

Market evolution: Semiconductor manufacturing machines (CN 8486) — 2015–2025

Introduction

The European Union's trade in semiconductor manufacturing equipment (CN code 8486) has undergone a profound transformation between 2015 and 2025. This product grouping covers machines and apparatus used in the production of semiconductor boules, wafers, devices, integrated circuits and flat panel displays, as well as their parts and accessories. Using the EU Trade Dashboard data, this report describes and interprets the main dynamics observable over the last decade. The analysis reveals that the EU's trade performance is not a story of volume expansion but one of surging unit values, shifting geographical patterns and an increasing, though volatile, export specialisation.

1. An Export Surge Powered by Price, Not by Quantity

The headline figures for extra-EU trade show a spectacular rise in export value, yet the increase in the number of units shipped was modest. This decoupling between value and volume signals that the quality, sophistication and unit price of the exported equipment have soared.

Export value multiplied almost four-fold while the number of units rose by only one-fifth

Between 2015 and 2025, the EU's exports of heading 8486 climbed from €7.88 billion to €30.93 billion (+292.4 %), whereas the quantity grew from around 22 742 units to 27 564 units (+21.2 %). Consequently, the average unit value jumped by 223.8 %, from €346 549 to €1 122 030 (EU trade flows). Imports increased much less, from €3.00 billion to €5.50 billion (+83.3 %), with quantity up only 10.5 % and the unit price rising 65.9 %. The trade balance thus exploded from a surplus of €4.88 billion to €25.42 billion (+421.1 %).

Indicator (extra-EU)	2015	2025	Change (%)
Exports (€ bn)	7.88	30.93	+292.4
Export quantity (units)	22 742	27 564	+21.2
Export unit value (€)	346 549	1 122 030	+223.8
Imports (€ bn)	3.00	5.50	+83.3
Import unit value (€)	194 323	322 426	+65.9
Trade balance (€ bn)	4.88	25.42	+421.1

Domestic production reflects the same value-intensive shift

EU production of these machines also skyrocketed in value terms, from €3.9 billion in 2015 to €34.3 billion in 2024 (+6 440 %), while the number of units manufactured rose from 46 298 to 514 841. This suggests that the industry has moved overwhelmingly towards high-value equipment, both for export and for the internal market (production volumes). The fact that export unit prices increased faster than domestic ones points to a product mix that is particularly rich in ultra-advanced lithography, etching or inspection tools destined for global semiconductor leaders.

2. A Geographic Pivot: Concentrating Exports While Diversifying Imports

The EU's trading partner structure evolved in two opposite directions. On the export side, the customer base became more concentrated; on the import side, it became more diversified. This dual movement reduces the risk of dependence on a single supplier for critical inputs, even as it focuses export exposure on a few fast-growing semiconductor manufacturing hubs.

EU exports gravitate even more towards a handful of Asian semiconductor powerhouses

The export Herfindahl-Hirschman Index (HHI) rose from 1 918 to 2 310 (+20.4 %), meaning that the top destinations account for a larger share of total exports (concentration HHI). The table below shows that China, Taiwan and Korea together absorbed almost four-fifths of the EU's export value in 2025.

Top export partners	2015 (€ mn)	2025 (€ mn)	Change (%)
China	896	10 173	+1 035.1
Taiwan	1 730	7 124	+311.9
Korea	1 935	6 511	+236.5
United States	1 969	4 739	+140.6
Singapore	143	669	+369.7

(Top partners – exports)

Import sources become more diverse, reducing reliance on any single supplier

The import HHI fell from 3 164 to 2 394 (-24.3 %), indicating a broadening of supply origins. The United States remained the largest single source, but its share diminished relative to the growing roles of Taiwan, Korea and Singapore. Japan, once a major supplier, even saw its absolute value drop slightly.

Top import partners	2015 (€ mn)	2025 (€ mn)	Change (%)
United States	1 393	2 350	+68.7
Japan	917	814	-11.2
Taiwan	91	675	+643.7
Korea	137	648	+374.1
Singapore	122	304	+148.5

(Top partners – imports)

The dominance of the Netherlands in EU-wide exports is striking: in 2025 it accounted for €25.5 billion (over 82 % of the bloc's exports), followed by Germany (€2.6 bn) and Austria (€1.9 bn) (top reporters). This concentration reflects the presence of a few global champions and the hub function of Dutch logistics.

3. Price Shocks and Supply-Side Volatility in a High-Stakes Market

Trade in semiconductor manufacturing equipment is inherently lumpy, and the data reveal several sharp price shocks as well as stark differences in the stability of flows across partners. Nevertheless, the core export volumes to the major Asian markets have remained remarkably steady.

Sudden price surges on the United States and Korea highlight steep adjustment costs

The price-shock detection algorithm flags three notable events in EU exports (price shocks). A 56.1 % price spike occurred for the United States in 2017, even as the number of units shipped dropped. In Korea, a 62.6 % price jump in 2020 took place against stable quantities, and the post-shock period sustained even higher price levels. These events align with periods of massive fab investment and technology node transitions, when very

expensive EUV or advanced deposition tools are delivered, dramatically lifting the average transaction price.

Trading partners exhibit vastly different stability profiles, but core flows remain robust

The coefficient of variation (CV) of export quantity describes the regularity of shipments. For major Asian destinations, the CV is low – China 0.23, Korea 0.21, Japan 0.22 – indicating reliable, steady demand. In contrast, smaller or more erratic markets such as the United Kingdom (1.20) and Iran (2.15) are highly volatile. On the import side, supplies from Taiwan (CV 0.75) and Singapore (0.51) show considerable quantity variability, but their limited share reduces potential disruptions (volatility bars). The EU's overall export propensity remains high (82.7 % in 2024), underlining the sector's dependence on foreign demand, while the deeply negative net-import reliance (–178 % in 2024) confirms the EU's role as a dominant net supplier (autonomy indicators).

Conclusion

From 2015 to 2025, the EU's semiconductor equipment trade has evolved into a high-value, technology-intensive export activity where price appreciation, not volume growth, is the engine of expansion. The bloc has deepened its export ties with a concentrated set of Asian semiconductor manufacturing giants, while simultaneously diversifying its own sources of imported equipment. Price shocks linked to investment cycles and technological leaps are a recurring feature, yet the underlying volume flows to the main partners remain stable. With a trade surplus exceeding €25 billion and a highly specialised manufacturing base, the EU has cemented its position as a critical global supplier of semiconductor production machinery.

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If you need advice on European trade policy, or representation for your interests in Brussels, feel free to contact me at support@tradedashboard.eu. You can find my CV at [this address](#).