

Market evolution: Measuring instruments (CN 9031) — 2015–2025

Introduction

The EU's trade in measuring and checking instruments (CN 9031) – a broad category ranging from balancing machines and test benches to optical semiconductor inspection equipment – experienced a pronounced value-driven expansion between 2015 and 2025. Extra-EU exports rose by nearly half, imports by over 60 %, and the Union's trade surplus widened by more than a third. Behind these headline figures, however, physical volumes grew only moderately, unit prices soared, and a handful of disruptive shocks reshaped partner relationships and product-mix dynamics. This report examines the main structural and cyclical forces that have defined the market over the last decade.

Surging trade values disguised modest volume growth, as unit prices climbed sharply

Extra-EU export values expanded by 47.9 % while import values jumped 61.3 %, leaving a trade surplus that still grew by 35.7 %

Flows for the whole CN 9031 heading show a robust value expansion on both sides. Using the trade overview, exports climbed from €7.96 billion in 2015 to €11.76 billion in 2025, while imports rose from €3.77 billion to €6.08 billion. The resulting balance improved from a surplus of €4.19 billion to €5.68 billion.

Indicator	2015	2025	Change (%)
Exports (€)	7.96 bn	11.76 bn	+47.9
Imports (€)	3.77 bn	6.08 bn	+61.3
Trade balance (€)	4.19 bn	5.68 bn	+35.7
Export unit price (€/kg)	119.0	162.2	+36.3
Import unit price (€/kg)	118.8	115.4	–2.9

Physical quantities grew only 8.5 % for exports and 66.2 % for imports, signalling that price inflation drove most of the value increments

The volume side tells a different story. Export tonnage edged up from 66 856 tonnes to 72 506 tonnes (+8.5 %), whereas import tonnage rose from 31 720 tonnes to 52 705

tonnes (+66.2 %). Consequently, the average export price increased by more than a third, while the average import price even slightly declined. This contrasting price trend suggests that EU exporters moved up the value chain, supplying ever more sophisticated – and expensive – instruments, while the EU imported a larger quantity of comparatively lower-priced items.

China's rapid ascent as top import supplier and a twin-engine export dynamic reshaped partner patterns

Chinese imports to the EU more than tripled, making it the largest non-EU source ahead of the United States

According to the top partners by value, Chinese shipments into the EU surged from €355 million in 2015 to €1.18 billion in 2025 (+232.1 %). This growth far outpaced that of the United States (+51.3 % to €1.32 billion) and Japan (+108.3 % to €661 million), propelling China from the fourth-largest import origin to first place.

Import partner	2015 (€)	2025 (€)	Change (%)
China	355 M	1.18 bn	+232.1
United States	875 M	1.32 bn	+51.3
Japan	317 M	661 M	+108.3
Switzerland	430 M	581 M	+35.2
United Kingdom	441 M	547 M	+24.1
Korea, Rep. of	252 M	195 M	–22.5
Türkiye	30 M	70 M	+133.4

EU exports remained concentrated on two giants, the United States and China, while several middle-sized markets delivered fast growth

On the export side, the same partner ranking reveals a twin-engine structure. Shipments to China (€1.77 billion to €2.47 billion, +39.6 %) and the United States (€1.55 billion to €2.47 billion, +59.8 %) together accounted for roughly two-fifths of all extra-EU exports throughout the period. Among the next-tier destinations, Türkiye (+95.6 %), India (+68.2 %), and the United Kingdom (+51.7 %) recorded notable gains, suggesting a gradual broadening of the export footprint.

Export partner	2015 (€)	2025 (€)	Change (%)
China	1.77 bn	2.47 bn	+39.6
United States	1.55 bn	2.47 bn	+59.8
United Kingdom	533 M	808 M	+51.7
Türkiye	220 M	431 M	+95.6
India	303 M	510 M	+68.2
Mexico	230 M	309 M	+34.6
Korea, Rep. of	370 M	523 M	+41.4

Concentration levels remained stable and relatively low on both sides, indicating a well-diversified portfolio of partners

The Herfindahl-Hirschman Index for imports moved from 1 112 to 1 208 (still a moderately concentrated market), while the export HHI was virtually unchanged at around 1 067–1 068. These figures, available in the concentration dashboard, confirm that the EU's trade in measuring instruments relies on a broad set of partners and that the rise of China as a supplier did not provoke a dangerous concentration of import sources.

Geopolitical shocks, price disruptions and the semiconductor cycle left deep marks on volatility and product composition

The near-total collapse of EU exports to Russia after 2022 illustrates the force of sanctions-induced supply shocks

The supply shock detection identifies the Russian Federation as the most extreme event. Export quantity plummeted from an average of 2 311 tonnes per year during the 2015-2022 baseline to just 57 tonnes in 2023-2025, a drop of –97.5 %. At the same time, the unit price of the remaining flows tripled relative to the baseline, consistent with a scenario where only a handful of non-sanctioned, high-value items could still be shipped. This shock wiped out a market that had represented 2.1 % of EU export value.

A marked price shock in Japanese imports around 2020 exposed rapid shifts in the availability of high-end instruments

Among the price shock events, Japanese imports stand out. In 2018-2019 the unit price averaged about €70 000 per tonne; in 2020 it shot up to €152 154, a jump of 117.8 %, while the volume contracted to just 2 757 tonnes – a fraction of the previous levels. The post-shock period (2021-2022) saw even higher prices (€174 000 per tonne) with only a partial volume recovery, suggesting a structural tightening in the supply of certain Japanese instruments.

Semiconductor inspection equipment drove the most dynamic export segment, while non-optical instruments remained the volume backbone

The product segment breakdown shows that the subclass 903180 (non-optical instruments) accounted for the largest quantities in both imports and exports – 31 778 tonnes imported and 38 800 tonnes exported in 2025 – and represented the biggest value block on the export side (€5.92 billion). However, the highest unit prices and fastest value growth occurred in 903141 (optical instruments for inspecting semiconductor wafers). Export values for this niche more than tripled from €147 million in 2015 to €543 million in 2025, and the unit price rose from €373 000 to €582 000 per tonne. This pattern reflects the EU's strong position in equipment for the global semiconductor industry, a sector prone to its own demand cycles.

Conclusion

The EU's external trade in measuring and checking instruments has undergone a decade of value-rich expansion, underpinned by a rising quality premium on exports and a massive inflow of lower-cost imports, above all from China. The Union's trade surplus grew in absolute terms, yet the reliance on extra-EU sources for domestic consumption increased – the net import reliance ratio became less negative, moving from –62.1 % in 2015 to –35.3 % in 2024 – while trade intensity more than doubled. Structural specialisation is heavily skewed towards Germany, but smaller member states such as Malta and Estonia also show very strong comparative advantages. The period was punctuated by significant disruptions: Russia's disappearance as an export destination after sanctions, a sharp Japanese supply-price shock around 2020, and the ever-growing weight of semiconductor-related instruments. Going forward, the sector's openness and its exposure to both geopolitical tensions and technological cycles will be the key factors to watch.

Generated on 2026-07-28 based on data from tradedashboard.eu

Auto-generated report: it accelerates, and sometimes misleads, human analysis. It cannot replace it in full.

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](#).