ECONOMICS

Regional

ASEAN Economics

Deepening Supply Chains in a Fragmented World

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US-China Rivalry is Channeling Trade & Investments to ASEAN

"Geoeconomic fragmentation" – defined as *policy-driven reversal of global economic integration often by guided strategic considerations* - is reshaping trade and investment flows. The IMF warned that fragmentation and formation of opposing geopolitical blocs centered on the two largest economies – US and China – could reduce global GDP, undermine trade and increase financial stability risks. ASEAN is not immune to the fallout from fragmentation, but has so far benefited from the rechanneling of trade and investment because of its "neutrality".

ASEAN has seen large increases in exports to *both* the US and China. Share of US imports from ASEAN has grown to 10.3% in 2022 from 7.3% in 2018, boosted by Vietnam and Thailand. Share of China imports from ASEAN has risen to 15% in 2022 from 12.6% in 2018, led by Indonesia and Malaysia. ASEAN's share of China's outward direct investment rose to 11% in 2021 from 9.6% in 2018, as Chinese firms shift production to manage geopolitical risk, reduce costs and expand their regional influence. China's ODI to ASEAN grew +44% between 2018 and 2021, led by Indonesia, Thailand and Vietnam.

ASEAN Increasingly Reliant on China's Intermediate Imports

ASEAN's growing reliance on China for imports of components and capital goods, however, increases the vulnerability to disruptions if US-China sanctions and tensions worsen. Share of ASEAN-6's intermediate and capital goods imports from China has risen to 24% in 2020 from 21% in 2018. Cambodia (44% in 2020 vs. 43.5% in 2018) and Vietnam (33.7% in 2020 vs. 29.6% in 2018) are more reliant on Chinese inputs ranging from clothing materials to machinery, equipment and tools. Share of Indonesia's imports from China has risen materially. Including for electrical equipment, organic chemicals and machinery & mechanical appliances.

Friend-shoring: Japan and Korea Pivot Towards ASEAN

Both Japan and South Korea are pivoting towards ASEAN to reduce their reliance on China. Japan has announced subsidies for firms onshoring and moving production to ASEAN. Japanese investment in ASEAN is rising, whilst investment in China has stagnated, with Thailand, Vietnam, and Indonesia receiving larger investments. Since the launch of Korea's New Southern Policy Framework to advance ties, ASEAN's share of Korean exports has risen to 18.3% in 2022 from 16.6% in 2017. Korean outward direct investment to ASEAN has climbed +50% over the period.

Fragmented Electronics and Energy Markets

The electronics industry has become the epicenter of geoeconomic fragmentation. Geopolitical rivalry and export controls have reduced US-China tech trade. China's share of US electronics imports has fallen sharply from 52% in 2018 to 37% in 2022, while ASEAN's share has risen to 26% in 2022 from 17% in 2018. China remains the largest market for US semiconductor exports, but its share has fallen to 17% of total in 2022 from 22% in 2020. Both Korea and Japan have reduced their export shares of electronics to China in favor of ASEAN, in part as component demand rises with production relocation. US chip-related restrictions on China may however indirectly impact exports of Singapore and Malaysia, given their roles in chip fabrication and packaging. Escalating US-China chip rivalry is fueling investments in facilities outside China, especially in Singapore, Malaysia and Vietnam. The energy market is also fragmenting, with Russia's crude oil products being diverted to China, India, and the Middle East. Europe is importing more expensive oil from the US, Norway, and Saudi Arabia. Malaysia (mineral fuels) and Indonesia (coal) are benefiting from the shift in energy supplies, with rising demand from Japan, South Korea and Europe.

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Deepening Supply Chains in a Fragmented World

"Investment flows are also shifting. Global foreign direct investment or FDI flows grew strongly in the past decades, as companies established footprints all over the world. They found the best places to do business and linked them up into global supply chains. Singapore has benefited tremendously from this; we built our economy around such global investments. But now this too is changing. Geopolitics is re-channeling FDI flows …

Unfortunately we are now in a world where rules are shaped not by logic or principles, but by geopolitics and security imperatives. And Singapore is already feeling the impact."

Deputy Prime Minister Lawrence Wong in 2023 May Day Rally speech, 1 May 2023.

The global economy is becoming increasingly fragmented amid rising geopolitical tensions and protectionism. The World Trade Uncertainty Index[1], which counts the number of times 'uncertainty' is mentioned in the Economist Intelligence Unit (EIU) country reports jumped in 1Q2023 to the highest level in 3 years (see Fig 1).

Fig 1: World Trade Uncertainty Index Rose to a 3-Year High in 1Q2023

Source: World Uncertainty Index

The IMF warned that fragmentation and formation of opposing geopolitical blocs centered on the two largest economies – US and China – could reduce global GDP, undermine trade and increase financial stability risks. The latest IMF World Economic Outlook Report [2] estimated that the impact from geoeconomic fragmentation was especially negative for Southeast Asia, which was grouped under China bloc (except Indonesia which was categorized as non-aligned). The medium-term negative impact on investment flows was -2.9% to -3.2%, as the region faces heightened barriers to the major sources of investments, namely advanced economies. Long-term GDP losses for ASEAN due to policy uncertainty was estimated at -6.4% to -6.6%.

We examine how "geo-economic fragmentation" – defined as a *policy-driven reversal of global economic integration often guided by strategic considerations* – is reshaping and impacting trade and FDI flows to ASEAN. Geopolitical rivalries have fueled greater protectionism and increasing use of

[1] "*The World Uncertainty Index*", Hites Ahir, Nicholas Bloom, Davide Furceri (Oct 2018).
[2] IMF World Economic Outlook Report Chapter 4, "*Geoeconomic Fragmentation and Foreign Direct Investment*", Apr 2023. (link)

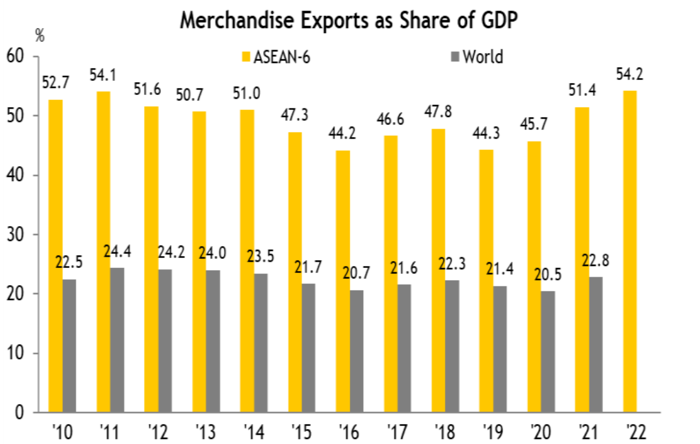
cross-border restrictions on national security grounds. Estimates of losses range from 1% of GDP due to trade and sectoral misallocation to as much as 12% of GDP from full technological decoupling[3].

Global goods and capital flows have stagnated over the past decade in contrast to steady growth in prior years, a phenomenon that observers call "slowbalization". ASEAN has been less affected by "slowbalization" so far, as its member states benefit from the diversion and rechanneling of trade and investment, largely because of ASEAN's *neutral* stance in the US-China geopolitical rivalry.

ASEAN's geopolitical neutrality is facilitating a deepening of its supply chains and economic linkages with both rival blocs, strengthening its connectivity and role as a bridge in a fragmented world. ASEAN-6's merchandise exports and FDI inflows as a share of GDP have been increasing even as geopolitical tensions took a turn for the worse from the US-China trade war in 2018.

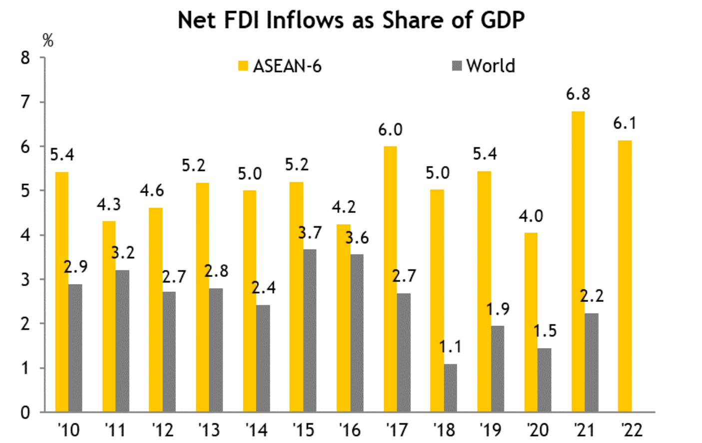
ASEAN's exports rose to 54% of GDP in 2022 from 44% of GDP in 2019, even as the global export to GDP ratio hovered at similar levels to previous years (see Fig 2). ASEAN's FDI to GDP ratio increased to a historic high of 6.8% in 2021 and 6.1% in 2022, even as the global FDI to GDP ratio (2.2%) remained below mid-decade levels (see Fig 3).

Fig 2: ASEAN Export to GDP Ratio Rising Since 2019



Source: CEIC, World Bank

Fig 3: ASEAN FDI to GDP Ratio Hit Highs in 2021 and 2022



Source: CEIC, World Bank

We assess how ASEAN has been impacted from geo-economic fragmentation, by examining trade and capital flows with the US, China, Japan and South Korea. We also look at (1) the global electronic supply chain, which has been thrust into the spotlight as the epicenter of fragmentation and supply chain reconfigurations; and (2) the energy market, which has become more fragmented since the Russia-Ukraine War.

[3] Aiyar, S and Ilyina, A (2023), "*Geo-economic fragmentation and the world economy*," CEPR, 27 Mar 2023.

US-China Rivalry: More Measures in Pipeline

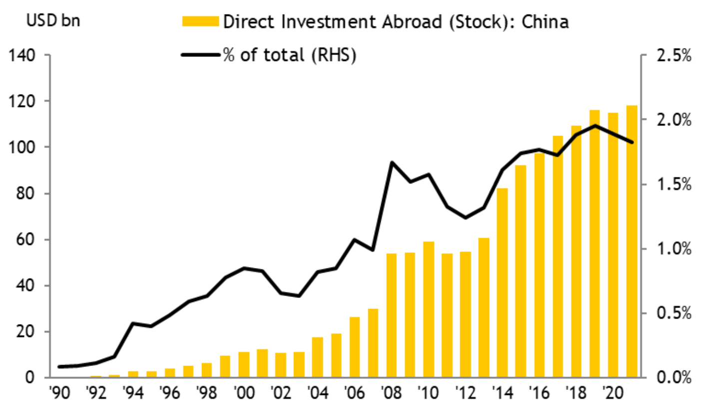
US-China relations continue to deteriorate amid Beijing's close relationship with Russia, differences over Taiwan, and technology decoupling between the two powers. Recent weeks have seen growing tensions as China rewrote its law against espionage to tighten state control over a wider range of data and digital activities; brought in foreign executives at Shanghai's Bain & Co. for questioning; and launched a cybersecurity review of imports from chip maker Micron.

Worsening US-China ties may force countries to choose sides. For instance, the US urged South Korea not to fill chip shortfalls in China if Beijing bans chipmaker Micron Technology from selling chips[4].

American firms will likely diversify their investments away from China to other parts of the world as US-China relations deteriorate. US' cumulative total direct investment in China amounted to nearly US$120bn at the end of 2021 (see Fig 4), growing +8.2% CAGR over the past decade, with around half going into manufacturing. Bulk of the investment in manufacturing was in chemicals, transportation equipment, and computers/electronics (see Fig 5).

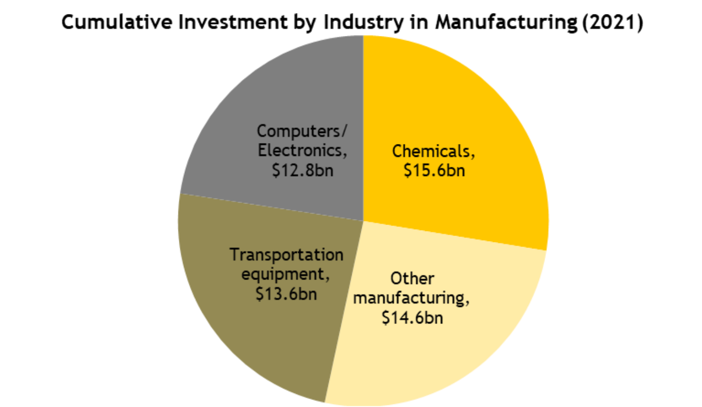
President Joe Biden plans to sign an executive order which will limit investment in key parts of China's economy by American businesses, and wants key allies to back the concept at the G-7 summit on 19 May[5]. The order will cover the fields of semiconductors, artificial intelligence, and quantum computing. This follows the new rules released on Oct 2022 prohibiting US companies from exporting the technology, software and equipment used in producing advanced computing chips and supercomputers to China.

Fig 4: US Cumulative Direct Investment in China Climbed to US$118bn as of 2021



Source: CEIC, Bureau of Economic Analysis

Fig 5: US Investment in China's Manufacturing Sector Largely Focused on Chemicals, Transportation, and Electronics

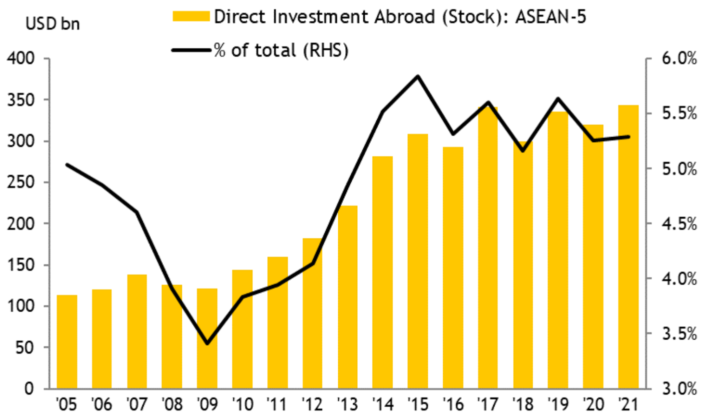


Source: Bureau of Economic Analysis

US' outbound investment into ASEAN is larger than to China in value terms, and has been growing over the past decade (see Fig 6). Cumulative investment to ASEAN amounted to US$343bn in 2021 with the bulk going to Singapore (US$294bn in 2021). Indonesia ($15.7bn) and Thailand ($15.5bn) are the next two largest destinations. Investment in Malaysia ($12.5bn) and the Philippines ($4.7bn) have fallen in recent years (see Fig 7).

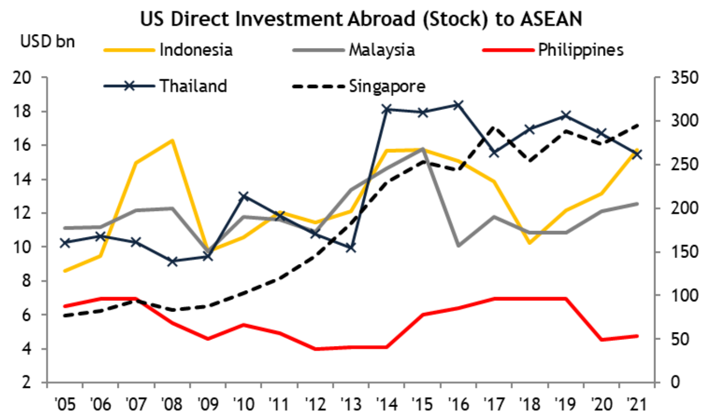
[4] Reuters, "*US urges South Korea not to fill chip shortfalls in China if Micron banned, Financial Times reports*", 24 Apr 2023.
[5] Bloomberg, "*Biden Aims to Unveil China Investment Curbs With G-7 Backing*", 20 Apr 2023.

Fig 6: US Cumulative Direct Investment to ASEAN-5 Rose from $12bn in 2011 to $15.7bn in 2021



Source: CEIC, Bureau of Economic Analysis

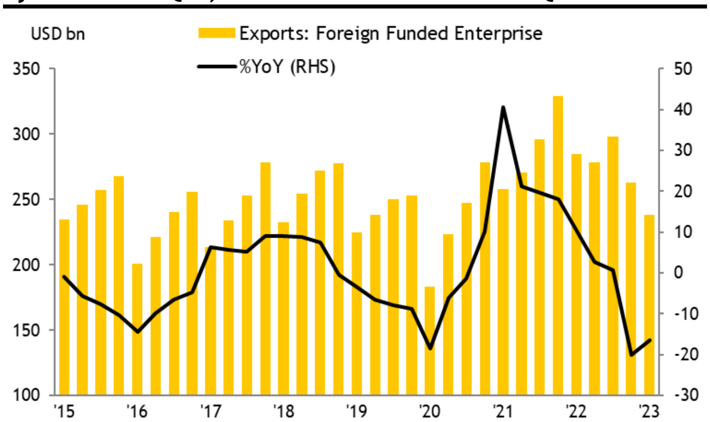
Fig 7: US Outbound Investment to ASEAN Mainly Driven by Singapore; Indonesia & Thailand Next Largest Destinations



Source: CEIC, Bureau of Economic Analysis

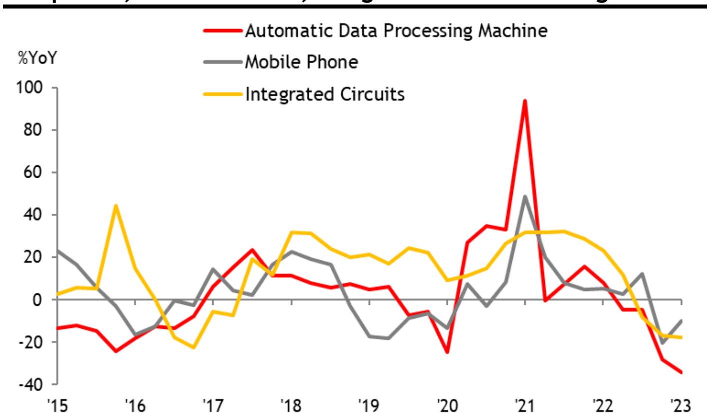
Latest trade data from China implies that a supply chain relocation away from China may be accelerating. Shipments from foreign-invested companies plunged by -16.4% in 1Q 2023 from a year ago (see Fig 8). The decline was mostly driven by "processing trade" – which involves importing all or part of the raw materials and re-exporting the finished products after processing or assembly by enterprises within the country[6]. In particular, smartphones (-31.9%) - of which around 80% of Chinese smartphone exports belong to the processing trade - computers (-25.9%), and integrated circuits (-2.2%) continued to fall in March (see Fig 9).

Fig 8: China – Exports by Foreign-Invested Companies Plunged by -16.4% in 1Q23, to the Lowest Level Since 2Q20



Source: CEIC

Fig 9: China – Exports of "Processing Trade" Products Such as Computers, Mobile Phones, Integrated Circuits Falling



Source: CEIC

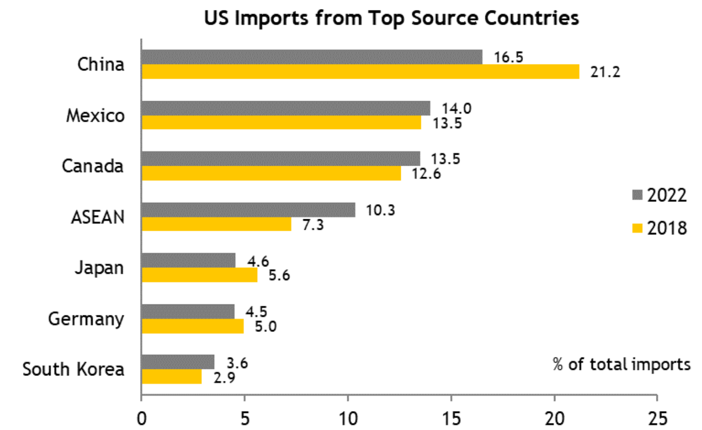
US' dependence on China imports has fallen since the start of the US-China trade war, with US share of imports from China declining to 16.5% in 2022 from 21.2% in 2018 (see Fig 10). On the other hand, US' share of imports from ASEAN has grown visibly from 7.3% in 2018 (US$18.4bn) to 10.3% in 2022 ($33.6bn). Imports from Mexico and Canada have risen in recent years as well, partly reflecting "nearshoring" as the US imposed tariffs and trade restrictions on China.

In ASEAN, Cambodia, Vietnam and Thailand are large beneficiaries from US' trade diversion. The US accounted for 29.5% of Vietnam's total exports in 2022 (up from 19.5% in 2018) and 16.6% of Thailand's total exports in 2022 (up from 11.1% in 2018) (see Fig 12). US imports data shows that the boost from both countries were mainly in electrical machinery & equipment and machinery & mechanical appliances – categories which include computers, smartphones, office

[6] SCMP, "*China trade data points to accelerated supply chain relocation despite rebound in March exports*", 21 Apr 2023.

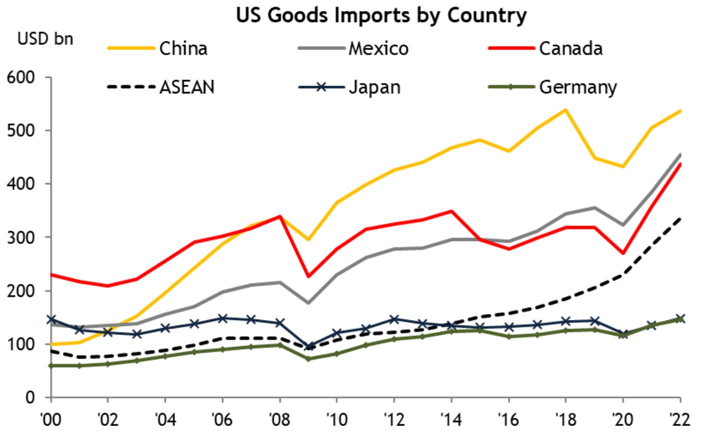
machines, monitors, etc. – but also furniture, bedding & lights, and clothing (see Table 1).

Fig 10: US - Share of Imports from China Has Fallen Since the Trade War; Visible Gain in Share of Imports from ASEAN



Source: CEIC

Fig 11: US - China Remains Largest Import Source, But Imports from ASEAN, Mexico, and Canada Gaining Ground



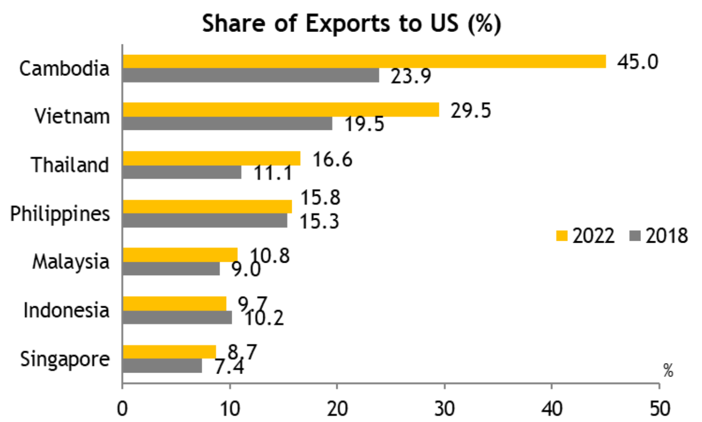
Source: CEIC

Table 1: US Imports from Vietnam & Thailand - Largest Contributors to Growth Between 2018 and 2022

	2018	2022	Growth		2018	2022	Growth
From Vietnam	USD mn	USD mn	%	From Thailand	USD mn	USD mn	%
Total Imports	**49,139**	**127,521**	**160**	**Total Imports**	**31,873**	**58,736**	**84**
Electrical Machinery & Equipment, Television Image & Sound Recorders & Reproducers	11,000	45,468	313	Electrical Machinery & Equipment, Television Image & Sound Recorders & Reproducers	7,851	16,699	113
Machinery & Mechanical Appliances, Parts Thereof	2,782	12,887	363	Machinery & Mechanical Appliances, Parts Thereof	7,937	15,163	91
Furniture, Bedding, Lights	5,089	13,198	159	Rubber & Articles Thereof	3,329	5,336	60
Articles of Apparel & Clothing Accessories	12,185	18,024	48	Vehicles Other Than Railway	1,035	2,251	117
Footwear, Gaiters	6,203	10,906	76	Furniture, Bedding, Lights	234	1,229	426
Toys, Games & Sports Requisites	715	3,203	348	Articles of Iron or Steel	808	1,579	95
Plastics & Articles Thereof	469	2,745	486	Aluminum & Articles Thereof	280	884	216
Rubber & Articles Thereof	669	1,558	133	Optical, Photographic, Medical or Surgical Instruments Parts & Accessories Thereof	1,058	1,636	55

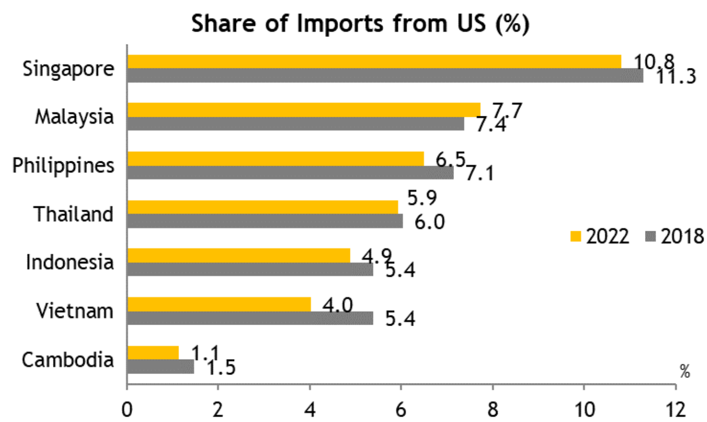
Source: CEIC

Fig 12: US Share of Exports Rising Strongly for Cambodia and Vietnam



Source: CEIC

Fig 13: US Share of ASEAN Imports Relatively Stable over Past Five Years



Source: CEIC

Share of ASEAN's imports sourced from the US has remained relatively stable between 2018 and 2022 (see Fig 13). The US is not a major import source for ASEAN countries, which tend to obtain most of their imports from China and around the region.

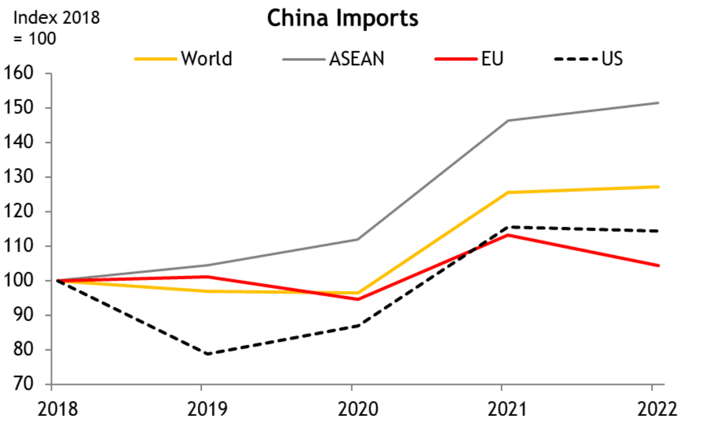
Fragmented China-West Ties Boosting China's Trade and Investment with ASEAN

Since the US-China trade war began in 2018, relations between China and Western nations led by the US have been souring amid intensifying geopolitical tensions over Taiwan, Russia and anti-China containment policies. Amid this adverse environment, China has looked to diversify economic links from the West and reinforce trade with countries in its neighborhood.

ASEAN has benefited from China's economic diversification through more trade and investment, helped by its geographical proximity, close bilateral relations and deeper integration fostered by the Regional Comprehensive Economic Partnership (RCEP).

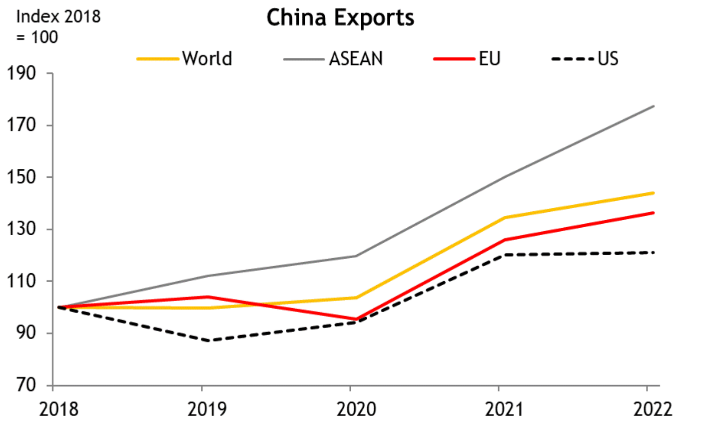
Between 2018 and 2022, China's imports from ASEAN soared +52%, at nearly twice the pace of aggregate imports (+27%). In contrast, imports from US (+14%) and EU (+4.4%) have slowed and lagged total import growth (see Fig 14).

Fig 14: China's Imports from ASEAN Outpacing EU, US and Overall Imports



Source: China General Administration of Customs

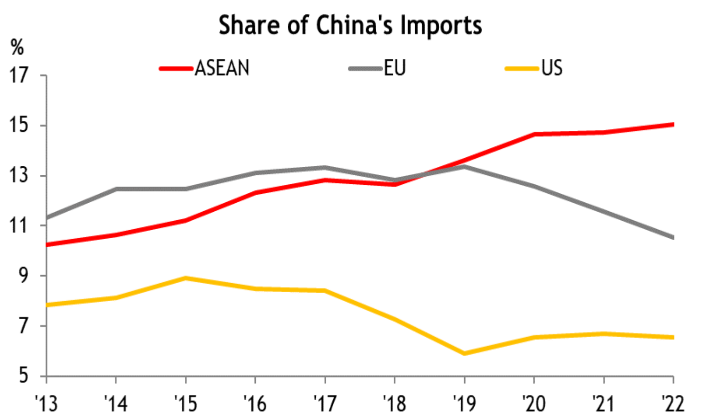
Fig 15: China's Exports to ASEAN Soared +78% Between 2018 to 2022



Source: China General Administration of Customs

Consequently, ASEAN's market share of China's imports has risen to 15% in 2022 (vs. 12.6% in 2018) (see Fig 16), overtaking EU to become China's largest import source. Meanwhile, EU (15.6% in 2022 vs. 16.5% in 2018) and US market share (16.1% in 2022 vs. 19.2% in 2018) have declined over the past five years.

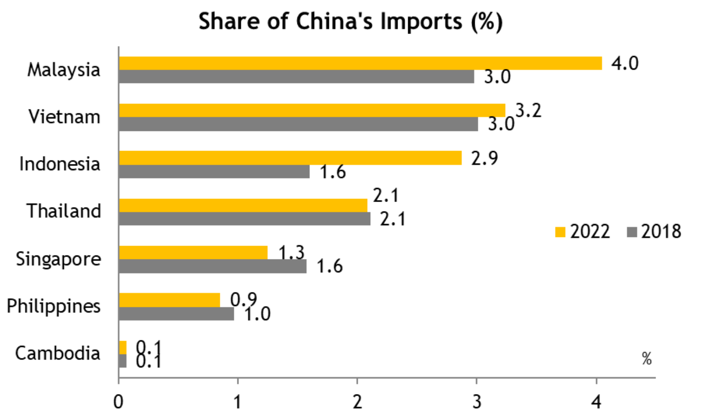
Fig 16: China's Imports from ASEAN Outpacing EU, US and Overall Imports



Note: in USD terms.

Source: China General Administration of Customs

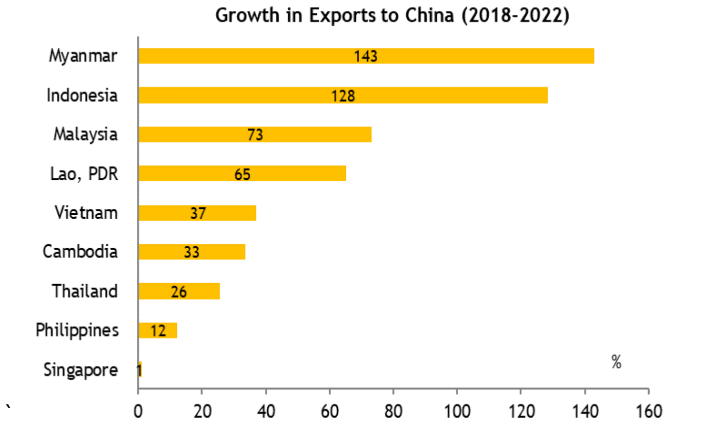
Fig 17: Indonesia and Malaysia Saw Largest Gains in Market Share of China Imports



Note: in USD terms.

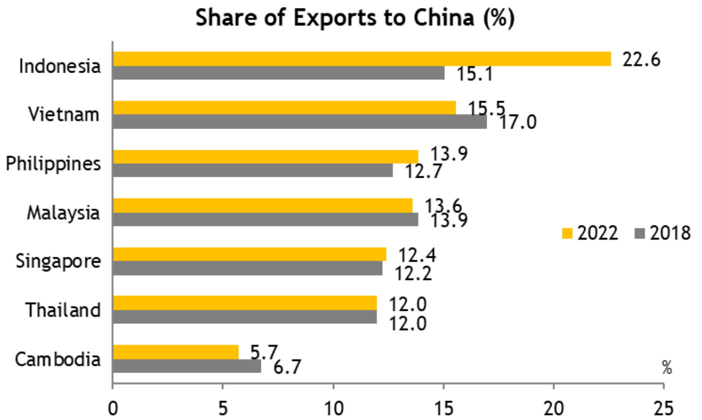
Source: China General Administration of Customs

Fig 18: Indonesia and Malaysia Saw Highest Growth in Exports to China in ASEAN-6, 2018-2022



Source: China General Administration of Customs

Fig 19: China Becoming an Increasingly Important Export Market for Indonesia



Source: China General Administration of Customs

The increase in ASEAN's share of China's imports has been led by Indonesia (2.9% in 2022 vs. 1.6% in 2018) and Malaysia (4% in 2022 vs. 3% in 2018) (see Fig 17).

Indonesia's exports to China surged +128% over 2018 to 2022 (see Fig 18), driven largely by base metals (65ppt) and mineral products (38ppt) (see Table 2). China is Indonesia's largest export market, and the gap between China and other export markets is widening. China accounted for 22.6% of Indonesia's exports in 2022, up from 15% in 2018 (see Fig 19).

Exports of nickel to China jumped to $4.4bn in 2022 (vs. $237mn in 2021), reflecting Indonesia's rising role in the Electric Vehicle (EV) supply chain on the back of Chinese investment to build up nickel mining, refining and processing capabilities. Exports of other metals have also fared well, including iron & steel ($19.6bn in 2022 vs. $2.9bn in 2018), tin ($820mn in 2022 vs. $23mn in 2018) and aluminium ($89mn in 2022 vs. $4.5mn in 2018). Mineral fuel exports to China doubled to $23bn (vs. $11.4bn in 2018).

Malaysia's exports to China soared +73% between 2018 and 2022, led by mineral products (41ppt) and machinery, mechanical appliances & electrical equipment (16ppt) (see Table 2).

Exports of mineral fuels rose +212% to $39bn in 2022 from $12.5bn in 2018. Malaysia became China's third largest crude oil supplier in 2022, behind Saudi Arabia and Russia. Ship-to-ship transfers of oil originating from other locations, rather than domestic production, may have accounted for a significant proportion of China's crude imports from Malaysia last year. The volume of China's crude imports from Malaysia was three times Malaysia's average daily production between January and September 2022[7].

Malaysia's exports of machinery, mechanical appliances & electrical equipment to China hit $40.7bn last year, a +20% increase from 2018, although down from its peak of $43.7bn in 2021. Growth of the segment was fueled by integrated circuits, which made up nearly a quarter of China's imports from Malaysia in 2021 in value terms. This reflects Malaysia's increasing importance in the global semiconductor supply chain as a packaging and testing hub.

[7] Oil Price.com, "*China's Imports Of Crude Oil From Malaysia Hit Record High*", 20 Jan 2023.

Table 2: Percent Point Contribution to 2018-22 Growth in Exports to China

	AP	VP	FO	FB	MP	CP	PR	LT	WO	PP	TX	FO	SC	PS	BM	ME	TE	OM	2018-22 Growth
ID	1.5	1.6	11.0	1.2	38.1	7.2	-0.6	0.1	-0.8	2.9	-1.0	1.3	0.0	0.0	65.4	0.3	0.1	0.0	128.4
MY	0.6	0.2	1.6	0.1	41.4	1.5	0.3	0.0	-0.1	1.0	0.0	0.0	0.1	0.0	6.7	16.4	-0.1	3.4	73.1
VN	1.8	1.4	0.0	1.0	-0.5	1.1	1.4	-0.1	1.9	0.2	0.2	0.8	0.0	0.0	0.9	38.8	0.3	-1.7	37.1
TH	1.0	12.4	0.0	1.6	-1.6	-1.4	0.9	0.0	-0.7	1.1	-0.3	0.1	0.0	-0.5	4.4	10.1	0.5	-2.0	25.6
PH	0.0	-0.3	0.6	0.3	7.7	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	2.0	2.5	-0.1	-0.7	12.2
SG	0.1	0.0	0.0	0.2	-4.2	-1.6	0.3	0.0	0.0	-0.5	0.0	0.0	-0.1	-3.0	0.2	5.6	1.7	2.2	1.0

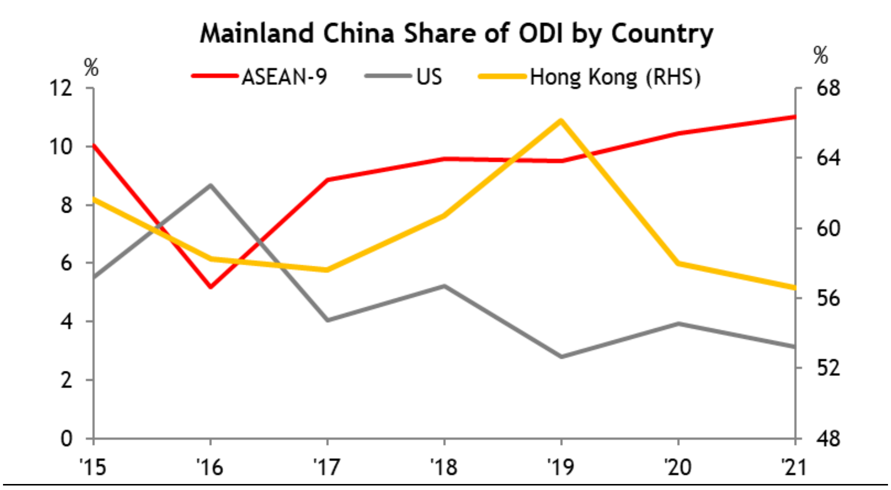
Note: Within each row, higher contributions will be denoted by deeper shades of green.
AP = animal products, VP = vegetable products, FO = animal or vegetable fats and oils, FB = food, beverages & tobacco, MP = mineral products, CP = chemical & related products, PR = plastic & rubber articles, LT = leather, travel goods & handbags, WO = wood & wood articles, PP = pulp of wood & paper articles, TX = textiles & textile articles, FO = footwear, SC = stone, cement, ceramic & glass products, PS = pearls, precious stones & metals, BM = base metals & articles, ME = machinery, mechanical appliances & electrical equipment, appliances & parts thereof, TE = vehicles, aircraft, vessels and associated transport equipment, OM = optical, precision & medical instruments. "Others" category omitted.
Source: China General Administration of Customs, Maybank IBG Research calculations

Chinese companies have been diversifying investments from the US in favor of more investment in ASEAN since the trade war, as they are keen to manage geopolitical risk, reduce costs and leverage on preferential tariffs enjoyed by Vietnam, Malaysia and Singapore under CPTPP (see *ASEAN Economics - China's Belt & Road: "Small But Beautiful"*, 17 Mar 2023).

Official Ministry of Commerce data shows that China's outward direct investment (ODI) in ASEAN rose +44% between 2018 and 2021, driven by Indonesia (+134%), Vietnam (+92%) and Thailand (+102%).

ASEAN's share of China's outward direct investment (ODI) rose to 11% in 2021 from 9.6% in 2018. In contrast, Chinese investments in the US have declined by a quarter over the same period, with the share of China's ODI going to the US falling to 3.1% in 2021 from 5.2% in 2018 (see Fig 20). Hong Kong continues to account for the majority of ODI (56.6% in 2021), although the territory tends to be used as a conduit to channel funds to other countries.

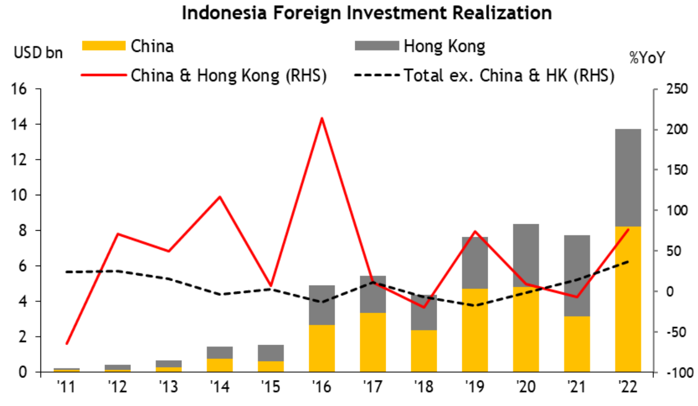
Fig 20: ASEAN's Share of China Outward Direct Investments Rising, While US Share Declining



Source: China Ministry of Commerce

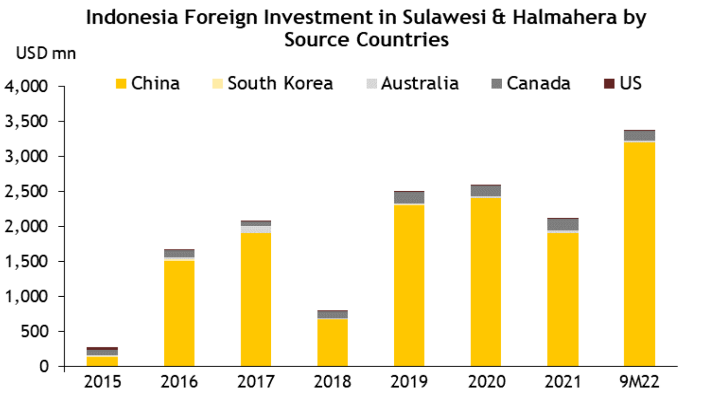
Indonesia's foreign investment realization from China and Hong Kong has risen threefold between 2018 and 2022. Last year alone saw +77% growth in foreign investment (see Fig 21). Besides mega projects such as the Jakarta-Bandung High Speed Rail and hydropower plants, Chinese mining companies have actively invested in nickel refineries and smelters for EV battery production. Foreign investment realization in Sulawesi and Halmahera rose to US$3.2bn in the first 9 months of 2022, outstripping investment from other countries (see Fig 22). GEM Co. (a supplier to Samsung Electronics) and Contemporary Amperex Technology Co. (CATL) started a production line in Sep 2022. Tsingshan Holding Group plans to supply 100k tons of nickel matte from its Sulawesi refinery[8].

Fig 21: Indonesia - Foreign Investment Realization from China & Hong Kong Surged by +77% in 2022



Source: CEIC, Indonesia Investment Coordinating Board

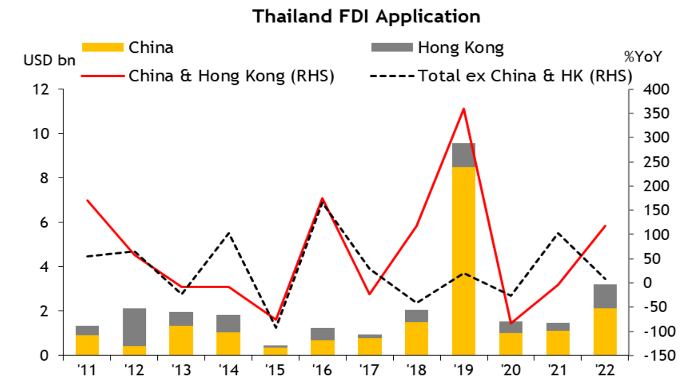
Fig 22: Indonesia - China's Investment in Nickel-Rich Sulawesi and Halmahera Rising Strongly Since 2016



Source: Indonesia Investment Coordinating Board, Bloomberg

Thailand saw China return as its top foreign investor in 2022 for the first time in 3 years, as China pledged $2.3bn in key industries such as electronics, automotive and data centers[9] (see Fig 23). BYD received approval to invest Bt3.9bn (US$113mn) in a facility to produce EV batteries, on top of its initial Bt17.9bn (US$517mn) investment to build its first EV manufacturing plant outside China. MG Motor, owned by China automaker SAIC, received investment promotion incentives worth Bt2.1bn for EV charging stations.

Fig 23: Thailand - FDI Application from China More than Doubled in 2022 to US$2.3bn



Source: CEIC, Thailand Board of Investment

Table 3: Thailand - FDI Application Approved for China by Sector (2018 to 2022)

	USD mn	As % of Total FDI Application Approved for All Countries
Total	**7,836**	**18.4%**
Metal Products & Machinery	3,127	26.0%
Electronic Products	1,573	17.5%
Minerals and Ceramics	975	49.0%
Light Industries & Textiles	885	29.4%
Services	536	6.6%
Chemicals & Paper	533	9.4%
Agri Products	207	7.7%

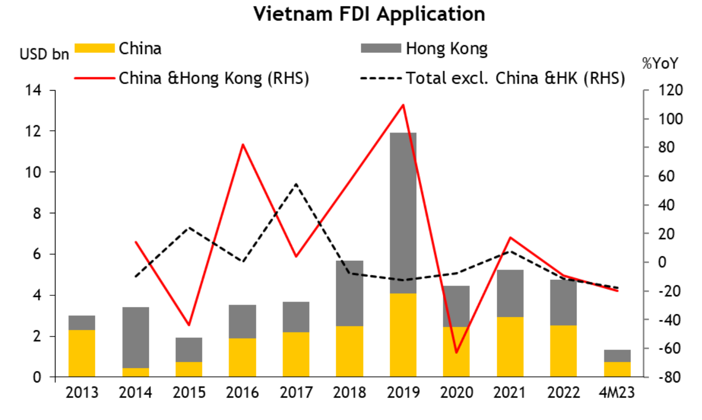
Source: CEIC, Thailand Board of Investment

Vietnam's FDI pledges from China and Hong Kong peaked at $11.9bn in 2019 and subsided to $4.7bn in 2022 (see Fig 24). Chinese firms invested in 204 new projects in 2021 and 283 new projects in 2022, down from 683 projects in 2019.

[8] Bloomberg, "*Chinese Companies Are Flocking to Indonesia for Its Nickel*", 16 Dec 2022.
[9] Nikkei Asia, "*China returns as Thailand's top investor through electronics, EVs*", 14 Jan 2023.

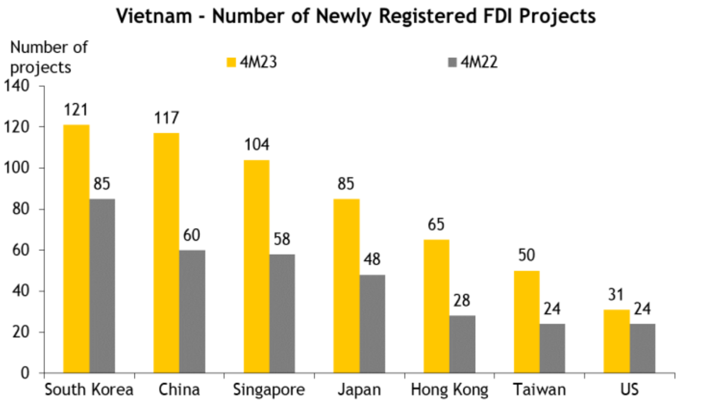
Nonetheless, investment interest from China is rebounding after China ended strict virus curbs last December, when measured in terms of the number of projects. Over the first four months of 2023, Chinese firms invested in 117 new projects in the country, nearly twice that in the same period last year and only behind South Korea (121) (see Fig 25). According to industry experts, the current wave of investors are predominantly smaller suppliers of components and other inputs to larger MNCs already present. The value of newly-registered FDI projects from China and Hong Kong in 4M2023 is 20% lower than the same period last year, implying that China's year-to-date average expenditure on new projects in Vietnam is $8.3mn, down from $4.5mn in 2022.

Fig 24: Vietnam - 4M23 Newly Registered FDI from China and HK Down -20% YoY



Source: CEIC, Vietnam Ministry of Planning & Investment

Fig 25: Vietnam - Chinese Firms Invested in 117 New Projects over 4M23, Only Behind South Korea



Source: CEIC, Vietnam Ministry of Planning & Investment

Chinese manufacturers investing in Vietnam include suppliers to the solar panel industry, such as plastic moulding, die casting and energy storage. Chinese electronics, robotics and home appliance firms are also among the top investors, according to CBRE data on industrial leases last year[10].

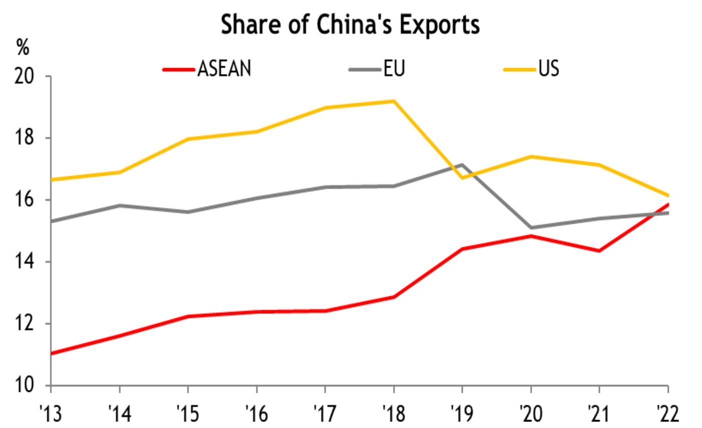
For instance, China's Sunny Group announced plans in March 2023 to invest up to $2.5bn in the northern province of Thai Nguyen, which is expected to generate $5 billion in annual revenue and create 15,000 local jobs. Sunny Group produces integrated optical components for various devices such as telephones, computers, robots, medical equipment and industrial production machines. It has invested $130mn in four projects in Vietnam to date, producing infrared lenses for cars, mobile phone camera modules and surveillance cameras in Thai Nguyen, Vinh Phuc and Hanoi industrial parks[11].

Growing reliance on intermediate imports from China is becoming a key source of vulnerability for ASEAN's manufacturing sectors. China has been increasing its supply of production inputs to the region to diversify its export markets.

ASEAN's market share of China's exports has grown to 15.8% in 2022 (vs. 12.9% in 2018), even as EU's and US's share have eased to 15.6% (vs. 16.5% in 2018) and 16.1% (vs. 19.2% in 2018) (see Fig 26).

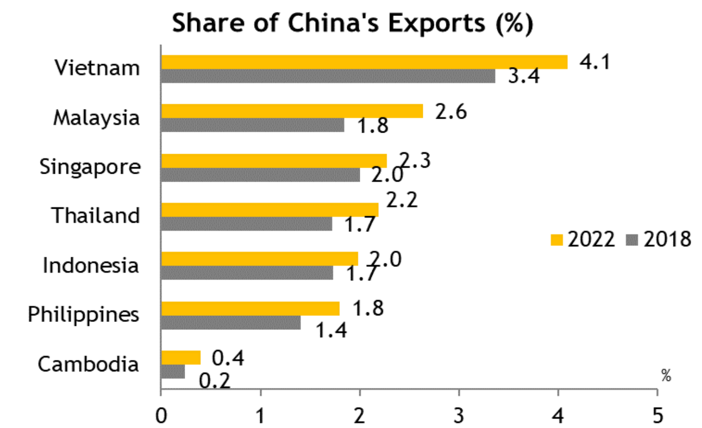
[10] Reuters, "Analysis: Chinese suppliers race to Vietnam as COVID let-up opens escape route from Sino-U.S. trade war", 16 Mar 2023.
[11] Hanoi Times, "China's Sunny Group plans US$2.5 billion investment in Vietnam", 9 Mar 2023.

Fig 26: China Exporting More to ASEAN and Less to US and EU



Note: in USD terms.
Source: China General Administration of Customs

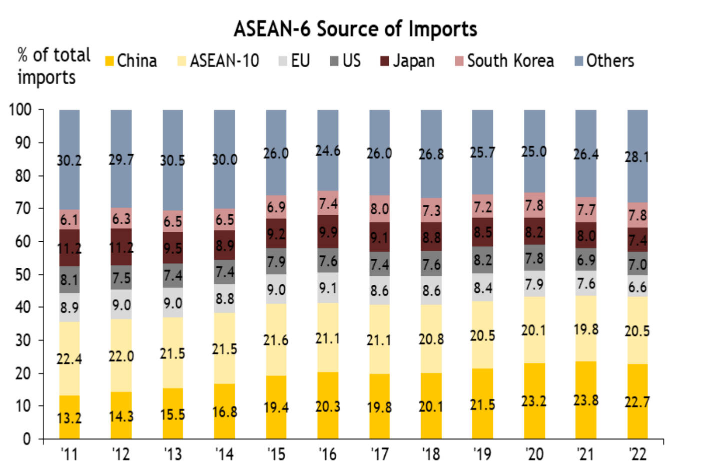
Fig 27: Vietnam and Malaysia Have Seen Large Gains in Share of China's Exports



Note: in USD terms.
Source: China General Administration of Customs

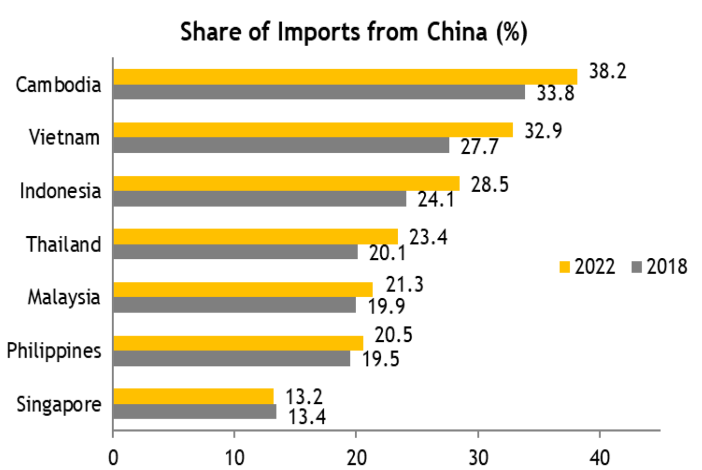
ASEAN sourced 23% of its imports from China in 2022, with China's import share rising steadily over the past decade (see Fig 28). Share of ASEAN-6's capital and intermediate goods imports sourced from China increased to 24% in 2020 from 21% in 2018.

Fig 28: ASEAN Becoming More Dependent on Imports from China



Source: CEIC

Fig 29: Cambodia and Vietnam Most Reliant on Imports from China



Source: CEIC

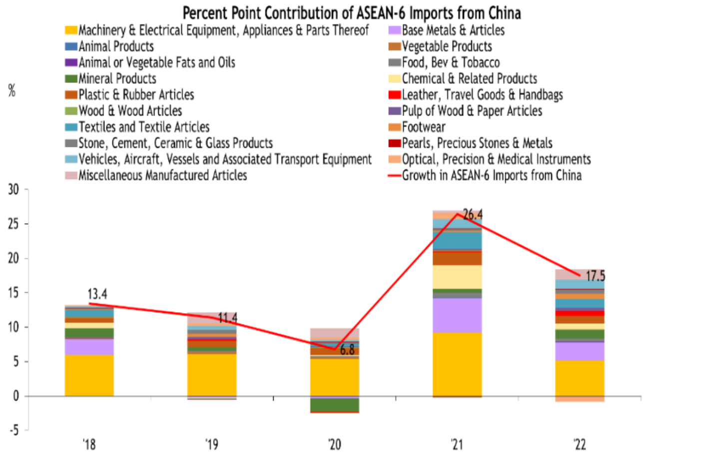
Ironically, supply chain shifts from China to ASEAN on the back of global MNCs' "China + 1" strategy are a major reason for rising import dependence on China. This implies that the fundamental vulnerability in MNCs' supply chain remains, as their production in ASEAN is ultimately highly dependent on China, which may be impacted if US trade restrictions and sanctions on China broaden.

Demand for Chinese inputs has risen as production has diverted from China to ASEAN. This reflects China's large and sophisticated web of competitive suppliers, which cannot be easily replicated in another country. Components and capital goods are shipped from China and heavily used for assembly of products for export out of several ASEAN countries.

A breakdown of imported products reveals that machinery & electrical equipment, appliances & parts was the main driver of the recent rise in ASEAN-6's imports from China. Imports soared +80% between 2018 and 2020, contributing nearly half of growth in aggregate imports from China (see Fig 30). Base metal imports, most notably iron and steel were another large contributor, rising +88%

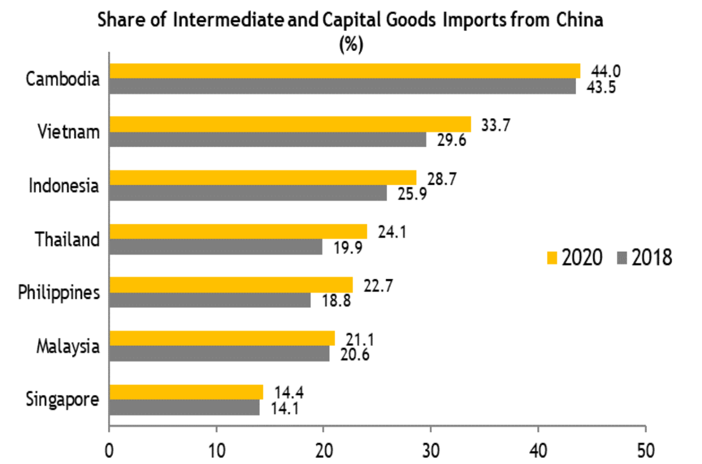
between 2020 and 2022. This could have been partly due to the property crisis-induced plunge in real estate investment and construction, leading Chinese producers to look for external markets.

Fig 30: Machinery & Electrical Equipment and Base Metals Main Drivers of ASEAN's Imports from China



Source: China General Administration of Customs, Maybank IBG Research calculations

Fig 31: Cambodia, Vietnam and Indonesia Most Reliant on Intermediate and Capital Goods Imports from China



Note: BEC, rev. 4 codes denoting intermediate and capital goods imports are 41, 521*, 111*, 121*, 21*, 22*, 31*, 322*, 42* and 53*. 2020 is latest available data.*
Source: UN Comtrade

Table 4: Percent Point Contribution to 2018-22 Growth in Imports from China

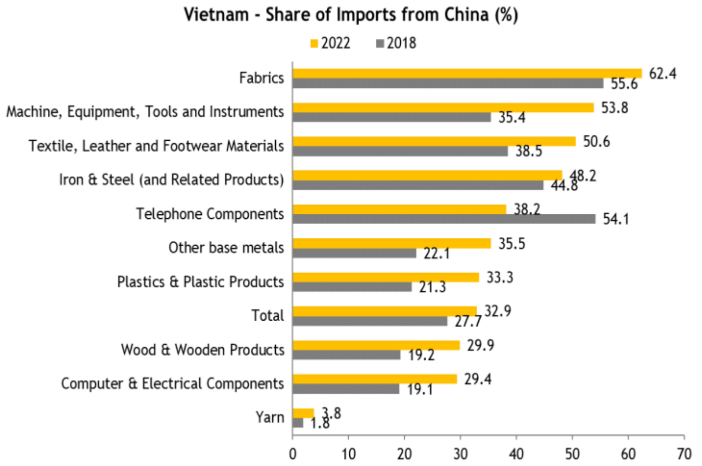
	AP	VP	FO	FB	MP	CP	PR	LT	WO	PP	TX	FO	SC	PS	BM	ME	TE	OM	MM	OT	2018-22 Growth
ID	0.2	0.4	0.1	0.5	2.5	5.3	5.1	0.9	0.2	0.9	3.3	2.1	1.4	0.0	8.4	25.3	4.1	-0.2	3.9	0.3	**64.9**
MY	0.1	1.1	0.3	4.9	2.9	5.7	7.0	2.1	0.1	1.6	9.2	2.0	1.6	1.2	6.5	43.1	3.4	0.7	9.2	3.8	**106.2**
VN	0.1	-0.6	0.0	1.2	0.1	5.3	5.7	0.3	0.4	1.6	3.9	1.5	3.2	0.0	6.3	38.7	2.6	-0.1	4.1	1.0	**75.3**
TH	-0.4	0.1	0.0	3.9	1.3	7.2	5.7	1.1	0.4	1.7	6.0	1.4	2.4	0.1	12.8	25.8	4.0	0.9	6.3	2.3	**82.9**
PH	0.4	0.2	0.0	1.3	0.5	3.0	7.1	1.6	0.3	1.2	3.0	4.6	3.5	0.1	24	17.4	4.3	0.7	8.9	2.4	**84.5**
SG	-0.1	0.1	0.9	0.3	0.6	4.4	5.4	2.4	-0.1	1.1	4.8	0.4	0.1	1.0	5.0	18.7	8.3	2.2	4.3	3.9	**63.7**

Note: Within each row, higher contributions will be denoted by deeper shades of green.
AP = animal products, VP = vegetable products, FO = animal or vegetable fats and oils, FB = food, beverages & tobacco, MP = mineral products, CP = chemical & related products, PR = plastic & rubber articles, LT = leather, travel goods & handbags, WO = wood & wood articles, PP = pulp of wood & paper articles, TX = textiles & textile articles, FO = footwear, SC = stone, cement, ceramic & glass products, PS = pearls, precious stones & metals, BM = base metals & articles, ME = machinery & electrical Equipment, appliances & parts thereof, TE = vehicles, aircraft, vessels and associated transport equipment, OM = optical, precision & medical instruments, MM = miscellaneous manufactured articles, OT = others
Source: China General Administration of Customs, Maybank IBG Research calculations

Cambodia and Vietnam are the most reliant on Chinese imports, as their manufacturing sectors are geared towards downstream processing and assembly. China's share of Cambodia's imports rose to 38.2% in 2022 (vs. 33.8% in 2018), while its share of Vietnam's imports increased from 27.7% in 2018 to 32.9% in 2022 (see Fig 29). Cambodia and Vietnam respectively sourced 44% and 33.7% of capital and intermediate goods imports from China (see Fig 31). In contrast, Singapore relies on China for just 13% of imports, reflecting its upstream position in manufacturing supply chains.

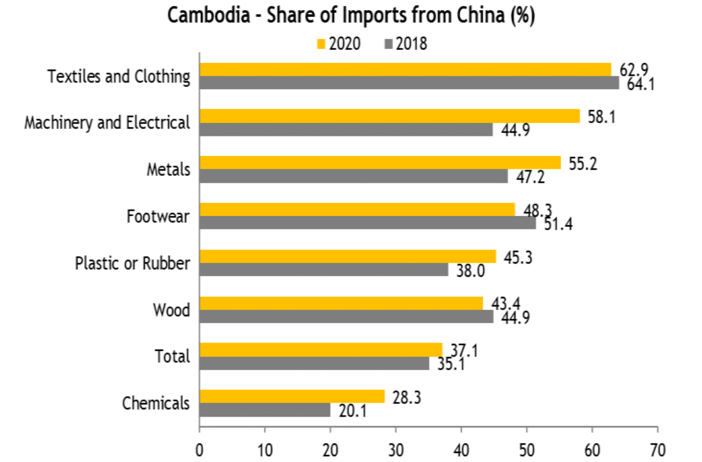
Product-wise, Vietnam relies on China for 62% of its fabric imports (vs. 55% in 2018), 54% of machinery & equipment imports (vs. 35% in 2018), 51% of textile & footwear materials (vs. 38% in 2018) and 48% of iron & steel products (vs. 45% in 2018) (see Fig 32).

Fig 32: Vietnam Dependent on China for Fabric, Machinery & Equipment, Textile & Footwear Materials, Iron & Steel Imports



Source: Vietnam Customs, Maybank IBG Research calculations

Fig 33: Cambodia Dependent on China for Machinery, Electrical, Metals, Chemicals, Plastic and Rubber Imports

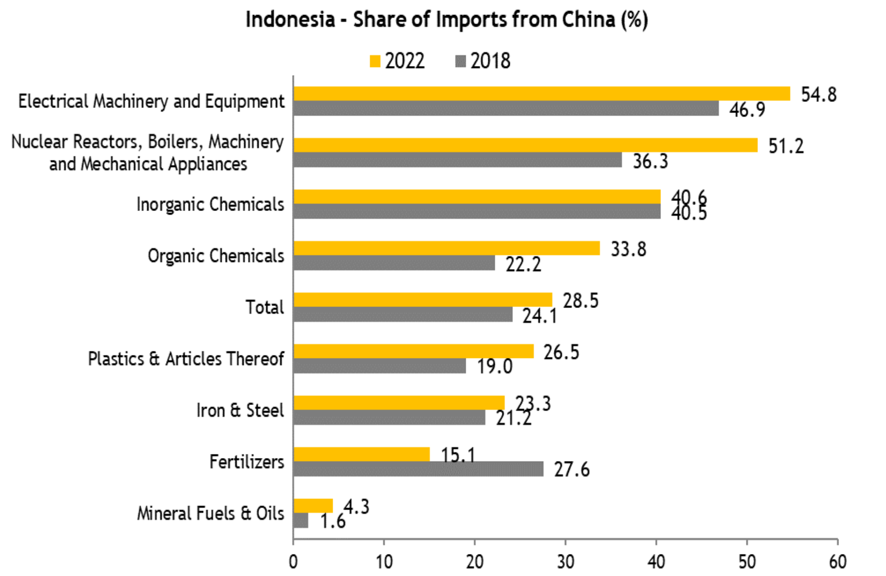


Note: Latest data as of 2020.
Source: World Bank WITS database

As of 2020, Cambodia obtained 63% of textiles & clothing imports, 58% of machinery & electrical imports and 55% of metals imports from China. The share of machinery & electrical products, metals, chemicals, plastic and rubber sourced from China has risen since 2018 (see Fig 33).

China's share of Indonesia's imports (28.5% in 2022 vs. 24.1% in 2018) has also risen materially. A breakdown of products reveals that import dependence on China has risen most notably for electrical equipment (54.8% in 2022 vs. 46.9% in 2018), organic chemicals (33.8% in 2022 vs. 22.2% in 2018) and machinery & mechanical appliances (51.2% in 2022 vs. 36.3% in 2018) (see Fig 34).

Fig 34: Indonesia - Import Dependence on China Has Risen Most Notably For Electrical Equipment, Chemicals and Machinery & Mechanical Appliances



Source: Indonesia Central Bureau of Statistics

Friend-Shoring: Japan and Korea Pivot to ASEAN

Both Japan and South Korea have found themselves in delicate geopolitical positions, with the US as their key ally and security guarantor, but China as their largest trading partner. Both countries have come under increasing pressure to take sides with the US as its relationship with China turns more confrontational, but have tried to avoid antagonizing China due to their heavy economic dependence.

China is the largest trading partner of both Japan and Korea. In Japan, China accounted for 19.4% of Japan's exports and 21% of imports in 2022. In Korea, it accounted for 22.8% of exports and 21% of imports.

China had weaponized its economic ties with Japan and Korea during past disputes, raising the impetus for the two countries to reduce reliance on the Chinese economy as global geopolitics become more precarious.

Korean businesses recorded more than $7.5bn in losses due to China's economic coercion campaign in protest of Seoul's deployment of the THAAD missile defense system[12] in 2017. Measures against South Korea included closures of Lotte Group stores in China in alleged violation of Chinese safety codes, bans imposed on some cosmetics and tech exports, suspension of Korean tour package sales and cancellation of K-pop concerts in China[13].

China slowed shipments of crucial inputs to Japan during past disputes, such as rare earth materials in a 2010 diplomatic clash over Japan's detainment of a Chinese fishing vessel captain near the Senkaku/Diaoyu islands claimed by both countries.

Deepening Japan-ASEAN Supply Chains

ASEAN could benefit from Japan's push to reduce reliance on Chinese manufacturing after the pandemic disrupted supply chains. In 2020, the government earmarked JPY243.5bn (US$2.2bn), or around 4.5% of GDP in its Covid-19 economic stimulus package to help Japanese manufacturers shift production out of China. About 87 companies were eligible for the subsidies, with JPY220bn provided for onshoring production and JPY23.5bn for moving production to other countries[14].

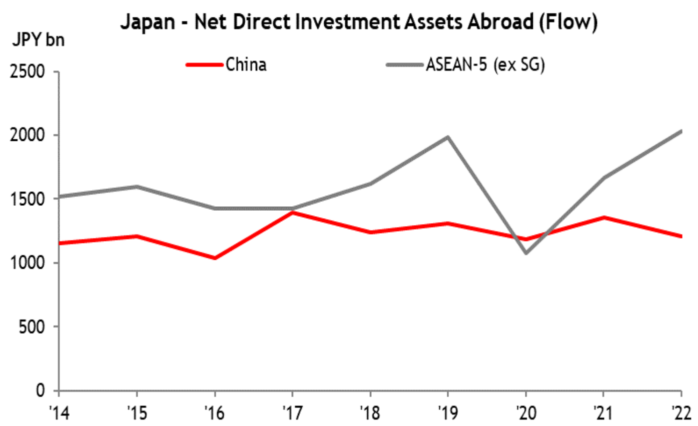
ASEAN is a high priority destination for investment, with the Japanese government announcing in Oct 2020 that it would cover up to half the cost of expanding production networks into ASEAN nations for large companies and as much as two-thirds for smaller businesses. The subsidies apply to products for which manufacturing is concentrated in any specific country[15].

Japan's net direct investment flow to China has stagnated over recent years, amounting to JPY1207bn in 2022 (vs. JPY1238bn in 2018). Japanese net direct investment in ASEAN (JPY2031bn in 2022 vs. JPY1618bn in 2018) has been increasing, notwithstanding the pandemic hit in 2020 (see Fig 35). Thailand (JPY839bn) is receiving the most investment, followed by Vietnam (JPY378bn) and Indonesia (JPY335bn) (see Fig 36). Investment in Thailand grew +76% in 2022, with

[12] Los Angeles Times, "*When China and U.S. Spar, It's South Korea That Gets Punched*", 19 Nov 2020.
[13] Botto, Kathryn (Carnegie Endowment for International Peace), "*South Korea Beyond Northeast Asia: How Seoul is Deepening Ties With India and ASEAN*", 19 Oct 2021.
[14] South China Morning Post, "*Japan to pay firms to leave China, relocate production elsewhere as part of coronavirus stimulus*", 9 Apr 2020.
[15] Nikkei Asia, "*Japan expands 'China exit' subsidies for moves to Southeast Asia*", 15 Oct 2020.

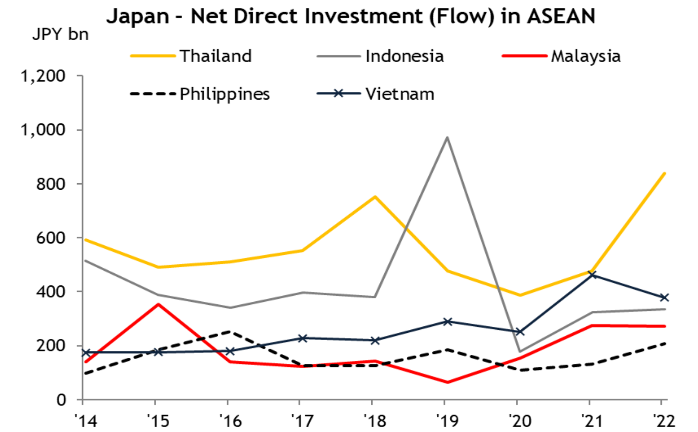
approved applications concentrated in the electronic products (35%) and services (20%) sectors.

Fig 35: Japan's Investment to ASEAN Rising, China Stagnating



Source: CEIC, Bank of Japan

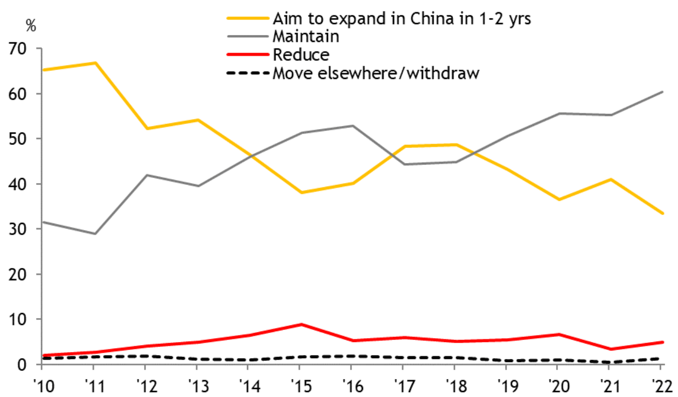
Fig 36: Thailand Receiving Largest Direct Investment from Japan, Followed by Vietnam and Indonesia



Source: CEIC, Bank of Japan

Nonetheless, Japanese businesses are reluctant to fully decouple from the Chinese market due to the heavy economic cost. Although they are wary of expanding operations in China, few businesses plan to exit the country. According to a survey by the Japan External Trade Organization (JETRO), only 6.3% of Japanese firms in 2022 planned to reduce or withdraw operations in China. The number of Japanese companies aiming to expand operations in China nonetheless stood at a historic low of 33.4%[16] (see Fig 37).

Fig 37: Few Japanese Business Plan to Exit China, Though Number of Firms Intending to Expand China Operations at Historic Low



Source: JETRO, Bloomberg

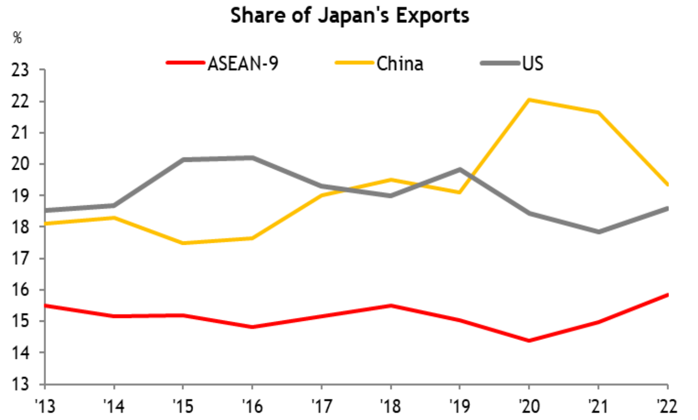
ASEAN's market share of Japan's exports (15.8% in 2022) and imports (14.7%) remains similar to pre-pandemic years (see Fig 38 and 39), although trade with ASEAN has risen in absolute terms. Between 2018 and 2022, Japan's exports to ASEAN climbed +23% while imports rose +43%. In contrast, China's market share has declined since the pandemic. This could be a result of diversification but also reflects cyclical factors, namely its economic slowdown and supply disruptions induced by lockdowns.

Despite more US discourse lately about 'friendshoring' trade (i.e. sourcing from politically friendly countries), US's share of Japan's exports declined to 18.6% in 2022 (vs. 19% in 2018), as exports to the US plunged by -17% in 2020 due to the

[16] Bloomberg, "*Japan's Separation Anxiety Over Pandas and China*", 31 Mar 2023.

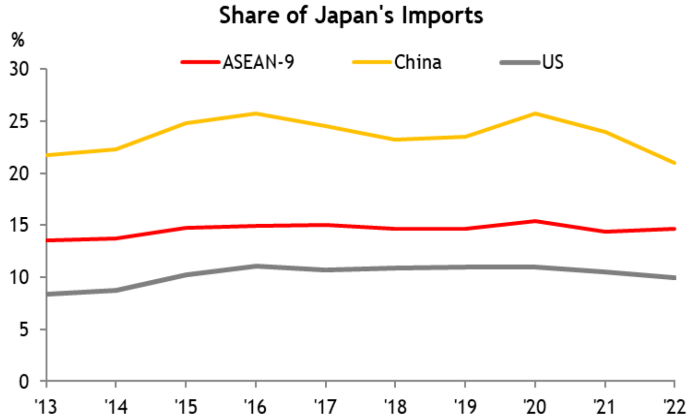
slump in automobile demand caused by the pandemic. US's share of Japan's imports eased to 9.9% last year from 10.9% in 2018.

Fig 38: ASEAN's Share of Japan's Exports and Imports Rose in Past Two Years But Remain Similar to Pre-Pandemic Levels



Source: CEIC, Japan Ministry of Finance

Fig 39: China's Share of Japan's Exports and Imports Have Fallen Since Pandemic



Source: CEIC, Japan Ministry of Finance

Japan has sought to counter China's influence in Southeast Asia through more infrastructure investments and military aid. Japan has historically been the largest investor in Southeast Asia's infrastructure, overshadowing China. Infrastructure investments play a key role in Japan's "Free and Open Indo-Pacific" vision, and offer a tool for ASEAN countries to hedge against the risk of being dominated by Chinese investments.

Japan launched several mechanisms and initiatives to step up infrastructure development after China's Belt and Road Initiative (BRI) was announced in 2013. These include Japan Overseas Infrastructure Investment Corporation for Transport and Urban Development in 2014, a public-private investment fund; the Partnership for Quality Infrastructure in 2015 to provide $110bn over five years for projects across Asia in collaboration with the ADB; and the Japan-ASEAN Connectivity Initiative. Examples of infrastructure financed by Japan include the Neak Loeung Bridge in Cambodia, the Ho Chi Minh City metro in Vietnam, the New Bohol International Airport in the Philippines and the Patimban Deep Sea Port in Indonesia.

Tokyo plans to ramp up development assistance with more land, sea and air connectivity projects in ASEAN countries to be completed over the coming years. These include the Philippines' Metro Manila subway; a new container terminal at Cambodia's Sihanoukville Port; and the East-West and Southern Economic Corridors to boost connectivity between Mekong region countries[17].

Defence spending is emerging as another tool for Japan to counter Chinese influence, with the government announcing in December 2022 that it would double defence spending over the next five years.

Tokyo is deepening security cooperation with other "like-minded" Asian countries under the Overseas Security Assistance (OSA) scheme, offering countries financial aid to strengthen defenses. An allocation of $15mn was set aside for military assistance, of which the Philippines, Malaysia and Fiji are expected to be the first recipients[18]. Local media reported that Japan is considering providing the Philippines with radars for monitoring of Chinese activity

[17] The Japan Times, "*Why Japan still leads in Southeast Asian infrastructure investment*", 6 Dec 2022.
[18] South China Morning Post, "*Japan sees Philippines, Malaysia as 'like-minded' nations in military aid plan to counter China*", 13 Apr 2023.

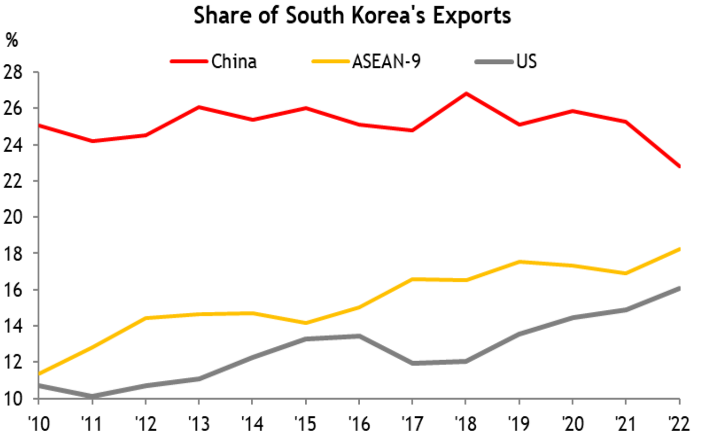
in the contested South China Sea[19].

Deepening South Korea-ASEAN Supply Chains

Faced with the need to diversify economic and strategic relationships amid uncertainty brought about by US-China rivalry, South Korea is advancing ties with ASEAN and India through its New Southern Policy (NSP) framework unveiled in November 2017. The NSP aims to elevate Korea's relations with ASEAN member states and India to the same level of US, China, Japan and Russia – whom it had traditionally prioritized - deepening security, sociocultural and economic cooperation under its three pillars of peace, people and prosperity.

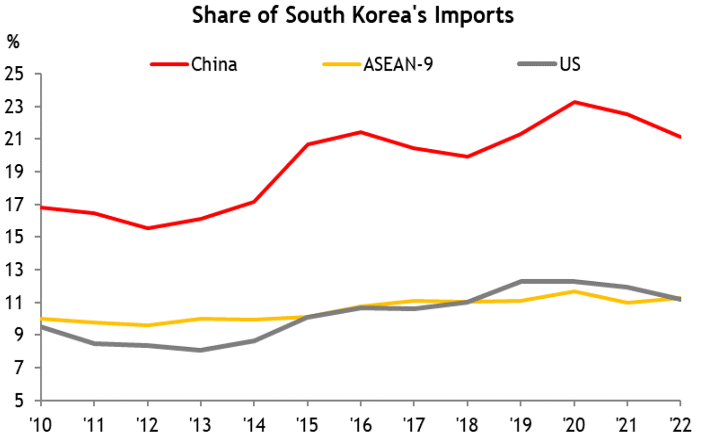
Korea's trade and investment with ASEAN have grown since the NSP was launched. Exports to ASEAN have climbed by +31% between 2017 and 2022. **ASEAN is becoming an increasingly important export destination, with its share of Korea's exports rising to 18.3% in 2022** (vs. 16.6% in 2017; see Fig 40), driven by Vietnam (8.9% in 2022 vs. 8.3% in 2017) and Singapore (3% in 2022 vs. 2% in 2017). A growing proportion of Korea's exports are going to the US (16% in 2022 vs. 12% in 2018). In contrast, China's share fell from 24.8% in 2017 to 22.8% in 2022.

Fig 40: ASEAN's Share of Korea Exports Rose Between 2017 and 2022, While China's Share Fell



Source: CEIC, Korea Customs Service

Fig 41: ASEAN's Share of Korea Imports Remain Largely Unchanged, While China's Market Share Has Risen



Source: CEIC, Korea Customs Service

South Korea's imports from ASEAN rose by +55% between 2017 and 2022, although ASEAN's market share has remained largely unchanged at 11.2% of Korea's imports (see Fig 41). Over the same period, Korea has become more dependent on Chinese imports, with China's share of imports rising to 21.1% in 2022 from 20.5% in 2017 despite falling by 2% points since 2020.

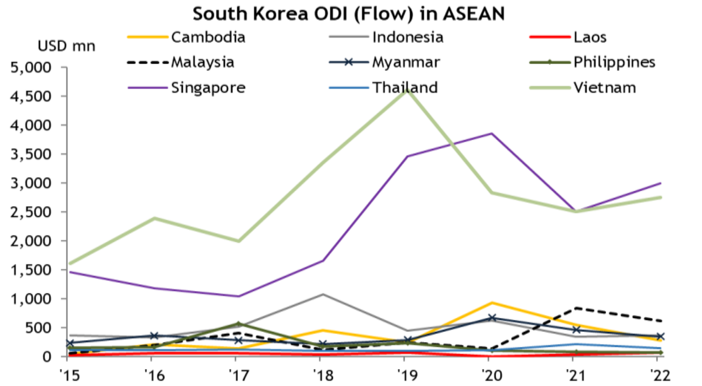
Rising Korea-ASEAN trade has been driven by ASEAN's growing consumer market, its role as a key production hub for many Korean conglomerates, and free trade agreements. In recent years, Korea has signed an FTA with Cambodia which came into force in Dec 2022, a Comprehensive Economic Partnership Agreement (CEPA) with Indonesia which took effect in Jan 2023, and will soon implement an FTA with the Philippines. Korea is also in the process of upgrading the ASEAN-Korea FTA to strengthen supply chains.

Korea's outward direct investment in ASEAN climbed +50% from 2017 to 2022, despite a -21% fall since 2019 due to the pandemic. Singapore (+188%) and Vietnam (+38%) are the largest beneficiaries of Korean investment (see Fig 42).

[19] South China Morning Post, "*Japan to start funding foreign defence projects after rule change*", 5 Apr 2023 (published by Reuters).

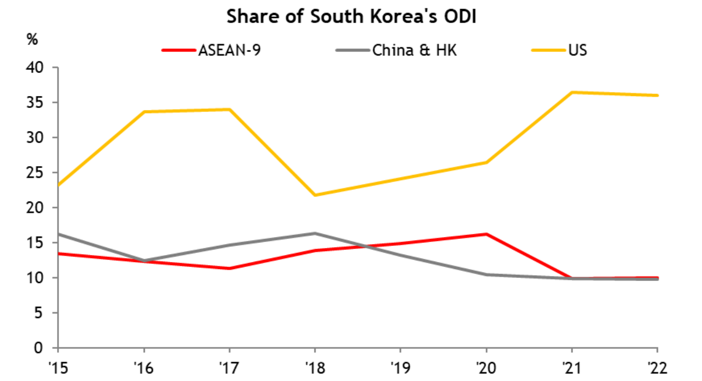
Robust investment growth was also seen across other countries, particularly Cambodia (+107%) and Malaysia (+51%). The Council for the Development of Cambodia (CDC) registered 219 Korean investment projects in 2022, mainly in construction and real estate[20].

Fig 42: Singapore and Vietnam Largest Beneficiaries of Korean Investment



Source: CEIC, Korea EximBank

Fig 43: ASEAN and China's Share of Korea ODI Dipped, While US Rose



Source: CEIC, Korea EximBank

The proportion of Korean ODI received by China and Hong Kong fell to a multi-year low of 9.7%, compared to 14.6% in 2017. However, this share has not shifted to ASEAN, with ASEAN's share of Korea's ODI dipping to 9.9% (vs. 11.4% in 2017) (see Fig 43).

Korea has instead been directing investments to the US (+81% from 2017 to 2022), which accounted for 36% of outward investment in 2022, up from 34% in 2017. This reflects an uptick in joint Korea-US ventures focused on electric vehicle batteries, semiconductors and Covid-19 vaccines[21]. For instance, South Korea's SK Innovation announced in September 2021 that it would jointly invest with Ford more than $11bn in EV and battery production facilities, including two lithium-ion plants in Kentucky and a 3,600-acre campus in Tennessee. In addition, Samsung plans to build a $17bn semiconductor plant in Texas, which would be the largest single foreign direct investment in the state's history.

Fragmentation in Electronics Supply Chain

The electronics industry has been thrust into the spotlight as a key epicenter of fragmentation and supply chain reconfigurations. There is great impetus for sourcing diversification, given the long and complex nature of the global supply chain, with production primarily concentrated in Asia.

In this section, we examine supply reconfigurations within electronics global value chains since 2018, and assess the impact on ASEAN.

Since the trade war in 2018, the US has reduced its imports of final electronics (e.g. consumer products) and intermediate electronics (e.g. machine parts, electronic components, chips) from China, in favor of ASEAN. China remains the main source accounting for 36.7% of the US' electronics imports in 2022, but its market share has fallen steeply from 51.6% in 2018 (see Fig 44).

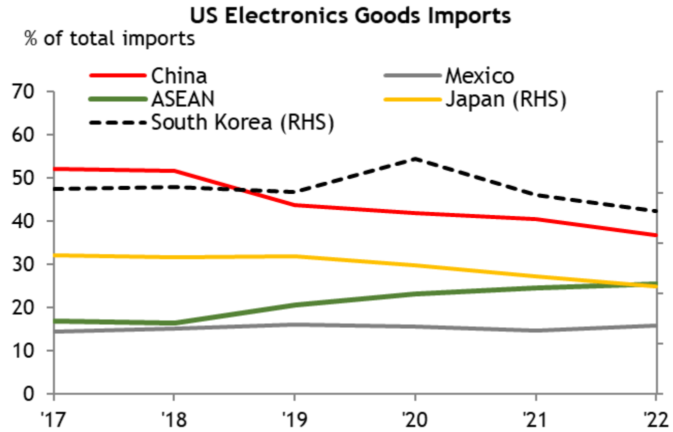
ASEAN's market share of US electronics imports climbed to 25.5% in 2022 (vs. 16.5% in 2018). These gains were spread across both final and intermediate electronics

[20] Khmer Times, "Strong Footing: FTA to give fillip to Cambodia-Korea investment", 22 Feb 2023.
[21] The Diplomat, "*South Korea-US Economic Ties Are Changing*", 8 Feb 2022.

products. Despite rising interest in nearshoring production to neighboring markets, Mexico's share of US electronics imports (15.7%) remained largely unchanged between 2018 and 2022.

China remains the largest market for US semiconductor exports, but its share has fallen to 17.1% of total in 2022 from 21.9% in 2020 (see Fig 45). This could have been partly due to lockdowns in China which disrupted production (and reduced demand for inputs), as well as hoarding behavior over 2020-21 as manufacturers in China frontloaded imports for fear of impending US export controls. Sales of US semiconductors to China may continue to decline, given the strict new export controls announced in October 2022.

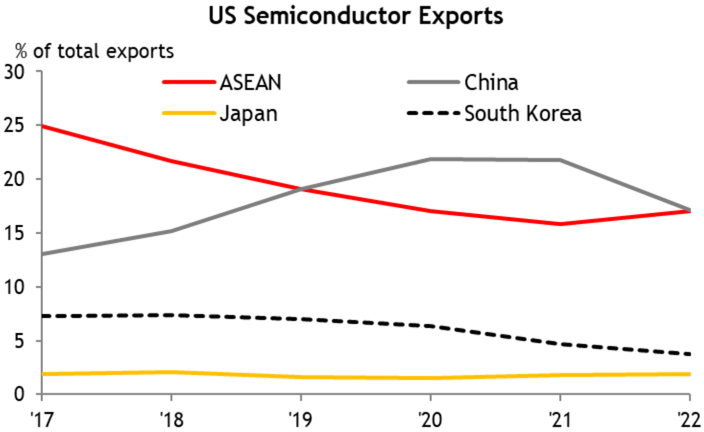
Fig 44: US Substituting Final Electronics Goods Imports Away from China and Towards ASEAN



Note: Electronics goods comprise SITC codes 751, 752, 761, 762, 763, 764, 759 and 776. ASEAN refers to ASEAN-6.

Source: UN Comtrade

Fig 45: US - Share of Semiconductor Exports to China Fell to 3-Year Low in 2022



Note: Semiconductors comprise HS codes 8541 and 8542 (a subset of electronics). ASEAN refers to ASEAN-6.

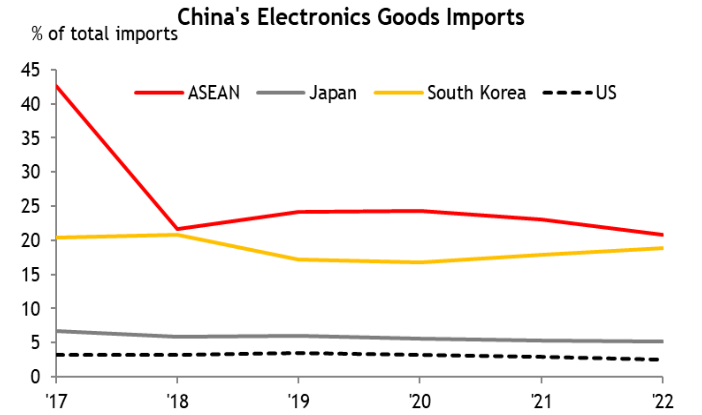
Source: UN Comtrade

Although China's import of electronics from the US was already relatively small, US' market share fell a further 0.7% point following the trade war to 2.5% in 2021. China sources the bulk of its electronics from ASEAN and South Korea. ASEAN's market share remained largely unchanged at 21% between 2018 and 2022 (see Fig 46).

China's semiconductor imports from US (as share of total) has fallen from the peak of 4.3% in 2019 to 2.9% in 2022 (see Fig 47). China's semiconductor imports from ASEAN has also dipped to 17.5% in 2022 (from 20.2% in 2019), as US sanctions and trade restrictions may also apply to US MNC semiconductor companies based in ASEAN. Taiwan and Korea are China's largest suppliers of semiconductors. Market share has shifting in favor of Taiwan (36.3% in 2022 vs. 29.8% in 2018), while Korea's share (19.1% in 2022 vs. 24.7% in 2018) has fallen.

Exports of electronics from China to ASEAN climbed to 11.8% of the total in 2022 (vs. 9.3% in 2018) as China-based manufacturers shift production to the region and assemble products using components shipped from China. Although the US remains China's largest electronic export market, US' market share fell from 21.4% to 18% over the same period (see Fig 48). For semiconductors, exports to ASEAN (as % of total) rose from 17.7% in 2018 to 22.1% in 2020, but has since eased to 17.9% (see Fig 49).

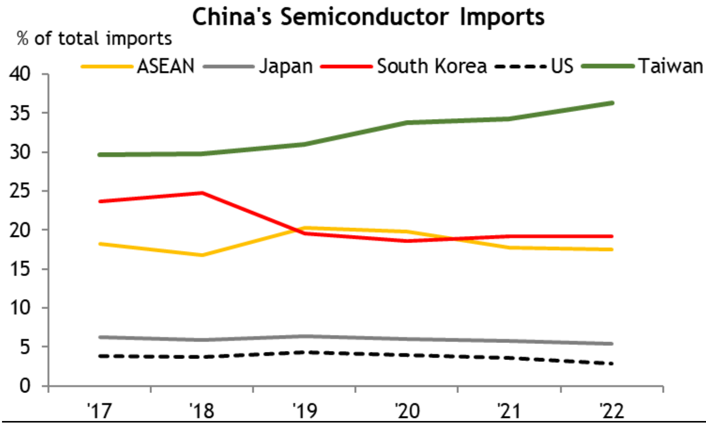
Fig 46: ASEAN Saw Slight Gain in Market Share of China Electronics Imports Between 2018 and 2022



Note: Electronics goods comprise SITC codes 751, 752, 761, 762, 763, 764, 759 and 776. ASEAN refers to ASEAN-6.

Source: UN Comtrade

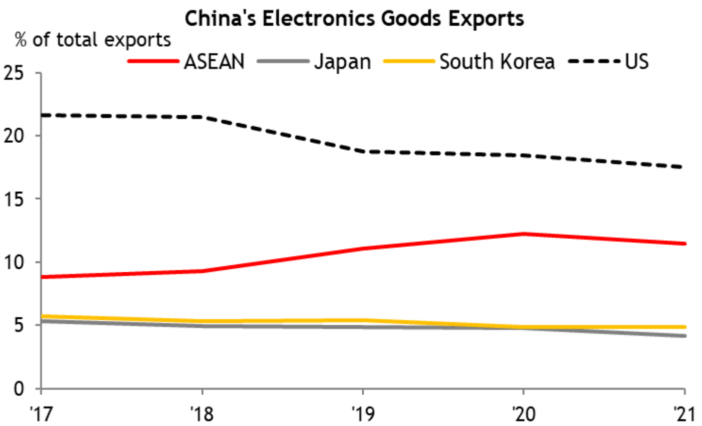
Fig 47: China - Share of Chip Imports from US, ASEAN and Korea Fell Between 2018 and 2022, With Taiwan Gaining Share



Note: Semiconductors comprise HS codes 8541 and 8542 (a subset of electronics). ASEAN refers to ASEAN-6.

Source: UN Comtrade

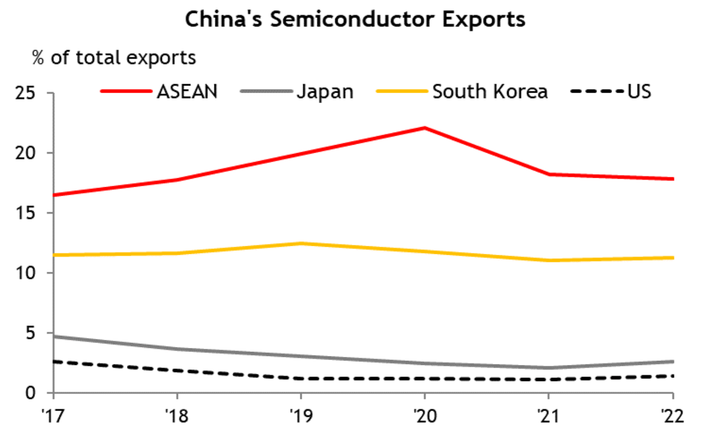
Fig 48: China Ramped Up Electronics Exports to ASEAN in Recent Years, Diversifying from US



Note: Electronics goods comprise SITC codes 751, 752, 761, 762, 763, 764, 759 and 776. ASEAN refers to ASEAN-6.

Source: UN Comtrade

Fig 49: China's Share of Semiconductor Exports to ASEAN Rose to 22% in 2020, Before Easing to 18% in 2022



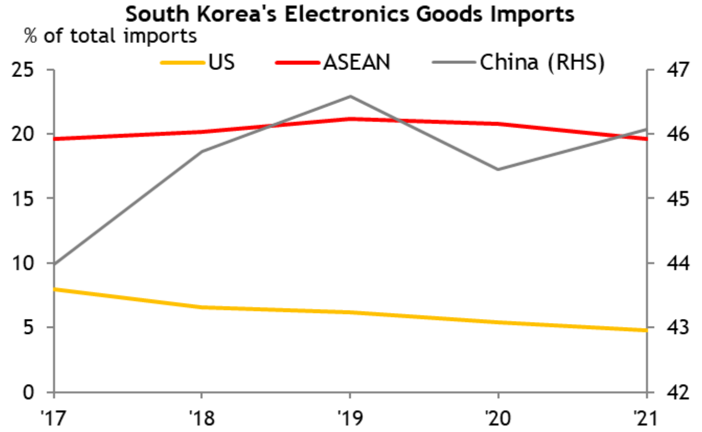
Note: Semiconductors comprise HS codes 8541 and 8542 (a subset of electronics). ASEAN refers to ASEAN-6.

Source: UN Comtrade

Supply reconfigurations towards ASEAN are less evident in South Korean and Japanese electronics imports, which still heavily rely on China. ASEAN's share of Korea and Japan's imports have remained similar since 2018 at around 20% and 16% respectively (see Fig 50 and 51). Japan has reduced imports from China (to 32% of total) but Korea's imports from China have risen (to 58% of the total).

Korea and Japan have reduced exports of electronics to China, in favour of ASEAN. This could be reflective of production shifts from China to ASEAN, leading to a rise in demand for tech components. Korea exported 24% of its electronics to ASEAN in 2021, up from 17% in 2018 (see Fig 52). Japan shipped 21.7% of its electronics exports to ASEAN last year (vs. 20.5% in 2018) (see Fig 53).

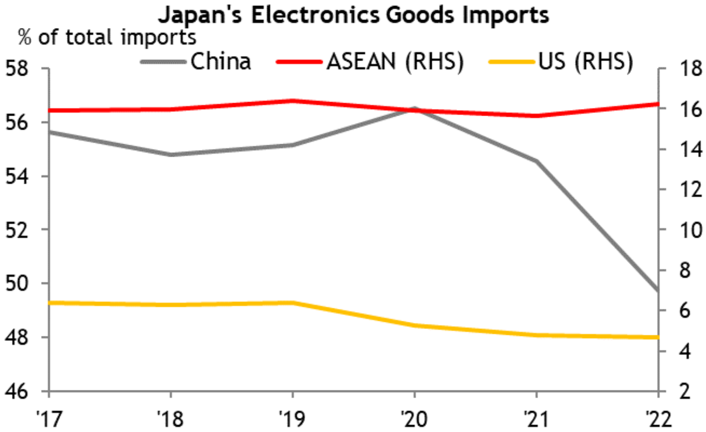
Fig 50: Korea - ASEAN's Share of Electronic Goods Imports Remains Stable While China's Share Rising



Note: Electronics goods comprise SITC codes 751, 752, 761, 762, 763, 764, 759 and 776. ASEAN refers to ASEAN-6.

Source: UN Comtrade

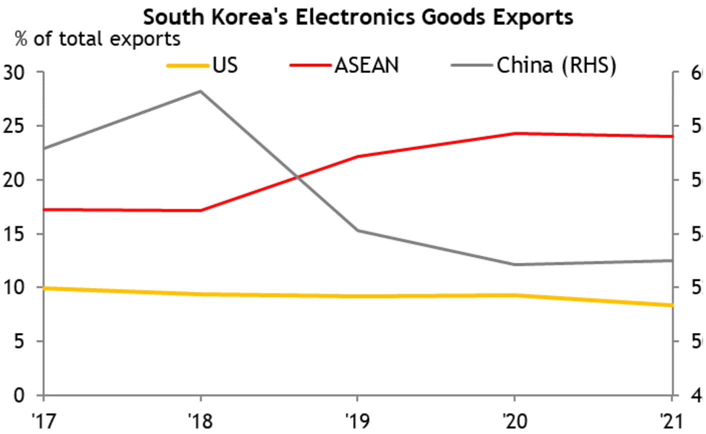
Fig 51: Japan - Share of Electronic Goods Imports from China Falling While ASEAN's Share Remains Stable



Note: Electronics goods comprise SITC codes 751, 752, 761, 762, 763, 764, 759 and 776. ASEAN refers to ASEAN-6.

Source: UN Comtrade

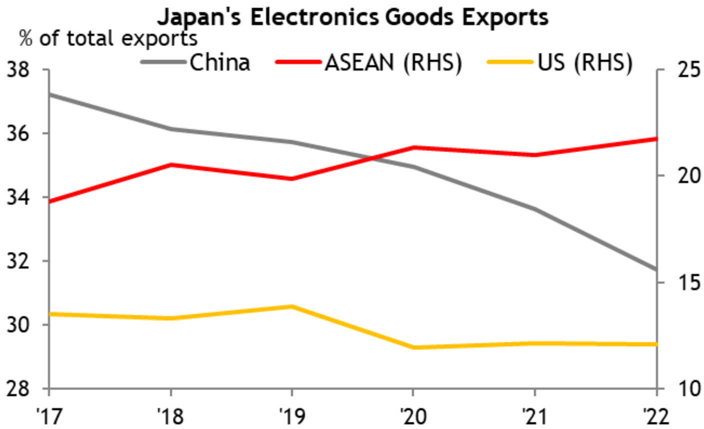
Fig 52: Korea - ASEAN Share of Electronics Exports Rising While China Share Falling



Note: Electronics goods comprise SITC codes 751, 752, 761, 762, 763, 764, 759 and 776. 2021 is latest available data. ASEAN refers to ASEAN-6.

Source: UN Comtrade

Fig 53: Japan - ASEAN Share of Electronics Exports Climbing While China Share Falling

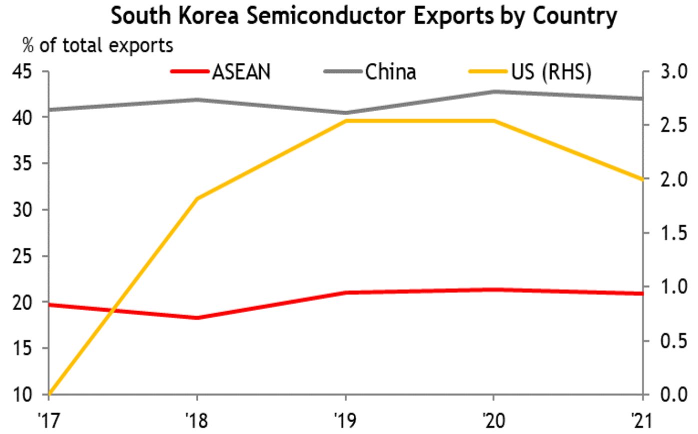


Note: Electronics goods comprise SITC codes 751, 752, 761, 762, 763, 764, 759 and 776. ASEAN refers to ASEAN-6.

Source: UN Comtrade

China remains the largest market for Japan and South Korea's semiconductor exports (see Figures 54 & 55). ASEAN's share of Japan's semiconductor exports climbed +1.2% point to 23.9% while China's share declined to 24.3% last year (vs. 26.5% in 2018). ASEAN's share of Korea's semiconductor exports rose to 20.9% in 2021 (vs. 18.2% in 2018) while China's share was constant at a much larger 42%.

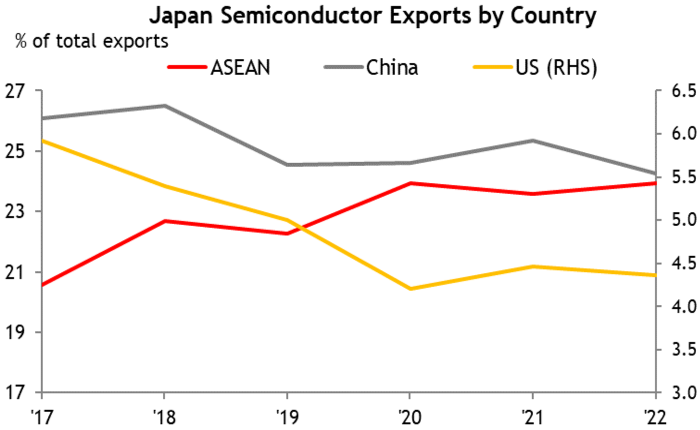
Fig 54: South Korea - Share of Semiconductor Exports to China Steady



Note: Semiconductors comprise HS codes 8541 and 8542 (a subset of electronics). 2021 is latest available data. ASEAN refers to ASEAN-6.

Source: UN Comtrade

Fig 55: Japan - Share of Semiconductor Exports to ASEAN Rising, While Exports to US Falling



Note: Semiconductors comprise HS codes 8541 and 8542 (a subset of electronics). ASEAN refers to ASEAN-6.

Source: UN Comtrade

Countries are increasingly viewing the semiconductor sector in national security terms and looking to onshore or near-shore production.

The US introduced the CHIPS and Science Act in 2022, which provides $39bn in incentives to build semiconductors in the US; $13.2bn in R&D and workforce development; and $500mn for enhanced security and updating legacy systems. In addition, a 25% investment tax credit will be provided for capital expenses for manufacturing of semiconductors and related equipment[22]. To qualify for these incentives, recipients are prohibited from expanding chip manufacturing capacity in China or any other country deemed to pose national security risks.

The EU finalized a EUR43bn ($47bn) Chips Act in April 2023, aiming to double the bloc's share of global chip output to 20% by 2030 in an attempt to catch up with Asia and the US. The Act will support investment along the entire semiconductor value chain, including chip fabrication, research and design, and packaging[23].

At the same time, the US has introduced a variety of containment measures to curb growth of China's technology and semiconductor companies, and is asking allied chipmaking countries to participate in the measures. Export restrictions were unveiled in Oct 2022 preventing US companies from supplying technology, software and equipment used in producing advanced chips to China. US citizens and green card holders have been banned from working with several Chinese chipmakers. In Jan 2023, the US, Netherlands, and Japan agreed to restrict exports of some advanced chip-making equipment to China.

Singapore's Minister of State for Trade and Industry Alvin Tan remarked that Singapore's semiconductor sector could be affected by the containment measures, as many chip firms operating in Singapore have manufacturing processes and products reliant on US technology, which may be subject to the US' export controls. For instance, Applied Materials, the largest employer and contributor to the output of Singapore's semiconductor equipment industry, said that the export restrictions will affect sales of its wafer-fabrication equipment and related parts to China[24]. Net sales to China fell to $1.3bn in 4Q22 (vs. $2.1bn in 4Q21), with China making

[22] US White House, "Fact Sheet: CHIPS and Science Act Will Lower Costs, Create Jobs, Strengthen Supply Chains, and Counter China" (link).
[23] European Commission, "*EU Chips Act triggers further €7.4bn investment in advanced semiconductor manufacturing in Europe - Statement by Commissioner Thierry Breton*", 28 Apr 2023 (link).
[24] Straits Times, "*US tech curbs on China will affect S'pore's semiconductor sector: MTI*", 20 Oct 2022.

up a smaller 20% of total sales (vs. 34% in 4Q21).

Singapore's government said it does not have enough granular information to quantify the impact of latest US curbs on Singapore's semiconductor industry. However, the impact may not be insignificant, given that Hong Kong and Mainland China are Singapore's largest chip export markets. Exports of semiconductor devices to China and Hong Kong made up a hefty 18.1% ($1bn) and 26.6% ($1.5bn) of total product exports respectively. Exports of integrated circuits to China and Hong Kong made up 18.4% ($18.4bn) and 50.5% ($50.5bn) of total exports.

Malaysia's exports may also be affected by the chip-related restrictions on China, given its role as a semiconductor packaging and testing hub supplying an estimated 13% of global demand.

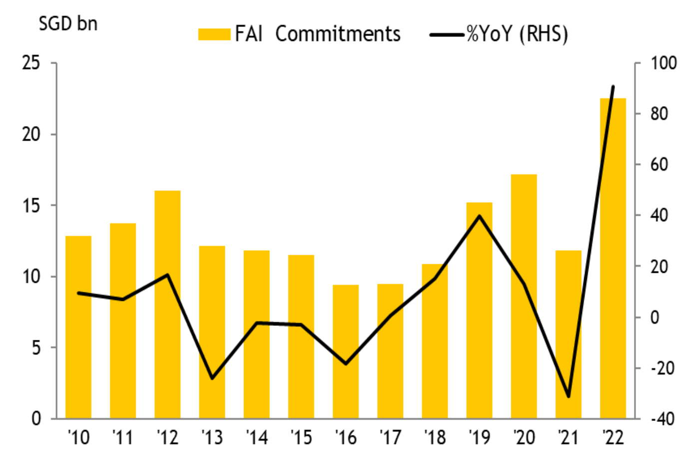
That said, the escalating chip rivalry between US and China is fueling a surge in investment to set up semiconductor facilities outside China, in order to meet US regulatory requirements and manage the risk of further curbs.

Even as advanced economies like the US and EU push for more on-shoring of production, neither of them are able to be truly self-sufficient across the entire semiconductor value chain given its length and complexity.

As a politically neutral region neither aligned with China nor the West in present disputes, ASEAN is well-positioned to benefit from diversification of semiconductor value chains, as chipmakers seek to reduce concentration risks.

In Singapore, fixed asset investment commitments jumped by +90% YoY to a record high of S$22.5bn in 2022, 67% of which was in the electronics cluster alone (see Figures 56 & Table 4). Applied Materials is setting up a new S$600mn plant (to open in 2024), which will add an additional 1k staff to its local workforce of 2.5k[25]. French semiconductor materials supplier Soitec is investing S$571mn to double the capacity of its wafer fabrication plant by 2024 and double its Singapore workforce to more than 600 by 2026[26].

Fig 56: Singapore - Fixed Asset Investment Commitments Rose to Record High of S$22.5bn in 2022



Source: EDB

Table 5: Surge Mainly Due to Electronics, Which Accounted for 67% of FAI

	2021	2022	2021	2022
	SGD mn	SGD mn	% of total	% of total
Total	**11,796**	**22,490**	**100%**	**100%**
Manufacturing	**8,486**	**17,371**	**72%**	77%
Electronics	4,986	14,994	42%	67%
Biomedical Manufacturing	1,769	862	15%	4%
Chemicals	980	844	8.3%	4%
Transport Engineering	367	68	3.1%	0%
General Manufacturing	315	166	2.7%	1%
Precision Engineering	69	437	0.6%	2%
Services	**3,310**	**5,118**	**28%**	**23%**

Source: EDB

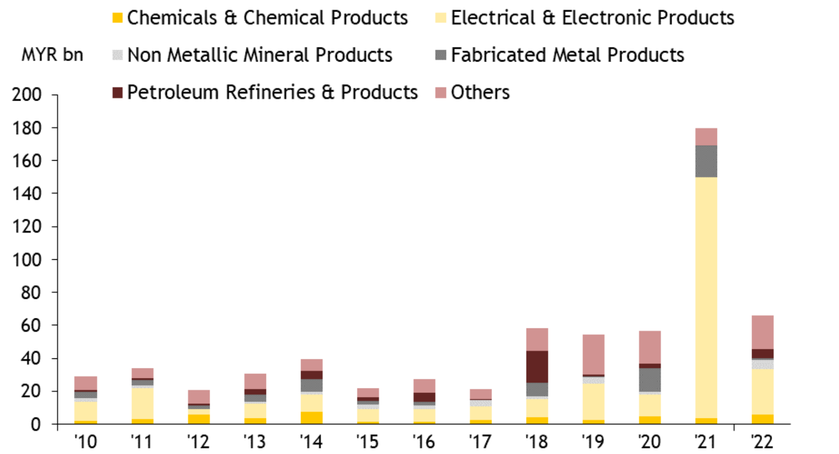
Malaysia secured MYR146.3bn in 2021 and MYR27.9bn in 2022 of approved FDI in the electrical & electronic products sector (which is dominated by semiconductor-related industries), significantly higher than an average of $15.4bn in the three

[25] Straits Times, "*Applied Materials breaks ground on $600 million facility in Singapore that will add 1,000 jobs*", 22 Dec 2022.
[26] Straits Times, "*French semiconductor firm Soitec to double production and manpower in Singapore*", 9 Dec 2022.

years prior. Electronic products made up 70.9% of total FDI during the past two years, far surpassing the annual average of 27.2% during 2018-2020 (see Fig 57).

TF AMD Microelectronics, a local partner to chipmaker AMD announced MYR2bn investment to build a new manufacturing facility last year. Intel announced in 2021 that it would inject MYR30bn of capital spending over ten years to expand chip packaging and testing operations[27].

Fig 57: Malaysia - Electronic Products Made Up 71% of FDI During Past Two Years, Far Surpassing Annual Average of 27.2% During 2018-2020



Source: CEIC

There has also been considerable interest in chip-related investments in Vietnam amid the government's push to promote hi-tech manufacturing and the country's close proximity to China. Competitive tax exemptions have been introduced for investments in the semiconductor sector, with the authorities also offering to subsidize up to 15% of training costs for companies.

Last year, Samsung announced a $3bn commitment to build a semiconductor component manufacturing facility in Vietnam, which is planned to be ready by July. Intel invested an additional $475mn in its Saigon Hi-tech Park semiconductor test-and-assembly facility over Jun 2019 to Dec 2020 to enhance manufacturing of its 5G products and Core processors[28].

US firm Synopsys, one of the three US companies[29] dominating the global chip design software market announced in August 2022 that it would deepen expansion in Vietnam by training more electrical engineers and providing 30 chip design centre software licenses worth $20mn to the Saigon Hi-Tech park. The company is supporting SHTP to establish a chip design centre to develop IC design talent, by providing curriculum and educational resources, and investing in the centre's IT infrastructure[30].

[27] South China Morning Post, "*Malaysia faces pressure to 'innovate' chip sector as US-China rivalry gives Vietnam a boost*", 22 Apr 2023.
[28] Intel Newsroom, "*Intel Invests Additional $475 million in Vietnam*", 26 Jan 2021.
[29] The other two companies are Cadence Design Systems and Mentor, also US-based.
[30] Digi Times, "*Synopsys aims to advance IC design talent in Vietnam*", 29 Aug 2022.

Fragmentation in Energy Markets

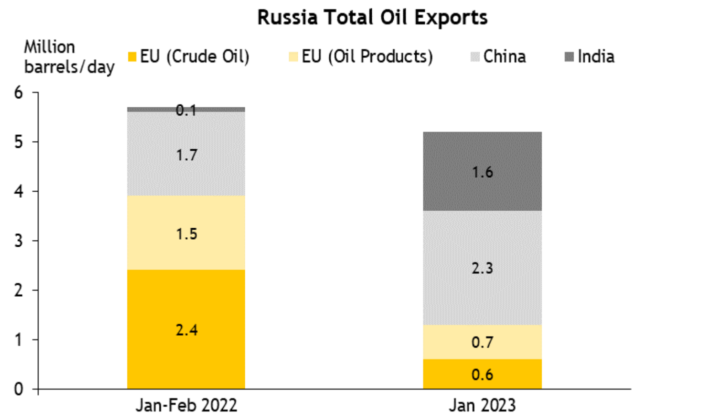
"We always monitor all of the options. If there is the country (and) they give a better price, of course."

President Joko Widodo in an interview with the Financial Times when asked whether Indonesia would buy oil from Russia[31], Sep 2022.

Geoeconomic fragmentation in energy markets is becoming more evident. Russia's crude oil and refined fuels have been diverted to China, India, and the Middle East, following the start of the Russia-Ukraine war in March 2022 (see Fig 58). The UAE and Saudi Arabia have increased imports of Russian fuel oil, to displace crude in direct-burning for power generation.

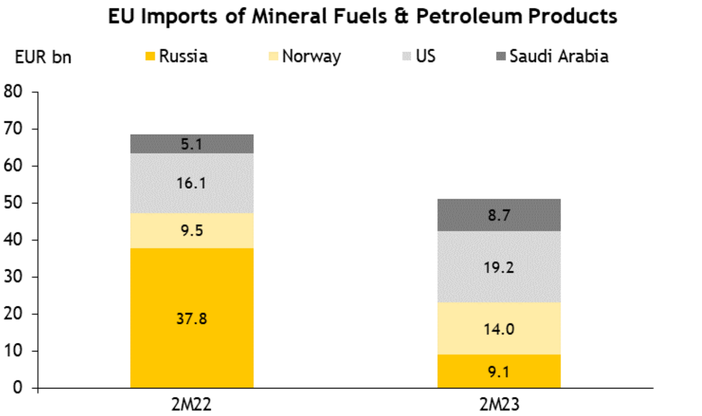
Russia's oil exports to Europe plunged following the EU embargo on Russian crude oil effective 5 Dec 2022, and a ban on Russian oil products effective 5 Feb 2023. Europe has imported more expensive oil from the US, Norway, Saudi Arabia, and other countries (see Fig 59).

Fig 58: Russia's Oil Exports to China and India Jumped Following the Start of Russia-Ukraine War



Source: International Energy Agency

Fig 59: EU's Energy Imports from Russia Shrunk in 2M23 from Last Year; Imports from Norway, US, Saudi Arabia Rose



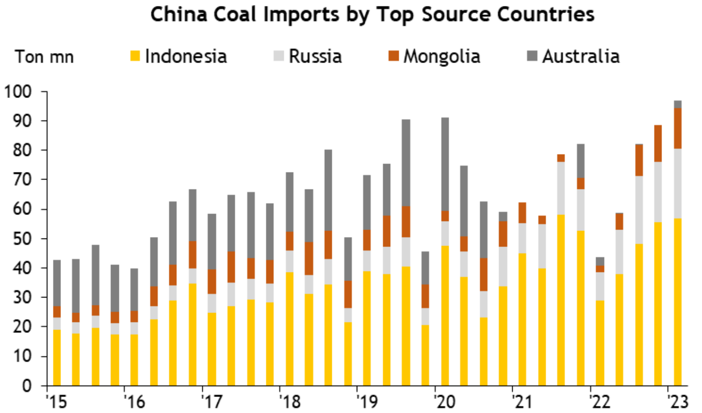
Source: CEIC

Indonesia came under the spotlight when it considered buying Russian oil last year as fuel prices soared. In Aug 2022, Tourism Minister Sandiaga Uno stated that Indonesia was offered Russian crude at a 30% discount, and that state-owned Pertamina was reviewing the risks of buying Russian oil. Any move to purchase Russian crude at prices above the cap agreed by G-7 members could subject Indonesia to US sanctions.

China's reliance on Russian coal has increased following the Russia-Ukraine war and the ban on Australian supplies. Russia's largest thermal coal miner pledged in April 2023 to triple exports to China this year to help offset sanctions elsewhere[32]. Indonesia's exports of coal to China also jumped by +39% to 196mn tons in 2021 following the ban on Australia coal (see Fig 60).

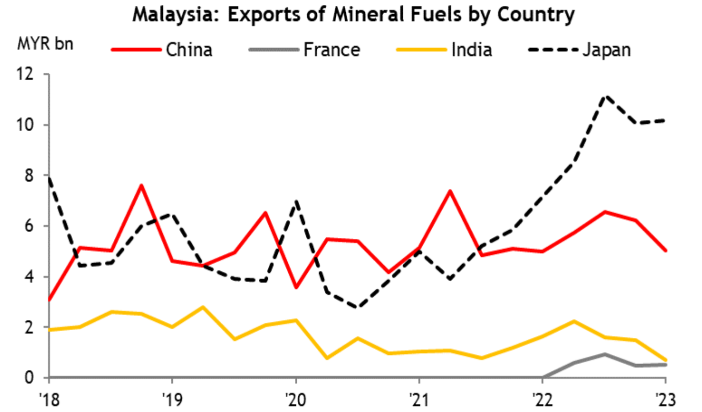
[31] Reuters, "*Indonesia considering buying Russian oil as fuel prices soar, FT reports*", 12 Sep 2022.
[32] Bloomberg, "*China's Big Coal Haul Includes Record Russian Purchases*", 21 Apr 2023.

Fig 60: China's Coal Imports from Russia Nearly Doubled in 2022 from 2020 Levels Following the Ban on Australia Coal



Source: CEIC

Fig 61: Malaysia's Mineral Fuel Exports to Japan and France Soared Since the Russia-Ukraine War Started



Source: CEIC

Malaysia and Indonesia are benefiting from the reconfiguration in energy suppliers, with both countries seeing rising demand from Japan, South Korea, and some European countries. Malaysia's exports of mineral fuels to Japan have nearly doubled since the start of the Russia-Ukraine war. Exports to France – which was nearly non-existent prior to the war – reached MYR2bn (US$455mn) in 2022 (see Fig 61). Indonesia's coal exports (in volume terms) to Italy jumped by nearly tenfold in 2022, while exports to Netherlands also hit a record high.

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