# NORTHERN IRELAND INPUTS TO REPUBLIC OF IRELAND EU FTA EXPORTS

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# EXECUTIVE SUMMARY

This report examines cross-border trade in Ireland from the perspective of the supply chain participation of Northern Ireland inputs into onward exports from Ireland to countries that have free trade agreements with the European Union.

The aim of the report is to give an initial assessment of the potential exposure to any changes in the extent of access of Northern Ireland to these onward trading agreements once the Brexit transition period ends.

The key finding is that approximately one-quarter of goods imported to Ireland from Northern Ireland are imported by firms that export to countries that the EU has a free trade agreement with.

EU FTA supply chains are most significant in the dairy and beverages sectors. In both of these, EU FTA exporting firms account for 61 per cent of imports from Northern Ireland.

Dairy accounts for 45 per cent of total imports from Northern Ireland by EU FTA exporters. The next largest contributors to EU FTA supply links with Northern Ireland are the beverages and machinery and electrical sectors, both of which account for ten per cent of cross-border purchases by these firms.

Wood products and chemicals sectors are also above average in terms of the share of imports accounted for by firms exporting to EU FTA countries but are smaller in scale.

Mineral products, transport goods and vegetable products, in contrast, have under 5 per cent of imports being purchased by firms exporting to EU FTA countries.

Mitigating the level of risk considerably is that much of the imported inputs from Northern Ireland appear to undergo substantive processing in Ireland. This is indicated in the data by the relative differences in the sectoral distribution of the products firms are importing from Northern Ireland and the sector of their subsequent exports to EU FTA partners. Substantive processing is an important requirement of most free trade agreements in order to allow continued use of imported inputs.

Mitigating this risk further, the UK government has rolled over 47 of the 77 trade agreements that the EU has in place (at least on a temporary basis). These 47 countries account for just over half of Irish exports to EU FTA countries.

UK rollover agreements cover a higher share (67%) of the destinations for Irish exports of chemical and pharmaceuticals to FTA countries and this sector makes up one-fifth of the export activity using Northern Ireland inputs.

Future continued reduction of this risk would result from the inclusion of diagonal cumulation terms in trade agreements with third countries by the UK and EU which allow for exports to these countries to have inputs sourced on equal terms from either the UK or EU.

# SECTION 1: INTRODUCTION

This report examines the linkages between Northern Ireland's goods exports to Ireland and the onward goods exports from Ireland, with a specific focus on exports to countries and country blocs with whom the EU has Free Trade or other Trade Facilitation Agreements. The objective of the analysis is to provide an assessment of how this "indirect" trade with the EU's free trade partner countries might be impacted by the UK leaving the EU.

A key feature of the Brexit withdrawal deal and the Ireland/Northern Ireland Protocol is that Northern Ireland will remain within the UK customs area but that, for goods, it will also have access to the EU market without the requirement for border checks and tariff payments. The UK Government has made commitments that Northern Ireland will have access to UK FTAs that are in force with third countries. How that commitment will be realised remains to be clarified fully.

The Protocol does not provide a clear route whereby Northern Ireland firms will have the ability to trade freely via EU FTAs either directly (i.e. NI direct exports to EU FTA partners) or indirectly via supply of inputs into EU products that are subsequently exported to an FTA partner by an EU based producer. This report sets out an assessment of the extent to which Northern Ireland exports to Ireland are destined for firms that subsequently sell produce to EU free trade partners. Due to data availability, the focus is on indirect supply chain links with Ireland only. Similar considerations would also apply to Northern Ireland exports to other EU markets where they may also feed into onward supply chains to EU FTA partner countries. Examining this issue with regard to Ireland, which is Northern Ireland's largest EU trade partner, should provide an important guide to the extent of the potential risks.

In addition to setting terms on tariffs and quotas in trade relationships, free trade agreements frequently include "Rules of Origin" (RoO) terms. These define where a good has been produced for the purposes of the trade agreement. For some products, to avail of a tariff reduction in an FTA, the product much be wholly sourced and manufactured in the exporting country. For other products, however, some specified amount of the inputs to production may have been sourced by the exporter from a different country. These criteria can be quite complex and in the event of uncertainty as to whether Northern Ireland inputs are considered as

equivalent in origin to those sourced within the EU could lead to EU purchasers that trade via EU FTAs reorienting their supply chains away from Northern Ireland producers.

The EU has a large number of countries that it has signed free trade agreements with, most recently Canada (2017) and Japan (2019). The depth and coverage of these deals can vary with some focusing purely on trade in goods while others include cooperation arrangements on a broader range of economic and other issues. With some limited exceptions, most of the deals come close to eliminating tariffs on bilateral trade as well as covering a range of issues related to mutual recognition of standards. The full list of the partner countries used in this analysis are listed in the Appendix. We use all countries for which a free trade deal is fully implemented and also countries where a deal has been completed and is being provisionally implemented. Countries where free trade deals negotiations with the EU are underway but not completed are not considered but there could be further future risks to supply chains in new FTA agreements signed by the EU unless steps are taken to specifically mitigate the issues relating to Northern Ireland inputs.

The research approach uses detailed firm level customs returns for firms in Ireland from the Central Statistics Office. These data include the imports and exports of each firm recording each product and partner country. It is therefore possible to track the extent to which firms that import from Northern Ireland are exporting to other markets. We first present evidence on the overall structure of Ireland's import and export activities to serve as a benchmark for the extent of Northern Irish supply chain links and their composition. We then isolate the group of firms that export to the EU's free trade partner countries and examine how much and what type of good they are purchasing from Northern Ireland. The analysis in this report is limited to goods trade purely for reasons of data availability.

The report is structured as follows. Section 2 presents the patterns of overall imports and exports for the Republic of Ireland, noting the shares accounted for by Northern Ireland and by the EU free trade partner countries. Section 3 narrows the focus to firms that export to EU free trade partners and estimates the extent of their inputs from Northern Ireland. Section 4 presents more detail on the composition of this supply chain trade in terms of sectoral coverage and usage classifications. Section 5 discusses how the EU FTA agreements compare to those signed by the UK and the relevant rules of origin. Section 6 concludes.

# SECTION 2: IRISH TRADE PATTERNS

The focus of this research is the extent of Irish trade with countries the EU has agreed free trade agreements with (henceforth referred to as EU FTA partners) and how imports from Northern Ireland feed into exports to these countries. To put these trade flows in context, Table 1 shows the patterns of overall Irish export destinations (panel A) and sources of imports (panel B). For both directions of trade, we see a broadly diversified pattern.

In 2017, the biggest export destinations were the EU26 (i.e. the EU excluding Ireland itself and the UK) and the rest of the world (with the United States being a major destination within this). Exports to Britain accounted for just under 19 per cent and Northern Ireland a further 3.3 per cent. EU FTA partners are a somewhat smaller grouping, accounting for 12 per cent of RoI exports in 2017. The import patterns show a larger concentration coming from Britain and the EU26 compared to the export spread. In particular, we see that while EU FTA partners are a reasonably substantive share of exports, they account for a much smaller share of imports.

It should be noted that these numbers are slightly different from the officially published trade statistics as they relate to firms for which we have detailed trade information at the product level and destination information recorded in the customs micro data in order to undertake the supply chain analysis.[1] This is because some smaller exporters trading within Europe are not obliged to provide full details of their trading activity if it falls below a reporting threshold. However, all trade over €250 to countries outside the EU is reported in detail so this does not cause any concern for the focus of this work.

[1] In order to identify the onward export patterns of the firms in Ireland using supply inputs from Northern Ireland, this report uses data on cross-border trade from the CSO. It should be noted however that there are differences in coverage and methodology between the main sources of data on cross-border trade (CSO, NISRA and HMRC) which means the sources are not entirely comparable. Research on the different methodologies found that although there are gaps in levels of trade from the different sources, there is no evidence of any systematic bias across sectors.
InterTradeIreland (2009) "Investigation into North/South Trade Statistics" https://intertradeireland.com/insights/publications/working-paper-investigation-into-north-south-trade-statistics/

TABLE 1: IRISH TRADE FLOWS BY PARTNER AND DIRECTION OF TRADE

A: Destinations of Irish exports

| | Northern Ireland | Britain | EU26 | EU FTA partners | Rest of World |
|---|---|---|---|---|---|
| 2013 | 1.5% | 14.1% | 41.7% | 12.8% | 29.9% |
| 2014 | 1.6% | 12.9% | 40.5% | 13.1% | 31.9% |
| 2015 | 3.5% | 22.0% | 33.2% | 17.7% | 23.6% |
| 2016 | 3.3% | 21.6% | 31.9% | 16.4% | 26.8% |
| 2017 | 3.3% | 18.7% | 30.5% | 12.1% | 35.4% |

B: Sources of Irish imports

| | Northern Ireland | Britain | EU26 | EU FTA partners | Rest of World |
|---|---|---|---|---|---|
| 2013 | 2.2% | 33.0% | 32.0% | 7.9% | 24.9% |
| 2014 | 2.2% | 30.7% | 34.0% | 8.7% | 24.4% |
| 2015 | 2.3% | 33.8% | 37.5% | 6.0% | 20.5% |
| 2016 | 2.3% | 28.9% | 39.1% | 4.7% | 25.0% |
| 2017 | 2.2% | 27.2% | 40.0% | 4.3% | 26.3% |

*Source: Author's calculations from CSO customs microdata*

Previous work on cross-border trade by InterTradeIreland and NISRA emphasised the small size of many exporting firms.[2] Table 2 shows how many exporters and importers are active in the different market groupings. Firms may export and import to multiple regions so these figures do not add up total numbers of exporters and importers. The numbers trading with Northern Ireland, as expected from the previous work, are relatively high compared to the share of trade values. This due to a large number of smaller firms trading cross-border but that do not account for a large share of aggregate trade.

The numbers trading with EU FTA partners is also quite substantial at close to half of overall exporters. As mentioned above, care should be taken in comparing this

[2] InterTradeIreland (2018a) "Cross-Border Trade and Supply Linkages", available at: http://www.intertradeireland.com/media/ITICrossBorderTradeandLinkagesReport.pdf
InterTradeIreland (2018b). "Export Participation and Performance of Firms on the Island of Ireland", available at: https://intertradeireland.com/news/export-participation-and-performance-of-firms-on-the-island-of-ireland/
NISRA (2018). *Cross-Border Supply Chain Report, 2015-2016,* www.nisra.gov.uk

to the numbers exporting within the EU due to the lower threshold for reporting detailed trading activities with non-EU partners. Taken together, Tables 1 and 2 suggest a reasonably significant but not dominant role of EU FTA partner countries in Irish trading activity.

TABLE 2: PATTERNS OF FIRM PARTICIPATION IN TRADE

Number of exporting firms

| | Northern Ireland | Britain | EU26 | EU FTA partners | Rest of World | Total Exporters |
|---|---|---|---|---|---|---|
| 2013 | 643 | 1617 | 1342 | 1919 | 2527 | 3846 |
| 2014 | 664 | 1696 | 1398 | 2044 | 2712 | 4096 |
| 2015 | 702 | 1796 | 1437 | 2134 | 2679 | 4336 |
| 2016 | 743 | 1865 | 1469 | 2030 | 2561 | 4239 |
| 2017 | 788 | 1978 | 1578 | 2102 | 2525 | 4399 |

Number of importing firms

| | Northern Ireland | Britain | EU26 | EU FTA partners | Rest of World | Total Importers |
|---|---|---|---|---|---|---|
| 2013 | 1646 | 5447 | 4631 | 3254 | 7224 | 11134 |
| 2014 | 1881 | 6003 | 5025 | 3576 | 8045 | 12208 |
| 2015 | 1855 | 5940 | 5067 | 3640 | 8225 | 12495 |
| 2016 | 1355 | 4501 | 3936 | 3587 | 8311 | 11494 |
| 2017 | 1402 | 4833 | 4223 | 3611 | 8434 | 11748 |

*Note: Destination rows do not add to total traders as firms may operate in multiple markets. Reporting threshold is lower for import activity than for export activity so panels are not strictly comparable. Source: Author's calculations from CSO customs microdata.*

We next take a look at the sectoral distribution of trade with EU FTA partners as a benchmark for how inputs from Northern Ireland can be later compared. Table 3 and 4 present different ways of examining the relative importance of each region and sector in overall exports and, following that Tables 5 and 6 will do the same for imports. Table 3 shows how the exports for each sector are spread across regions (with each row totalling 100). This shows that EU FTA partner countries are particularly important trading partners for the chemical and pharmaceutical sector, where they account for one-quarter of exports, and also for mineral products, where they account for 20 per cent of exports. They also make up a smaller, but not insignificant, share of ten per cent of exports in both other

chemical and organic chemical sectors. They make up under 5 per cent of the export value of most other sectors. As a broad generalisation, we see that the closer markets of Northern Ireland, Britain and EU26 make up the bulk of food, textile and mineral sectors with beverages, chemicals and transport (equipment not services) going to non-EU markets.

TABLE 3: SHARE OF SECTOR EXPORTS TO EACH REGION 2017

| | Northern Ireland | Britain | EU26 | EU FTA partners | Rest of World | Total |
|---|---|---|---|---|---|---|
| Beverages | 7% | 19% | 23% | 7% | 44% | 100% |
| Carpets, footwear | 12% | 38% | 43% | 2% | 5% | 100% |
| Chemical & pharma | 1% | 7% | 23% | 25% | 44% | 100% |
| Dairy | 4% | 32% | 41% | 7% | 16% | 100% |
| Foodstuffs | 4% | 40% | 29% | 6% | 21% | 100% |
| Leather and fur | 3% | 29% | 49% | 2% | 17% | 100% |
| Live animals | 24% | 44% | 15% | 5% | 12% | 100% |
| Machinery & electrical | 2% | 19% | 47% | 9% | 24% | 100% |
| Meat and fish | 5% | 41% | 42% | 4% | 8% | 100% |
| Metals | 8% | 36% | 37% | 4% | 15% | 100% |
| Milled products, oils | 20% | 18% | 46% | 3% | 13% | 100% |
| Mineral products | 9% | 31% | 31% | 20% | 9% | 100% |
| Miscellaneous | 3% | 10% | 29% | 8% | 50% | 100% |
| Other chemicals | 1% | 10% | 56% | 10% | 22% | 100% |
| Other organic chemicals | 5% | 28% | 39% | 10% | 18% | 100% |
| Plastic and rubber | 8% | 35% | 32% | 5% | 20% | 100% |
| Stone and glass | 8% | 55% | 16% | 5% | 17% | 100% |
| Textiles | 2% | 31% | 46% | 8% | 13% | 100% |
| Tobacco & food residues | 22% | 51% | 16% | 3% | 7% | 100% |
| Transportation | 0% | 5% | 19% | 2% | 73% | 100% |
| Vegetable products | 22% | 73% | 3% | 1% | 1% | 100% |
| Wood & wood products | 15% | 61% | 17% | 3% | 4% | 100% |
| **All Exports** | **3%** | **19%** | **31%** | **12%** | **35%** | **100%** |

*Source: Author's calculations from CSO customs microdata*

Table 3 showed the importance of each region sector by sector. Table 4 gives an alternative view of the same data which adjusts for the different sizes of the sectors by showing how trade within each region is composed (i.e. in this case it is the region columns which sum to 100). This shows the dominance of the chemical and pharmaceutical sector in trade with EU FTA partners, accounting for 63 per cent of the exports going to these countries.

TABLE 4: SHARE OF REGION IN EACH SECTOR'S EXPORTS 2017

| | Northern Ireland | Britain | EU26 | EU FTA partners | Rest of World | Total |
|---|---|---|---|---|---|---|
| Beverages | 4% | 2% | 2% | 1% | 2% | 2% |
| Carpets, footwear | 3% | 1% | 1% | 0% | 0% | 1% |
| Chemical and pharma | 11% | 11% | 23% | 63% | 39% | 31% |
| Dairy | 5% | 7% | 6% | 3% | 2% | 4% |
| Foodstuffs | 5% | 9% | 4% | 2% | 2% | 4% |
| Leather and fur | 0% | 1% | 1% | 0% | 0% | 0% |
| Live animals | 5% | 2% | 0% | 0% | 0% | 1% |
| Machinery & electrical | 7% | 13% | 21% | 10% | 9% | 14% |
| Meat and fish | 12% | 18% | 12% | 3% | 2% | 8% |
| Metals | 5% | 4% | 3% | 1% | 1% | 2% |
| Milled products, oils | 2% | 0% | 1% | 0% | 0% | 0% |
| Mineral products | 7% | 4% | 3% | 4% | 1% | 3% |
| Miscellaneous | 7% | 5% | 8% | 6% | 12% | 8% |
| Other chemicals | 1% | 1% | 3% | 2% | 1% | 2% |
| Other organic chemicals | 2% | 2% | 2% | 1% | 1% | 1% |
| Plastic and rubber | 6% | 5% | 3% | 1% | 1% | 3% |
| Stone and glass | 2% | 3% | 0% | 0% | 0% | 1% |
| Textiles | 0% | 0% | 0% | 0% | 0% | 0% |
| Tobacco & food residues | 4% | 2% | 0% | 0% | 0% | 1% |
| Transportation | 2% | 4% | 8% | 2% | 25% | 12% |
| Vegetable products | 3% | 2% | 0% | 0% | 0% | 0% |
| Wood & wood products | 6% | 4% | 1% | 0% | 0% | 1% |
| **All Exports** | **100%** | **100%** | **100%** | **100%** | **100%** | **100%** |

*Source: Author's calculations from CSO customs microdata*

The other chemical sectors are less significant in this view and the only other sector accounting for a relatively large share is the machinery and electrical sector which accounts for ten per cent of the exports to the EU FTA markets. Chemical and pharmaceuticals is also a major component of exports to the rest of the world market but makes up a much smaller share of trade with Northern Ireland and Britain where the trade is much more dispersed across sectors.

Moving next to the import composition of Irish trade, where our interest is now more in the inputs that are coming from Northern Ireland and may feed into onward supply linkages. Table 5 shows how the imports for each sector are spread across regions (with each row totalling 100) and Table 6 shows how trade within each region is distributed across sectors (i.e. in this case it is the region columns which sum to 100).

In terms of sector import sourcing, the sector that stands out most in Table 5 is the dairy sector where 37 per cent of imports come from Northern Ireland. Other sectors where Northern Ireland accounts for a substantial share include beverages, milled products, tobacco and food residues and vegetable products. As noted in the discussion of overall trade, imports from EU FTA partners make up quite a small share of the total and here we note that the only sector in which they account for a notable share of imports is in mineral products (which includes petroleum products). Table 6 then shows the distribution of each region's imports across the sectors. Trade from Northern Ireland is fairly widely spread across sectors with only dairy and mineral product sectors accounting for ten per cent or more.

TABLE 5: SHARE OF SECTOR IMPORTS FROM EACH REGION 2017

| | Northern Ireland | Britain | EU26 | EU FTA partners | Rest of World | Total |
|---|---|---|---|---|---|---|
| Beverages | 8% | 46% | 34% | 6% | 6% | 100% |
| Carpets, footwear | 1% | 47% | 22% | 4% | 26% | 100% |
| Chemical & pharma | 0% | 20% | 43% | 4% | 33% | 100% |
| Dairy | 37% | 40% | 23% | 0% | 0% | 100% |
| Foodstuffs | 3% | 63% | 30% | 1% | 2% | 100% |
| Leather and fur | 1% | 39% | 29% | 1% | 30% | 100% |
| Live animals | 4% | 69% | 14% | 0% | 13% | 100% |
| Machinery & electrical | 1% | 32% | 32% | 5% | 30% | 100% |
| Meat and fish | 5% | 49% | 43% | 1% | 3% | 100% |
| Metals | 3% | 44% | 31% | 5% | 16% | 100% |
| Milled products, oils | 9% | 33% | 43% | 2% | 12% | 100% |
| Mineral products | 3% | 56% | 8% | 19% | 15% | 100% |
| Miscellaneous | 2% | 43% | 24% | 3% | 28% | 100% |
| Other chemicals | 1% | 39% | 47% | 2% | 11% | 100% |
| Other organic chemicals | 1% | 63% | 24% | 3% | 9% | 100% |
| Plastic and rubber | 3% | 35% | 40% | 3% | 18% | 100% |
| Stone and glass | 2% | 28% | 40% | 3% | 27% | 100% |
| Textiles | 3% | 27% | 45% | 9% | 17% | 100% |
| Tobacco & food residues | 15% | 21% | 27% | 3% | 34% | 100% |
| Transportation | 0% | 5% | 57% | 2% | 36% | 100% |
| Vegetable products | 10% | 28% | 41% | 12% | 9% | 100% |
| Wood & wood products | 5% | 49% | 31% | 5% | 10% | 100% |
| **All Exports** | **2%** | **27%** | **40%** | **4%** | **26%** | **100%** |

*Source: Author's calculations from CSO customs microdata*

TABLE 6: SHARE OF REGION IN EACH SECTOR'S IMPORTS 2017

| | Northern Ireland | Britain | EU26 | EU FTA partners | Rest of World | Total |
|---|---|---|---|---|---|---|
| Beverages | 4% | 2% | 1% | 2% | 0% | 1% |
| Carpets, footwear | 2% | 6% | 2% | 3% | 4% | 4% |
| Chemical & pharma | 2% | 8% | 11% | 10% | 13% | 10% |
| Dairy | 17% | 2% | 1% | 0% | 0% | 1% |
| Foodstuffs | 6% | 8% | 3% | 1% | 0% | 3% |
| Leather and fur | 0% | 0% | 0% | 0% | 0% | 0% |
| Live animals | 1% | 1% | 0% | 0% | 0% | 0% |
| Machinery & electrical | 6% | 15% | 10% | 13% | 15% | 13% |
| Meat and fish | 4% | 3% | 2% | 0% | 0% | 2% |
| Metals | 5% | 5% | 2% | 4% | 2% | 3% |
| Milled products, oils | 4% | 1% | 1% | 0% | 0% | 1% |
| Mineral products | 10% | 15% | 1% | 32% | 4% | 7% |
| Miscellaneous | 4% | 7% | 3% | 3% | 5% | 5% |
| Other chemicals | 1% | 2% | 1% | 1% | 0% | 1% |
| Other organic chemicals | 1% | 6% | 1% | 2% | 1% | 2% |
| Plastic and rubber | 5% | 4% | 3% | 2% | 2% | 3% |
| Stone and glass | 1% | 1% | 1% | 1% | 1% | 1% |
| Textiles | 0% | 0% | 0% | 0% | 0% | 0% |
| Tobacco & food residues | 8% | 1% | 1% | 1% | 2% | 1% |
| Transportation | 5% | 6% | 51% | 17% | 48% | 35% |
| Vegetable products | 8% | 2% | 2% | 5% | 1% | 2% |
| Wood & wood products | 6% | 4% | 2% | 3% | 1% | 2% |
| **All Exports** | **100%** | **100%** | **100%** | **100%** | **100%** | **100%** |

*Source: Author's calculations from CSO customs microdata*

Another way to look at the composition of trade, which is particularly useful when interested in potential supply chain linkages, is to categorise the products by use. The Broad Economic Classification system (BEC) used by the United Nations allocates each detailed product in trade statistics into four broad types: consumption goods (those going to an end user), intermediate products (destined for further processing), capital goods (for example machinery that has a longer life span than intermediate goods) and other goods (those which cannot be allocated to any of the main groups). In the analysis of cross-border trade by InterTradeIreland and NISRA,[3] it was noted that a shortcoming of the BEC classification in this context was the automatic allocation of most food products to the consumption category whereas industry expertise had identified a substantial proportion of cross-border trade (in particular in the dairy industry) as involving processing activities that better suited it to being described as an intermediate input. Following this prior work, this report also uses an "adjusted" version of the BEC classification which treats the dairy and meat sectors as being intermediates rather than final consumption goods while applying the standard BEC classifications to all other products. All exports and imports are allocated to one of the four categories.

As with the sectoral breakdowns, we look at the BEC groupings both in terms of how trade from each country or region is composed of each type (Table 7) and also how each type of product is allocated across region (Table 8). In line with the previous research by InterTradeIreland and NISRA, we see that a majority of cross-border trade is in intermediate inputs. These make up over 60 per cent of Irish exports to Northern Ireland and 70 per cent of imports. Most of the remainder of trade in both directions comes from goods for final consumption with a minor share from capital or other products. In contrast, capital goods make up a majority of Irish imports from markets in the rest of the world and almost half of imports from the EU26 while imports from Britain have a substantial share coming from consumption goods. Exports to EU FTA partner countries are strongly dominated by intermediate goods consistent with the high share of the chemical and pharmaceutical industry in these destinations. Table 8 shows that exports to EU FTA countries make up over 19 per cent of Irish exports of intermediates.

[3] InterTradeIreland (2018a) "Cross-Border Trade and Supply Linkages", available at: http://www.intertradeireland.com/media/ITICrossBorderTradeandLinkagesReport.pdf
NISRA (2018). *Cross-Border Supply Chain Report, 2015-2016,* www.nisra.gov.uk

### TABLE 7: TRADE BY ADJUSTED BROAD ECONOMIC CLASSIFICATION – SHARE BY REGION

A: Exports

| | Consumption | Intermediate | Capital | Other | Total |
|---|---|---|---|---|---|
| Northern Ireland | 32.5% | 61.2% | 6.0% | 0.3% | 100% |
| Britain | 29.5% | 59.4% | 10.9% | 0.1% | 100% |
| EU26 | 26.3% | 51.2% | 22.4% | 0.0% | 100% |
| EU FTA partners | 9.2% | 80.6% | 10.1% | 0.1% | 100% |
| Rest of World | 29.2% | 33.3% | 37.5% | 0.0% | 100% |

B: Imports

| | Consumption | Intermediate | Capital | Other | Total |
|---|---|---|---|---|---|
| Northern Ireland | 22.1% | 70.0% | 5.6% | 2.3% | 100% |
| Britain | 37.9% | 50.8% | 9.1% | 2.2% | 100% |
| EU26 | 19.5% | 25.3% | 49.2% | 6.1% | 100% |
| EU FTA partners | 15.0% | 62.6% | 17.0% | 5.3% | 100% |
| Rest of World | 19.1% | 25.8% | 55.0% | 0.0% | 100% |

*Source: Author's calculations from CSO customs microdata*

### TABLE 8: TRADE BY ADJUSTED BROAD ECONOMIC CLASSIFICATION – SHARE BY TYPE

A: Exports

| | Consumption | Intermediate | Capital | Other | Total |
|---|---|---|---|---|---|
| Northern Ireland | 4.1% | 4.0% | 0.8% | 18.6% | 3.3% |
| Britain | 21.2% | 22.1% | 8.6% | 45.6% | 18.7% |
| EU26 | 30.8% | 31.1% | 29.0% | 3.2% | 30.5% |
| EU FTA partners | 4.2% | 19.4% | 5.2% | 28.9% | 12.1% |
| Rest of World | 39.7% | 23.4% | 56.3% | 3.6% | 35.4% |
| All regions | 100% | 100% | 100% | 100% | 100% |

B: Imports

| | Consumption | Intermediate | Capital | Other | Total |
|---|---|---|---|---|---|
| Northern Ireland | 2.0% | 4.4% | 0.3% | 1.5% | 2% |
| Britain | 42.5% | 39.6% | 6.6% | 17.9% | 27% |
| EU26 | 32.1% | 29.0% | 52.5% | 73.3% | 40% |
| EU FTA partners | 2.7% | 7.7% | 2.0% | 6.9% | 4% |
| Rest of World | 20.7% | 19.4% | 38.6% | 0.3% | 26% |
| All regions | 100% | 100% | 100% | 100% | 100% |

*Source: Author's calculations from CSO customs microdata*

# SECTION 3: NI INPUTS AND TRADE WITH EU FTA COUNTRIES

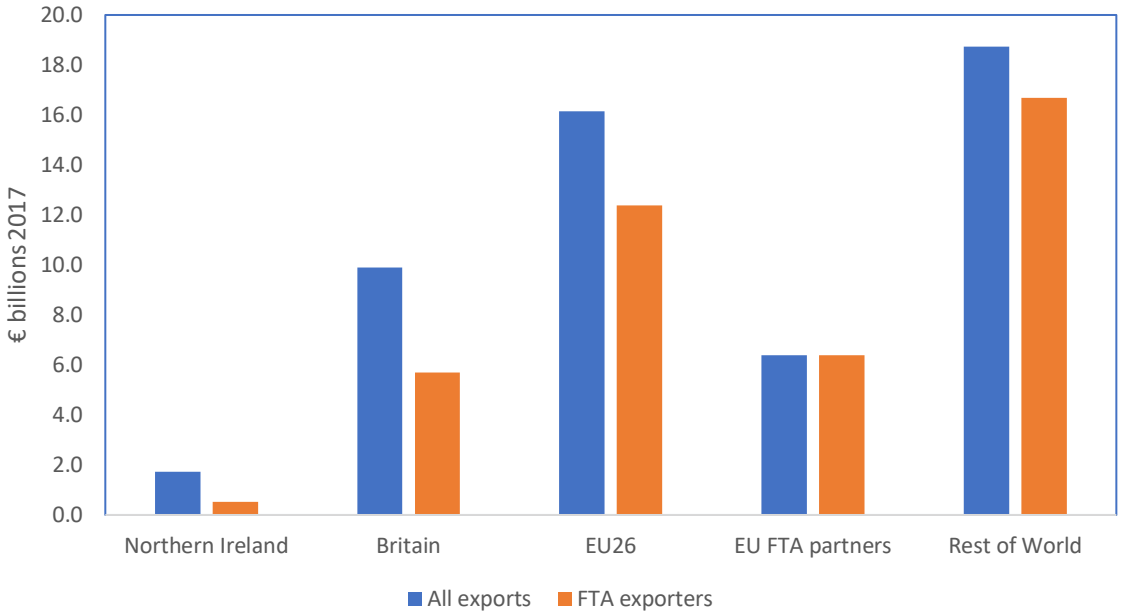
In this section, we look in more detail at the role of firms exporting to EU FTA partner countries and the extent to which imports from Northern Ireland are purchased by these firms.

Figures 1 and 2 show that firms active in exporting to EU FTA countries also account for a substantial proportion of the trade with all other markets suggesting that these are large and internationally diversified firms. For example, in Table 9, we find that 90 per cent of exports to countries in the rest of the world groups are made by firms who also sell to EU FTA markets. This is in line with international evidence that trade values tend to be concentrated in a relatively small number of large firms. Across a number of European countries, for example, the think-tank Bruegel found that the largest ten per cent of exporting firms accounted for 80 to 90 per cent of export values.[4]

The figures show this in absolute values of trade while Tables 9 and 10 show the shares of the FTA exporting firms in total exports and imports respectively. In Table 9, FTA exporting firms are shown to account for a substantial majority of trade with both the EU26 and with countries in the rest of the world in addition to the trade with the FTA partner countries themselves. Firms that export tend also to import and Table 10 shows that the same firms identified as exporting to EU FTA partner countries account for a significant proportion of the imports coming from each of these regions as well. Only around one quarter of imports from FTA partner countries are imported from firms that do not also export to these markets (as shown in Figure 2 and Table 10). FTA exporters have a significant export presence in Britain but tend to source a smaller share of their imports there.

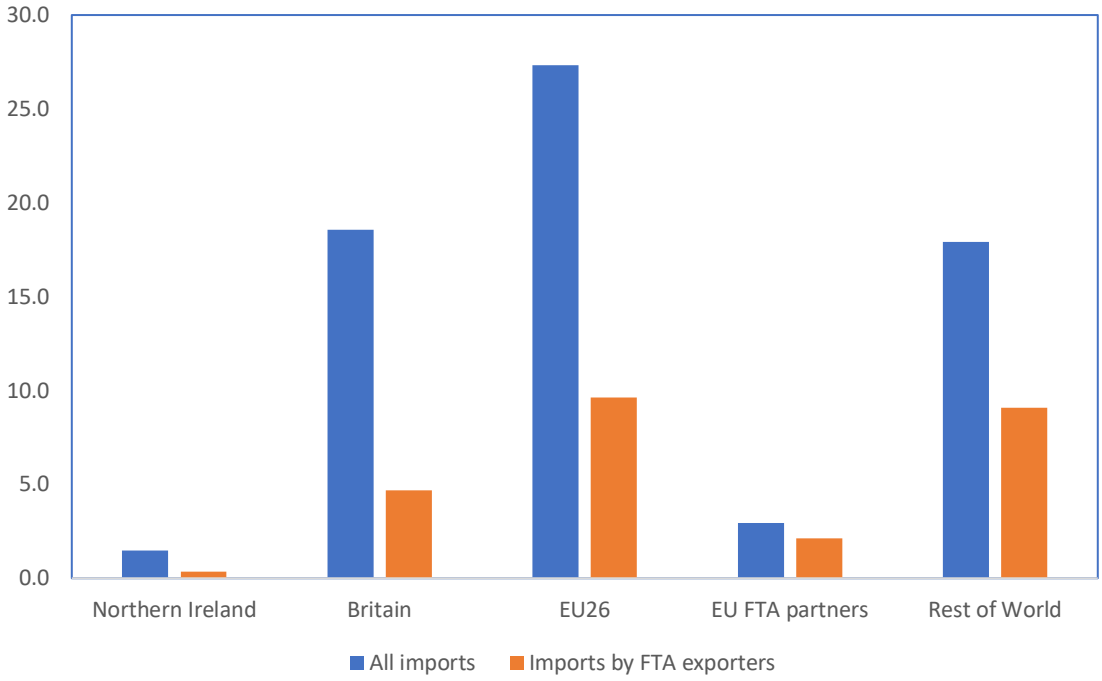
[4] Thierry Mayer and Gianmarco Ottaviano (2008) "The Happy Few: The internationalisation of European firms" https://www.bruegel.org/wp-content/uploads/imported/publications/BP_Nov2008_The_happy_few.pdf

FIGURE 1: COMPARISON OF ALL EXPORTS AND EXPORTS BY FIRMS WITH FTA EXPORTS (VALUES)




*Source: Author's calculations from CSO customs microdata*

FIGURE 2: COMPARISON OF ALL IMPORTS AND IMPORTS BY FIRMS WITH FTA EXPORTS (ABSOLUTE VALUES)




*Source: Author's calculations from CSO customs microdata*

Looking at Northern Ireland, in Tables 9 and 10 we find that the firms exporting to EU FTA countries make up about one-third of total Irish exports to Northern

Ireland, a substantially smaller share than their contributions to other markets. This is in line with previous research showing cross-border trade having a substantial share of small Irish domestic firms relative to the multinational-dominated profile of aggregate Irish trade.

Table 10 shows how much firms exporting to EU FTA trade partners are importing from each region as a share of total imports. This gives us a key finding into the potential exposure of Northern Ireland exporters into any supply chain implications of Brexit if restrictions are put on the use of inputs from Northern Ireland for these destinations. Slightly under one-quarter of total Northern Ireland sales into Ireland are purchased by firms that export to EU FTA partner countries. These firms, as noted above, also export to many other markets including Britain and the EU26, but it is not possible to assign the purchased imports to any specific process within firms that may differ across their export destinations.

TABLE 9: EXPORTS BY FIRMS WITH FTA EXPORTS AS SHARE OF REGION TOTAL

| | Northern Ireland | Britain | EU26 | EU FTA partners | Rest of World | Total |
|---|---|---|---|---|---|---|
| 2013 | 38% | 73% | 90% | 100% | 88% | 88% |
| 2014 | 42% | 72% | 93% | 100% | 95% | 91% |
| 2015 | 31% | 55% | 79% | 100% | 85% | 77% |
| 2016 | 33% | 57% | 70% | 100% | 82% | 74% |
| 2017 | 31% | 58% | 77% | 100% | 89% | 79% |

*Source: Author's calculations from CSO customs microdata*

TABLE 10: FTA EXPORTERS AS SHARE OF IMPORTS EACH REGION

| | Northern Ireland | Britain | EU26 | EU FTA partners | Rest of World | Total |
|---|---|---|---|---|---|---|
| 2013 | 28% | 27% | 48% | 83% | 77% | 51% |
| 2014 | 30% | 26% | 57% | 69% | 77% | 53% |
| 2015 | 19% | 23% | 42% | 38% | 60% | 39% |
| 2016 | 24% | 23% | 35% | 76% | 60% | 40% |
| 2017 | 24% | 25% | 35% | 72% | 51% | 38% |

*Source: Author's calculations from CSO customs microdata*

In addition to the findings on the share of import values, Table 11 notes that approximately 16 per cent of the firm numbers importing from Northern Ireland are also exporting to EU FTA partner countries. The relatively small share of firms that import from Northern Ireland and also export to EU FTA countries is a reflection of the dominance of cross-border trade by small traders that tend not to have broader export networks.[5]

TABLE 11: NUMBER OF IMPORTING FIRMS, WHO EXPORT TO EU FTA PARTNER COUNTRIES

| | Northern Ireland | Britain | EU26 | EU FTA partners | Rest of World |
|---|---|---|---|---|---|
| FTA | 221 | 872 | 857 | 1074 | 1507 |
| All | 1402 | 4833 | 4223 | 3611 | 8434 |
| Share | 16% | 18% | 20% | 30% | 18% |

*Source: Author's calculations from CSO customs microdata*

## SECTION 4: COMPOSITION OF NORTHERN IRISH INPUTS

In the previous section, we found that one-quarter of imports from Northern Ireland to Ireland were purchased by firms that export to EU FTA partner countries. In this section, we examine the structure of these imports across sectors and product classification to see if they differ in any significant way from the overall structure of imports from Northern Ireland.

In Table 12, we compare the imports from Northern Ireland across sectors by EU FTA exporting firms to those of all firms by sector. In the final column of the table, we calculate the share of each sector that is accounted for by the EU FTA exporting firms. This shows quite substantial differences across sectors in terms of their links to EU FTA country supply linkages. The two most notable sectors in terms of the

[5] InterTradeIreland (2018b). "Export Participation and Performance of Firms on the Island of Ireland", available at: https://intertradeireland.com/news/export-participation-and-performance-of-firms-on-the-island-of-ireland/

share of their imports being purchased by firms exporting to EU FTA partners are beverages and dairy. In both of these sectors, the EU FTA firm share is 61 per cent of the total imports. However, in terms of total values, it is the dairy sector which dominates, with imports being several times larger than those from the beverages sector. The dominance of dairy in the imports of EU-FTA exporting firms may appear unexpected alongside the concentration of these firms' exports which are largely concentrated in the chemicals and pharmaceuticals sectors. Inputs from the dairy sector (processed into forms such as lactose and casein) are important in the production of a range of pharmaceuticals and, while we cannot trace the precise use of inputs along a path to a final product, this is a likely explanation for the different sectoral concentrations of imports compared to exports.[6]

There are a number of other sectors where EU FTA exporting firms account for a reasonably substantial fraction of the total imports – over one-third in machinery and electrical, other chemicals and wood and wood products for example and over one-quarter in meat and fish, stone and glass and textiles. Other sectors, although substantial in overall cross-border trade, such as mineral products, vegetable products or minerals, have limited connection with firms export to EU FTA partners (3 to 4 per cent).

Table 13 compares the overall sectoral composition of imports by EU FTA exporters with total imports from Northern Ireland (for all purposes). This shows even more clearly the central position of the diary sector in these linkages. While dairy already makes up a significant share of total Northern Ireland sales into Ireland at 17 per cent, its share of sales to EU FTA exporters is 45 per cent. Using this metric, the next largest contributors to EU FTA supply links with Northern Ireland are the beverages and machinery and electrical sectors, both of which account for ten per cent of cross-border purchases by these firms with Wood and Wood products following at around 8%.

[6] An overview of the use of lactose in pharmaceutical preparations can be found here: https://www.pharmaexcipients.com/organic-chemicals/sugars/lactose-in-pharma/

TABLE 12: IMPORTS BY EU FTA EXPORTERS COMPARED TO ALL IMPORTS
BY SECTOR - 2017 €M

| | NI imports by EU FTA exporting firms | Total imports from NI by all firms | Share imported by EU FTA exporters |
|---|---|---|---|
| Beverages | 38.7 | 63.0 | 61% |
| Carpets, footwear | 1.0 | 26.4 | 4% |
| Chemical and pharmaceutical | 2.3 | 24.5 | 9% |
| Dairy | 155.9 | 257.0 | 61% |
| Foodstuffs | 14.4 | 82.8 | 17% |
| Leather and furs | . | 2.2 | . |
| Live animals | . | 8.6 | . |
| Machinery and electrical | 33.7 | 89.4 | 38% |
| Meat and fish | 17.6 | 60.9 | 29% |
| Metals | 12.3 | 74.4 | 17% |
| Milled products, oils | 6.5 | 52.3 | 13% |
| Mineral products | 3.1 | 145.0 | 2% |
| Miscellaneous | 4.6 | 59.7 | 8% |
| Other chemicals | 2.9 | 8.6 | 33% |
| Other organic chemicals | 3.4 | 21.7 | 16% |
| Plastic and rubber | 9.1 | 78.4 | 12% |
| Stone and glass | 4.8 | 19.3 | 25% |
| Textiles | 0.9 | 3.1 | 29% |
| Tobacco & food residues | 2.5 | 124.6 | 2% |
| Transportation | 3.1 | 72.6 | 4% |
| Vegetable products | 4.2 | 123.0 | 3% |
| Wood and wood products | 28.4 | 86.6 | 33% |
| **All sectors** | **349.5** | **1484.3** | **24%** |

*Source: Author's calculations from CSO customs microdata*

TABLE 13: SECTORAL DISTRIBUTION OF IMPORTS BY EU FTA EXPORTERS COMPARED TO ALL IMPORTS

| | Sector share of total - by EU FTA firms | Sector share of total - by all firms |
|---|---|---|
| Beverages | 11% | 4% |
| Carpets, footwear | 0% | 2% |
| Chemical and pharmaceutical | 1% | 2% |
| Dairy | 45% | 17% |
| Foodstuffs | 4% | 6% |
| Leather and fur | . | 0% |
| Live animals | . | 1% |
| Machinery and electrical | 10% | 6% |
| Meat and fish | 5% | 4% |
| Metals | 4% | 5% |
| Milled products, oils | 2% | 4% |
| Mineral products | 1% | 10% |
| Miscellaneous | 1% | 4% |
| Other chemicals | 1% | 1% |
| Other organic chemicals | 1% | 1% |
| Plastic and rubber | 3% | 5% |
| Stone and glass | 1% | 1% |
| Textiles | 0% | 0% |
| Tobacco & food residues | 1% | 8% |
| Transportation | 1% | 5% |
| Vegetable products | 1% | 8% |
| Wood and wood products | 8% | 6% |
| All sectors | 100% | 100% |

*Source: Author's calculations from CSO customs microdata*

We next look at the composition of imports by EU FTA exporting firms by final use as classified by the UN BEC groupings and compare that to the overall composition of imports from Northern Ireland to Ireland. Table 14 shows that the differences in this classification between the EU FTA firms and overall trade are relatively modest, with intermediate inputs making up the majority of trade for both, followed by a sizeable contribution from final consumption products. The share of intermediates in purchases by the EU FTA exporting firms is slightly higher, particularly in 2017, but the general pattern is similar.

TABLE 14: STRUCTURE OF NI IMPORTS BY ALL FIRMS AND BY EU FTA EXPORTING FIRMS

| | Consumption | Intermediate | Capital | Other | Total |
|---|---|---|---|---|---|
| Shares in imports by EU FTA exporting firms | | | | | |
| 2013 | 32% | 66% | 2% | . | 100% |
| 2014 | 26% | 71% | 4% | . | 100% |
| 2015 | 29% | 68% | 4% | . | 100% |
| 2016 | 23% | 73% | 5% | . | 100% |
| 2017 | 19% | 77% | 4% | . | 100% |
| Share in imports by all firms | | | | | |
| 2013 | 25% | 69% | 4% | 2% | 100% |
| 2014 | 22% | 71% | 5% | 2% | 100% |
| 2015 | 24% | 70% | 5% | 2% | 100% |
| 2016 | 22% | 70% | 6% | 2% | 100% |
| 2017 | 22% | 70% | 6% | 2% | 100% |

*Source: Author's calculations from CSO customs microdata*

## SECTION 5: EU FTA AGREEMENTS AND RULES OF ORIGIN

The evidence from the previous section shows that inputs sourced in Northern Ireland are a reasonably substantial part of supply chains for firms actively exporting to other markets, including countries that the EU has free trade agreements in place with. One-quarter of goods imported to Ireland from Northern Ireland are imported by these EU FTA exporting firms, with dairy being a

particularly important sector from which they make their purchases. This suggests that losing access to these supply chains poses a significant risk to this segment of trade between Northern Ireland and Ireland. This section adds some further considerations to assess the extent of the risks. The first relates to the importance of the different countries that make up the group of EU FTA partners and how they overlap with countries that the UK also has a free trade agreement with. The second relates to how supply chain inputs from other countries (i.e. those not part of the FTA) are treated in free trade agreements.

Table 15 shows that of the 77 countries that Ireland trades with under the terms of EU free trade agreements, seven account for the vast majority of Irish exports to the entire group. Of these, the dominant trading partner is Switzerland, which accounts for 42 per cent of the exports from Ireland to EU FTA partners. This is also one of the countries that the UK has made an agreement to roll over current trading arrangements after the end of the Brexit transition period. According to UK Government information, trade agreements have been rolled over with 47.[7]

In terms of the supply chain links that are being focused on here, these 47 countries that the UK has signed continued trade agreements with (note that some of the agreements are with blocks of countries rather than with the individual countries themselves) account for 54 per cent of Irish exports to the total group of EU FTA countries. While some of the UK rollover agreements may be temporary, this gives some assurance that, were there to be diagonal cumulation in place between the EU, UK and the FTA trading partner, there is the potential to mitigate some of these risks.[8] However, while the UK is seeking to develop opportunities for diagonal cumulation in trade negotiations with the EU, there is no guarantee at this stage that will be the final outcome or indeed that it will be in place for the long term.

[7] https://www.gov.uk/guidance/uk-trade-agreements-with-non-eu-countries.

[8] Diagonal cumulation allows for the use of input materials originating in different countries provided that each of the countries involved in the trade process have free trade agreements with one another using the same rules of origin (e.g. If both the UK and EU have FTAs with Japan containing the same rules of origin, then exports from the UK to Japan could use EU inputs and these would be treated as equivalent to inputs originating in the UK).

TABLE 15: MAIN IRISH EXPORT DESTINATIONS AMONGST EU FTA PARTNERS

| Country | Share of Irish exports to all EU-FTA countries | UK to roll over agreement? |
|---|---|---|
| Switzerland | 42.0% | Yes |
| Japan | 17.7% | No |
| Mexico | 9.6% | No |
| Canada | 7.4% | No |
| South Korea | 4.3% | Yes |
| Turkey | 3.6% | No |
| Norway | 2.7% | No |
| ***Contribution of top 7*** | ***87.3%*** | |

Source: CSO Trade Statistics December 2018 for Irish export destinations and UK Government for trade agreement status (as of 4th May 2020) https://www.gov.uk/guidance/uk-trade-agreements-with-non-eu-countries.

However, there are a number of sizeable markets for Irish exports that the UK has not (to date) completed trade agreements with. Japan, Mexico and Canada jointly represent 35 per cent of Irish exports to EU FTA countries so these are the most significant in terms of the continued recognition of Northern Irish inputs. Exports to these markets are quite concentrated in terms of products. The top fifteen products account for 80 per cent of exports to Japan, 97 per cent to Mexico and 78 per cent to Canada. The top fifteen for each of these markets and also for Switzerland are shown in the Appendix.

In the case of the products for Japan, Mexico and Canada, the Appendix table also shows a summary of the rules of origin applied to the use of inputs acquired from outside the EU.[9] Rules of Origin (RoO) set out requirements for goods traded under an FTA that require them to be either entirely or substantially produced in the exporting country.

The degree to which production needs to take place in the exporting country and the associated limits on usage of inputs from third countries can be a highly complex part of FTAs with the specific limits varying at a highly detailed product

[9] These rules of origin are based on the text or annexes from each free trade agreement*:*
*EU-Japan (*http://trade.ec.europa.eu/doclib/docs/2018/august/tradoc_157231.pdf#page=47*),*
*EU-Mexico (*https://op.europa.eu/en/publication-detail/-/publication/47746f24-ac63-11e4-b5b2-01aa75ed71a1/language-en*)*
*EU-Canada (*https://www.international.gc.ca/trade-commerce/trade-agreements-accords-commerciaux/agr-acc/ceta-aecg/text-texte/toc-tdm.aspx?lang=eng)

code level. These are beyond the scope of this report but, at a very high level, a key distinction is between products that must be wholly originating in the exporting country and those for which some imported inputs are allowed so long as substantive processing takes place.

Each of the agreements with the largest partner countries for Ireland that the UK has not signed a comparable agreement with – Japan, Mexico and Canada – have requirements that dairy imports are wholly originated in the EU. This would cause substantial difficulty for onward exports of dairy products sourced in Northern Ireland by firms in Ireland. For the majority of the highest-value products traded between Ireland and the largest EU FTA partner countries, the requirement is that the level of processing is substantive enough to change the product code that is used to describe the product. In simple terms, the input must be transformed into a product that is categorised as coming under a different sector (or "chapter"). These are indicated in the Appendix as products requiring either a Change to Heading (CTH) or CTSH (Change to Sub-Heading) with WO indicting the products where only Wholly Originating inputs may be used.

In addition to the requirement of processing substantive enough to change the tariff heading of the product, further requirements may be placed on the maximum value of materials coming from outside the exporting country or a minimum requirement for the share of value that needs to be added in the processing that has taken place in the exporting country. [10] These rules can be complex, particularly in sectors where they vary across individual products. If inputs from Northern Ireland were to be included in this "non-originating" set of inputs, individual firms would have to document how this affected the degree of processing they undertook in Ireland.

There are two risks this brings about for supply chains. The first is the direct risk that if Northern Irish inputs are substantive enough a share to affect the product's treatment under the EU FTA the firm may look to switch to a supply source that complies with the origin requirements. The second risk is that firms may switch

[10] As an example of this, the requirements for products under Chapter 33 (which includes Ireland's largest export product to Mexico) in the EU-Mexico deal specify:
"ex Chapter 33 Essential oils and resinoids; perfumery, cosmetic or toilet preparations, except for: Manufacture in which all the materials used are classified within a heading other than that of the product. However, materials classified within the same heading may be used provided their value does not exceed 20 % of the ex-works price of the product OR Manufacture in which the value of all the materials used does not exceed 40 % of the ex-works price of the product."

supply arrangements even if they are not using a substantial amount of Northern Irish inputs in order to minimise the complexity of having to document the origin of all inputs or to use separate production lines in order to assure trading partners that EU product is not being mixed with product from NI.

To draw these findings together, we compare the sectoral structure of imports from Northern Ireland and the exports to EU FTA countries by these firms. While we cannot look inside the production structure of any individual firm, these changes in sector give us a broad indication of the extent to which inputs from Northern Ireland are undergoing substantive processing before being exported onwards to countries the EU has an FTA with. We also expand on the finding above that over half of Irish trade with EU FTA partner countries is with countries that the UK have concluded a rollover trade agreement by undertaking the same calculation at a sector level to allow greater granularity in the assessment of risk across sectors. The first column of Table 16 repeats the sectoral distribution of imports from Northern Ireland by firms in Ireland that export to EU FTA countries already shown in Table 13. The second column shows the sectoral distribution of the EU FTA exports of the firms that import from Northern Ireland.

The change in the share of the Dairy sector is quite striking. Although accounting for 45 per cent of imports from Northern Ireland, Dairy is not a major export sector to the other countries the EU has a trade agreement with. Instead we see a much greater share of exports being accounted for by the Chemical and Pharmaceutical sector. This is consistent with the earlier conjecture that Dairy imports may be part of a production process leading to chemical and pharmaceutical exports rather than being exported in their current form. This is again subject to the caveat that we cannot map directly the imported input onto a firm export to a specific destination and, as noted above, most firms large enough in scale to export to EU FTA countries are also exporting to closer markets such as the UK and EU. However, it would indicate that the risk to Northern Ireland supply chain links into EU FTA export markets is less substantial than the initial examination of the composition of import sectors may have indicated.

The final column of Table 16 shows that the share of each sector's trade with EU FTA partners that is with countries with whom the UK has also concluded a rollover trade agreement. This shows substantial variation across sectors with the highest share of trade covered being 67 per cent of the EU FTA exports in the Chemical and Pharmaceutical sector while others come in below 10 per cent. Reassuringly, the

sectors where the highest shares of the EU FTA exports are sold to countries that the UK has not signed a rollover agreement are not those where inputs from Northern Ireland play a substantial role. Of the main export sectors using Northern Ireland inputs, typically the rollover agreements cover at least close to half of current trade.

TABLE 16: SECTORAL COMPOSITION OF EU FTA EXPORTS BY FIRMS IMPORTING FROM NORTHERN IRELAND AND UK ROLLOVER TRADE AGREEMENTS

| | Sector of imported product | Sector of exported product | Share of sector trade with UK rollover |
|---|---|---|---|
| Beverages | 11% | 2% | 27% |
| Carpets, footwear | 0% | 0% | 8% |
| Chemical and pharmaceutical | 1% | 20% | 67% |
| Dairy | 45% | 6% | 34% |
| Foodstuffs | 4% | 13% | 43% |
| Leather and fur | . | 0% | 32% |
| Live animals | . | . | 14% |
| Machinery and electrical | 10% | 24% | 48% |
| Meat and fish | 5% | 12% | 47% |
| Metals | 4% | 2% | 42% |
| Milled products, oils | 2% | 0% | 61% |
| Mineral products | 1% | 1% | 2% |
| Miscellaneous | 1% | 5% | 17% |
| Other chemicals | 1% | 6% | 29% |
| Other organic chemicals | 1% | 1% | 15% |
| Plastic and rubber | 3% | 3% | 52% |
| Stone and glass | 1% | 1% | 47% |
| Textiles | 0% | 0% | 8% |
| Tobacco & food residues | 1% | 1% | 41% |
| Transportation | 1% | 3% | 11% |
| Vegetable products | 1% | . | 17% |
| Wood and wood products | 8% | 1% | 34% |
| All sectors | 100% | 100% | 54% |

*Source: Author's calculations from CSO customs microdata and UN ComTrade database*

# SECTION 6: CONCLUSIONS

The purpose of this report is to provide an assessment of the extent to which inputs purchased from Northern Ireland by firms in RoI form part of onward exporting activity. This is a question of potentially significant policy relevance as, although the Brexit withdrawal agreement provided Northern Ireland with access to the EU market, it does not provide a clear route by which Northern Ireland goods can retain preferential access to non-EU countries with which the EU has existing (or indeed future) free trade agreements.

This report uses detailed trade data from Ireland to examine the purchasing patterns of firms that export to EU FTA partner countries. Tracking the imports from Northern Ireland by firms exporting to EU FTA countries gives us considerable information on how much and what type of good they are purchasing from Northern Ireland and, hence, the maximum degree of exposure to any potential limitations being put on this indirect exporting through onward supply chain integration.

The overall estimate of the extent of linkages is that approximately one-quarter of goods imported to Ireland from Northern Ireland are imported by firms that export to countries that the EU has a free trade agreement with. There is considerable variation across sectors with EU FTA supply chains being of particular importance in the dairy and beverages sectors. In both of these, EU FTA exporting firms account for 61 per cent of imports from Northern Ireland.

The dairy sector initially appears to be the most particularly exposed to any changes to supply chain activities. It accounts for 45 per cent of total imports from Northern Ireland by EU FTA exporters. However, Dairy is not a major export sector to the other countries the EU has a trade agreement with one of the largest shares of exports coming from the Chemical and Pharmaceutical sector. This is consistent with Dairy imports forming part of a production process leading to chemical and pharmaceutical exports and hence makes it more likely that the risk is mitigated through compliance with any substantive processing requirements of trade agreements.

The UK government has rolled over trade agreements involving 47 of the 77 countries where the EU has agreements in place (at least on a temporary basis).

These 47 countries account for just over half of Irish exports to the total group of EU FTA countries. Three of the largest EU-FTA markets for Irish exports that the UK has not (to date) completed trade agreements with are Japan, Mexico and Canada. All three of these trade agreements have requirements that dairy imports are wholly originated in the EU. For most other products, the trade agreements allow for non-originating inputs. However, they specify that substantial processing is done in the EU with specific percentages varying across products. Going forward, the inclusion of diagonal cumulation terms in trade agreements with countries that both the UK and EU have free trade arrangements with would allow for exports to these countries to have inputs sourced on equal terms from either the UK or EU. This would substantially reduce the risk to Northern Ireland inputs used by firms in Ireland losing access to broader export networks of EU free trade partners.

# APPENDIX: EU FREE TRADE AGREEMENT PARTNER COUNTRIES

### AGREEMENTS IN PLACE:

| Country | Country | Country | Country |
|---|---|---|---|
| Albania | Algeria | Andorra | Armenia |
| Bosnia & Herzegovina | Botswana | Chile | Egypt |
| Eswatini (Swaziland) | Faroe Islands | Georgia | Iceland |
| Israel | Japan | Jordan | Kosovo |
| Lebanon | Liechtenstein | Lesotho | Mexico |
| Moldova | Montenegro | Morocco | Mozambique |
| Namibia | North Macedonia | Norway | Palestinian Authority |
| San Marino | Serbia | South Africa | South Korea |
| Sri Lanka | Switzerland | Syria | Tunisia |
| Turkey | | | |

### AGREEMENTS PARTLY IN PLACE:

| Country | Country | Country | Country |
|---|---|---|---|
| Antigua & Barbuda | Armenia | Bahamas | Barbados |
| Belize | Botswana | Cameroon | Canada |
| Colombia | Côte d'Ivoire | Comoros | Costa Rica |
| Cuba | Dominica | Dominican Republic | Ecuador |
| El Salvador | Ethiopia | Fiji | Ghana |
| Grenada | Guatemala | Guyana | Honduras |
| Iraq | Jamaica | Kazakhstan | Nicaragua |
| Panama | Papua New Guinea | Madagascar | Mauritius |
| Peru | Samoa | Seychelles | St Kitts & Nevis |
| St Lucia | St Vincent & Grenadines | Sudan | Suriname |
| Trinidad & Tobago | Ukraine | Zambia | Zimbabwe |

*Source:* European Commission (https://ec.europa.eu/trade/policy/countries-and-regions/negotiations-and-agreements/#_in-place) Accessed 6th March 2020.

# APPENDIX: MAIN PRODUCTS EXPORTED BY IRELAND TO LARGEST FTA PARTNER COUNTRIES

| Switzerland | Share of trade |
|---|---|
| Heterocyclic compounds; containing a pyrimidine ring (whether or not hydrogenated) or piperazine ring in the structure, (other than malonylurea and its derivatives, loprazolam, mecloqualone, methaqualone, zipeprol, and salts thereof) n.e.c. in 2933.5 | 37.3% |
| Blood, human or animal, antisera, other blood fractions and immunological products; antisera and other blood fractions | 24.2% |
| Polypeptide hormones, protein hormones and glycoprotein hormones, their derivatives and structural analogues; other than somatotropin, (its derivatives and structural anaologues) and insulin and its salts | 9.8% |
| Heterocyclic compounds; lactams; other than 6-hexanelactam (epsilon caprolactam) and clobazam (INN) and methyprylon (INN) | 6.7% |
| Antibiotics; n.e.c. in heading no. 2941 | 3.6% |
| Toxins, cultures of micro-organisms (excluding yeasts) and similar products | 3.5% |
| Medicaments; consisting of mixed or unmixed products n.e.c. in heading no. 3004, for therapeutic or prophylactic uses, packaged for retail sale | 2.9% |
| Heterocyclic compounds; n.e.c. in headings no. 2933 | 2.1% |
| Cyclic amides (including cyclic carbamates) and their derivatives; other than the derivatives and salts of ureines, 2-acetamidobenzoic acid (N-acetylanthancillic acid),ethinamate S, and alachlor (ISO) and their derivatives and salts | 0.9% |
| Machinery, plant and laboratory equipment; for treating materials by change of temperature, other than for making hot drinks or cooking or heating food | 0.9% |
| Odoriferous substances and mixtures; of a kind used in the food or drink industries | 0.8% |
| Chemical products, mixtures and preparations; n.e.c. heading 3824 | 0.7% |
| Artificial parts of the body | 0.5% |
| Units of automatic data processing machines; processing units other than those of item no. 8471.41 or 8471.49, whether or not containing in the same housing one or two of the following types of unit: storage units, input units or output units | 0.4% |
| Meat; of bovine animals, boneless cuts, fresh or chilled | 0.4% |

| Japan | Share of trade | Rule of origin |
|---|---|---|
| Lenses, contact; unmounted, of any material, excluding elements of glass not optically worked | 19.1% | CTH |
| Aeroplanes and other aircraft; of an unladen weight exceeding 15,000kg | 12.6% | CTH |
| Blood, human or animal, antisera, other blood fractions and immunological products; immunological products, put up in measured doses or in forms or packings for retail sale | 11.7% | CTSH |
| Medicaments; consisting of mixed or unmixed products n.e.c. in heading no. 3004, for therapeutic or prophylactic uses, packaged for retail sale | 8.9% | CTSH |

| | | |
|---|---|---|
| Heterocyclic compounds; containing a quinoline or isoquinoline ring-system (whether or not hydrogenated) in the structure, not further fused, other than levorphanol (INN) and its salts | 6.0% | CTSH |
| Odoriferous substances and mixtures; of a kind used in the food or drink industries | 4.3% | CTH |
| Appliances; worn, carried or implanted in the body, to compensate for a defect or disability | 3.9% | CTH |
| Pacemakers; for stimulating heart muscles (excluding parts and accessories) | 2.2% | CTH |
| Oral or dental hygiene preparations; other than dentifrices | 2.1% | CTSH |
| Organo-inorganic compounds; other than tetramethyl lead, tetraethyl lead, tributyltin compounds, and other organo-phosphorus derivatives | 1.8% | CTSH |
| Nucleic acids and their salts, other heterocyclic compounds, n.e.c. in heading number 2934 | 1.8% | CTSH |
| Units of automatic data processing machines; storage units | 1.8% | CTSH |
| Vaccines; for human medicine | 1.5% | CTSH |
| Dairy produce; cheese (not grated, powdered or processed), n.e.c. in heading no. 0406 | 1.0% | WO |
| Oral or dental hygiene preparations; dentifrices | 0.9% | CTSH |

| **Mexico** | **Share of trade** | **Rule of origin** |
|---|---|---|
| Odoriferous substances and mixtures; of a kind used in the food or drink industries | 63.3% | CTH |
| Chemical products, mixtures and preparations; n.e.c. heading 3824 | 11.5% | CTH |
| Appliances; worn, carried or implanted in the body, to compensate for a defect or disability | 11.1% | CTH |
| Medicaments; consisting of mixed or unmixed products n.e.c. in heading no. 3004, for therapeutic or prophylactic uses, packaged for retail sale | 4.1% | CTH |
| Casein | 2.3% | CTH |
| Medical, surgical instruments and appliances; catheters, cannulae and the like | 1.2% | CTH |
| Yarn, synthetic; filament, monofilament (less than 67 decitex), textured, of nylon or other polyamides, measuring per single yarn more than 50 decitex, not for retail sale, not sewing thread | 0.6% | CTH |
| Electronic integrated circuits; n.e.c. in heading no. 8542 | 0.4% | CTH |
| Toxins, cultures of micro-organisms (excluding yeasts) and similar products | 0.4% | CTH |
| Pharmaceutical goods; opacifying preparations for x-ray examinations, diagnostic reagents designed to be administered to the patient | 0.4% | CTH |
| Food preparations; of flour, meal, starch, malt extract or milk products, suitable for infants or young children, put up for retail sale | 0.4% | CTH |
| Brushes; toothbrushes | 0.3% | CTH |
| Oral or dental hygiene preparations; other than dentifrices | 0.3% | CTH |
| Plastics; other articles n.e.c. in chapter 39 | 0.3% | CTH |
| Liqueurs and cordials | 0.2% | CTH |

| **Canada** | **Share of trade** | **Rule of origin** |
|---|---|---|
| Medicaments; consisting of mixed or unmixed products n.e.c. in heading no. 3004, for therapeutic or prophylactic uses, packaged for retail sale | 21.1% | CTSH |
| Toxins, cultures of micro-organisms (excluding yeasts) and similar products | 9.1% | CTSH |
| Sulphonamides; n.e.c. in heading no. 2935 | 8.7% | CTSH |

| | | |
|---|---|---|
| Blood, human or animal, antisera, other blood fractions and immunological products; immunological products, put up in measured doses or in forms or packings for retail sale | 8.0% | CTSH |
| Cyclic amides (including cyclic carbamates) and their derivatives; other than the derivatives and salts of ureines, 2-acetamidobenzoic acid (N-acetylanthancillic acid),ethinamate S, and alachlor (ISO) and their derivatives and salts | 5.9% | CTSH |
| Petroleum oils and oils from bituminous minerals, not containing biodiesel, not crude, not waste oils; preparations n.e.c, containing by weight 70% or more of petroleum oils or oils from bituminous minerals; not light oils and preparations | 3.8% | CTH |
| Liqueurs and cordials | 3.6% | CTH |
| Heterocyclic compounds; containing an unfused thiazole ring (whether or not hydrogenated) in the structure | 3.1% | CTH |
| Heterocyclic compounds; containing an unfused pyridine ring (whether or not hydrogenated) in the structure, n.e.c. in 2933.3 | 3.0% | CTH |
| Communication apparatus (excluding telephone sets or base stations); machines for the reception, conversion and transmission or regeneration of voice, images or other data, including switching and routing apparatus | 2.9% | CTSH |
| Medical, surgical or dental instruments and appliances; n.e.c. in heading no. 9018 | 2.5% | CTH |
| Odoriferous substances and mixtures; of a kind used in the food or drink industries | 1.8% | CTH |
| Nucleic acids and their salts, other heterocyclic compounds, n.e.c. in heading number 2934 | 1.6% | CTH |
| Whiskies | 1.4% | CTH |
| Beer; made from malt | 1.3% | CTH |

*Source: Export value shares calculated from United Nations ComTrade database and rules of origin from free trade agreements:*
*EU-Japan (*http://trade.ec.europa.eu/doclib/docs/2018/august/tradoc_157231.pdf#page=47*),*
*EU-Mexico (*https://op.europa.eu/en/publication-detail/-/publication/47746f24-ac63-11e4-b5b2-01aa75ed71a1/language-en*)*
*EU-Canada (*https://www.international.gc.ca/trade-commerce/trade-agreements-accords-commerciaux/agr-acc/ceta-aecg/text-texte/toc-tdm.aspx?lang=eng)

*CTH represents Change to Heading, CTSH is Change to Sub-Heading and WO is Wholly Originating*