AMRO
ASEAN +3 MACROECONOMIC RESEARCH OFFICE

Analytical Note

Trade Wind Series

Has the Shifting Trade Landscape Changed the China–ASEAN Nexus?[1]

September 8, 2023

I. Introduction

1. **China's position as a leading exporter in global trade is being challenged.** The trade conflict between the US and China since 2018 has caused consternation about China's trade and growth due to the imposition of high tariffs and heightened uncertainties (Fajgelbaum and Khandelwal 2022). The COVID-19 pandemic exacerbated these concerns, as many countries increasingly advocated for supply chain independence and security. Since then, there has been a strong push to relocate offshore manufacturing from China back to home countries or nearby friendly nations (Shih 2020). As a result, China's export growth and the production structure of its trading partners are being disrupted.

2. **ASEAN's role in international trade has correspondingly been affected.** The extent to which ASEAN's exports may be changing as a result of China's evolving situation has become an important issue. On the one hand, the tariffs imposed by the US and China on each other may be transferred to third economies through input-output linkages (Mao and Gorg 2020). On the other, trade flows between the US and China could be significantly diverted to their major trade partners, including to many Asian countries (Flaaen, Hortacsu, and Tintelnot 2020; Li, Balisteri, and Zhang 2020). Given that ASEAN is close to China and has deep and widespread linkages with the latter through a complex network of supply chains, there is growing interest in whether the ASEAN region will become the main offshoring destination for China and potentially replace China as the next major manufacturing center.

3. **This note analyzes the performance of China and ASEAN in global trade to determine if their respective contributions have materially altered.** There are two separate concepts that are considered here. Both export share and growth are calculated to determine the extent of gains or losses by economies amid the shifts in global trade patterns. For example, although any reduction in global export share may point to

[1] Prepared by Hongyan Zhao (zhao.hongyan@amro-asia.org) and Yin Fai Ho (yinfai.ho@amro-asia.org) (both Macro-Financial Research Group); reviewed by Li Lian Ong (Senior Advisor). The authors would like to thank Jae Young Lee, Kouqing Li, and Allen Ng for useful comments. The views expressed in this note are the authors' and do not necessarily represent those of the AMRO or AMRO management. Unless otherwise indicated, the analysis is based on information available up to August 2023. For brevity, Hong Kong, China is referred to as "Hong Kong" in the text.

diminishing export competitiveness, it does not necessarily indicate an immediate loss in welfare—rather, it could be a consequence of a growing global export market. We assess the evolving global trade landscape and examine the sectors in which China's comparative advantages in world exports have either diminished or expanded, the countries that have stepped in to replace China in its declining sectors, as well as the ASEAN economies that are successfully leveraging off China's ascendant sectors.

II. Sectoral Winners and Losers

4. **Emerging market economies (EMEs), notably China, increased their contributions to global trade during the rapid trade integration of the 21st century.** The rise in global export shares of EMEs began in the 1990s but accelerated especially after 2000 when the trade-to-GDP ratio increased quickly (Antras 2020). EME export share increased to over 43 percent in 2022 from 26 percent in 2000, with China and ASEAN reaping substantial gains during this time (Figure 1). In contrast, the advanced economies (AEs) saw their aggregate export share fall from 74 percent in 2000 to 56 percent in 2022—the US and Japan, in particular, recorded notable losses in market share (Figure 2).

5. **China's rising position in world trade had slowed even before its trade conflict with the US.** China's ascent, especially after it joined the World Trade Organization (WTO) in 2001, was remarkable in its acceleration, propelling its share of global exports to around 14 percent in 2015 from less than 4 percent in 2000. However, the upward trajectory began to decelerate over the 2016–18 period amid a general slowdown in global trade. The subsequent imposition of high tariffs by the US on Chinese exports saw bilateral trade between the two dip in 2019, although China's overall export share of global trade rose moderately. The year 2020 witnessed a dramatic surge in China's export share as the COVID-19 pandemic swept the world and China's supply chain remained resilient; however, China's export share resumed its previous downward trend in 2022 (Figure 1).

6. **China's comparative advantage has diminished in certain, mainly labor-intensive sectors.** For instance:

- Among its medium- to large-sized sectors, approximately 30 percent (69 sectors) have witnessed decreases in their global export share from 2015–2022.[2] Collectively, these sectors account for an average of 26 percent of China's total exports between 2015–22.

- Among these sectors, the first 34 that show the most rapid drop constitute roughly 9.7 percent of China's overall exports (Appendix Table 1). For these fast-declining sectors, changes in global export shares range from –4.5 to –46.6 percent.[3]

[2] Here, the medium- or large-sized sectors refer to those with export shares exceeding the average share of each sector in China's total exports. At the HS 4-digit level, there are over 1,000 sectors in total. The average share is around 0.08 percent, with 226 sectors at the HS 4-digit level exceeding this threshold. These sectors collectively account for around 83 percent of China's total exports. Laser and optical appliances (HS4: 9013) and flat panel display modules (HS4: 8524) are excluded given that China's Customs modified the statistical catalog and changed the code for "LCD panel" from "9013" to "8524" in 2022, and consequently, the time series of "9013" and "8524" before and after 2022 are inconsistent and cannot be compared.

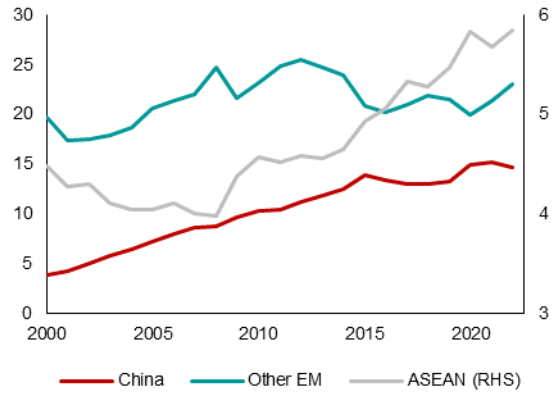
[3] Fast-declining sectors are defined as those whose respective global shares dropped more than the median change observed across 69 sectors, that is, the first 34 sectors. We will refer to these fast-declining sectors as "declining" sectors from here onward.

- Approximately 60–70 percent of the declining sectors that have recorded decreases in global shares are in the labor-intensive category (Figure 3).[4] Notably, the sectors experiencing the most significant decline are apparel, shoes, and hats, each of which has observed a reduction of more than 10 percent in their respective global shares (Appendix Figure 1).[5]

- At the aggregate level, the global export share of the declining sectors has fallen from 39.3 percent in 2015 to 29.0 percent in 2022, translating to an 8.4 percent drop in China's exports to the world.[6] This decline was evident even prior to the US–China trade conflict and the COVID-19 pandemic, which the latter resulted in a temporary reversal (Figure 3).

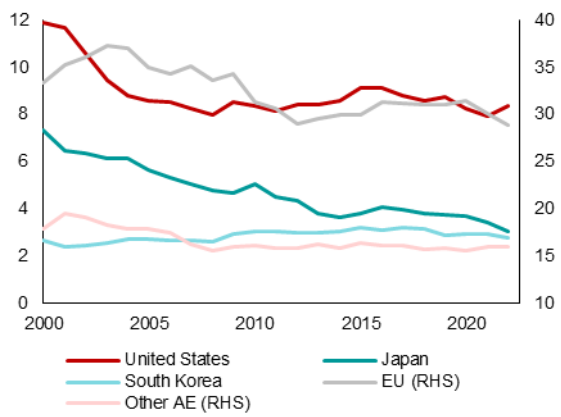
However, the fall in market share and growth of these labor-intensive exports becomes less alarming when viewed through the lens of China's ongoing process of industrial upgrading and deliberate offshoring of labor-intensive production to mitigate the escalating costs.

Figure 1. EMEs: Share of Global Exports, 2000–22
(Percent)



Sources: IMF via Haver Analytics; and AMRO staff calculations.
Note: ASEAN excludes Singapore.

Figure 2. AEs: Share of Global Exports, 2000–22
(Percent)



Sources: IMF via Haver Analytics; and AMRO staff calculations.
Note: EU = European Union.

7. **The role of the US as a major destination for China's exports appears to be stable among declining sectors.** Although China's global share of certain sectors started decreasing from 2015, the role of the US as a major destination for China's exports in those sectors has not diminished in any pronounced manner. And despite the reduction in China's share of exports to the US in 2019 and 2020 following the US–China trade conflict—as predicted by trade models (Guo and others 2018)—China's US market share has rebounded over the past two years (Figure 4). Even after taking into account China's decreasing indirect exports through Hong Kong, the US continues to maintain its role as an essential trade

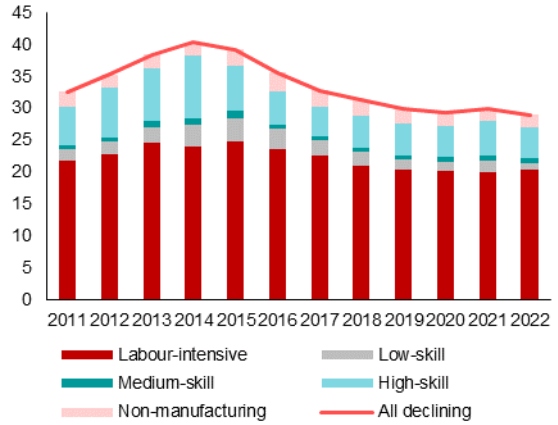
[4] We follow UNCTAD's classification of manufactured goods by degree of manufacturing groups (SITC Rev.3) and utilize the concordance between HS and SITC provided by United Nations to determine the categorization of HS 4-digit sector into labor-intensive and resource-intensive, low-skill and technology-intensive, medium-skill and technology-intensive, and high-skill and technology-intensive manufactures.

[5] See Appendix III for global share by product group.

[6] The global export share is computed based on 43 major economies that account for an average of 87 percent of the world's exports from 2011–22.

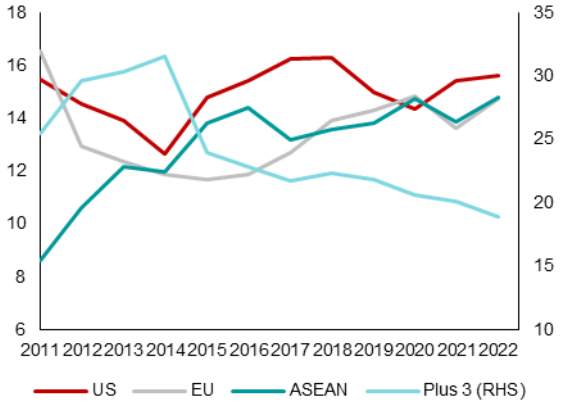
partner.[7] Meanwhile, China has been expanding its exports to both ASEAN and the EU across a variety of products—their share of China's total exports increased by 1.0 and 3.0 percentage points, respectively, from 2015 to 2022. In contrast, China's export shares to the respective Plus-3 economies, particularly Hong Kong and Japan, have dropped.

Figure 3. China: Share of Global Exports in Its Declining Sectors
(Percent)



Sources: IHS Markit Global Trade Atlas; UN Comtrade; and AMRO staff calculations.

Figure 4. China: Major Export Partners in Its Declining Sectors
(Percent of total exports)



Sources: IHS Markit Global Trade Atlas; UN Comtrade; and AMRO staff calculations.
Note: EU = European Union; Plus-3 = Hong Kong, Japan, and Korea; US = United States.

8. **On a positive note, China's exports have gained market share across the majority of sectors.** Specifically:

- Roughly 70 percent of medium- to large-sized sectors at the HS 4-digit level (157 sectors) have experienced global market share growth from 2015–22, accounting for nearly 57 percent of China's total exports. The top half of these growing sectors contribute 22.2 percent to China's total exports (Appendix Table 2).

- At the sectoral level, the changes in market share of these fast-rising sectors range from 5.4 percent to 24.9 percent.[8] Noteworthy sectors posting rapid growth include electrical equipment, toys, and organic chemicals (Appendix Figure 2).[9]

- On an aggregate level, these growing sectors have collectively witnessed a surge in their global market share, escalating from 17.9 percent in 2015 to 28.5 percent in 2022 (Figure 5). In value terms, these exports more than doubled over the same period, growing by 115.7 percent. Over 70 percent of these ascendant sectors are medium- or high-skill and technology-intensive industries, aligning with China's economic development and policy direction. Following several decades of robust growth, China has amassed capital, skilled labor, and technology, enabling its

[7] The share of China's exports to Hong Kong had declined dramatically, accompanied by a rapid decrease in the US' share of Hong Kong's exports. However, given that China's trade that is routed through Hong Kong to the US constitutes a small proportion (around 10 percent) of China's direct exports, the US continues to represent an important export destination for China even when indirect exports via Hong Kong are taken into account.

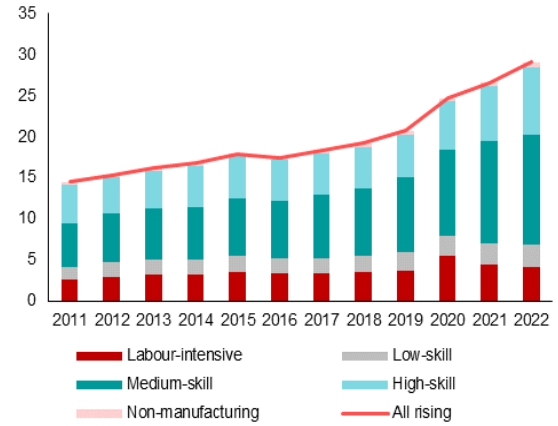
[8] Fast-rising sectors are defined as those whose respective global shares rose more than the median change observed across 157 sectors, that is, the first 78 sectors. We will refer to these fast-rising sectors as "ascendant" sectors from here onward.

[9] See Appendix III for global share by product group.

transition into advanced industries (Zhang and Zhang 2023). Furthermore, the Chinese government has actively endorsed policies fostering industrial upgrades and transfers.[10]

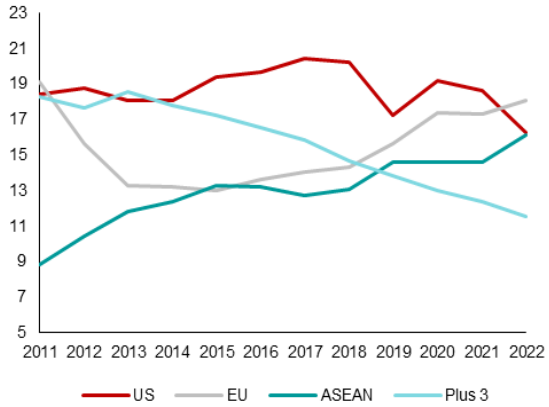
9. **China's exports to the EU and ASEAN have exhibited greater growth compared to other trading partners in China's ascendant sectors.** Unlike China's declining sectors, the significance of the US as the foremost export destination has waned within these expanding sectors. In contrast, China's exports to the EU have been on the rise since 2016, with the latter having become the former's largest export partner in these sectors as of 2022. Exports to ASEAN have also gained prominence. Elsewhere, China's total export shares of the Hong Kong and Japanese markets have fallen rapidly, even within the sectors experiencing growth (Figure 6).

Figure 5. China: Share of Global Exports in Its Ascendant Sectors
(Percent)



Sources: IHS Markit Global Trade Atlas; UN Comtrade; and AMRO staff calculations.

Figure 6. China: Major Export Partner Share in Its Ascendant Sectors
(Percent of total exports)



Sources: IHS Markit Global Trade Atlas; UN Comtrade; and AMRO staff calculations.
Note: EU = European Union; Plus-3 = Hong Kong, Japan, and Korea; US = United States.

III. Substitution and Synchronization

10. **The question is which economies have benefited from China's loss in exports.** For those sectors in which China's shares of global exports have fallen, we find that Hong Kong has also concurrently experienced losses, primarily attributable to its role as a re-exporter for China. Otherwise:

- The global export share of EU countries, in those sectors where China's shares have declined (by about 10 percentage points), has surprisingly increased—by 6.9 percentage points, from 23.1 percent in 2015 to 30.0 percent in 2022.[11] Indeed, the EU's exports in these sectors expanded by an impressive 61 percent during this

[10] Numerous policies have been introduced to steer industrial upgrading and transfers, including 'Made in China 2025,' a national strategic plan designed to advance China's manufacturing sector; the 'Thirteenth Five-Year Plan' in 2016 and 'Fourteenth Five-Year Plan' in 2021, focusing on the growth of strategic emerging industries; the 'Industrial Structure Adjustment Guidance Catalog,' initially introduced in 2019 and subsequently revised in 2023, aimed at directing private investments towards advanced manufacturing sectors; and the 'Guiding Opinions on Promoting the Orderly Transfer of Manufacturing Industry' in 2022, aimed at orchestrating a well-coordinated transition of industries.

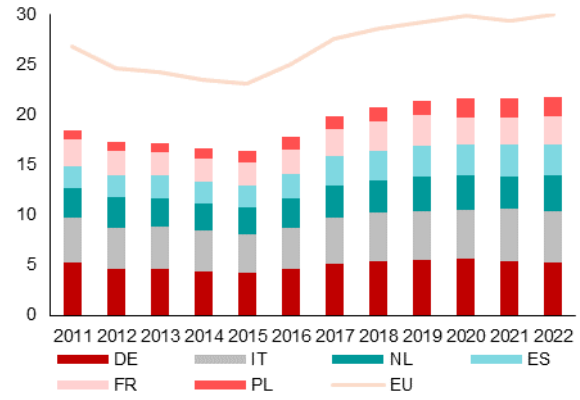
[11] References to the EU in Parts III and IV excludes Bulgaria, Croatia, Cyprus, Estonia, Greece, Latvia, Lithuania, Luxembourg, Malta, and Slovenia for which data are unavailable.

period. The increase is mainly driven by AEs such as Italy, Germany, Spain, Netherlands, and France as they export higher-value-added labor-intensive products (Figure 7). Among the European EMEs, Poland has also increased its global share of those sectors.

- ASEAN has only substituted for a small fraction of China's loss in market share, of less than 2.3 percentage points—growing from 10.1 percent to 12.4 percent in sectors where China has ceded market share.[12] More than half of the share increase in ASEAN is concentrated in labor-intensive sectors. Vietnam has benefited most from this rise in export share, followed by Malaysia and Indonesia (Figure 8). However, the Philippines and Thailand have not seen corresponding improvements in their respective global market shares. Nonetheless, total ASEAN exports to the world in these sectors rose by almost 52 percent from 2015–22 (Figure 9).

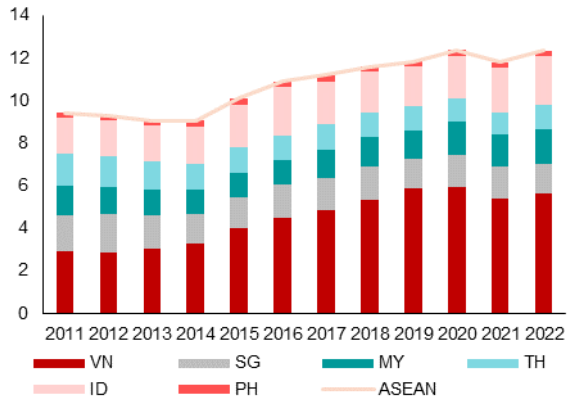
- The substitution effect is more obvious at the individual country level. Vietnam's global share of China's declining sectors has risen from 4.0 percent in 2015 to 5.6 percent in 2022, compared to EU economies such as Germany and Italy, which saw their shares grow from 4.3 percent to 5.3 percent and from 3.9 percent to 5.1 percent, respectively. Considering Vietnam's relatively smaller export scale and economic size, a mere 1.6 percentage point rise in global export share holds significant value for the country, translating into additional growth of 41 percent in Vietnam's exports in those sectors from 2015–22.

Figure 7. Selected EU: Share of Global Exports in China's Declining Sectors
(Percent)



Sources: IHS Markit Global Trade Atlas; UN Comtrade; and AMRO staff calculations.
Note: EU refers to the 17 countries in the European Union, excluding 10 countries—Bulgaria, Croatia, Cyprus, Estonia, Greece, Latvia, Lithuania, Luxembourg, Malta, and Slovenia due to data unavailability. DE = Germany; ES = Spain; FR = France; IT = Italy; NL = Netherlands; PL = Poland.

Figure 8. Selected ASEAN: Share of Global Exports in China's Declining Sectors
(Percent)

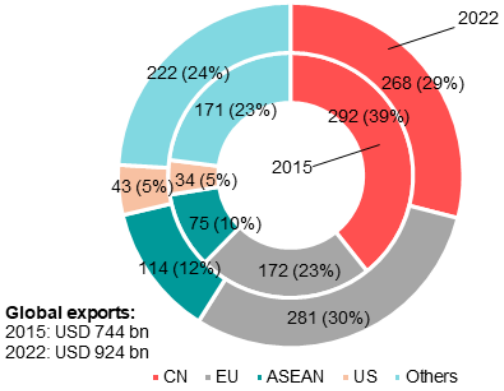


Sources: IHS Markit Global Trade Atlas; UN Comtrade; and AMRO staff calculations.
Note: ASEAN excludes Cambodia, Lao PDR, and Myanmar due to data unavailability. ID = Indonesia; MY = Malaysia; PH = the Philippines; SG = Singapore; TH = Thailand; VN = Vietnam.
.

[12] References to ASEAN in Parts III and IV excludes Cambodia, Lao PDR, and Myanmar for which data are unavailable.

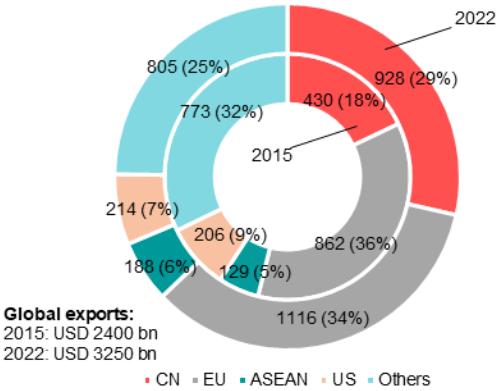
11. **Few economies appear to have gained from China's greater market share.** In sectors where China's market share has increased, the EU has experienced a concurrent decline, decreasing from 35.9 percent in 2015 to 34.3 percent in 2022 (Figure 10). Notably, Germany, which contributes a third of the EU's exports in these sectors, has driven this decrease (Figure 11). Several ASEAN countries, such as Singapore, Malaysia, Thailand, and the Philippines, have observed minor reductions in their respective market shares. In contrast, Vietnam has posted modest gains in tandem with China, while Indonesia also has seen slight improvements (Figure 12).

Figure 9. Selected Economies: Global Export Values in China's Declining Sectors, 2015–22
(Billions of US dollars)



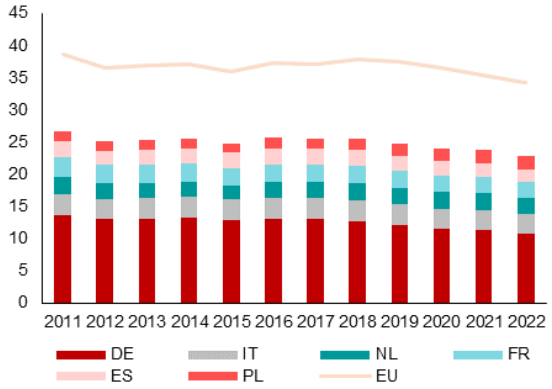
Sources: IHS Markit Global Trade Atlas; UN Comtrade; and AMRO staff calculations.
Note: Numbers in parentheses refer to the share of global exports. EU refers to the 17 countries in the European Union, excluding 10 countries—Bulgaria, Croatia, Cyprus, Estonia, Greece, Latvia, Lithuania, Luxembourg, Malta, and Slovenia due to data unavailability. ASEAN excludes Cambodia, Lao PDR, and Myanmar due to data unavailability. CN = China; US = United States.

Figure 10. Selected Economies: Global Export Values in China's Ascendant Sectors, 2015–22
(Billions of US dollars)



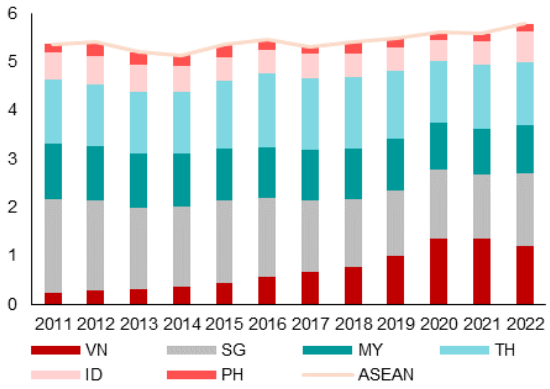
Sources: IHS Markit Global Trade Atlas; UN Comtrade; and AMRO staff calculations.
Note: Numbers in parentheses refer to the share of global exports. EU refers to the 17 countries in the European Union, excluding 10 countries—Bulgaria, Croatia, Cyprus, Estonia, Greece, Latvia, Lithuania, Luxembourg, Malta, and Slovenia due to data unavailability. ASEAN excludes Cambodia, Lao PDR, and Myanmar due to data unavailability. CN = China; US = United States.

Figure 11. Selected EU: Share of Global Exports in China's Ascendant Sectors
(Percent)



Sources: IHS Markit Global Trade Atlas; UN Comtrade; and AMRO staff calculations.
Note: EU refers to the 17 countries in the European Union, excluding 10 countries—Bulgaria, Croatia, Cyprus, Estonia, Greece, Latvia, Lithuania, Luxembourg, Malta, and Slovenia due to data unavailability. DE = Germany; ES = Spain; FR = France; IT = Italy; NL = Netherlands; PL = Poland.

Figure 12. Selected ASEAN: Share of Global Exports in China's Ascendant Sectors
(Percent)



Sources: IHS Markit Global Trade Atlas; UN Comtrade; and AMRO staff calculations.
Note: ASEAN excludes Cambodia, Lao PDR, and Myanmar due to data unavailability. ID = Indonesia; MY = Malaysia; PH = the Philippines; SG = Singapore; TH = Thailand; VN = Vietnam.

12. **Nonetheless, both ASEAN and EU economies have still benefited from China's ascendant sectors because global export markets have grown larger.** On aggregate, global exports for these sectors expanded by 35.4 percent from 2015–22, while corresponding ASEAN exports grew by 46.2 percent (Figure 10). With the exception of the Philippines, all others have seen their exports in these sectors expand between 2015 and 2022, at an annualized rate of 3.4 percent. Sectors characterized as non-labor-intensive have grown even more rapidly. However, a key distinction emerges when comparing ASEAN exports to Vietnam—the former is achieving lower export growth rates in China's rising sectors compared to their overall export growth, unlike Vietnam. Likewise, while the EU's exports have attained 29.3 percent growth over the same period, the export gains in these sectors are much smaller than those of China's and Vietnam's.

13. **The trade performance of the EU and China resembles a "seesaw" between the two, while Vietnam appears to be strategically leveraging China's evolving export position.** When examining each specific sector individually, a consistent pattern emerges across the medium- to large-sized sectors. Notably:

- Alterations in China's global market share are negatively correlated to corresponding changes observed in the EU's—when China's market share of a given sector falls, there tends to be a concurrent increase in the EU's market share, even in cases primarily involving labor-intensive sectors. Conversely, when China makes gains in market share, the EU's presence in that sector tends to recede (Figure 13). This intricate interplay suggests the competitive nature between China and the EU.

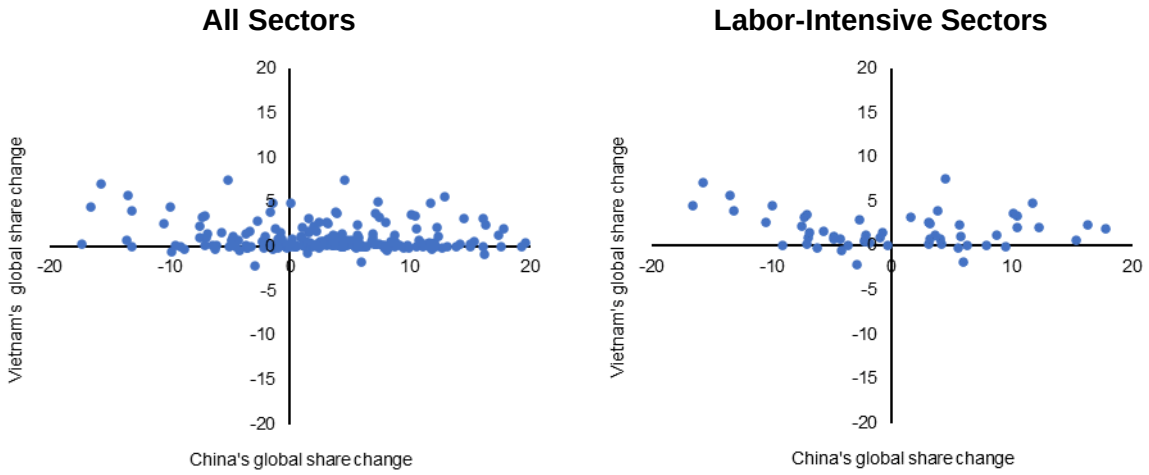
- In contrast, the dynamics between global export share changes in China and Vietnam follow a different pattern (Figure 14). Vietnam seemingly plays a dual role—substituting for China in declining sectors and aligning with China in sectors that are on the rise thanks to positive spillovers to supply chains (Khan 2022). Irrespective of whether China is gaining or losing market share, Vietnam manages to expand its market share across a majority of sectors, particularly in labor-intensive sectors.

Figure 13. China and EU: Change in Global Export Share across Sectors, 2015–22
(Percent)

Sources: IHS Markit Global Trade Atlas; UN Comtrade; and AMRO staff calculations.
Note: All sectors refer to a total of 226 medium- or large-sized sectors in China, with 56 of these being categorized as labor-intensive sectors. The reference to the EU here excludes Bulgaria, Croatia, Cyprus, Estonia, Greece, Latvia, Lithuania, Luxembourg, Malta, and Slovenia, for which data are unavailable.

Figure 14. China and Vietnam: Change in Global Export Share across Sectors, 2015–22

(Percent)



Sources: IHS Markit Global Trade Atlas; UN Comtrade; and AMRO staff calculations.
Note: All sectors refer to a total of 226 medium- or large-sized sectors in China, with 56 of these being categorized as labor-intensive sectors.

IV. China and Vietnam

14. **Vietnam's substantial gains in the evolving global trade landscape, outperforming other ASEAN economies in terms of gaining global export share, warrant further study.** Vietnam shows similarities in manufacturing structures vis-à-vis China and the potential for mutual offsetting in exports—their revealed comparative advantages (RCAs) are positively correlated across numerous ascendant and declining sectors (Figure 15).[13] This alignment implies that the two economies possess similar advantages, or lack thereof, across most sectors, contributing to Vietnam's ability to substitute a portion of China's exports.[14] In contrast, advanced EU economies do not exhibit strong positive RCA correlations. However, they too can expand their respective market shares as long as they possess comparative advantage within these sectors.

15. **However, the changes in China's and Vietnam's RCAs do not necessarily align.** The result may be that Vietnam's gains are limited or even reversed during periods when China increases its market share of specific sectors. Indeed, the correlation between RCA changes for China and Vietnam over the 2015–22 period is not statistically significant. China predominantly accumulates market share of sectors associated with medium- to high-skilled and technologically advanced industries after decades of amassing capital, labor, and technology; these contributing and associated factors might be less substantial in Vietnam because it might require time to develop the necessary capacity to synchronize with or complement China's advancements in innovative high-tech sectors.

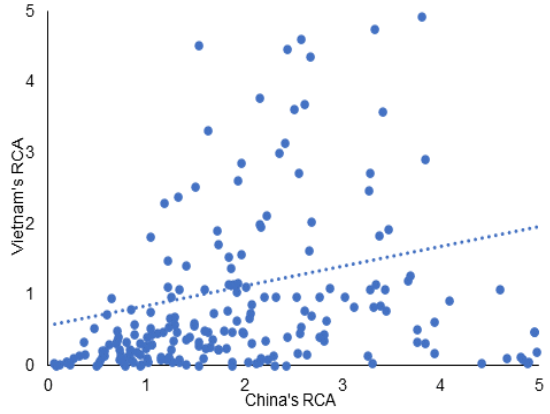
16. **China's investments in Vietnam are on the rise, particularly directed toward advanced sectors.** In 2021, some 44 percent of China's investments within the ASEAN region were channeled into the manufacturing sector, marking a significant leap from the 10 percent reported a decade ago. Previously, China's completed investments had primarily

[13] Indices such as RCA, Trade Complementarity Index, and Spearman's Rank Correlation are used to measure trade correlation between countries.

[14] Price elasticities may be estimated to analyze if a country is complementary or substitutionary for another country's export goods (Fajgelbaum and others 2023).

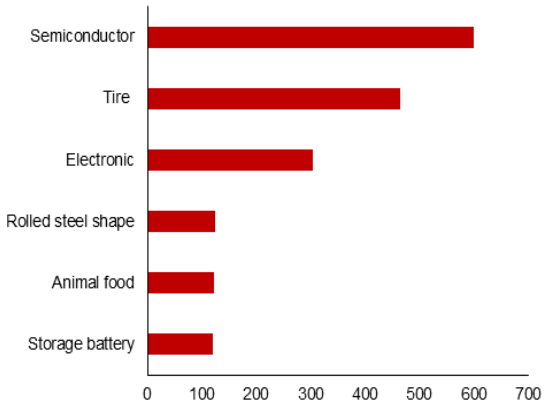
centered around low-tech labor-intensive industries, encompassing fiber production, apparel knitting, food manufacturing, and furniture.[15] However, a notable shift occurred in 2021, with China announcing outward direct investment (ODI) projects in considerably more advanced sectors, such as electronics, semiconductors, and storage batteries, markings diversification in focus beyond traditional food and steel manufacturing (Figure 16). This evolution possibly stems from China's pursuit of offshoring strategies, while concurrently fostering the development of analogous strengths in these sectors by Vietnam.

Figure 15. Manufacturing RCA in China and Vietnam
(2015–22 average)



Sources: IHS Markit Global Trade Atlas; UN Comtrade; and AMRO staff estimates.

Figure 16. China: Announced ODI Projects in Vietnam since 2021
(Millions of US dollars)



Sources: Orbis Crossborder Investment; and AMRO staff estimates.

V. Conclusion

17. **China's loss of export market share primarily affects sectors that are mainly concentrated in labor-intensive industries.** These sectors, which account for around 26 percent of China's total exports, are undergoing industrial upgrading and subject to offshoring. In other words, declining shares are natural for these sectors and the result of a strategic shift toward higher value-added and technology-intensive sectors. It signifies a proactive approach toward economic evolution with little need for government support.

18. **Indeed, a majority of China's industries are progressively gaining global market share, particularly in high-skilled and technology-intensive sectors.** This uptrend underscores China's competitive edge in these emerging sectors and has the potential to drive future growth of the domestic economy, with potentially positive spillover effects to the region. The creation of a favorable environment for viable firms is very important for the development of these sectors.

19. **Despite ongoing geopolitical tensions, China has managed to retain its status as a global manufacturing center.** Following a temporary reduction in global export share during the period of heightened US–China trade tensions, China swiftly rebounded. The negative effects in bilateral trade between the two countries were short-lived. The US has continued to maintain its significance as a crucial trade partner for China, despite ongoing export restrictions and other "de-risking" policies. This enduring relationship underscores the

[15] Per Moody's Orbis Crossborder Investment database.

robust interdependence between the world's two largest economies, notwithstanding the sometimes-tense rhetoric.

20. **ASEAN has the potential to benefit from shifts in the global trade landscape, although it has not yet fully capitalized on this opportunity.** While some of ASEAN's market share has increased slightly in sectors where China's corresponding share has shrunk, these gains are notably lower than those observed in EU markets, challenging the notion that ASEAN would significantly benefit from China's export losses arising from geopolitical tensions and supply chain reconfiguration. Most of these gains are concentrated in labor-intensive industries that are well-matched to their current comparative advantages. Nonetheless, ASEAN has still benefited from substantial export growth in these sectors because of the expanding market size.

21. **In China's expanding sectors that encompass more technology-intensive industries, only Vietnam achieved notable gains.** Other ASEAN economies such as Singapore, Malaysia, Thailand, and the Philippines, have seen slight reductions in their respective market shares, albeit their exports have grown in a larger market. Consequently, ASEAN governments should consider implementing supportive policies to nurture new industries that can drive future export growth and upskill their labor to complement China's industrial evolution. Given the region's deep economic ties with China, enhancing integration with China may be strategic, while diversifying export markets offers increased resilience (Alfaro-Urena and others 2023).

22. **In this regard, Vietnam stands out among ASEAN economies.** It appears to have captured a significant portion of China's share of the latter's diminishing sectors, particularly relative to its economic size, and is now aligning itself with China's emerging sectors. Vietnam's exports are poised to continue filling the void created by the former as a result to its comparative advantage. However, Vietnam's growing export sector makes it more susceptible to external shocks and it must therefore strengthen the resilience of its supply chains to safeguard against potential disruptions.

23. **Vietnam's strategy of integrating its production with China is a reminder that the latter is a key node in Asia's value chain network.** Within this network, ASEAN is a major exporter of commodities and intermediate goods to China, and hence the former's export performance would also continue to be closely tied to that of the latter's. This aspect of the China–ASEAN nexus warrants further study and will be covered in a future issue of AMRO's ***Trade Wind Series***.

****

Appendix I. China's Declining Business Sectors

Appendix Table 1. List of China's Declining Sectors at the HS4-Digit Level

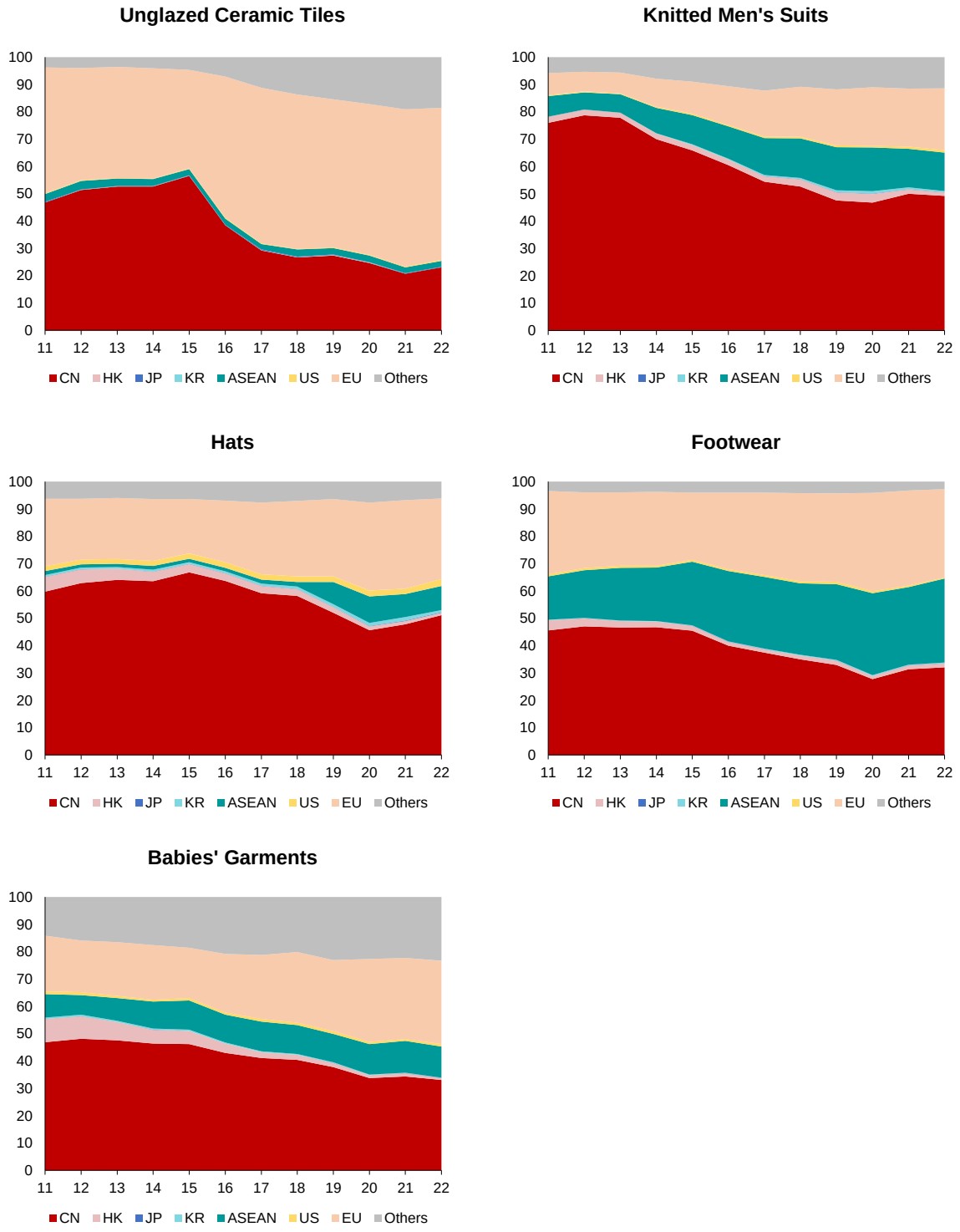
(Medium- to large-sized sectors)

HS4 Code	HS4 Description	Change in Global Export Share (2015–22)	Share of China's Exports (2015–22 Average)	Global Export Share (2015–22 Average)
303	Fish, frozen, excluding fish fillets and other fish meat without bones; fish livers and roes, frozen	-4.5	0.1	17.6
304	Fish fillets and other fish meat (whether or not minced), fresh, chilled or frozen	-8.8	0.2	21.9
307	Molluscs	-7.5	0.1	31.5
703	Onions, shallots, garlic, leeks and other alliaceous vegetables, fresh or chilled	-6.1	0.1	40.8
712	Vegetables, dried, whole, cut, sliced, broken or in powder, but not further prepared	-13.2	0.1	65.1
3102	Mineral or chemical fertilizers, nitrogenous	-20.8	0.1	24.1
3105	Mineral or chemical fertilizers with two of the three fertilizer elements; fertilizers nesoi; fertilizers in packs etc. Not over 10 kg gross weight	-9.9	0.2	32.5
4412	Plywood, veneered panels and similar laminated wood	-7.1	0.2	37.9
5208	Woven fabrics of cotton, containing 85% or more cotton by weight, weighing not more than 200 g/m2	-6.9	0.3	60.4
6103	Men's or boys' suits, ensembles, suit-type jackets, blazers, trousers, bib and brace overalls, breeches and shorts (no swimwear), knitted or crocheted	-16.6	0.2	53.4
6104	Women's or girls' suits, ensembles, suit-type jackets, blazers, dresses, skirts, divided skirts, trousers, etc. (no swimwear), knitted or crocheted	-10.5	0.6	50.0
6109	T-shirts, singlets, tank tops and similar garments, knitted or crocheted	-4.8	0.3	24.8
6110	Sweaters, pullovers, sweatshirts, waistcoats (vests) and similar articles, knitted or crocheted	-4.8	0.7	41.5
6111	Babies' garments and clothing accessories, knitted or crocheted	-13.1	0.1	38.7
6201	Men's or boys' overcoats, carcoats, capes, cloaks, anoraks including ski jackets, windbreakers and similar articles, other than those of heading 6203	-7.0	0.2	40.7
6202	Women's or girls' overcoats, carcoats, capes, cloaks, anoraks including ski jackets, windbreakers and similar articles, other than those of heading 6203	-9.1	0.3	44.4
6203	Men's or boy's suits, ensembles, suit-type jackets, blazers, trousers, bib and brace overalls, breeches, etc. (no swimwear), not knitted or crocheted	-7.5	0.5	32.7
6204	Women's or girls' suits, ensembles, suit-type jackets, dresses, skirts, divided skirts, trousers, etc. (no swimwear), not knitted or crocheted	-7.0	0.9	42.1
6205	Men's or boys' shirts, not knitted or crocheted	-7.3	0.1	25.2
6210	Garments, made-up of fabrics of felt or nonwovens and garments of textile fabrics (not knit etc.) rubberized or impregnated, coated etc. With plastics	-9.9	0.2	47.6
6402	Footwear, with outer soles and uppers of rubber or plastics, nesoi	-5.7	0.9	61.3
6404	Footwear, with outer soles of rubber, plastics, leather or composition leather and uppers of textile materials	-13.5	0.5	35.2
6505	Hats and other headgear, knitted or crocheted, or made up from lace, felt or other textile fabric, in the piece (no strips); hair nets of any material	-15.7	0.1	55.6
6802	Worked monumental or building stone and articles thereof nesoi; mosaic cubes and the like and colored granules, chippings and powder, of natural stone	-6.2	0.2	45.5
6907	Unglazed ceramic flags and paving, hearth or wall tiles; unglazed ceramic mosaic cubes and similar products	-33.4	0.2	30.8
7113	Articles of jewelery and parts thereof, of precious metal or of metal clad with precious metal	-5.1	0.5	14.7
7225	Flat-rolled alloy steel (other than stainless) products, 600 mm (23.6 in.) or wider	-17.3	0.3	25.7
7227	Bars and rods of alloy steel (other than stainless), hot-rolled, in irregularly wound coils	-46.6	0.1	44.7
7228	Bars and rods nesoi, angles, shapes and sections of alloy steel (other than stainless); hollow drill bars and rods, of alloy or nonalloy steel	-42.1	0.3	40.6
7604	Aluminium bars, rods and profiles	-13.6	0.1	20.2
8521	Video recording or reproducing apparatus, whether or not incorporating a video tuner	-4.9	0.1	63.3
8523	Prepared unrecorded media (other than motion-picture film) for sound recording or similar recording of other phenomena	-6.4	0.2	8.8
8525	Transmission apparatus for radiotelephony, radiotelegraphy, radiobroadcasting or tv; tv cameras; still image video cameras and recorders; digital cameras	-5.1	0.4	26.3
8532	Electrical capacitors, fixed, variable or adjustable (pre-set); parts thereof	-9.6	0.2	19.5

Sources: IHS Markit Global Trade Atlas; UN Comtrade; and AMRO staff calculations.

Appendix Figure 1. Share of Global Exports by Economy for China's Top Five Declining Sectors

(Percent)



Sources: IHS Markit Global Trade Atlas; UN Comtrade; and AMRO staff calculations.
Note: Unglazed ceramic tiles, knitted men's suits, hats, footwear, and babies' garments refer to HS 4-digit codes 6907, 6103, 6505, 6404, and 6111 respectively. EU refers to the 17 countries in the European Union, excluding 10 countries—Bulgaria, Croatia, Cyprus, Estonia, Greece, Latvia, Lithuania, Luxembourg, Malta, and Slovenia due to data unavailability. ASEAN excludes Cambodia, Lao PDR, and Myanmar due to data unavailability. CN = China; HK = Hong Kong; JP = Japan; KR = Korea; US = United States.

Appendix II. China's Ascendant Business Sectors

Appendix Table 2. List of China's Ascendant Sectors at the HS4-digit Level

(Medium- to large-sized sectors)

HS4 Code	HS4 Description	Change in Global Export Share (2015–22)	Share of China's Exports (2015–22 Average)	Global Export Share (2015–22 Average)
2917	Polycarboxylic acids, their anhydrides, halides, peroxides and peroxyacids; their halogenated, sulfonated, nitrated or nitrosated derivatives	14.2	0.1	18.8
2918	Carboxylic acids with added oxygen function and their anhydrides, halides, peroxides etc.; their halogenated, sulfonated, nitrated etc. Derivatives	9.7	0.1	37.2
2922	Oxygen-function amino-compounds	19.6	0.1	23.6
2931	Organo-inorganic compounds, nesoi	19.2	0.1	39.3
2933	Heterocyclic compounds with nitrogen hetero-atom(s) only	8.0	0.4	12.8
2934	Nucleic acids and their salts, other heterocyclic compounds	5.5	0.1	15.1
2941	Antibiotics	13.8	0.1	34.5
3206	Coloring matter nesoi; coloring preparations nesoi; inorganic products used as luminophores	15.0	0.1	20.1
3808	Insecticides, rodenticides, fungicides, herbicides, antisprouting products etc., packaged for retail sale or as preparations or articles	11.7	0.2	16.3
3818	Chemical elements doped for use in electronics, in the form of discs, wafers or similar forms; chemical compounds doped for use in electronics	6.9	0.1	24.7
3907	Polyacetals, other polyethers and epoxide resins, in primary forms; polycarbonates, alkyds, polyallyl esters and other polyesters, in primary forms	6.9	0.3	11.5
3918	Floor coverings, in rolls or tiles, of plastics; wall or ceiling coverings, in rolls not under 45 cm (18 in.) In width, of plastics	12.9	0.2	55.4
3919	Self-adhesive plates, sheets, film, foil, tape and other flat shapes, of plastics	8.5	0.1	17.1
3920	Plates, sheets, film, foil and strip, except self-adhesive, of plastics, non-cellular, not reinforced, laminated etc. Or combined with other materials	5.8	0.3	13.0
3924	Tableware, kitchenware, other household articles and toilet articles of plastics	12.1	0.4	55.7
3926	Articles of plastics and articles of polymers and resins of headings 3901 to 3914, nesoi	7.4	0.9	29.8
4421	Articles of wood, nesoi	5.5	0.1	46.3
4823	Paper, paperboard, cellulose wadding and webs, cut to size or shape nesoi; articles of paper pulp, paper, paperboard, cellulose wadding or webs nesoi	10.5	0.1	33.4
5211	Woven fabrics of cotton, containing less than 85% cotton by weight, mixed mainly or solely with manmade fibers, weighing more than 200 g/m2	12.2	0.1	60.7
5402	Synthetic filament yarn (other than sewing thread), not put up for retail sale, including synthetic monofilaments of less than 67 decitex	16.3	0.2	31.8
5407	Woven fabrics of synthetic filament yarn, including those of monofilaments 67 decitex or more, not over 1 mm cross-section and of strip not over 5 mm	15.4	0.5	54.7
5516	Woven fabrics of artificial staple fibers	7.9	0.1	71.3
5903	Textile fabrics impregnated, coated, covered or laminated with plastics, other than tire cord fabric	5.8	0.2	41.4
6001	Pile fabrics, including long pile fabrics and terry fabrics, knitted or crocheted	10.4	0.2	74.3
6004	Knitted or crocheted fabrics of a width exceeding 30 cm, containing by weight 5% or more elastomeric yarn or rubber thread, other than those head 6001	17.8	0.1	43.2
6006	Knitted or crocheted fabrics, nesoi	10.1	0.4	52.8
6307	Made-up articles of textile materials nesoi	6.0	0.5	53.3
6406	Parts of footwear; removable insoles, heel cushions and similar articles; gaiters, leggings and similar articles, and parts thereof	11.7	0.1	37.9
6702	Artificial flowers, foliage and fruit and parts thereof; articles made of artificial flowers, foliage or fruit	6.0	0.2	88.8
6910	Ceramic sinks, washbasins and pedestals, baths, bidets, water closet bowls and flush tanks, urinals and similar sanitary fixtures	11.8	0.3	66.0
7007	Safety glass, consisting of toughened (tempered) or laminated glass	8.8	0.1	29.1
7009	Glass mirrors, whether or not framed, including rearview mirrors	9.5	0.1	33.3

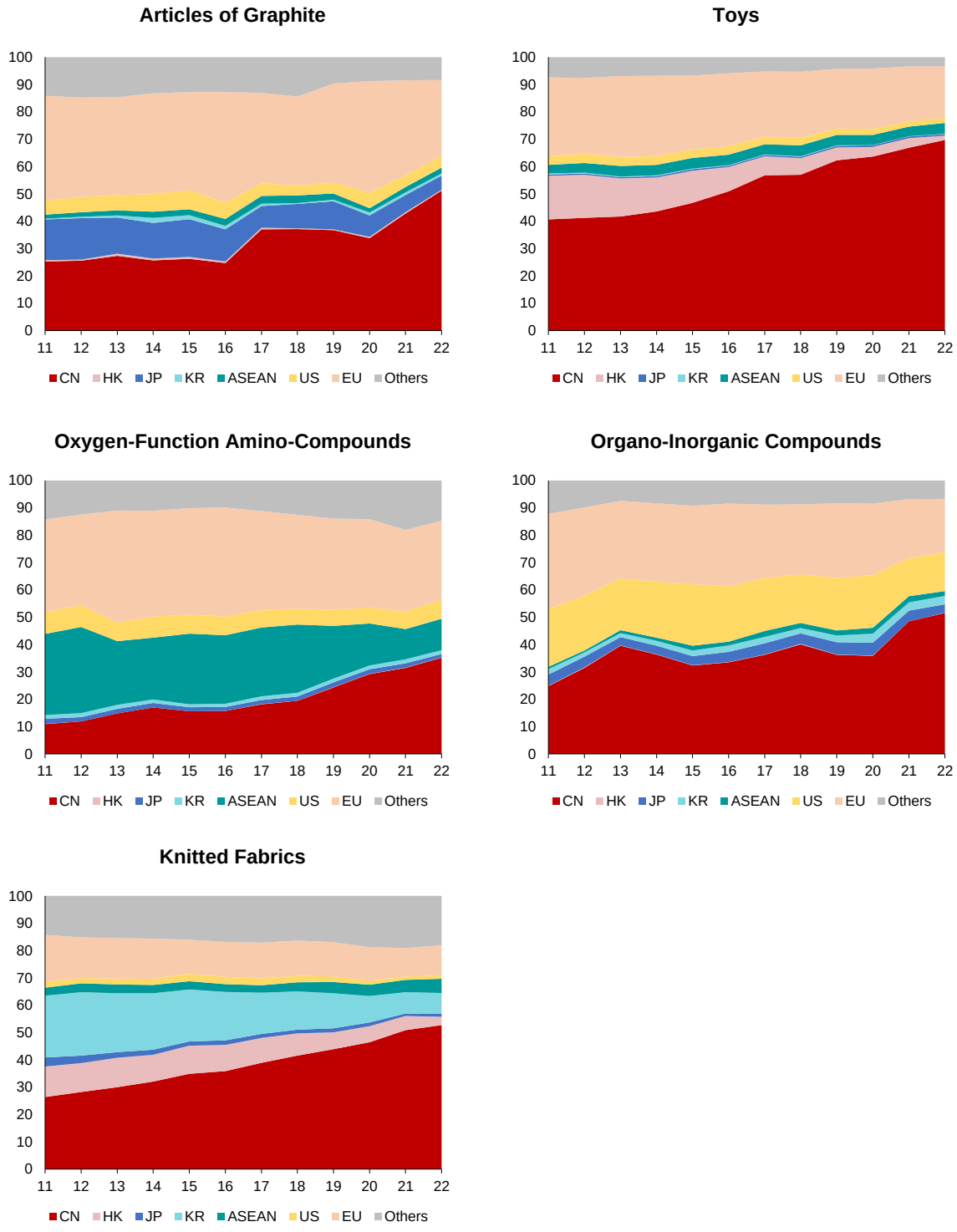
HS4 Code	HS4 Description	Change in Global Export Share (2015–22)	Share of China's Exports (2015–22 Average)	Global Export Share (2015–22 Average)
7013	Glassware for table, kitchen, toilet, office, indoor decoration or similar purposes nesoi	6.3	0.1	42.6
7117	Imitation jewelery	11.8	0.1	33.7
7217	Wire of iron or nonalloy steel	17.4	0.1	31.3
7304	Tubes, pipes and hollow profiles, seamless, of iron (other than cast) or steel	9.9	0.2	25.6
7318	Screws, bolts, nuts, coach screws, screw hooks, rivets, cotters, cotter pins, washers and similar articles, of iron or steel	7.8	0.3	17.0
7323	Table, kitchen or other household articles and parts thereof, of iron or steel; iron or steel wool; pot scourers, scouring pads etc., of iron or steel	8.0	0.3	63.5
7326	Articles of iron or steel, nesoi	8.8	0.4	20.1
7606	Aluminum plates, sheets and strip, over 0.2 mm (0.0079 in.) Thick	11.6	0.3	21.5
7607	Aluminum foil (whether or not printed or backed with paper or other backing materials), not over 0.2 mm (0.0079 in.) Thick (excluding any backing)	9.2	0.2	35.8
7616	Articles of aluminium, nesoi	5.7	0.1	20.2
8205	Handtools nesoi; blow torches etc.; vies, clamps and the like nesoi; anvils; portable forges; grinding wheels with frameworks; base metal parts	10.8	0.1	37.2
8207	Interchangeable tools for handtools (power-operated or not) or for machine-tools, including dies for extruding metal, and base metal parts thereof	6.8	0.1	16.2
8412	Engines and motors nesoi, and parts thereof	5.9	0.1	14.2
8414	Air/vacuum pumps, air/gas compressors and fans; ventilating/recycling hoods incorp a fan; gas-tight biological safety cabinets; parts thereof	10.9	0.6	22.9
8418	Refrigerators, freezers and other refrigerating or freezing equipment, electric or other; heat pumps nesoi, parts thereof	7.2	0.4	24.9
8425	Pulley tackle and hoists other than skip hoists; winches and capstans; jacks	10.5	0.1	32.9
8427	Fork-lift trucks; other works trucks fitted with lifting or handling equipment	12.1	0.1	15.4
8429	Self-propelled bulldozers, angledozers, graders, levelers, scrapers, mechanical shovels, excavators, shovel loaders, tamping machines and road rollers	13.1	0.2	12.8
8431	Parts of machinery of headings 8425 to 8430 covering derricks, fork-lift trucks, conveyers, self-propelled bulldozers, graders, snowplows, etc.	9.8	0.3	16.4
8474	Machinery for sorting, grinding etc. Minerals; machinery for agglomerating etc. Mineral products and for forming foundry molds of sand; parts thereof	6.4	0.1	20.5
8477	Machinery for working rubber or plastics or for the manufacture of products therefrom, nesoi; parts thereof	8.3	0.2	18.7
8479	Machines and mechanical appliances having individual functions, nesoi; parts thereof	7.1	0.3	9.0
8480	Molding boxes for metal foundry; mold bases; molding patterns; molds for metals, nesoi, metal carbides, glass, mineral materials, rubber or plastics	11.3	0.2	27.3
8502	Electric generating sets and rotary converters	12.4	0.2	21.0
8503	Parts of electric motors, generators, generating sets and rotary converters	7.1	0.2	28.1
8505	Electromagnets; permanent magnets and articles to be permanent after magnetization; electromagnetic or permanent magnet chucks, brakes etc.; parts	16.1	0.1	35.8
8507	Electric storage batteries, including separators therefor; parts thereof	16.2	0.8	30.3
8509	Electromechanical domestic appliances, with self-contained electric motor; parts thereof	11.1	0.3	53.6
8527	Reception apparatus for radiotelephony, radiotelegraphy or radiobroadcasting, whether or not combined with sound recording or reproducing apparatus	7.9	0.2	33.7
8528	Television receivers, including video monitors and video projectors	7.1	1.3	35.0
8529	Parts for television, radio and radar apparatus (of headings 8525 to 8528)	7.3	0.5	24.2
8531	Electric sound or visual signaling apparatus (bells, sirens, burglar or fire alarms etc.), nesoi; and parts thereof	14.4	0.1	20.9
8533	Electrical resistors (including rheostats and potentiometers), other than heating resistors; parts thereof	12.7	0.1	24.5
8539	Electric filament or discharge lamps, including sealed beam lamp units and ultraviolet or infrared lamps; arc lamps; parts thereof	16.1	0.3	52.6
8541	Semiconductor devices; photosensitive semiconductor devices including photovoltaic cells; light-emitting diodes (led); mounted piezo-elec crystals; parts	7.9	1.4	29.8

HS4 Code	HS4 Description	Change in Global Export Share (2015–22)	Share of China's Exports (2015–22 Average)	Global Export Share (2015–22 Average)
8543	Electrical machines and apparatus, having individual functions, nesoi; parts thereof	11.6	0.6	29.5
8545	Carbon electrodes, carbon brushes, lamp carbons, battery carbons and other articles of graphite or other carbon used for electrical purposes	24.9	0.1	36.2
8703	Motor cars and other motor vehicles designed to transport people (other than public-transport type), including station wagons and racing cars	5.4	0.5	2.0
8905	Light-vessels, fire-floats, dredgers, floating cranes etc.; floating docks; floating or submersible drilling or production platforms	26.3	0.2	20.3
9019	Mechano-therapy, massage, psychological aptitude-testing appliances and apparatus; ozone etc. Therapy and respiration apparatus; parts and accessories	8.8	0.2	30.6
9401	Seats (other than barber, dental and similar chairs), whether or not convertible into beds, and parts thereof	5.7	1.1	36.1
9503	Toys nesoi; scale models etc.; puzzles; parts and accessories thereof	23.0	1.1	59.2
9504	Video game consoles and machines, table or parlor games, including pinball machines, billiards, special tables for casino games and automatic bowling equipment, etc	7.5	0.5	43.3
9505	Festive, carnival or other entertainment articles, including magic tricks and practical joke articles; parts and accessories thereof	15.0	0.3	80.5
9603	Brooms, brushes, hand-operated floor sweepers, not motorized, mops and feather dusters; prepared knots and tufts; paint pads and rollers; squeegees	8.0	0.2	48.9
9617	Vacuum flasks and other vacuum vessels, complete; parts thereof other than glass inners	5.6	0.1	77.7

Sources: IHS Markit Global Trade Atlas; UN Comtrade; and AMRO staff calculations.

Appendix Figure 2. Share of Global Exports by Economy for China's Top Five Ascendant Sectors

(Percent)

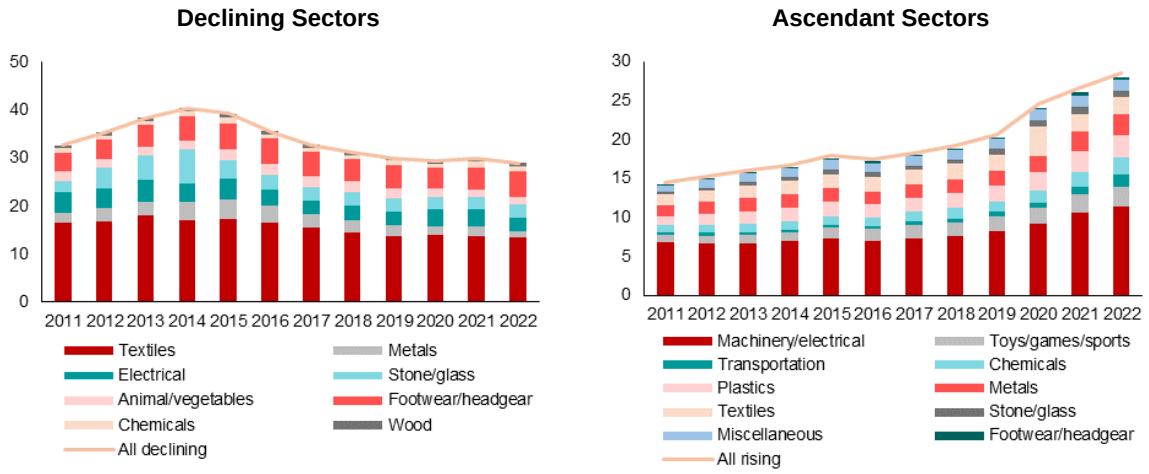


Sources: IHS Markit Global Trade Atlas; UN Comtrade; and AMRO staff calculations.
Note: Articles of graphite, toys, oxygen-function amino-compounds, organo-inorganic compounds, and knitted fabrics refer to HS 4-digit codes 8545, 9503, 2922, 2931, and 6004 respectively. EU refers to the 17 countries in the European Union, excluding 10 countries—Bulgaria, Croatia, Cyprus, Estonia, Greece, Latvia, Lithuania, Luxembourg, Malta, and Slovenia due to data unavailability. ASEAN excludes Cambodia, Lao PDR, and Myanmar due to data unavailability. CN = China; HK = Hong Kong; JP = Japan; KR = Korea; US = United States.

Appendix III. China's Share of Global Exports by Product Group

Appendix Figure 3. Share of Global Exports by Product Group for China's Declining and Ascendant Sectors

(Percent)



Sources: IHS Markit Global Trade Atlas; UN Comtrade; and AMRO staff calculations.
Note: Sectors are grouped based on their HS 2-digit code classifications.

References

Alfaro-Urena, Alonso, Juanma Castro-Vincenzi, Sebastian Fanelli, and Eduardo Morales. 2023. “Firm Export Dynamics in Interdependent Markets.” NBER Working Paper 31610, National Bureau of Economic Research, Cambridge, Massachusetts. https://www.nber.org/papers/w31610.

Antras, Pol. 2020. “De-globalisation? Global Value Chains in the Post-COVID-19 Age.” NBER Working Paper 28115, National Bureau of Economic Research, Cambridge, Massachusetts. https://www.nber.org/papers/w28115.

Fajgelbaum, Pablo, and Amit Khandelwal. 2022. “The Economic Impacts of the US–China Trade War.” *Annual Review of Economics* 14: 205–28.

Fajgelbaum, Pablo, Pinelopi K. Goldberg, Patrick J. Kennedy, Amit Khandelwal, and Daria Taglioni. 2023. “The US–China Trade War and Global Reallocations.” NBER Working Paper 29562, National Bureau of Economic Research, Cambridge, Massachusetts. https://www.nber.org/papers/w29562.

Flaaen, Aaron, Ali Hortaçsu, and Felix Tintelnot. 2020. “The Production Relocation and Price Effects of U.S. Trade Policy: The Case of Washing Machines.” *American Economic Review* 110 (7): 2103–27.

Guo, Meixin, Lin Lu, Liugang Sheng, and Miaojie Yu. 2018. “The Day after Tomorrow: Evaluating the Burden of Trump's Trade War.” *Asian Economic Papers* 17 (1): 101–20.

Khan, Nazmus Sadat. 2022. “Spillover Effects of China's Trade and Growth Shocks on ASEAN Countries: Evidence from a GVAR Model.” World Bank Policy Research Working Paper 10225, The World Bank, Washington, DC. https://elibrary.worldbank.org/doi/abs/10.1596/1813-9450-10225.

Li, Minghao, Edward J. Balistreri, and Wendong Zhang. 2020. “The U.S.–China Trade War: Tariff Data and General Equilibrium Analysis.” *Journal of Asian Economics* 69 (101216).

Mao, Haiou, and Holger Gorg. 2020. “Friends Like This: The Impact of the US–China Trade War on Global Value Chains.” *The World Economy* 43 (7): 1776–91. https://onlinelibrary.wiley.com/doi/full/10.1111/twec.12967.

Shih, Willy C. 2020. “Global Supply Chains in a Post-Pandemic World.” *Harvard Business Review*, September–October 2020. https://hbr.org/2020/09/global-supply-chains-in-a-post-pandemic-world.

Zhang, Jialiang, and Xiaobo Zhang. 2023. “Domestically ‘Flying Geese’: Regional Manufacturing Investment Flows within China.” *The World Bank Economic Review* 37 (3): 460–78.