

EU 27 & UK: Trade Overview/Pattern in 2020

(For the application of “Data minded economist” in DAMVAD Analytics)

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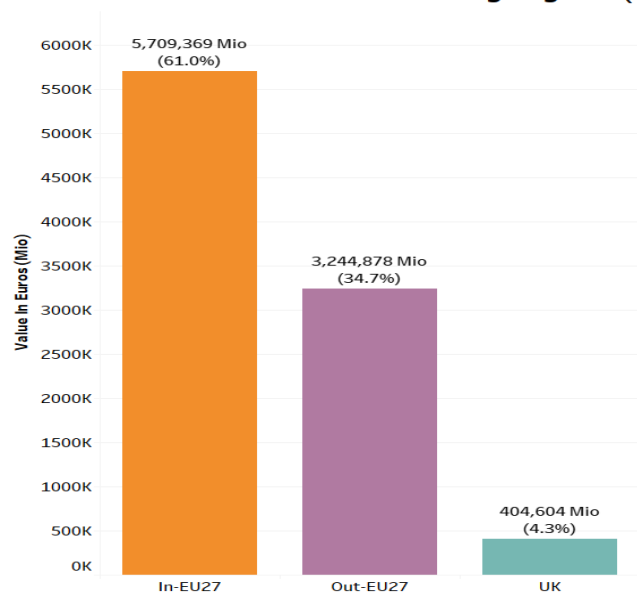
Data Source

The dataset (with 9,162,543 obs) includes the declarant EU27 countries' & UK's trade flow (export & import) per product with all the countries in the world along with the following granularities:

- Trading country (and region)
- Trade flow (Import VS Export)
- Trade type
- Product section
- Detailed Product (in according to different classifications BEC, SITC, CPA)
- Trade value
- Trade quantity

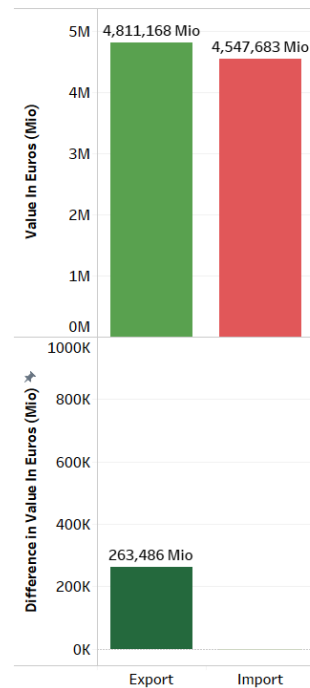
*Although there is NO explanation on the meaning of index values of each granularity in the dataset, after validating all these granularities, I have figured out the detailed meaning of values in each granularity

EU27&UK: Trade Value with 3 Trading Regions (Mio €)

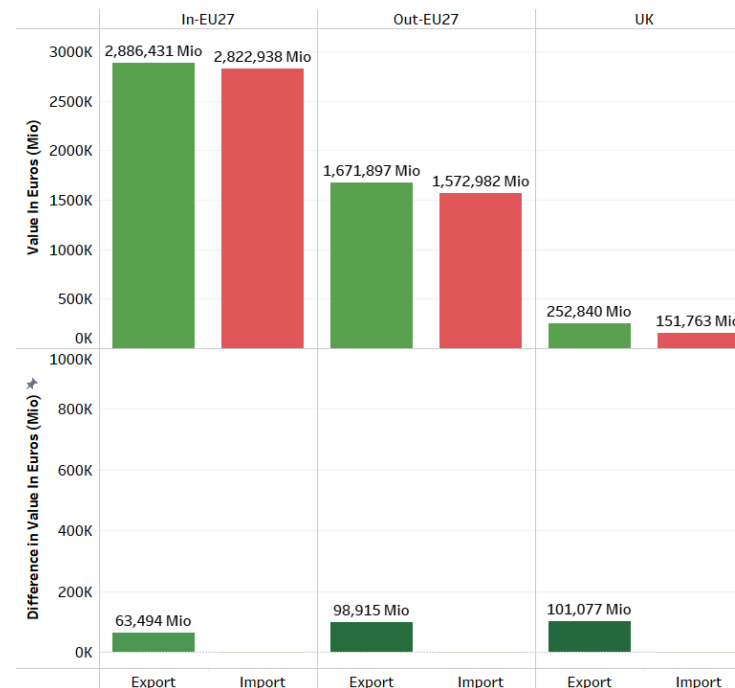


In 2020, EU27 countries & UK's biggest trade partner is EU27 itself, whose trading value (including import and export) is 5.7 trillion €, accounting for 61% of EU27 countries & UK's total trade in 2020; EU27's trading value with UK is 0.4 trillion €, taking up 4.3% of EU27 countries & UK's total trade in 2020; EU27 countries & UK's trading value with the rest countries (Out-EU27) in the world is 3.2 trillion €, which is 34.7% of its 2020 total trade.

EU27 & UK: Export & Import (Mio €)

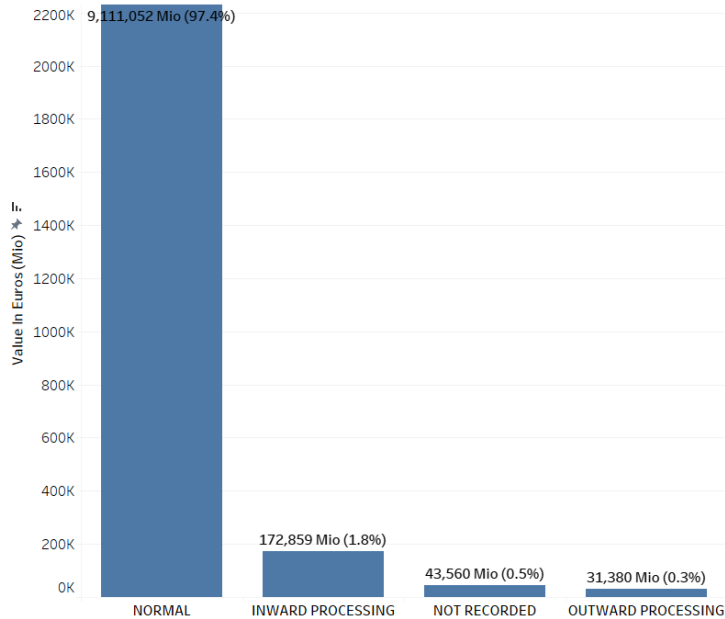


EU27 & UK: Export & Import in 3 Trading Regions (Mio €)

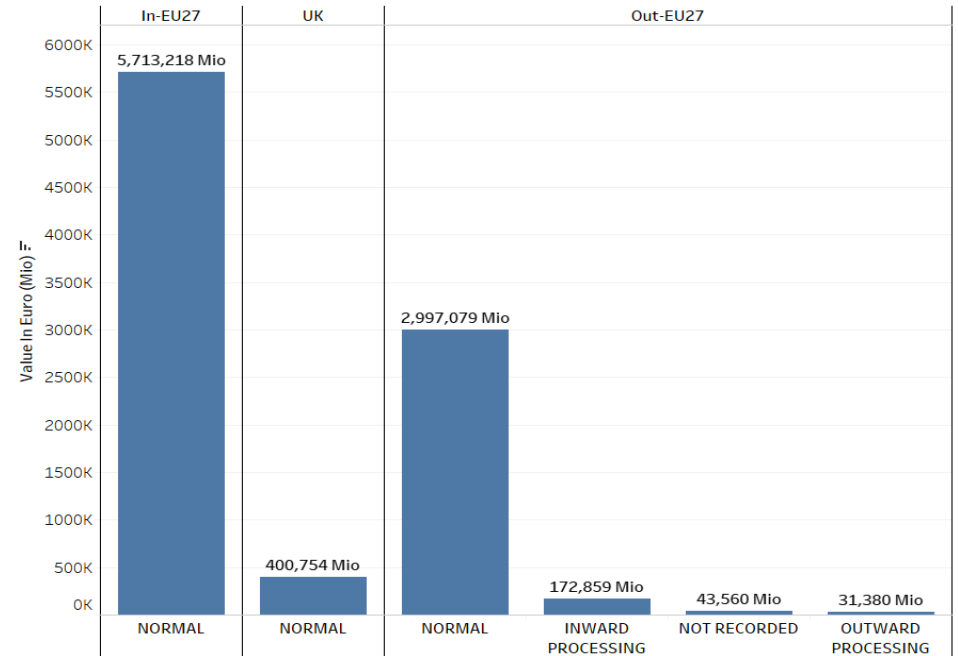


- In 2020, EU27 countries' & UK's total export (4.8 trillion €) is greater than import (4.5 trillion €), yielding net exports of 0.26 trillion €
- Among EU27 countries' & UK's 3 trading regions, its net exports to UK is 101 billion €, which is the highest as compared to net exports to In-EU27 (63 billion €) and the rest world Out-EU27 (99 billion €)

EU27&UK's Trade Value/Trade Type (Mio €)

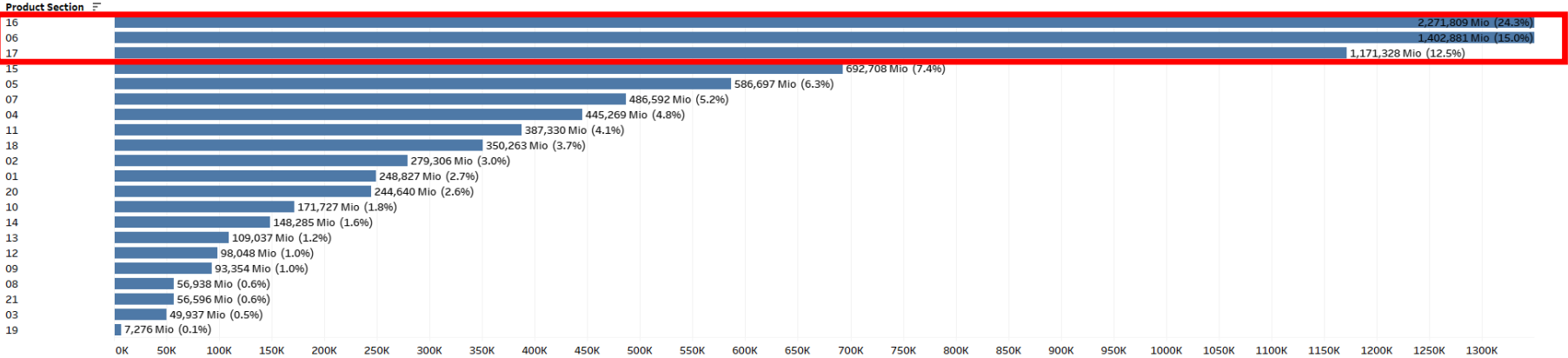


EU27&UK's Trade Value (Mio €) /Trade Type with 3 Trading Regions

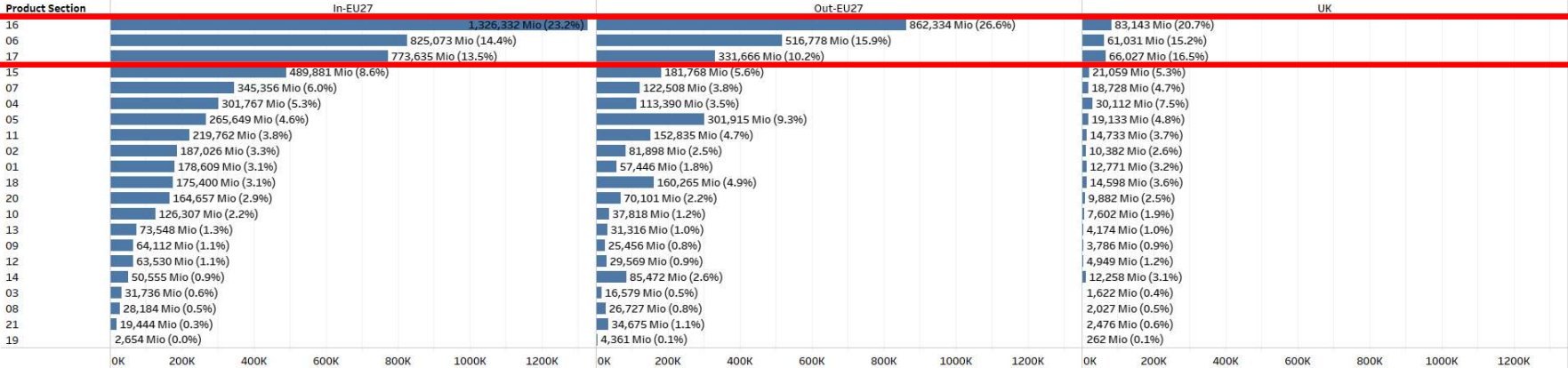


- There are 4 types in EU27 countries'&UK's trade: normal trade (97.4%), inward processing trade (1.8%), NOT recorded (0.5%) and outward processing trade (0.3%), among which the normal trade takes up the overwhelming majority
- In the trade between EU27 countries&UK and In-EU27/UK, there is only normal trade; Differently, the trade between EU27 countries&UK and Out-EU27 covers all these 4 trade types

Product Section: EU27&UK Total Trade Value with World (Mio €)



Product Section: EU27&UK Trade Value with 3 Regions (Mio €)

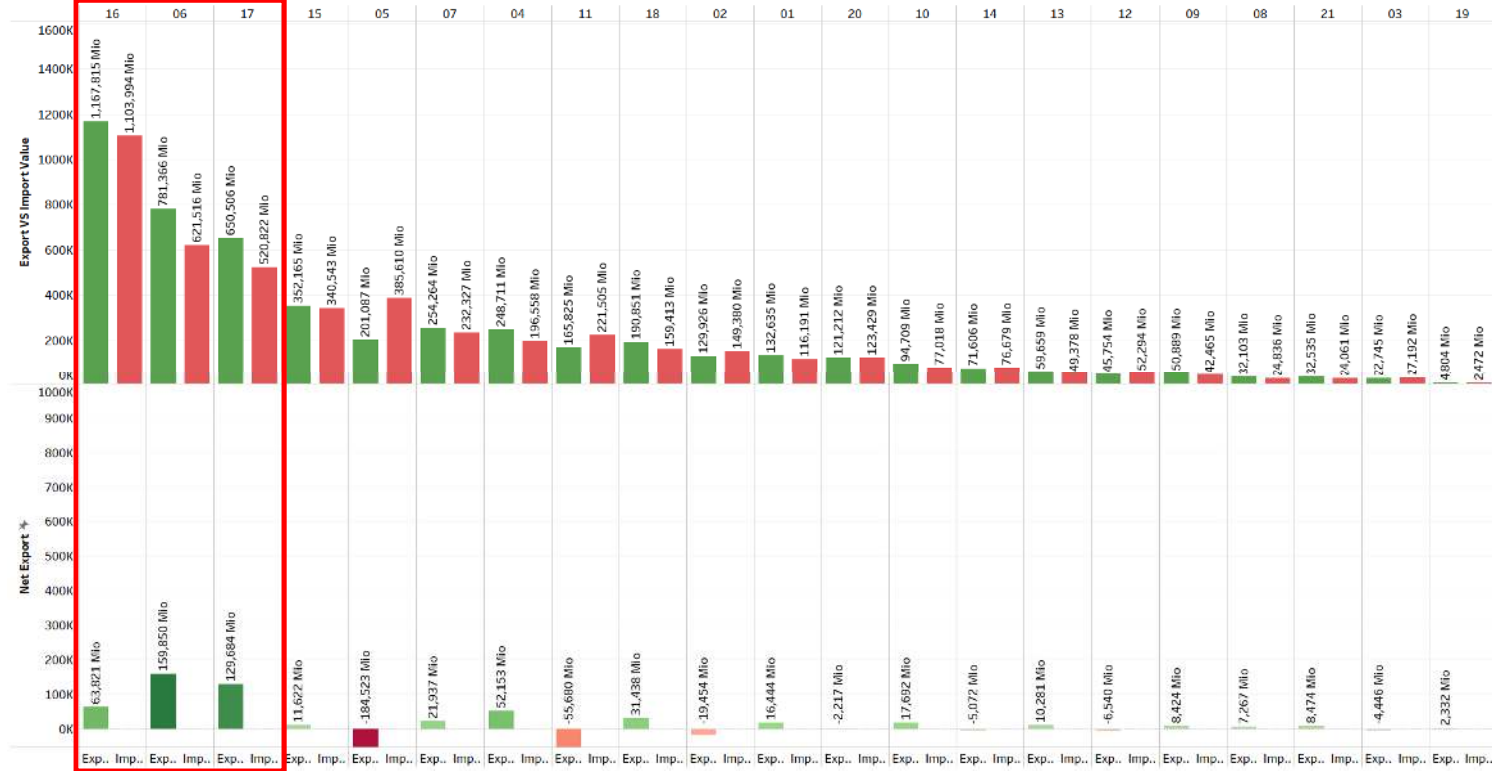


Product Section: EU27&UK Trade Value/Trade Type (Mio €)

Product Section	NORMAL	INWARD PROCESSING	OUTWARD PROCESSING	NOT RECORDED
16	2,220,563 Mio (24%)	42,105 Mio (24%)	8,954 Mio (29%)	187 Mio (0%)
06	1,371,282 Mio (15%)	30,375 Mio (18%)	885 Mio (3%)	339 Mio (1%)
17	1,098,223 Mio (12%)	53,848 Mio (31%)	13,822 Mio (44%)	5,435 Mio (12%)
15	685,868 Mio (8%)	6,182 Mio (4%)	623 Mio (2%)	36 Mio (0%)
05	537,698 Mio (6%)	12,985 Mio (8%)	20 Mio (0%)	35,994 Mio (83%)
07	482,410 Mio (5%)	3,543 Mio (2%)	542 Mio (2%)	97 Mio (0%)
04	434,443 Mio (5%)	9,832 Mio (6%)	197 Mio (1%)	797 Mio (2%)
11	382,957 Mio (4%)	1,023 Mio (1%)	2,953 Mio (9%)	397 Mio (1%)
18	347,285 Mio (4%)	2,430 Mio (1%)	518 Mio (2%)	31 Mio (0%)
02	278,420 Mio (3%)	783 Mio (0%)	42 Mio (0%)	60 Mio (0%)
01	247,218 Mio (3%)	1,204 Mio (1%)	354 Mio (1%)	51 Mio (0%)
20	243,803 Mio (3%)	648 Mio (0%)	154 Mio (0%)	34 Mio (0%)
10	171,585 Mio (2%)	37 Mio (0%)	73 Mio (0%)	33 Mio (0%)
14	144,038 Mio (2%)	3,190 Mio (2%)	1,057 Mio (3%)	1 Mio (0%)
13	108,437 Mio (1%)	554 Mio (0%)	38 Mio (0%)	9 Mio (0%)
12	97,261 Mio (1%)	47 Mio (0%)	731 Mio (2%)	9 Mio (0%)
09	93,290 Mio (1%)	46 Mio (0%)	9 Mio (0%)	10 Mio (0%)
08	56,367 Mio (1%)	246 Mio (0%)	318 Mio (1%)	7 Mio (0%)
21	55,256 Mio (1%)	1,241 Mio (1%)	67 Mio (0%)	32 Mio (0%)
03	47,607 Mio (1%)	2,325 Mio (1%)	4 Mio (0%)	1 Mio (0%)
19	7,041 Mio (0%)	216 Mio (0%)	20 Mio (0%)	
	OK 500K 1000K 1500K 2000K	OK 500K 1000K 1500K 2000K	OK 500K 1000K 1500K 2000K	OK 500K 1000K 1500K 2000K

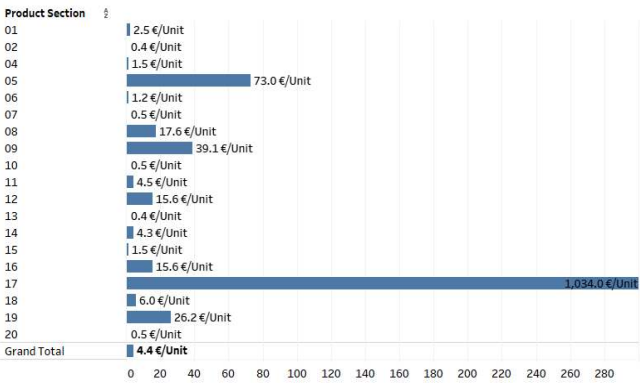
- The top 3 trading sections of EU27 countries&UK are product section 16 (24.3%), 06 (15%), 17 (12.5%), which in total account for more than half of EU27 countries&UK's total trade (export&import); In addition, EU27 countries&UK has net exports in these top 3 sections
- Among the EU27 countries&UK's trade with 3 trading regions (In-EU27, Out-EU27 and UK), these 3 sections also rank the highest ones
- Similarly, the section 16, 06 and 17 are also the top 3 trading sections in the 4 trade types (normal trade, inward processing trade, outward processing trade and NOT record)

Product Section: Export & Import Value (Mio €)



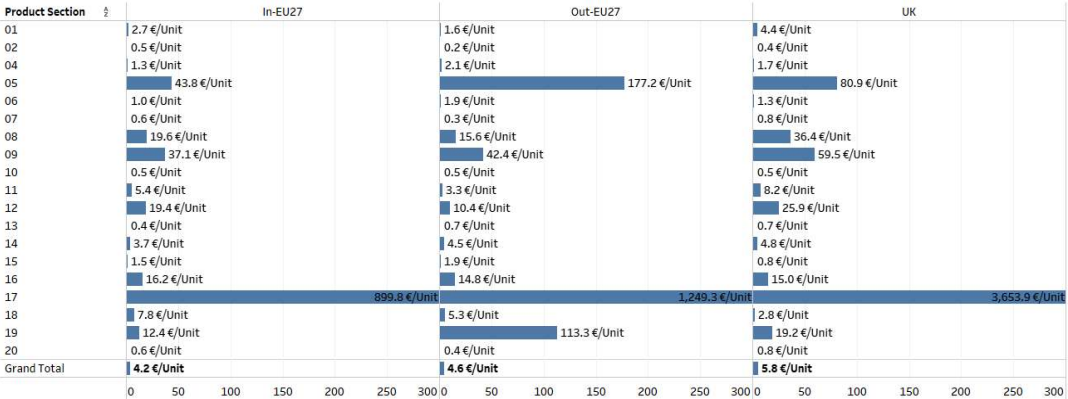
In these 3 top product sections, they have both highest export and import, and yielding 3 highest net exports among all the product sections

Trade Quality (Euro/Unit): EU27 & UK / Product Section



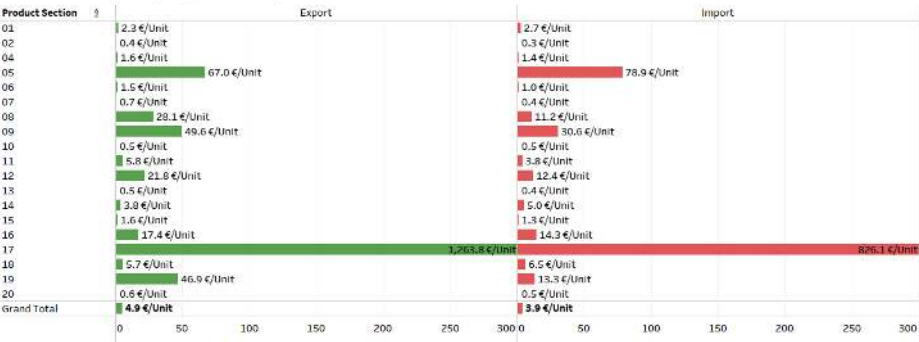
We define Trade Quality=Trade Value/Quantity, which could be understood as the average price index. As the measurements of quantity are reported inconsistently in different units and weight (kg) in the dataset, given the conversion rate between different measurements of quantity is missing, for the moment, we use the granularity “supp_quantity” (in the dataset) as the quantity to calculate the trade quality

Trade Quality (Euro/Unit): EU27 & UK's Trade with 3 Regions/Product Section

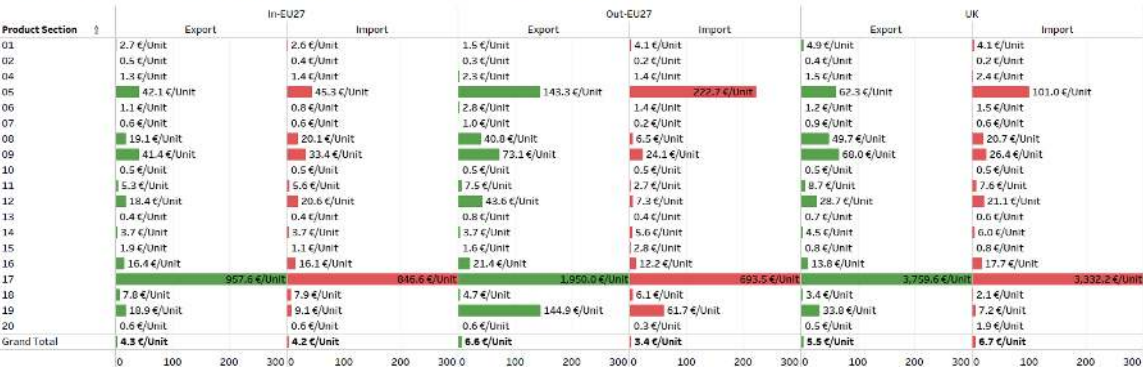


The trade quality (average price index) of EU27&UK's overall trade is 4.4 €/unit, which is slightly greater than the trade quality 4.2 €/unit of EU27&UK's trade with In-EU27 countries, slightly lower than the trade quality 4.6 €/unit of EU27&UK's trade with Out-EU27 countries, and much lower than the trade quality of EU27's trade with UK. The reason why EU27's trade with UK has much higher trade quality 5.8 €/unit is because the UK's import&export tax increased after Brexit in 2020

Import&Export (Euro/Unit): EU27 & UK / Product Section

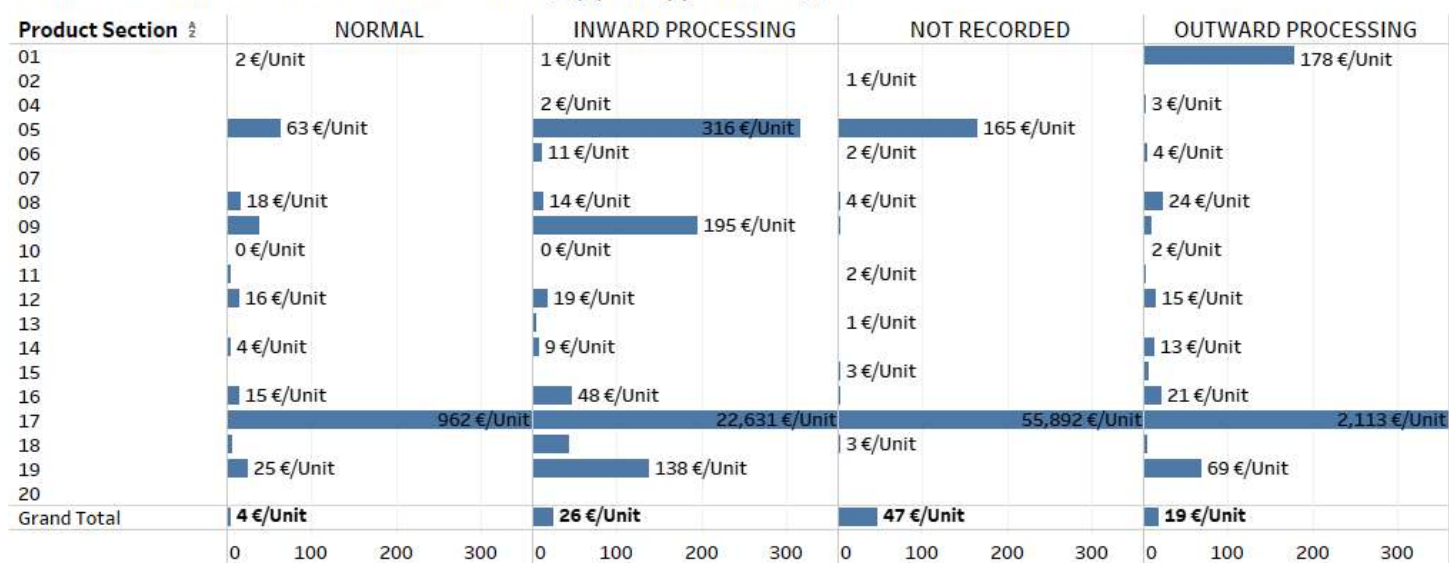


Import&Export Quality (Euro/Unit): EU27 & UK's Trade with 3 Regions/Product Section



The trade quality (average price index) of EU27&UK's overall import is 3.9 €/unit, which is lower than the trade quality 4.9 €/unit of EU27&UK's overall export. Similarly, in EU27&UK's trade with In-EU27 countries and Out-EU27 countries, the trade quality of export is also greater than import. Differently, the trade quality of EU27's exports to UK is lower than the import, which is caused by the implementation of new tax after the Brexit of UK from the beginning of 2020

Product Section: EU27 & UK Trade Quality (€/Unit) / Trade Type



Among the 4 trade types, EU27&UK's trade quality (average price index) in normal trade is the lowest 4 €/unit, the trade quality of Outward processing trade is 19 €/unit, Inward processing's trade quality is 26 €/unit, and the trade quality of Not recorded trade is the highest 47 €/unit. The reason is that the products in Inward processing trade, Outward processing trade already had a high added value before they are circulated in EU27&UK

Product Section: EU27 & UK Import&Export Quality (€/Unit) / Trade Type

Product Section #	NORMAL				INWARD PROCESSING				NOT RECORDED				OUTWARD PROCESSING			
	Export		Import		Export		Import		Export		Import		Export		Import	
01	2.3 €/Unit		2.7 €/Unit		3.8 €/Unit		0.7 €/Unit						176.4 €/Unit		3,926.0 €/Unit	
02									0.6 €/Unit							
04	1.6 €/Unit		1.4 €/Unit		2.1 €/Unit		0.6 €/Unit		1.7 €/Unit				2.7 €/Unit		2.7 €/Unit	
05	58.5 €/Unit		68.3 €/Unit		321.4 €/Unit		282.5 €/Unit		36.6 €/Unit		229.2 €/Unit					
06	1.3 €/Unit		0.9 €/Unit		11.8 €/Unit		10.7 €/Unit		1.9 €/Unit		15.5 €/Unit		0.7 €/Unit		6.2 €/Unit	
07	0.7 €/Unit		0.4 €/Unit		0.1 €/Unit		0.5 €/Unit		1.9 €/Unit		2.1 €/Unit		0.2 €/Unit		0.9 €/Unit	
08	28.3 €/Unit		11.2 €/Unit		16.5 €/Unit		12.6 €/Unit		9.8 €/Unit		3.8 €/Unit		24.2 €/Unit		24.2 €/Unit	
09	49.6 €/Unit		30.6 €/Unit		445.4 €/Unit		126.8 €/Unit		13.5 €/Unit		3.2 €/Unit		9.1 €/Unit		11.6 €/Unit	
10	0.5 €/Unit		0.5 €/Unit		0.4 €/Unit		6.8 €/Unit						4.2 €/Unit		0.4 €/Unit	
11	5.9 €/Unit		3.8 €/Unit		3.0 €/Unit		2.0 €/Unit		5.6 €/Unit		2.0 €/Unit		2.4 €/Unit		5.8 €/Unit	
12	21.8 €/Unit		12.4 €/Unit		36.4 €/Unit		10.5 €/Unit		19.5 €/Unit		1.4 €/Unit		6.0 €/Unit		15.3 €/Unit	
13	0.5 €/Unit		0.4 €/Unit		9.3 €/Unit		4.5 €/Unit		20.2 €/Unit		1.2 €/Unit		0.9 €/Unit		0.5 €/Unit	
14	3.7 €/Unit		5.0 €/Unit		16.8 €/Unit		5.8 €/Unit		0.1 €/Unit		0.1 €/Unit		12.4 €/Unit		17.6 €/Unit	
15	1.6 €/Unit		1.3 €/Unit		0.4 €/Unit		10.8 €/Unit				3.5 €/Unit		4.6 €/Unit		21.2 €/Unit	
16	17.2 €/Unit		14.0 €/Unit		34.5 €/Unit		73.5 €/Unit		42.2 €/Unit		3.2 €/Unit		23.7 €/Unit		15.4 €/Unit	
17	1,152.4 €/Unit		792.2 €/Unit		25,826.0 €/Unit		4,002.7 €/Unit		274,403.6 €/Unit		27,371.5 €/Unit		184.8 €/Unit		15,402.5 €/Unit	
18	5.7 €/Unit		6.4 €/Unit		45.4 €/Unit		44.0 €/Unit		24.7 €/Unit				4.9 €/Unit		6.8 €/Unit	
19	45.7 €/Unit		12.9 €/Unit		107.3 €/Unit		802.5 €/Unit						746.6 €/Unit		12.9 €/Unit	
20	0.6 €/Unit		0.5 €/Unit		0.3 €/Unit		0.3 €/Unit		0.6 €/Unit		0.6 €/Unit		0.6 €/Unit		1.0 €/Unit	
Grand Total	4.7 €/Unit		3.8 €/Unit		29.6 €/Unit		16.2 €/Unit		49.4 €/Unit		46.6 €/Unit		8.6 €/Unit		35.7 €/Unit	
	0 100 200 300		0 100 200 300		0 100 200 300		0 100 200 300		0 100 200 300		0 100 200 300		0 100 200 300		0 100 200 300	

Product Section: EU27 & UK Import&Export Quality (Euro/Unit) / Trade Type in World's 3 Regions

Product Section #	In-EU27 NORMAL		INWARD PROCESSING		Out-EU27 NORMAL		NOT RECORDED		OUTWARD PROCESSING		UK NORMAL	
	Export	Import	Export	Import	Export	Import	Export	Import	Export	Import	Export	Import
01	2.7 €/Unit	2.6 €/Unit	3.8 €/Unit	0.7 €/Unit	1.5 €/Unit	4.2 €/Unit			176.4 €/Unit	3,926.0 €/Unit	4.9 €/Unit	4.1 €/Unit
02	0.5 €/Unit	0.4 €/Unit	3.4 €/Unit	0.9 €/Unit	0.3 €/Unit	0.2 €/Unit					0.4 €/Unit	0.2 €/Unit
04	1.3 €/Unit	1.4 €/Unit	2.1 €/Unit	0.6 €/Unit	2.4 €/Unit	1.4 €/Unit			2.7 €/Unit	2.7 €/Unit	1.5 €/Unit	2.4 €/Unit
05	42.1 €/Unit	45.3 €/Unit	321.4 €/Unit	282.5 €/Unit	125.7 €/Unit	216.7 €/Unit			36.6 €/Unit	229.2 €/Unit	62.3 €/Unit	101.0 €/Unit
06	1.1 €/Unit	0.8 €/Unit	11.8 €/Unit	10.7 €/Unit	2.1 €/Unit	1.1 €/Unit			15.5 €/Unit	15.5 €/Unit	1.2 €/Unit	1.5 €/Unit
07	0.6 €/Unit	0.6 €/Unit	0.1 €/Unit	0.5 €/Unit	1.0 €/Unit	0.2 €/Unit			1.9 €/Unit	2.1 €/Unit	0.9 €/Unit	0.6 €/Unit
08	19.1 €/Unit	20.1 €/Unit	16.5 €/Unit	12.6 €/Unit	41.8 €/Unit	6.3 €/Unit			9.8 €/Unit	3.8 €/Unit	24.2 €/Unit	20.7 €/Unit
09	41.4 €/Unit	33.4 €/Unit	445.4 €/Unit	126.8 €/Unit	73.1 €/Unit	24.1 €/Unit			13.5 €/Unit	3.2 €/Unit	9.1 €/Unit	26.4 €/Unit
10	0.5 €/Unit	0.5 €/Unit	0.4 €/Unit	6.8 €/Unit	0.5 €/Unit	0.5 €/Unit					4.2 €/Unit	0.5 €/Unit
11	5.3 €/Unit	5.6 €/Unit	3.0 €/Unit	2.0 €/Unit	8.1 €/Unit	2.7 €/Unit			5.6 €/Unit	2.0 €/Unit	2.4 €/Unit	7.6 €/Unit
12	18.4 €/Unit	20.6 €/Unit	36.4 €/Unit	10.5 €/Unit	43.7 €/Unit	7.2 €/Unit			19.5 €/Unit	1.4 €/Unit	6.0 €/Unit	21.1 €/Unit
13	0.4 €/Unit	0.4 €/Unit	9.3 €/Unit	4.5 €/Unit	0.8 €/Unit	0.4 €/Unit			20.2 €/Unit	1.2 €/Unit	0.9 €/Unit	0.6 €/Unit
14	3.7 €/Unit	3.7 €/Unit	16.8 €/Unit	5.8 €/Unit	3.5 €/Unit	5.6 €/Unit			0.1 €/Unit	0.1 €/Unit	12.4 €/Unit	6.0 €/Unit
15	1.9 €/Unit	1.1 €/Unit	0.4 €/Unit	10.8 €/Unit	1.6 €/Unit	2.7 €/Unit			3.5 €/Unit	3.5 €/Unit	4.6 €/Unit	0.8 €/Unit
16	16.4 €/Unit	16.1 €/Unit	34.5 €/Unit	73.5 €/Unit	20.8 €/Unit	11.7 €/Unit			42.2 €/Unit	3.2 €/Unit	23.7 €/Unit	17.7 €/Unit
17	957.6 €/Unit	846.6 €/Unit	25,826.0 €/Unit	4,002.7 €/Unit	1,496.5 €/Unit	562.9 €/Unit			274,403.6 €/Unit	27,371.5 €/Unit	184.8 €/Unit	15,402.5 €/Unit
18	7.8 €/Unit	7.9 €/Unit	45.4 €/Unit	44.0 €/Unit	4.7 €/Unit	6.0 €/Unit			24.7 €/Unit	2.8 €/Unit	4.9 €/Unit	3.4 €/Unit
19	18.9 €/Unit	9.1 €/Unit	107.3 €/Unit	802.5 €/Unit	48.8 €/Unit	56.6 €/Unit					746.6 €/Unit	33.8 €/Unit
20	0.6 €/Unit	0.6 €/Unit	0.3 €/Unit	0.6 €/Unit	0.6 €/Unit	0.3 €/Unit			0.6 €/Unit	0.6 €/Unit	1.0 €/Unit	1.9 €/Unit
Grand Total	4.3 €/Unit	4.2 €/Unit	29.6 €/Unit	16.2 €/Unit	5.8 €/Unit	3.2 €/Unit			49.4 €/Unit	46.6 €/Unit	8.6 €/Unit	6.7 €/Unit
	0 100 200	0 100 200	0 100 200	0 100 200	0 100 200	0 100 200			0 100 200	0 100 200	0 100 200	0 100 200

Among the 4 trade types, the trade quality (average price index) of EU27&UK's exports is greater than its imports in normal trade, Inward processing trade and NOT record. However, the situation is reversed in Outward processing trade. The reason is that the products in Outward processing imported into EU27 countries&UK have already been processed to a sophisticated level in other countries, so when these products are imported to EU27&UK, the added value is already high, which leads to a higher import quality (average price index) than exports from EU27&UK

Conclusions (Selling Points of the Analysis)

- In 2020, EU27&UK has net exports in its overall trade, and also in its trade in 3 regions: Intra-EU27, UK, Extra-EU27
- Normal trade (out of 4 trade types) dominates the overall trade of EU27&UK, and in its 3 trading regions
- In EU27&UK's trade, section 16, 06 and 17 are the 3 highest trading sections, with highest exports, imports, and so the highest net exports
- After Brexit of UK in 2020, import and export trade quality (average price index) between EU27 and UK is higher than Intra-EU27's counterparts, which is caused by new tax after Brexit of UK
- The EU27's trade quality is higher in its exports than import, which reflects the higher sophistication of EU27's export against its import

Thank You 😊