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Firms and Trade on the Island of Ireland

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Abstract: This paper documents the broad patterns of firm sales and participation in trade for Northern Ireland and Ireland. Looking across sectors and firm size groups, it examines the distribution of cross-border trade with a particular focus on the degree of integration of supply chains. Using both aggregate and firm-level data, this paper aims to give as comprehensive a picture as possible of the international activities of firms in both economies. I highlight the contribution made by micro and small firms in cross-border trade. Despite a steadily increasing probability of being an exporter as firm size increases, cross-border trade has many features that make it resemble local trade rather than international export activity. Trade in intermediate products and the large role of two-way traders shows that supply chain links are a major element of cross-border trade.

Keywords: export participation, cross-border trade, supply chains
JEL: F10

1. INTRODUCTION

In the aftermath of the vote by the United Kingdom to exit the European Union, a spotlight has fallen on the porous nature of the border on the island of the Ireland and the level of interconnectness of the economies on the island. This paper examines the patterns of firms trading across the border as one of the clearest measures of island economic integration. It examines levels of participation in exporting, both in total and cross-border, for firms across the island of Ireland and looks in detail at the contribution of supply chain integration in cross-border trade flows. It also details how these patterns vary across different types of firms, showing in particular how this trade matters to the smallest group of firms.

Using detailed aggregate and firm-level data from both Northern Ireland and Ireland, the aim of the paper is to give as comprehensive a picture as possible about the international activities of firms across the island. To do this, the paper is structured around four related research questions: Firstly, where do firms trade? Secondly, what type of firms sell across the Irish border, with a particular focus on the role of smaller firms? Thirdly, how much comes from integration of supply chains? Finally, how exposed is this trade to potential increases in trade costs that might arise from Brexit?

In terms of the findings on the concentration and composition of trade, we find that Ireland is considerably more open to international trade than Northern Ireland. A much larger share of overall sales is accounted for by local sales for Northern Irish firms whereas the share of exports is almost half of output for firms in Ireland. This is particularly the case for the services sector, where despite lower rates of individual firm participation in exporting, the scale of exports coming from Ireland is considerably larger. The multinational dominated structure of the Irish export sector is clearly an important contributor to this pattern, with Irish-owned firms accounting for just 10% of total Irish exports in either goods or services.

[1] This research uses statistical data from the Northern Ireland Statistics and Research Agency (NISRA) and the Central Statistics Office (CSO). The permission for controlled access to micro datasets has been granted for research purposes under strict confidentiality agreements. The use of these statistical data does not imply the endorsement of NISRA or the CSO in relation to the analysis or interpretation of the statistical data. This paper draws on several reports prepared under a research programme between InterTradeIreland and the ESRI on 'Enterprises and Cross-Border Trade'. I would like to thank all involved in the research programme, the Central Statistics Office, and the Northern Ireland Statistics and Research Agency for helpful comments and support on earlier versions of this work.

In both economies, there is a strong relationship between firm size and external sales or exporting. For Northern Ireland, we find that almost all exporting firms appear to include Ireland as one of their destination markets and, for smaller firms, the majority export to Ireland only. Even amongst the largest firms, close to half of exporters sell to Ireland only. In the opposite direction, exports to Northern Ireland make up an important share of exports for many Irish firms. While exporting is reasonably common amongst smaller firms in both economies, total export values are dominated by a few large exporters with firms that have over 250 employees contributing almost half of total exports.

We find that a very significant share of cross-border trade is accounted for by supply chain linkages. The majority of cross-border trade occurs in intermediate inputs and the share of intermediates in trade between Northern Ireland and Ireland is higher in almost all sectors than trade in the same sectors between Ireland and the rest of the UK. Trade in agricultural products and food are important components of cross-border trade, both as intermediates for further processing and as final products for consumption. The high share of these sectors however lead to higher exposure of cross-border trade to potential post-Brexit tariffs relative to overall trade between Ireland and the UK. This is due to the structure of the EU tariff schedule with higher rates applying to trade in agriculture and food than on most other sectors. We also show that most cross-border trade is quite local in nature, with high numbers of delivery journeys with relatively small values per delivery. While demonstrating the integrated nature of the cross-border economies, this also highlights the extent to which this trade is exposed to the risk of disruption.

2. BROAD PATTERNS OF FIRM SALES

In this section, we look at the overall patterns of where firms sell their output and the contributions of exports and cross-border sales to total sales. The data is drawn primarily from firm level surveys published by the Central Statistics Office for Irish firms (Census of Industrial Production and Annual Services Inquiry) and by the Northern Ireland Statistics and Research Agency for Northern Ireland (the Broad Economy Sales and Export Survey). As far as possible, the data breakdowns are intended to be comparable for both economies but differences in data collection methods, timing and definitions across the sources mean that the figures discussed should be interpreted as indications of broad patterns with some caution attached to comparing precise estimates. In particular, it should be noted that the Northern Irish data for both goods and services firms comes from the same survey source whereas the information on firms in Ireland is collected using different sources for industrial firms and services firms with somewhat different sampling frames.

Table 1 details the distribution of Northern Irish firm sales across the broad geographic markets of local sales within Northern Ireland, Great Britain, Ireland, the rest of the EU (REU)[2] and the rest of the World (ROW). The corresponding broad allocations of sales for firms located in Ireland are shown in Table 2. In both cases, we also highlight some differences between the patterns coming from goods and services.

The first striking difference in terms of the patterns is the share of overall sales that are accounted for by local sales with 65% of total sales by Northern Irish firms being sold in Northern Ireland compared to 46% of sales by firms in Ireland being sold domestically. Parallel to this, exports account for the other 54% of turnover by firms in Ireland (including both domestically owned firms and multinationals). The export orientation of Northern Irish based firms is lower with 35% of turnover being sold outside of Northern Ireland. Of these external sales, the majority (20%) go to Britain with the remaining 15% being exports to international markets. While Britain accounts for the largest share of external sales for Northern Irish firms, Ireland is the largest international export market accounting for 5% of the economy's total sales or equivalently one-third of its exports. Three percent of total sales (20% of exports) are destined for other markets within the EU and the remainder to the rest of the world.

Total sales by firms located in Ireland are much more export-orientated as noted above. In terms of destinations, exports to the UK are an important component accounting for approximately 9% of total output with the rest of exports split between the EU (20% of total sales) and the rest of the world (25% of sales). Northern Ireland's share of total sales cannot be identified separately for total sales as this is not available for services trade but we can see how much of Ireland's goods exports go cross-border as distinct from going elsewhere in Britain. This amounts to 1% of total goods output with another 6% going to the rest of Britain. Putting these numbers in a slightly different frame, ever the past number of years, Northern Ireland has accounted for between ten and twelve percent of total exports from Ireland to the UK and seven to eight per cent of imports. Given that the population of Northern Ireland makes up less than three per cent of the UK total, this shows the closeness of the economic ties between the two jurisdictions.

[2] We use the "Rest of the EU" or REU throughout the report to refer to EU member states excluding Ireland and the UK.

Table 1: Northern Ireland Sales Patterns, 2016

	Share of Total		
	Total Sales	Goods	Services
NI Sales	65%	62%	73%
GB Sales	20%	21%	18%
Ireland Sales	5%	5%	4%
REU Sales	3%	4%	2%
ROW Sales	6%	7%	4%
External	35%	38%	27%
Exports	15%	17%	9%

Source: BESES Statistics (NISRA 2018)

Table 2: Ireland Sales Patterns, 2015

	Share of Total		
	Total Sales	Goods	Services
Ireland Sales	46%	52%	38%
NI Sales	n.a	1%	n.a
GB Sales	9%	6%	12%
REU Sales	20%	19%	21%
ROW Sales	25%	22%	28%
Exports	54%	48%	62%

Sources: CSO Balance of Payments and External Trade statistics for trade patterns, CIP and ASI data for total turnover of manufacturing and services firms (CSO Statbank, May 2018). Note that Northern Ireland can be identified separately as a destination for goods exports but this is not available in the services exports data.

Tables 1 and 2 also compares the broad structure of manufactured goods and services separately. For Northern Ireland goods output, we see that 62% is sold within Northern Ireland with 21% going to the rest of Britain and the remaining 17% is exported. Services are more locally concentrated, with 72% sold within Northern Ireland. The share of services exported to Ireland is 4% of total output, slightly lower than the share of total goods sales but making a larger contribution to total services exports at close to 45% due to the much lower overall services export orientation.

This pattern whereby fewer firms in services sector engage in international trade than in manufacturing sector, and that their trade intensities are generally lower has been documented across a range of countries: For Ireland, Damijan et al. (2015) found trade participation rates ranging between 3.5 per cent for exports only, to 16.5 per cent for imports only while two way traders (exporters and importers) represent around 13.4 per cent of firms. Trade participation rates found in other papers range from 0.14 per cent for exports of services in Germany (Kelle and Kleinert, 2010), 8.1 per cent for the UK (Breinlich and Criscuolo, 2011), 16 per cent for German exports of business activities (Vogel and Wagner, 2010) up to 18 per cent for Slovenian services exporters (Grublješič and Damijan, 2011).

Ireland however is an outlier to the pattern with a greater share of exports being exported than sold domestically. Just 38% of Irish services are local sales and 62% are exported. Irish services exports are quite internationally diversified with 12% of total services sales going to the UK, 21% to the EU and the remaining 28% to the rest of the world (accounting for 20%, 35% and 45% of services exports respectively).

Table 3 further illustrates the differences in the structures of the two economies in terms of the relative contributions to total output of goods and services. The decomposition of total turnover by sector shows a considerably higher share of output accounted for by manufactured goods in Northern Ireland compared to that of Ireland where the contributions of goods and services are almost close to being equal. Goods output accounts for 72% of total turnover in Northern Ireland with the other 28% coming from services. In terms of exports, the goods share is even higher at 82% of total exports.

Table 3: Shares of Goods and Services in NI Output by Broad Destination

	Turnover	Exports
Northern Ireland		
Goods	72%	82%
Services	28%	18%
	100%	100%
Ireland		
Goods	54%	48%
Services	46%	52%
	100%	100%

Source: BESES Statistics (NISRA 2018) for Northern Ireland, CSO Balance of Payments and External Trade statistics for trade patterns, CIP and ASI data for total turnover of manufacturing and services firms (CSO Statbank, May 2018).

Irish output contains a considerably greater share of services at 46% and these make up 52% of total exports. InterTradeIreland (2018b) shows that the composition of domestic sales is reasonably similar in both Ireland and Northern Ireland so it is the much greater export orientation of the services sector that is the main driver of the differences in the structure of the two economies.

The differences between Ireland and Northern Ireland in terms of overall export orientation and also in the relative contributions of goods and services can to a considerable extent be explained by the multinational dominated structure of the Irish export sector. In both the goods and services sectors, Irish-owned firms account for in the region of ten percent of total Irish exports with the vast majority originating from foreign-owned firms.

3. FIRM EXPORT PARTICIPATION AND INTENSITY

This section examines patterns of export participation and average export sales across broad sectors and firm size groups in Northern Ireland and Ireland. We focus in particular on differences in outward orientation by firm size. This is done by dividing firms into four groups based on their number of employees: micro firms are those with fewer than 10 employees, small firms are those with between 10 and 49 employees, medium firms have between 50 and 249 employees and large firms are those with 250 or more employees.

Before examining the export participation rates of different types of firms, we first present some statistics on the overall distribution of firms across the broad sectors and size groups to give context to the export calculations that follow. Table 4 describes the distribution of firms in Northern Ireland and Table 5 presents similar breakdowns for Ireland. The difference in the total numbers of firms in each economy is broadly linked to the differences in their relative sizes. However, it may also reflect a lower threshold in the reporting on very small firms (those with just one or two employees) in the Irish services numbers.

Table 4 shows that 32% of Northern Irish firms sell goods, 44% are exclusively services firms and a significant proportion (15%) sell a combination of goods and services. In terms of the size distribution of firms, a large majority (77%) are micro firms that employ fewer than ten people, with a further 20% categorised as small. The largest size group accounts for a very small proportion of firm numbers at just 0.5% although we will see later that they contribute considerably more when we turn to their shares of output and export values. Comparing goods and services firms, we note that services firms make up a larger share of the very small firms but firms in other size categories are broadly evenly spread between the two sectors.

Table 4: Distribution of NI Firms by Size Group and Sector

	Size Group				
	0-9	10-49	50-249	250+	Total
Total Firms (number)	38,799	10,285	1,260	245	50,589
Goods firms	22.6%	7.8%	1.0%	0.2%	31.6%
Services firms	35.5%	7.6%	0.9%	0.2%	44.2%
Both	9.9%	4.4%	0.5%	0.1%	14.9%
N/A	8.6%	0.5%	0.1%	0.0%	9.2%
% by size	76.7%	20.3%	2.5%	0.5%	100.0%

Source: Author calculations using BESES Statistics (NISRA 2018)[3]

[3] Note that the number of firms refers to those businesses covered by the BESES/ABI and excludes some farming sectors (including live animals), financial, pension services and the public sector as well as sole traders who are below the VAT threshold.

Table 5: Distribution of Irish Firms by Size Group, Sector and Nationality

	Size Group				
	0-9	10-49	50-249	250+	Row Total
Total Firms (number)	173,971	13,238	2,382	417	190,008
Goods firms	7.8%	0.9%	0.3%	0.1%	9.0%
Services firms	83.8%	6.1%	1.0%	0.1%	91.0%
% by size	91.6%	7.0%	1.3%	0.2%	100.0%
Breakdown by ownership (goods firms)					
Irish-owned	55.0%	27.1%	7.2%	1.1%	90.4%
Foreign-owned	1.2%	2.6%	3.8%	2.0%	9.6%

Sources: CSO data for size distribution of goods and services firms (CSO Statbank, May 2018). Nationality distribution from author's calculations using CIP microdata (2012).

The distribution between goods and services firms in Ireland shown in Table 5 has much greater concentration in small services firms which account for the bulk of reported firms. As has already been noted however, some of this may be due to methodological issues in the different data sources with the inclusion of firms with just one or two employees in the services numbers whereas the data on goods firms requires at least three employees. Due to the collection of information on goods and services firms in Ireland using different sources, we are not able to include a category for firms that supply both goods and services comparable with the Northern Irish data.

Against that background of the total firm structure in each economy, we next look at overall export participation rates and at how these vary across firm size groups. We also look at the effect of ownership for Irish goods firms. In addition to participation in the export market in general terms, for Northern Irish firms we look at participation in external sales (i.e. to Britain) and later present calculations for how many exporters concentrate in selling to Ireland as their sole export market. Mirroring this, we look at how patterns of participation in exporting to the UK differs across firms groups in Ireland.

Beginning with firms in Northern Ireland, Table 6 shows that 17% of firms participate in exporting with a somewhat higher share (23%) reporting external sales outside of Northern Ireland to either Britain or elsewhere. Almost all exporting firms appear to include Ireland as one of their destination markets with 15% of firms selling across the border. Comparing the proportions of firms with external sales and those with exports allows us to infer that 6% of Northern Irish firms sell into Britain but do not export.

Table 6 also presents export participation rates by firm size group. Unsurprisingly, the probability of a firm being an exporter increases substantially as we move up the size categories: while just under 12% of micro firms are exporters, 46% of large firms export. A similar increase in participation rates can be observed both for exporting to Ireland and for having external sales. Apart from in the largest size class there is a fairly stable 6% of each size group that sells to the British market but does not export elsewhere. This is much lower for the largest firms as, despite almost half of them having some sales in Britain, they are more likely to also export more broadly.

Table 6: Export Participation of NI firms by Size Group

	Size Group				
By share of size group:	0-9	10-49	50-249	250+	Total
Exporters	12%	33%	36%	46%	17%
External (Export & GB)	18%	39%	42%	49%	23%
GB only	6%	7%	6%	3%	6%
Exporters to Ireland	10%	30%	34%	39%	15%
Export only to Ireland	9%	24%	22%	22%	13%
By share of exporting firms					
RoI only exporters/exporters in size group	81%	73%	61%	48%	77%

Source: Author calculations using BESES Statistics (NISRA 2018)

Focusing on firms that sell to the Irish market, we can calculate the difference between total exporters and those that are reported as exporting to other EU markets to classify the remainder as being Ireland-only exporters. Across size groups, we find that when micro or small firms do participate in exporting, they are almost overwhelmingly likely to export only to Ireland. The final row of Table 6 shows that over 80% of micro firms and over 70% of small firms concentrate all of their export activity in Ireland. Even amongst the largest firms, close to half of exporters sell to Ireland only.

Table 7: Export Participation of Irish Firms by Size and Ownership

	Size Group				
By share of size group	0-9	10-49	50-249	250+	All
Irish-owned goods firms					
Exporters	66%	54%	70%	72%	63%
UK exporters	35%	22%	68%	70%	34%
Foreign-owned goods firms					
Exporters	61%	80%	87%	91%	83%
UK exporters	26%	46%	66%	67%	56%

Note that the export participation calculations for goods firms are based on firms included in the Census of Industrial Production so firms with fewer than 3 employees are not captured. The export participation shares are therefore likely to be upper bounds. Equivalent data on services firms was not available. Sources: Shares of goods firms are author's calculations from CSO CIP.

We next look at how the patterns of export participation in Ireland compare to those of Northern Ireland. Table 7 shows breakdowns by firm size and nationality of ownership for the export participation of Irish goods firms and also the share of exporters that include exporting to the UK as a destination market. Amongst goods firms, the export participation rate in Ireland is quite high compared to that of Northern Ireland with 62% of Irish-owned manufacturing firms being exporters and almost 83% of foreign-owned firms exporting. There is evidence of increasing participation probabilities as we move up the firm size classes but as participation at the smaller end of the firm size spectrum is quite high at 65%, the gradient across the size groups is correspondingly less steep than amongst Northern Irish firms. Slightly more than one-third of firms and almost 55% of exporters include the UK as one of their export markets amongst Irish-owned firms.

We next look at the contribution of each group of firms to total exports and to examine this potential trade-off between having many small exporters compared to a few large exporters. Table 8 shows the contributions of each size group to total export values in Northern Ireland and Ireland. In both, we see that the relatively small number of exporters in the largest size category contribute disproportionally in terms of export values. In Northern Ireland, the largest firms make up just under half of total export value while the pattern in Ireland is even more concentrated with the largest firms accounting for 79% of exports.

In Northern Ireland, most of the contribution of the largest size group comes from firms exporting goods only (29%) with firms that export both goods and services also playing a sizeable role. Services only exporters, even within the largest firm size group, make up a minority of total export flows. The contribution of services exporters, however, is more evenly spread across firm size groups, whereas the contribution to total exports amongst goods (and goods and services) is more strongly concentrated in larger firms.

Due to data limitations, we focus on goods firms only when looking at the relative contributions of firm size groups for Ireland. This shows a much more strongly skewed pattern with export values dominated by large foreign-owned firms which account for approximately three-quarters of total export flows. Within Irish-owned firms, which sell 11% of total exports, the largest firms account for just over 40% of this (4.6% of the 11%) with the medium-sized firms contributing a similar share. Compared to the Northern Irish patterns, this gives a slightly larger role to medium-sized firms but otherwise a similar picture in which total exports are dominated by a relatively small number of large exporters.

Table 8: Contribution By Firm Size and Sector to Total Exports: NI and RoI Firms

	Size Group				
	0-9	10-49	50-249	250+	Row total
NI Firms					
Export goods only	5%	13%	17%	29%	64%
Export services only	2%	4%	4%	4%	14%
Export goods and services	1%	3%	3%	16%	22%
Column total	8%	20%	23%	49%	100%
Irish goods firms					
Foreign	1%	1%	13%	74%	89%
Irish	1%	1%	5%	5%	11%
Column total	2%	2%	18%	79%	100%

Sources: Author calculations using BESES Statistics (NISRA 2018) for NI firms and CSO CIP for Irish firms.

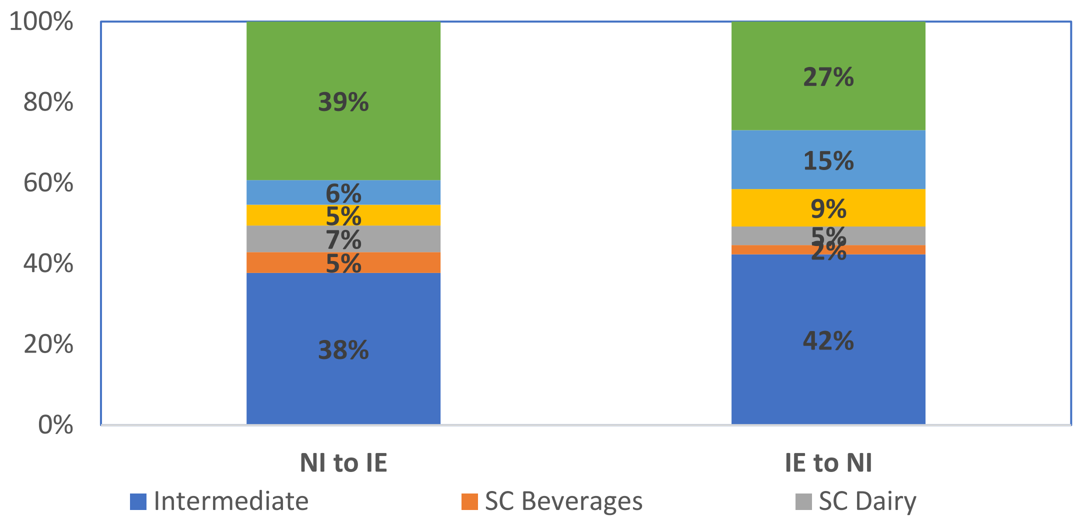
4. SUPPLY CHAIN

One aspect of global trade patterns that have been the subject of increasing attention in recent years is the extent to which trade in intermediate products has expanded and global production and supply chains have become more closely integrated (Antràs and Chor, 2013). This section presents some evidence on the extent to which trade across the border reflects supply chain integration, primarily by looking at the contribution to total flows of trade in intermediate inputs. This is then supplemented with some descriptions of the size and frequency of cross-border trade deliveries which reinforce the picture from the previous section of cross-border trade being represented by numerous interactions by smaller firms.

To examine the role of intermediate inputs in overall trade, the standard methodology is to use a grouping of products designed by the United Nations called the Classification by Broad Economic Categories (BEC). This divides all traded products into consumption goods, intermediates, capital goods and others.[4] However, this international breakdown does not necessarily fully capture the level of integration of cross-border trade on the island of Ireland because it classifies almost all dairy and beef products as being for final consumption which would very much underestimate the level of cross-border supply chain linkages, as cross-border processing of these product categories is likely to be substantial. Recent work by NISRA (2018) on supply chains adapted the UN classifications to take into account the specific features of cross-border trade and Figure 1 shows the structure of trade (NI to Ireland and Ireland to NI) using their adapted definitions.

They examine cross-border trade using firm-level customs data and in addition to the standard goods classified by the UN as intermediates, they also classify as intermediate trade products in the meat and fish, foodstuffs, dairy and beverages sectors that was traded across the border in both directions by individual companies. This reflects the cross-border movements for processing within these particular sectors. Figure 1 identifies these as SC (supply chain) components of each of the four sub-sectors and also shows the contribution of intermediate inputs (using the standard classification) and other trade in final products. Standard measures of intermediate trade shows that it makes a considerable contribution to cross-border trade with 38% of Northern Ireland trade to Ireland being in these products and 42% of Irish trade to Northern Ireland also being in these goods.

Figure 1: Role of Broadly-Defined Intermediates in Total Trade



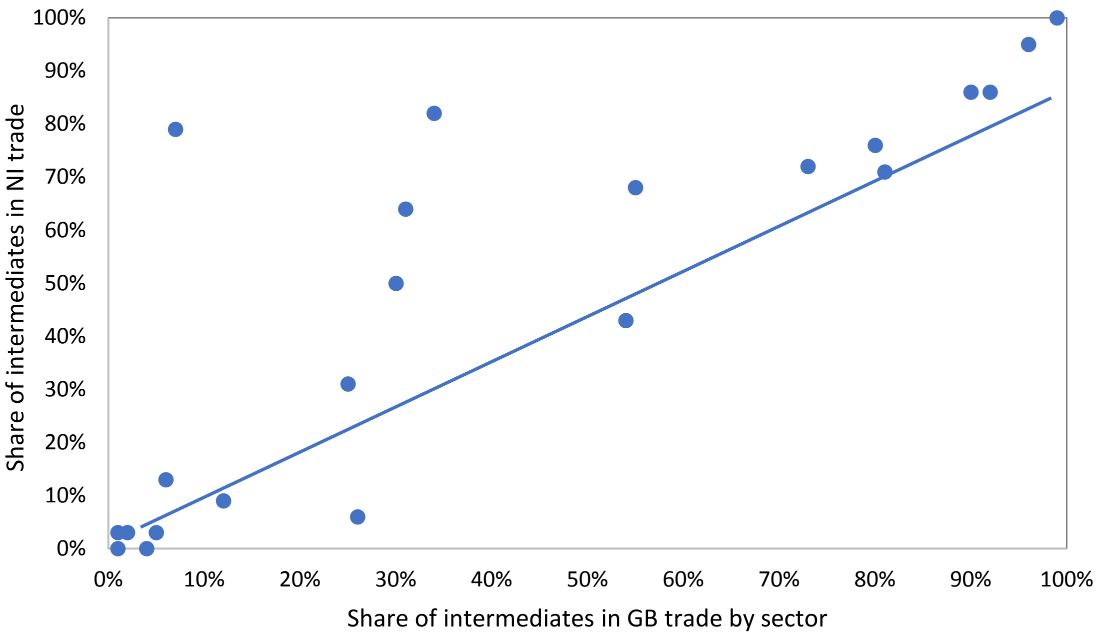
Source: Cross-Border Supply Chain Report, NISRA (2018)

Broadening the definition of intermediates to account for supply chain integration in the four agri-food subsectors increases the size of the contribution of intermediate trade quite substantially. The combined contribution of these supply chain food movements makes up a further 23% of trade from Northern Ireland to Ireland and 31% of trade from Ireland to Northern Ireland. The contributions within the subsectors vary somewhat with the dairy sector being particularly important for Northern Ireland and meat and fish being the largest component in this trade from Ireland. When this broader definition of intermediates is used, the total contribution to cross-border trade is that intermediates comprise 61% of trade coming from Northern Ireland and 73% of trade from Ireland. Trade in final products is actually in the minority of 39% of Northern Ireland trade and 27% of Irish trade, reflecting a very high degree of interdependence and multiple movements across the border as part of the production process.

[4] https://unstats.un.org/unsd/cr/registry/regcst.asp?Cl=10

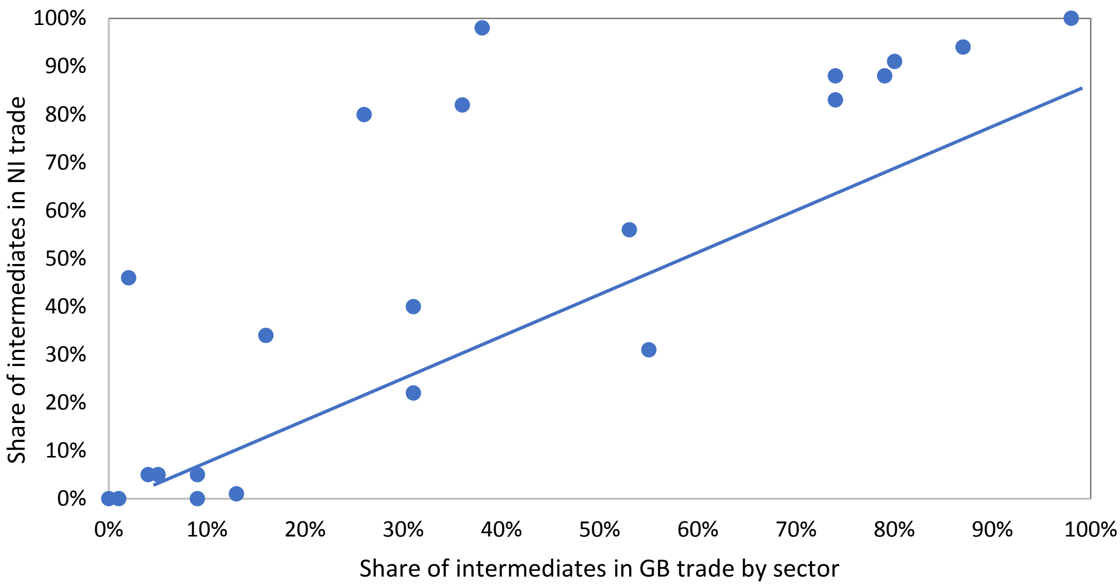
To examine if this level of supply chain integration is particularly high, we compare it to the level of intermediates across a range of sectors in Irish trade with Britain. This follows the approach Stojanovic and Rutter (2017) used to show that the UK's supply chains are more integrated with the rest of the EU than they are with non-EU countries. Here we show that, by this measure, the links between Northern Ireland and Ireland are closer than those between Ireland and the rest of Britain. Figures 2 and 3 present the shares across sectors of those goods classed as intermediate inputs for exports and imports respectively comparing the shares with Northern Ireland trade and trade with the rest of Britain. The diagonal line would indicate that the share of intermediates in a sector is equal for both trade flows while observations above the line show that intermediates make up a larger share of trade with Northern Ireland than they do with Britain (in the same sector). This gives a general impression of a greater degree of interconnected supply chain activity across the border than would be expected from an average share within the sector.

Figure 2: Relative Importance of Intermediates in Irish Exports to NI and GB



Source: Author calculations based on Central Statistics Office, 2017

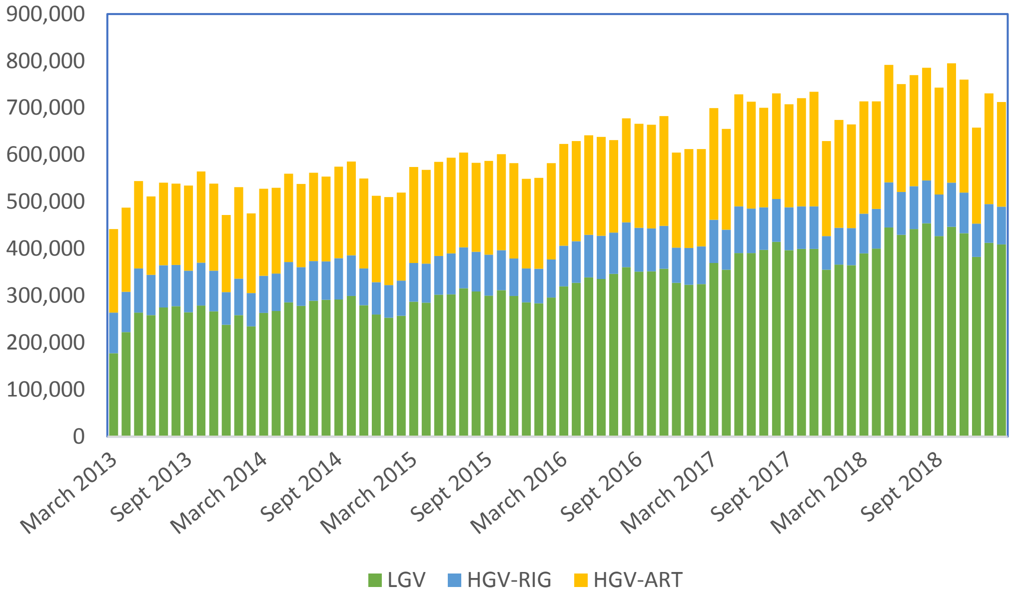
Figure 3: Relative Importance of Intermediates in Irish Imports from NI and GB



Source: Author calculations based on Central Statistics Office, 2017

We next move to looking at the patterns of delivery of these trade flows which complement our findings on firm size and supply integration already described above. Figure 4 shows the breakdown of cross-border freight traffic by type – identifying the vehicles as light goods (LGV), rigid heavy goods vehicles (HGV-RIG) and articulated heavy goods vehicles (HGV-ART). In addition to showing an increase in traffic volumes over the 2013 to 2019 period, what is noteworthy about these patterns is the dominance of smaller delivery vehicles with light goods vans accounting in general for around half of all movements.

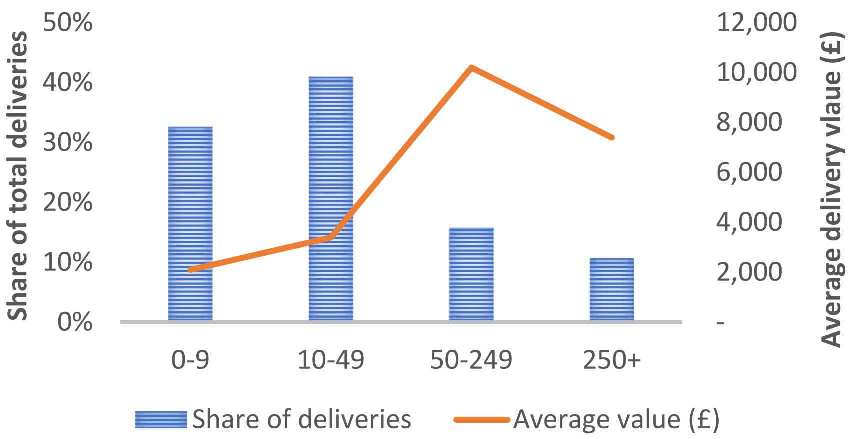
Figure 4: Cross-Border Delivery/Freight Traffic



Source: TII Traffic Count (15 main border crossings), NISRA 2019

Further work by NISRA (2018) survey firms on the nature of their cross-border supply chain structures shows a pattern of very high frequency, relatively low value deliveries dominate these trade and traffic flows. Figure 5 shows how these relate to our earlier findings on the scale of cross-border trade participation by smaller firms in particular. It shows that one-third of all cross-border deliveries are made by firms with fewer than 10 employees and a further 41% are by firms with between 10 and 49 employees. Although this combined group of firms therefore make almost 74% of cross-border movements, they account for slightly less than one-fifth of the value of cross-border goods trade. The remaining firms, making much larger deliveries, account for the majority of trade value despite making just over one-quarter of the trips. The line in the graph showing the average value per shipment shows the extent to which this increases with firm size. This links to our overall finding that the small firms operating across the border are more like local firms serving their immediate surroundings rather than the typical international trader.

Figure 5: Delivery Frequency and Average Value for Cross-Border Trade



Source: Cross-Border Supply Chain Report, NISRA (2018)

5. EXPOSURE TO BREXIT

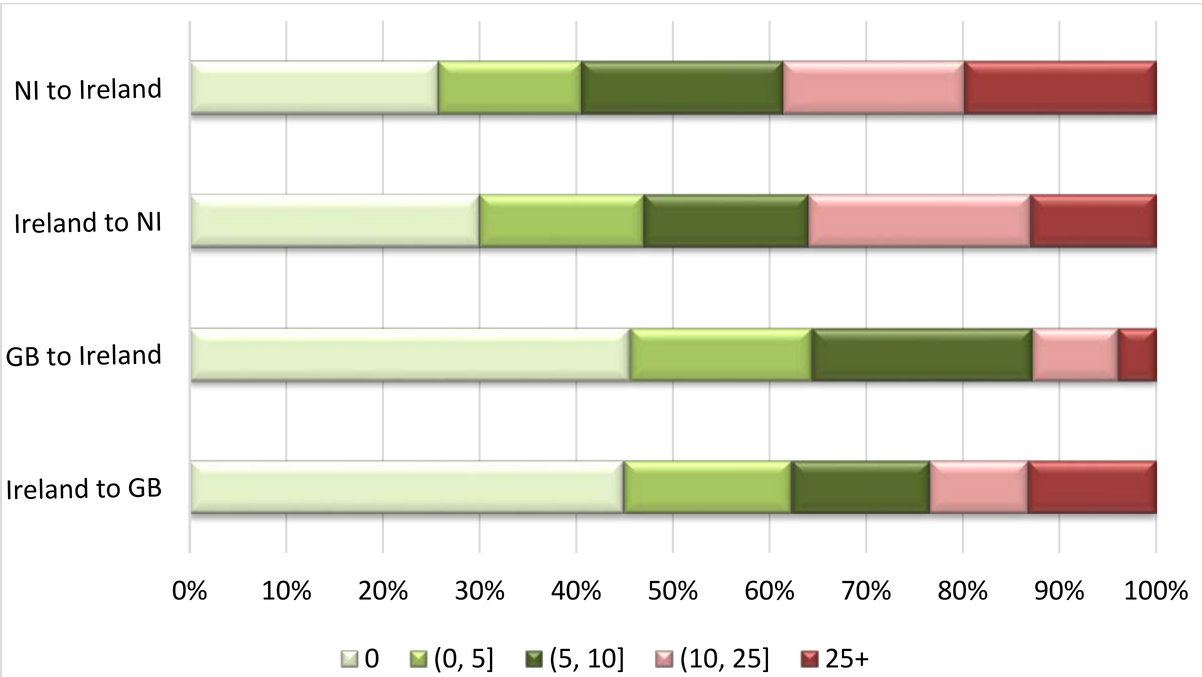
This descriptive account of the structure of cross-border trade brings us to the current main risk that has the potential to cause disruption to it. While the nature of the trade arrangements that will be in place following the exit of the UK from the EU is currently unknown, the highly integrated trade flows on the island with products potentially crossing the border multiple times during different stages of processing are at the forefront of exposure to any changes in trading costs.

One way to assess how this exposure is balanced is to compare the extent to which cross-border trade would be impacted in the event of tariffs being applied that are at the same level as those the EU currently charge on imports from third countries under its World Trade Organisation (WTO) schedule. This is discussed in more detail in InterTradeIreland (2017) and here we look at a comparison of exposure of cross-border trade compared to trade between Ireland and Britain to highlight how differences in trade structure can impact the potential exposure to tariffs. Tariffs can be applied in two different ways – most of the WTO tariff rates are *ad valorem* tariffs (i.e. charged as a percentage of the value of the goods being shipped) while others are applied as a charge per unit quantity or by weight. In some instances, the two methods are combined, as for example in the case of the tariff on fresh or chilled boneless bovine meat which is 12.8% of the value of the product plus €303 per 100 kg. Here we combine both, using the current volumes of trade to weight the *ad valorem* and unit based charges.

Figure 6 shows that there are a large number of sectors that would face either no tariff at all or a rate set very close to zero: these include paper products, pharmaceuticals, iron and steel. Goods in this tariff category account for a considerable proportion of trade between Ireland and Britain, around 45% of trade in each direction. Considerable less cross-border trade is accounted for by this class of products however – 30% of trade from Ireland to Northern Ireland would be unaffected by tariffs and just 26% of trade from Northern Ireland to Ireland.

At the other end of the scale, food and textiles sectors face rates going from 10.2% on footwear to as high as 73.4% on meat products. The sectors with the highest tariffs all fall within the broader headings of food, clothes and tobacco products. Meat and dairy are sectors with particularly high tariff rates under the current EU WTO schedule and are important sectors in cross-border flows. The extent to which cross-border trade therefore falls into the highest tariff bands is driven by these sectors and distinguishes it fairly considerably from trade between Ireland and Britain. Around 39% of trade from Northern Ireland could be faced with tariffs above 10% in this hard Brexit scenario, 19% of which would be impacted by tariffs of over 25%. From Ireland to Northern Ireland, a similar 36% of trade would fall into the over-10% tariff range, although the share impacted by the very highest tariff rates is slightly lower at 13%. The contribution of the dairy sector to Northern Irish exports to Ireland accounts for most of this difference in the most exposed group.

Figure 6: Cross-Border Trade and WTO Tariff Ranges



Source: Adapted from InterTradeIreland (2018)

6. CONCLUSIONS

This paper draws together a range of new and detailed data from both Northern Ireland and Ireland to give new insight into the patterns of cross-border trade and the firms that carry it out in both economies.

The central result of the paper is to highlight the contribution made by micro and small firms in cross-border trade. While we observe a steadily increasing probability of being an exporter as firm size increases, we also find indicative evidence that cross-border trade has features closer to local trade than to international export activity. For example, almost all exporting firms in Northern Ireland include Ireland as one of their destination markets and over 80% of the smallest firm size group that export from Northern Ireland have all of their export sales in Ireland. In contrast, 6% of Northern Irish firms sell into the British market only without having any export sales to Ireland or elsewhere.

Trade in intermediate products and the large role of two-way traders shows that supply chain links are a major element of cross-border trade. This also links to the findings regarding the role of smaller firms as we find cross-border movements dominated by a relatively high frequency of delivery and low value per delivery consistent with local deliveries by smaller firms. Combining the patterns of cross-border participation with evidence on tariff rates from the EU, this work finds that the impacts of any changes in the cost of trading post-Brexit are most likely to be felt by very small firms trading across the border.

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SYMPOSIUM DISCUSSSION

Michael Darcy: Sir George Quigley first put forward the concept of an island economy in his 1992 address to the then Confederation of Irish Industry (now IBEC). In doing so he set the challenge as being that “I find no difficulty with the proposition that Ireland is -or should be- an island economy. Both North and South would have signally failed to give substance to the 1992 concept if, occupying a small island on the periphery of the EC, they neglected or were unable to function as a single market”.

This challenge has been met in some sectors more successfully than others. For example, Sir George in this address had proposed “Tourism is an obvious example of the potential for an island economy” before the Paramilitary Ceasefires and the Belfast/Good Friday Agreement, and when few would have dared imagine the success of the sector today, Although he went on with some understatement to acknowledge there would be “difficulties in the short term” he nevertheless judged that “even in the current circumstances it would make sense to market the northern third of the island as a leisure entity”. I added that at the time Sir George was supported in this cross border ambition by economist Paul Tansey who added that ‘tourism brought economic well-being to areas that other forms of economic development could not’. Today tourism has developed scale as an all island sector and its ‘brand’ is successfully marketed globally by Tourism Ireland.

In conclusion I compliment the papers given and encourage SSISI to propose more research be done on a joined up basis on the single all island market that has evolved since Sir George gave this address, and that it be undertaken in the context of the ‘totality of relationships’ referred to in Strand Two on North/South cooperation in the Belfast/Good Friday Agreement.