

# Research Bulletin 19/11 | Supply Chain Analysis

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## Summary

This article examines the characteristics of businesses engaging in potential supply chain activity, in terms of both imports and exports. It looks at the Broad Economic Category of goods being imported/exported by businesses in Northern Ireland, as well as the size bands and country of ownership of those businesses. There is also analysis using a wider definition of supply chain activity that incorporates bilateral agri-food trade.

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## Introduction

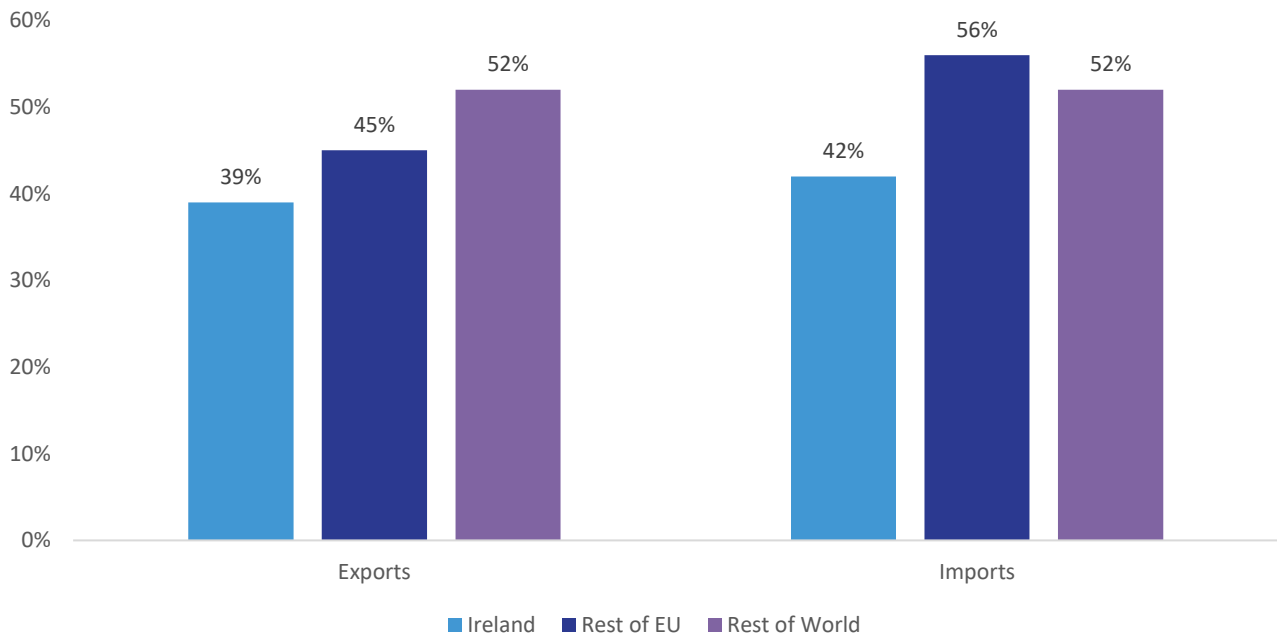
The following analyses are based on HMRC microdata on trade in goods<sup>i</sup>, these data related to above Intrastat reporting threshold traders. The product data within HMRC's dataset has been aggregated from commodity code level into the international standard Broad Economic Category (BEC) classification. This classification divides products according to their main end use in terms of capital, consumption or intermediate use<sup>ii</sup>. In particular the use of intermediate goods, i.e. those that are themselves produced and used to produce other goods, may provide insight into those businesses trading products likely to be involved in supply chains. However, it should be noted that this category also contains products more generally thought of as primary commodities, particularly those in the Agri-Food sector.

## Overview of trade by Broad Economic Category (BEC)

In terms of both exports and imports with the Rest of World, trade in intermediate goods represents the largest proportion of trade of the three Broad Economic Categories, accounting for both 52% of exports and imports, in terms of value this accounts for £1,874m of exports and £1,382m of imports. The same is true for trade with Rest of EU, with trade in intermediate goods representing 45% of exports (£786m by value) and 56% of imports (£1,072m by value), again this is the largest proportion of trade for the three BEC categories for this destination/origin. The respective proportions for NI trade with Ireland, 39% of exports (£816m by value) and 42% of imports (£553m by value), are lower (in percentage terms) than for the other two destinations as presented in Figure 1 and Figure 2.

Table 1 in the Annex to this bulletin represents this data in more detail.

**Figure 1: Percentage of Northern Ireland exports and imports of intermediate goods by broad destination, 2016 (£m)**



**Figure 2: Net trade in intermediate goods by broad destination, 2016 (£m)**



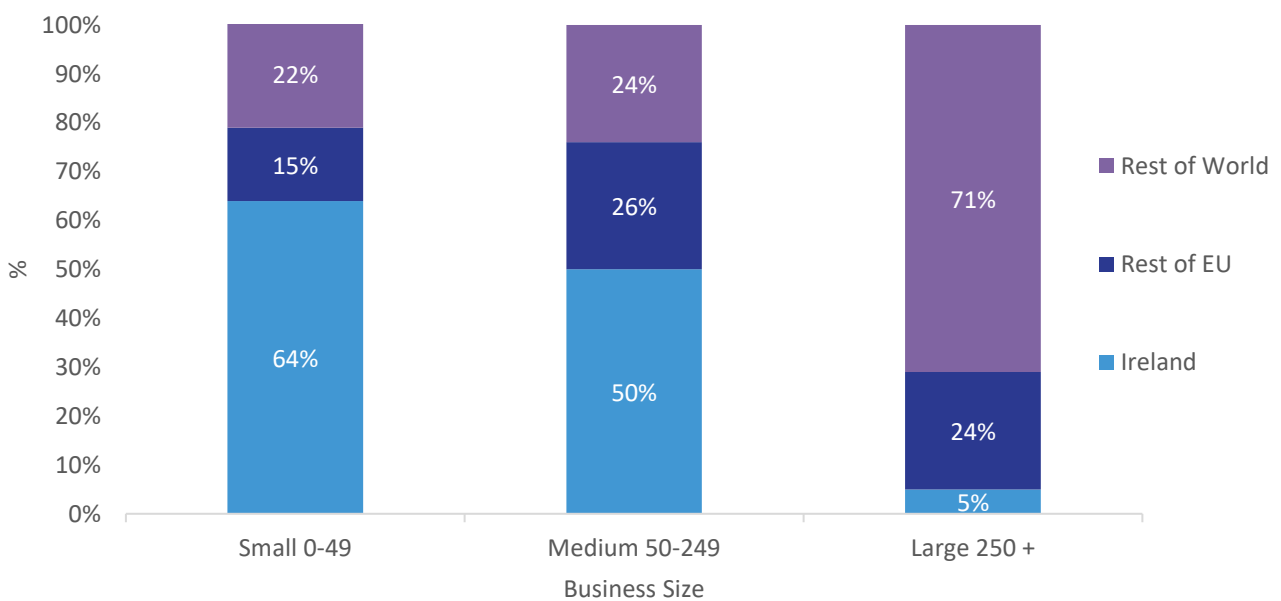
### Trade by business size band

To get more information about the attributes of businesses that were engaged in supply chain activity, data from the Inter-Departmental Business Register (IDBR) was merged with the HMRC trade data to give further information about the size of businesses and their country of ownership.

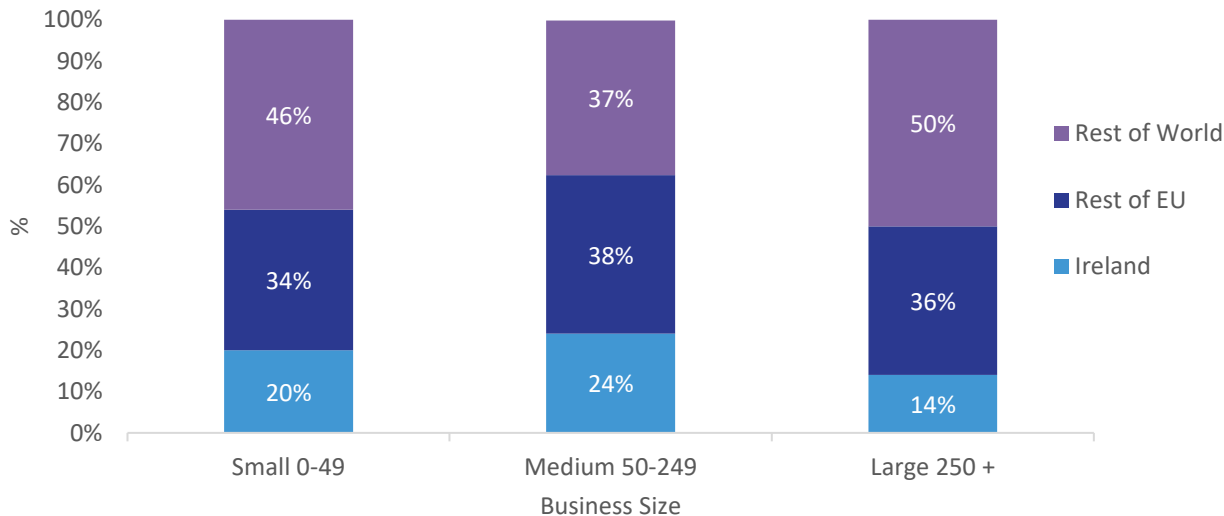
Figure 3 below focuses on the disaggregation of trade in intermediate goods by businesses size band. It can be seen that for small businesses the majority of exports in intermediate goods are sold to Ireland (64%). Medium sized businesses also have a high reliance on Ireland for exports of their intermediate products (50%), however large businesses export almost three-quarters (71%) of their intermediate goods to the Rest of the World. However, when it comes to imports of intermediate goods the Rest of the EU and Rest of the World are more important markets for small and medium sized businesses than for exports, as demonstrated in Figure 4. Table 2 in the Annex illustrates this data in more detail.

Large businesses, those that have 250 or more employees, export a higher proportion of intermediate products, 53% (£2,268m of a total of £4,279m) of all exports by these businesses were classified as intermediate (see table 3 in Annex). This compares to medium and small businesses, whose equivalent figures were 34% and 41% respectively. The data suggests that this is largely driven by exports outside of the EU, where sales of intermediate goods accounts for 58% of total goods exported by large businesses to the Rest of the World, compared to 25% for Ireland and 53% for Rest of EU. In relation to imports there is less variation, for businesses of each size band imports of intermediate goods accounts for approximately 50% of their trade.

**Figure 3: Proportion of Northern Ireland exports of intermediate goods by broad destination and business size, 2016 (%)**



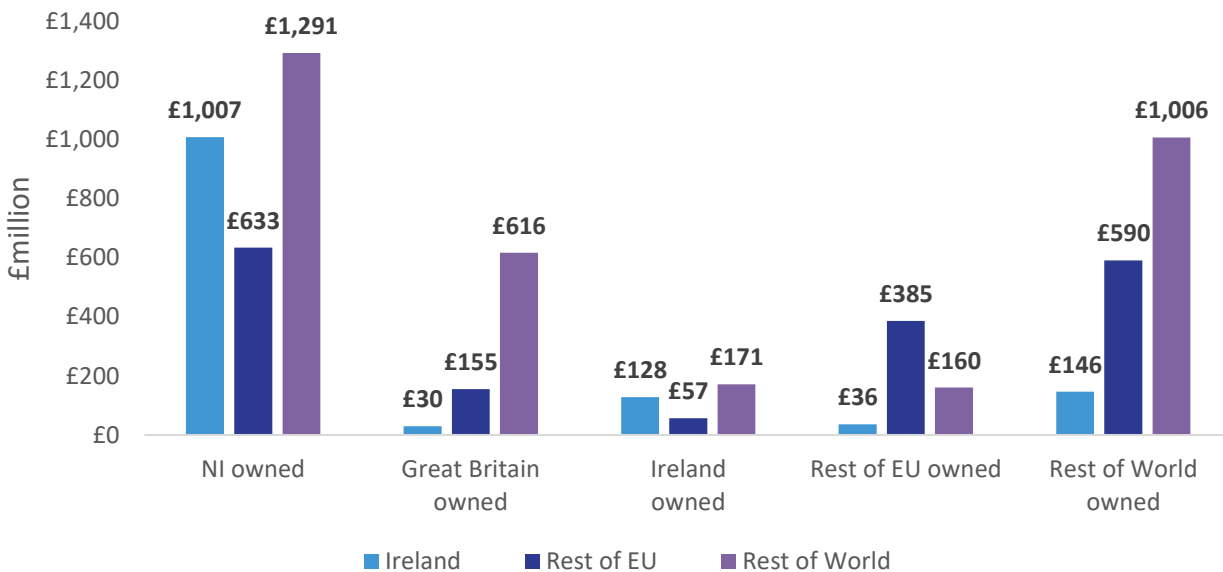
**Figure 4: Proportion of Northern Ireland imports of intermediate goods by broad destination and business size, 2016 (%)**



**Trade by country of ownership**

NI owned companies in terms of both exports and imports of Intermediate goods account for the largest proportion of trade, at £1.7bn and £1.2bn respectively, totalling £2.9bn worth of trade in intermediate goods (see table 4 in Annex). For both directions of trade Rest of World accounts for the largest proportion of trade by destination for Intermediate goods. For companies with ownership from the Rest of the World, the second largest grouping by country of ownership in terms of trade value, again Intermediate goods account for the largest proportion of trade, for both exports and imports. Similarly to NI owned companies again, the majority of trade in Intermediate goods by Rest of World owned companies, both in terms of imports and exports, is with Rest of World destinations.

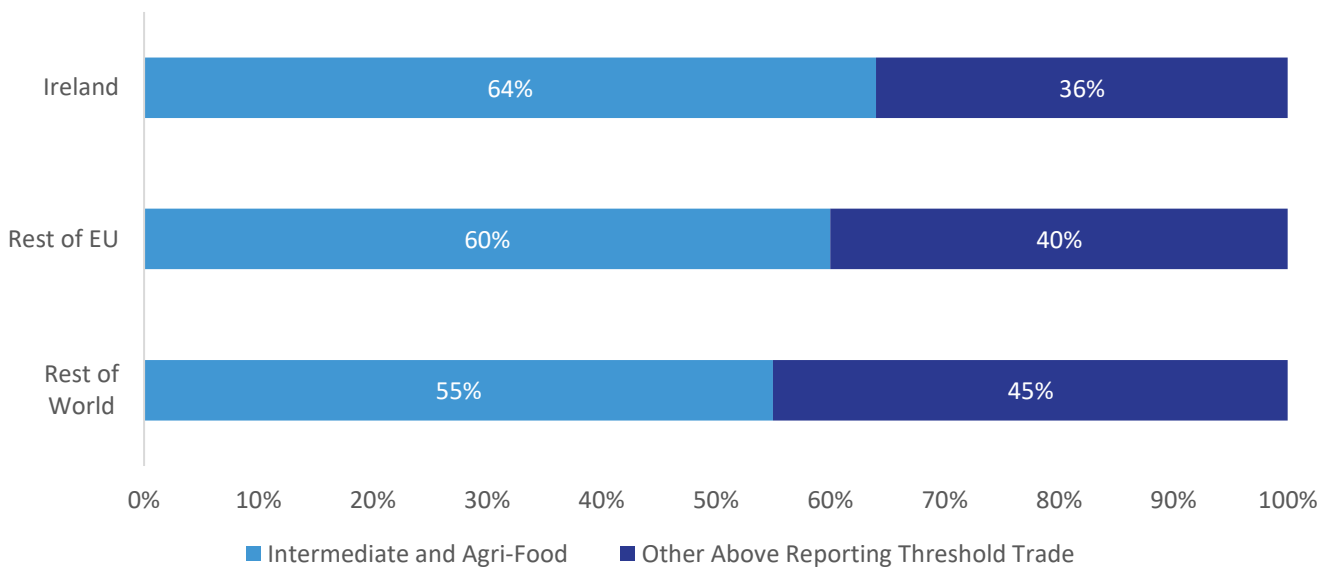
**Figure 5: Total value of Northern Ireland trade in intermediate goods by country of ownership and broad destination, 2016 (£m)**



## Wider supply chain activity

Previous analysis into supply chains in Northern Ireland found that trade in the Meat & Fish, Foodstuffs, Dairy Products and Beverages sectors that was traded bilaterally by individual companies was seen to be evidence of potential supply chain activity. Figure 6 below includes this wider definition of supply chain activity. Looking at overall trade between NI and Ireland, both imports and exports, around 64% of above Intrastat reporting threshold trade relates to the wider definition of potential supply chain activity. For the Rest of EU and Rest of World the respective percentages are 60% and 55%. Table 5 in the Annex displays this data in more detail.

**Figure 6: Proportion of Northern Ireland Trade (exports and imports) of intermediate goods and agri-food sector by broad destination, 2016 (%)**



## Conclusions

Trade in intermediate goods accounts for a larger proportion of trade, both in terms of imports and exports, for Rest of EU and Rest of World than it does for Ireland. However when considering the wider definition, i.e. including bilateral trade in agri-food, Ireland has a higher proportion of trade, both in terms of imports (72%) and exports (60%), when compared with the other two broad destinations (Rest of EU, 65% imports and 53% exports, and Rest of World, 53% imports and 56% exports). The overall percentage of the wider definition of supply chain involvement was 59% of total trade, accounting for a value of £7.8bn. This highlights a high level of interdependence between NI businesses and those in each of the broad destinations.

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## Annex

**Table 1. Northern Ireland exports and imports to/from broad destinations by Broad Economic Category and share of value (above threshold traders), 2016 (£m)**

	Exports				Imports				Total			
	Ireland	Rest of EU	Rest of World	Total	Ireland	Rest of EU	Rest of World	Total	Ireland	Rest of EU	Rest of World	Total
<b>Capital</b>	225	#	#	<b>1,642</b>	#	#	338	<b>706</b>	310	#	#	2,348
<b>Consumption</b>	1,037	442	832	<b>2,311</b>	674	539	924	<b>2,137</b>	1,711	981	1,756	4,448
<b>Intermediate</b>	816	786	1,874	<b>3,477</b>	553	1,072	1,382	<b>3,007</b>	1,370	1,858	3,256	6,484
<b>Unassigned</b>	40	#	*	<b>52</b>	#	*	-	<b>25</b>	48	*	#	78
<b>Total</b>	<b>2,118</b>	<b>1,750</b>	<b>3,615</b>	<b>7,483</b>	<b>1,321</b>	<b>1,909</b>	<b>2,644</b>	<b>5,875</b>	<b>3,439</b>	<b>3,660</b>	<b>6,259</b>	<b>13,358</b>
<b>Above Threshold as % of Total Trade to Destination</b>	89%	97%	99%	<b>96%</b>	68%	81%	100%	<b>85%</b>	80%	88%	100%	<b>90%</b>
<b>Total Trade to Destination</b>	<b>2,368</b>	<b>1,812</b>	<b>3,645</b>	<b>7,825</b>	<b>1,945</b>	<b>2,357</b>	<b>2,644</b>	<b>6,946</b>	<b>4,313</b>	<b>4,169</b>	<b>6,289</b>	<b>14,771</b>

Source: Author calculations based on HMRC trade data

Note: Figures may not sum due to rounding

\* Figure suppressed to avoid disclosure of individual company information

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**Table 2. Northern Ireland exports and imports of intermediate goods to/from broad destinations by Broad Economic Category and business size, 2016 (£m)**

Broad Economic Category	Business size	Exports				Imports				Total (exports and imports)			
		Ireland	Rest of EU	Rest of World	Total Int. goods	Ireland	Rest of EU	Rest of World	Total Int. goods	Ireland	Rest of EU	Rest of World	Total Int. goods
Intermediate Goods	<b>Small 0-49</b>	406	94	139	<b>639</b>	181	311	425	<b>917</b>	587	405	564	<b>1,556</b>
		64%	15%	22%	<b>100%</b>	20%	34%	46%	<b>100%</b>	38%	26%	36%	<b>100%</b>
	<b>Medium 50-249</b>	269	139	126	<b>535</b>	167	261	255	<b>683</b>	436	400	381	<b>1,218</b>
		50%	26%	24%	<b>100%</b>	24%	38%	37%	<b>100%</b>	36%	33%	31%	<b>100%</b>
	<b>Large 250 +</b>	111	550	1,607	<b>2,268</b>	188	493	690	<b>1,371</b>	299	1,043	2,297	<b>3,639</b>
		5%	24%	71%	<b>100%</b>	14%	36%	50%	<b>100%</b>	8%	29%	63%	<b>100%</b>
	<b>Total</b>	786	783	1,872	<b>3,441</b>	536	1,066	1,370	<b>2,972</b>	1,322	1,848	3,242	<b>6,413</b>
		38%	45%	52%	<b>47%</b>	42%	56%	52%	<b>51%</b>	40%	51%	52%	<b>49%</b>

Source: Author calculations based on HMRC trade data

Note: Figures may not sum due to rounding

**Table 3. Northern Ireland exports and imports to/from broad destinations by Broad Economic Category and business size, 2016 (£m)**

Business Size	Broad Economic Category	Exports				Imports				Total (exports and imports)			
		Ireland	Rest of EU	Rest of World	Total	Ireland	Rest of EU	Rest of World	Total	Ireland	Rest of EU	Rest of World	Total
Small 0-49	<b>Capital</b>	#	#	#	<b>335</b>	#	#	#	<b>184</b>	174	172	173	<b>519</b>
	<b>Consumption</b>	354	91	83	<b>529</b>	241	175	205	<b>621</b>	596	266	288	<b>1,150</b>
	<b>Intermediate</b>	406	94	139	<b>639</b>	181	311	425	<b>917</b>	587	405	564	<b>1,556</b>
	<b>Unassigned</b>	#	*	*	<b>43</b>	*	#	#	<b>8</b>	39	2	10	<b>51</b>
	<b>Total</b>	935	266	345	<b>1,546</b>	460	579	690	<b>1,730</b>	1,395	845	1,035	<b>3,276</b>
Medium 50-249	<b>Capital</b>	#	#	#	<b>335</b>	#	#	#	<b>166</b>	86	215	200	<b>501</b>
	<b>Consumption</b>	338	170	190	<b>698</b>	186	121	118	<b>425</b>	524	291	308	<b>1,123</b>
	<b>Intermediate</b>	269	139	126	<b>535</b>	167	261	255	<b>683</b>	436	400	381	<b>1,218</b>
	<b>Unassigned</b>	#	#	*	<b>7</b>	#	*	*	<b>15</b>	8	14	0	<b>22</b>
	<b>Total</b>	668	429	477	<b>1,574</b>	385	492	412	<b>1,289</b>	1,053	921	889	<b>2,864</b>
Large 250 +	<b>Capital</b>	#	#	#	<b>965</b>	#	#	#	<b>344</b>	38	411	859	<b>1,308</b>
	<b>Consumption</b>	314	173	559	<b>1,046</b>	233	236	595	<b>1,064</b>	548	408	1,154	<b>2,110</b>
	<b>Intermediate</b>	111	550	1,607	<b>2,268</b>	188	493	690	<b>1,371</b>	299	1,043	2,297	<b>3,639</b>
	<b>Unassigned</b>	#	*	*	<b>0</b>	*	*	0	<b>1</b>	0	1	0	<b>1</b>
	<b>Total</b>	448	1,043	2,788	<b>4,279</b>	437	820	1,522	<b>2,779</b>	885	1,863	4,310	<b>7,058</b>

Source: Author calculations based on HMRC trade data

Note: Figures may not sum due to rounding



**Table 4. Northern Ireland exports and imports to/from broad destinations by Broad Economic Category and country of ownership, 2016 (£m)**

Country of Ownership	Broad Economic Category	Exports				Imports				Total Trade			
		Ireland	Rest of EU	Rest of World	Total	Ireland	Rest of EU	Rest of World	Total	Ireland	Rest of EU	Rest of World	Total
NI	<b>Capital</b>	198	#	#	<b>520</b>	37	#	#	<b>204</b>	235	195	294	<b>724</b>
	<b>Consumption</b>	678	258	645	<b>1,581</b>	371	207	377	<b>956</b>	1,049	465	1,022	<b>2,536</b>
	<b>Intermediate</b>	684	194	830	<b>1,708</b>	323	439	461	<b>1,224</b>	1,007	633	1,291	<b>2,932</b>
	<b>Unassigned</b>	36	*	*	<b>47</b>	8	#	#	<b>9</b>	44	2	10	<b>56</b>
	<b>Total</b>	1,596	558	1,702	<b>3,856</b>	740	737	915	<b>2,392</b>	2,336	1,296	2,617	<b>6,248</b>
Great Britain	<b>Capital</b>	#	#	9	<b>20</b>	*	#	54	<b>113</b>	25	44	63	<b>133</b>
	<b>Consumption</b>	#	57	*	<b>249</b>	*	80	#	<b>523</b>	126	137	510	<b>772</b>
	<b>Intermediate</b>	#	*	*	<b>375</b>	*	#	*	<b>426</b>	30	155	616	<b>801</b>
	<b>Unassigned</b>	#	#	*	<b>0</b>	*	*	*	<b>0</b>	0	0	0	<b>1</b>
	<b>Total</b>	58	169	417	<b>644</b>	123	167	772	<b>1,062</b>	181	336	1,189	<b>1,706</b>
Rest of EU	<b>Capital</b>	#	*	*	<b>235</b>	#	#	#	<b>73</b>	4	174	130	<b>308</b>
	<b>Consumption</b>	8	8	7	<b>23</b>	14	114	28	<b>156</b>	22	122	34	<b>179</b>
	<b>Intermediate</b>	27	116	64	<b>207</b>	9	269	96	<b>375</b>	36	385	160	<b>582</b>
	<b>Unassigned</b>	*	*	#	<b>0</b>	#	*	*	<b>1</b>	0	1	0	<b>1</b>
	<b>Total</b>	37	241	186	<b>464</b>	26	441	138	<b>605</b>	62	682	325	<b>1,069</b>
Rest of World	<b>Capital</b>	18	282	414	<b>714</b>	14	90	178	<b>282</b>	31	372	592	<b>995</b>
	<b>Consumption</b>	145	45	15	<b>206</b>	26	107	91	<b>224</b>	171	152	106	<b>430</b>
	<b>Intermediate</b>	#	343	*	<b>1,089</b>	#	247	#	<b>652</b>	146	590	1,006	<b>1,741</b>
	<b>Unassigned</b>	#	*	*	<b>4</b>	*	#	*	<b>15</b>	4	15	0	<b>19</b>
	<b>Total</b>	224	670	1,119	<b>2,013</b>	128	459	585	<b>1,173</b>	352	1,129	1,704	<b>3,186</b>

Source: Author calculations based on HMRC trade data

Note: Figures may not sum due to rounding

**Table 5. Northern Ireland exports and imports to/from broad destinations – wider definition of supply chain activity analysis (above threshold traders), 2016 (£m)**

		Exports				Imports				Total			
		Ireland	Rest of EU	Rest of World	Total	Ireland	Rest of EU	Rest of World	Total	Ireland	Rest of EU	Rest of World	Total
Agri-Food	<b>Beverages</b>	117	#	#	<b>298</b>	38	#	*	<b>66</b>	154	69	140	<b>364</b>
	<b>Dairy</b>	106	#	*	<b>142</b>	51	#	*	<b>62</b>	157	29	17	<b>203</b>
Bilateral Trade	<b>Foodstuffs</b>	119	7	3	<b>129</b>	129	59	7	<b>194</b>	247	66	10	<b>323</b>
	<b>Meat and Fish</b>	107	#	#	<b>180</b>	178	#	*	<b>268</b>	286	158	4	<b>447</b>
	<b>Total</b>	448	145	155	<b>749</b>	396	177	15	<b>589</b>	845	322	171	<b>1,337</b>
Total Trade	<b>Intermediate Trade</b>	816	786	1,874	<b>3,477</b>	553	1,072	1,382	<b>3,007</b>	1,370	1,858	3,256	<b>6,484</b>
	<b>Intermediate and Agri-Food</b>	1,265	931	2,030	<b>4,225</b>	950	1,249	1,397	<b>3,596</b>	2,214	2,180	3,427	<b>7,821</b>
	<b>Total Value of Trade Above Reporting Threshold</b>	2,118	1,750	3,615	<b>7,483</b>	1,321	1,909	2,644	<b>5,875</b>	3,439	3,660	6,259	<b>13,358</b>
	<b>% Wider Definition (Intermediate + Agri-Food)</b>	60%	53%	56%	<b>56%</b>	72%	65%	53%	<b>61%</b>	64%	60%	55%	<b>59%</b>

Source: Author calculations based on HMRC trade data

Note: Figures may not sum due to rounding

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<sup>i</sup> HMRC trade data is not directly comparable to NISRA's Broad Economy Sales and Export Statistics (BESES) due to methodological differences, for more information see <https://www.nisra.gov.uk/publications/broad-economy-sales-and-exports-statistics-comparison-hmrc-regional-trade-statistics>.

<sup>ii</sup> Capital goods refer to inputs to the production process, consumption goods refer to final products and intermediate goods refer to goods used to produce other products, with some goods remaining unassigned.