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Scotland's Port Analysis – Fish and seafood

[Redacted]

Trade Statistics

Office of the Chief Economic Adviser (OCEA)

4th March 2022



Exports of fish/seafood

Scotland's international goods exports - 2021 Q1-3

Commodity	Via Scotland's ports (OTS) (£bn)	Scotland's exports (RTS) (£bn)	Difference (£ mill)	Difference (%)
Fish & seafood	374	743	369	50%

Source: HMRC RTS 2021 Q3 & HMRC OTS November 2021

HMRC Overseas Trade Statistics (OTS) data for 2021 (Q1-Q4):

- Fish/seafood was the 5th largest exported commodity from Scottish ports
 - 3rd largest commodity exported to EU: 87% of fish exports from Scottish ports were to the EU
 - Fish/seafood accounted for 4% of all exports from Scottish ports (7% when oil and gas are excluded)
- Scottish ports accounted for a third (33%) of all fish/seafood exports from UK ports:
 - 40% of EU exports
 - 15% of non-EU exports
- The majority of this comes from Glasgow (Clyde)

Top ports for fish/seafood exports - 2021

Rank	Total exports	EU exports	Non-EU exports
1	Glasgow (Clyde)	Glasgow (Clyde)	London Heathrow
2	London Heathrow	Eurotunnel (Folkstone)	Grangemouth
3	Eurotunnel (Folkstone)	Portsmouth	Southampton
4	Portsmouth	Dover	Immingham
5	Dover	Dover/Eurotunnel	London Stansted
6	Dover/Eurotunnel	Lerwick	Felixstowe
7	Grangemouth	Tyne	London Gateway

Port	Export value (£ million)	% of Scottish ports total	% of UK ports total
Glasgow (Clyde)	421	79%	26%
Grangemouth	47	9%	3%
Lerwick	31	6%	2%
London Heathrow	269		17%
Eurotunnel (Folkstone)	215		13%
All UK ports	1,627		
All Scottish ports	530		33%

Glasgow (Clyde)

EU vs Non-EU

Export destination	Export value (£m)	% of total
EU	416	99%
Non-EU	6	1%
Total	421	100%

Top destination countries

Country	Export value (£ m)	% of total
France	335	80%
Poland	37	9%
Spain	13	3%

Top commodities

Commodity (SITC5)	EU exports (£m)	Non-EU exports (£m)	Total exports (£m)	% of total exports	% of Scottish ports exports	% of UK ports exports
Fresh salmon	291	5	296	70%	98%	46%
Fresh fish fillets	44	0.03	44	11%	46%	100%
Smoked fish	20	0.4	20	5%	48%	88%

- Glasgow (Clyde) was the top port for fish/seafood exports among all UK ports
- Fish and seafood was the top exported commodity from Glasgow
 - Accounted for 81% of exports from this port
- Fish and seafood exports from Glasgow were dominated by exports of Salmon and exports to the EU, and France in particular

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Grangemouth

EU vs Non-EU

Export destination	Export value (£m)	% of total
EU	0.3	1%
Non-EU	46	99%
Total	47	100%

Top destination countries

Country	Export value (£m)	% of total
South Korea	9	19%
Australia	9	18%
China	8	17%
United States	5	11%

Top commodities

Commodity (SITC5)	EU exports (£m)	Non-EU exports (£m)	Total exports (£m)	% of total exports	% of Scottish ports exports	% of UK ports exports
Frozen mackerel	0.1	13	13	28%	34%	16%
Frozen molluscs not for human consumption		7	7	15%	84%	19%
Frozen crustaceans for human consumption		5	5	12%	64%	19%

- Fish/seafood accounted for just 1% of exports from Grangemouth but was Scotland's second largest exporting port for this commodity
- Dominated by exports of fish/seafood to non-EU destinations

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Export destination	Export value (£m)	% of total
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Heathrow

EU vs Non-EU

Export destination	Export value (£m)	% of total
EU	1	0.4%
Non-EU	268	99.6%
Total	269	100%

Top destination countries

Country	Export value (£ m)	% of total
United States	179	66%
China	42	16%
Taiwan	11	4%
Canada	9	3%

Top commodities

Commodity (SITC5)	EU exports (£m)	Non-EU exports (£m)	Total exports (£m)	% of total exports
Fresh salmon	0.3	235	235	87%
Fresh fish fillets	0.03	14	14	5%
Frozen crustaceans for human consumption	0.5	7	8	3%

- Heathrow was second ranking port for fish/seafood exports: top for non-EU exports
- Dominated by exports to non-EU and of fresh salmon:
 - 90% of fish exports to USA and 88% to China were of fresh salmon

Heathrow

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Eurotunnel (Folkstone)

EU vs Non-EU

Export destination	Export value (£m)	% of total
EU	215	99.7%
Non-EU	0.6	0.3%
Total	215	100%

Top destination countries

Country	Export value (£ m)	% of total
France	208	97%
Spain	3	1%
Belgium	2	1%
Portugal	1	1%

Top commodities

Commodity (SITC5)	EU exports (£m)	Non-EU exports (£m)	Total exports (£m)	% of total exports
Fresh salmon	57	0.6	57	27%
Other fresh fish	30		30	14%
Frozen crustaceans for human consumption	27		27	13%

- Dominated by fish/seafood exports to the EU and especially France
- Diverse fish exports to France
- Spain receives mostly crustaceans

Questions & Discussion

- What additional analysis of this data could we do to help take this work forward?
- Do you have any insights or further data that could help improve our understanding?





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Scotland's Port Analysis – Beverages

[Redacted]

Trade Statistics

Office of the Chief Economic Adviser (OCEA)

24th March 2022



Exports of beverages

Scotland's international goods exports - 2021 Q1-3

Commodity	Via Scotland's ports (OTS) (£bn)	Scotland's exports (RTS) (£bn)	Difference (£ mill)	Difference (%)
Beverages	647	2,975	2,329	78%

Source: HMRC RTS 2021 Q3 & HMRC OTS November 2021

Beverages had the largest gap of all commodities both for value and volume

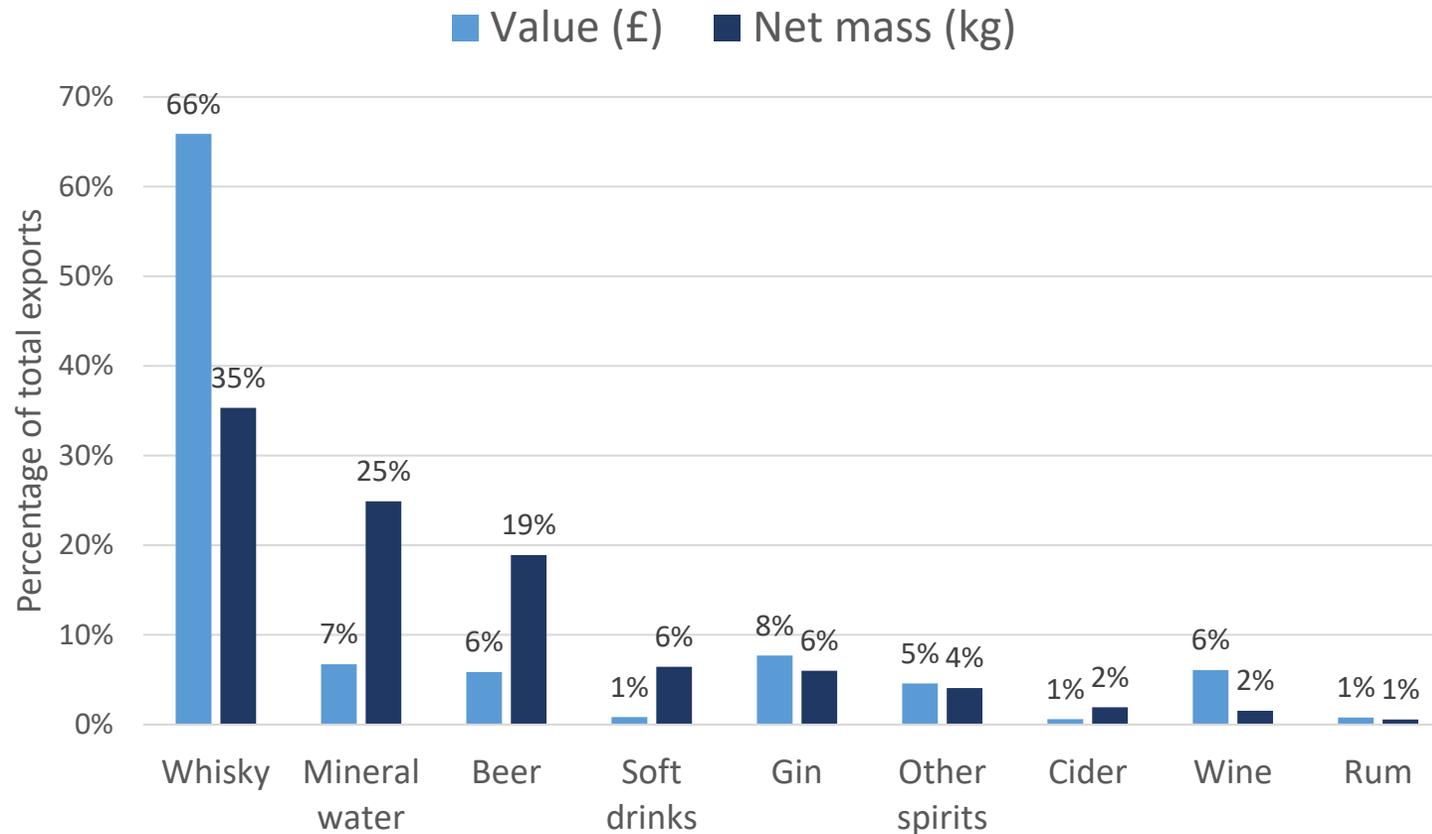
- Scotland's 2nd largest exported commodity behind oil in value terms
- Scotland's 3rd largest in volume terms behind oil & gas (HMRC RTS 2021 Q1-3)

HMRC Overseas Trade Statistics (OTS) data for 2021 (Q1-Q4):

- Beverages was the 3rd largest exported commodity from Scottish ports
 - Ranked lower for EU exports (7th) than non-EU (3rd)
- Scottish ports accounted for 12% of all beverages exports from UK ports:
 - 6% of EU exports
 - 16% of non-EU exports
- Over three quarters (82%) of beverages exports from Scottish ports went to non-EU destinations

Exports of beverages from UK ports

- Whisky dominated UK beverage exports in value terms: accounted for two thirds (66%) of value of exports of beverages
- In terms of volume, whisky only accounted for one third (35%) of beverage exports from UK ports



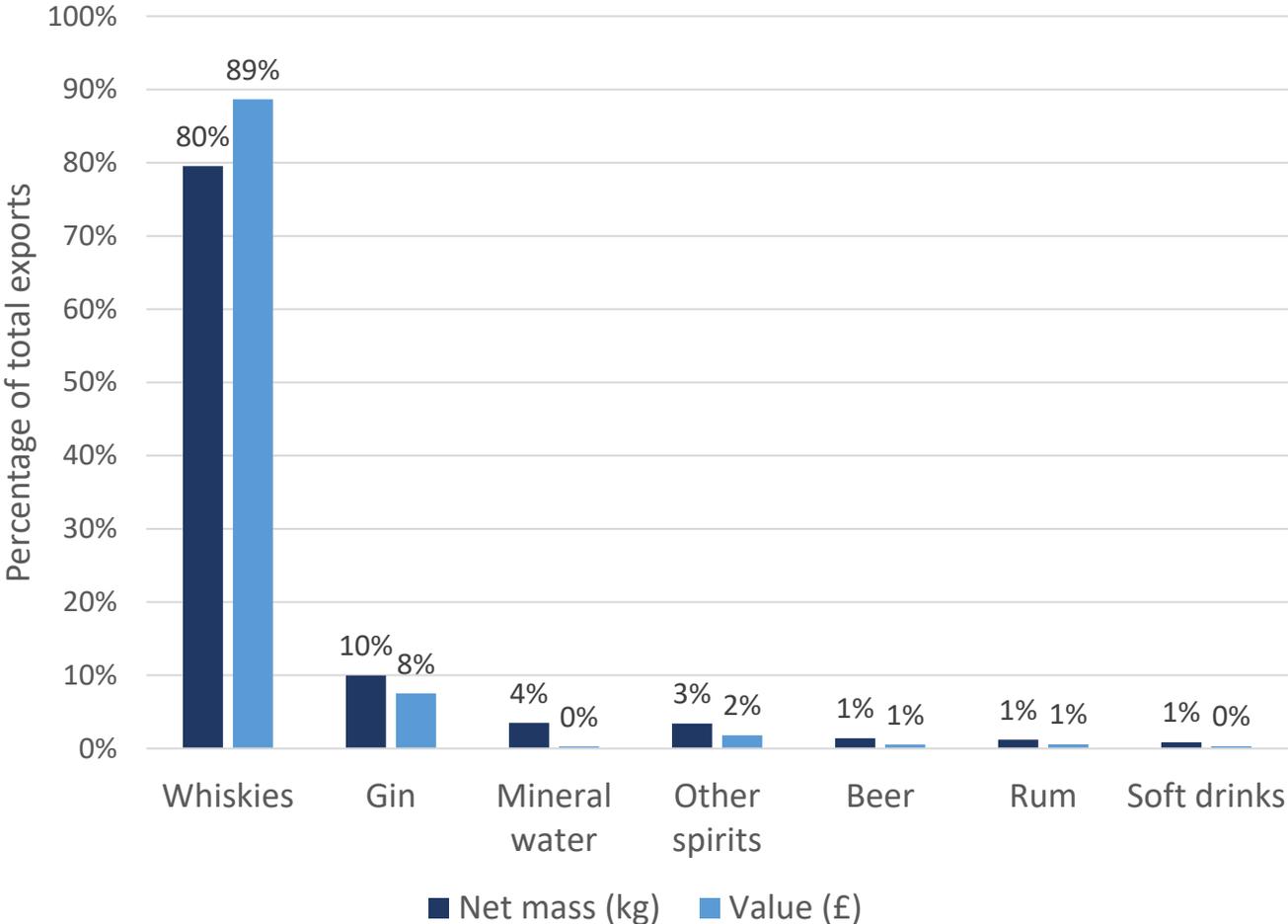
Whisky

- No port information for majority of whisky exports: inland clearance - what does this mean?
- Around 25% (in volume terms) exported from Grangemouth & Greenock ports

	EU		Non-EU		Total	
UK Port	Value (£)	Volume (Kg)	Value (£)	Volume (Kg)	Value (£)	Volume (Kg)
Inland Clearance	976,582,556	180,393,627	2,133,684,111	316,841,518	3,110,266,667	497,235,145
Grangemouth	62,560,183	23,257,281	401,966,392	91,695,766	464,526,575	114,953,047
Greenock	51,939,097	14,142,734	212,311,608	62,332,041	264,250,705	76,474,775
Middlesbrough	88,317,271	36,566,091	4,036,494	2,256,103	92,353,765	38,822,194
London Gateway	684,899	159,765	115,141,383	22,299,969	115,826,282	22,459,734
Southampton	199,584	39,536	79,860,697	15,821,012	80,060,281	15,860,548
Liverpool	9,302,391	5,016,544	50,788,783	5,335,111	60,091,174	10,351,655
Dover	54,655,271	8,469,577	2,961,889	367,105	57,617,160	8,836,682
Not Collected	27,053,119	8,186,078			27,053,119	8,186,078
London(inc Tilbury)	9,680,879	2,657,544	17,498,381	3,888,090	27,179,260	6,545,634

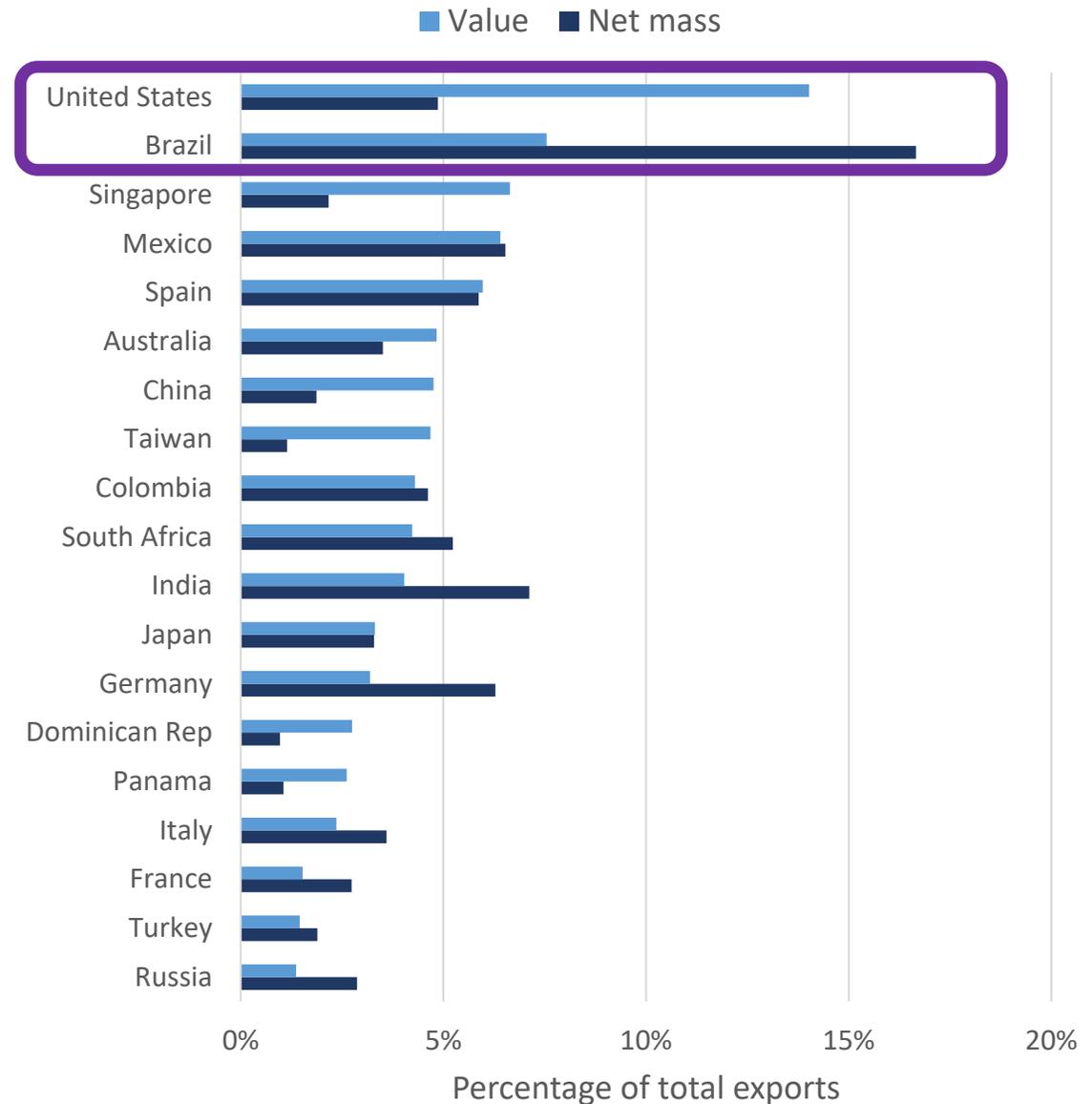
Exports of beverages from Scottish ports

- Whisky dominated exports from Scottish ports in both value and volume terms



Exports of beverages from Scottish ports

- The United States accounted for 14% of the value of exports of beverages: top destination for value
 - Only 5% of volume
- Brazil accounted for 17% of the volume of exports of beverages: top destination for volume
 - Only 8% of value
- 64% of beverage exports volume from UK to Brazil leave via Scottish ports
- 4% of beverage exports volume to the USA from the UK is from Scottish ports



Differences in country rank for export value and volume

Are some countries receiving higher value beverages?

Not whisky as expected?

Brazil

Commodity	Net Mass (Kg)	% of total net mass	Value (£)	% of total value	Value per kg (£)
Beer	44,100	0%	52,984	0%	1.2
Whiskies	35,104,269	87%	59,243,803	90%	1.7
Gin	5,053,408	13%	6,366,285	10%	1.3
Other spirits	223,640	1%	311,005	0%	1.4
Grand Total	40,425,417	100%	65,974,077	100%	1.6

USA

Commodity	Net Mass (Kg)	% of total net mass	Value (£)	% of total value	Value per kg (£)
Mineral water	135,106	1%	550,774	0%	4.1
Wine	181	0%	38,426	0%	212.3
Cider	16,020	0%	26,190	0%	1.6
Beer	106,926	1%	96,695	0%	0.9
Whiskies	8,590,465	73%	104,280,626	85%	12.1
Other spirits	140,979	1%	1,573,142	1%	11.2
Rum	594	0%	18,411	0%	31.0
Gin	2,803,401	24%	15,910,143	13%	5.7
Other alcoholic drinks	13,139	0%	61,583	0%	4.7
Grand total	11,806,811	100%	122,555,990	100%	10.4

Top ports for exports of beverages - 2021

Value

Rank	Total exports	EU exports	Non-EU exports
1	Inland Clearance	Inland Clearance	Inland Clearance
2	Grangemouth	Dover	Grangemouth
3	Greenock	Middlesbrough	London Heathrow
4	London Heathrow	Immingham	London Gateway
5	London Gateway	Grangemouth	Greenock

Volume

Rank	Total	EU	Non-EU
1	Inland Clearance	Inland Clearance	Inland Clearance
2	Liverpool	Liverpool	Grangemouth
3	Grangemouth	Dover	London Gateway
4	London Gateway	Dover/ Eurotunnel	Liverpool
5	Dover	Middlesbrough	Southampton

Port	Value (£)	% of Scottish ports total	% of UK ports total	Volume (Kg)	% of Scottish ports total	% of UK ports total
Grangemouth	543,205,735	62%	8%	155,860,699	64%	7%
Greenock	279,060,478	32%	4%	83,145,728	34%	4%
Inland Clearance	3,679,442,103		52%	663,826,906		28%
London Heathrow	278,935,424		4%	2,339,913		0.1%
All UK ports	7,039,134,683			2,334,964,133		
All Scottish ports	874,227,703		12%	242,622,503		10%

Top Scottish ports for exports of beverages

- Grangemouth is the top Scottish port in both value and volume terms
- Scottish ports account for around 12% (value) or 10% (volume) of total UK exports
- This increases to 29% and 20% if we exclude data with no port information

Port	Value (£)	% of Scottish ports total (value)	Volume (Kg)	% of Scottish ports total (volume)
Grangemouth	543,205,735	62%	155,860,699	64%
Greenock	279,060,478	32%	83,145,728	34%
Ayr	3,816,721	0%	1,695,882	1%
Glasgow Airport	44,314,764	5%	1,618,566	1%
Glasgow	199,336	0%	168,372	0%
Inverness (inc.Wick)	105,499	0%	76,266	0%
Edinburgh Airport	3,116,219	0%	43,938	0%
Prestwick Airport	49,703	0%	9,908	0%
Aberdeen	60,668	0%	2,197	0%
Aberdeen Airport	1,004	0%	627	0%
Peterhead	297,576	0%	320	0%
Scottish ports total	874,227,703	100%	242,622,503	100%
UK Total	7,039,134,683		2,334,964,133	
Scottish ports % of UK	12.4%		10.4%	
UK Total*	3,052,984,655		1,283,037,195	
Scottish ports % of UK*	28.6%		18.9%	

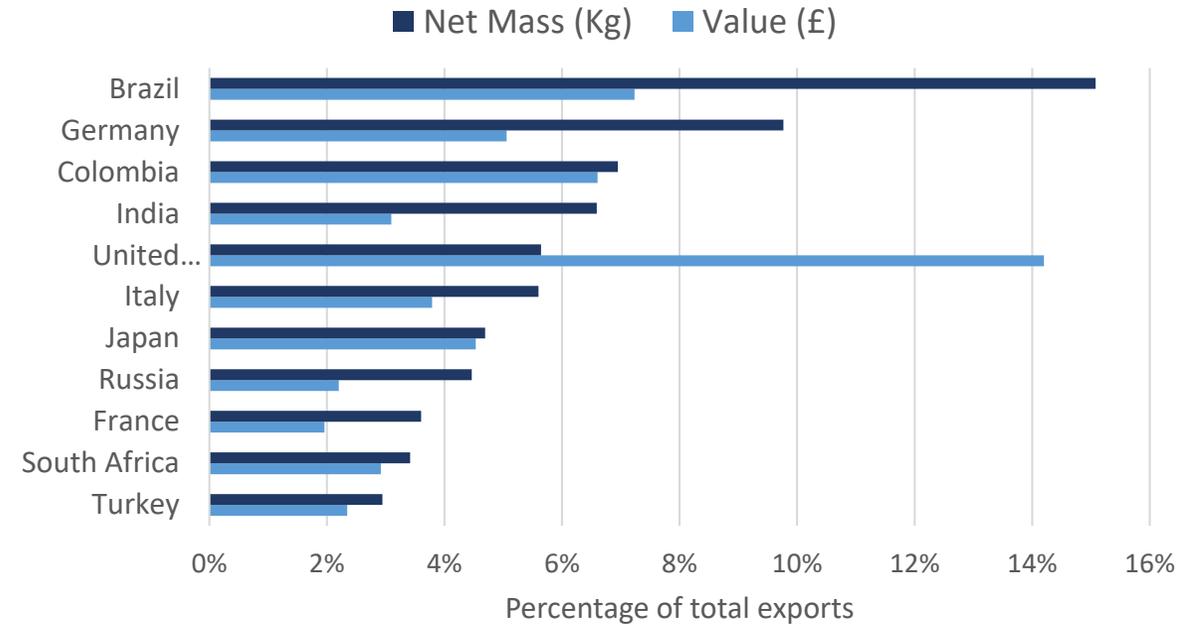
* excluding Not Collected & Inland Clearance

Grangemouth

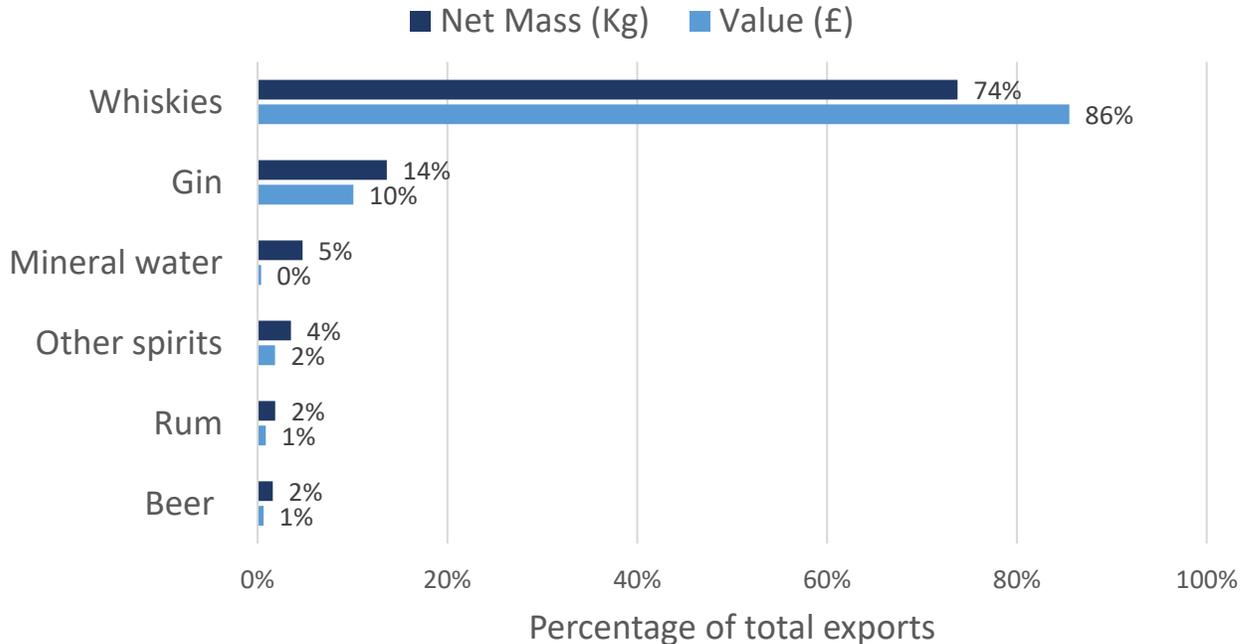
EU vs Non-EU

Export destination	Export value (£m)	% of total export value	Export volume (t th)	% of total export volume
EU	87	16%	38	24%
Non-EU	456	84%	118	76%
Total	543	100%	156	100%

Top destination countries



Top commodities



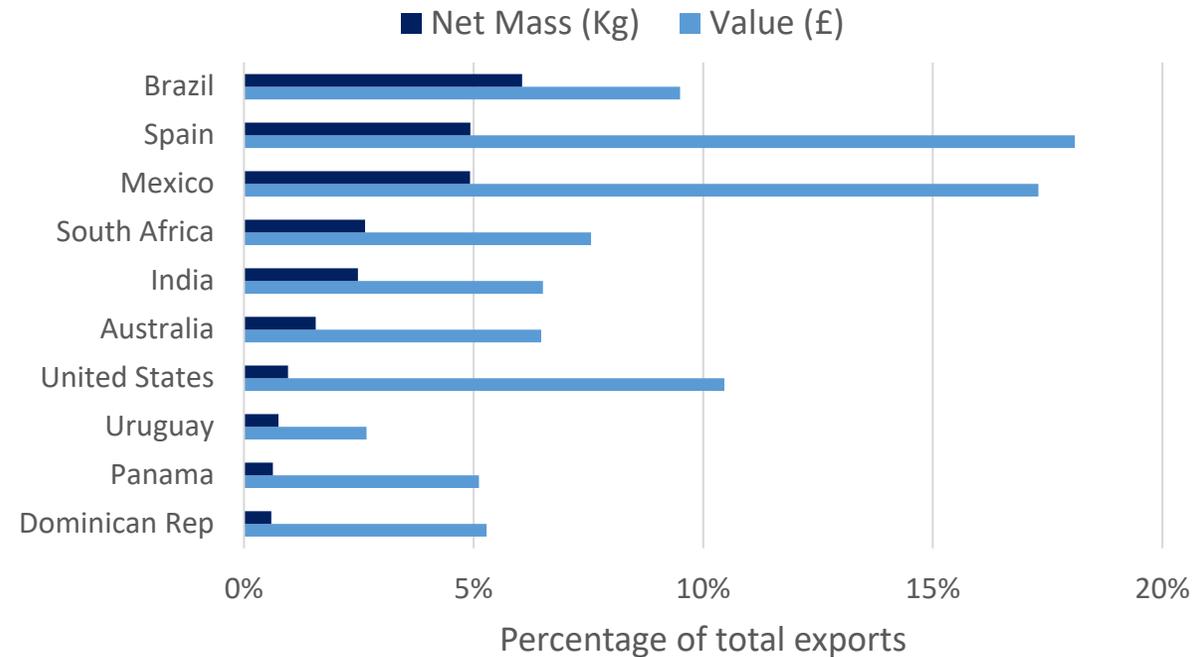
- Over three quarters of beverage exports go to non-EU
- Beverage exports dominated by whisky
- Brazil and USA are top export destinations
- Exports to US and Brazil are dominated by whisky

Greenock

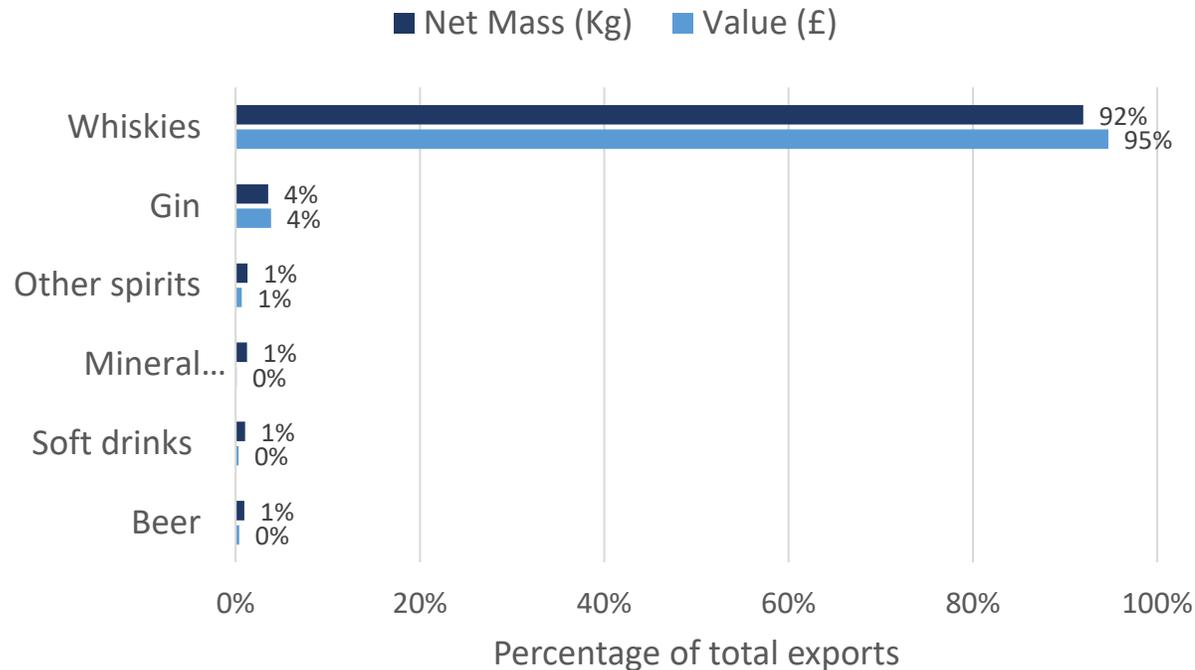
EU vs Non-EU

Export destination	Export value (£m)	% of total export value	Export volume (t th)	% of total export volume
EU	64	23%	18	22%
Non-EU	215	77%	65	78%
Total	279	100%	83	100%

Top destination countries



Top commodities



- Over three quarters of beverage exports go to non-EU
- Beverage exports almost entirely whisky
- Spain and Mexico are top export destinations in value terms
- Brazil is top destination in volume terms

Questions & Discussion

- Does the data reflect what happens on the ground in the industry, for example, how and where beverages are exported?
- Do you have any insights or further data that could help improve our understanding, particularly around inland clearance?





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Transport / Trade Project – Analysis Update

[Redacted]

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Office of the Chief Economic Adviser (OCEA)

May 2022





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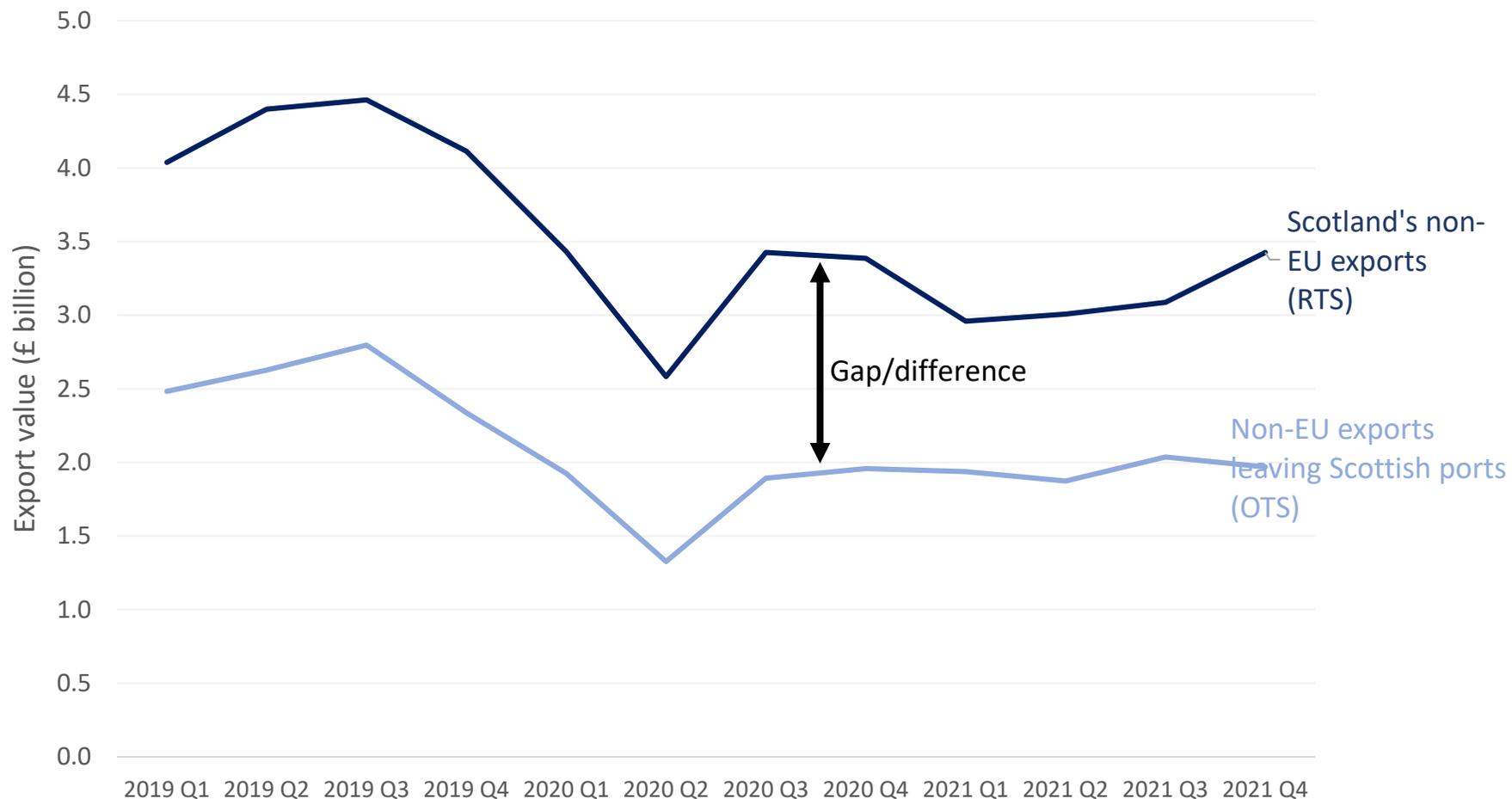
Scotland's goods exports Port Gap Analysis

Value & volume



Estimating the gap between Scotland's exports and exports leaving Scottish ports

- HMRC Regional Trade Statistics (RTS): Scotland's international goods exports/imports
- HMRC Overseas Trade Statistics (OTS): goods exported/imported via Scottish sea and airports



Total international exports - 2021

2021	Value		Volume	
	Difference (£bn)	Difference (% of Scotland's exports)	Difference (million tonnes)	Difference (% of Scotland's exports)
Total exports (with exclusions*)	12.1	62%	1.8	48%

- The gap (between the goods Scotland exports and those that leave Scottish ports) was estimated to value around £12.1 billion and account for 62% of the value of Scotland's exports
- In volume terms, this gap was estimated to account for 1.8 million tonnes and almost half of the volume of Scotland's exports

*excluding oil, gas & commodities where exports from Scottish ports (OTS) exceeds Scotland's exports (RTS)

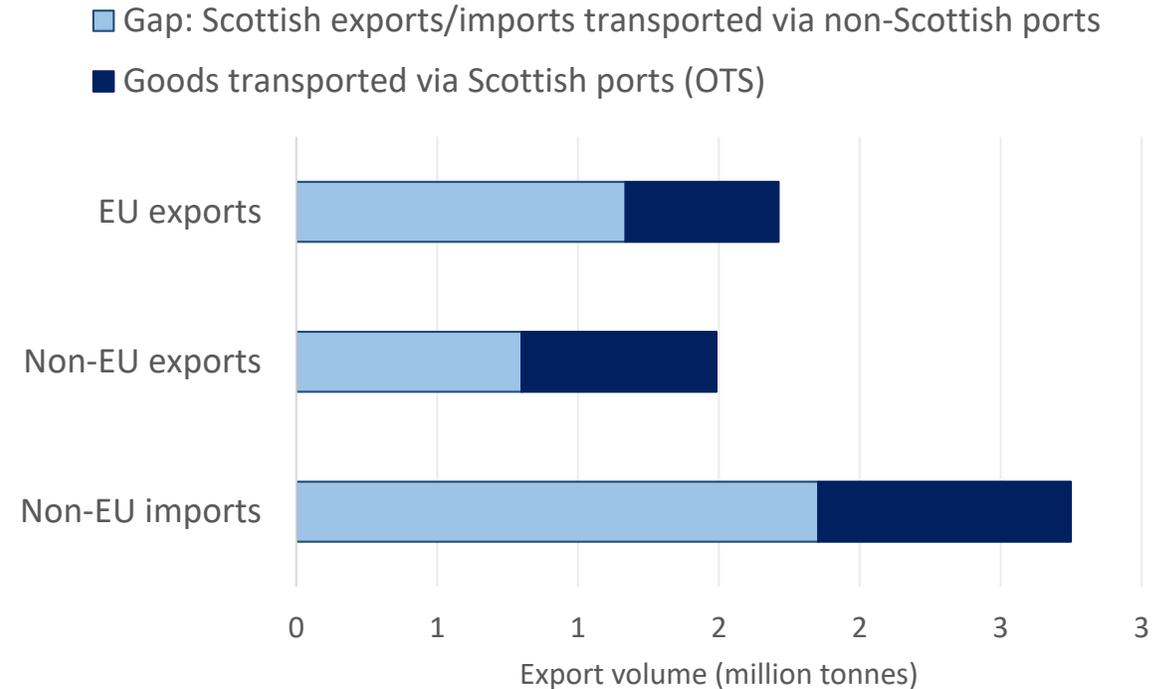
EU/non-EU exports & non-EU imports

The gap between Scotland's total exports (RTS) and exports from Scottish ports (OTS) for value and volume in 2021. The full bars represent Scotland's total goods exports (RTS)

Value



Volume

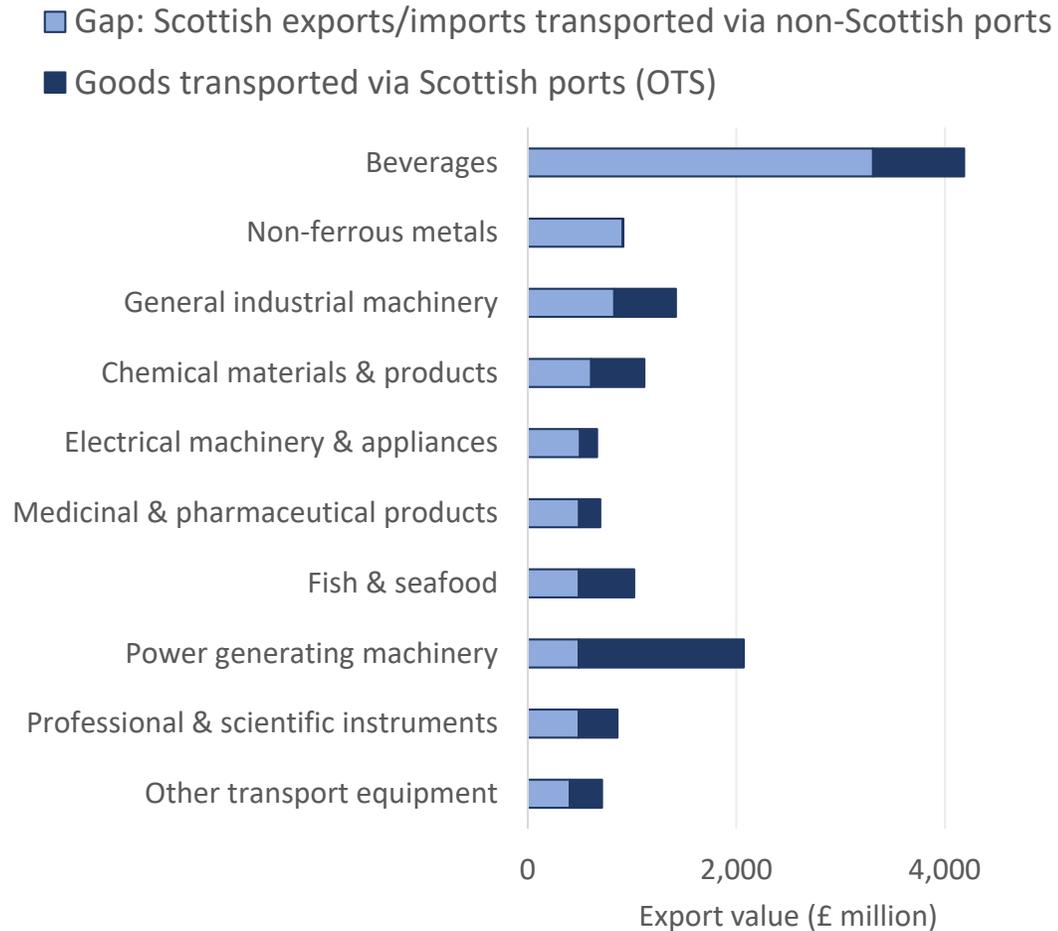


- Value: gap was largest for non-EU imports in absolute terms but as % of Scottish exports, it was largest for EU exports (71%)
- Volume: gap was largest for non-EU imports in absolute terms but as % of Scottish exports, it was very similar for non-EU imports (67%) and EU exports (68%)

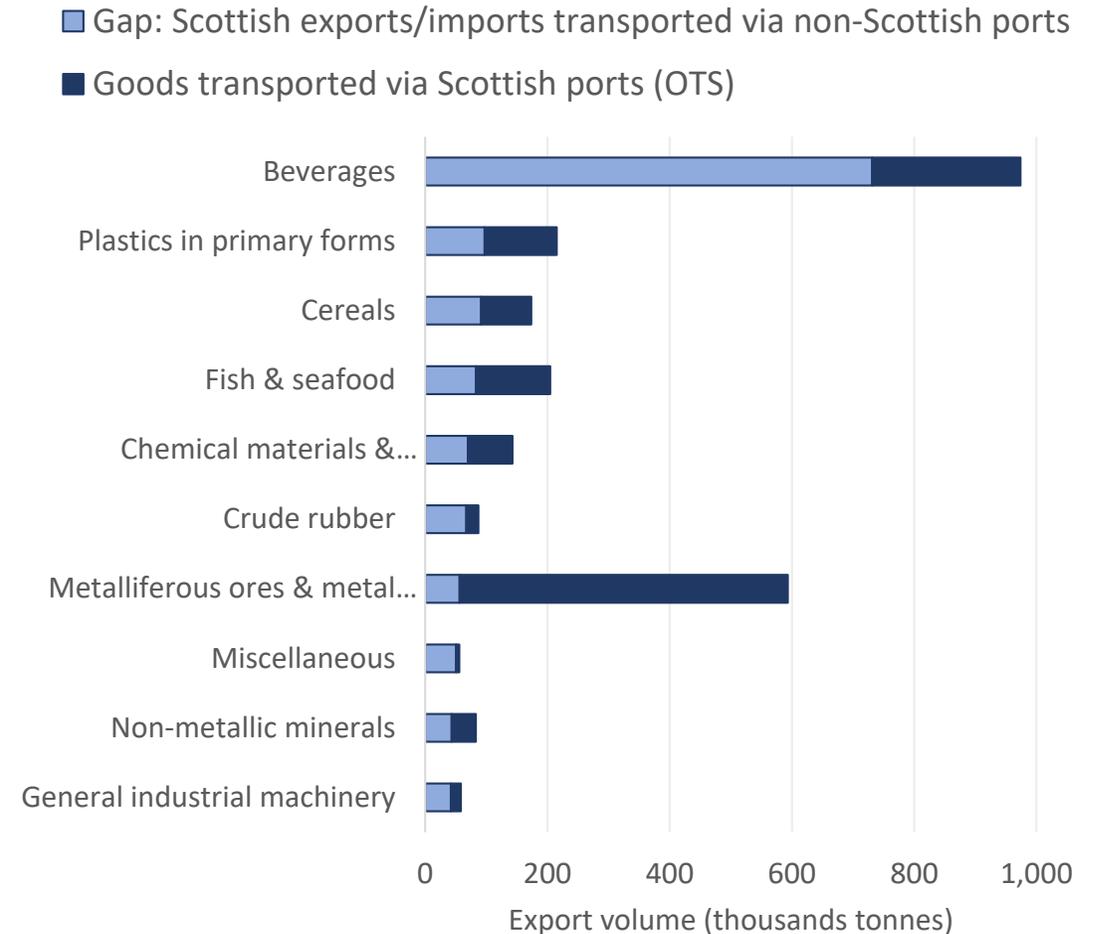
Top commodities in terms of size of the gap

Commodities with the largest gap between Scotland's total exports (RTS) and exports from Scottish ports (OTS) for value and volume in 2021. The full bars represent Scotland's total goods exports (RTS) for each commodity

Value



Volume



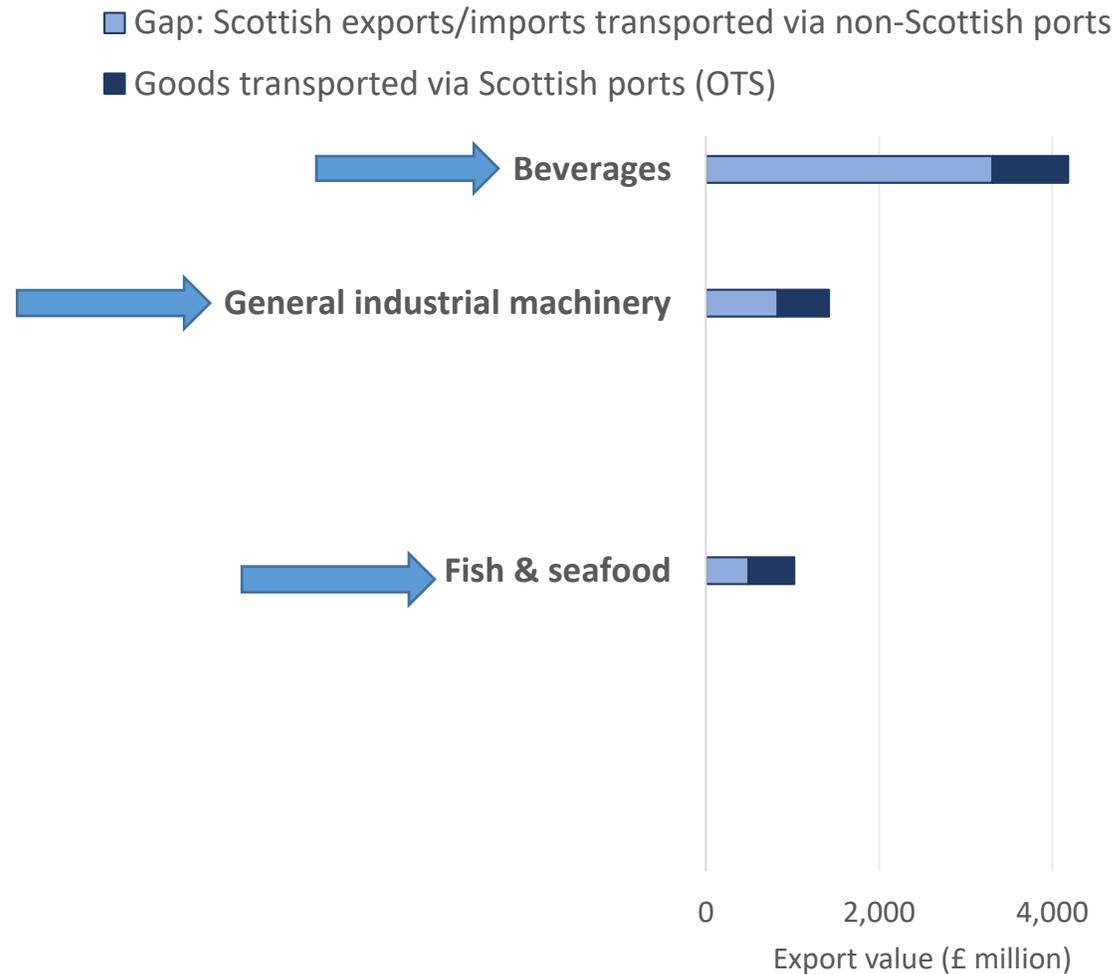


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Data Deep Dives - Summary



Data deep dives on Scotland's exports of fish / seafood, beverages and general industrial machinery



Exports of fish/seafood

Scotland's international goods exports - 2021								
Commodity	Value				Volume			
	Via Scotland's ports (OTS) (£ mill)	Scotland's exports (RTS) (£ mill)	Difference (£ mill)	Difference (% of RTS)	Via Scotland's ports (OTS) (000s tonnes)	Scotland's exports (RTS) (000s tonnes)	Difference (000s tonnes)	Difference (% of RTS)
Fish/seafood	530	1,021	490	48%	121	205	83	41%

Source: HMRC RTS 2021 Q4 & HMRC OTS February 2022

HMRC Overseas Trade Statistics (OTS) data for 2021 (Q1-Q4):

- Fish/seafood was the 5th largest exported commodity from Scottish ports
 - 3rd largest commodity exported to EU: 87% of fish exports from Scottish ports were to the EU
 - Fish/seafood accounted for 4% of all exports from Scottish ports (7% when oil and gas are excluded)
- Scottish ports accounted for a third (33%) of all fish/seafood exports from UK ports:
 - 40% of EU exports
 - 15% of non-EU exports

Top ports for fish/seafood exports - 2021

Value

Rank	Total exports	EU exports	Non-EU exports
1	Glasgow	Glasgow	London Heathrow
2	London Heathrow	Eurotunnel (Folkstone)	Grangemouth
3	Eurotunnel (Folkstone)	Portsmouth	Southampton
4	Portsmouth	Dover	Immingham
5	Dover	Dover/Eurotunnel	London Stansted
6	Dover/Eurotunnel	Lerwick	Felixstowe
7	Grangemouth	Tyne	London Gateway

Volume

Rank	Total exports	EU exports	Non-EU exports
1	Glasgow	Glasgow	London Heathrow
2	Eurotunnel (Folkstone)	Eurotunnel (Folkstone)	Grangemouth
3	London Heathrow	Portsmouth	Peterhead
4	Portsmouth	Dover	London Gateway
5	Dover	Lerwick	Southampton
6	Lerwick	Dover/Eurotunnel	Felixstowe
7	Grangemouth	Tyne	Inland Clearance

Port	Value (£ million)	% of Scottish ports total	% of UK ports total	Volume (Kg)	% of Scottish ports total	% of UK ports total
Glasgow	421	79%	26%	67,794,422	56%	19%
Grangemouth	47	9%	3%	17,412,757	14%	5%
Lerwick	31	6%	2%	17,530,550	14%	5%
London Heathrow	269		17%	34,138,615		10%
Eurotunnel (Folkstone)	215		13%	34,561,910		10%
All UK ports	1,627			349,822,447		
All Scottish ports	530		33%	121,487,955		35%

Exports of beverages

Scotland's international goods exports - 2021

Commodity	Value				Volume			
	Via Scotland's ports (OTS) (£ mill)	Scotland's exports (RTS) (£ mill)	Difference (£ mill)	Difference (% of RTS)	Via Scotland's ports (OTS) (000s tonnes)	Scotland's exports (RTS) (000s tonnes)	Difference (000s tonnes)	Difference (% of RTS)
Beverages	874	4,185	3,311	79%	243	974	731	67%

Source: HMRC RTS 2021 Q4 & HMRC OTS February 2022

Beverages had the largest gap of all commodities both for value and volume in 2021

- Scotland's 2nd largest exported commodity behind oil in value terms
- Scotland's 3rd largest in volume terms behind oil & gas (HMRC RTS)

HMRC Overseas Trade Statistics (OTS) data for 2021 (Q1-Q4):

- Beverages was the 3rd largest exported commodity from Scottish ports
 - Ranked lower for EU exports (7th) than non-EU (3rd)
- Scottish ports accounted for 12% of all beverages exports from UK ports:
 - 6% of EU exports
 - 16% of non-EU exports
- Over three quarters (82%) of beverages exports from Scottish ports went to non-EU destinations

Top ports for exports of beverages - 2021

Value

Rank	Total exports	EU exports	Non-EU exports
1	Inland Clearance	Inland Clearance	Inland Clearance
2	Grangemouth	Dover	Grangemouth
3	Greenock	Middlesbrough	London Heathrow
4	London Heathrow	Immingham	London Gateway
5	London Gateway	Grangemouth	Greenock

Volume

Rank	Total	EU	Non-EU
1	Inland Clearance	Inland Clearance	Inland Clearance
2	Liverpool	Liverpool	Grangemouth
3	Grangemouth	Dover	London Gateway
4	London Gateway	Dover/ Eurotunnel	Liverpool
5	Dover	Middlesbrough	Southampton

Port	Value (£)	% of Scottish ports total	% of UK ports total	Volume (Kg)	% of Scottish ports total	% of UK ports total
Grangemouth	543,205,735	62%	8%	155,860,699	64%	7%
Greenock	279,060,478	32%	4%	83,145,728	34%	4%
Inland Clearance	3,679,442,103		52%	663,826,906		28%
London Heathrow	278,935,424		4%	2,339,913		0.1%
All UK ports	7,039,134,683			2,334,964,133		
All Scottish ports	874,227,703		12%	242,622,503		10%

Exports of general industrial machinery

Scotland's international goods exports - 2021

Commodity	Value				Volume			
	Via Scotland's ports (OTS) (£ mill)	Scotland's exports (RTS) (£ mill)	Difference (£ mill)	Difference (% of RTS)	Via Scotland's ports (OTS) (000s tonnes)	Scotland's exports (RTS) (000s tonnes)	Difference (000s tonnes)	Difference (% of RTS)
General Industrial Machinery	590	1,421	831	58%	16	58	42	72%

- HMRC Overseas Trade Statistics (OTS) data for 2021 (Q1-Q4):
 - General Industrial Machinery was the 4th largest exported commodity from Scottish ports
 - Ranked lower for EU exports (15th) than non-EU (4th)
- Scottish ports accounted for 4% of all general industrial machinery exports from UK ports:
 - 0.8% of EU exports
 - 7% of non-EU exports
- The vast majority (92%) of general industrial machinery exports from Scottish ports went to non-EU destinations.

Top ports for exports of General Industrial Machinery - 2021

Value

Rank	Total exports	EU exports	Non-EU exports
10	Felixstowe	London (inc Tilbury)	Aberdeen
11	Dover/Eurotunnel	Liverpool	Manchester Airport
12	London (inc Tilbury)	Harwich Internation'	Immingham
13	Birmingham Airport	London Stansted	London (inc Tilbury)
14	Aberdeen	Killingholme	Grangemouth
	Hull	Felixstowe	Montrose

Volume

Rank	Total	EU	Non-EU
10	London (inc Tilbury)	London (inc Tilbury)	Aberdeen
11	Hull	Killingholme	Immingham
12	Harwich Internation'	Portsmouth	Grangemouth
13	Holyhead	Birmingham Airport	E Midlands Airport
14	Killingholme	Purfleet	Manchester Airport
15	Belfast	Eurotunnel (Folkstone)	Dover/Eurotunnel

Port	Value (£)	% of Scottish ports total	% of UK ports total	Volume (Kg)	% of Scottish ports total	% of UK ports total
Aberdeen	213,458,305	36%	2%	6,264,005	39%	0.8%
Grangemouth	103,486,358	18%	0.7%	3,872,901	24%	0.5%
London Heathrow	2,643,928,411		19%	25,562,495		3%
Dover	2,596,154,481		18%	157,922,477		20%
All UK ports	14,196,140,226			790,008,444		
All Scottish ports	590,316,600		4%	16,097,654		2%

Questions & Discussion

- Any final thoughts and concluding reflections on the data?
- How do you plan to use this data going forward when it is published?
- Is there value in looking at annual trends as more data becomes available – where should the focus be?



Emerging data to inform Phase 2



Additional data– costs, frequency, reliability and carbon impact

- Feedback from stakeholders on costs for routes ex Scotland vs ex rUK has shown a level of complexity – but not indicated that routes ex Scotland are prohibitively expensive
- Initial analysis on the carbon impact of different routes and modes of transport (Annex A) has demonstrated that in many cases there may be a carbon saving in routes ex Scotland.
- Exploring information on costs, carbon impact, frequency and reliability of routes (and the interdependence of these factors) will be a key part of the second phase discussions

Annex A – Emissions data

Emissions factors

Mode of transport	Emissions factor (kgCO ₂ e/tonne km)
container ship	0.01614
rail freight	0.02556
2000+ LM Roro ferry	0.05019
0-1999 LM Roro ferry	0.06114
averagely laden HGV (all diesel)	0.10650
Large RoPAX ferry	0.37668
international flight (excl radiative forcing)	0.59943
international flight (incl radiative forcing)	1.13382

Source: UK Government GHG Conversion Factors for Company Reporting 2020 (DEFRA/BEIS)

Annex A – Emissions data

Rosyth – Zeebrugge vs Channel Crossing

Route	CO ₂ e emissions (kg) per tonne conveyed	Notes
Cumbernauld-Rosyth-Zeebrugge	51	based on 0-1999 LM factor
Cumbernauld-Rosyth-Zeebrugge-Calais	65	based on 0-1999 LM factor
Cumbernauld-Dover-Calais low estimate	84	based on 2000+ LM factor
Cumbernauld-Dover-Calais high estimate	97	based on RoPAX factor

- First route assumes Zeebrugge and Calais are equally useful continental entry points for onward transportation of exports.
- Second route (Zeebrugge - Calais by road) more applicable for final destinations not significantly north or east of Calais.
- Assumes any Rosyth-Zeebrugge ferry would be no bigger than that used previously.
- Implicitly assumes Rosyth ferry at an industry standard level of capacity utilisation.
- Two alternative estimates as unclear which emissions factor more appropriate for Dover crossing.

Emissions data

Air route to Chicago

Route	CO ₂ e emissions (tonnes) per tonne conveyed	Notes
Glasgow Airport-Chicago Airport	6.72	
Glasgow-Heathrow-Chicago Airport	7.28	Glasgow-Heathrow by HGV

- Assumes goods originate at Glasgow Airport so no road travel to the airport (most favourable comparison)
- Takes radiative forcing into account (aircraft emissions have more impact because of the height at which they are emitted)
- This is the "right" direction - direct export flights from Scotland to the SE (most of Europe, Asia, Africa) would have greater emissions than via Heathrow (likely only lower for N America)

Emissions data

Containers to Rotterdam

Route	CO ₂ e emissions (tonnes) per tonne conveyed	Notes
Cumbernauld-Grangemouth-Rotterdam	17.7	HGV/ferry
Cumbernauld-Felixstowe-Rotterdam	77.7	HGV/ferry
Cumbernauld-Coatbridge-Felixstowe-Rotterdam	22.7	HGV/rail/ferry

- Once electric freight is possible all the way between Coatbridge and Felixstowe (relevant electrification at Felixstowe end is planned) the emissions for the third option would be significantly reduced.



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Transport / Trade Project – Analysis Update

[Redacted]

Trade Statistics

Office of the Chief Economic Adviser (OCEA)

15th March 2022



What's been done so far?

- Gap analysis – value
- Gap analysis – volume (work in progress)
- Detailed analysis of seafood / fish exports by port
- Sub-group meeting on seafood / fish exports
- Some analysis of beverages exports by port (work in progress)



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Scotland's Port Gap Analysis – Value & volume (provisional results)



Total exports

2021 Q1-3	Difference in value (£bn)	Difference in value (% of Scotland's exports)	Difference in volume (000s tonnes)	Difference in volume (% of Scotland's exports)
Total exports	8.5	45%	1,511	9%
Total exports with exclusions*	9.4	63%	2,980	58%

- The gap is estimated to value around £9.4 billion and account for 63% of the value of Scotland's exports
- The gap is estimated to account for 3 million tonnes and 58% of the volume of Scotland's exports

2021 Q1-3		Difference in value (£bn)	Difference (% of Scotland's exports/imports value)	Difference in volume (000s tonnes)	Difference in volume (% of Scotland's exports/imports volume)
Non-EU exports	Total	3.2	35%	-2,718	-76%
	Total with exclusions*	4.5	55%	669	58%
EU exports	Total	5.3	54%	4,229	31%
	Total with exclusions*	4.9	73%	2,476	67%
Non-EU imports	Total	4.0	37%	-700	-6%
	Total with exclusions*	5.0	53%	2,128	24%

Value:

- When commodities that bias the results are excluded, the estimated value of the gap is quite similar for EU and non-EU exports and non-EU imports
- The gap accounts for a greater proportion of exports to the EU than to non-EU destinations

Volume:

- When commodities that bias the results are excluded, the estimated size of gap is smallest for non-EU exports but still accounts for over half of all Scotland's exports
- The gap suggests that over two thirds of Scotland's exports to EU destinations leave via ports outwith Scotland

Scotland's international goods exports - 2021 Q1-3 - Value				Scotland's international goods exports - 2021 Q1-3 - Volume			
Rank	Commodity	Difference (£ mill)	Difference (%)	Rank	Commodity	Difference (000s tonnes)	Difference (%)
1	Beverages	2,329	78%	1	Gas	1,681	67%
2	Non-ferrous metals	694	98%	2	Beverages	528	74%
3	General industrial machinery	576	54%	3	Plastics	68	43%
4	Gas	569	63%	4	Fish/seafood	67	45%
5	Chemical materials & products	461	53%	5	Cereals	63	52%
6	Electrical machinery	372	75%	6	Chemical materials & products	57	52%
7	Fish & seafood	369	50%	7	Crude rubber	49	74%
8	Professional & scientific instruments	355	58%	8	Transport equipment	48	44%
9	Medicinal & pharmaceutical products	347	68%	9	Miscellaneous manufactured articles	43	89%
10	Power generating machinery	316	22%	10	Non-metallic mineral manufactures	31	51%

- Gas replaces beverages as the commodity with the largest gap when looking at volume rather than value (but we're going to look at these results without gas as well)
- Gas, beverages, fish/seafood and chemicals are the only common commodities in the top ten lists for value and volume
 - The gap as a percentage of total exports remains similar for these three commodities across the two measures
- The rankings of commodities differ considerably when comparing the gap in absolute terms based on value or volume of exports
 - Same for EU and non-EU breakdowns and non-EU imports



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Scotland's Port Analysis – Fish and seafood



Exports of fish/seafood

Scotland's international goods exports - 2021 Q1-3

Commodity	Via Scotland's ports (OTS) (£bn)	Scotland's exports (RTS) (£bn)	Difference (£ mill)	Difference (%)
Fish & seafood	374	743	369	50%

Source: HMRC RTS 2021 Q3 & HMRC OTS November 2021

HMRC Overseas Trade Statistics (OTS) data for 2021 (Q1-Q4):

- Fish/seafood was the 5th largest exported commodity from Scottish ports
 - 3rd largest commodity exported to EU: 87% of fish exports from Scottish ports were to the EU
 - Fish/seafood accounted for 4% of all exports from Scottish ports (7% when oil and gas are excluded)
- Scottish ports accounted for a third (33%) of all fish/seafood exports from UK ports:
 - 40% of EU exports
 - 15% of non-EU exports
- The majority of this comes from Glasgow

Top ports for fish/seafood exports - 2021

Rank	Total exports	EU exports	Non-EU exports
1	Glasgow	Glasgow	London Heathrow
2	London Heathrow	Eurotunnel (Folkstone)	Grangemouth
3	Eurotunnel (Folkstone)	Portsmouth	Southampton
4	Portsmouth	Dover	Immingham
5	Dover	Dover/Eurotunnel	London Stansted
6	Dover/Eurotunnel	Lerwick	Felixstowe
7	Grangemouth	Tyne	London Gateway

Port	Export value (£ million)	% of Scottish ports total	% of UK ports total
Glasgow	421	79%	26%
Grangemouth	47	9%	3%
Lerwick	31	6%	2%
London Heathrow	269		17%
Eurotunnel (Folkstone)	215		13%
All UK ports	1,627		
All Scottish ports	530		33%

Glasgow

EU vs Non-EU

Export destination	Export value (£m)	% of total
EU	416	99%
Non-EU	6	1%
Total	421	100%

Top destination countries

Country	Export value (£ m)	% of total
France	335	80%
Poland	37	9%
Spain	13	3%

Top commodities

Commodity (SITC5)	EU exports (£m)	Non-EU exports (£m)	Total exports (£m)	% of total exports	% of Scottish ports exports	% of UK ports exports
Fresh salmon	291	5	296	70%	98%	46%
Fresh fish fillets	44	0.03	44	11%	46%	100%
Smoked fish	20	0.4	20	5%	48%	88%

- Glasgow was the top port for fish/seafood exports among all UK ports
- Fish and seafood was the top exported commodity from Glasgow
 - Accounted for 81% of exports from this port
- Fish and seafood exports from Glasgow were dominated by exports of Salmon and exports to the EU, and France in particular

Grangemouth

EU vs Non-EU

Export destination	Export value (£m)	% of total
EU	0.3	1%
Non-EU	46	99%
Total	47	100%

Top destination countries

Country	Export value (£m)	% of total
South Korea	9	19%
Australia	9	18%
China	8	17%
United States	5	11%

Top commodities

Commodity (SITC5)	EU exports (£m)	Non-EU exports (£m)	Total exports (£m)	% of total exports	% of Scottish ports exports	% of UK ports exports
Frozen mackerel	0.1	13	13	28%	34%	16%
Frozen molluscs not for human consumption		7	7	15%	84%	19%
Frozen crustaceans for human consumption		5	5	12%	64%	19%

- Fish/seafood accounted for just 1% of exports from Grangemouth but was Scotland's second largest exporting port for this commodity
- Dominated by exports of fish/seafood to non-EU destinations

Heathrow

EU vs Non-EU

Export destination	Export value (£m)	% of total
EU	1	0.4%
Non-EU	268	99.6%
Total	269	100%

Top destination countries

Country	Export value (£ m)	% of total
United States	179	66%
China	42	16%
Taiwan	11	4%
Canada	9	3%

Top commodities

Commodity (SITC5)	EU exports (£m)	Non-EU exports (£m)	Total exports (£m)	% of total exports
Fresh salmon	0.3	235	235	87%
Fresh fish fillets	0.03	14	14	5%
Frozen crustaceans for human consumption	0.5	7	8	3%

- Heathrow was second ranking port for fish/seafood exports: top for non-EU exports
- Dominated by exports to non-EU and of fresh salmon:
 - 90% of fish exports to USA and 88% to China were of fresh salmon

Eurotunnel (Folkstone)

EU vs Non-EU

Export destination	Export value (£m)	% of total
EU	215	99.7%
Non-EU	0.6	0.3%
Total	215	100%

Top destination countries

Country	Export value (£ m)	% of total
France	208	97%
Spain	3	1%
Belgium	2	1%
Portugal	1	1%

Top commodities

Commodity (SITC5)	EU exports (£m)	Non-EU exports (£m)	Total exports (£m)	% of total exports
Fresh salmon	57	0.6	57	27%
Other fresh fish	30		30	14%
Frozen crustaceans for human consumption	27		27	13%

- Dominated by fish/seafood exports to the EU and especially France
- Diverse fish exports to France
- Spain receives mostly crustaceans



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Scotland's Port Analysis – Beverages (provisional results)



Top ports for beverages exports – 2021 (based on value)

Rank	Total exports	EU exports	Non-EU exports
1	Inland Clearance	Inland Clearance	Inland Clearance
2	Grangemouth	Dover	Grangemouth
3	Greenock	Middlesbrough	London Heathrow
4	London Heathrow	Immingham	London Gateway
5	London Gateway	Grangemouth	Greenock
6	Liverpool	Dover/Eurotunnel	Southampton
7	Southampton	Liverpool	Liverpool
8	Dover	Greenock	Felixstowe
9	Felixstowe	Killingholme	Belfast
10	Immingham	Purfleet	Glasgow Airport

Top ports for beverages exports – 2021 (based on volume)

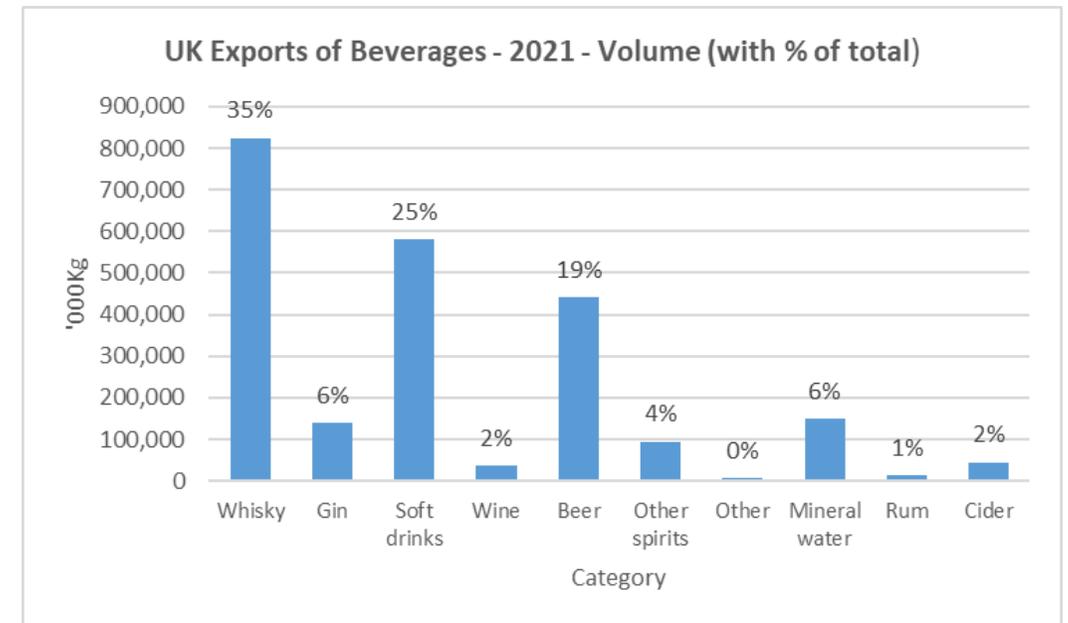
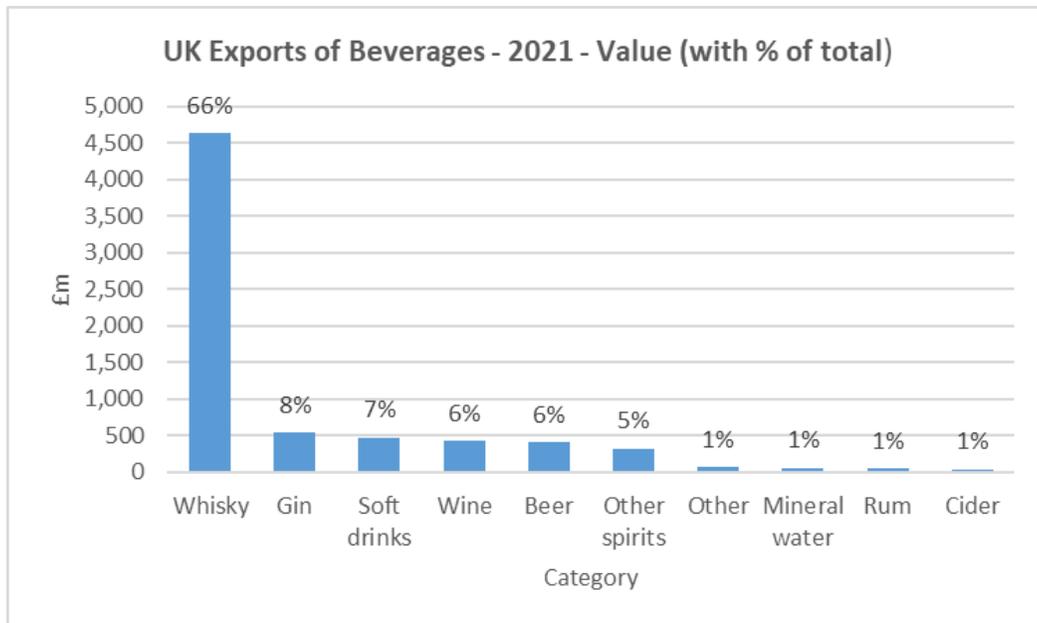
Rank	Total exports	EU exports	Non-EU exports
1	Inland Clearance	Inland Clearance	Inland Clearance
2	Liverpool	Liverpool	Grangemouth
3	Grangemouth	Dover	London Gateway
4	London Gateway	Dover/Eurotunnel	Liverpool
5	Dover	Middlesbrough	Southampton
6	Southampton	Immingham	Greenock
7	Greenock	Grangemouth	Belfast
8	Dover/Eurotunnel	Holyhead	Felixstowe
9	Immingham	Purfleet	Immingham
10	Felixstowe	Killingholme	Dover

- Grangemouth is the top port in both value and volume terms
- Scottish ports account for around 12% (value) or 10% (volume) of total UK exports
- This increases to 29% and 20% if we exclude data with no port information

Port	Value (£)	Volume (Kg)	Volume / Value
Grangemouth	543,205,735	155,860,699	0.29
Greenock	279,060,478	83,145,728	0.30
Ayr	3,816,721	1,695,882	0.44
Glasgow Airport	44,314,764	1,618,566	0.04
Glasgow	199,336	168,372	0.84
Inverness (inc.Wick)	105,499	76,266	0.72
Edinburgh Airport	3,116,219	43,938	0.01
Prestwick Airport	49,703	9,908	0.20
Aberdeen	60,668	2,197	0.04
Aberdeen Airport	1,004	627	0.62
Peterhead	297,576	320	0.00
Grand Total	874,227,703	242,622,503	0.28
UK Total	7,039,134,683	2,334,964,133	0.33
Scot %	12.4%	10.4%	
UK Total*	3,052,984,655	1,283,037,195	
Scot % *	28.6%	18.9%	

* excluding Not Collected & Inland Clearance

UK beverages exports dominated by whisky, in value terms. but less so in volume terms – 66% of value but 35% of volume



Don't have port information for the majority of whisky exports. However around 25% (in volume terms) exported from Grangemouth & Greenock ports

	EU		Non-EU		Total	
UK Port	Value (£)	Volume (Kg)	Value (£)	Volume (Kg)	Value (£)	Volume (Kg)
Inland Clearance	976,582,556	180,393,627	2,133,684,111	316,841,518	3,110,266,667	497,235,145
Grangemouth	62,560,183	23,257,281	401,966,392	91,695,766	464,526,575	114,953,047
Greenock	51,939,097	14,142,734	212,311,608	62,332,041	264,250,705	76,474,775
Middlesbrough	88,317,271	36,566,091	4,036,494	2,256,103	92,353,765	38,822,194
London Gateway	684,899	159,765	115,141,383	22,299,969	115,826,282	22,459,734
Southampton	199,584	39,536	79,860,697	15,821,012	80,060,281	15,860,548
Liverpool	9,302,391	5,016,544	50,788,783	5,335,111	60,091,174	10,351,655
Dover	54,655,271	8,469,577	2,961,889	367,105	57,617,160	8,836,682
Not Collected	27,053,119	8,186,078			27,053,119	8,186,078
London(inc Tilbury)	9,680,879	2,657,544	17,498,381	3,888,090	27,179,260	6,545,634

Work in progress and next steps..

- Continue with gap analysis – volume
- Follow-up analysis on seafood / fish exports following sub-group meeting
- Continue detailed analysis of beverages exports by port – value & volume
- Sub-group meeting on beverages exports – 24th / 25th March
- Detailed analysis of general industrial machinery exports by port (followed by sub-group meeting)



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Scotland's Port Demand - Gaps and Projections

Office of the Chief Economic Adviser (OCEA)

3rd February 2022



Introduction

Who we are

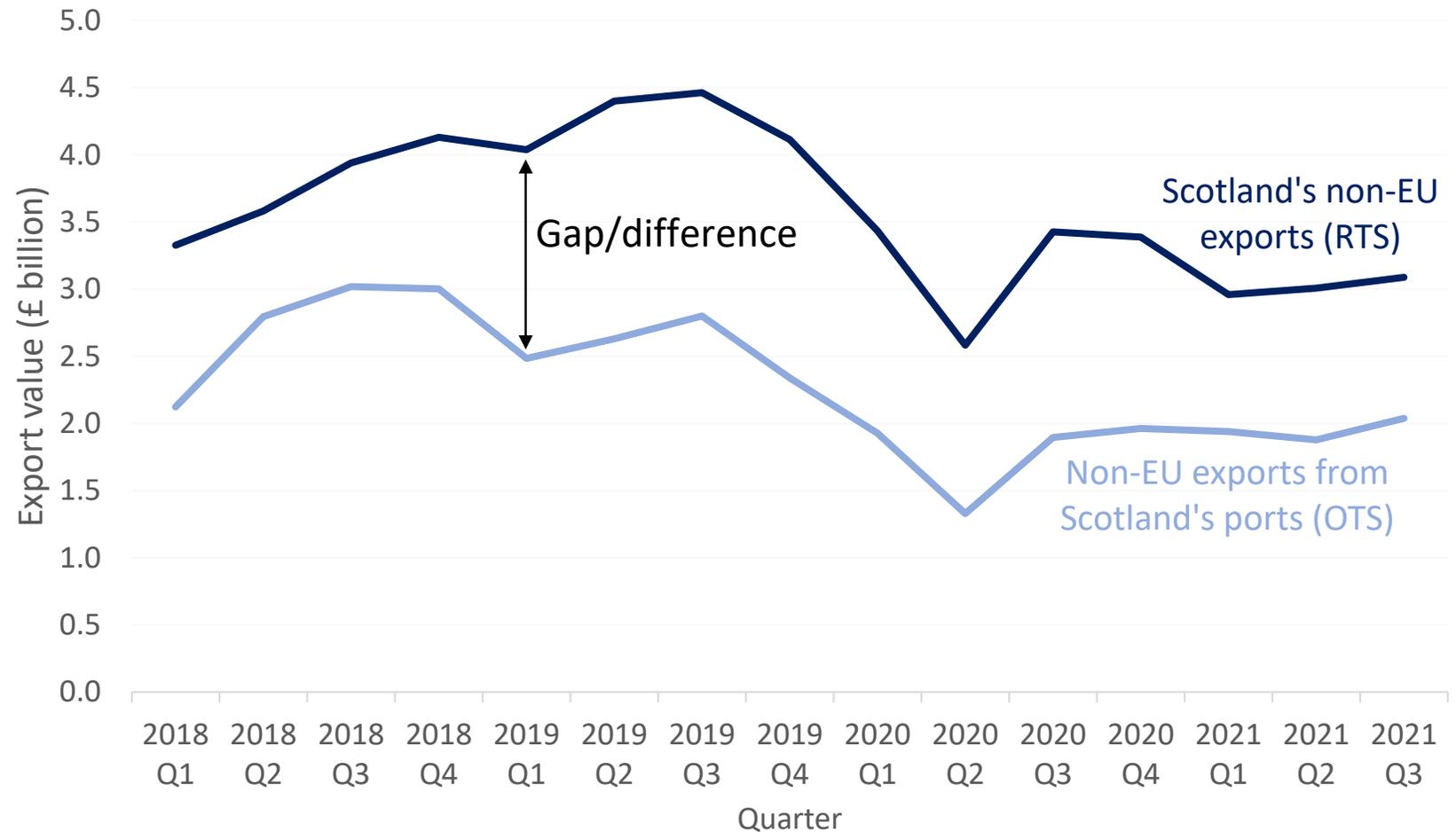
- Office of the Chief Economic Adviser (OCEA)
- Trade Statistics: **[redacted]**
- Trade and Investment Analysis:[redacted]

Today's presentation

- **ITEM 1** – Estimate of UK exports leaving Scottish ports as a share of total Scottish exports
- **ITEM 2** - Analysis of the projections for UK maritime freight and the implications for the Scottish mix of freight

Estimating the gap between Scotland's exports and UK exports leaving Scottish ports

- HMRC Regional Trade Statistics (RTS): Scotland's international goods exports/imports
- HMRC Overseas Trade Statistics (OTS): goods exported/imported via Scottish sea and airports



- The gap is estimated to be around £9.4 billion and account for 63% of Scotland's exports

2021 Q1-3	Via Scotland's ports (OTS) (£bn)	Scotland's exports (RTS) (£bn)	Difference (£bn)	Difference (% of Scotland's exports)
Total exports	10.4	18.9	8.5	45%
Total exports with exclusions*	5.5	14.9	9.4	63%

- When commodities that bias the results are excluded, the estimated value of the gap is quite similar for EU and non-EU exports and non-EU imports
- The gap accounts for a greater proportion of exports to the EU than to non-EU destinations

2021 Q1-3		Via Scotland's ports (OTS) (£bn)	Scotland's exports/imports (RTS) (£bn)	Difference (£bn)	Difference (% of Scotland's exports/imports)
Non-EU exports	Total	5.9	9.1	3.2	35%
	Total with exclusions*	3.7	8.2	4.5	55%
EU exports	Total	4.5	9.8	5.3	54%
	Total with exclusions*	1.8	6.7	4.9	73%
Non-EU imports	Total	6.7	10.7	4.0	37%
	Total with exclusions*	4.3	9.3	5.0	53%

*Excluding oil and commodities where exports from Scottish ports exceed Scotland's exports

Source: HMRC RTS 2021 Q3 & HMRC OTS November 2021

- The gap is estimated to be around £9.4 billion and account for 63% of Scotland's exports

2021 Q1-3	Via Scotland's ports (OTS) (£bn)	Scotland's exports (RTS) (£bn)	Difference (£bn)	Difference (% of Scotland's exports)
Total exports	10.4	18.9	8.5	45%
Total exports with exclusions*	5.5	14.9	9.4	63%

- When commodities that bias the results are excluded, the estimated value of the gap is quite similar for EU and non-EU exports and non-EU imports
- The gap accounts for a greater proportion of exports to the EU than to non-EU destinations

2021 Q1-3		Via Scotland's ports (OTS) (£bn)	Scotland's exports/imports (RTS) (£bn)	Difference (£bn)	Difference (% of Scotland's exports/imports)
Non-EU exports	Total	5.9	9.1	3.2	35%
	Total with exclusions*	3.7	8.2	4.5	55%
EU exports	Total	4.5	9.8	5.3	54%
	Total with exclusions*	1.8	6.7	4.9	73%
Non-EU imports	Total	6.7	10.7	4.0	37%
	Total with exclusions*	4.3	9.3	5.0	53%

*Excluding oil and commodities where exports from Scottish ports exceed Scotland's exports

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The ten commodities with the largest value gap in the first nine months of 2020

Scotland's international goods exports - 2021 Q1-3				
Commodity	Via Scotland's ports (OTS) (£bn)	Scotland's exports (RTS) (£bn)	Difference (£ mill)	Difference (%)
Beverages	647	2,975	2,329	78%
Non-ferrous metals	11	705	694	98%
General industrial machinery	488	1,064	576	54%
Gas	330	899	569	63%
Chemical materials & products	409	870	461	53%
Electrical machinery	124	496	372	75%
Fish & seafood	374	743	369	50%
Professional & scientific instruments	256	611	355	58%
Medicinal & pharmaceutical products	164	511	347	68%
Power generating machinery	1,123	1,439	316	22%

- Beverages has the largest value gap
- The gap represents most of Scotland's exports for non-ferrous metals
 - Very little of this commodity is exported via Scottish ports
- These ten commodities account for 70% of the overall gap

- For EU & non-EU exports, the gap is largest for beverages
- For non-EU imports, the gap is largest for office machines
 - 2nd largest imported commodity behind gas

Scotland's non-EU imports - 2021 Q1-3		
Commodity	Difference (£ mill)	Difference (%)
Office machines	977	91%
Non-ferrous metals	583	97%
Articles of apparel & clothing	328	84%
Electrical machinery & appliances	236	63%
Telecomms & sound recording equipment	227	85%

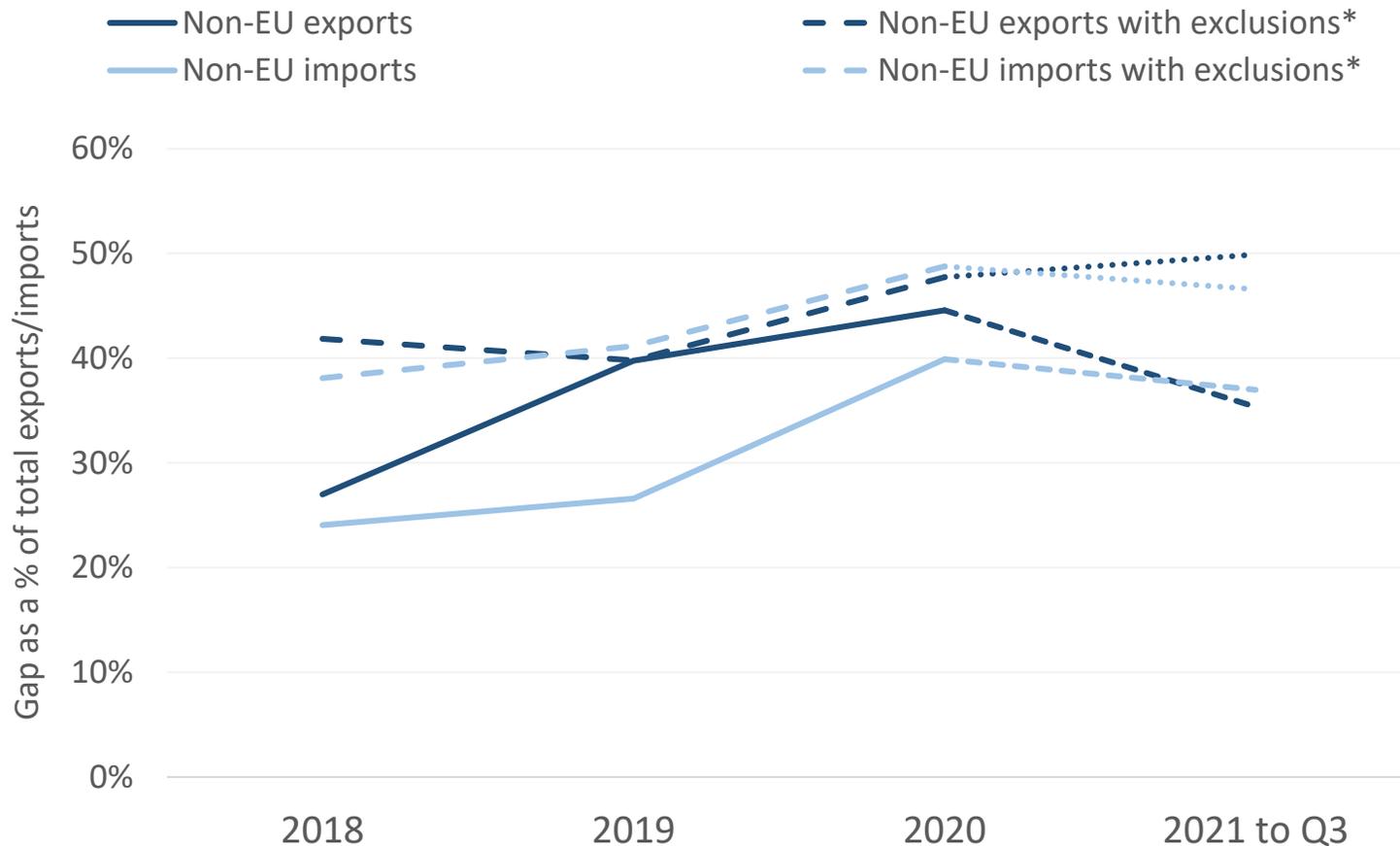
Non-EU exports – 2021 Q1-3			EU exports – 2021 Q1-3		
Commodity	Difference (£ mill)	Difference (%)	Commodity (exc. oil)	Difference (£ mill)	Difference (%)
Beverages	1,473	73%	Beverages	856	89%
Non-ferrous metals	513	99%	Gas	563	64%
General industrial machinery	244	36%	Chemical materials/ products	370	90%
Professional & scientific instruments	205	49%	General industrial machinery	332	87%
Medicinal products	191	77%	Fish/seafood	221	40%

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- The gap varies over time: approx 40-50% with exclusions
- Variation is reduced by excluding oil, and less importantly, commodities where imports/exports via Scottish ports exceed Scotland's exports



- Exports/imports from Scottish ports exceeded Scotland's exports/imports for some commodities:
 - Oil (except for EU exports)
 - Iron & steel (EU exports)
 - Paper (non-EU)
 - Organic chemicals (EU exports)
 - Power generating machinery (non-EU imports)
 - Fertilisers (non-EU imports)

*Excluding oil and commodities where exports from Scottish ports exceed Scotland's exports



Source: HMRC RTS 2021 Q3 & HMRC OTS November 2021



Questions & Discussion

Discussion Topics

- What are your views of the gap analysis?
- Expected gap - what would a reasonable level be?
- Are there other sources of data that you use in the industry that could provide more insight?



Drivers of Sea Port Demand

Location relative to production and destination

Proximity to desirable routes

Quality of infrastructure

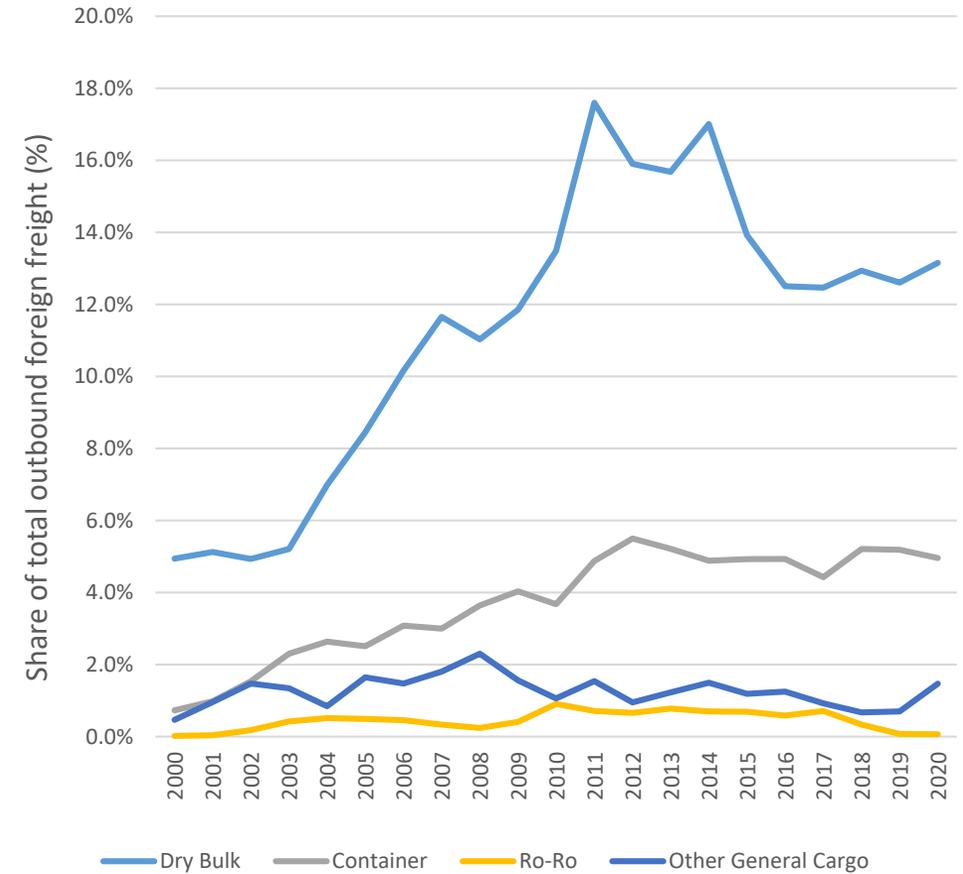
Competitiveness of tariffs

Scottish Maritime Mix

Mix of Maritime Commodities leaving Major Scottish Sea Ports (international)

tonnes (000s)	2001-2005	2006-2010	2011-2015	2016	2017	2018	2019	2019 (rUK* Total)
Dry Bulk	3,481	4,876	5,076	4,118	4,421	4,310	4,208	10,737
Liquid Bulk	52,970	34,813	24,309	26,581	28,894	26,933	27,187	29,287
Container	1,121	1,455	1,607	1,624	1,570	1,735	1,732	20,784
Ro-Ro	178	194	224	192	252	110	24	30,439
Other General Cargo (Breakbulk)	724	693	405	412	327	224	233	2,410

Source: DfT Port Statistics 2020 (*excl. Scotland)



Future Projections and Scottish Implications



Future of Fossil Fuels

- Liquid bulk projected to decline each year
- 0.85m tonnes reduction from Scottish ports
- 2.6% ↑ port capacity per year



Drivers for Containers

- Scotland positive trend (absolute and as a share of total)
- Less exposed to EU trade (relative to Ro-Ro)



Scottish Implications

- Net ↓ 0.94m tonnes per year, 2.8% capacity
- Not offset by growth, therefore spare capacity
- Possibility to diversify and compete

- ✓ **Drewry outlook to 2026** forecasts decline in fossil fuels in line with historic trends, but faster than Scotland has experienced.
- ✓ **Container projected to be one of the fastest growing commodity groups** which also has the least exposure to trade with the EU. Ro-Ro is most exposed but projected to have slower growth.



Questions & Discussion

Discussion Topics

- Do these trends fall in line with industry realities?
- What do they tell us about our Scottish ports in terms of resilience and growth possibilities?
- Drivers and competition – where can Scotland compete?



ATN Transport Links Project

Economics and Data Overview - OCEA

Economics of Freight

- “The best division of labour in international sea transport is obtained when the most efficient operators become price leaders.”

Sidney Gilman

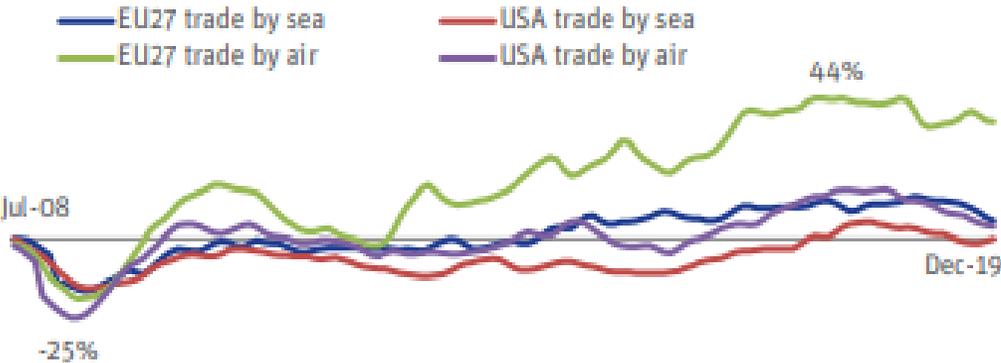
- Derived demand
- Cost competitiveness in open freight markets
- Principle of comparative advantage
- To intervene or not to intervene...

Historical Overview

Global

- Mode specific trends
- Post-crisis air freight growth
- Sea freight largely stagnant

External trade by sea and air, percentage change from June 2008
(Tonnes, monthly trend, seasonally adjusted)



Source: International Transport Forum. Note: trade by air for EU does not include the Netherlands.

UK/Scotland

- UK economic mix
- Nature of trade from UK has changed over past 20 years, shift to a more service driven economy.
- Trade surplus in goods
- Movements away from energy markets - less coal, fewer bulk exports
- 99% of companies SMEs
- 71/100 top exporters are large companies

Table 3 | Development of goods loaded worldwide by type of cargo (Millions of tons)

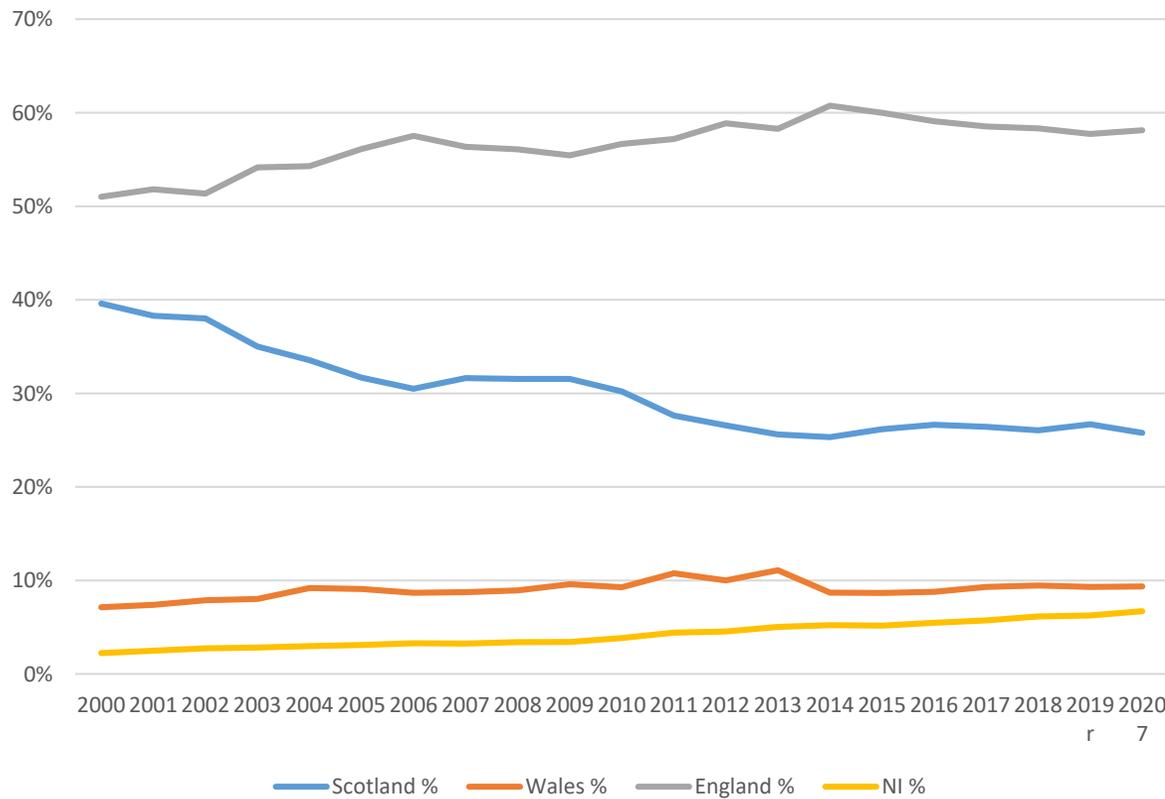
Year	Total goods	Crude oil	Other tanker trade	Dry cargo
1974	3 304	1 497	335	1 472
1979	3 828	1 725	318	1 785
1984	3 364	1 079	399	1 886
1989	3 940	1 260	468	2 212
1994	4 485	1 498	509	2 478
1999	5 683	1 553	532	3 598
2004	6 758	1 770	546	4 442
2009	7 818	1 710	931	5 177
2014	9 816	1 712	1 122	6 983
2019	11 076	1 860	1 308	7 907

Scotland Carbon Account for Transport

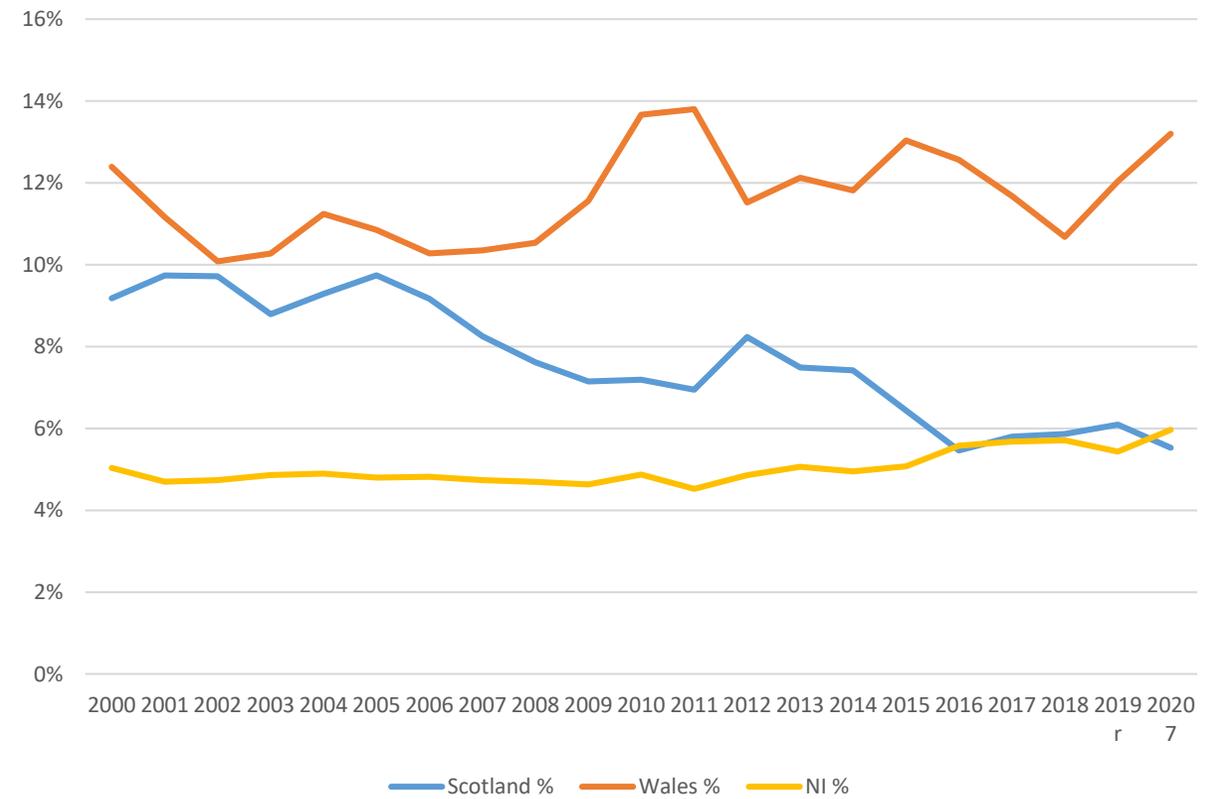
Activity	Type	Unit	kg CO ₂ e	kg CO ₂	g CO ₂ e	g CO ₂
Van (Diesel)	Average (up to 3.5 tonnes)	tonne.km	0.54	0.54	544	540
Van (Petrol)	Average (up to 3.5 tonnes)	tonne.km	0.27	0.27	274	272
HGV (Diesel)	All HGVs (average laden)	tonne.km	0.11	0.11	107	106
	All HGVs (average laden) - refrigerated	tonne.km	0.13	0.12	126	124
Rail	Freight train	tonne.km	0.03	0.03	34	33
Air	Short-haul, to/from UK	tonne.km	1.95	1.94	1947	1937
	Long-haul, to/from UK	tonne.km	1.23	1.23	1232	1226
	International, to/from non-UK	tonne.km	1.23	1.23	1232	1226
Sea tanker	Crude tanker avg	tonne.km	0.0	0.0	5	5
	Chemical tanker avg	tonne.km	0.01	0.01	10	10
	Gas tanker avg	tonne.km	0.01	0.01	11	11
Container ship	General cargo avg	tonne.km	0.01	0.01	13	13
	Container ship avg	tonne.km	0.02	0.02	16	16
	Ro-ro ferry avg	tonne.km	0.05	0.05	52	51
	Refrigerated cargo	tonne.km	0.01	0.01	13	13

Sea Freight Trends - DfT

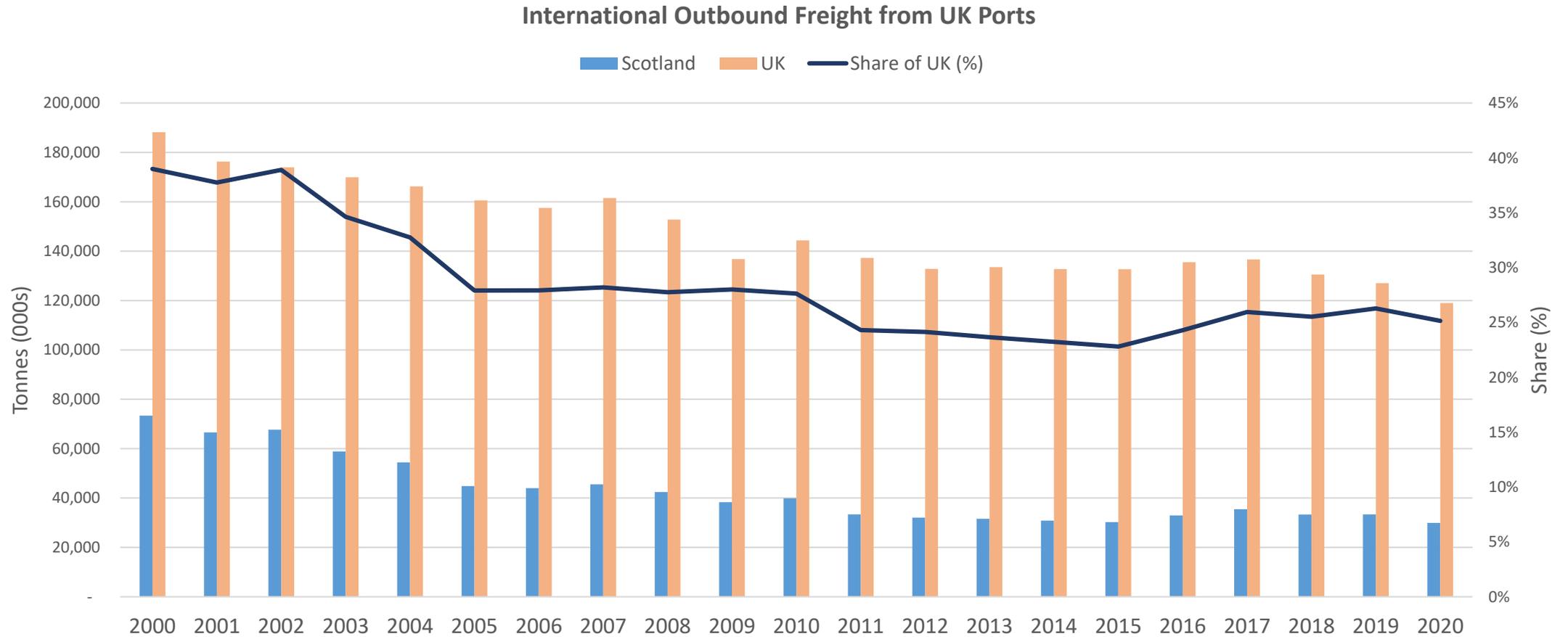
UK Major Ports - UK country share of total (outbound)



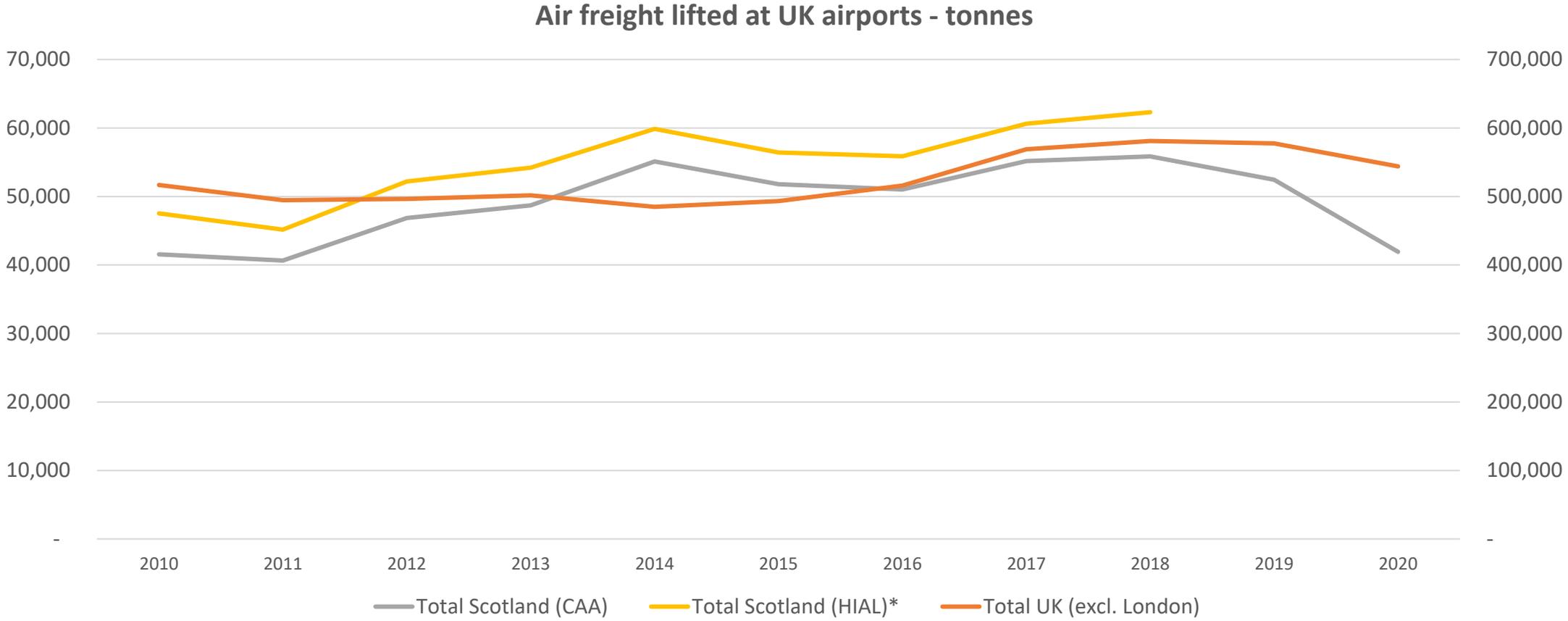
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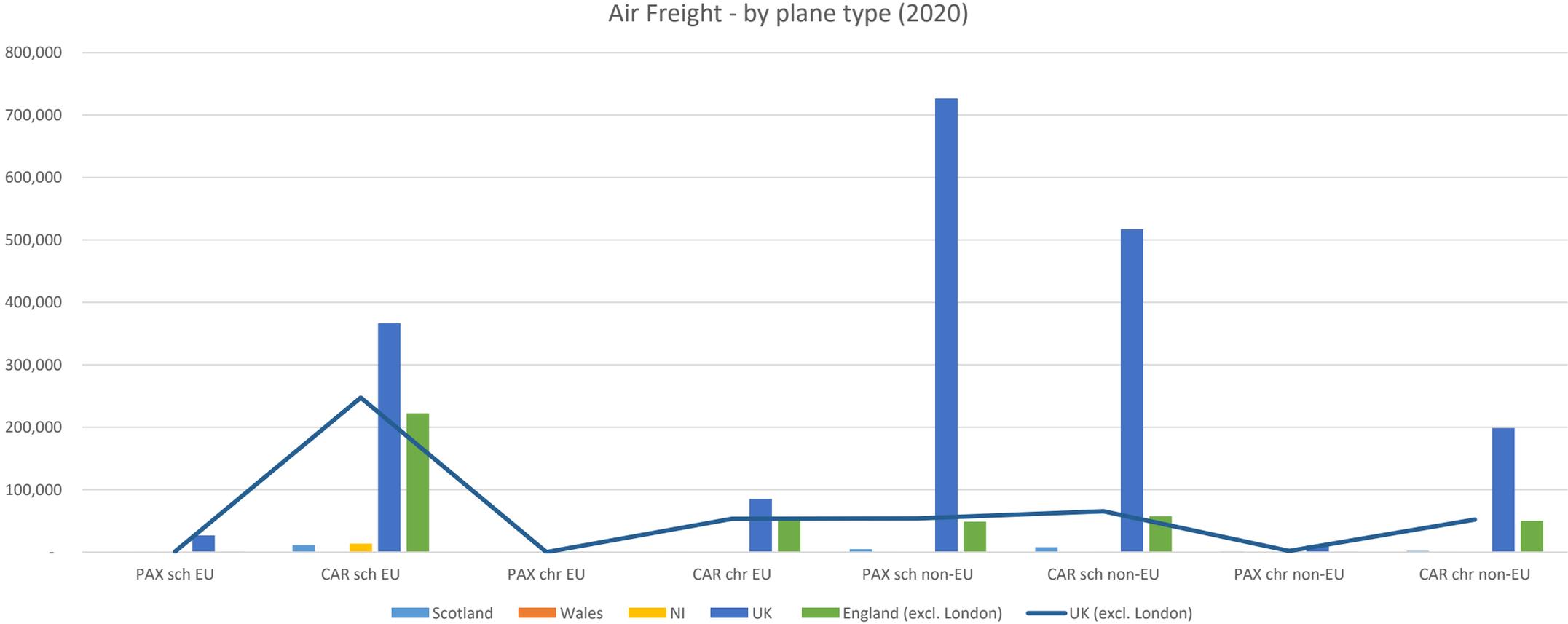
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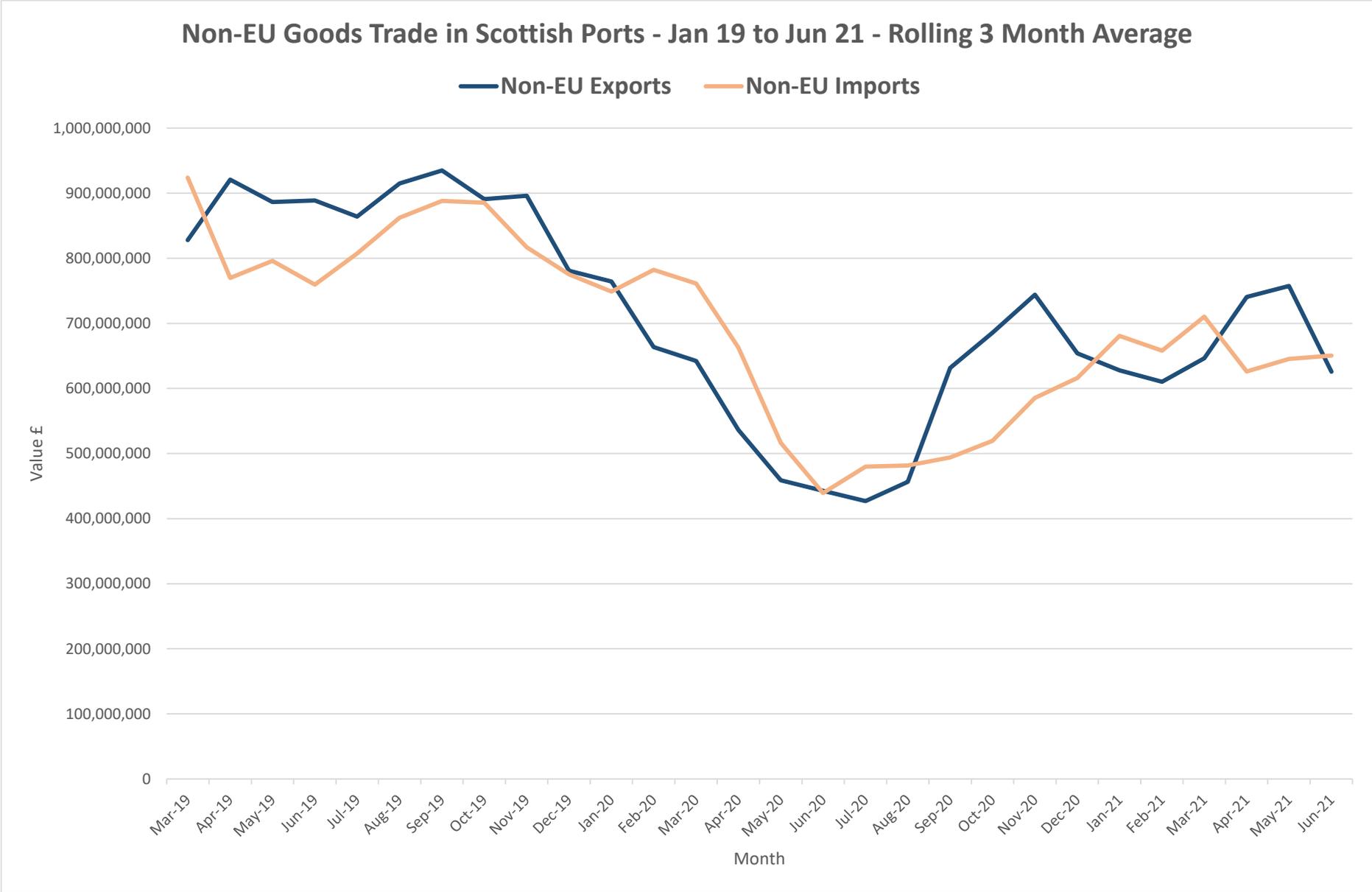
Air Freight Trends



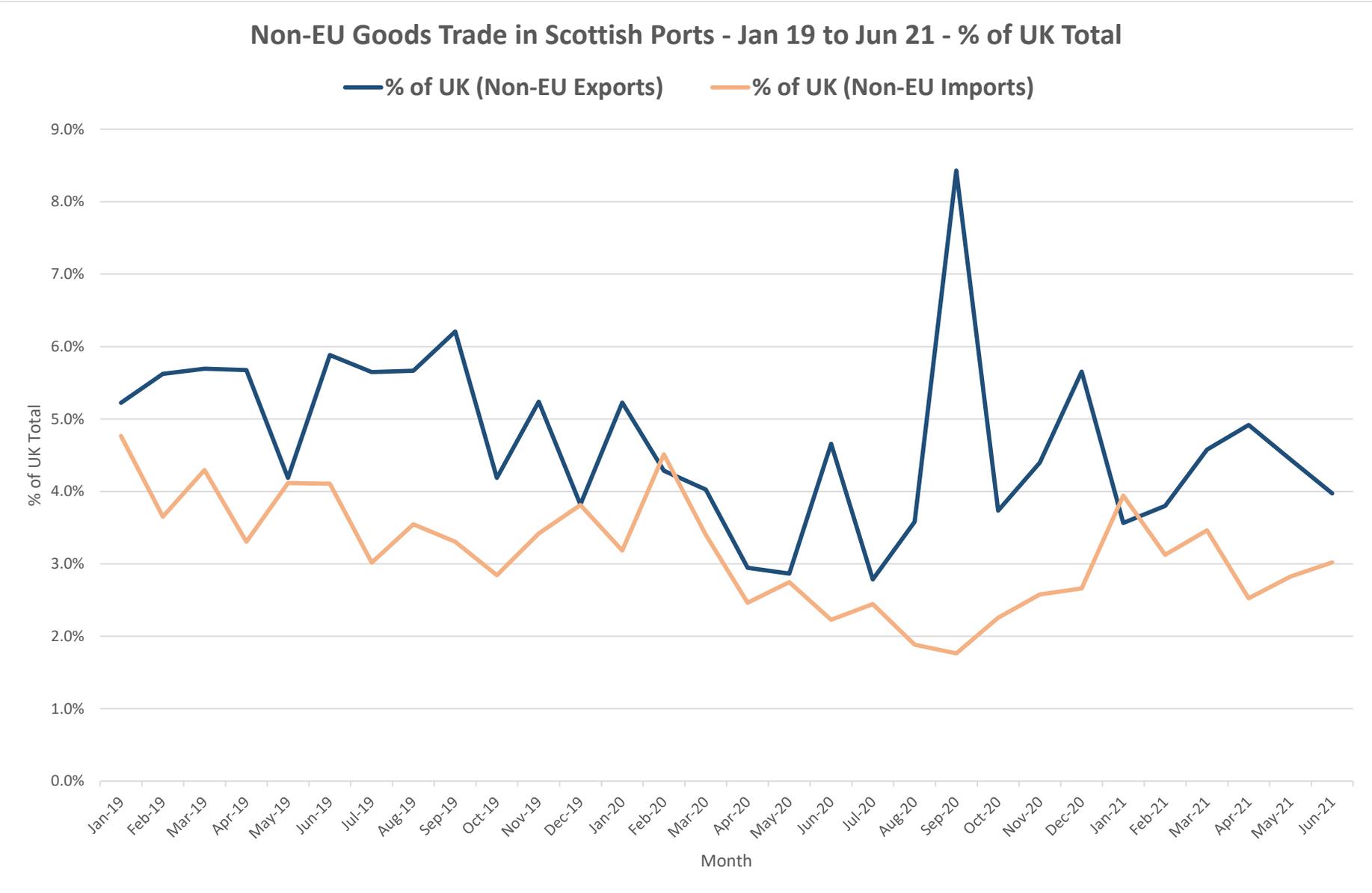
Air freight by plane type



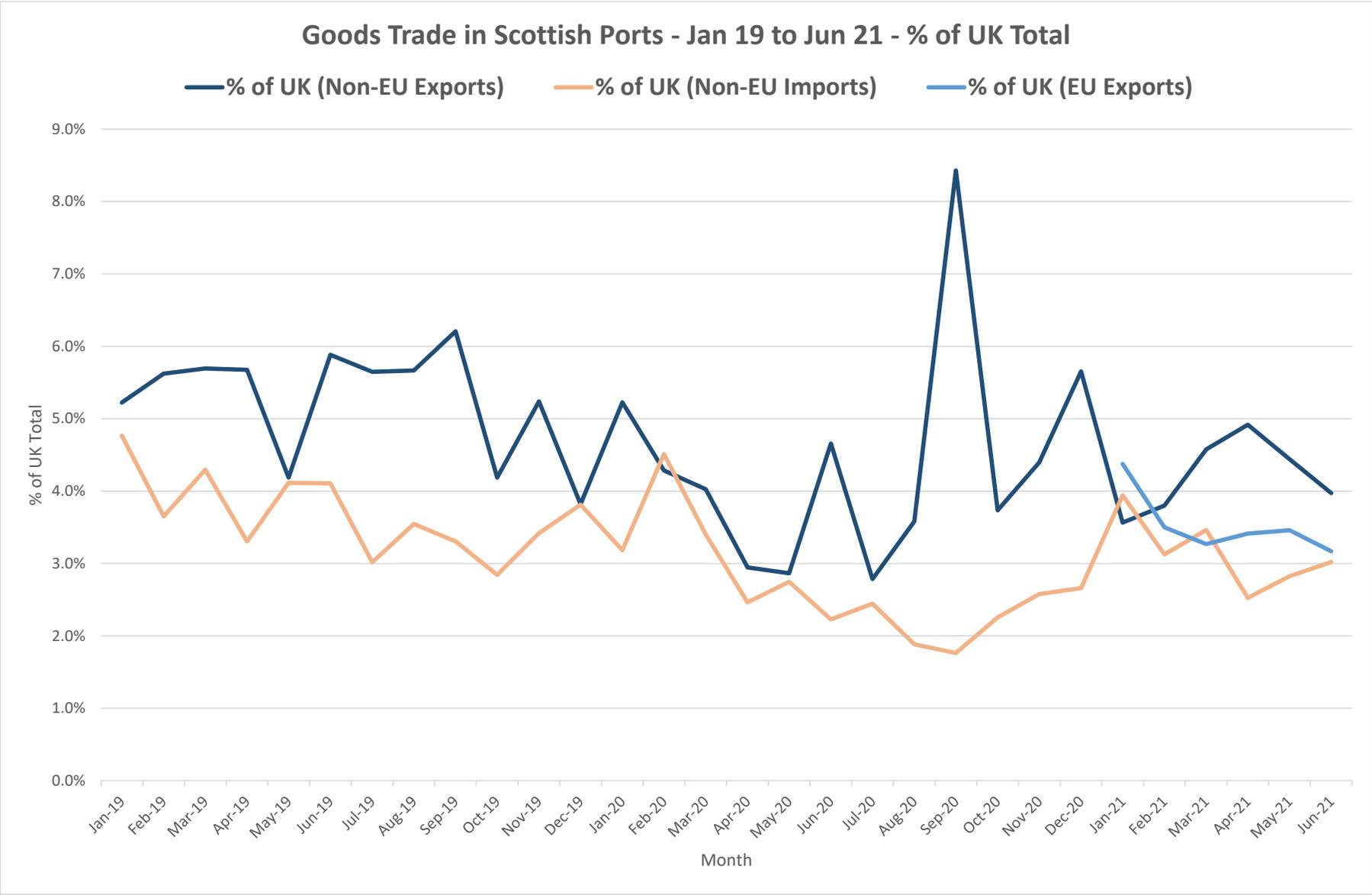
Trade trends – HMRC (OTS) – Non-EU trade



Trade trends – HMRC (OTS) – Non-EU trade



Trade trends – HMRC (OTS) – inc. EU trade



Top Export Commodities

EU Exports from Scottish Ports – 2021

Petroleum (24% of UK total)

Fish (43%)

Gas (20%)

Power generating machinery (3%)

Organic chemicals (5%)

Non-EU Exports from Scottish Ports – 2021

Petroleum (44% of UK total)

Power generating machinery (8%)

Beverages (16%)

General industrial machinery (8%)

Chemical materials & products (15%)

Gaps in data & potential plugs

- Boosting use of Scottish ports, or just for Scottish exports?
- Supply chain questions – where are they?
- Linking between companies exporting and routes chosen

Next steps

Hard Data

- Regular HMRC OTS overview analysis
- Scope out available datasets in more depth – IATA CASS, CAA exploration

Soft Data

- Explore further potential engagement (businesses, logistics, freighters, ports) – why route chosen?

Emissions factors

	emissions factor (kgCO ₂ e/tonne km)
0-1999 LM Roro ferry	0.06114
2000+ LM Roro ferry	0.05019
Large RoPAX ferry	0.37668
averagely laden HGV (all diesel)	0.10650
international flight (excl radiative forcing)	0.59943
international flight (incl radiative forcing)	1.13382
container ship	0.01614
rail freight	0.02556

Source: UK Government GHG Conversion Factors for Company Reporting 2020 (DEFRA/BEIS)

RORO exports: Rosyth - Zeebrugge v Channel crossing

Route	CO ₂ e emissions (kg) per tonne conveyed	Notes
Cumbernauld-Rosyth-Zeebrugge	51	based on 0-1999 LM factor
Cumbernauld-Rosyth-Zeebrugge-Calais	65	based on 0-1999 LM factor
Cumbernauld-Dover-Calais low estimate	84	based on 2000+ LM factor
Cumbernauld-Dover-Calais high estimate	97	based on RoPAX factor

- First route assumes Zeebrugge and Calais are equally useful continental entry points for onward transportation of exports.
- Second route (Zeebrugge - Calais by road) more applicable for final destinations not significantly north or east of Calais.
- Assumes any Rosyth-Zeebrugge ferry would be no bigger than that used previously.
- Implicitly assumes Rosyth ferry at an industry standard level of capacity utilisation.
- Two alternative estimates as unclear which emissions factor more appropriate for Dover crossing.

Air exports to Chicago

Route	CO ₂ e emissions (tonnes) per tonne conveyed	Notes
Glasgow Airport-Chicago Airport	6.72	
Glasgow-Heathrow-Chicago Airport	7.28	Glasgow-Heathrow by HGV

- Assumes goods originate at Glasgow Airport so no road travel to the airport (most favourable comparison)
- Takes radiative forcing into account (aircraft emissions have more impact because of the height at which they are emitted)
- This is the "right" direction - direct export flights from Scotland to the SE (most of Europe, Asia, Africa) would have greater emissions than via Heathrow (likely only lower for N America)

Containers to Rotterdam

Route	CO ₂ e emissions (tonnes) per tonne conveyed	Notes
Cumbernauld-Grangemouth-Rotterdam	17.7	HGV/ferry
Cumbernauld-Felixstowe-Rotterdam	77.7	HGV/ferry
Cumbernauld-Coatbridge-Felixstowe-Rotterdam	22.7	HGV/rail/ferry

- Once electric freight is possible all the way between Coatbridge and Felixstowe (relevant electrification at Felixstowe end is planned) the emissions for the third option would be significantly reduced.