Market evolution: Medical instruments and appliances (CN 9018) — 2015–2025

Introduction

CN 9018 groups a wide range of instruments and appliances used in medical, surgical, dental and veterinary sciences — from syringes and catheters to MRI scanners, electro-diagnostic devices and ophthalmic instruments. The European Union is a major global player in this high-tech sector, consistently exporting more than it imports. This report examines the evolution of EU extra-EU trade in 9018 over the period 2015-01 to 2025-12, using annual data. It highlights three central dynamics: a strong expansion in trade values driven by a quality upgrade, a progressive diversification of import sources that contrasts with a deepening export concentration on the United States, and a notable shift in the product mix led by electro-diagnostic apparatus.

Strong growth and the leap toward higher unit values

Exports expanded by more than 70%, with average prices rising even faster

Extra-EU exports of CN 9018 rose from €20.8 billion in 2015 to €35.6 billion in 2025, an increase of 71.6 % (EU trade overview). Volume growth was more modest (+25.7 %), implying a 36.4 % rise in the average export unit value, from about €94 720 per tonne to €129 232 per tonne. This points to a structural shift towards higher-value devices rather than a simple increase in quantities.

Imports accelerated even faster, narrowing the trade surplus after 2022

Imports grew from €15.8 billion in 2015 to €28.3 billion in 2025 (+79.5 %), again with a strong price component (+34.5 %) and a volume increase of 33.5 %. Because imports expanded faster than exports, the EU's trade surplus, which had peaked at €9.2 billion in 2022, fell to €7.3 billion in 2025. Nevertheless, the EU remained a solid net exporter, with a net-import-reliance ratio that stayed deeply negative (-27.8 % in 2024).

Trade flow	2015 (€ billion)	2025 (€ billion)	Change (%)
Exports	20.76	35.61	+71.6
Imports	15.77	28.31	+79.5
Balance	+4.99	+7.30	+46.4

Production reorientation: fewer units, much higher value

EU manufacturers produced 26.5 billion units of 9018 goods in 2024, a 7.8 % decline compared with 2015, but the production value more than doubled, soaring from €6.6 billion to €15.6 billion (+137 %) (production volumes). The implicit average price jumped from €0.23 to €0.59 per unit, confirming the move toward technologically sophisticated, higher-priced products. At the same time, the EU's export propensity climbed from 87.9 % to 134.7 %, indicating that the sector became increasingly outward-oriented.

Diversifying import sources while export concentration on the US deepened

Import sourcing became markedly less concentrated

The Herfindahl-Hirschman Index (HHI) for extra-EU imports fell from 2 383 in 2015 to 1 833 in 2025 (-23.1 %) (concentration HHI), reflecting a broader supplier base. This was driven by exceptionally fast growth from several non-traditional partners. China nearly tripled its sales to the EU (+191.5 %), while Switzerland (+99.2 %), Malaysia (+115.8 %), Mexico (+72.5 %) and Türkiye (+110.5 %) all expanded strongly. The United States remained the largest single supplier, but its growth (50.9 %) was well below the overall import increase.

Top import partners	2015 (€ billion)	2025 (€ billion)	Change (%)
United States	7.20	10.86	+50.9
China	0.99	2.89	+191.5
Mexico	1.50	2.59	+72.5
Switzerland	1.08	2.14	+99.2
United Kingdom	1.23	1.39	+13.0
Malaysia	0.39	0.84	+115.8

(top partners)

Exports grew most rapidly to the United States, concentrating destination risk

On the export side, the HHI rose from 1 202 to 1 431 (+19.1 %), largely because shipments to the United States almost doubled (+97.7 %), reaching €12.2 billion in 2025. The US absorbed more than a third of all extra-EU exports of CN 9018. Other major destinations such as Switzerland (+88.3 %) and the United Kingdom (+51.9 %) also grew, but Japan (+9.1 %) and the Russian Federation (+67.3 %) showed more contained rises. The net effect was a modest increase in export destination concentration.

Top export partners	2015 (€ billion)	2025 (€ billion)	Change (%)
United States	6.16	12.18	+97.7
United Kingdom	2.58	3.92	+51.9
China	1.47	2.22	+51.1
Switzerland	1.08	2.04	+88.3
Russian Federation	0.70	1.17	+67.3
Japan	1.06	1.16	+9.1

A sharp post-Brexit price shock in UK imports

The data detect a pronounced price shock in imports from the United Kingdom in 2021 (shock events). The quantity of goods imported from the UK plunged to 44.9 % of the 2019-2020 baseline, while the average price soared by 90.6 %. Although volumes partially recovered in 2022-2023, they remained well below pre-shock levels. This event coincided with the UK's departure from the EU single market and the introduction of customs formalities, which likely disrupted supply chains and added costs. It illustrates the sector's sensitivity to regulatory changes even for a geographically close partner.

Electro-diagnostic apparatus leads the product-mix transformation

Imports of electro-diagnostic apparatus (901819) quadrupled

The fastest-growing segment by far was electro-diagnostic apparatus (CN 901819), which includes devices for functional exploratory examinations and physiological parameter monitoring. EU imports of this subcategory skyrocketed from €0.92 billion to €4.06 billion (+341 %) over the ten-year window (product segment comparison). Import prices also surged by about 80 %, indicating a strong appetite for advanced diagnostic technologies that are not yet produced in sufficient quantity within the EU. By contrast, traditional segments such as "Instruments and appliances n.e.s." (901890) grew by 68 % and needles/catheters (901839) by 52 %.

Top import subheads	2015 (€ billion)	2025 (€ billion)	Change (%)
901890 (Instr. n.e.s.)	6.69	11.26	+68
901839 (Catheters/needles)	4.03	6.13	+52
901819 (Electro-diag.)	0.92	4.06	+341
901831 (Syringes)	0.82	1.77	+115
901813 (MRI)	0.87	1.19	+36

EU exporters also accelerated in high-tech segments, but with different price dynamics

Exports of electro-diagnostic apparatus rose from €1.47 billion to €3.64 billion (+148 %), a strong performance albeit less explosive than imports. More strikingly, the average export price for "Instruments and appliances n.e.s." (901890) jumped by 48 % (from €85 865 to €126 962 per tonne), whereas import prices for the same category increased by only 20 %. This suggests that EU producers are moving into higher-tier products, upgrading the quality of the instruments they sell abroad faster than the imports they buy. Dental instruments (901849), too, saw exports grow from €1.10 billion to €1.52 billion (+38 %).

Top export subheads	2015 (€ billion)	2025 (€ billion)	Change (%)
901890 (Instr. n.e.s.)	8.46	15.68	+85
901839 (Catheters/needles)	4.98	8.03	+61
901819 (Electro-diag.)	1.47	3.64	+148
901813 (MRI)	1.74	1.98	+14
901831 (Syringes)	0.73	1.50	+106

Syringes and catheters show solid volume growth with moderate price rises

Volume-driven growth is most visible in syringes (901831) and catheters/needles (901839). Syringe imports rose by 115 % in value and roughly 50 % in quantity; their average import price moved from €21 311 to €30 649 per tonne, a 44 % increase. The same segments on the export side exhibited similar patterns, reflecting steady demand for consumables alongside the more dynamic high-tech apparatus.

Conclusion

The EU's extra-EU trade in medical instruments and appliances (CN 9018) underwent a deep transformation between 2015 and 2025. Trade values more than doubled in many segments, propelled by both volume and, critically, a strong rise in unit values. The EU moved decisively toward higher-quality, more expensive devices — visible in soaring production values despite slightly lower quantities — and became even more integrated into global value chains, as illustrated by an export propensity that now exceeds 130 %.

At the same time, the geographic pattern evolved in two distinct ways. On the import side, the supplier base diversified markedly, with China, Switzerland, Malaysia and others gaining substantial market share. On the export side, the United States reinforced its role as the dominant destination, pushing external concentration slightly higher. A sharp price shock in UK imports after Brexit serves as a reminder of the sector's vulnerability to regulatory and customs disruptions.

Product-wise, electro-diagnostic apparatus emerged as the most dynamic category, with imports quadrupling and exports more than doubling. The ability of EU manufacturers to command higher export prices than import prices for general instruments points to a competitive edge in the upper end of the market. Looking ahead, the sustained trade surplus, the ongoing technology upgrade and the diversified import base provide a solid foundation, though the sector's growing reliance on the US export market and its exposure to geopolitical and regulatory shocks warrant close monitoring.

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