

Market evolution: Integrated circuits (CN 8542) — 2015–2025

Introduction

Electronic integrated circuits (CN 8542) sit at the heart of every modern digital device, from smartphones and cars to data centres and defence systems. This report examines the extra-EU trade of this crucial product family over the eleven-year window from 2015 to 2025. The data show a decade of transformation: the value of EU trade more than doubled despite a contraction in physical volumes, the geography of partners shifted profoundly, and the bloc's exposure to concentrated supply chains became strikingly visible. The analysis draws exclusively on the figures available in the dataset and highlights the main dynamics that have reshaped the EU's integrated-circuit trade landscape.

A decade of value explosion: the decoupling of trade value from physical volumes

EU total trade in integrated circuits more than doubled in value terms, while shipped tonnage declined by over a fifth.

Between 2015 and 2025, extra-EU exports of CN 8542 rose from EUR 12.8 billion to EUR 28.2 billion (+119.4%), while imports climbed from EUR 17.8 billion to EUR 39.0 billion (+119.1%) EU trade overview. In the same period the physical quantities shipped shrank: export tonnage fell from 16,827 tonnes to 13,333 tonnes (–20.8%) and import tonnage from 30,555 tonnes to 21,905 tonnes (–28.3%). The trade deficit widened markedly, from –EUR 5.0 billion to –EUR 10.8 billion, with both sides peaking in 2022 (exports EUR 33.3 billion, imports EUR 51.2 billion) before cooling somewhat.

Unit prices rose by roughly 180 % for exports and 206 % for imports, pointing to a prolonged chip shortage and product-mix upgrade.

The entire growth in trade value was driven by unit prices. Average export prices increased from EUR 763 per kg to EUR 2,112 per kg (+176.9%) and average import prices from EUR 582 per kg to EUR 1,780 per kg (+205.6%) EU trade overview. This price surge was especially pronounced around 2020–2022, matching the well-known global semiconductor

shortages, but even in 2025 prices remained far above the 2015 baseline, suggesting a structural shift toward higher-value, more advanced chips.

Geopolitical reorientation: Asia's supply-side dominance and the UK's abrupt exit

Asian partners – led by Taiwan, China and Malaysia – now supply the lion's share of EU extra-EU imports.

The sources of EU imports underwent a fundamental realignment. Deliveries from Taiwan grew from EUR 2.8 billion to EUR 8.5 billion (+205.2%), from Malaysia from EUR 2.7 billion to EUR 7.6 billion (+176.4%), and from China from EUR 1.7 billion to EUR 4.5 billion (+172.3%) Top partners. Together these three Asian suppliers accounted for a much larger share of total imports by 2025, while traditional partners such as the United States (−4.4%) and Japan (−2.4%) stagnated or declined.

Brexit erased the United Kingdom as a major import source, while sanctions eliminated the Russian export market virtually overnight.

The UK's role collapsed dramatically. Having supplied EUR 2.0 billion of ICs to the EU in 2015, UK imports fell to just EUR 0.2 billion by 2025 (−88.4%) Top partners. A supply shock detected in the data shows an abrupt shift in 2021, after which import quantities dropped from an average of 18 059 tonnes (2015-2020) to a mere 282 tonnes, accompanied by a seven-fold jump in unit prices Trade shocks. On the export side, shipments to the Russian Federation collapsed after 2022 from a pre-sanctions level of over 600 tonnes per year to effectively zero Trade shocks.

Ireland, the Netherlands and Italy emerged as the most dynamic EU trade hubs, reflecting multinational investment in chip fabrication and testing.

Within the EU, trade flows became more concentrated in a handful of Member States. Ireland saw its imports surge from EUR 0.3 billion to EUR 4.0 billion (+1250.7%) and its exports from EUR 1.4 billion to EUR 7.0 billion (+412.4%) Top EU reporters. The Netherlands' imports rose by 211.9% and its exports by 233.8%, while Italy's exports expanded from a modest EUR 0.16 billion to EUR 1.45 billion (+822.1%). Germany remained the largest importer and exporter, but its growth was far more moderate (+64.9% for imports, +39.5% for exports). These shifts point to large-scale investments in semiconductor manufacturing and re-export logistics that have turned certain EU economies into pivotal nodes.

Deepening concentration and structural vulnerability in the EU's chip trade

Net import reliance peaked above 43 % during the chip crisis, underlining the EU's dependency on foreign fabrication.

The EU's dependence on imported chips, as measured by net-import-reliance, climbed from 17.9% in 2015 to a high of 43.6% in 2023 before falling back to 27.4% in 2024 Net import reliance. The easing after 2023 coincided with a ramp-up of domestic production: EU-wide manufacturing value grew from EUR 12.8 billion in 2015 to EUR 23.0 billion in 2024, while the quantity produced rose from 15.7 billion to 22.9 billion units Production volumes. Despite this catch-up, the EU remains a net importer of chips and thus sensitive to external supply disruptions.

Concentration among suppliers increased, exposing the EU to geopolitical and single-source risks.

The Herfindahl-Hirschman Index (HHI) for import values rose from 1044 to 1251 (+19.8%), while the export-value HHI moved from 742 to 950 (+28.0%) Market concentration. In parallel, volume-based HHI indicators fell sharply (import volume HHI –33.9%, export volume HHI –46.8%), indicating that price divergence among partners – rather than volume consolidation – is driving the value concentration. The volatility data further reinforce the point: the highest coefficients of variation in import quantities were observed for the UK (1.045) and the US (0.307), while price shocks of up to +97.2% for Taiwan (2022) and +60.1% for Malaysia (2019) hit the EU import bill Volatility Trade shocks. These episodes highlight how a small number of Asian fabs can transmit large cost impulses through the entire EU electronics sector.

Processors and controllers (8542 31) dominate trade, putting the EU at risk of product-specific bottlenecks.

Breaking down the product family reveals the overwhelming weight of “processors and controllers” (subheading 8542 31). Over the decade, import value of processors grew from EUR 7.66 billion to EUR 22.21 billion and export value from EUR 7.15 billion to EUR 17.28 billion, far outpacing other segments such as memories (8542 32) or amplifiers (8542 33) Product segment comparison. Unit prices for imported processors rose from EUR 0.66 million per tonne to EUR 2.19 million per tonne, a powerful driver of the headline value increase. The EU's heavy reliance on this single semiconductor category means that any disruption in advanced logic-chip supply chains – be it from Asian foundries or from export restrictions – has immediate, economy-wide consequences.

Conclusion

Between 2015 and 2025, the EU's trade in integrated circuits underwent a remarkable transformation. Values exploded entirely on the back of higher unit prices, while the physical flow of goods actually shrank. Asia tightened its grip as the dominant source of chips, while Brexit and sanctions removed long-standing partners from the map. Inside the EU, a select group of Member States – notably Ireland and the Netherlands – grew into indispensable trade hubs, mirroring large-scale manufacturing investments. At the same time, the bloc's import dependency reached historically high levels before easing, and both partner and product concentration increased, leaving the European electronics ecosystem with heightened strategic vulnerabilities. The data make clear that while the EU has boosted domestic output, its integrated-circuit trade remains tightly woven into a globalised, and increasingly volatile, network dominated by a handful of Asian suppliers and a single product segment.

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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](#).