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AI-Enabling Goods in Global Trade: Product-level List and Recent Trends

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Abstract

The global surge in AI-related investment boosts the demand for AI-enabling goods. To track the impact on global trade, in this paper we construct a list of AI-enabling goods refining earlier lists from the literature and present descriptive statistics on AI-enabling goods. The list is narrower compared to the list in the World Trade Report 2025 to better target goods whose trade is dominated by AI and advanced compute uses. According to the new list, the share of AI-enabling goods in total merchandise trade has increased rapidly from 7% in 2023 to almost 14% in the first half of 2026. Despite their moderate share in global trade, AI-enabling goods are responsible for a significant share of global merchandise trade growth in values (36% in 2025 and 43% in the first half of 2026). The growth acceleration is largest in Asia with East Asia and Southeast Asia responsible for about three quarters of global exports (compared to a third in total exports). The same Asian regions are the dominant players on the import side together with North America. Europe's share in AI-enabling goods exports and imports is much smaller than region's share in total trade. Geographic concentration of AI-enabling goods trade as measured by the Herfindahl-Hirschman index is twice as large as for total trade. At the economy level the ten largest traders are responsible for about 85% of global exports.

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JEL classification: F14, L60, Y10

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1 INTRODUCTION

The rise of artificial intelligence (AI) is rapidly modifying the global economy. There is significant debate about the potential productivity effects of the use of AI and the impact on the labour market of widescale AI deployment.[1] AI is also expected to raise international trade through the reduction in trade costs and the expected productivity effects (Bekkers et al., 2025; Jakubik et al., 2025). However, the supply of AI services also requires massive investments in data centres and other AI equipment, as is clearly visible in many economies in 2026 (IMF, 2026; WTO, 2026). Recent projections suggest that the investment boom in AI will amount to 3.6% of GDP in the US between 2025 and 2032, implying that the AI sector should become 9% of GDP by 2032 (Van Nieuwerburgh, 2026). These investments in turn require the production of AI-enabling goods, from semiconductors and upstream inputs to products that serve as inputs into building or operating AI compute, the computing capacity on which AI models are trained and run. The high degree of specialization in the production of AI-enabling goods related to their complexity and scale economies implies that the surge in investment in AI equipment generates an increase in the role of trade in production in the global economy.

In this paper we introduce a list of AI-enabling goods, building on and refining existing approaches, and present a range of descriptive statistics on the role of such goods in the global economy. We propose a list with 55 harmonized system (HS) 6-digit lines, considerably smaller than the lists in WTO (2025) and Waugh (2026). The proposed list is more targeted at goods used specifically in the production and operation of AI computing capacity and takes a global approach by focusing not only on the situation in the United States (US) economy. We show that the share of trade in AI-enabling goods has increased rapidly from 7% in 2023 to almost 14% in the first half of 2026; AI-enabling goods provided an outsized contribution to global trade growth, representing 36% of global trade growth in values in 2025 and 43% of global trade growth in the first half of 2026; AI-enabling goods trade is highly concentrated with a Herfindahl-Hirschman index twice as large as for other goods; and there are large regional disparities in AI-enabling goods trade with East Asia and Southeast Asia representing about three quarters of the export value of AI-enabling goods (compared to about one third of all trade).

Section 2 introduces the methodology to define AI-enabling goods and Section 3 provides comparison of the resulting list to other lists in the literature. Section 4 presents the descriptive statistics. Section 5 concludes.

2 CONSTRUCTING A PRODUCT-LEVEL LIST OF AI-ENABLING GOODS

2.1 AI-enabling goods and the existing lists

There is by now a lot of interest in how the AI boom shows up in trade data, but there is no agreed definition of what an AI-enabling good is. AI is a capability and not a product, and no tariff line says "AI" specifically. Any measurement therefore has to decide which physical goods are used as a proxy, and existing lists make this decision in quite different ways, which produces different numbers.

2.2 What counts as an AI-enabling good

AI-enabling goods are defined, as in the World Trade Report (2025), as goods that encompass the raw materials, intermediate inputs and products that support the development and production of AI technologies. Critical minerals are refined into substrates and chemicals; these are turned into chips in fabrication plants that depend on a narrow set of tools, most visibly lithography machines. The chips are packaged into boards and integrated into servers. Finally, data centres need power, cooling and networking equipment to run them. Goods that use or embed AI, such as smartphones, vehicles, robots or machinery with controllers, are out of scope. These can be seen as AI-enabled goods.[2] Their trade follows consumer and industrial demand and not the expansion of compute capacity.

[1] See for the expected productivity effects of AI for example Briggs and Kodnani (2023), Acemoglu (2025), Aghion and Bunel (2024), Bekkers et al. (2025) and Korinek et al. (2026) and for the employment effects for example Felten et al. (2021), Rockall, Mendes Tavares, and Pizzinelli (2025), Autor and Thompson (2025), Freund and Mann (2026) and Althoff and Reichardt (2026).

[2] AI-enabled goods can feed into the production of AI indirectly: using a smartphone, for example, generates data on which models are trained. Products which could be seen as AI-enabling are not included in the analysis of this paper. Over time almost all electronics will generate data used for training, so including it

Our classification logic can be understood based on the four-step semiconductor supply chain of Ji, Nauta and Powell (2023, Figure 4): steps 1 to 3, i.e. wafer production (1), semiconductor production (2), and intermediate electronics (3), are in scope. Step 4, final electronics (laptops, smartphones, etc.), is largely out of scope. The exception is processing, storage and other units that servers are built from, which their mapping places in step 4 but which are considered AI-enabling in this paper. GPUs and other AI accelerators, which are the chips that are used for training and running of AI models, are frequently shipped already integrated into server and card assemblies rather than as standalone pieces, so excluding processing and storage units would drop an important dimension of AI hardware trade from the list. AI-enabling goods in our definition also cover AI-specific intermediates outside the semiconductor value chain, such as power conversion, cooling and networking equipment used in data centres and critical minerals, but in each case at the intermediate or equipment stage rather than the final product.

2.3 Motivation

To build our list, we start from the list of AI-enabling goods published in the World Trade Report (WTR) 2025, which is described as non-exhaustive (WTO, 2025). Since then, several other lists have appeared in the literature, in particular the Waugh (2026) list, which is much more detailed and works at a more granular level of the tariff schedule, as well as lists focused on critical minerals and on the semiconductor value chain (OECD, 2025; Baskaran and Schwartz 2024). This made it worthwhile to revise the WTR list in light of what has become available, using a finer level of disaggregation and aiming for a list which would capture most accurately AI trade from a global perspective.

Two issues motivate how the revision is done. The first one is the level of aggregation. The WTR list, as some other lists, is constructed at the HS 6-digit level, because this is the level at which trade data are comparable across economies. However, sometimes HS 6-digit is too broad to capture AI in a meaningful way. While a given HS6 code may contain a product that is used in the AI value chain, counting the whole heading as AI-enabling might substantially overstate trade in AI goods. For example, subheading 8504.40 (static converters) contains power supplies suitable for physical incorporation into automatic data processing machines (e.g., computer servers), but also motor speed drive controllers, telecommunications converters and general industrial converters. These goods all convert electric current, but they do it for very different industries.

The second problem is that lists built for one economy, most often the US, are not necessarily applicable globally. The largest input into the initial list developed in this paper, the Waugh list, is constructed based on US data, and the US is currently going through a large data centre buildout. In US imports it is therefore plausible that for example copper wire, generators or transformers are AI-driven at the margin. Globally this is not the case: these goods are most likely still dominated by construction, utilities, manufacturing and transport, and the AI share in them is small. A list that works well for attributing US imports will overstate AI-specificity when it is applied to global trade.

There is therefore a trade-off. Broad HS6 lists tend to overstate the size of AI-enabling trade, and the de Soyres et al. (2026) note makes this point explicitly about the WTO list. Very narrow lists are cleaner but can also understate AI-enabling trade, because a lot of AI-related trade does not enter under the few codes that are unambiguously AI. The approach taken here is to classify at HTS10, which is more granular than what is done in the literature, and then to aggregate back to HS6 and measure how much HTS10 line trade within each HS6 line is AI enabling, thus generating for each HS6 line in our AI-enabling goods trade list a share of trade that is AI enabling. This does not remove the aggregation problem, but it makes its size visible and allows the data to be rescaled instead of the problem being assumed away. Necessarily, we need to rely on US data to calculate these shares.

2.4 Methodology overview

The methodology proceeds in three steps. First, an initial list of candidate goods is assembled from the lists already available in the literature. Where the initial list is at the HS6 level, every HS6 code on the list is expanded into all of its HTS10 statistical suffixes. This gives in total 1,123 candidate HTS10 lines. Second, each line is then evaluated individually at HTS10 against a written protocol, using an LLM (Claude, Anthropic), and assigned one of three flags: 1 where trade in the code is majority AI-driven globally or where the code qualifies on other cited evidence, 0 where an AI slice

would extend the definition to most electronics trade without identifying the goods that build and run AI computing capacity.

can be identified within the legal scope of the code but is not the majority of its trade, and x where no AI slice can be identified at all. This exercise generates 97 HTS10 lines falling into 55 HS6 subheadings flagged 1 and 0. Third, since international trade data are reported at HS6, these lines are then aggregated back up to HS6-digit level, and for each subheading the share of its trade accounted for by the classified lines (employing US trade shares) is measured and used to rescale the data.

Table 1 illustrates this approach using subheading 8504.40, static converters, as an example. The subheading appears in the World Trade Report (2025) list and is reported as a single value in international trade data. Expanding it to the US HTS 10-digit schedule yields 22 tariff lines, of which three fall under a heading that names power supplies for automatic data processing machines and have high-power wattage, so they are flagged as AI-enabling. Aggregating back, those three lines account for 18.2% of the subheading's US general imports (CIF) in 2024-2026 on average, and the subheading enters the aggregate at that share. While the shares vary significantly from one HS6 subheading to another, for the whole list of 55 HS6 codes, about half of subheadings have a scaling share of 85% and higher, and they account for about three quarters of trade value of the unweighted list.

Table 1: From HS6 to HTS10 and back: example using subheading 8504.40, static converters

1 Start from the HS6 subheading

HS6 8504.40	Static converters, on the World Trade Report 2025 list

At six digits the subheading is a single value: power supplies for servers and speed controllers for electric motors are not distinguishable from one another.

This step applies only to candidate lines published at six digits. Sources already compiled at ten digits, such as Waugh (2026), enter the procedure directly at step 3.

↓

2 Expand to the US tariff schedule: 22 ten-digit lines

☐	8504.40.40.00	Speed drive controllers for electric motors
☐☐☐☐	8504.40.60.01–.18	Internal ADP power supplies, by wattage
☐☐☐☐	8504.40.70.01–.18	External ADP power supplies, by wattage
☐	8504.40.85.00	For telecommunication apparatus
☐☐☐☐☐☐☐☐☐☐☐☐☐	8504.40.95.10–.80	Other static converters

Each square is one HTS10 statistical line. In the two ADP rows the squares run from the lowest to the highest power output band.

↓

3 Flag each line against the protocol

☐	8504.40.40.00	Speed drive controllers for electric motors
☐☐■■	8504.40.60.01–.18	Internal ADP power supplies, by wattage
☐☐☐■	8504.40.70.01–.18	External ADP power supplies, by wattage
☐	8504.40.85.00	For telecommunication apparatus
☐☐☐☐☐☐☐☐☐☐☐☐☐	8504.40.95.10–.80	Other static converters

3 lines flagged.	All sit under a single heading of the schedule "Power supplies for automatic data processing machines or units thereof of heading 8471", and within it only the high-power bands: internal units over 150 W and external units over 500 W.
19 lines not flagged.	Lower-power ADP power supplies, motor drives, telecommunication apparatus, and the residual "Other".

↓

4 Aggregate back to HS6, weighting by import value

18.2%	81.8%

Coverage: the 3 flagged lines account for 18.2% of the subheading's US general imports (CIF), averaged over 2024–2026 (2026: January–May).

Source: Authors, based on 2026 US Harmonized Tariff Schedule and US Census Bureau data.

2.5 Existing lists

The initial list is assembled from the lists that are already available in the literature, so that the starting point is an existing set of products rather than a newly selected one, and the work done here is the re-evaluation of that set at a more granular level. Six sources are used, and each of them is used in a different way.[3]

The WTO World Trade Report 2025 list (Annex A.1) has 104 HS6 codes and is built from three main ingredients. Raw materials and chemical elements come from Baskaran and Schwartz (2024) at Center for Strategic and International Studies (CSIS), which is a narrow set of high-risk semiconductor minerals (silicon, gallium, germanium and palladium). Semiconductors and intermediate inputs come from the Semiconductor Industry Association (SIA) submission to a Section 232 investigation (SIA 2025), which is at HS8 and was converted to HS6 for the WTR. Equipment and related goods come from a subset of the Information and Technology Agreement (ITA) list, selected by expert judgement. The WTR selection also used keyword searches, including keywords derived from US Export Control Classification Numbers. The SIA submission is also used separately as a source, as some tariff lines were not included in the WTR list.

The Waugh (2026) list provides the largest part of the initial list. It uses an LLM classifier on the full US HTS10 universe of about 18,000 codes, with the corresponding NAICS code added for context, and assigns high, medium or low relevance for data centre construction and operation. The high relevance tier has 645 HTS10 codes after chapter 27 (mineral fuels) is dropped. As noted above, it is built for US import attribution, and it therefore includes a lot of general-purpose infrastructure.

The Fed note by de Soyres, Haag, Liu and Van Leemput (2026) goes in the opposite direction and uses only three HS6 codes (8471.50, 8471.80 and 8473.30) for its global analysis, on the grounds that international data exist only at HS6 and that this level mixes AI with non-AI products. The note observes that some HS6 codes can include both AI and non-AI products, while others might not fully capture AI trade if the product is shipped embedded in another product, thus both overstating and understating the magnitude of AI trade can be a concern when working at HS6.

The OECD (2025) mapping of the semiconductor value chain is based on the old HS2017 classification. Its codes are mapped forward to HS2022 using UN concordance tables and expanded to HTS 2026, and all of its value chain segments are used as a source. The correlation is one-to-one apart from four genuine HS2022 splits; three headings that a mechanical concordance over-links because they are broad-source in HS2022 (electrical and electronic waste and scrap (8549), flat panel display modules (8524) and parts of headings 8525 to 8528 (8529.90)) are excluded. CSIS (Baskaran and Schwartz 2024, Table 1) has a list of semiconductor-relevant minerals by name, however, it does not provide HS codes. To be able to add those minerals to the list for classification, the names were mapped into the HTS10 codes containing those minerals, as well as their mixtures and compounds, using an LLM (Claude, Anthropic).

2.6 The initial list

The initial list is the union of these sources, combined at HTS10. The resulting list has 1,123 HTS10 lines. Following Waugh (2026), the goods are grouped into three domains: 387 in Compute Hardware, 546 in AI Infrastructure (split into Electrical Power, Networking and Telecom, and Other, which includes Building and Structure, Cooling and HVAC, Fire Safety and Security) and 190 in Chemicals & Minerals. The sources come in different vintages: the WTR list in HS2022, the SIA submission in the 2025 HTS, the OECD list in HS2017 and the Waugh list in the HTS10 codes of 2024 US trade data. All are mapped to the July 2026 edition of the HTS (U.S. International Trade Commission, 2026), with split or renumbered codes carried to all of their successors, and the US import data used for coverage are mapped to the same edition.

The expansion makes the initial list long on purpose to be as comprehensive as possible given what is available in the literature. It also means that many lines are expected to be dropped later, since naming an HS6 subheading because of one relevant product brings in every other product that shares it, even if a large part of it is dominated globally by uses that have nothing to do with AI.

Because some of the source lists are published at HS6, a last step is taken to finalize the initial candidate list. Semiconductor-specific wording often sits in the 10-digit US statistical suffixes and is

[3] The Bown (2026) list of AI-related goods was not available at the time the initial list was assembled, so it is not part of it. It was evaluated separately using the same prompt, and no further additions to the classified list were needed.

invisible at six digits. Subheadings 9031.49 and 9031.80, for example, read only as other optical instruments and other instruments, and name semiconductors only in their eight- and ten-digit breakouts. To catch such products, the HTS 2026 schedule was also searched directly for every ten-digit line whose own description contains the words "semiconductor", "reticle", "photomask" or "boule".[4] The search returns fourteen lines, ten of which were already on the list. Additionally, the list was expanded to include parts of machines or instruments when the flag admits this machine or instrument to the final list. Together, the search and its parts provisions add six lines to the final list. This step partly addresses the risk of false negatives due to lines missing from all source lists and therefore never making it to the candidate list.

2.7 The task and the flags

Each of the 1,123 lines is classified using a written prompt, which is applied in the same way to all lines.[5] The classification is done by an LLM (Claude, Anthropic), with the initial list, the HTS 2026 schedule and relevant recent literature on AI, semiconductor value chains and critical minerals provided as inputs (also cited at the end of the prompt). For every line the model returns a flag, a one-sentence reason, and two or three examples of non-AI use in international or developing economy contexts, thus providing an answer to the question of what dominates the code globally. Table 2 provides an overview of the three types of flags generated. The prompt is very detailed because the analysis aims to be replicable using the initial list, the prompt and literature inputs alone.

The overarching instruction that does most of the work in the prompt is the following:

> *Flag by what dominates the code's global trade, not by whether the good can appear in an AI system. … The US context is misleading: current US data centre buildout means copper wire or generators in US imports may be AI-driven, but globally these products serve construction, utilities, manufacturing, and transport with only marginal AI share.*

Table 2: The three flags

Flag	Definition
1 — AI-enabling	Trade in the code is majority AI-driven globally, or the code is included on cited evidence. In the second case the code is not majority AI, and what else it contains must still be compute or semiconductor rather than unrelated trade.
0 — dual-use	An AI or advanced-compute slice can be identified within the legal scope of the code, but AI is not the majority of the code's global trade.
x — general purpose	Global trade is not AI-driven and no AI/advanced compute slice can be identified within the scope of the code itself, whatever individual shipments are actually used for.

Source: Authors.

The prompt was written to separate codes whose global trade is dominated by AI use (flag=1) from dual-use products (flag=0). However, even at HTS10 the AI slice is rarely separable from general advanced compute: EUV and DUV lithography machines, for instance, share a subheading. Therefore, additional routes through which a product can classify as flag=1 were added as cited evidence, such as on chokepoint, product-specificity or embedded-carrier grounds. Front-end wafer fabrication equipment (8486.20) is included on chokepoint grounds, since EUV lithography is supplied by a single firm and gates the advanced nodes on which accelerators are made, and the code is semiconductor-specific so escalating it does not bring in unrelated trade. The two gallium arsenide lines (3818.00.00.10 and 2853.90.90.10) are limited by their scope to doped and undoped compound-semiconductor wafers, an input to devices used in AI hardware, so counting them whole brings in nothing outside semiconductor manufacturing. The remaining three, under headings 8471 and 8473, are included on "embedded carrier" logic, because GPUs are often shipped embedded in

[4] The four terms isolate semiconductor manufacturing in the line's own description. "Wafer" is deliberately not among them because it appears mainly in the descriptions of unrelated goods, like bread wafers in chapter 19, waferboard in chapter 44, and disks, wafers and washers of cork in subheading 4503.90, while the semiconductor wafer lines are already included through the other terms or through the source lists. "Integrated circuit" and "doped" also return no line not already present.

[5] The prompt is available from the authors upon request.

other advanced compute products.[6] Flag=1 is therefore not a single criterion but a small set of justifications.

2.8 Decision rules and evidence

The prompt instructs the LLM to judge but based on the literature provided, with more recent literature (2025, 2026) weighted as being more relevant. If the data it's been trained on contradicts literature, information in the literature should take precedence. Only if it cannot find a relevant source, the LLM is allowed to use web search.

Trade data are not an input into the classification. Evidence about what a good is used for is admissible, and end-use composition enters the classification in the ways described below. What is ruled out is trade-pattern evidence rather than every use of quantities: a flag is never derived from who trades a good with whom, since bilateral and regional flows are the object of the descriptive analysis the list supports. This matters for the credibility of the descriptive analysis, since a list built on the same data that is later used to describe it would be circular.

The prompt is detailed and contains category-level priors, which set a default flag for each broad type of good, so that raw semiconductor materials start at 0, and commodity metals and building materials at x; disambiguation rules, which are applied where the priors are ambiguous or where applying the broad rule would give a wrong answer; and worked examples, which show the model how individual cases are resolved. A set of detailed disambiguation rules helps increase replicability of the classification results, because it gives specific logical guidance to the LLM for less clear-cut cases, where its judgement can vary from one run to another.

Three of the disambiguation rules are applied most often throughout the classification process.[7] First, classification follows the legal HTS description and the relevant chapter and section notes, and not the explanation attached to the code in the source list.[8] Second, relevance established at a more aggregate level does not propagate downward: if a source treats an HS6 subheading as AI-relevant, only the HTS10 lines that actually name the AI-specific product take the higher flag, which is what stops one suffix from pulling in its siblings. And third, a code takes 0 only if the AI or advanced-compute slice can be identified from the legal scope of the code itself, and x if the slice is real but can be identified only from the end use of individual shipments. Static converters illustrate this: power supplies for automatic data processing machines take 0 where the description and power rating together isolate server-class units (above 150 W for units built into the machine, above 500 W for external units), while converters of the same power output in the residual suffixes take x. The same test puts commodity metals, passive components and general power distribution equipment at x as well, because their AI share is neither large nor identifiable. Criticality on its own does not move a code upward, which is why wafers, process gases and photoresist, all critical but serving the whole chip industry, take 0 or x rather than 1.

The reason recorded for each line is intended to be evidence about what the code actually carries, since this is the base for the classification. What a code is legally capable of containing is set by the wording of the tariff line itself, together with the chapter and section notes of the HTS schedule, which define and limit the terms used.[9] This is what decides most of the list. About half of the lines

[6] de Soyres et al. (2026) argue that US import volumes under 8542.31.00.40 are far below what would be expected from NVIDIA chip production at TSMC, and that one plausible explanation is that GPUs frequently leave the economy already built into graphics cards or server assemblies instead of being shipped as standalone components. This route of classification is available in our prompt only where such a citation exists, and never on plausibility or on the model's own knowledge. De Soyres et al. (2026) document the point at HS6. The descent to HTS10 is direct for two of the three codes; for the third it is a judgement between suffixes that the source does not resolve.

[7] The full set of disambiguation rules can be found in the prompt, available from the authors upon request.

[8] Explanation is often based on the reason why the code was included in the original source list, for example, in case of the WTR list it refers to the specific product that enters the AI value chain and therefore might not be representative of the whole subheading.

[9] Where the scope of a line is genuinely contested, the classification follows published US customs rulings interpreting those notes: HQ 966482 (a critical-dimension scanning electron microscope with cassette-to-cassette wafer handling is a functional unit classified in 9031.80.40, revoking HQ 962435), NY H89484 (overlay metrology that also measures critical dimensions falls in 9031.41 rather than the residual 9031.49), NY N097693 and HQ H128136 (optical elements stay in headings 9001 and 9002 under chapter 90 note 2(a), and section XVI note 1(m) precludes heading 8486), NY N337843 (a data-centre coolant distribution unit falls in 8419.89.95) with NY N133281 (closed-loop liquid CPU coolers fall in 8473.30.51 as parts of automatic data processing machines), and NY N260676 (photomask blanks fall in the residual line 3701.99.60.60 rather than in the more specifically worded dry plates sibling).

on the final list name the AI-specific product in their own description, for example, semiconductor, wafer, photomask, printed circuit, automatic data processing machines, doped for use in electronics. Most of the remainder are identified by the heading they sit under. For example, memory and processor lines of heading 8542: their descriptions do not contain language specific to AI, but the heading 8542 is electronic integrated circuits and nothing else. Where the heading and the line description together isolate the product, no further evidence is needed.[10] Still, description does not tell what the code is mostly made up of in practice. For two groups of goods, this is decided based on additional information related to end uses, as described below.

For semiconductor equipment, the Emerging Technology Observatory (ETO, 2025) Chip Explorer, an open dataset on the advanced semiconductor supply chain maintained by Georgetown University's Center for Security and Emerging Technology, for each node of the semiconductor chain, gives its global market size and supplier concentration (by economy and company). ETO Chip Explorer contains no tariff codes and so never settles a line on its own, but it enters the classification in the following ways. First, market size gives an absolute magnitude for the semiconductor-related activity that a good serves, which can be set against what else that good is used for, drawn from end-use evidence and from the legal scope of the line. This supports the ordering: whether the semiconductor use looks like most of what a good is for, an identifiable minority of it, or negligible. This mostly works on exclusions, and in case of 7 lines, the ETO Chip Explorer evidence decides on keeping the lines on the list (photomask blanks (3701.99), photoresist (3707.90), copper-clad laminates (7410.21, two lines), neon and other rare gases (2804.29, two lines), and the cyanate ester resins in 2929.90). Second, supply shares identify the chokepoints. However, since the ETO Chip Explorer covers only the semiconductor chain, so it does not have information on critical minerals and on the power, cooling and networking equipment that the list also contains.

U.S. Geological Survey (2025a) gives, for each mineral, the industry that accounts for most of the probability-weighted GDP impact of a supply disruption, and the Mineral Commodity Summaries (U.S. Geological Survey, 2025b) give end-use splits. This is what keeps gallium, germanium and hafnium at 0 and drops palladium and tantalum, which attribute mainly to automobile manufacturing and to capacitors, and it is also why minerals are treated element by element rather than as categories.[11] The same test explains why mining and refining stages generally take x even though they clearly feed AI hardware, since copper is dominated globally by construction and the power grid, and cobalt and lithium by EV batteries. Including them would not be wrong about the supply chain, but it would be wrong about the composition of the trade, and it would overstate the share of AI-enabling goods globally.

A small number of lines fall outside all of this. Networking and optical fibre goods (switching and routing apparatus, optical fibres and optical fibre cables) are not AI-specific in their legal scope and have no end-use source behind, and they are classified on the category-level priors in the protocol.

2.9 Final classified list

The classified list has 97 HTS10 lines with flag=1 (7 lines) or flag=0 (90 lines), which fall into 55 HS6 subheadings (listed in full in Appendix A, Tables A1 and A2). The majority of lines from the initial combined list (1,123 products) got assigned flag=x. Of the 97 HTS10 codes, 65 are located in the Compute Hardware category, 14 in AI Infrastructure, and 18 in Chemicals and Minerals (Table 3). The overall survival rate from the initial list to the final is only 9%, mainly driven by the very low survival rate in the AI Infrastructure category (2.6%), because products in this category predominantly have no identifiable AI-specific slice and have multiple broad uses globally.

[10] Membership of the heading is not on its own sufficient. The analog and mixed-signal lines of subheading 8542.39 (active filters, analog-to-digital and digital-to-analog converters and radio-frequency transceivers) are electronic integrated circuits by heading, but no AI or advanced-compute slice is identifiable within their own scope, and they take x, as do 8-, 16- and 32-bit microcontrollers, digital signal processors and programmable logic other than FPGAs in 8542.31, and DRAM of 1 gigabit or less and SRAM in 8542.32.

[11] Rare earths are treated element by element and not as a category: element-specific lines follow their own attribution and go to x, while residual mixture lines are kept at 0, because thulium is the only rare earth that attributes to semiconductor manufacturing and it has no suffix of its own through which it can enter trade.

Table 3: Classified HTS10 codes by category

Category	HTS10 lines flagged 1 or 0	Candidates	Survival rate
Compute Hardware	65	387	17%
AI Infrastructure	14	546	2.6%
Chemicals & Minerals	18	190	9%
Total	**97**	**1,123**	**9%**

Source: Authors' classification of the candidate list described in Section 2.6 using an LLM.

The aim of the analysis and the corresponding prompt is to separate codes, where global trade is dominated by AI use (flag=1) from dual-use products (flag=0). It was not known how many products would end up with flag=1 on global AI dominance, and it turned out that very few qualify. Only one product, GPUs (8542.31.00.40), qualifies based on the criterion that AI dominates its global trade. The other six lines are included on chokepoint, product-specificity or embedded-carrier grounds, discussed in Section 2.7. Given that only GPUs trade is clearly AI dominated globally and overall, too few codes fall under flag=1, the final list combines flag=1 and flag=0. Most products on the combined list are therefore dual-use, predominantly advanced compute, with an AI slice present but not separable from the description. This is the best that can be done with the current nomenclature, and it is generally in line with what other papers do.

2.10 Mapping HTS10 to HS6

HTS10 is a national extension of the internationally harmonised HS6 code, and trade statistics for most economies are reported at HS6, so any international analysis has to go back to that level. To map HTS10 into HS6, shares of classified HTS10s within HS6 based on US imports data (US Census) are used.

For each HS6 subheading, coverage is computed as the share of the subheading's US imports that is accounted for by the classified HTS10 lines, using general imports at CIF value. Coverage of 100% means that all HTS10 lines in that subheading are on the list, so that going to HS6 loses nothing; coverage of 80% means that the classified lines account for 80% of the import value of that HS6. Coverage is averaged over 2024, 2025 and January–May 2026. Of the 55 subheadings, 28 have average coverage above 85% (with 19 of them at 100%); 10 have coverage below 10%; and 17 are in between. Overall coverage for the whole list is 89%, which means that the subheadings with large import values tend to be the ones that are fully covered. The table with coverage by year is presented in Appendix B.

These shares are used to rescale the international trade data, so that a subheading enters the aggregate with the share that the classified lines represent and not in full. The alternative would be to take whole HS6 lines without any scaling, which would inflate AI-enabling trade by the full value of the unrelated goods that share each subheading. Using this scaling is important as illustrated, for example, by code 8479.89, which contributes one classified HTS10 line, a machine for placing components on printed circuit assemblies, inside an HS6 subheading that otherwise consists of trash compactors, floor polishers and oilfield equipment. The average shares are used to convert HTS10s to HS6 in the descriptive analysis, which reduces the volatility of the share in the few subheadings where it is not stable from year to year.[12]

The obvious caveat is that the shares are computed employing US data, so they will overstate coverage for goods where the US is a disproportionately large buyer and understate it elsewhere. The US accounted for 16.6% of global imports of AI-enabling goods on the new list in 2025, but the US shares vary by code and some compute hardware lines are much more skewed towards US demand. However, this is the best available option because the 10-digit statistical suffixes that make the detailed classification possible have no counterpart in other schedules. Extensions beyond 6 digits exist for a handful of economies (EU, China, Japan, Republic of Korea) but are not

[12] 2025 is a full year of data based on the most recent schedule. To calculate coverage for 2024 and 2023, two data constructions are needed. US statistical suffixes change in the middle of the series, so a code can be missing from the data in earlier periods when its trade was still reported under a superseded suffix. Where the successors are mixed, the legacy line is apportioned using the split observed in the first period with clean data (2804.29, 2825.60, 3818.00, 8542.31 and 8542.39). One line, 3818.00.00.95, is still reported in place of its successors through May 2026 and is counted in full, so coverage of 3818.00 is an upper bound.

harmonized and can be significantly different from the US HTS. This implies that the list of AI-enabling goods at 10-digit level could be substantially different across countries. Recalculating the shares directly from other economies 8-10 digit schedules is therefore not possible.

One reassuring factor is that most subheadings sit at the two ends of the coverage distribution, and the 28 subheadings with a trade share above 85% (in a specific HS6 line) account for 76% of the 2025 value of the unscaled list globally. Both ends should be reasonably stable across countries: a line that exhausts its subheading in the US will generally do so elsewhere, and a line that is negligible will generally stay negligible. The variation across countries would likely be concentrated in the subheadings in the middle, and in countries that are strongly specialised in these goods.

2.11 Robustness of the classification

Since LLM outputs are probabilistic, some checks on stability are needed. First, the classification was run in parallel on a second model of the same family and compared line by line; binary agreement under the final version of the prompt is above 95% in terms of the HTS10 lines assigned the same flag in both runs. Second, the output was reviewed manually. We went through the classified list and found several false positives, which were moved to x, and the prompt was then amended accordingly. Particular attention was given to the lines on which the two runs disagreed. Third, a dedicated false negatives pass was run over the x-coded lines to look for borderline cases that could be reconsidered, with particular attention to the WTR categories that had been demoted.

3 COMPARISONS WITH EXISTING LISTS

Compared with Annex A.1 of the World Trade Report 2025, the new list is narrower at HS6, with 55 subheadings against 104, but it is classified at a finer level. Of the 104 WTR subheadings, 37 are kept and 67 are not, and 18 subheadings are added. In 2025 the WTR list accounts for 15.9% of global imports and 18.9% of US imports, against 10.2% and 13.1% for the list proposed here.

The 67 subheadings from the WTR list that are not kept fall into five groups. Discrete semiconductors and other electrical components account for twenty subheadings. Diodes, transistors and similar single-function devices (heading 8541) are classified separately from integrated circuits (8542), which include the processors and memory used in AI hardware. They switch and regulate electric current in almost every electrical product, from cars to household appliances, but do not perform computation. Switchgear, cables, insulators, motors and transformers are likewise used in every electrical installation, so are not data-centre specific. Fabrication consumables that sit inside broad-purpose codes account for another eleven: each of them names a genuine input, such as chamber seals, cleanroom garments or pad conditioners, but the tariff lines that carry them are rubber seals, garments of man-made fibres and grinding wheels, where the semiconductor slice is real but not identifiable. The third group, general-purpose machinery and instruments, such as pumps, valves, filters and industrial robots, account for sixteen, and the fourth group of commodity chemicals and minerals for thirteen. Silicon codes, show this logic working within one element: silicon of at least 99.99% purity (2804.61) is kept as semiconductor grade, while lower-purity silicon (2804.69), silicon dioxide (2811.22), silicon carbide (2849.20) and silicones (3910.00) are not, because globally they are dominated by a different use than building AI compute: aluminium alloying, solar, abrasives, refractories, construction and personal care. The remaining seven subheadings constitute group five, which includes final computers and telecommunication equipment, such as laptops (8471.30), and parts of integrated circuits and of other electrical apparatus (8542.90 and 8543.90), where general-purpose uses dominate.

The 18 added subheadings are critical minerals and compound-semiconductor inputs (6), circuit-board inputs and manufacturing machinery (4), power-supply components for data-processing machines (2), and semiconductor equipment and inputs that are named as such only at ten digits (6). The effect on the numbers is moderate. The share of AI-enabling goods in trade is lower on our list, about 10% against 16% under the WTR list in 2025, but growth is higher (32% in our list vs. 22% in the WTR list in 2025), so the contribution to total trade growth in 2025 is similar: 2.6 percentage points, or 36% of the total, against 3.1 percentage points, or 42%. Therefore, while initially the analysis started with a broadened list to be classified, the resulting new list is a reduced and better targeted list, which is more suited to capture the rapid growth in AI-enabling goods trade. Disaggregating to HTS10 also helps to preserve the magnitude of the true positives that HS6 aggregation would otherwise dilute.

Compared with the Waugh High-relevance list, the difference is structural and not just a matter of judgement on individual codes. Waugh's list is US focused and built around "products directly used

in data centre construction or operation", including building materials and general infrastructure. Waugh's 655 High-relevance codes (645 excluding Chapter 27), built on an earlier version of the HTS schedule, correspond to 673 lines in the July 2026 HTS. Of these, 72 codes are retained and 601 excluded, mainly in electrical power (259), cooling and HVAC (147), compute hardware (107, mostly general-purpose chips, power supplies and storage) and building and structure (46). Generic goods such as cement, structural steel and copper are the clearest case: data centres are a visible buyer in the US, but their share of global demand for these goods is in the low single digits at most, so the corresponding lines are dominated by construction, the power grid and manufacturing.[13] There are also codes in the new list that are not on the Waugh High-relevance list (25 codes out of the 97 final 10-digit lines), which are concentrated in semiconductor manufacturing equipment, lithography materials and electronic-grade minerals. These are upstream products that are not used directly in data centre operation and therefore do not pass the high-relevance bar in the Waugh list. The Waugh list accounts for 16.3% of global imports (using the same HTS10 to HS6 shares-based mapping as the main list) and 19.7% of US imports in 2025.

A list built to assess supply dependencies and criticality would keep more of these goods. Baldwin (2026) points to US dependence on China for transformers, switchgear and batteries in the data-centre build-out. Such goods can matter for supply risks to the AI build-out in a given economy even when the AI share of their global trade is marginal, as for lithium-ion batteries, which serve mainly electric vehicles and grid storage globally. Counting them in aggregate statistics would overstate AI-enabling trade. Assessing such dependencies would require a broader list that covers every good entering the AI value chain, whatever the AI share of its trade.

Compared with the three codes used in de Soyres et al. (2026), the difference goes the other way, since all three are kept and 52 more subheadings are added. de Soyres et al. (2026) argues that measuring AI-enabling goods trade at HS6, where international data is available, can both obscure smaller AI-enabling goods categories and pull in unrelated trade, because HS6 mixes AI and non-AI products even under relevant headings such as integrated circuits (8542.31). Their paper opts for a very narrow list of HS6 codes (8471.50, 8471.80, 8473.30), admitting that even this narrow list can both underestimate and overestimate the value of AI-enabling trade globally. Their three codes account for 2.8% of global imports and 7.7% of US imports in 2025.

Overall, how a list is constructed determines in which direction it potentially mismeasures AI-enabling trade once it is applied to global data. Lists that count whole HS6 subheadings, like the WTR list, could overstate it wherever the AI-relevant product shares a subheading with unrelated goods, as server power supplies do in 8504.40. Lists built for US import analysis, like the Waugh list, can also overstate it when applied globally. For example, copper wire, generators or transformers may be AI-driven at the margin in the US build-out but are dominated worldwide by construction, utilities and manufacturing. A list of three HS6 codes, like the de Soyres et al. (2026) list, potentially understates it, since it leaves out chips, semiconductor manufacturing equipment and materials, although it also counts the non-AI computers and parts that share those subheadings.

The list in this paper, initially constructed at HTS10-digit level and then mapped into HS6, aims to both identify AI-enabling goods at the finest possible level and, this way, also to trim globally unrelated trade from the list. Nevertheless, it can still err in both directions. Rescaling by coverage removes most unrelated trade from mixed subheadings, but, as noted above, the US-based shares can overstate coverage where US demand is heavily skewed towards the AI-relevant line and can understate it for upstream goods the US imports little of. Counting every listed line in full also overstates the AI share of dual-use goods such as processors and memories, while the lines left at x can still carry some AI-related trade, even if only a small amount. On balance the current list is closer to an upper bound for compute hardware and to a lower bound for upstream equipment and materials.

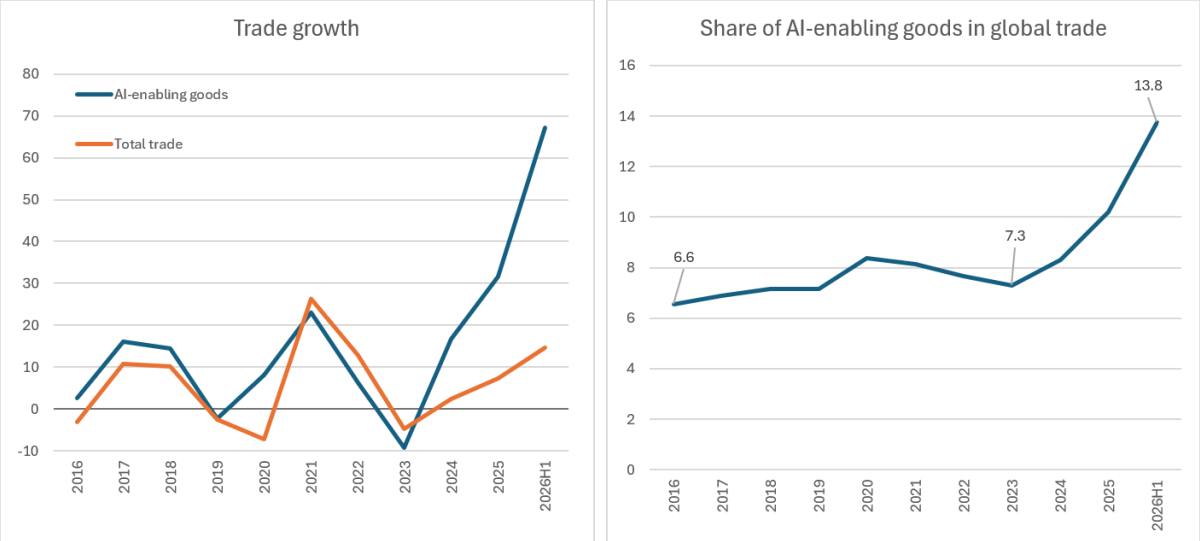
[13] The largest excluded blocks are general-purpose goods in which data centres take a small share of global demand. Data-centre cement is under 1 per cent of US cement consumption (American Cement Association, 2025); data-centre copper is about 1 to 3 per cent of world refined production, depending on the estimate (BHP, 2025; Fastmarkets, 2026; U.S. Geological Survey, 2026); and structural steel adds a low single-digit uplift to US steel demand (England et al., 2026). Data-centre cooling equipment is roughly 7 to 12 per cent of the HVAC equipment market on commercial estimates whose scope varies by firm (Fortune Business Insights, 2026; Grand View Research, 2026; Mordor Intelligence, 2026; Precedence Research, 2025). The liquid-cooling components that sit in or next to the server, cold plates and coolant distribution units, are captured through 8473.30.51 and 8419.89.95.40; what remains excluded is room-level equipment such as chillers and computer-room air handling, where no tariff line isolates a data-centre unit. Passive and discrete components account for a further 131 excluded lines.

4 DESCRIPTIVE STATISTICS

4.1 Big picture

Until 2023, the value of trade in AI-enabling goods moved broadly in line with the rest of merchandise trade. From 2024 it breaks away, and it has accelerated further in every period since (Figure 1, left panel). After falling by 9% in 2023, it grew by 17% in 2024, 32% in 2025 and 67% in the first half of 2026. Its share of world merchandise trade, broadly flat at around 7% between 2016 and 2023, reached 13.8% in the first half of 2026 (right panel).

Figure 1: AI-enabling merchandise trade, 2016-2026H1
Year-on-year % change in US$ values and percentage share



Note: Trade is an average of imports and exports. Estimates for AI-enabling goods trade are based on available reporters in the Trade Data Monitor. Data for Viet Nam and Russian Federation are mirrored.
Source: WTO-UNCTAD (world)/WTO Secretariat estimates (AI-enabling goods).

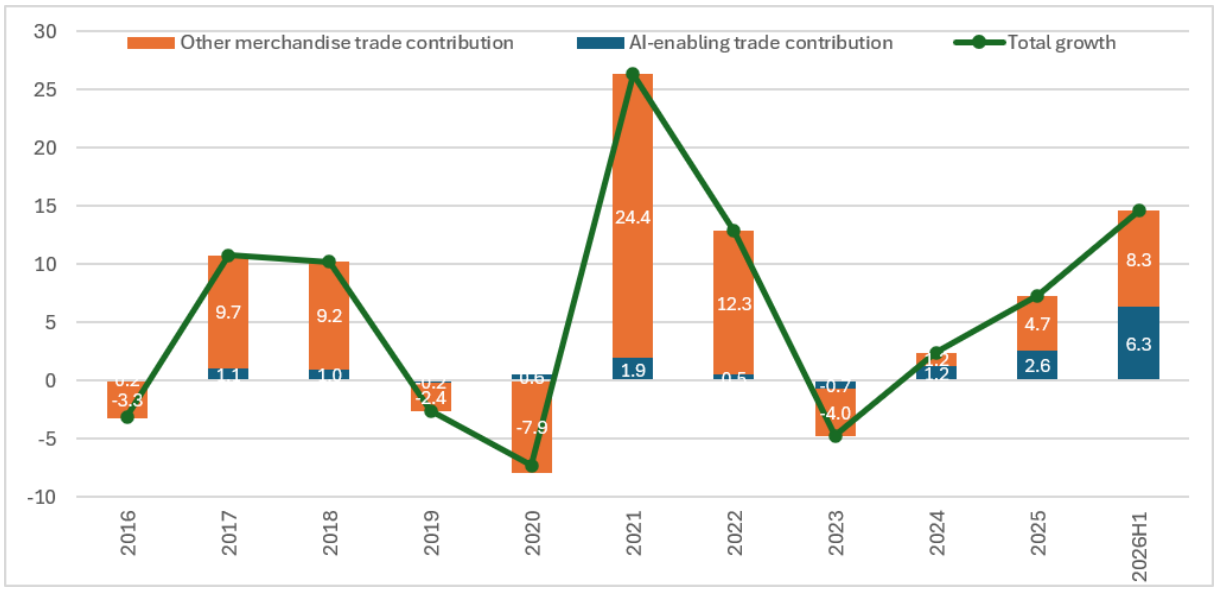
While AI-enabling merchandise accounts for less than fifteen percent of world trade, it is now driving close to half of its growth. In the first half of 2026, it accounted for 43% of total merchandise trade growth (6.3% out of 14.6% (6.3% plus 8.3%) in Figure 2).[14] Its contribution was marginal in every year before 2024 (Figure 2), even during the surge in demand for electronics in 2021, which confirms that the list separates AI-enabling goods from general electronics well.

One qualification applies throughout: these figures are values, not volumes, and unit values for advanced accelerators and memory have risen steeply recently, so part of the measured expansion reflects price and increased capabilities. ECB (2026) estimates show that import prices growth for AI-enabling goods was about 10% year-on-year in 2025 and increased to 20%-30% year-on-year in the first half of 2026. Evenett (2026) estimates prices and quantities growth in China's "AI-exposed" goods using China Customs data and concludes that China's exports growth of these goods in 2026 was mostly about prices.[15]

Caution is needed in using unit values to obtain data on quantity growth for these products, because quality is rising rapidly for most products included, particularly the compute hardware (semiconductors). We leave the calculation of quantity growth (employing methodologies to separate price and quality changes such as Khandelwal (2010) and Feenstra and Romalis (2014)) from the literature for future work.

[14] The numbers have changed slightly compared to the Global Trade Outlook and Statistics (WTO, 2026), because of minor refinements in the list of products.
[15] Evenett (2026) defines his list based on eight HS6 codes: chips (854231 processors, 854232 memory, 854239 other), processing units (847150), computer systems (847149), storage (847170, 852351) and computer parts (847330).

Figure 2: AI-enabling merchandise trade growth contribution, 2016-2026H1
Year-on-year % change in US$ values and percentage points contributions

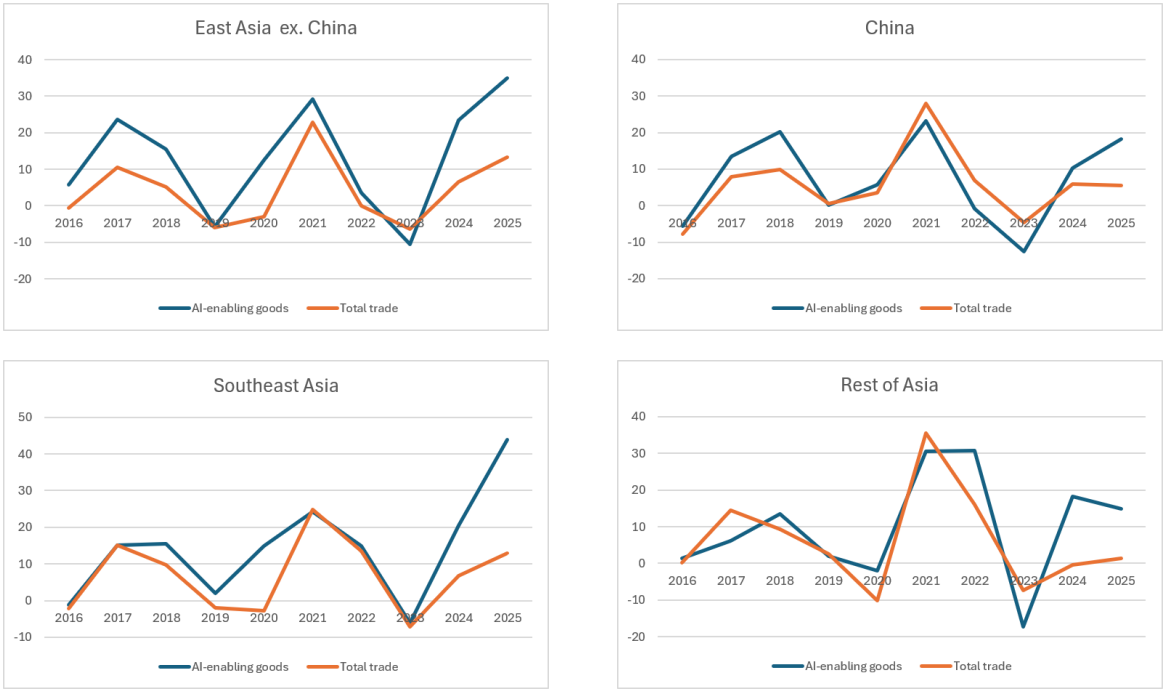


Note: Trade is an average of imports and exports. Estimates for AI-enabling goods trade are based on available reporters in the Trade Data Monitor. Data for Viet Nam and Russian Federation are mirrored.
Source: WTO-UNCTAD (world)/WTO Secretariat estimates (AI-enabling goods).

4.2 Regional disparities

The acceleration is relatively broad-based although not for all exporters (Figure 3). Export growth is accelerating compared to all merchandise trade in all regions of Asia, America and Europe while CIS, Africa and the Middle East remain behind. Growth rates are particularly high in most sub-regions of Asia.

Figure 3: AI-enabling vs. total merchandise exports growth, 2016-2025
Year-on-year % change in US$ value



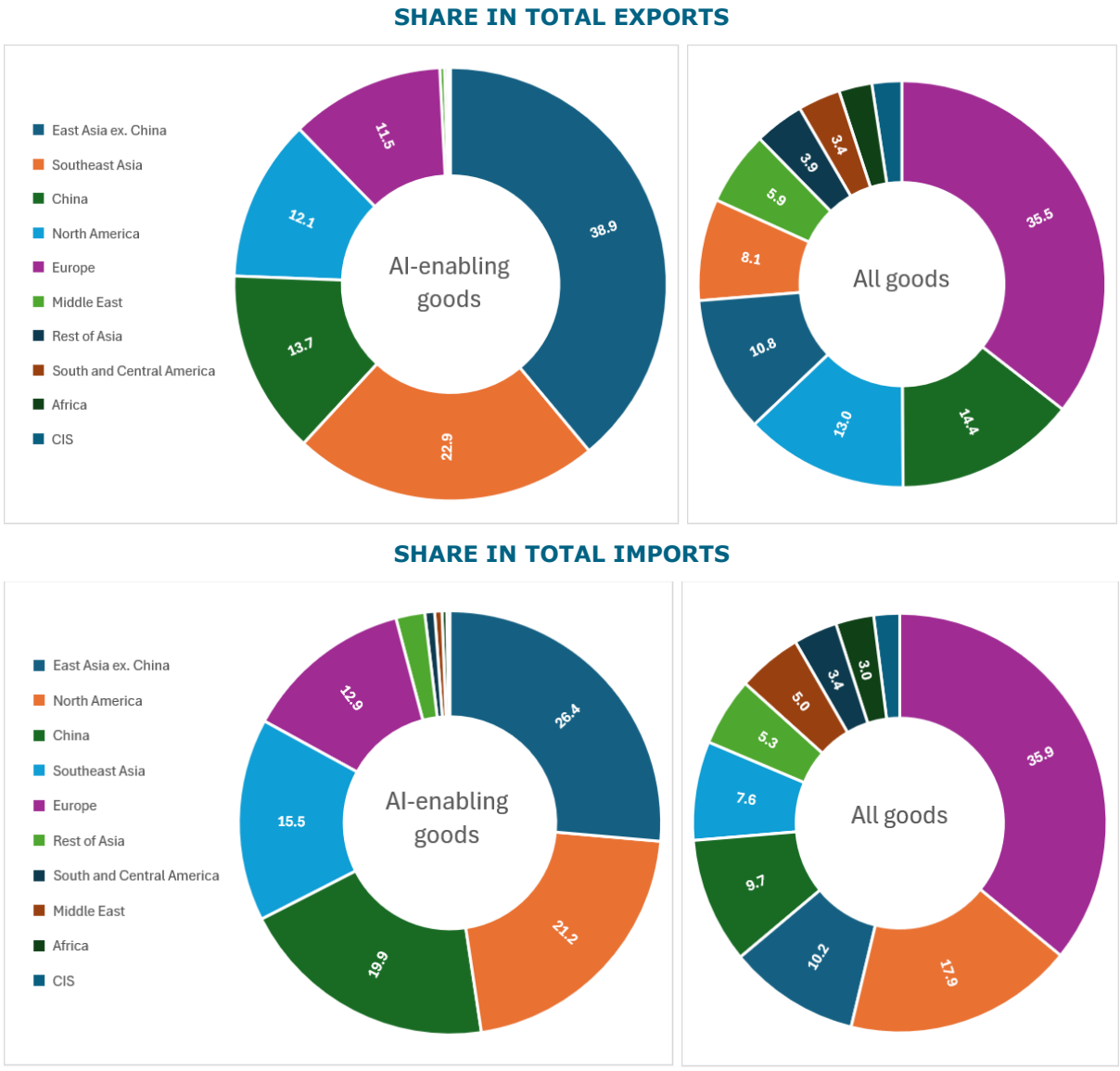


Note: Estimates for AI-enabling goods trade are based on available reporters in the Trade Data Monitor. Data for Viet Nam and Russian Federation are mirrored. East Asia is based on the largest four economies (Japan; Hong Kong, China; Republic of Korea; Chinese Taipei) excluding China, which is presented separately. Southeast Asia is based on the largest six economies (Indonesia, Malaysia, Philippines, Singapore, Thailand, Viet Nam). South and Central America includes the Caribbean. CIS refers to the Commonwealth of Independent States (CIS), including certain associate and former member states.
Source: WTO Secretariat estimates.

While most geographical areas have seen AI-enabling goods trade growth accelerate, trade in these products is dominated by few regions. Figure 4 shows that 38.9% of AI-enabling goods exports come from four East Asian economies (Republic of Korea; Chinese Taipei; Hong Kong, China; and Japan) whereas exports from these economies are only 10.8% of overall merchandise trade. The same pattern holds for Southeast Asia (the six largest Southeast Asian economies in terms of trade are included: Indonesia, Malaysia, Philippines, Singapore, Thailand, Viet Nam) with 22.9% of global

AI-enabling goods exports compared to 8.1% overall. For North America and China, the shares are approximately identical (12.1% versus 13% for North America and 13.7% versus 14.4% for China), whereas the share of Europe in AI-enabling goods exports is much smaller than its overall share (11.5% compared to 35.5%).[16]

Figure 4: Share of regions in merchandise trade by category, 2025
Per cent of total



Note: Estimates for AI-enabling goods trade are based on available reporters in the Trade Data Monitor. Data for Viet Nam and Russian Federation are mirrored. East Asia is based on the largest four economies (Hong Kong, China; Japan; Republic of Korea; Chinese Taipei) excluding China, which is presented separately. Southeast Asia is based on the largest six economies (Indonesia, Malaysia, Philippines, Singapore, Thailand, Viet Nam). South and Central America includes the Caribbean. CIS refers to the Commonwealth of Independent States (CIS), including certain associate and former member states.
Source: WTO Secretariat estimates.

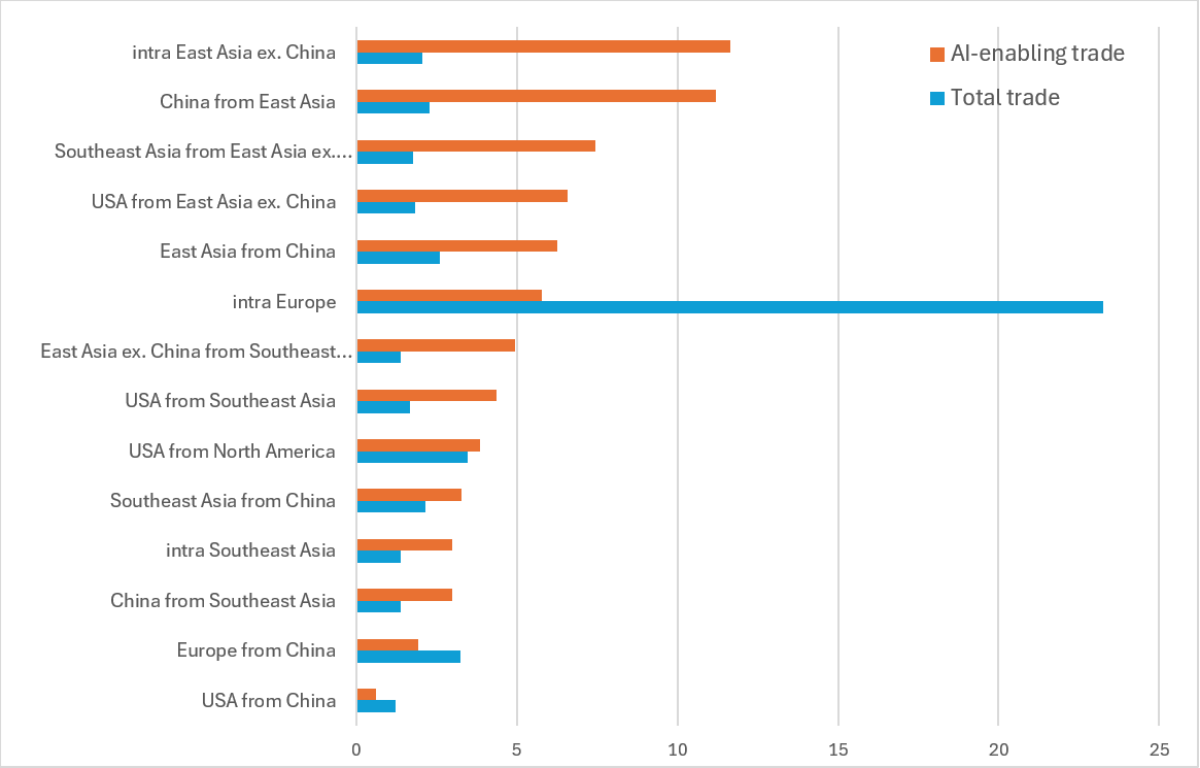
[16] Hereafter East Asia excluding China is defined based on four largest economies in terms AI-enabling trade: Japan; Hong Kong, China; Republic of Korea. Southeast Asia is defined based on six largest Southeast Asian economies in terms of AI-enabling trade: Indonesia, Malaysia, Philippines, Singapore, Thailand, Viet Nam. Remaining East and Southeast Asian economies are included in the Rest of Asia aggregate. The designations employed and the composition of the groupings used in this analysis are for statistical convenience only and do not imply the expression of any opinion on the part of the WTO Secretariat concerning the status of any economy or territory, or concerning the relationship between economies and territories placed in different groupings.

On the import side, AI-enabling goods trade shares of East Asia and Southeast Asia are also much larger than their shares in overall trade, a reflection of the value chain nature of these goods. China is a large importer of AI-enabling goods (19.9 % compared to 9.7% for all trade). The same holds for North America but to a lesser extent (21.2% compared to 17.9%). The pattern for China and North America (including the United States) reflects the fact that these two countries play a dominant role in the provision of AI services (Bekkers et al., 2025), thus requiring AI-enabling goods as inputs. Interestingly, also on the import side Europe's share in AI-enabling goods trade is about a third of its share in overall trade (12.9% versus 35.9%).

Bilateral flows show the same concentration from another angle. Figure 5 selects the fourteen largest bilateral shares in the value of AI-enabling goods trade. The largest flows consist of trade within East Asia (excluding China) and trade with Southeast Asia and China. All these bilateral flows of AI-enabling goods constitute a much larger share in their global trade than the share of these flows in global merchandise trade. In line with patterns identified above, the share of intra-EU trade in global AI-enabling goods is smaller than its share in total merchandise trade. The same holds for US and Europe's imports from China.

These relationships have not been stable. Figure 6 shows how the same fourteen bilateral shares have shifted since 2015. The share of US imports from East Asia (excluding China) and Southeast Asia has risen, as well as imports from the rest of North America, consistent with massive build-up of data centres by US hyperscaler firms. Trade among Asian sub-regions has also gained in scale, especially trade with East Asia (excluding China). At the same time, the share of trade with China is declining (dashed bubbles) except for Southeast Asian imports from China. Large flows of European imports related to AI-enabling goods have both decreased, as well as the trade outside of these selected bilateral relationships. All together these charts paint a picture of increased concentration, especially around East Asian economies other than China and the United States as an importer, with Southeast Asia gaining prominence rapidly as well.

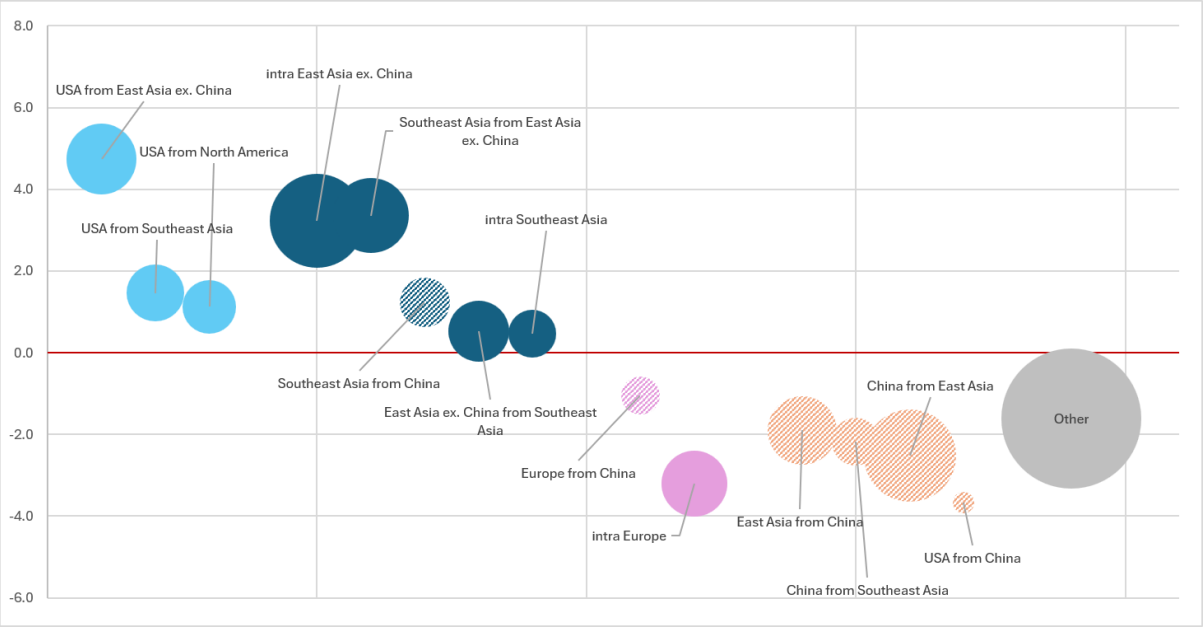
Figure 5: AI-enabling vs. total selected bilateral merchandise imports shares, 2025
Per cent of total, by category



Note: Estimates for both AI-enabling goods trade and overall bilateral merchandise trade are based on available reporters in the Trade Data Monitor. Data for Viet Nam and Russian Federation are mirrored. The chart shows fourteen largest bilateral shares in AI-enabling trade based on average import share in 2015-2025.
Source: WTO Secretariat estimates.

Figure 6: Change in selected bilateral imports shares of AI-enabling goods, 2025 vs.2015

Percentage points change



Note: Estimates for AI-enabling goods trade are based on available reporters in the Trade Data Monitor. Data for Viet Nam and Russian Federation are mirrored. Bubble area is proportional to the size of bilateral imports in 2025. The chart shows fourteen largest relationships in AI-enabling trade based on average import share in 2015-2025. Trade with China is shown by the dashed bubbles.
Source: WTO Secretariat estimates.

Two distinct processes appear to be at work in these shifts. The first is scale: the build-out of AI compute capacity in the United States has pulled in imports from wherever the relevant hardware is made, lifting flows from East Asia, Southeast Asia and the rest of North America together. The second could be AI-enabling goods in part following a broader reorganization of value chains documented for US imports as a whole (Alfaro and Chor 2023; Freund et al. 2024; Antràs et al., 2026; Bown, 2026), where economies replacing China are themselves integrated into Chinese supply chains and are sourcing imports from China. And the reorganization of value chains is not related only to trade with China: Bown (2026) cites Foxconn (a large company from Chinese Taipei) building an AI server assembly factory in Mexico in 2024, which increased US imports of AI-enabling products from Mexico, in addition to imports directly from Chinese Taipei.

Growth in the first half of 2026 has reinforced these positions rather than levelled them out. The regions that were already leading also grew the fastest, reflecting their established specialization in these goods (Figure 7). Even though trade acceleration was broad-based and AI-enabling goods exports have grown faster than total merchandise trade in most regions, the growth in regions with smaller shares was not enough to narrow the gap with the regions with the highest growth rates.

Figure 7: AI-enabling vs. total merchandise trade growth, 2026H1
Year-on-year % change



Note: Estimates for AI-enabling goods trade are based on available reporters in the Trade Data Monitor. Data for Viet Nam and Russian Federation are mirrored. Bubble size is proportional to the value of trade.
Source: WTO Secretariat estimates.

The implication of the analysis so far is that Asian economies are driving most of the export growth in AI-enabling goods, while North America plays an important role on the demand side. Figure 8 displays the contribution to AI exports and imports growth in the last six quarters. In the second quarter of 2026, total export growth was 78%, with East Asia contributing 31.6 percentage points, Southeast Asia 21.3 percentage points, China 12.6 percentage points, North America 8.4 percentage points, and Europe 4.1 percentage points. On the import side, North America contributed 19.8 percentage points of the growth of 70%.[17]

It is too early to evaluate the longer-term outlook for the impact of AI on the global economy. WTO (2025) and Bekkers et al. (2025) employ scenario analysis to show that the expansion of AI can contribute to economic catch-up of lower income economies, depending on policy choices. Furthermore, the current analysis focuses on AI-enabling goods trade and not on AI enabled goods and services, which could see a boost in their trade in the future.

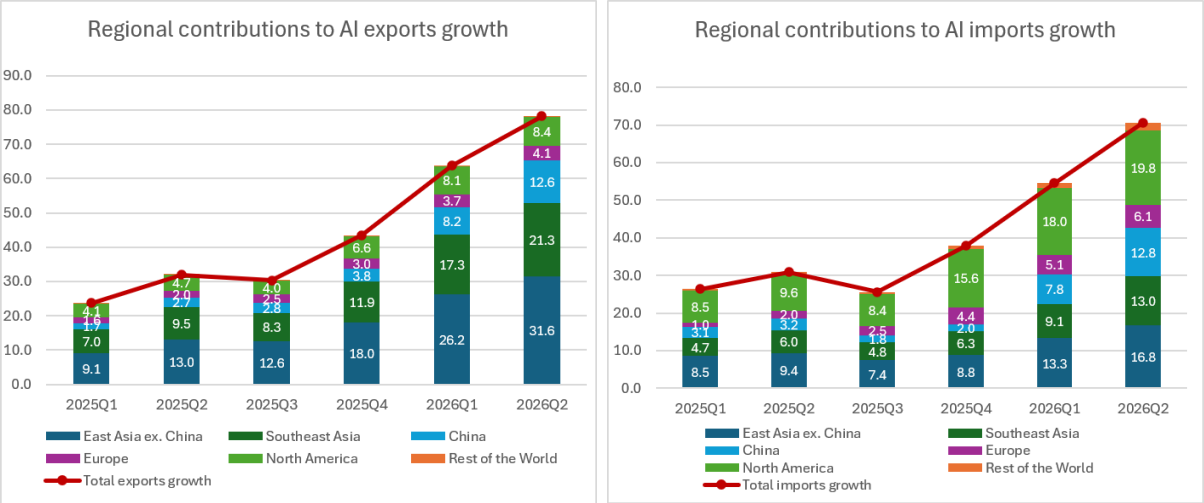
China's position in all these data deserves a word of interpretation. Its share of AI-enabling imports is roughly double its share of merchandise imports overall, while its share of exports is close to its overall share, and its import share has been falling since 2023 (Figure 12). Part of the explanation is that a growing proportion of China's AI compute needs is met from domestic production that never enters international trade statistics. Successive rounds of export controls seemed to have restricted access to the most advanced foreign accelerators, and, with the government also promoting local alternatives, domestically designed chips have taken a larger share of the Chinese market in their place (IDC, reported by Reuters, 2026). Domestic output has so far been absorbed largely within China itself. Trade data therefore are likely understating the scale of China's AI build-out relative to economies that meet the same demand through imports.

Europe presents another special case. Its share of AI-enabling goods trade is roughly a third of its share of merchandise trade on both the export and the import side, despite hosting one of the most critical nodes in the entire chain (produced by ASML in the Netherlands). The explanation lies partly in what the chain looks like in value terms: Europe's strength is concentrated in upstream equipment and materials, which command high strategic leverage but modest trade value relative to the chips and assemblies downstream of them. On the import side, the low share reflects a relatively small data centre build-out compared to the size of the European economy. Europe is therefore neither a large supplier nor a large buyer of these goods in value terms, even where it is close to irreplaceable in particular segments on the export side.

[17] Growth rates differ on the import side and export side because of discrepancies between data reported by importers and exporters.

Figure 8: Regional contributions to AI-enabling merchandise trade growth, 2025-2026H1

Year-on-year % change in US$ values and percentage points contributions



Note: Estimates for AI-enabling goods trade are based on available reporters in the Trade Data Monitor. Data for Viet Nam and Russian Federation are mirrored. Difference between total imports and total exports growth is attributable to differences in reporting by individual economies.
Source: WTO Secretariat estimates.

This is also visible from the analysis of AI-enabling trade flows by stage of production (Figure 9), using data for 2025. All AI-enabling trade is split into three categories: Chemicals and Minerals (1% of total AI-enabling US $ value), Intermediates (58%), and Equipment (42%), which is further split into Semiconductor Manufacturing Equipment (SME, 6%) and Compute and Infrastructure Equipment (CIE, 35%). Equipment is split into these two categories because they belong to different stages of the value chain: SME is used to manufacture semiconductors and never enters the final product, whereas CIE is the finished hardware that those semiconductors are built into and that is installed in data centres to run AI models.

The bulk of supply of chemicals and minerals comes from Asia – East Asia including China and Southeast Asia jointly account for almost three quarters of the total exports for this category. Demand for processed chemicals and minerals from Asia is also very high relative to other regions. The composition is different, however: the share of Southeast Asia and especially China in imports is significantly higher relative to their share in exports (23% vs. 13% for China).

Exports and imports of intermediates are even more dominated by Asian economies than chemicals and minerals AI trade, since they account for about 80% of both flows. Again, on the demand side China plays a bigger role than on the supply side.

Forty percent of the demand for semiconductor manufacturing equipment comes from East Asia excluding China and about 30% more comes from China itself, with the role of other regions being much smaller. The share in global supply is balanced between East Asia excluding China, Southeast Asia and Europe. Notably, Europe's share in SME supply at 27% is significantly higher than its share in other categories.

Demand for compute and infrastructure equipment is strongly dominated by the US (33%) and Europe (23%), while supply is relatively more balanced among the main regions dominating in the AI value chain, still with visible domination of East and Southeast Asia. The US share across categories shows that its demand for AI-enabling goods is heavily skewed towards compute and infrastructure equipment, suggesting it's mainly importing goods that go into data centres rather than goods at earlier stages of the value chain. China's strong demand for all categories but CIE, on the contrary, points to the importance of domestic inputs in the final production stages of China's AI build up.

Figure 9: Regional shares in AI-enabling merchandise trade, by stage of production, 2025

Per cent of total by category



Note: Estimates for AI-enabling goods trade are based on available reporters in the Trade Data Monitor. Data for Viet Nam and Russian Federation are mirrored. Mapping between HS6 and BEC is used to classify the list of AI-enabling goods into Chemicals and Minerals (minerals and chemicals from BEC codes 21 and 22), Intermediates (BEC code 42 plus part of code 22) and Equipment (BEC code 41). Equipment is further split into Semiconductor Manufacturing Equipment and Compute and Infrastructure Equipment. BEC codes are reclassified in some instances based on the underlying 10-digit product line. The full classification is provided in Table A3 of Appendix A.

Source: WTO Secretariat estimates.

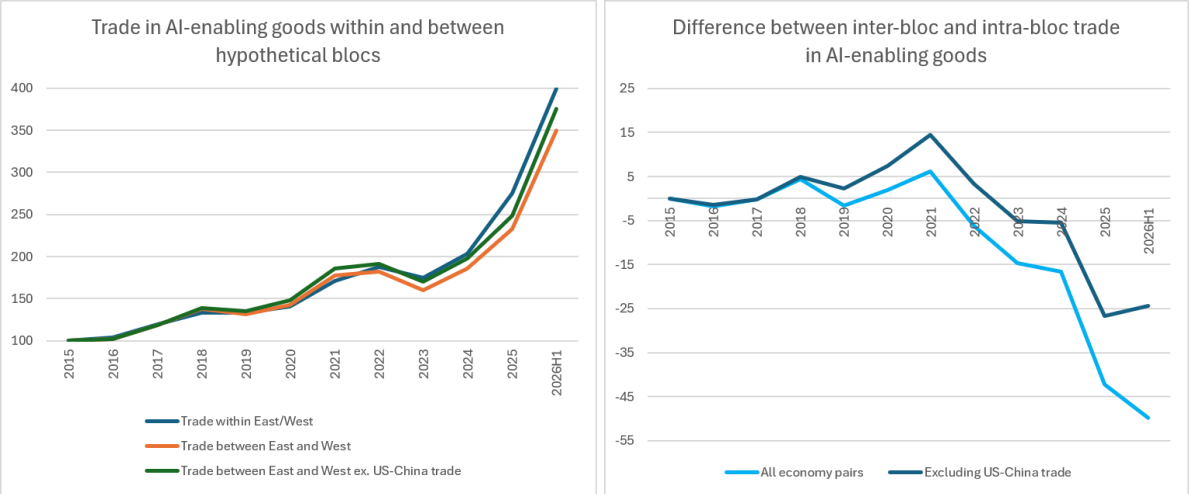
4.3 Trade in AI-enabling goods is highly geographically concentrated and increasingly geopolitically aligned

Trade in AI-enabling goods is not simply concentrating in a few regions, it is concentrating along geopolitical alignment lines as well (Figure 10), and it has done so over precisely the period in which the value of this trade has expanded most rapidly.[18] The two series move together until 2021, separate from 2022, hold roughly steady through 2024, then diverge sharply in 2025. This runs

[18] The analysis is based on the grouping of economies into blocs based on UN voting patterns employing the difference between alignment in voting with the United States and China (Góes and Bekkers, 2022; Blanga-Gubbay and Rubínová, 2024).

counter to the pattern for merchandise trade as a whole, where the gap between intra-bloc and inter-bloc trade also widened in 2022 but then narrowed in 2026 (WTO, 2026).

Figure 10: Trade in AI-enabling goods within and between hypothetical geopolitical blocs, and difference between inter-bloc and intra-bloc trade, 2015-2026H1
Index (2015=100) and difference between the two indices



Note: Estimates for AI-enabling goods trade are based on available reporters in the Trade Data Monitor. TDM data for Viet Nam and Russian Federation are mirrored. Data for 2026H1 is annualized.
Source: WTO Secretariat estimates.

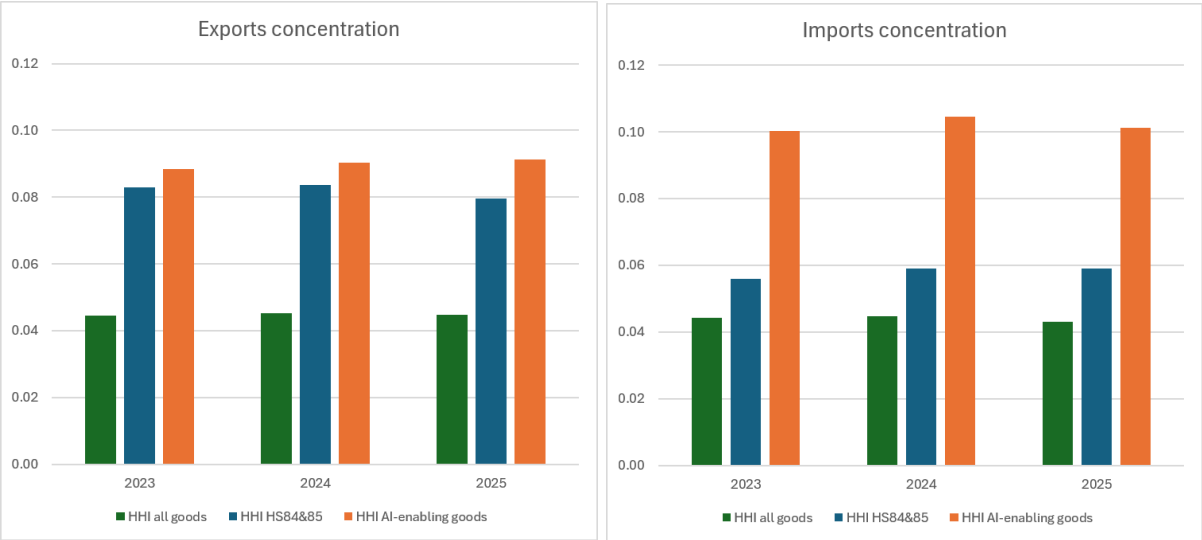
A significant portion of the divergence in AI-enabling goods trade between intra-bloc and inter-bloc trade is accounted for by the United States and China: excluding their bilateral trade roughly halves the gap in the first half of 2026, moreover the gap is starting to narrow.[19] This is consistent with the aggregate picture presented in the GTOS (WTO, 2026), in which US-China decoupling is now the main driver of the remaining bloc divergence, and with the finding that the broader bloc pattern is most evident in less complex products, for which production can be shifted across suppliers more easily, whereas US-China decoupling extends across all product categories and is particularly pronounced for more complex ones (Blanga-Gubbay and Rubínová, 2024).

Figure 11 summarizes geographic concentration using the Herfindahl-Hirschman Index (HHI). To get a complete picture the HHI for all goods is compared with the HHI for AI-enabling goods and trade in HS2 chapters 84 and 85 (machinery and electronics) where most of AI-enabling hs6 codes sit. On the exports side, the HHI is about double across economies compared to all trade, with concentration in HS84 and HS85 only slightly lower than in AI, suggesting that the same economies that are also highly specialized in electronics and machinery also lead AI exports. On the import side the HHI is significantly larger for AI-enabling goods compared to both all trade (more than double) and HS84 and HS85. This confirms that the rising demand for AI-enabling goods and data centre construction is coming from a small set of economies, whereas demand for general electronics and machinery is much more evenly spread globally.

Despite the asymmetry between the two panels, there are risks on both sides. Concentrated exports are a supply-side vulnerability: a disruption at a small number of production sites propagates quickly to everyone who buys from them. Demand concentrated in a handful of economies means a slowdown in AI investment in those economies would transmit directly to exporters that have become specialized in serving them, and the economies most exposed to such a reversal are precisely those whose export growth has been strongest. Given that trade in AI-enabling goods constitutes a significant share of all trade growth globally, this also has implications for forecasting aggregate trade patterns. A slowdown in demand for AI-enabling goods will meaningfully impact aggregate merchandise trade growth.

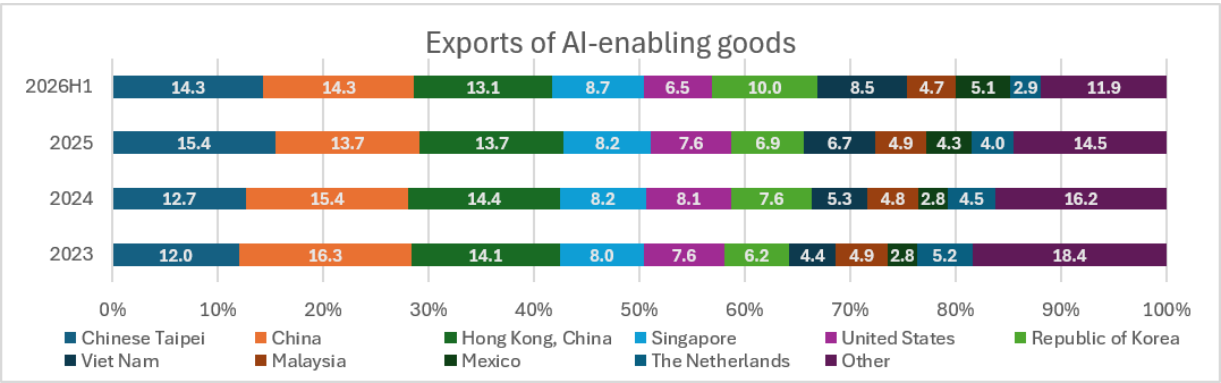
[19] The analysis here focuses only on direct trade and does not consider indirect trade (through intermediates) between the US and China. Data on indirect trade for AI-enabling goods are not yet available, since AI-enabling goods are not included so far in multi-region input output tables.

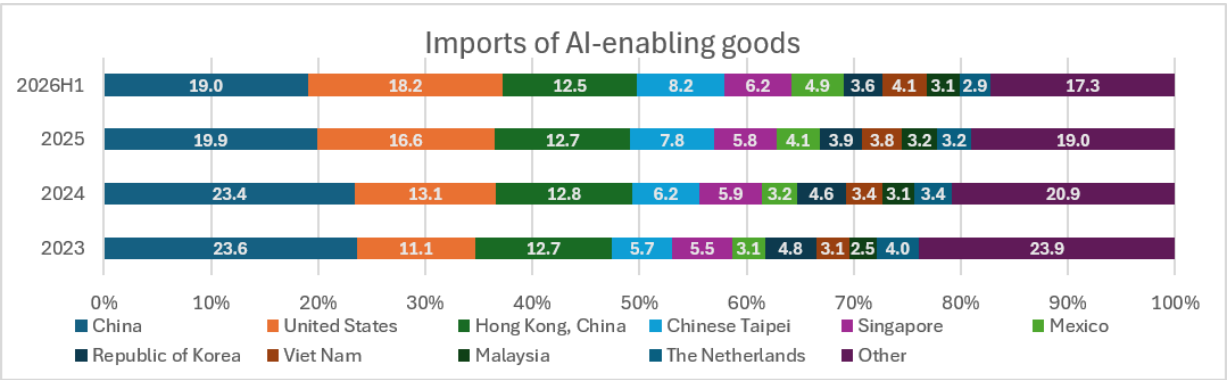
Figure 11: Merchandise trade concentration by category, 2023-2025
Herfindahl-Hirschman Index



Note: Estimates for AI-enabling goods trade and HS84 and HS85 are based on available reporters in the Trade Data Monitor. TDM data for Viet Nam and Russian Federation are mirrored. Data for global trade is from the WTO. EU is disaggregated into individual countries.
Source: WTO Secretariat estimates.

Figure 12: Selected economies' shares in AI-enabling merchandise trade, 2023-2026H1
Per cent of total AI-enabling merchandise exports (imports)





Note: Estimates for AI-enabling goods trade are based on available reporters in the Trade Data Monitor. Data for Viet Nam and Russian Federation are mirrored. Ten largest economies by US $ value of AI-enabling trade in 2025 are selected.
Source: WTO Secretariat estimates.

Looking at individual economies helps clarify why concentration patterns are so striking. Figure 12 shows the ten largest traders of AI-enabling goods, which accounted for about 85% of all exports and about 80% of all imports in 2025, with concentration increasing further in 2026. Imports are dominated by the United States, China and Hong Kong, China, with the share of import demand coming from the United States rising and the share coming from China falling. Together, these three economies account for about half of all imports of AI-enabling goods. Similarly, about half of all exports is accounted for by only four East Asian economies: Chinese Taipei; China; Hong Kong, China; and the Republic of Korea. Mexico's and Viet Nam's contributions have been rapidly increasing, although from a lower base. Among European economies, only the Netherlands appears among the ten largest traders.

4.4 Economy-level analysis

This section zooms in on risks related to supply concentration and import dependencies for major economies involved in AI-enabling goods trade. For this analysis, a group of 13 economies is selected based on their dominance in both AI-enabling imports and exports in 2025 in US$ value terms.

Figure 13 shows the geographic concentration of exports across partners using the Herfindahl-Hirschman Index (HHI). To understand whether export concentration across partners in AI-enabling goods is elevated, it is useful to compare it to that same economy's overall trade export concentration. The exporter with the most highly concentrated exports across partners in AI-enabling goods is Mexico, though they are almost just as concentrated in overall trade, due to close trade ties with the United States. The second most concentrated exporter is Hong Kong, China, and they too are almost equally concentrated in overall trade due to significant trade with China. Germany and China have the most diversified exports in terms of overall trade, and for Germany their trade in AI-enabling goods is also very diversified, whereas it is more concentrated for China. Concentration has been increasing for most exporters on the list, suggesting demand for AI-enabling goods is becoming less dispersed, with a handful of exceptions, most notably Viet Nam and Republic of Korea. This is in contrast to overall trade, where concentration across partners remained relatively stable or decreased for most exporters on the list for the same period.

Figure 13: Exports concentration across partners, 2023-2026H1
Herfindahl-Hirschman Index, percentage change, average over period

	AI-enabling goods					Overall trade			
	HHI 2023Q1 - 2026Q2	% change 2025-2023	2023 avg	2025 avg	2026 H1	% change 2025-2023	2023 avg	2025 avg	2026 H1
Chinese Taipei		39.9	0.13	0.18	0.19	29.3	0.11	0.14	0.15
Thailand		35.2	0.17	0.23	0.27	19.3	0.06	0.08	0.09
United States		33.3	0.08	0.11	0.15	-13.3	0.07	0.06	0.06
China		10.6	0.12	0.14	0.16	-18.1	0.04	0.03	0.03
Japan		6.1	0.16	0.17	0.17	-6.5	0.09	0.08	0.08
Hong Kong, China		5.1	0.49	0.52	0.50	7.4	0.34	0.36	0.43
Germany		1.0	0.05	0.05	0.05	-2.3	0.04	0.04	0.04
Mexico		0.9	0.78	0.79	0.87	5.5	0.64	0.67	0.68
Malaysia		0.6	0.12	0.12	0.12	5.3	0.07	0.07	0.08
Singapore		-0.8	0.11	0.11	0.12	-0.2	0.06	0.06	0.07
The Netherlands		-2.9	0.06	0.06	0.05	-1.8	0.08	0.08	0.08
Viet Nam		-8.0	0.17	0.15	0.16	7.2	0.12	0.13	0.13
Republic of Korea		-16.7	0.19	0.15	0.16	-4.9	0.09	0.08	0.10

Note: Estimates for AI-enabling goods trade are based on available reporters in the Trade Data Monitor. Data for Viet Nam are mirrored. The figure shows thirteen largest economies based on their dominance in both AI-enabling imports and exports in 2025 in US$ value terms. HHI is normalized: $HHI = \frac{\sum_i share_i^2 - 1/N}{1 - 1/N}$, where N is the maximum number of trading partners.
Source: WTO Secretariat estimates.

Figure 14: Exports concentration across products, 2023-2026H1
Herfindahl-Hirschman Index, percentage change, average over period

		AI-enabling goods				Overall trade			
	HHI 2023Q1 - 2026Q2	% change 2025-2023	2023 avg	2025 avg	2026 H1	% change 2025-2023	2023 avg	2025 avg	2026 H1
Mexico		61.7	0.24	0.39	0.56	56.7	0.01	0.02	0.04
Republic of Korea		20.1	0.21	0.25	0.33	74.3	0.02	0.03	0.08
China		15.0	0.09	0.11	0.18	1.3	0.01	0.01	0.01
United States		14.3	0.08	0.10	0.11	13.7	0.01	0.01	0.02
Japan		9.3	0.10	0.10	0.11	18.6	0.01	0.02	0.02
Thailand		7.1	0.17	0.18	0.21	38.2	0.01	0.01	0.01
The Netherlands		0.2	0.13	0.13	0.12	-12.6	0.01	0.01	0.01
Viet Nam		-5.9	0.27	0.26	0.27	48.6	0.02	0.03	0.05
Hong Kong, China		-8.0	0.16	0.15	0.14	20.7	0.05	0.06	0.07
Germany		-8.8	0.07	0.06	0.06	2.2	0.00	0.00	0.00
Singapore		-9.7	0.17	0.15	0.13	16.5	0.03	0.04	0.05
Malaysia		-13.8	0.21	0.18	0.14	11.0	0.03	0.03	0.04
Chinese Taipei		-25.4	0.24	0.18	0.18	1.8	0.10	0.11	0.12

Note: Estimates for AI-enabling goods trade are based on available reporters in the Trade Data Monitor. Data for Viet Nam are mirrored. The figure shows thirteen largest economies based on their dominance in both AI-enabling imports and exports in 2025 in US$ value terms. HHI is normalized: $HHI = \frac{\sum_i share_i^2 - 1/N}{1-1/N}$, where N is the maximum number of products.
Source: WTO Secretariat estimates.

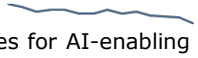
Turning to exports concentration across products, a few trends stand out (Figure 14). Mexico and the Republic of Korea have become significantly more concentrated across AI-related products, from an already high base, and China and Thailand also saw increases, although their levels of concentration are lower, meaning they export a more diversified basket of AI-enabling goods. Some other economies on the list, on the contrary, diversified their exports basket of AI-enabling goods, most notably Chinese Taipei. Levels for AI-enabling goods and for overall trade are not directly comparable, since the first is computed over 55 products and the second over several thousand, so the comparison is about changes rather than levels. Overall export concentration across products rose for the Republic of Korea, Mexico and Viet Nam, consistent with the growing weight of AI-enabling goods in their exports, but it remains low in absolute terms.

Figure 15: Import concentration across partners, 2023-2026H1
Herfindahl-Hirschman Index, percentage change, average over period

		AI-enabling goods				Overall trade			
	HHI 2023Q1 - 2026Q2	% change 2025-2023	2023 avg	2025 avg	2026 H1	% change 2025-2023	2023 avg	2025 avg	2026 H1
United States		58.9	0.12	0.19	0.18	-13.6	0.07	0.06	0.07
Mexico		21.5	0.15	0.18	0.21	-14.1	0.22	0.19	0.17
Singapore		18.3	0.18	0.21	0.25	5.9	0.07	0.07	0.08
Viet Nam		17.4	0.18	0.21	0.23	11.5	0.20	0.22	0.22
Malaysia		15.4	0.13	0.15	0.15	18.1	0.08	0.10	0.11
Thailand		14.5	0.21	0.24	0.32	37.1	0.09	0.12	0.12
Chinese Taipei		4.6	0.14	0.15	0.15	11.4	0.09	0.10	0.10
Republic of Korea		4.1	0.14	0.15	0.15	4.1	0.08	0.04	0.09
China		-1.6	0.19	0.19	0.19	0.5	0.04	0.04	0.04
Germany		-3.9	0.09	0.09	0.08	0.1	0.05	0.05	0.05
Hong Kong, China		-10.5	0.21	0.19	0.18	-5.9	0.16	0.16	0.14
Japan		-19.0	0.19	0.15	0.16	6.0	0.08	0.08	0.09
The Netherlands		-25.3	0.12	0.09	0.08	-4.8	0.06	0.06	0.06

Note: Estimates for AI-enabling goods trade are based on available reporters in the Trade Data Monitor. Data for Viet Nam are mirrored. The figure shows thirteen largest economies based on their dominance in both AI-enabling imports and exports in 2025 in US$ value terms. HHI is normalized: $HHI = \frac{\sum_i share_i^2 - 1/N}{1-1/N}$, where N is the maximum number of trading partners.
Source: WTO Secretariat estimates.

Figure 16: Top import supplier share, 2023-2026H1
Percentage share, percentage change, average over period

	AI-enabling goods						Overall trade			
	HHI 2023Q1 - 2026Q2	% change 2025-2023	2023 avg	2025 avg	2026 H1	Top supplier in 2025	% change 2025-2023	2023 avg	2025 avg	2026 H1
Mexico		143.6	13.4	32.6	40.5	Chinese Taipei	-11.7	42.7	37.7	34.4
United States		61.2	20.8	33.5	31.4	Chinese Taipei	2.3	15.1	15.4	16.7
Chinese Taipei		55.9	17.7	27.6	28.2	Republic of Korea	1.5	20.5	20.8	20.9
Thailand		32.4	30.7	40.7	51.3	Chinese Taipei	27.3	24.7	31.4	30.5
Singapore		18.1	34.1	40.2	46.7	Chinese Taipei	38.9	11.5	16.0	21.1
Viet Nam		16.7	30.0	35.0	35.8	China	8.1	40.6	43.9	42.4
Germany		-1.5	23.5	23.1	19.6	The Netherlands	-2.2	14.0	13.7	13.9
China		-3.4	36.8	35.6	31.1	Chinese Taipei	15.4	8.1	9.4	9.2
Malaysia		-6.4	24.1	22.6	26.7	China	13.7	21.3	24.2	26.4
Hong Kong, China		-6.4	31.4	29.4	28.9	China	-5.6	36.6	34.6	32.0
Republic of Korea		-7.0	25.9	24.1	28.1	China	0.9	22.3	22.4	23.9
Japan		-14.0	32.9	28.3	30.5	Chinese Taipei	6.5	22.1	23.5	24.1
The Netherlands		-23.7	23.4	17.9	12.9	China	-3.5	15.1	14.6	13.8

Note: Estimates for AI-enabling goods trade are based on available reporters in the Trade Data Monitor. Data for Viet Nam are mirrored. The figure shows thirteen largest economies based on their dominance in both AI-enabling imports and exports in 2025 in US$ value terms.
Source: WTO Secretariat estimates.

Imports of AI-enabling goods are also becoming more concentrated across partners for the economies on the list, unlike their overall trade (Figure 15). All but five economies on the list (Germany, the Netherlands, Republic of Korea, Malaysia and Chinese Taipei), have an HHI over 0.15, indicating moderate import concentration. Thailand and Singapore both have HHI indices over 0.25, suggesting high concentration, or dependence. Over the last two years, import dependencies have grown for many economies, with the highest increase registered for the United States, meaning its AI-enabling infrastructure build up relies on imports from a few trading partners.

The share of AI-enabling imports attributed to the reporting economy's top supplier is high across the board (Figure 16), with the average being nearly one third in 2026, and for some economies' this share edging closer to a half (Thailand, Singapore, Mexico). The leading suppliers for the majority of importers are Chinese Taipei and China. While some economies decreased their dependency over time (Germany, the Netherlands, Japan, China; Hong Kong, China), others saw a rapid increase (Mexico, the United States, Chinese Taipei, Thailand, Singapore and Viet Nam). Some economies have a much lower top supplier share in overall trade than in AI-enabling goods trade, meaning more diversification in other products (the United States, Singapore, China), while many of those at the core of the AI-enabling value chain have similar levels for both (Chinese Taipei, Thailand, Viet Nam, Malaysia, Republic of Korea; Hong Kong, China; Japan), suggesting advanced compute might be dominating their overall trade patterns.

Figure 17 shows that the economies with the strongest revealed comparative advantage (RCA) in AI-enabling goods are Chinese Taipei; Hong Kong, China; Singapore; and Malaysia. The Republic of Korea and Viet Nam also have an RCA close to 3 and moreover see it increase over time. On the other hand, the United States and in particular Germany display RCAs below 1, indicating that they are less specialized in AI-enabling goods compared to the global average. Over time, Mexico, Viet Nam and the Republic of Korea saw their RCA increase, while Chinese Taipei, Hong Kong, China, Japan and the Netherlands experienced a decline in comparative advantage as other economies started gaining prominence in the value chain.

The Netherlands case is worth noting separately. The country also has an RCA close to 1, despite its large export position in lithography machines, which are a critical step in the AI value chain. Lithography is the most concentrated node in the entire chain, with extreme ultraviolet systems supplied by a single firm (ASML), yet the overall value of the equipment traded is small relative to the overall value of downstream goods. Comparative advantage measured on trade values therefore is not a good metric of the strategic position of economies specialising in upstream equipment and materials and overstates that of economies that assemble and re-export finished hardware. The same caution applies in the opposite direction to Singapore and Hong Kong, China, where high RCA values partly reflect goods passing through as re-exports rather than domestic production.

Figure 17: Revealed Comparative Advantage, 2023-2026H1
RCA units, percentage change, average over period

	AI-enabling goods				
	RCA 2023Q1 - 2026Q2	% change 2025-2023	2023 avg	2025 avg	2026 H1
Mexico		45.0	1.1	1.6	1.9
Viet Nam		16.7	2.3	2.7	2.9
Thailand		11.6	1.3	1.4	1.4
Republic of Korea		8.9	2.3	2.5	3.0
United States		3.0	0.9	0.9	0.8
Singapore		-4.3	4.0	3.8	3.5
Chinese Taipei		-4.4	6.6	6.3	5.1
Malaysia		-9.5	3.8	3.4	2.8
China		-17.0	1.2	1.0	1.0
Hong Kong, China		-17.6	5.9	4.8	3.8
The Netherlands		-20.0	1.3	1.1	0.8
Japan		-21.4	1.3	1.1	0.8
Germany		-28.6	0.5	0.3	0.2

Note: Estimates for AI-enabling goods trade are based on available reporters in the Trade Data Monitor. Data for Viet Nam are mirrored. The figure shows thirteen largest economies based on their dominance in both AI-enabling imports and exports in 2025 in US$ value terms.
Source: WTO Secretariat estimates.

5 CONCLUSION

AI is rapidly changing the global economy. Whereas much of the economic literature focuses on the potential repercussions of AI deployment for productivity and employment, this paper zooms in on the upstream effects of the massive investment in AI equipment. We do so by introducing a list of AI-enabling goods, building on and refining existing lists. We offer a more targeted approach focusing on products where trade is dominated by AI and advanced compute globally, discarding products which are mostly AI-enabling only in specific economies (the US) in 2025-2026 or for which AI use is marginal. The exercise has generated a list of only 55 HS lines whose share in global trade is nevertheless almost 14%.

We analyse the patterns of trade in AI-enabling goods which are characterized by rapid growth, high concentration on the export and import side and shifting patterns of revealed comparative advantage. Most notably, AI-enabling goods are responsible for respectively 36% and 43% of global merchandise trade growth in values in 2025 and the first half of 2026. On the export side East Asia and Southeast Asia export about three quarters of global exports of AI-enabling goods while North America also plays an important role on the import side. We also document that at the economy level there is also a high level of dependency of imports from a small number of export partners.

Future work can expand in multiple directions. First, the proposed list can be employed to split sectors in different multi-regional input output tables (MRIOs) such as TiVA and GTAP to better understand value chain relations and conduct counterfactual analysis. Second, further analysis can shed light on trade dependencies considering factors like the scope for substitution. Third, trade policies for these goods can be studied to explore to what extent trade policies respond to the rapid growth and trade dependencies. Fourth, statistics can be constructed on AI enabled goods and services, to see how deployment of AI is affecting global trade patterns.

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APPENDIX A. AI-ENABLING GOODS LIST

Table A1. AI-enabling goods: classified HTS10 lines

HTS10 code	Description
Compute Hardware	
8471.49.00.00	Other automatic data processing machines: Other, entered in the form of systems
8471.50.01.50	Processing units other than those of subheading 8471.41 or 8471.49, whether or not containing in the same housing one or two of the following types of unit: storage units, input units, output units: Other
8480.71.40.00	Molds for rubber or plastics: Injection or compression types: For the manufacture of semiconductor devices
8486.10.00.00	Machines and apparatus for the manufacture of boules or wafers
8486.20.00.00	Machines and apparatus for the manufacture of semiconductor devices or of electronic integrated circuits
8486.90.00.00	Machines and apparatus of a kind used solely or principally for the manufacture of semiconductor boules or wafers, semiconductor devices, electronic integrated circuits or flat panel displays; machines and apparatus specified in note 11(C) to this chapter; parts and accessories
8514.39.10.00	Other furnaces and ovens: Of a kind used solely or principally for the manufacture of printed circuits or printed circuit assemblies
9030.82.00.00	Other instruments and apparatus: For measuring or checking semiconductor wafers or devices (including integrated circuits)
9031.41.00.20	For inspecting semiconductor wafers or devices (including integrated circuits) or for inspecting photomasks or reticles used in manufacturing semiconductor devices (including integrated circuits)
9031.41.00.40	For inspecting semiconductor wafers or devices: For wafers
9031.41.00.60	For inspecting semiconductor wafers or devices: Other
9031.49.70.00	Other optical instruments and appliances: Other: For inspecting masks (other than photomasks) used in manufacturing semiconductor devices; for measuring surface particulate contamination on semiconductor devices
9031.80.40.00	Other instruments, appliances and machines: Electron beam microscopes fitted with equipment specifically designed for the handling and transport of semiconductor wafers or reticles
9031.90.54.00	Parts and accessories: Of other optical instruments and appliances, other than test benches: Of optical instruments and appliances of subheading 9031.41 or 9031.49.70
9031.90.70.00	Parts and accessories: Other: Of articles of subheading 9031.80.40
8471.70.40.65	Not assembled in cabinets, and without attached external power supply: Hard magnetic disk drive units
8471.70.50.65	Magnetic disk drive units: Other: Other: Hard magnetic disk drive units
8471.70.60.00	Other storage units: Not assembled in cabinets for placing on a table, desk, wall, floor or similar place
8471.70.90.00	Other storage units: Other
8471.80.10.00	Control or adapter units
8471.80.40.00	Units suitable for physical incorporation into automatic data processing machines
8471.80.90.00	Other units of automatic data processing machines: Other
8479.89.92.00	Automated electronic component placement machines of a kind used solely or principally for the manufacture of printed circuit assemblies
3701.99.60.60	Photographic plates and film in the flat, sensitized, unexposed, of any material other than paper, paperboard or textiles; instant print film in the flat, sensitized, unexposed, whether or not in packs
3707.90.32.90	Chemical preparations for photographic uses: Other
3818.00.00.10	Gallium arsenide wafers, doped
3818.00.00.30	Silicon carbide wafers, doped
3818.00.00.40	Monocrystalline silicon wafers, doped: Round (circular) shaped, as described in statistical note 2 to this chapter
3818.00.00.50	Monocrystalline silicon wafers, doped: Other

HTS10 code	Description
3818.00.00.91	Chemical elements doped for use in electronics, in the form of discs, wafers or similar forms; chemical compounds doped for use in electronics: Other
3923.10.20.00	Specially shaped or fitted for the conveyance or packing of semiconductor wafers, masks or reticles of subheadings 3923.10 or 8486.90
7017.10.30.00	Of fused quartz or other fused silica: Quartz reactor tubes and holders designed for insertion into diffusion and oxidation furnaces for production of semiconductor wafers
7020.00.30.00	Quartz reactor tubes and holders designed for insertion into diffusion and oxidation furnaces for production of semiconductor wafers
7410.21.30.20	Having a base wholly of plastics impregnated glass: Having copper on one side only
7410.21.30.40	Having a base wholly of plastics impregnated glass: Having copper on both sides
8424.89.10.00	Mechanical appliances for projecting, dispersing or spraying, of a kind used solely or principally for the manufacture of printed circuits or printed circuit assemblies
8473.30.11.40	Memory modules suitable for use solely or principally with machines of heading 8471
8473.30.11.80	Printed circuit assemblies: Other
8473.30.20.00	Parts and accessories, including face plates and lock latches, of printed circuit assemblies
8473.30.51.00	Not incorporating a cathode ray tube: Other
8473.30.91.00	Parts and accessories of the machines of heading 8471: Other
8486.40.00.10	Machines and apparatus specified in note 11(C) to this chapter: For the manufacture or repair of masks and reticles
8486.40.00.20	Machines and apparatus specified in note 11(C) to this chapter: For assembling semiconductor devices or electronic integrated circuits
8486.40.00.30	Machines and apparatus specified in note 11(C) to this chapter: For lifting, handling, loading or unloading of boules, wafers, semiconductor devices, electronic integrated circuits and flat panel displays
8514.31.10.00	Electron beam furnaces: Of a kind used solely or principally for the manufacture of printed circuits or printed circuit assemblies
8523.51.00.00	Solid-state non-volatile storage devices
8534.00.00.20	Having a base wholly of impregnated glass: With 3 or more layers of conducting materials
8534.00.00.40	Having a base wholly of impregnated glass: Other
8534.00.00.70	Plastics impregnated, not flexible type: Other
8534.00.00.95	Printed circuits: Other
8542.31.00.30	Controllers (including microcontrollers): Other
8542.31.00.40	Graphics processing units (GPUs)
8542.31.00.45	Central processing units (CPUs)
8542.31.00.50	Processors (including microprocessors): Other
8542.31.00.60	Field programmable gate arrays (FPGAs)
8542.31.00.70	Processors and controllers, whether or not combined with memories, converters, logic circuits, amplifiers, clock and timing circuits, or other circuits: System on chip (SoCs)
8542.31.00.75	Processors and controllers, whether or not combined with memories, converters, logic circuits, amplifiers, clock and timing circuits, or other circuits: Other
8542.32.00.36	Dynamic read-write random access (DRAM): Over 1 gigabit
8542.32.00.51	Electrically erasable programmable read-only memory (EEPROM)
8542.32.00.71	Memories: Other
8542.33.00.01	Electronic integrated circuits: Amplifiers
8542.39.00.90	Electronic integrated circuits: Other
9002.19.00.00	Objective lenses and parts and accessories thereof: Other
9030.90.66.00	Printed circuit assemblies: Of instruments and apparatus of subheading 9030.40 or 9030.82
9030.90.84.00	Parts and accessories: Other: Of instruments and apparatus of subheading 9030.82
AI Infrastructure	
8504.40.60.12	Suitable for physical incorporation into automatic data processing machines or units thereof of heading 8471: With a power output exceeding 150 W but not exceeding 500 W

HTS10 code	Description
8504.40.60.18	Suitable for physical incorporation into automatic data processing machines or units thereof of heading 8471: Other
8504.40.70.18	Power supplies for automatic data processing machines or units thereof of heading 8471; power supplies for goods of subheading 8443.31 or 8443.32; power supplies for monitors of subheading 8528.42 or 8528.52 or projectors of subheading 8528.62: Other
8504.50.40.00	Other inductors: For power supplies for automatic data processing machines or units thereof of heading 8471; power supplies for goods of subheading 8443.31 or 8443.32; power supplies for monitors of subheading 8528.42 or 8528.52 or projectors of subheading 8528.62; for telecommunication apparatus
8504.90.20.00	Printed circuit assemblies
8504.90.41.00	Of power supplies for automatic data processing machines or units thereof of heading 8471; of power supplies for goods of subheading 8443.31 or 8443.32; of power supplies for monitors of subheading 8528.42 or 8528.52 or projectors of subheading 8528.62: Other
8536.90.40.00	Other apparatus: Terminals, electrical splices and electrical couplings; wafer probers
8517.62.00.20	Switching and routing apparatus
8517.62.00.90	Machines for the reception, conversion and transmission or regeneration of voice, images or other data, including switching and routing apparatus
8544.70.00.00	Insulated (including enameled or anodized) wire, cable (including coaxial cable) and other insulated electric conductors, whether or not fitted with connectors; optical fiber cables, made up of individually sheathed fibers, whether or not assembled with electric conductors or fitted with connectors
9001.10.00.30	Optical fibers: For transmission of voice, data or video communications
9001.10.00.85	Optical fiber bundles and cables: Other
8414.59.15.00	Fans of a kind used solely or principally for cooling microprocessors, telecommunications apparatus, automatic data processing machines or units of automatic data processing machines
8419.89.95.40	Other: Other: Designed for cooling: Other
Chemicals & Minerals	
2804.29.00.20	Rare gases: Neon
2804.29.00.55	Rare gases: Other
2804.61.00.00	Silicon: Containing by weight not less than 99.99 percent of silicon
2804.80.00.00	Hydrogen, rare gases and other nonmetals: Arsenic
2805.30.00.50	Not intermixed or interalloyed: Other
2805.30.00.90	Rare-earth metals, scandium and yttrium, whether or not intermixed or interalloyed: Other
2825.60.00.10	Germanium oxides and zirconium dioxide: Germanium dioxide
2846.90.20.40	Rare-earth oxides except cerium oxides: Other
2846.90.20.84	Rare-earth chlorides except cerium chlorides: Other
2846.90.80.90	Compounds, inorganic or organic, of rare-earth metals, of yttrium or of scandium, or of mixtures of these metals: Other
2853.90.90.10	Gallium arsenide wafers, undoped
2929.90.05.00	2,2'-Bis(4-cyanatophenyl)-1,1,1,3,3,3-hexafluoro- propane; 2,2-Bis((4-cyanatophenyl) propane; 1,1-Ethylidenebis (phenyl-4-cyanate); 4,4'-Methylene bis(2,6-dimethylphenylcyanate); and 1,3-Phenylenebis (1-methylethylidenebis) cyanic acid, 1,4-phenylene ester
8112.31.00.00	Hafnium: Unwrought; waste and scrap; powders
8112.39.00.00	Hafnium: Other
8112.92.10.00	Unwrought; waste and scrap; powders: Gallium
8112.92.60.00	Germanium: Unwrought
8112.92.65.00	Germanium: Other
8112.99.10.00	Other: Germanium

Note: 97 ten-digit lines of the 2026 US Harmonized Tariff Schedule flagged 1 or 0 under the classification protocol, grouped by domain. Descriptions are abridged: the text of the line itself is reported, with the text of the level above it added where the line reads only "Other" or "Parts".

Table A2. AI-enabling goods: HS6 subheadings and coverage

HS6 code	Description	Coverage, average 2024–2026
2804.29	Hydrogen, rare gases and other nonmetals; Rare gases; Other	8.2%
2804.61	Silicon; Containing by weight not less than 99.99 percent of silicon	100%
2804.80	Hydrogen, rare gases and other nonmetals; Arsenic	100%
2805.30	Rare-earth metals, scandium and yttrium, whether or not intermixed or interalloyed	80.4%
2825.60	Germanium oxides and zirconium dioxide	72.9%
2846.90	Compounds, inorganic or organic, of rare-earth metals, of yttrium or of scandium, or of mixtures of these metals; Other	92.3%
2853.90	Phosphides, whether or not chemically defined, excluding ferrophosphorous; other inorganic compounds (including distilled or conductivity water and water of similar purity); liquid air (whether or not rare gases have been removed); compressed air; amalgams, other than amalgams of precious metals; Other	0.3%
2929.90	Compounds with other nitrogen function; Other	3.0%
3701.99	Photographic plates and film in the flat, sensitized, unexposed, of any material other than paper, paperboard or textiles; instant print film in the flat, sensitized, unexposed, whether or not in packs; Other; Other	100.0%
3707.90	Chemical preparations for photographic uses (other than varnishes, glues, adhesives and similar preparations); unmixed products for photographic uses, put up in measured portions or put up for retail sale in a form ready for use; Other	98.5%
3818.00	Chemical elements doped for use in electronics, in the form of discs, wafers or similar forms; chemical compounds doped for use in electronics	85.9%*
3923.10	Boxes, cases, crates and similar articles	2.8%
7017.10	Laboratory, hygienic or pharmaceutical glassware; Of fused quartz or other fused silica	19.2%
7020.00	Other articles of glass	13.9%
7410.21	Copper foil (whether or not printed or backed with paper, paperboard, plastics or similar backing materials) of a thickness (excluding any backing) not exceeding 0.15 mm; Backed; Of refined copper	82.5%
8112.31	Hafnium; Unwrought; waste and scrap; powders	100%
8112.39	Hafnium; Other	100%
8112.92	Beryllium, chromium, hafnium, rhenium, thallium, cadmium, germanium, vanadium, gallium, indium and niobium (columbium), and articles of these metals, including waste and scrap; Other; Unwrought; waste and scrap; powders	18.2%
8112.99	Beryllium, chromium, hafnium, rhenium, thallium, cadmium, germanium, vanadium, gallium, indium and niobium (columbium), and articles of these metals, including waste and scrap; Other; Other	25.9%
8414.59	Fans; Other	14.5%
8419.89	Machinery, plant or laboratory equipment for the treatment of materials by a process involving a change of temperature; Other machinery, plant or equipment; Other	44.5%
8424.89	Mechanical appliances for projecting, dispersing or spraying liquids or powders: Other appliances; Other	4.3%
8471.49	Other automatic data processing machines; Other, entered in the form of systems	100%
8471.50	Processing units other than those of subheading 8471.41 or 8471.49, whether or not containing in the same housing one or two of the following types of unit: storage units, input units, output units	100.0%
8471.70	Automatic data processing machines and units thereof; magnetic or optical readers, machines for transcribing data onto data media in coded form and machines for processing such data, not elsewhere specified or included; Storage units	92.6%
8471.80	Automatic data processing machines and units thereof; magnetic or optical readers, machines for transcribing data onto data media in coded form and machines for processing such data, not elsewhere specified or included; Other units of automatic data processing machines	100%
8473.30	Parts and accessories of the machines of heading 8471	100%

HS6 code	Description	Coverage, average 2024–2026
8479.89	Other machines and mechanical appliances; Other	2.7%
8480.71	Molds for rubber or plastics; Injection or compression types	1.0%
8486.10	Machines and apparatus for the manufacture of boules or wafers	100%
8486.20	Machines and apparatus for the manufacture of semiconductor devices or of electronic integrated circuits	100%
8486.40	Machines and apparatus specified in note 11(C) to chapter 84	100%
8486.90	Machines and apparatus of a kind used solely or principally for the manufacture of semiconductor boules or wafers, semiconductor devices, electronic integrated circuits or flat panel displays; machines and apparatus specified in note 11(C) to this chapter; parts and accessories	100%
8504.40	Electrical transformers, static converters (for example, rectifiers) and inductors; parts thereof; Static converters	18.2%
8504.50	Electrical transformers, static converters (for example, rectifiers) and inductors; parts thereof; Other inductors	10.1%
8504.90	Electrical transformers, static converters (for example, rectifiers) and inductors; parts thereof; Parts	11.4%
8514.31	Electron beam furnaces	3.7%
8514.39	Industrial or laboratory electric furnaces and ovens (including those functioning by induction or dielectric loss); other industrial or laboratory equipment for the heat treatment of materials by induction or dielectric loss; parts thereof; Other furnaces and ovens; Other	22.0%
8517.62	Machines for the reception, conversion and transmission or regeneration of voice, images or other data, including switching and routing apparatus	98.9%
8523.51	Solid-state non-volatile storage devices	100%
8534.00	Printed circuits	92.4%
8536.90	Electrical apparatus for switching or protecting electrical circuits, or for making connections to or in electrical circuits, for a voltage not exceeding 1,000 V; Other apparatus	43.6%
8542.31	Processors and controllers, whether or not combined with memories, converters, logic circuits, amplifiers, clock and timing circuits, or other circuits	94.9%
8542.32	Electronic integrated circuits; Memories	87.0%
8542.33	Electronic integrated circuits; Amplifiers	100%
8542.39	Electronic integrated circuits; Other	70.5%
8544.70	Insulated (including enameled or anodized) wire, cable (including coaxial cable) and other insulated electric conductors, whether or not fitted with connectors; optical fiber cables, made up of individually sheathed fibers, whether or not assembled with electric conductors or fitted with connectors; Optical fiber cables	100%
9001.10	Optical fibers, optical fiber bundles and cables	87.9%
9002.19	Lenses, prisms, mirrors and other optical elements, mounted; Objective lenses; Other	100%
9030.82	Other instruments and apparatus; For measuring or checking semiconductor wafers or devices (including integrated circuits)	100%
9030.90	Oscilloscopes, spectrum analyzers and other instruments and apparatus for measuring or checking electrical quantities, excluding meters of heading 9028; instruments and apparatus for measuring or detecting alpha, beta, gamma, X-ray, cosmic or other ionizing radiations; parts and accessories thereof	40.8%
9031.41	Other optical instruments and appliances; For inspecting semiconductor wafers or devices (including integrated circuits) or for inspecting photomasks or reticles used in manufacturing semiconductor devices (including integrated circuits)	100%
9031.49	Other optical instruments and appliances; Other	0.3%
9031.80	Other instruments, appliances and machines	3.7%
9031.90	Measuring or checking instruments, appliances and machines, not specified or included elsewhere in chapter 90; Parts and accessories	23.3%

Note: The 55 HS6 subheadings into which the classified HTS10 lines fall. Coverage is the share of the subheading's US general imports (CIF) accounted for by those lines, averaged over 2024, 2025 and January–May 2026, and is used to rescale international trade data reported at HS6. *Upper bound: one superseded line, still reported in place of its successors, is counted in full. Source: US Census Bureau; authors' calculations. Descriptions are abridged: the text of the line itself is reported, with the text of the level above it added where the line reads only "Other" or "Parts".

Table A3. AI-enabling goods: stage of production by HS6 subheading

HS6 code	BEC code	BEC description	Stage	Basis
2804.29	22	Processed industrial supplies n.e.s.	Chemicals and minerals	Neon and other rare gases (krypton, xenon), excluding helium and argon.
2804.61	22	Processed industrial supplies n.e.s.	Chemicals and minerals	High-purity silicon, 99.99% and above.
2804.80	22	Processed industrial supplies n.e.s.	Chemicals and minerals	Arsenic (element).
2805.30	22	Processed industrial supplies n.e.s.	Chemicals and minerals	Rare-earth metals other than lanthanum, cerium, praseodymium and neodymium, and their intermixtures and interalloys.
2825.60	22	Processed industrial supplies n.e.s.	Chemicals and minerals	HTS10 2825.60.00.10: germanium dioxide.
2846.90	22	Processed industrial supplies n.e.s.	Chemicals and minerals	Mixtures of rare-earth oxides or chlorides and other rare-earth compounds, other than those with lanthanum, yttrium or scandium as the predominant metal.
2853.90	22	Processed industrial supplies n.e.s.	Chemicals and minerals	HTS10 2853.90.90.10: undoped gallium arsenide wafers.
2929.90	22	Processed industrial supplies n.e.s.	Chemicals and minerals	HTS10 2929.90.05.00: cyanate ester resin monomers.
3701.99	22	Processed industrial supplies n.e.s.	Intermediates	Photomask blanks: substrates carrying an engineered film stack (Cr or MoSi absorber; Mo/Si multilayer for EUV).
3707.90	22	Processed industrial supplies n.e.s.	Chemicals and minerals	Photoresists and other photographic chemical preparations.
3818.00	22	Processed industrial supplies n.e.s.	Chemicals and minerals	Doped discs and wafers, unpatterned, including doped gallium arsenide and silicon carbide wafers.
3923.10	22	Processed industrial supplies n.e.s.	Intermediates	HTS10 3923.10.20.00: boxes and cases specially shaped for conveying or packing semiconductor wafers, masks or reticles (wafer carriers, FOUPs).
7017.10	22	Processed industrial supplies n.e.s.	Intermediates	HTS10 7017.10.30.00: quartz reactor tubes and holders for diffusion and oxidation furnaces used in semiconductor wafer production, classed as laboratory ware of fused quartz or fused silica.
7020.00	22	Processed industrial supplies n.e.s.	Intermediates	HTS10 7020.00.30.00: quartz reactor tubes and holders for diffusion and oxidation furnaces used in semiconductor wafer production, classed as other articles of glass.
7410.21	22	Processed industrial supplies n.e.s.	Chemicals and minerals	Backed copper foil (copper-clad laminates), with copper on one or both sides.
8112.31	22	Processed industrial supplies n.e.s.	Chemicals and minerals	Unwrought hafnium, powders, waste and scrap.
8112.39	22	Processed industrial supplies n.e.s.	Chemicals and minerals	Wrought hafnium articles.
8112.92	22	Processed industrial supplies n.e.s.	Chemicals and minerals	Unwrought gallium and germanium; powders.
8112.99	22	Processed industrial supplies n.e.s.	Chemicals and minerals	HTS10 8112.99.10.00: wrought germanium articles.
8414.59	41	Capital goods (except transport equipment)	CIE	HTS10 8414.59.15.00: fans for cooling microprocessors, telecommunications apparatus and automatic data processing machines; data-centre cooling equipment.

HS6 code	BEC code	BEC description	Stage	Basis
8419.89	41	Capital goods (except transport equipment)	CIE	HTS10 8419.89.95.40: machinery designed for cooling, including data-centre coolant distribution units.
8424.89	41	Capital goods (except transport equipment)	SME	HTS10 8424.89.10.00: appliances for projecting, dispersing or spraying, of a kind used for manufacturing printed circuits and printed circuit assemblies.
8471.49	41	Capital goods (except transport equipment)	CIE	ADP machines presented as systems.
8471.50	41	Capital goods (except transport equipment)	CIE	ADP processing units, including rack servers.
8471.70	41	Capital goods (except transport equipment)	CIE	ADP storage units.
8471.80	41	Capital goods (except transport equipment)	CIE	ADP units n.e.c.
8473.30	42	Parts and accessories of capital goods (except transport equipment)	Intermediates	Parts and accessories of 8471 machines.
8479.89	41	Capital goods (except transport equipment)	SME	HTS10 8479.89.92.00: automated electronic component placement machines for printed circuit assembly.
8480.71	41	Capital goods (except transport equipment)	SME	HTS10 8480.71.40.00: moulds for the manufacture of semiconductor devices (encapsulation and packaging).
8486.10	41	Capital goods (except transport equipment)	SME	Machines for the manufacture of semiconductor boules or wafers.
8486.20	41	Capital goods (except transport equipment)	SME	Machines for the manufacture of semiconductor devices and integrated circuits.
8486.40	41	Capital goods (except transport equipment)	SME	Machines for manufacturing or repairing masks and reticles, for assembling semiconductor devices and integrated circuits, and for handling boules, wafers and devices.
8486.90	42	Parts and accessories of capital goods (except transport equipment)	Intermediates	Parts and accessories of 8486 machines (components of SME).
8504.40	41	Capital goods (except transport equipment)	CIE	Power supplies for automatic data processing machines: internal units over 150 W and external units over 500 W; power equipment installed with servers in data centres.
8504.50	41	Capital goods (except transport equipment)	Intermediates	HTS10 8504.50.40.00: inductors for power supplies of automatic data processing machines; passive components mounted on a board.
8504.90	42	Parts and accessories of capital goods (except transport equipment)	Intermediates	Parts of power supplies for automatic data processing machines, including printed circuit assemblies.
8514.31	41	Capital goods (except transport equipment)	SME	HTS10 8514.31.10.00: electron beam furnaces of a kind used for manufacturing printed circuits and printed circuit assemblies.

HS6 code	BEC code	BEC description	Stage	Basis
8514.39	41	Capital goods (except transport equipment)	SME	HTS10 8514.39.10.00: electric furnaces and ovens of a kind used for manufacturing printed circuits and printed circuit assemblies.
8517.62	41	Capital goods (except transport equipment)	CIE	Switching and routing apparatus and other data transmission equipment; data-centre networking.
8523.51	42	Parts and accessories of capital goods (except transport equipment)	CIE	Solid-state non-volatile storage devices (SSDs), self-contained with their own controller and interface; data-centre storage capacity.
8534.00	42	Parts and accessories of capital goods (except transport equipment)	Intermediates	Printed circuits.
8536.90	42	Parts and accessories of capital goods (except transport equipment)	SME	HTS10 8536.90.40.00: terminals, electrical splices and couplings, and wafer probers; wafer probers are semiconductor test equipment.
8542.31	22	Processed industrial supplies n.e.s.	Intermediates	Processors and controllers: GPUs, CPUs, FPGAs, systems on chip and other processors, excluding microcontrollers, digital signal processors and other programmable logic.
8542.32	22	Processed industrial supplies n.e.s.	Intermediates	Memories: DRAM over 1 gigabit, EEPROM and other memories.
8542.33	22	Processed industrial supplies n.e.s.	Intermediates	Electronic integrated circuits: amplifiers.
8542.39	22	Processed industrial supplies n.e.s.	Intermediates	Other electronic integrated circuits, excluding data converters, active filters, radio-frequency transceivers and circuits with adjustable performance characteristics.
8544.70	22	Processed industrial supplies n.e.s.	Intermediates	Optical fibre cables made up of individually sheathed fibres.
9001.10	22	Processed industrial supplies n.e.s.	Intermediates	Optical fibres for transmitting voice, data or video, and optical fibre bundles and cables other than plastic.
9002.19	22	Processed industrial supplies n.e.s.	Intermediates	Mounted objective lenses, including lithographic projection optics (components of SME).
9030.82	41	Capital goods (except transport equipment)	SME	Instruments for measuring or checking semiconductor wafers and devices.
9030.90	42	Parts and accessories of capital goods (except transport equipment)	Intermediates	HTS10 9030.90.66.00 and 9030.90.84.00: printed circuit assemblies of 9030.40 and 9030.82 instruments, and other parts and accessories of instruments for measuring or checking semiconductor wafers and devices (9030.82).
9031.41	41	Capital goods (except transport equipment)	SME	Optical instruments for inspecting wafers, devices, photomasks and reticles.
9031.49	41	Capital goods (except transport equipment)	SME	HTS10 9031.49.70.00: optical instruments for inspecting masks and measuring surface contamination on semiconductor devices.
9031.80	41	Capital goods (except transport equipment)	SME	HTS10 9031.80.40.00: electron beam microscopes fitted with equipment for handling wafers or reticles (CD-SEM; CBP ruling HQ 966482).
9031.90	42	Parts and accessories of capital goods (except transport equipment)	Intermediates	HTS10 9031.90.54.00 and 9031.90.70.00: parts of the semiconductor inspection instruments of 9031.41, 9031.49.70 and 9031.80.40 (components of SME).

Note: BEC: UN Classification by Broad Economic Categories, Rev. 4. Stage is the classification used in Figure 9; SME: semiconductor manufacturing equipment, including equipment of a kind used solely or principally for manufacturing printed circuits and printed circuit assemblies; CIE: compute and infrastructure equipment. Where the stage differs from the BEC code, it follows the product described in the Basis column.

APPENDIX B. COVERAGE 2023-2026

Table B1. Coverage 2023-2026 based on US imports (CIF)

HS6	2023	2024	2025	2026 Jan–May	Average 2024-2026	HS6	2023	2024	2025	2026 Jan–May	Average 2024-2026
280429	33.6%	10.8%	9.3%	4.6%	8.2%	848071	0.7%	0.9%	1.2%	0.8%	1.0%
280461	100.0%	100.0%	100.0%	100.0%	100.0%	848610	100.0%	100.0%	100.0%	100.0%	100.0%
280480	100.0%	100.0%	100.0%	100.0%	100.0%	848620	100.0%	100.0%	100.0%	100.0%	100.0%
280530	78.3%	82.6%	66.9%	91.8%	80.4%	848640	100.0%	100.0%	100.0%	100.0%	100.0%
282560	77.1%	77.1%	64.6%	77.1%	72.9%	848690	100.0%	100.0%	100.0%	100.0%	100.0%
284690	91.9%	95.1%	91.4%	90.5%	92.3%	850440	10.9%	13.1%	17.8%	23.6%	18.2%
285390	0.4%	0.0%	0.2%	0.6%	0.3%	850450	13.7%	13.1%	3.8%	13.6%	10.1%
292990	2.7%	2.1%	3.7%	3.3%	3.0%	850490	14.3%	13.2%	11.6%	9.3%	11.4%
370199	100.0%	100.0%	100.0%	100.0%	100.0%	851431	48.8%	2.3%	3.5%	5.3%	3.7%
370790	97.5%	97.7%	98.4%	99.4%	98.5%	851439	13.7%	17.7%	34.8%	13.3%	22.0%
381800	88.6%	88.7%	88.5%	80.4%	85.9%	851762	98.4%	98.4%	99.1%	99.3%	98.9%
392310	3.1%	2.9%	2.6%	3.0%	2.8%	852351	100.0%	100.0%	100.0%	100.0%	100.0%
701710	6.8%	16.1%	22.7%	18.9%	19.2%	853400	91.8%	91.7%	92.9%	92.4%	92.4%
702000	16.2%	14.2%	13.9%	13.6%	13.9%	853690	38.9%	38.9%	44.2%	47.7%	43.6%
741021	74.5%	81.8%	82.1%	83.6%	82.5%	854231	94.7%	94.9%	94.7%	95.2%	94.9%
811231	100.0%	100.0%	100.0%	100.0%	100.0%	854232	89.6%	90.0%	89.4%	81.5%	87.0%
811239	100.0%	100.0%	100.0%	100.0%	100.0%	854233	100.0%	100.0%	100.0%	100.0%	100.0%
811292	13.3%	13.9%	17.4%	23.4%	18.2%	854239	67.2%	72.5%	71.8%	67.2%	70.5%
811299	8.3%	24.0%	8.4%	45.3%	25.9%	854470	100.0%	100.0%	100.0%	100.0%	100.0%
841459	9.0%	12.0%	15.2%	16.2%	14.5%	900110	87.1%	84.1%	88.2%	91.3%	87.9%
841989	21.7%	32.4%	54.8%	46.3%	44.5%	900219	100.0%	100.0%	100.0%	100.0%	100.0%
842489	4.1%	3.2%	4.9%	4.9%	4.3%	903082	100.0%	100.0%	100.0%	100.0%	100.0%
847149	100.0%	100.0%	100.0%	100.0%	100.0%	903090	40.9%	42.3%	40.5%	39.5%	40.8%
847150	100.0%	100.0%	100.0%	99.9%	100.0%	903141	100.0%	100.0%	100.0%	100.0%	100.0%
847170	98.1%	94.7%	91.1%	91.9%	92.6%	903149	0.2%	0.2%	0.3%	0.4%	0.3%
847180	100.0%	100.0%	100.0%	100.0%	100.0%	903180	2.7%	3.2%	3.0%	4.7%	3.7%
847330	100.0%	100.0%	100.0%	100.0%	100.0%	903190	18.3%	19.8%	23.1%	26.9%	23.3%
847989	2.6%	1.9%	2.1%	4.1%	2.7%	TOTAL	80.3%	84.7%	89.7%	93.0%	89.1%

Note: Coverage is the share of the subheading's US general imports (CIF) accounted for by the classified HTS10 lines. Average is the mean of 2024, 2025 and January–May 2026. TOTAL is the coverage of the whole list. Source: US Census Bureau; authors' calculations.