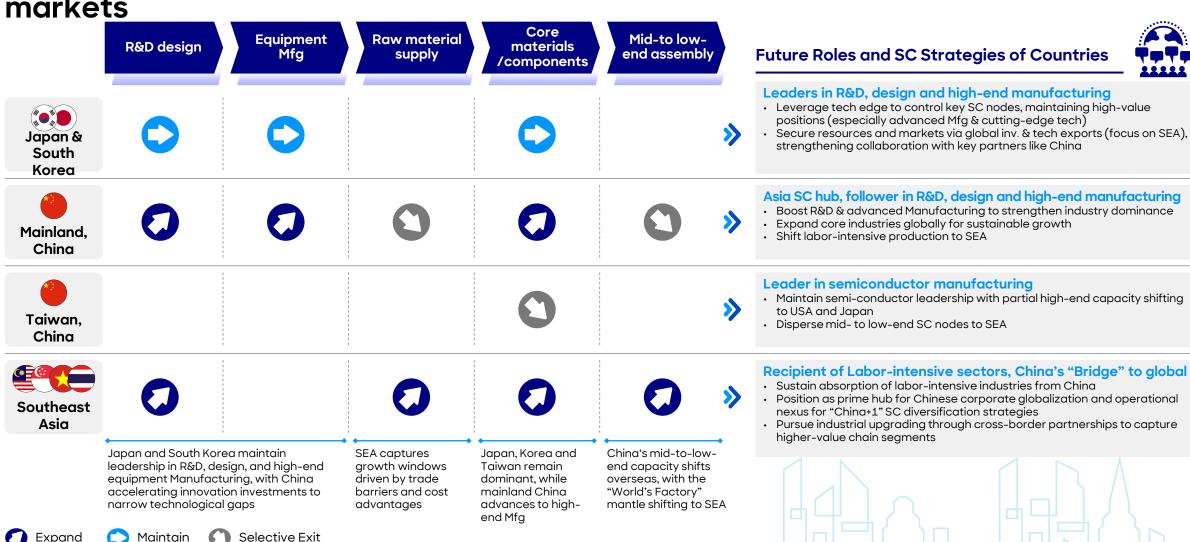
· Companies will continue to diversity sourcing and manufacturing locations in response to geopolitical tensions, increase trade barriers and supply chain disruptions - resulting in a gradual move away from highly centralized single-source models towards more distributed, multi-origin networks



Demand for maritime services to be impacted

· As trade policy remains uncertain growth in nonmainline trade routes expected to continue creating more complex maritime routes

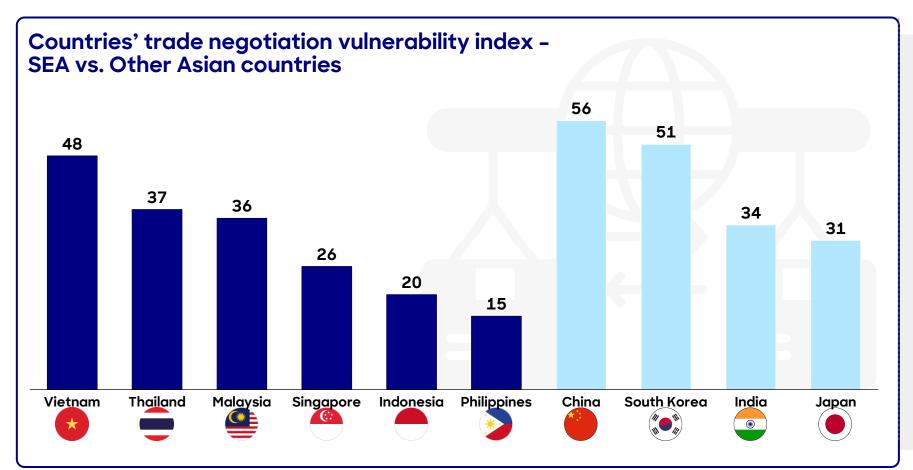
Amid ongoing SC reconfiguration, China is prioritizing upstream high-end segments, SEA absorbing labor-intensive industries as "bridge" to global markets



Source: Roland Berger analysis

SEA's trade vulnerability varies, Vietnam, Thailand, and Malaysia most exposed, while expanding U.S. tariffs beyond China reshape regional dynamics

Trade Negotiation Vulnerability Index - Southeast Asia (SEA)



Key insights

- SEA nations show varying levels of trade negotiation vulnerability, with Vietnam, Thailand, and Malaysia ranking the highest due to their strong export dependence on the U.S., while Indonesia and the Philippines have lower vulnerability, reflecting more diversified trade relationships
- China and South Korea have the highest vulnerability in the region, largely driven by U.S. trade policies, including tariffs and supply chain decoupling efforts, which have significantly impacted their trade exposure
- Recent U.S. trade policies, including tariffs targeting China and South Korea, and trade tensions with Japan and India, have reshaped trade dynamics in Asia, prompting countries to reassess their strategies by diversifying export markets and strengthening regional partnerships to enhance economic resilience

Source: Roland Berger | 7

SEA's supply chains face major shifts driven by manufacturing relocation from China, infrastructure gaps, technology upgrades, and geopolitical tensions

Asian Supply Chain Reconfiguration Megatrends for Southeast Asia (SEA)

	Key Trends	Description	Countries Affected ¹⁾
Shifts in Manufacturing & Trade Flows	Relocation of Labor-Intensive Manufacturing to SEA	China's mid-to-low-end industries (e.g., textiles and consumer electronics) are relocating to SEA due to rising labor costs and trade tensions	* • •
	China+1 Diversification Strategies	Global firms adopt "China+1" to reduce dependency and mitigate China-related geopolitical & trade risks, making SEA a key operational nexus	**
	Increased Intra-Regional Trade Integration	Growth of intra-Asian trade driven by regional agreements like RCEP, creating integrated regional supply chains with higher intra-SEA economic dependency	- • •
	Intensifying Low-End Manufacturing Competition	Homogeneous and overlapping capacity expansions intensify competition among SEA countries, leading to market saturation	
Supply Chain Bottlenecks & Infrastructure Gaps	Infrastructure Gaps in Logistics	Insufficient infrastructure investments in ports, roads, and energy grids continue to limit SEA's manufacturing efficiency, despite rapid inflow of FDIs	
	ASEAN Collaboration Inefficiencies	Lack of unified standards limits regional synergy despite shared goals	- • •
	Workforce Upskilling for Advanced Manufacturing	Rising demand for skilled labor in automation and precision manufacturing strains existing vocational training systems	
High-Tech & Green Supply Chain Transformation	Green Tech Investment Surge	EU carbon tariffs and net-zero policies drive investments in renewables, EVs, and sustainable manufacturing	
	Tech Transfer from Northeast Asia	Japan/South Korea/Taiwan shift mid-tier tech to SEA, but high-end R&D remains concentrated	
Geopolitical	Geopolitical Fragmentation Risks	SEA nations face pressure to align with US- or China-centric supply chains, creating trade policy inconsistencies	

¹⁾ Ranked from most affected (left) to least affected (right); other countries in the SEA may still be affected, although the level of impact is not as high as in the three countries highlighted

Source: WDI, Roland Berger Roland Berger | 8

There are 5 potential impact areas for local, regional and global businesses operating in SEA ...

Overview of supply chain reconfiguration and tariff implications to SEA

Changes in SEA exports to the US

2 Supply chain reconfigurations

- 3 Manufacturing footprints
- Potential SEA retaliation
- 5 Operational reviews

- Softened demand for SEAproduced goods with companies renegotiating contracts with SEA-based manufacturers for lower volumes
- Reduced export competitiveness of countries with high tariff increases (e.g. Vietnam, Thailand, Malaysia, Cambodia)
- Potential economic and production slowdowns, and job losses – e.g. solar panel industry in Thailand which was hit with tariffs up to 375%
- Reduced export revenues of SEA countries which impacts economic growth

- Companies will reconsider supplier locations and supply chain network to minimize tariff exposure
- Increased risk of capital flight if manufacturingfocused corporations relocate operations to less tariff-impacted countries
- Existing manufacturing operations in heavily tariffimpacted sectors and countries will reduce or halt operations
- SEA countries with lower tariff impact and preferential trade agreements may benefit from manufacturing rebasing
- Companies may hold off on investments into manufacturing presence expansion in the region

- SEA countries have largely ruled out retaliatory tariffs against the US given high economic dependence on the US market and investments
- ASEAN's strategy is to pursue dialogue and constructive talks with the US to find mutually acceptable solutions
- Governments (e.g. Singapore) are forming task forces to help businesses navigate uncertainties caused by tariffs
- Companies are reassessing cost structures, supply chain dependencies, and market assumptions to enhance resilience
- Increased push towards operational efficiency, streamlining, and possibly accelerating digital transformation to mitigate tariff-related risks and sustain growth

Source: Desk research, Roland Berger 9

... resulting in implications for companies looking to derisk including focus on production locations, strengthening resilience and leveraging regional opportunities

Key implications for companies

Relocation

Shift Manufacturing Closer to End Markets: 'China + 1' Strategy is increasingly being adopted by companies to reduce over-reliance on China, mitigating risks such as political tensions

 Policy Alianment and Industry Challenges: Assess whether the key policies in potential relocation countries align with your company's needs and regional challenges, such as political instability, infrastructure gaps, or regulatory hurdles should also be considered

Example: Apple has increasingly adopted the "China + 1" strategy. diversifying its manufacturing operations out of China to countries like India, Vietnam, and Malaysia

Resilience building

- · Diversification of Supply and Demand Source: Multi-sourcing, where companies procure materials from multiple regions or suppliers, and sell to different countries mitigates risks such as political instability and tariff changes and increases flexibility
- · Stockpiling Critical Materials: Given the unpredictability of global supply chains, companies should consider strategic stockpiling of essential which can be done at a central warehouse or across regional hubs to ensure supply continuity

Example: Toyota uses a multi-sourcing approach for key components, e.g., Toyota sources semiconductor chips from various suppliers across Japan. Taiwan, and South Korea

Regional collaboration

- Consideration of Industry-Specific Hubs: Companies could focus on countries with strong industry foundation and policies (e.g., tax incentives) designed to nurture these industries, e.g., Vietnam has become a major hub for electronics and textiles
- ASEAN Integration: ASEAN is increasingly becoming a more integrated economic bloc, and companies can benefit from crossborder partnerships and regional supply chain networks

Example: Unilever strategically leverages ASEAN countries' strengths by establishing a food manufacturing hub in Thailand consumer goods manufacturing in Indonesia, and using Singapore as its regional hub for logistics and supply chain management

Sustainability

- Sustainability Conscious: Companies prioritizing eco-friendly standards, such as reducing carbon emissions, ensure compliance with sustainability requirements in different countries and help attracting environmentallyconscious consumers
- **Leveraging Government Incentives:** Companies that adopt sustainable practices can benefit from government incentives (e.g., tax breaks, subsidies, or grants) which can lower costs

Example: Tesla places a strong emphasis on sustainability within its operations. from sourcing raw materials for EV production to using renewable energy at its Gigafactories

Reconfiguration of supply chain has implications for maritime players in SEA – increased uncertainties creates challenges and opportunities

Key challenges and opportunities for SEA maritime players

Challenges



Reduced demand for maritime services

 High likelihood of manufacturing centres expected to shift to locations with lower tariff or reshoring closer to end-use markets - reducing overall demand for maritime throughput from producers in Asia with end customers in North America



Increased trade barriers

 Imposition of new port fees for using Chinese built and operated vessels adds financial burden and uncertainty over port call strategies while tariff and changes to custom enforcement creates additional compliance requirements – resulting in increased operational friction for maritime players



Shifting trade landscape

 Continuously shifting trade and supply chain landscape create uncertainties in medium-term and long-term strategies by manufacturers especially in Asia constraining ability of long-term demand planning by maritime players



Opportunities



Focus on improving operational resilience

 Continued investments in digitalization and automation optimize operational costs and efficiency
 enhancing operational resilience of maritime players to meet trade uncertainties



Emphasis on regional shipping

 Growing regional integration in ASEAN and ASIA creates opportunities for specialized intra-Asia shipping and feeder services that avoid US-China routes due to trade restrictions



SEA as alternative shipping hub

 Increased restriction affecting China-US shipping provides opportunity for SEA to strengthen its role as logistics and manufacturing hub connecting the two regions

Source: Roland Berger Roland Berger

