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Owning the road, not paying the toll: how Europe can keep the returns from AI

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The best opportunity for Europe to harness the potential of artificial intelligence is to focus on applications for business, industry and other practical uses. But without a footprint in compute and secure and diversified access to AI models, a growing share of the productivity gains could become rents collected by external actors. To capture a bigger share of the fast-growing AI economy, Europe should limit the risks and costs of dependencies. Five priorities stand out:

1. **Excel at deployment**: roll out AI applications across industries and services, replicating proven use cases at scale. Learn from best practices of data-pooling and innovation diffusion.

2. **Invest in areas of strength in the AI stack**, especially where European firms have demonstrated capabilities that can be further strengthened. This enables Europe to benefit from and acquire leverage in this fast-growing market.

3. **For standard, real-world applications, cut the costs and risks of large language model dependency through diversification and optimisation.** Avoid lock-in by using and supporting a range of models, including open-source. Invest in specialised and vertical models for applications. For critical sectors, however, access to frontier and sovereign solutions remains necessary.

4. **Invest in infrastructure.** Diversifying options, including investing in European Union-based compute capacity, EU-owned data centres and sovereign cloud services, means strengthening security and strategic autonomy, as well as exploiting a business opportunity.

5. **Leverage the size of the EU market** on the supply side, the demand side, the financial side and globally.

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1 Europe's AI opportunity

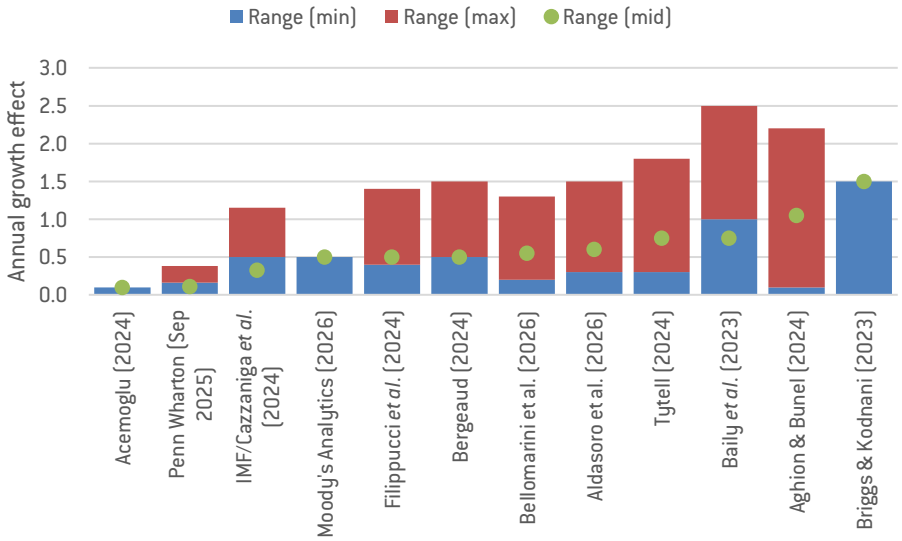
Europe's most tangible opportunity in the artificial intelligence race lies in business applications. This is consistent with the case for raising productivity below the AI technology frontier through applications and specialised models, rather than trying to catch up at the frontier (Martens, 2024; Macchi *et al*, 2026). Europe's comparative strength is a large industrial base in machinery, automotive, chemicals, energy and health, which provides the domain knowledge, the data and the customers needed to enable AI's productivity potential.

The impact of AI adoption is already visible at the microeconomic level, while at the macroeconomic level it has yet to materialise. A growing literature estimates the effects of AI adoption on firms, looking at the experiences of the United States and Europe. The impact of adoption is positive and significant; Figure 1 shows the range of estimates. Aldasoro *et al* (2026), among others, have focused on European firms, showing an increase in productivity of between 0.4 and one percent per year, in line with findings in other literature (Figure 1). They also found that the productivity effect of AI adoption is strongly dependent on complementary investment in intangibles and skills. At the macroeconomic level, enablers are even more critical. As in the cases of past, general-purpose innovations such as electricity or ICT, the effects on productivity take time to materialise. AI is likely to disrupt parts of the real economy, but also to create new businesses and sectors and to raise productivity growth. Even more than in the past, *ex-ante* preparedness and the flexibility of each economy to reallocate resources, embrace new opportunities and retain the returns of technology will be an important driver in defining future winners and losers.

European firms are already embracing AI. The share of firms adopting generative AI technologies is roughly the same in the European Union and in the US (67 percent of EU firms use generative AI against 70 percent in the US, according to EIBIS (2026)). European firms can still catch up in terms of depth of usage. Fewer EU firms use AI across several business areas: about 44 percent of firms in the EU use AI in more than two fields, compared to 56 percent in the US. The primary AI uses remain administrative tasks and marketing, while utilisation for product development or other more complex activities remains low. With a narrower spectrum of utilisation of AI, EU firms tend to see the potential of AI later than those in the US. SMEs have much lower adoption rates compared to large firms and are less likely to see the potential of adoption.

A look at European innovation patterns confirms companies' orientations towards AI applications and adoption. As Rishabh and Shreeti (2026) show, Europe's AI start-up and scale-up ecosystem is smaller than in the US or China and tilted towards applications. Their paper shows that in the euro area, 57 percent of the valuation of AI firms in 2025 sat in the applications layer (firms that integrate AI models into end-user products in sectors such as healthcare, finance, legal or education) – compared with 31 percent in the US – while AI model developers accounted for only about one percent. Consistently, three quarters of European AI venture-capital investment goes towards vertical applications (Prosus, 2026).

Figure 1: Expected annual impact of AI on productivity growth (annual growth effect, percentage points)



Source: Bruegel based on Aldasoro *et al* (2026) and Moody's (2026). Notes: the studies use different methods, time horizons, productivity measures and geographies, so they are not directly comparable and the figures are indicative. TFP estimates are converted into labour productivity equivalents using a labour share of about 0.6. Ranges reflect the lower and upper bounds reported by each study and midpoints are derived.

Europe can capture AI's productivity gains through applications, but if Europe relies on foreign models, cloud services and hardware, a large share of the productivity gains from adoption risks flowing abroad as licence fees, service fees and intellectual property (IP) payments. This raises the issue of Europe's capacity to capture value.

This paper asks how Europe can retain a larger share of the upside from AI adoption and the fast-growing AI economy, increase its AI-stack build-out and reduce the cost of its dependencies. Answering those questions requires first assessing where Europe stands. This paper uses trade data in goods to map Europe's position across the AI stack, and a latent-potential framework to identify where European firms have the capacity to develop new strengths. It then looks at European dependencies on models and compute capacity, in terms of service trade and royalty payments, recorded in balance of payments statistics. In the context of AI, the single market's size, data production, demand and its pool of innovative companies provide the EU with leverage, if well managed.

In the global AI race, the main players pursue distinct strategies. The US' strategy is to reinforce leadership in frontier models, chip design and cloud services to generate revenues and dependencies globally. Investors' expectations that they will capture a high share of global AI revenues partly explain these firms' high valuations. Since 2022, the US has also been using export controls on advanced chips and tools to limit the capacity of its main competitor, China, to advance.

China competes across the full AI stack, from materials processing to models, and increasingly offers efficient, locally deployable models that lower costs for users, provides applications in the real economy and the capacity to deploy AI technologies at scale in manufacturing and physical applications. China has a strong hold on global AI supply chains through its control of critical raw materials, required for building AI chips

and infrastructure. Its restrictions on critical raw materials trade signal a willingness to use upstream leverage. At the same time, Chinese frontier and open-weight models are advancing quickly, and AI business applications are being rolled out at scale.

Taiwan and South Korea are dominant in cutting-edge AI chip fabrication and memory, with South Korea also launching a strategic push to develop sovereign AI models. Japan has developed resilience in sourcing key materials and tools, and economies in South-East Asia such as Vietnam, Malaysia and Thailand have become assembly and testing hubs.

Europe's relative strength will depend on five key factors: successful deployment of AI in business and industry, its hardware stack footprint, access to a diverse supply of models, including open-models, to minimise rent-seeking, ensuring sufficient computing capacity and energy at home and leveraging its market size and data pooling experience.

2 The AI supply chain as an engine of world trade and Europe's position

Poitiers and Schenk (2026) argue for *"sovereignty through indispensability"*: instead of replicating entire value chains at home, Europe should secure control of inputs, capabilities or chokepoints that others find difficult to bypass. This requires knowing where Europe already holds leverage in the physical stack, where it is dependent and where it could build new strengths. Europe's most prominent strength is its manufacture of specialised semiconductor equipment and advanced chip manufacturing technology, largely through the ecosystem built around Dutch firm ASML.

Leverage and indispensability across the AI stack are important elements, but trade in AI goods is also a fast-growing market, which offers opportunities. In this context, European firms' presence and footprint in the AI stack is also a signal of their capacity to harness a new and growing market. Trade data shows the EU's position in the AI stack, layer by layer.

Trade in AI-related goods (the raw materials, intermediate inputs and products that support the development and production of AI) has become one of the main drivers of worldwide trade in goods. According to the World Trade Organization, AI-related goods accounted for 15 percent of world goods trade in the first half of 2026, up from seven to eight percent between 2016 and 2023; yet it contributed 47 percent of its growth in value terms. This grew by 16 percent in 2024, 31 percent in 2025 and 67 percent year-on-year in the first half of 2026 (WTO, 2026).

A new dataset of EU trade in AI-enabling goods[1] classifies products relevant for AI from the EU's Harmonised System nomenclature at the six-digit level (HS6), into four layers of

1 This dataset will be a part of the forthcoming Bruegel AI tracker, a new system to monitor developments of the 'AI economy' in Europe including gross fixed capital formation related to AI, trade in AI-related goods and services, investment in data centres, AI innovation and firms' adoption of AI.

an 'AI trade stack': AI hardware, semiconductor manufacturing equipment, data centre infrastructure and energy and power grid. Codes have been selected via expert-based classification with LLM-assisted validation and largely map similar exercises conducted by the IMF and the WTO[2]. The dataset covers extra-EU exports from and imports to the EU27, which is treated as a single trading bloc from 2002 to mid-2026 (Table 1). Box 1 presents the codes utilised to construct the proxy for AI-related trade in goods at the HS6 level. The proxy represents an upper bound of trade in AI-related goods, given that HS6 codes also include sub-products which might not be exclusively AI focused. As a further cross-check, utilising sub-codes at the eight-digit level from the Combined Nomenclature classification, we ranked AI-relevance and developed a methodology to divide dual-use demand and estimate the share associated with AI.

Box 1: Measuring trade in AI goods

Our database of trade in AI-related goods is built from product codes at the HS6 level, the most detailed classification system which is harmonised across the globe. We retain codes strictly related to four key layers of the AI stack: AI hardware, semiconductor manufacturing equipment, data centre infrastructure and energy and grid (Table 1).

This is a broad definition. It covers goods that can be used for AI or are necessary for AI deployment and functioning, whether or not that is their current use. Many of these goods are dual use: servers also run cloud and enterprise computing, processors go into cars and industrial machinery, and transformers serve the whole grid, not just data centres. We nonetheless use this definition as our baseline, because it captures a country's capacity to supply the AI stack. A firm that produces these goods can serve AI demand regardless of its current customers, and production can be redirected quickly as AI demand grows. AI also relies on complementary capabilities, as investing in one technology increases the value of others (Köhler-Geib *et al*, 2026). In addition, HS6 data allow full comparability across countries and over time.

For transparency, we also provide a stricter estimate of the share of this trade currently driven by AI demand (last column of Table 1). We use more detailed Eurostat Comext data at the CN8 level (132 codes, 2024-2025). We first assess each code's relevance to AI and rank the codes accordingly. For dual-use codes, we then estimate the share of exports driven by AI demand using market data, such as the share of GPU servers in server revenue, of EUV in lithography sales, of high-bandwidth memory in DRAM value, and of AI in data centre switching and electrical equipment demand (Annex Table A2). Finally, we aggregate the results to HS6 codes and to the four layers, weighting by the composition of EU exports (Annex Table A1).

On this strict measure, about 16 percent of EU exports of AI-related goods is currently

2 The IMF has conducted a very similar mapping exercise, mostly focused on the core-AI and semiconductor component. The WTO had a more than 100 codes nomenclature, later summarised, without providing full visibility of the codes retained. The key codes for the main categories match, with the WTO further considering many critical raw materials among the relevant codes.

driven by AI demand. The share is highest in semiconductor manufacturing (27 percent) and AI hardware (18 percent), where European exports already feed the AI build-out directly, and lowest in data centre infrastructure and energy and grid equipment. These figures should be read as a lower bound on current AI use, not as a measure of Europe's capacity to supply AI.

Table 1: The four layers of the AI trade stack, relevant HS6 codes and their prevalence in EU trade (€ billions)

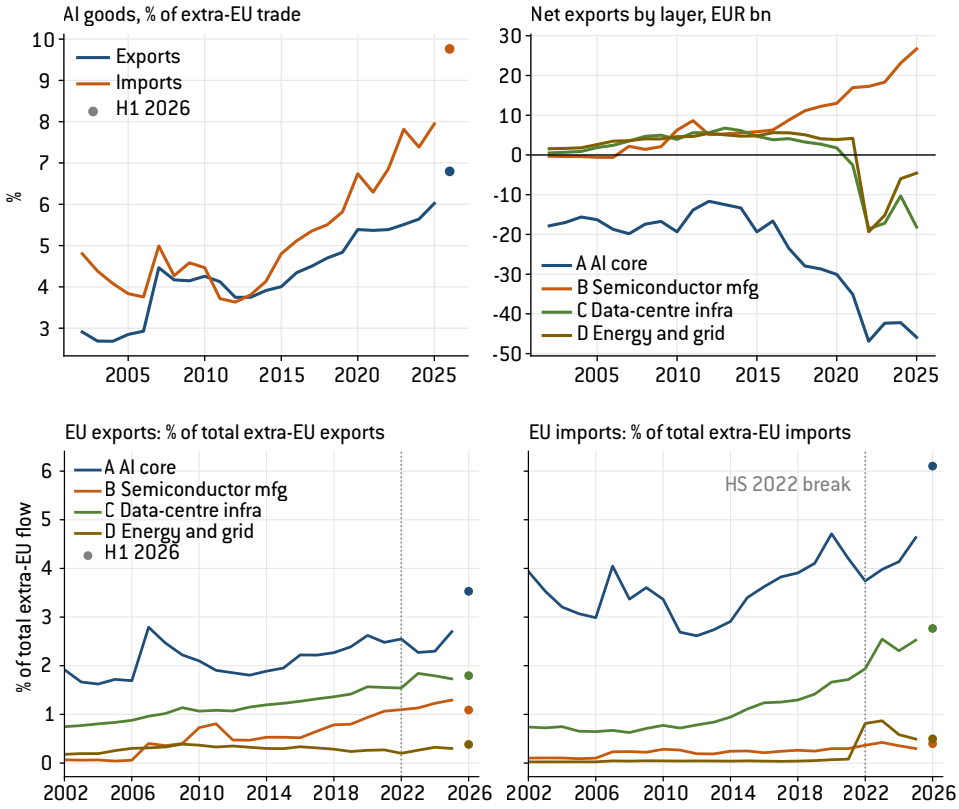
Layer	What it covers	HS6 codes	AI-driven share of layer exports and most AI-relevant codes, 2025
A – AI core	Compute and networking hardware	847150 processing units, 847170 storage, 847330 parts and accessories of computers, 854231 processors, 854232 memories, 854239 and 854290 other circuits and parts, 851762 data transmission equipment	18% (€13.1 of €71.5). Most AI-relevant: **847150** servers (45%); **847330** computer parts and assemblies (33%); **847170** storage (19%).
B – Semiconductor manufacturing equipment	Chip-making tools and materials	848620 machines for making ICs (incl. lithography), 848610 wafer machines, 848640 other semiconductor-making machines, 848690 parts, 903082 wafer-inspection instruments, 381800 doped wafers, 280461 high-purity silicon	27% (€9.4 of €34.2). Most AI-relevant: **848620** machines for making ICs (30%); **848690** parts (28%); **903082** wafer inspection (27%); **848640** other machines (20%).
C – Data centre infrastructure	Power, storage and cooling inside the facility	850440 static converters, 850760 lithium-ion batteries, 853710/853720 control boards, 841869 chillers, 841950 heat exchangers, 841451/841459 fans, 853400 printed circuits, 854470 optical-fibre cables	6% (€2.7 of €47.1). Most AI-relevant: **853720** control boards >1 kV (12%); **854470** optical-fibre cables (12%).
D – Energy and grid expansion	Generation and transmission to serve demand	850423 large transformers (data centre substations), 854143 PV modules, 850231 wind generators, 850421-850422 transformers, 853521/853529 breakers, 854460 HV conductors, grid-scale lithium-ion storage (counted in layer C)	2% (€0.15 of €6.6), focusing on indirect demand through grid connections. Most AI-relevant: **850421-850422** transformers (5%); **853521/853529** breakers (5%). A wider definition could, however, encompass all energy and grid expansion, as directly or indirectly connected to AI deployment.

Source: Bruegel based on Eurostat CN8. Notes: the last column presents the total extra-EU exports associated with each category in 2025 and a more restrictive proxy estimated for each layer selecting at the eight-digit level the sub-sectors strictly AI-related and estimating for dual-use products AI-driven demand. The column also presents the codes with the highest AI-driven share, with their own share in brackets. PV modules (854143) only have their own code from HS 2022, which creates a break in layer D in 2022; the jump in energy-and-grid imports that year is partly a reclassification rather than a new flow. A change in product codes in 2006-2007 creates discrepancies for layer A and B.

3 Europe's position across the stack in goods and key partners

Europe's AI-related trade has grown more than twice as fast as the rest of EU27 trade, but imports have outpaced exports. Between 2015 and 2025, extra-EU exports of AI-related goods rose 7.9 percent per year, versus 3.3 percent for non-AI goods. During the same timeframe, imports rose 9.8 percent versus four percent per year. As a result, the AI-related trade balance widened from a small deficit to €42 billion (Figure 2). Data for the first half of 2026 points to a further rise in the weight of AI goods in extra-EU trade, continuing to be driven more by imports than by exports.

Figure 2: Extra-EU trade in AI-related goods, 2002-2026



Source: Bruegel based on Eurostat; extra-EU flows, 2002-H1 2026. Notes: dots show shares for the first half of 2026 (H1 2026); net exports (top right) are shown up to 2025. The bottom panels show AI-stack layers as a share of total extra-EU exports and imports, 2002-H1 2026.

Europe's trade deficit in AI core hardware (compute and network) is structural and widening. Europe is a large consumer of processors, memory chips and servers but does not produce cutting-edge compute components at scale. The deficit mirrors the global division of labour in AI hardware: accelerators are designed in the US, fabricated mainly by TSMC in Taiwan, paired with high-bandwidth memory from South Korean producers such as SK hynix and Samsung and assembled into servers by Taiwanese

contract manufacturers in Taiwan, Mexico and South-East Asia. Europe's chipmakers, such as Infineon, STMicroelectronics and NXP, specialise in power semiconductors, microcontrollers and sensors for cars and industry, where the EU remains competitive. Those are not irrelevant to the AI stack, but they do not compete with the integral place that TSMC holds in the AI-stack supply chain.

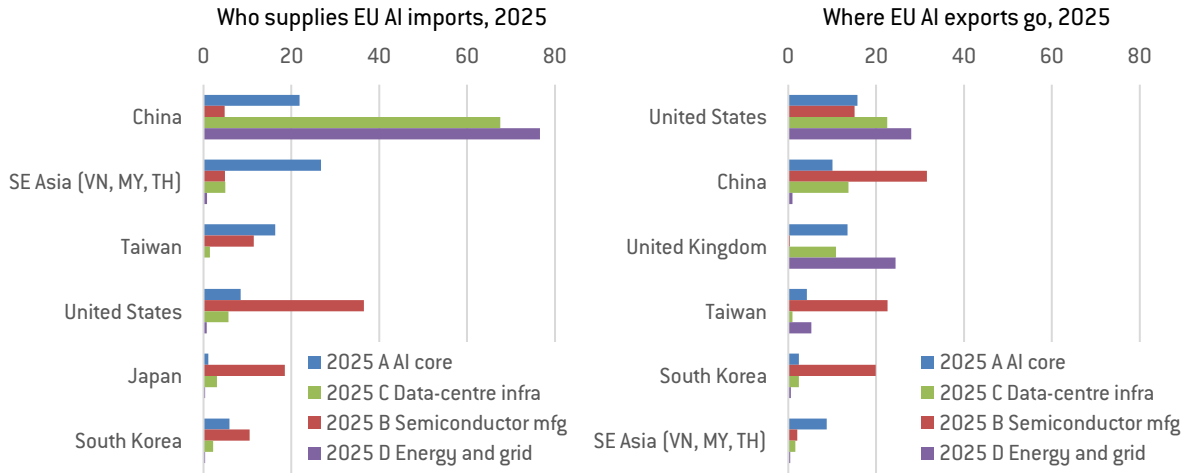
Semiconductor manufacturing equipment is the only layer where Europe shows a persistent and rising surplus, from €6 billion in 2015 to €27 billion in 2025. Exports reached €34 billion against imports of €7 billion, and have doubled since 2019, making chip-making equipment the EU's fastest-growing AI export. Behind the surplus is an industrial ecosystem: ASML in the Netherlands is the world's only supplier of extreme ultraviolet lithography machines and relies on optics from Zeiss in Germany, while firms such as ASM International supply deposition equipment. Machines for making integrated circuits alone account for about 30 percent of world exports of the product and for close to 15 percent of all EU AI-stack exports.

On the other hand, for goods relevant to data centre infrastructure, a surplus of €6 billion in 2015 turned into a deficit of €18 billion in 2025, as imports more than tripled (from €18 billion to €65 billion) while exports roughly doubled. The layer shows European strengths and dependencies. The EU has a comparative advantage in switchgear and control boards, where firms such as Schneider Electric and Siemens are global leaders, and in heat exchangers, large fans and chillers. The deficit comes largely from lithium-ion batteries, which are mostly made in China and used as much in electric vehicles and grid storage as in back-up power for data centres. The dual-use nature of this layer is evident: only about six percent of associated exports are estimated to be driven by AI demand (Table 1).

In the energy-and-grid related goods, Europe ran a modest trade surplus until 2021, then a deficit from 2022 that peaked at €20 billion and narrowed to €5 billion in 2025. The swing coincides with falling solar panel module prices and with an HS 2022 code break for PV modules, so the level should be read with care. Nevertheless, the trend points towards the growing use of imported electricity generation equipment. Europe remains a strong exporter of wind generators, accounting for about 57 percent of world exports thanks to firms such as Vestas, Siemens Gamesa and Nordex; it is also a strong exporter of high-voltage cables (Prysmian, Nexans, NKT) but relies almost entirely on China for solar modules.

The data shows that the sources of Europe's AI goods related imports are concentrated in Asia. China alone supplied 39 percent of extra-EU AI-stack imports in 2025, up from 32 percent in 2015. The pattern of dependence, however, differs sharply by layer (Figure 3).

Figure 3: Import suppliers and export destinations by layer (% of extra-EU layer imports and exports, 2025)



Source: Bruegel based on Eurostat; extra-EU flows.

In AI core hardware, Europe has diversified away from China, but towards a handful of other Asian hubs. The shift continued through the first half of 2026, with Taiwan and Vietnam gaining ground at China's expense. This is consistent with the geographical reconfiguration of electronics manufacturing and assembly under the China +1 strategy and with Taiwan's central role in fabricating AI servers and advanced chips. Nevertheless, Europe now depends on several Asian hubs instead of one, but many of them rely in turn on China-sourced components.

In data centre and grid equipment, dependence on China is high. China supplied 67 percent of the EU's data centre infrastructure imports and 77 percent of energy-and-grid imports in 2025, against 41 percent and 20 percent in 2015. Imports from China are, however, concentrated around mass-produced, largely dual-use components such as lithium-ion cells, power converters, fans and printed circuits, which serve electric vehicles, consumer electronics and solar installations as much as data centres. The more strategic, engineered systems, such as medium-voltage switchgear, uninterruptible power supplies, transformers, generators and cooling systems, are supplied mainly by European, US and Japanese firms. In contrast, Europe buys chip-making tools mainly from the US (37 percent) and Japan (19 percent), followed by Taiwan and South Korea.

On the export side, EU AI exports are far less concentrated than imports (Figure 3). The US and the United Kingdom are the main markets for EU data centre and grid equipment, consistent with European strength in the engineered systems of this layer. Semiconductor manufacturing is a source of leverage for Europe. About 93 percent of EU exports in this layer go to five economies (China, Taiwan, South Korea, the US and Japan), which together host most of the world's chip fabrication capacity. China's share of exports jumped from 19 percent in 2022 to 39 percent in 2024 before easing to 32 percent (€10.8 billion) in 2025, a pattern consistent with Chinese stockpiling ahead of tighter Dutch and US export controls. The decline continued in the first half of 2026,

when China's share fell back towards its pre-2023 level and Taiwan and South Korea regained weight, consistent with the end of the stockpiling phase.

3.1 The main players in the AI-stack trade: world shares and trade balances

The Eurostat data used so far covers only the EU's own trade and cannot show how Europe compares with the other main players. A full world comparison requires a database that reports trade for all economies on the same basis. This paper uses UN Comtrade, which provides export and import statistics in US dollars for every reporting economy, as well as world totals for each product, and applies the same HS6 classification from the AI stack. EU figures in Comtrade also refer to extra-EU trade.

China, the EU, the US, South Korea and Japan together supplied about 52 percent of world exports of AI-stack goods in 2025 and absorbed about 73 percent of world imports. Asian assembly hubs account for much of the rest (Table 2).

Their positions differ sharply. China is both the largest exporter and the largest importer of AI-stack goods, with 24 percent and 28 percent of world totals. It supplies about half of global exports of data centre and energy-and-grid equipment but depends on imports of chips and chip-making tools: it absorbs 38 percent of global imports of the latter while supplying only six percent of exports. The EU's profile is the reverse. It is the largest exporter of chip-making equipment (23 percent of world exports) but a net importer in every other layer, even though it is the second-largest exporter of data centre and grid equipment after China. The US supplies nine percent of world AI-stack exports but absorbs a quarter of imports, mostly AI core hardware for its data centre build-out (Section 6). South Korea and Japan are smaller but specialised, Korea in memory chips while Japan supplies 20 percent of global exports of chip-making tools.

Trade balances follow from these profiles (Table 2, lower panels). Only South Korea runs a sizeable surplus, driven by memory chips, while Japan is roughly balanced. China, the EU and the US all run deficits, for different reasons. China because of its imports of chips and tools, partly offset by surpluses in data centre and grid equipment; the US because of AI core hardware; the EU across AI core, data centre and grid equipment, only partly offset by its surplus in chip-making tools.

Table 2: Shares of world exports and imports, and trade balances in AI-stack goods, 2025

Layer	China	EU	United States	South Korea	Japan	Five combined
Share of world exports, 2025 (%)						
Total AI stack	24.3	7.6	8.8	7.8	3.2	51.7
A – AI core	19.3	4.5	9.0	8.9	1.9	43.6
B – Semiconductor manufacturing	6.0	22.8	13.7	7.3	19.6	69.4
C – Data centre infrastructure	46.1	13.8	7.4	3.6	3.5	74.3
D – Energy and grid	54.2	11.6	2.1	6.0	0.4	74.4
Share of world imports, 2025 (%)						
Total AI stack	27.9	11.1	24.7	5.7	3.2	72.6
A – AI core	33.4	8.9	26.5	5.1	2.9	76.8
B – Semiconductor manufacturing	38.4	6.5	11.7	20.3	7.2	84.0
C – Data centre infrastructure	6.7	19.9	21.6	3.9	3.1	55.2
D – Energy and grid	0.5	21.5	25.9	1.1	1.7	50.7
Trade balance, 2025 ($ billions; S = surplus, D = deficit)						
Total AI stack	**−74 (D)**	**−73 (D)**	**−325 (D)**	**+41 (S)**	**+1.3 (S)**	–
A – AI core	−210 (D)	−65 (D)	−260 (D)	+56 (S)	−15 (D)	–
B – Semiconductor manufacturing	−42 (D)	+21 (S)	+2.6 (S)	−17 (D)	+16 (S)	–
C – Data centre infrastructure	+143 (S)	−22 (D)	−52 (D)	−1.3 (D)	+1.4 (S)	–
D – Energy and grid	+35 (S)	−6.4 (D)	−16 (D)	+3.2 (S)	−0.9 (D)	–

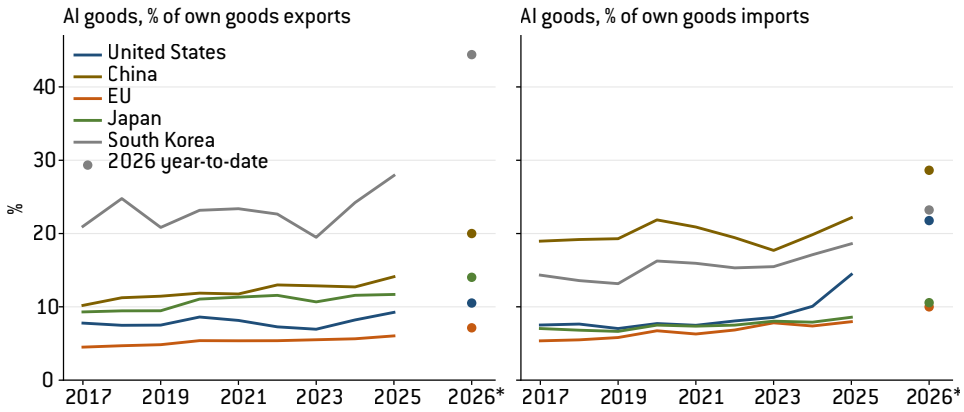
Source: Bruegel based on UN Comtrade. Notes: shares are each economy's exports (imports) of the AI-stack HS6 codes as a percentage of world exports of the same codes. EU flows are extra-EU. Trade balances are exports minus imports, in $ billions. Because of differences in source and valuation, EU levels differ from the Eurostat figures in euros used earlier in this section.

3.2 AI goods in each economy's own trade: specialisation and build-up

World shares show who supplies and who absorbs AI-stack goods. A complementary view is how much these goods weigh in each economy's own trade (Figure 4).

On the export side, the AI boom is driving export specialisation everywhere. In all five analysed economies the share of AI-stack goods has risen from 2017 to 2025, and the first months of 2026 point to a further rise. South Korea and China benefited the most. In South Korea, AI-related goods – largely memory chips – now make up more than a quarter of exports, and the 2026 boom in memory prices has pushed the share further. In China, the share of AI goods rose from about a tenth to around a seventh of exports, driven by data centre and energy equipment, the mass-produced layers where it dominates world supply. Japan's specialisation rests on chip-making tools. The EU remains the least specialised of the five: AI goods account for about six percent of its exports, and its gains come almost entirely from semiconductor manufacturing equipment.

Figure 4: AI-stack goods as a share of each economy's total goods exports (left) and imports (right), 2017-2025 (%)



Source: Bruegel based on national trade data. Note: EU27 refers to extra-EU trade. Because of differences in source and coverage, levels may differ slightly from Table 2. The 2026 period covered varies across reports.

On the import side, the data shows where the AI build-out is taking place. The US, China and South Korea show the strongest refocusing of their imports towards AI goods. In the US, their weight roughly doubled between 2017 and 2025 and rose further in the first months of 2026, almost entirely because of AI core hardware such as servers and accelerators. Waugh (2026) documents that the AI data centre build-out has become a major force in US trade. Using a large language model to classify some 18,000 HS10 product codes, he finds that AI-related products rose from 15 percent to 23 percent of US imports between 2023 and 2025, that their imports grew by 73 percent while other imports grew by only three percent and that, absent the AI boom, the US goods deficit would have been nearly $200 billion, or 16 percent, smaller than in 2025. China and Korea have seen a growing share of their imports go to the AI stack. In China, this is to sustain its own computing build-out and chip production despite US export controls, while in Korea it is to feed its chip industry with tools and inputs.

4 Revealed comparative advantages and latent potential: where Europe should focus

Trade balances and revealed comparative advantage (RCA) measures show the trade competitiveness of a country today; latent-potential measures indicate where they should focus in the future.

RCA compares the weight of a product in a country's exports with its weight in world exports. A value above one means the country is relatively specialised in that product, a sign of competitiveness. We compute revealed comparative advantage in AI-relevant goods for the EU, the US and China, using 2025 export data.

We also build a measure of latent potential. Following Brasili and Magnini (2026), we combine HS6 trade data with the AIPNET production network (Fetzer *et al*, 2024). AIPNET shows connections between a traded good and the items necessary for its production, at the N-1 step. The literature shows that countries diversify mainly into products close to their existing capabilities (Hidalgo *et al*, 2007), and success is more likely when new activities build on both competitive inputs and related products.

To capture where new advantages could emerge, the analysis identifies two indicators of latent potential. Vertical latency measures how many of a product's direct inputs a country already exports competitively (with an RCA above one): a country that is competitive in most of the inputs needed to make a product is well placed to become competitive in the market for the product itself. Horizontal latency measures how many related products – those that use similar inputs – a country already exports competitively, weighted by how similar they are: a country that is competitive in close substitutes can more easily move into the product. A product is classified as having latent potential when the country's vertical or horizontal score is above the median of the leading exporters of that product.

The approach has predictive value. Testing it on over 5,000 HS6-digit products over 2017-2024, Brasili and Magnini find that products in the top fifth of horizontal latency are about twice as likely to develop a new comparative advantage (around 14 percent, against six to eight percent for the lowest groups). Rising latency also makes existing advantages less likely to be lost.

We apply the same classification to AI-stack products, which gives a first look at Europe's potential for future leverage. Table 3 groups each economy's AI-stack exports by value according to whether the product already has an RCA, strong latent potential, some potential only or no specific advantage. The analysis is replicated for the EU overall, the US and China.

Table 3: AI-stack exports by comparative-advantage status

Share of AI-stack export value	EU	China	United States
Products with RCA > 1	43%	75.6%	56.3%
Strong latent potential	7.3%	3.2%	0%
Some potential	14%	17.6%	18.7%
No specific advantage	35%	3.5%	25%

Source: Bruegel based on Eurostat, Comtrade and AIPNET (Fetzer *et al*, 2024). Notes: shares may not sum to 100 percent because of rounding. RCA status refers to 2025 exports; latent-potential categories are based on 2025 latency indicators. The category 'strong latent potential' includes goods for which both the horizontal and the vertical potential are high. The category 'some potential' includes goods for which only one of the two is high; and typically for Europe this is horizontal and for the US it is vertical.

The results are striking. China is competitive or close to competitive across almost its entire AI export basket, consistent with a full-stack strategy. Products with an RCA above one account for 59 percent of its exports of AI core hardware, 91 percent in data centre infrastructure and 99 percent in energy and grid equipment. Its one clear gap is chip-making equipment, where none of its products has a comparative advantage. Where China is not yet competitive, it is often close: a further fifth of its AI exports, mainly

processors and other integrated circuits, shows latent potential, which suggests that its push into advanced chips builds on existing capabilities.

The EU and US have similar shares of AI exports with a comparative advantage. The EU has a meaningful group of products with strong latent potential, about seven percent of its AI exports, while the US has none at this threshold. The EU's strongest potential is concentrated where it matters for the AI stack: in parts for chip-making machines, similar to its existing strength in extreme ultraviolet lithography; in computer parts and boards, one of the few segments of AI core hardware where Europe has a foothold; and in grid equipment such as small and medium transformers and circuit breakers.

5 Beyond goods: services, rents, models

Measuring the goods trade understates Europe's AI dependence, because much of the stack is paid for as services. Software licences, cloud services, model access and the licences for patents and trademarks show up in the balance of payments. As AI shifts from hardware build-out to usage, these recurring payments become the main channel through which dependence appears in the external accounts.

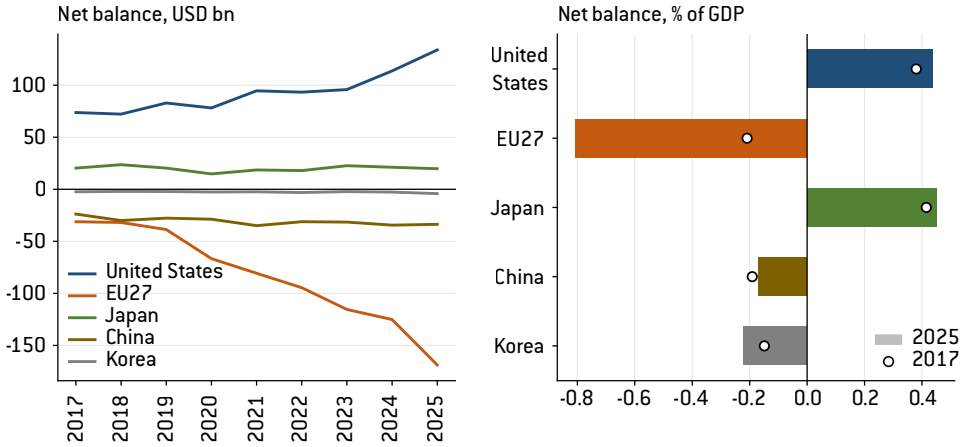
Availability of data is scarce. The level of disaggregation is limited and interpretation is complicated by foreign direct investment and intra-company arrangements. Recording practices also add uncertainty: cloud services and fees for the use of AI are mostly reported under telecommunications, computer and information services, but some may be recorded as charges for the use of intellectual property. New international guidance assigns this to computer and information services, but this is yet to be implemented in many countries (IMF, 2025b). Nevertheless, despite these complications, it is worth looking at emerging dynamics in AI-related services trade.

Charges for the use of intellectual property are the clearest measure of technology rents: what an economy pays to use knowledge, software, designs and brands owned by others. They reveal a clear hierarchy (Figure 5). The US is the main collector of these rents, and its surplus has nearly doubled since 2017. Japan is the only other large net earner, thanks to the licensing of manufacturing technology by its industrial firms abroad. The EU, China and Korea are net payers.

The EU's balance-of-payments position needs careful consideration, because it is shaped by where US technology companies locate their European operations. Many of the largest US digital firms run their business in Europe, the Middle East and Africa from Ireland. Their Irish affiliates sell cloud, software and platform services across Europe and beyond, which is recorded as EU exports of computer services, and pay royalties for the underlying technology to their US parents or to affiliates holding the IP. The large EU surplus in IT services and the large EU deficit in IP charges are, to a significant extent, two sides of the same corporate structure. The US figures are the mirror image. A modest US balance in IT services coexists with a large IP surplus, because US firms serve foreign markets through affiliates abroad rather than through direct exports.

Even with this caveat, the numbers are large. EU net payments for the use of IP have grown more than fivefold since 2017, from about 0.2 percent of GDP to about 0.8 percent in 2025, and continue to rise in 2026[3]. The EU's net IP payments are now several times its deficit in AI-related goods.

Figure 5: Charges for the use of intellectual property: net balance in $ billion, 2017-2025 (left) and as a share of GDP, 2017 and 2025 (right)



Source: Bruegel based on WTO for quarterly commercial services trade statistics (BOP6) and IMF World Economic Outlook (October 2026) for GDP numbers. Notes: net balance is receipts minus payments; EU27 refers to extra-EU trade. EU figures are strongly affected by Ireland as the location of the European headquarters of many US technology firms.

Figure 6 shows trade in telecommunications, computer and information services. The EU surplus has more than tripled since 2017 and now exceeds one percent of GDP, but for the reasons above it largely reflects the Irish hubs of US firms rather than European digital champions. China is a more instructive case. It still pays for foreign IP, but its net payments are small relative to the size of its economy and have stopped growing, while its surplus in IT services has risen significantly. Having developed its own platforms, cloud services and AI models, China increasingly pays for foreign technology with its own digital exports[4].

Japan and Korea suggest that industrial strength does not protect against digital dependence. Japan earns sizeable royalties from its manufacturing technology but runs a deficit in IT services that widened markedly in the early 2020s, driven by payments for foreign cloud services and software (Kugo, 2026). Its industrial IP surplus no longer shields it from paying rents in the digital economy. Korea, despite its strength in memory chips, remains a net payer of IP charges, reflecting payments for R&D-related intellectual property and software[5].

Economies that lack their own infrastructure and models must rely on external

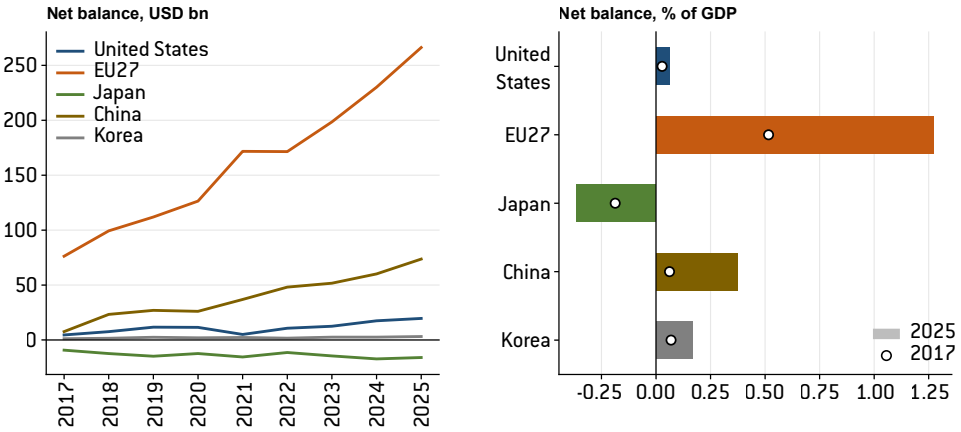
3 See World Trade Organization, 'Commercial services exports and imports by main sector, quarterly (BOP6)', https://www.wto.org/english/res_e/statis_e/tradeserv_stat_e.htm.

4 See footnote 4.

5 Han Dong-hoon, 'Korea's Knowledge Services Trade Deficit Hits 12-Year High', Seoul Economic Daily, 19 March 2026, https://en.sedaily.com/economy/2026/03/19/koreas-knowledge-services-deficit-widens-to-1025-billion.

providers which can incur rising costs. As AI moves from pilot projects to deployment and a growing share of payments derives from model access and cloud services, the share of value captured by external providers grows. A country's choice of model, cloud and computing capacity will therefore determine the value lost to these external rents. For Europe, an adoption-first strategy without a foundation in cloud services, compute and frontier models risks turning future productivity gains from AI into a rising external technology bill.

Figure 6: Telecommunications, computer and information services: net balance in $ billions, 2017-2025 (left) and as a share of GDP, 2017 and 2025 (right)



Source: Bruegel based on WTO for quarterly commercial services trade statistics (BOP6) and IMF World Economic Outlook (October 2026) for GDP. Notes: net balance is exports minus imports; EU27 refers to extra-EU trade. EU exports include large sales by Irish-based affiliates of US technology firms. GDP ratios are approximate.

US-based companies now provide around 85 percent of the European cloud market. A similar pattern holds in data centres. European firms such as Schneider Electric and Siemens are strong in equipment, design and construction, but the largest operators, such as Equinix and Digital Realty, are foreign-owned. European firms thus supply most of the equipment and receive revenue in the initial phase, while foreign operators run the facilities and earn the recurring service revenues thereafter.

In terms of models, the US still leads at the frontier for large language models, with 59 notable[6] models released in 2025 against 35 from China (Stanford HAI, 2026). Closed models, operating in the cloud, still dominate the market, but this is shifting. Open-weight models, whose parameters can be downloaded and run locally, have moved into the mainstream, and most of the leading ones are Chinese. On OpenRouter, a platform that routes developers' requests across models according to need and cost, Chinese open models accounted for about one percent of tokens in late 2024; by September 2026, Chinese developers accounted for about half of all requests. This data excludes direct traffic and covers a more price-sensitive part of the demand for AI services. The rise of

6 'Notable' models are those that meet at least one of the following criteria: they achieve state-of-the-art performance on a recognised benchmark, are highly cited, are of historical significance or are widely used.

platforms such as OpenRouter also suggests room for different players and business models to coexist and compete at different distances from the frontier, with relevance for applications.

The market is still evolving, and AI could yet become a winner-takes-all technology. Recent developments suggest, however, that open-weight models lower entry barriers, make sovereign deployment possible and, via competition between Chinese and US open models, limit the risk of lock-in at the application layer. For Europe, the implication is that diversified access to models, including open-weight models of different origins, can limit lock-in and rents, while its own development efforts focus on specialised models for industrial applications.

Diversifying the models in use also strengthens resilience, as access to frontier models can be lost, or never granted. In June 2026, three days after their public release, Anthropic's Fable 5 and Mythos 5 models became subject to US export controls which barred access by foreign nationals. Unable to verify users' nationality in real time, Anthropic suspended both models for all users. The controls were lifted three weeks later, and access to Mythos 5 was restored to selected US organisations before the models became available globally again[7]. Although limited in practical impact, the episode showed that access to frontier models can be revoked at the discretion of another jurisdiction.

Three risks follow from this example, in decreasing order of likelihood.

- Unequal access at release: the most advanced models may be made available first, or only, to selected firms, mostly domestic ones, as with the restricted release of Claude Mythos Preview to selected partners under Project Glasswing[8]. Firms without access fall behind at the frontier.
- The second is the rationing of frontier models that are already widely deployed. Restricting these by nationality is technically harder, but access can still be limited through chokepoints such as compute and cloud providers. Since access to frontier models is essential to address cybersecurity and economic security risks, compute located under European jurisdiction and contractual continuity clauses are the main safeguards.
- The third is a cut-off from widely used, sub-frontier models. This is the least likely, given competition from open-weight alternatives and the commercial cost to providers.

Overall, strategies focusing on interoperability, diversification across providers and use of open models remain critical, combined with sovereign solutions for specific models and uses – ie defence.

7 See Anthropic statement of 12 June 2026, 'Statement on the US government directive to suspend access to Fable 5 and Mythos 5', https://www.anthropic.com/news/fable-mythos-access.

8 See Anthropic website, 'Project Glasswing', 7 April 2026, https://www.anthropic.com/glasswing.

6 Invest in infrastructure: compute and what it takes to build it

The EU hosts only about two gigawatts of operational AI compute capacity, close to five percent of the global total, versus 78 percent in the US and 11 percent in China; current proposals would lift the EU's share only to about 5.6 percent by 2031 (Martens and Schenk, 2026). Hosting more compute in Europe and diversifying providers and ownership would avoid excessive dependency on infrastructure located and controlled elsewhere and ensure data residency and security and access to models in a crisis. Compute located in Europe is also easier to regulate and harder to cut off from frontier models and, because the AI race is to a large extent a race for processing power, control of compute may give some leverage over the actors who use it (García-Herrero and Martens, 2026).

Pooling demand for compute can turn the size of the EU market into a powerful motivator for building infrastructure, because compute is a scale business. Data centres and AI clusters are bankable when operators can count on stable, long-term offtake, which in the US comes from a few hyperscalers and frontier model development labs. Europe has no buyers of that size, and its demand is spread across thousands of firms and public bodies with small or moderate workloads. Aggregating that demand, and using public purchasing as an anchor, can reduce financing risk, lower prices through volume and provide an opening for new players, steering the market towards interoperable and diversified providers rather than a single supplier.

Public procurement alone accounts for approximately 15 percent of EU GDP (European Commission, 2026a), so even a modest shift in how it is used can send a strong signal to investors. The first steps are already underway. The Commission has awarded several six-year framework contracts for sovereign cloud services, designing the tender as a template that member states can reuse for their own procurement[9]. Germany has commissioned a €250 million AI cloud to serve as the central hub for its public administration, covering federal, state and local levels[10]. The AI Gigafactories call applies a similar anchor logic at the EU level. The EuroHPC Joint Undertaking, along with participating countries, will jointly buy compute time from the selected operators, and bidders can opt for an offtake model in which payments are spread over the typical five-year amortisation of the computing assets[11]. The proposed Cloud and AI Development Act would go further by allowing the Commission to act as a central purchasing body for data centre, cloud, software and AI services on behalf of member states, creating a

9 See European Commission announcement of 17 April 2026, 'Commission advances cloud sovereignty through strategic procurement', https://commission.europa.eu/news-and-media/news/commission-advances-cloud-sovereignty-through-strategic-procurement-2026-04-17_en.

10 See Bundesministerium für Digitales und Staatsmodernisierung press release of 21 May 2026, 'BMDS erteilt Zuschlag für souveräne KI-Cloud', https://bmds.bund.de/aktuelles/pressemitteilungen/detail/bmds-erteilt-zuschlag-fuer-souveraene-ki-cloud.

11 See European High Performance Computing Joint Undertaking, 'FAQs: AI Gigafactories', undated, https://eurohpc-ju.europa.eu/ai-gigafactories/faqs-ai-gigafactories_en.

federation through which public bodies can share capacity, and requiring public buyers to consider 'Union added value' as a non-price criterion (European Commission, 2026b).

Most of these instruments are not yet in force. The Cloud and AI Development Act is at the start of the legislative process[12]. The first AI gigafactories are not expected to operate before 2028. Demand pooling currently focuses on public demand. The larger opportunities will emerge from aggregating the demand of industrial firms and SMEs on which Europe's AI potential rests.

On the financing side, because electronic hardware depreciates quickly while buildings and grid assets are long-lived, financing structures that combine long-tenor debt, guarantees and blending with EU programmes, and bundling long-term offtake contracts from public or private buyers, can make such projects bankable despite fast technology cycles. Bundling demand through de-risking mechanisms for offtakers could provide a complementary boost. The experience developed with de-risking instruments for power purchase agreements of renewable energy could be explored[13].

7 Leverage the single market: size, data, regulation and innovation

Europe must reinforce three assets to preserve its relevance and leverage in AI: the size of its market, exploiting data and its innovation pool.

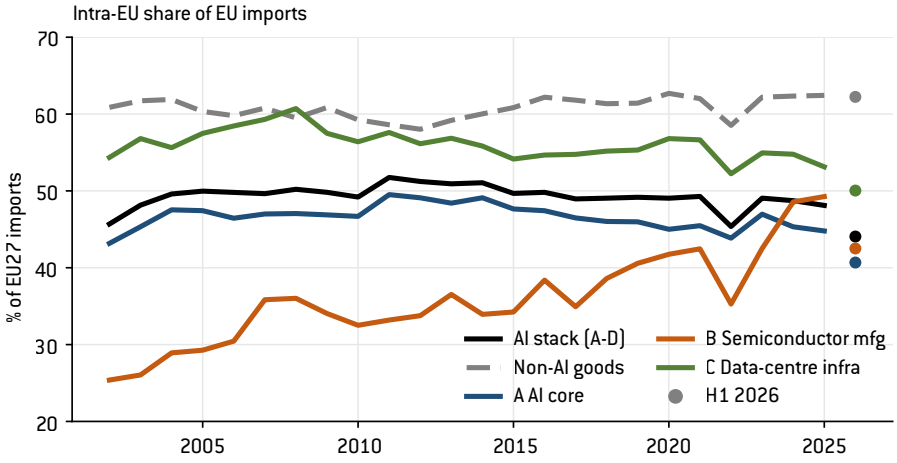
As of today, the internal market plays a smaller role in AI goods than in the rest of EU trade. AI-stack goods account for under five percent of intra-EU imports against almost eight percent of extra-EU imports, and the gap has widened as AI demand has grown, because additional demand is met mainly from outside the EU. The internal market only partly acts as a buffer against external shocks, however. Intra-EU flows mirror extra-EU flows, with both falling sharply in 2009 and 2024. They are somewhat less volatile on the import side, and in chip-making tools European suppliers partly filled gaps when extra-EU supply fell.

Market size matters in terms of demand pooling, however. With around 450 million people and more than 30 million firms, a deeper single market for digital and AI services would give Europe more weight in dealing with large AI providers and make its regulatory power through its rules and standards, competition enforcement such as the Digital Markets Act, and public procurement more globally impactful.

12 See European Parliament, 'Cloud and AI Development Act', Legislative Observatory, procedure file 2026/0138(COD), https://oeil.europarl.europa.eu/oeil/en/procedure-file?reference=2026%2F0138%28COD%29.

13 As one example, the European Investment Bank's (EIB) Pan European Purchasing Pawer Agreement programme (2025) shares financial risks with commercial banks to facilitate guarantees for corporate renewable energy offtakers. It reduces offtaker credit-risk barriers and guarantee costs, enabling companies to enter into long-term renewable purchase agreements.

Figure 7: Intra-EU share of EU27 imports, AI stack versus non-AI goods and by layer



Source: Bruegel based on Eurostat, 2002-H1 2026. Note: layer D is omitted because of the HS 2022 break.

The size of the EU market makes it critical for external firms' revenues. Today the largest US AI firms all earn a large share of their revenues abroad. According to SEC filings, Microsoft earned 49 percent of its revenues abroad, Amazon generated 32 percent and Anthropic 27 percent. Alphabet earned 30 percent of its revenues in the Europe, Middle East and Africa region and Meta earned 23 percent of its revenue in Europe.

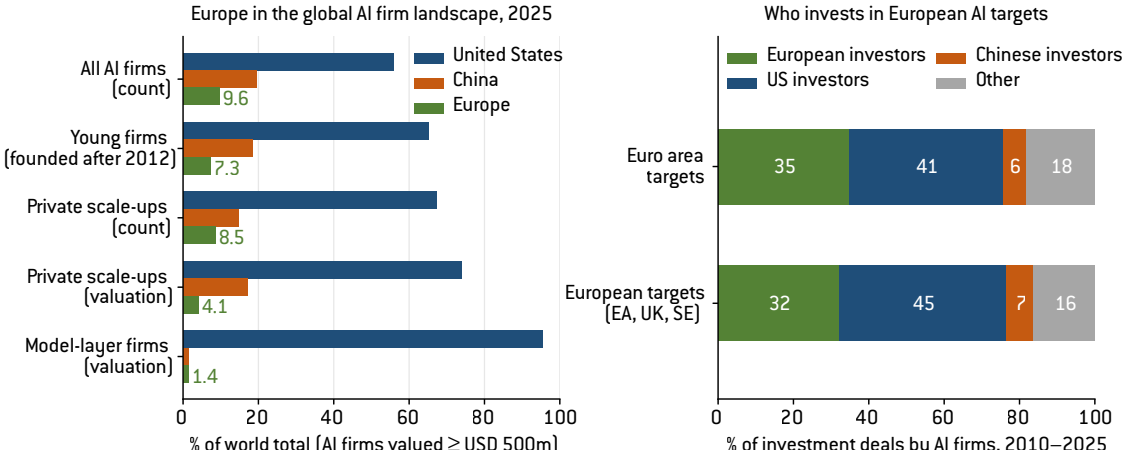
The single market also generates enormous amounts of data through common European data spaces, from manufacturing and energy to health. The European Health Data Space is an example of what data spaces could become, turning Europe's industrial and public data into a shared resource for developing and deploying AI applications, under European rules on access and use. However, beyond this, progress on sectoral data spaces has been limited. While frontier models are increasingly trained on synthetic data, industrial applications still depend on domain-specific data.

Successful cases of industrial data pooling should be further emulated. Among those, a useful example is Catena-X, the ecosystem built by the automotive industry for exchanging data along the supply chain. Catena-X does not provide data-pooling across the industry, but it is an example of how data structures for information sharing can be built through common standards and trust. Data is exchanged in a federated way, on demand and for specific uses, with each firm keeping control of its own data, but with exchanges through the multiple layers of own supply chains. By building a trusted structure Catena-X solves the problem of getting competing firms to share sensitive information, thanks to neutral governance mechanisms controlled by its members, common standards and clear rules on how data can be used.

Rules can add to this leverage if they are workable for business. The EU's body of rules on AI and digital markets, from the AI Act and the GDPR to the Digital Services Act, the Digital Markets Act and the revised Product Liability Directive, sets out in advance what is expected of companies and who is accountable when something goes wrong, giving firms legal certainty and users the confidence to adopt AI.

Europe's[14] capacity to remain a source of AI innovation is another of its strengths. Europe has about 325,000 AI professionals, as many as the US, and about 50,000 frontier AI researchers against 55,000 in the US. It creates roughly 900 new AI start-ups a year, a pace similar to the US, and European founders are behind a quarter of the world's AI unicorns (Prosus, 2026). Data from the BIS database of AI firms valued at $500 million or more confirm this sizeable pipeline. Europe hosts 119 of the world's 1,246 such firms (9.6 percent), third after the US (696) and China (244); the EU27 alone hosts 69 (5.5 percent). These firms are young and private: 71 are privately held scale-ups (8.5 percent of the total across the 15 largest jurisdictions) and 51 were founded after 2012 (7.3 percent). But Europe's weight shrinks as value rises. European private scale-ups account for only 4.1 percent of global private AI valuation ($164 billion out of almost $4 trillion) and for 1.4 percent of the model layer (Figure 8, left panel). Europe thus has many mid-sized AI firms but few large ones.

Figure 8: Europe's weight among AI firms valued at $500 million or more (2025), and origin of investment deals into European AI targets (2010-2025)



Source: Bruegel based on Rishabh and Shreeti (2026). Left: Europe = EU27, UK, Switzerland and Norway for all firms; private and young firms cover the euro area, UK, Sweden and Switzerland (114 of 119 European firms), with shares computed over the 15 largest jurisdictions; model-layer valuation uses firms' primary supply-chain layer. Right: deals in which AI firms act as investors; European investors = euro area, UK and Sweden.

Growth finance comes largely from the US. Europe matches the US in early-stage funding, but in 2025 it invested three times less at the growth stage and far less at the late stage ($12 billion compared to $141 billion). More than half of the late-stage capital raised by European AI start-ups came from abroad, mainly the US, and 73 percent of lead investors in large, late-stage rounds were American (Prosus, 2026). The BIS data corroborates this. As the database pools euro-area countries into a single entity, deal flows can be traced for the euro area as a whole: of the 1,245 investments by AI firms in euro area targets between 2010 and 2025, 41 percent were made by US firms against 31 percent by euro-area firms, and US firms account for 59 percent of all deals by investors from outside the euro area (Figure 8, right panel).

Several efforts at further EU market integration would help. The Savings and Investments

14 The definition of Europe in this section depends on the source. Prosus (2026) used a European aggregate that includes the UK. For figures based on the BIS data, Europe covers the EU27, UK, Switzerland and Norway, unless otherwise specified; the BIS data reports euro-area countries as a single entity.

Union would better integrate European financial markets. An ambitious '28th regime' would establish an EU-wide legal framework to allow companies to operate under a single harmonised set of rules across EU member states. Mechanisms such as the European Innovation Council facilitate direct EU equity financing of breakthrough innovative companies, while the European Tech Champions Initiative 2.0 provides indirect financing for VC funds to invest in scale-up firms. All of these play a role in creating a deeper market for innovation in Europe.

8 Conclusions and policy implications

Europe is investing in AI business applications. But without a stake in compute and secure and diversified access to models, a growing share of those gains might leave as rents to external providers. How much value Europe keeps depends on its capacity to reduce the risks and costs of its dependencies. This requires a strategy that blends diversification, leverage and sovereignty together.

The building blocks include:

1. **Excel at deployment.** Roll out AI applications across industries and services at scale, leveraging Europe's domain knowledge, data and customers. Policy should promote data sharing within industrial ecosystems, use public procurement as a lead customer and deepen late-stage finance so that promising European AI firms can scale at home. Finance should be bundled with support for skills, data readiness and process redesign, including through intermediated lending to SMEs, so that firms move from deployment of AI pilot programmes to integrating AI into core operations.
2. **Footprint** and **leverage on the AI stack**:
    - **Reinforce current and future comparative advantages.** Keeping Europe's lead in chip-making tools requires continued R&D and a secure supply of specialised components. Beyond that, the analysis of the EU AI stack, trade specialisation and latent-potential shows comparative advantages in 43 percent of EU AI exports, and latent potential in 21 percent of its AI-related exports. In particular, Europe's export potential is greatest where products are technically complex, customised and certified, such as chip-machine parts, specialised boards, large power transformers and high-end switchgear. In some of those products, global demand is increasing fast and supply is the constraint, offering opportunities. Policy and support should target these adjacent products, where the odds of developing new advantages are highest. Overall, Europe's position in the AI stack suggests a capacity to exploit market opportunities as global demand rapidly increases.
    - Be ready to use chokepoints as leverage. Semiconductor manufacturing

equipment is Europe's clearest claim to indispensability, and ASML, the sole supplier of the extreme ultraviolet lithography machines needed for leading-edge chips, is its strongest card. Europe should be prepared to use it as leverage if others weaponise their own chokepoints, such as critical raw materials or access to frontier models and compute.

3. **Cut the risks and costs of LLM dependency through diversification and interoperability**. As competition among models evolves, with open-weight models commoditising the volume market while rents stay at the closed frontier, Europe's interest lies in diversification rather than in dependence on a single provider. Combining US frontier models, open models and European solutions can lower costs and increase resilience. Interoperability, portability and procurement rules should limit lock-in.
4. **Invest in infrastructure.** Europe should invest in AI compute capacity to reduce excessive dependency, provide diversification options, reinforce sovereignty and retain control over its AI infrastructure. This calls for faster permits and grid connections, as well as mechanisms to secure offtaker demand for AI computing power.
5. **Leverage the size of the EU market** on the supply side, the demand side, the financial side and globally. While efforts from the policy side tend to focus on the supply and the financial side, best practices in terms of demand and data pooling could be further exploited.
6. **Monitor the stack systematically.** A regular tracker of EU investment in AI, innovative companies operating in the AI sphere, EU trade in the AI stack in goods and services, complemented by monitoring of model usage and access payments, compute capacity and energy needs, is essential for future positioning.

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Annex: Sensitivity analysis - AI-driven demand of AI-stack exports

Table A1 lists the HS6 codes with the largest AI-driven exports, based on the CN8 estimates behind Table 1. Table A2 summarises the main market data used to set the AI-driven share of each group of codes. Where no direct market data exist, shares reflect the product scope of each CN8 code and the composition of EU exports.

Table A1: HS6 codes with the largest AI-driven exports, 2025

HS6	Product	Exports 2025 (€ billion)	AI share 2025	AI-driven 2025 (€ billion)
847150	Processing units, mainly servers (A)	16.5	45%	7.4
848620	Machines for making ICs, incl. lithography (B)	23.9	30%	7.2
847330	Parts and accessories of computers (A)	6.0	33%	2.0
851762	Data-transmission equipment (A)	17.0	9%	1.5
848690	Parts of semiconductor-making machines (B)	5.2	28%	1.5
850440	Static converters (C)	11.9	8%	0.9

Source: Bruegel based on Eurostat Comext CN8 data. Note: these six codes account for about 81 percent of AI-driven AI-stack exports; AI shares are estimates (roughly ±30 percent of their value).

Table A2: Main market data used to set AI-driven shares

Codes	Market anchor for AI-driven share	Source
847150, 847330	Servers with embedded GPUs above half of world server revenue in 2025	IDC[15]
848620, 848690, 903082	EUV rose from 38% to 48% of ASML revenue in 2024-2025, driven by AI logic and memory	ASML (2026)
854232	HBM above 20% of DRAM market value in 2024 and above 30% in 2025	TrendForce[16]
851762	Ethernet switch sales in AI back-end networks more than tripled in 2025	Dell'Oro Group[17]
Layer C codes	Data centres about a quarter of revenue for a leading data centre equipment supplier (upper bound)	Reuters[18]

Note: shares are scaled down for the composition of extra-EU exports in each code; remaining codes are set based on product scope.

15 See International Data Corporation (IDC) press releases of December 2025 and March 2026, 'Worldwide Quarterly Server Tracker', https://www.idc.com/resource-center/press-releases/worldwide-server-market-revenue-increased-61-during-the-third-quarter-of-2025-according-to-idc/ and https://www.idc.com/resource-center/press-releases/4q25servertracker/.

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17 Sameh Boujelbene, 'Ethernet more than doubles size of InfiniBand as the leading fabric for AI scale-out networks in 2025', *Dell'Oro Group*, 10 March 2026, https://www.delloro.com/newsroom/ethernet-more-than-doubles-size-of-infiniband-as-the-leading-fabric-for-ai-scale-out-networks-in-2025/.

18 Gianluca Lo Nostro and Jerome Terroy, 'Schneider Electric beats organic growth forecast as AI boom fuels data centre demand', *Reuters*, 30 October 2025, https://www.reuters.com/business/energy/schneider-electric-beats-organic-growth-forecast-ai-boom-fuels-data-centre-2025-10-30/.

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