EU TRADE EXPLORER

Market evolution: Electrical machines and apparatus, not elsewhere specified (CN 8543) — 2015–2025

Introduction

This report examines the evolution of European Union (EU) trade in **Electrical machines and apparatus, having individual functions, n.e.s. in chapter 85, and parts thereof** (HS 8543) with non-EU partners between 2015 and 2025. The heading is a residual basket covering a heterogeneous mix of products, from signal generators and electroplating equipment to electronic cigarettes. Using yearly data, we highlight the main shifts in value, volume, unit prices, geographic orientation, market concentration, and product composition, and identify the most important shocks that shaped the market.

1. Asymmetric growth lifts exports, compresses imports, and narrows the deficit

EU trade in 8543 was characterised by an export value surge and a significant re-pricing of imports, while the physical volume of goods crossed the border declined on the import side. The result is a much smaller trade gap.

Export value growth far outpaced import value growth over the decade

Total extra-EU exports of 8543 climbed from **€3.25 billion in 2015 to €5.96 billion in 2025 (+83.7 %)**, while imports rose from **€4.36 billion to €6.17 billion (+41.4 %)** (EU trade overview). The trade deficit consequently shrank by **81.6 %**, from €-1.11 billion to just €-0.21 billion, bringing the balance close to zero.

Indicator	2015	2025	Change
Exports (€ bn)	3.25	5.96	+83.7 %
Imports (€ bn)	4.36	6.17	+41.4 %
Balance (€ bn)	–1.11	–0.21	+81.6 %

Divergent volume trends reveal a strong re-pricing of trade

While export volumes recorded a moderate increase of **17.1 %** (from 42.2 k tonnes to 49.4 k tonnes), import volumes actually fell by **21.9 %** (from 114.0 k tonnes to 89.1 k tonnes) (EU trade overview). Consequently, import unit prices soared by **81.0 %**, reaching

€69.2 k/tonne, and export unit prices by **56.8 %** to €120.6 k/tonne. The import price for the first time exceeded €78 k/tonne in 2025, signalling a structural shift toward more expensive items and away from bulk, lower-value goods.

2. Geopolitical realignment and the re-mapping of trade partners

The geographic structure of EU trade in 8543 underwent profound changes. While the United States and the United Kingdom remained major partners, the collapse of the Russian market and the emergence of Türkiye, Malaysia, and Norway reshaped export and import flows. Concentration measures and detected price shocks underline the volatility behind these shifts.

Imports diversified away from a dominant China, while Malaysia surged

China remained the top supplier with imports rising from **€2.29 billion to €2.77 billion (+20.8 %)**, but its share in a growing import basket fell. The import Herfindahl-Hirschman Index (HHI) dropped from **3018 to 2343 (–22.4 %)** (Market concentration). The most dynamic import partner was **Malaysia**, whose sales to the EU jumped **303.2 %** (€87 m to €351 m), while the United Kingdom (+73.7 %) and the United States (+49.6 %) also posted strong gains. By contrast, Japan lost ground (–28.9 %) and South Korea stagnated (+0.5 %) (Top trade partners).

Import partner	2015 (€ bn)	2025 (€ bn)	Change
China	2.29	2.77	+20.8 %
United Kingdom	0.29	0.51	+73.7 %
United States	0.51	0.77	+49.6 %
Malaysia	0.09	0.35	+303.2 %
Japan	0.24	0.17	–28.9 %

Exports: Russia vanishes, Türkiye and Norway become growth poles

The most dramatic export development was the **99.2 % collapse of deliveries to the Russian Federation**, from €136 m in 2015 to barely €1 m in 2025, reflecting sanctions after the 2022 invasion. Meanwhile, shipments to **Türkiye multiplied by four (+300.8 %)**, reaching €360 m, and those to **Norway more than doubled (+121.0 %)**. Exports to the United States (+80.0 %) and China (+90.5 %) also expanded robustly (Top trade partners). Export market concentration remained modest and stable (HHI broadly around 890–1 022), confirming a well-diversified destination portfolio (Market concentration).

Price shocks and high volatility hit several corridors

The most severe price shock was recorded on **exports to Ukraine in 2023**, where unit prices jumped **425.7 %** amidst the war-time disruption of trade flows (Supply shocks). Other notable price spikes affected exports to Morocco (+97.8 % in 2021), Brazil (+77.4 % in 2021), and Saudi Arabia (+97.8 % in 2022). On the import side, the **United Kingdom experienced a 105.2 % price jump in 2021**, linked to the post-Brexit trade adjustment, while quantities simultaneously contracted. Volatility analysis confirms that Russian Federation exports (CV 0.63) and imports from Vietnam (CV 0.85), Hong Kong (CV 0.59), and Thailand (CV 0.60) were the most unstable flows (Volatility analysis).

3. A changing product mix: e-cigarettes emerge, while high-tech components drive value

The broad 8543 category conceals a deep transformation of its constituent products. The post-2022 appearance of electronic cigarettes and the stellar rise of signal generator exports illustrate how the composition of trade evolved in favour of higher-value, technology-intensive items.

Imports: the vaping boom appears and then retreats

Before 2022, import data for subheading **854340 (electronic cigarettes)** was not recorded, suggesting that a separate customs classification was activated only recently. In its first year of reporting (2022), e-cigarette imports were valued at **€1.52 billion**, instantly becoming a major segment. However, by 2025 import value had declined to **€0.88 billion**, while the average price per tonne climbed from €89 k to €103 k (Product breakdown). Meanwhile, **parts (854390)** imports rose from €0.43 bn to €0.93 bn, and **electroplating apparatus (854330)** grew from €42 m to €295 m, indicating a broader shift toward capital equipment and components.

Exports: signal generators and parts drive record values

On the export side, **electrical machines n.e.s. (854370)** remained the dominant segment, rising from €2.21 bn to €4.18 bn. More strikingly, **signal generators (854320)** surged from €0.19 bn to €0.52 bn, with a unit price that quadrupled (from €199 k/tonne to €709 k/tonne), highlighting the growing importance of high-tech testing and measurement equipment. Exports of **parts (854390)** also grew solidly (from €0.62 bn to €0.84 bn), while **electroplating apparatus** reached €0.28 bn. E-cigarette exports remained modest (€56 m in 2025) and highly erratic (Product breakdown).

Specialisation: small, technology-oriented economies hold a strong comparative advantage

In 2025, the most specialised EU exporters of 8543 products were **Croatia (RSCA +0.60), Poland (+0.24), Germany (+0.19), Sweden (+0.15), and Estonia (+0.13)** (Specialisation). This pattern reflects the presence of specialised engineering and electronics clusters, with Germany and Poland acting as large-scale manufacturing hubs, while Croatia and Estonia show high relative concentration in niche segments.

Conclusion

EU trade in 8543 between 2015 and 2025 was marked by a powerful export expansion and a simultaneous import restructuring. Export value nearly doubled, driven by high-priced machinery, signal generators, and parts, while import volumes shrank as the EU bought fewer but more expensive items, partly due to the meteoric but volatile entry of e-cigarettes. Geopolitical forces redrew the map: Russia collapsed as an export market, Türkiye and Malaysia emerged as pivotal partners, and the supply base diversified away from China. The net effect is a dramatically reduced trade deficit and a product basket that leans ever more toward sophisticated, high-value-added capital goods and components.

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

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