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An Examination of the Employment Exposures to Brexit

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This paper has been prepared by IGEES staff in the Department of Social Protection, in collaboration with SOLAS. The views presented in this paper do not represent the official views of the Department or Minister for Social Protection.

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Disclaimer:

The views expressed herein are those of the authors and do not reflect the views of the Department of Social Protection or SOLAS. All errors are our own.

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Abstract

This paper seeks to assess Ireland's employment exposures to Brexit, by examining those sectors with the highest trade exposures to the United Kingdom. Using this information and employing a variety of data sources, we profile persons employed in these most exposed sectors, including a detailed regional examination of these exposures. As such, this paper aims to act as a toolkit for the Public Employment Service to inform any interventions that may be needed in the event of any Brexit-related labour market impact.

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Introduction and Context

Since the decision of the United Kingdom to exit the European Union in 2016, the potential implications of any withdrawal – with or without an EU/UK trade agreement – with regard to trade flows, employment and the wider macroeconomy has been subject to a wide range of debate and analysis.

After an extended period of negotiations, the UK formally exited the EU with the conclusion of the EU-UK Trade and Cooperation Agreement (TCA) on 31st December 2020. Whilst the agreement provides for preferential arrangements with regard to trade in goods and services, this cannot entirely negate any potential trade disruption over time, particularly for those sectors of Ireland's economy with a traditionally high degree of exposure to the UK economy. As such, Brexit is best understood not simply as a singular 'event' that occurred at end-2020 but rather, as an ongoing process, of which the consequences will only become clear over time.

For Ireland, the TCA ensures a continuation of tariff-free, quota-free trade in goods for Irish firms exporting to, and importing from, the UK. However, bilateral trade under this new regime will likely be negatively affected by a variety of non-tariff barriers including rules of origin checks, customs procedures and additional Sanitary and Phytosanitary (SPS) checks on agri-food products. While the TCA arrangements were introduced on 1 January 2021 across the EU for imports from the UK, the UK itself has opted to implement the new procedures on its imports from the EU on a phased basis. The UK plans to introduce further customs checks from the first quarter of 2022, and as such, the full economic impact of Brexit will not be evident for some time.

While disruption to Irish supply chains which encompass the UK will arise following Brexit – due to new administrative arrangements, inspections and transport delays – it is important to be aware, that Brexit may also offer a number of opportunities for Irish trade and increase the resilience of the wider economy over the longer term. In particular, this may include an increasingly diversified list of trade partners as well as increased import substitution in some sectors.

Over the past five years, a variety of research has been conducted on the likely impact of Brexit. One of the objectives of this work is to contribute to this canon. We endeavour to do so by means of exploring the employment exposures of Brexit. While this paper does assess developments in trade flows between Ireland and UK for contextual purposes (Section 1), the primary purpose of this paper is to explore these exposures by examining the scale and distribution of those workers employed in the sectors considered to be potentially exposed to shocks in trade with the United Kingdom (Sections 2 and 3). This includes an examination of the characteristics of said workers and the regional concentrations of employment in said sectors.

Over recent years, the Department of Social Protection has conducted extensive Brexit awareness raising and preparations across the regional structures of the Public Employment Service. This work has been undertaken in conjunction with SOLAS alongside a variety of other Government Departments and State Agencies². This paper also aims to complement and support these preparations by providing more granular insights into the potential employment exposures as a result of Brexit. By examining the sectors potentially most affected by Brexit and by profiling those sectors on a regional basis, this paper provides an input to the ongoing regional work co-ordinating the activities of the Department of Social Protection, Education and Training Boards and the various State Enterprise Agencies.

Moreover, identifying the characteristics of those whose employment is most likely to be affected by Brexit allows the Public Employment Service to respond to their precise needs. Where the analysis finds those affected have, on average, a lower level of education, that response may involve a return to education; where the interaction of sector and region places those with particular occupations at risk, the Public Employment Service may point people to other sectors where the same occupations are in demand, or to training to enable a transition to another occupation.

The global economy has experienced an abrupt and severe shock at the hands of the COVID-19 pandemic since the first quarter of 2020. In the Irish context, the pandemic and associated public health measures, saw approximately 1.2 million people in receipt of State supports to the labour market, either via the Live Register, Pandemic Unemployment Payment or wage subsidy schemes (Coates et al, 2020). While economic recovery is underway following the successful roll-out of Ireland's vaccination programme, a significant share of the labour force remains supported by these emergency measures.

In summary, this paper builds on Brexit preparations to date by providing insight into the sectors, and in turn workers, likely to be impacted under a parallel shock to the Irish economy by the trade consequences of Brexit. First, an analysis of Ireland's trading relationship with the United Kingdom is conducted, identifying key sectors with the highest export exposures. Combining this analysis with the other recent literature, the paper explores the characteristics of those in employment in the most exposed sectors. Understanding the kinds of individuals likely to be impacted enables preparation for any potential shock, while also allowing for better targeting of a potential response.

² This work has primarily been organised under the aegis of the Labour Market Surveillance Group (formerly, the Brexit Liaison Group).

Section 1:

Trade and Sectoral Exposures

This section presents an overview of Ireland's trading profile in recent years, looking specifically at import and export destinations and the sectors that account for this activity. This is followed by a more detailed analysis on Ireland's import and export exposure to the United Kingdom, including recent developments in trade flows post-Brexit, and related literature.

1.1 – Overview of Irish Trade (2010 – 2020)

1.1.1 – Exports

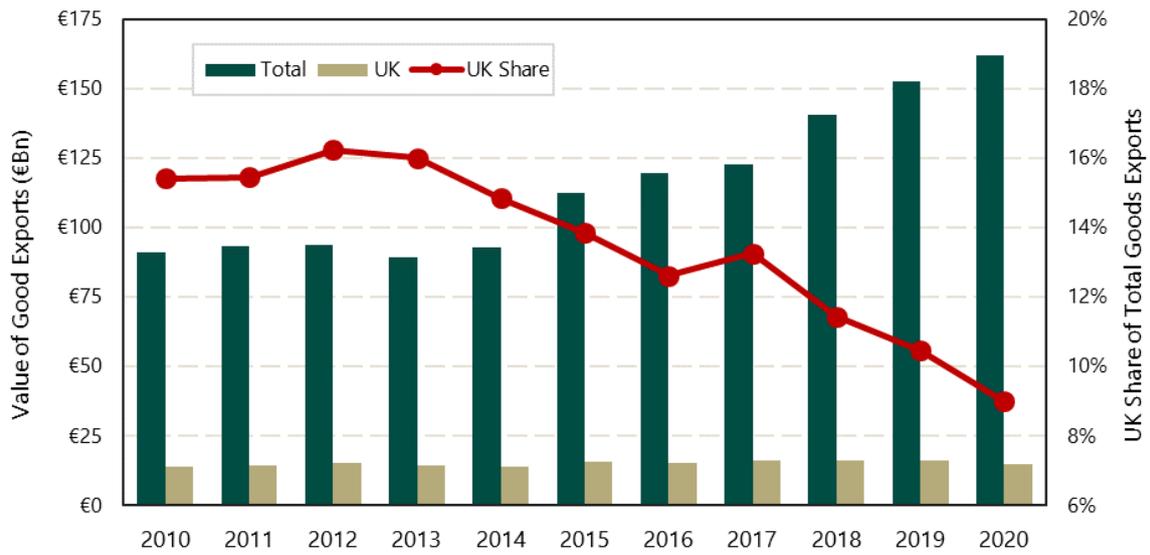
In 2019, the USA was Ireland's single largest export market, seeing exports to the value of almost €82bn, or 22 percent of Ireland's total value of exports. The UK followed the USA, being Ireland's second largest single export partner, with almost €51bn of exports, or 13.6 percent of the total value of Ireland's exports for that year. For comparison, the EU27 bloc accounted for €122bn, or 32.7 percent of the total value of Ireland's exports in 2019.

Figures 1.1 and 1.2 present the trends in Irish exports of goods and services from 2010 to present³. Over this decade, total Irish trade in exports has increased year-on-year. Overall, trade with the UK has been declining as a share of total Irish exports, of both goods and services, but still remains a significant share of Irish exports, accounting for 10.5 and 16 percent of total goods and services exports respectively in 2019, as shown in Figure 1.3. Latest available annual trade statistics for 2020 show that this downward trend in the UK's share of total Irish merchandise exports continued in the run-up to Brexit, standing at 9 percent.

Considering the absolute level of Irish-UK exports in financial terms, Figures 1.1 and 1.2 below show that for good exports the value has remained largely stable at between €14.5bn and €16bn per annum since 2015. During this time the value of Ireland's export of goods increased by over 44 percent. Similarly, while service exports to the UK have been steadily growing in recent years, the rate of growth – 61 percent since 2015 – has been less than that of Ireland's overall growth in service exports to all destinations; 84 percent. In short, while the value of exports to the UK have been stable or increasing in recent years they have not kept pace with the growth in value of Ireland's overall exports, thereby leading to the reduction in proportional reliance on the UK market as an export destination.

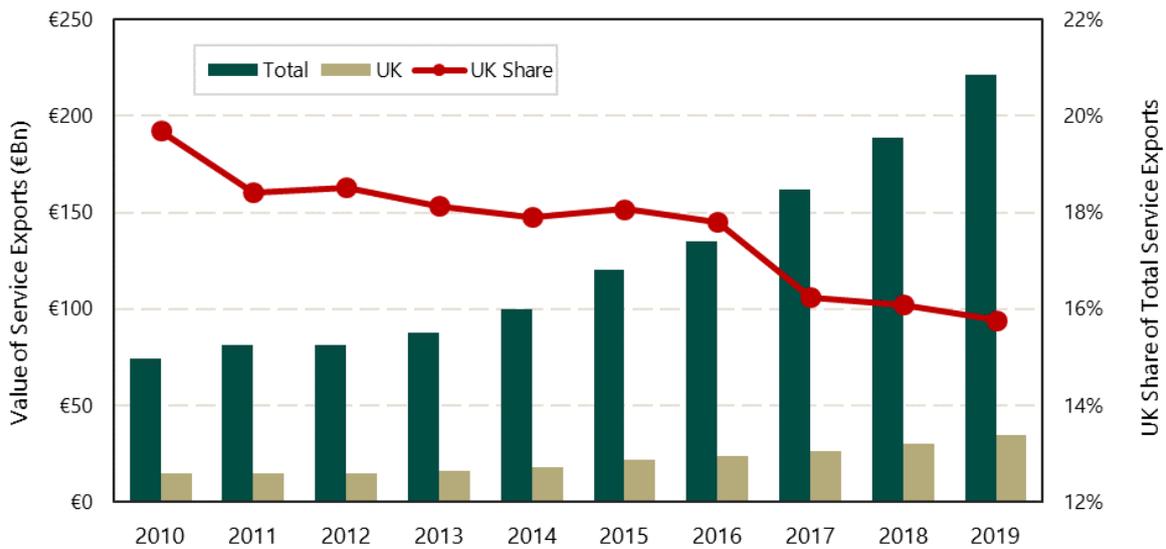
³ Latest available trade statistics from the Central Statistics Office covers the period 2010 – 2020 for goods/merchandise and 2010 – 2019 for services.

Figure 1.1: Irish Goods Exports, 2010-2020



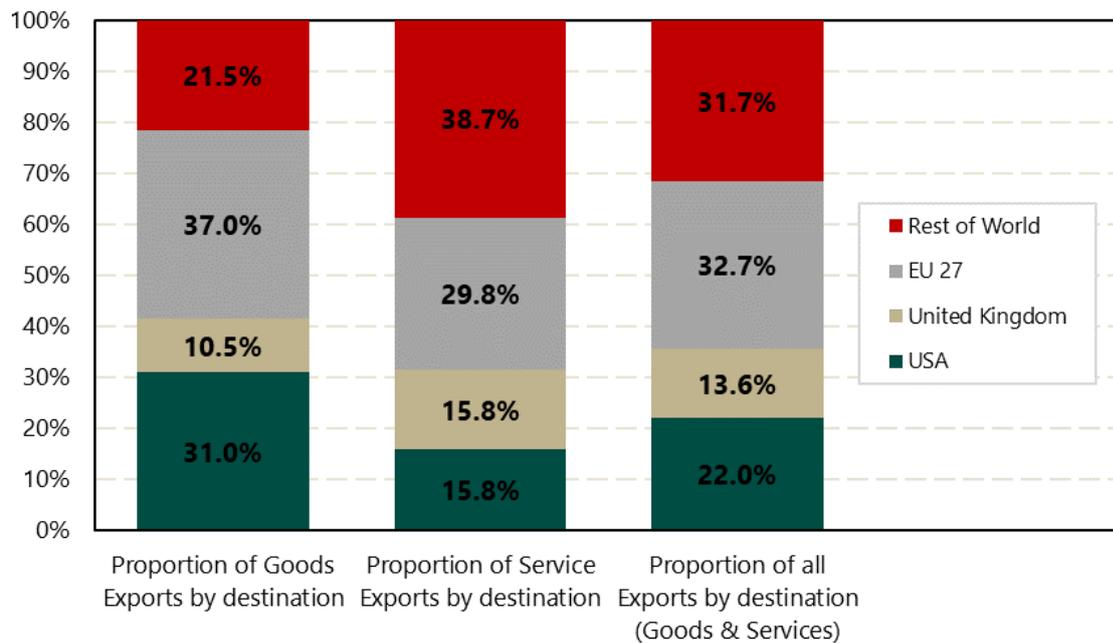
Data source: CSO, External Trade data.

Figure 1.2: Irish Services Exports, 2010-2019



Data source: CSO, Balance of Payments data.

Figure 1.3: Composition of Ireland's Goods and Services Exports by Region 2019 (in value)



Data source: CSO, External Trade (goods), Balance of Payments (services), and authors' calculations.

1.1.2 – Imports

Similar to exports, the USA represented Ireland's single largest source country for imports in 2019, with imports to the value of over €72bn, or 18.4 percent of Ireland's total imports. The UK followed the USA, being Ireland's second largest single import partner, with almost €41bn of imports, or 10.6 percent of the total value of Ireland's imports for that year. For comparison, the EU27 bloc accounted for €92bn, or 23.8 percent of the total value of Ireland's imports in 2019.

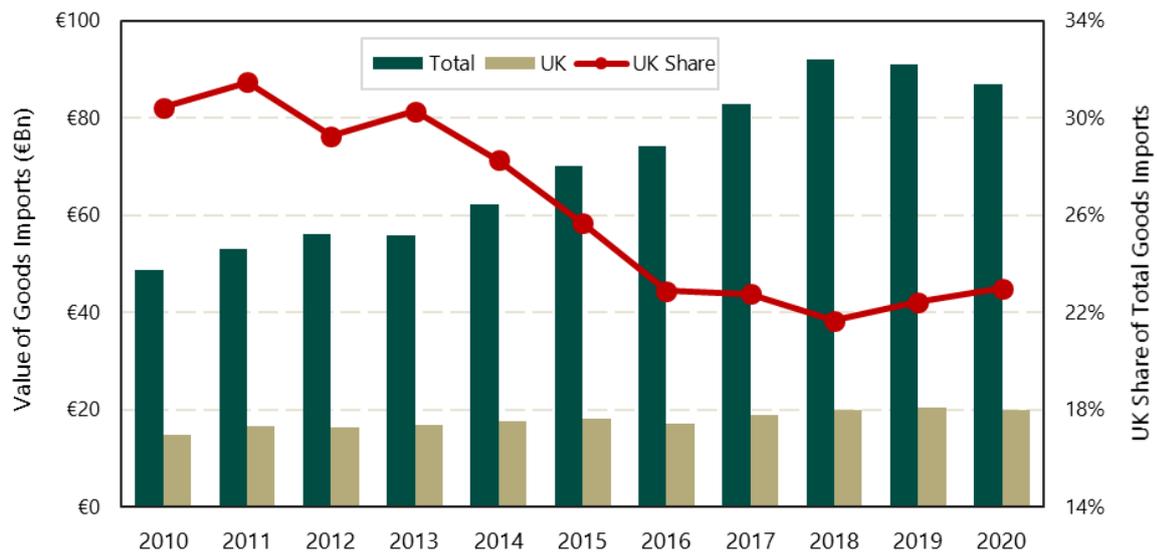
Figures 1.4 and 1.5 below present some key trends in Ireland's import history in recent years and highlight the declining share of the UK in Ireland's import trade.

Considering the absolute level of Irish-UK imports in financial terms, we see that for goods imports the value has remained relatively stable at between €18bn and €20bn per annum since 2015. During this time the value of Ireland's total imported goods has fluctuated somewhat but in general has grown more than the value of UK imports. Similarly, while service imports from the UK have been steadily growing in recent years, the rate of growth – 48 percent since 2015 – has been less than that of Ireland's overall growth in service imports from all destinations; 87 percent, albeit with a number of fluctuations year-to-year.

Therefore, similar to the discussion above on exports, the trade data would suggest that while the value of imports to the UK have been stable or increasing in recent years they have not kept pace with the growth in the value Ireland's overall imports, thereby leading to a reduction in Ireland's proportional reliance on the UK market as an import destination.

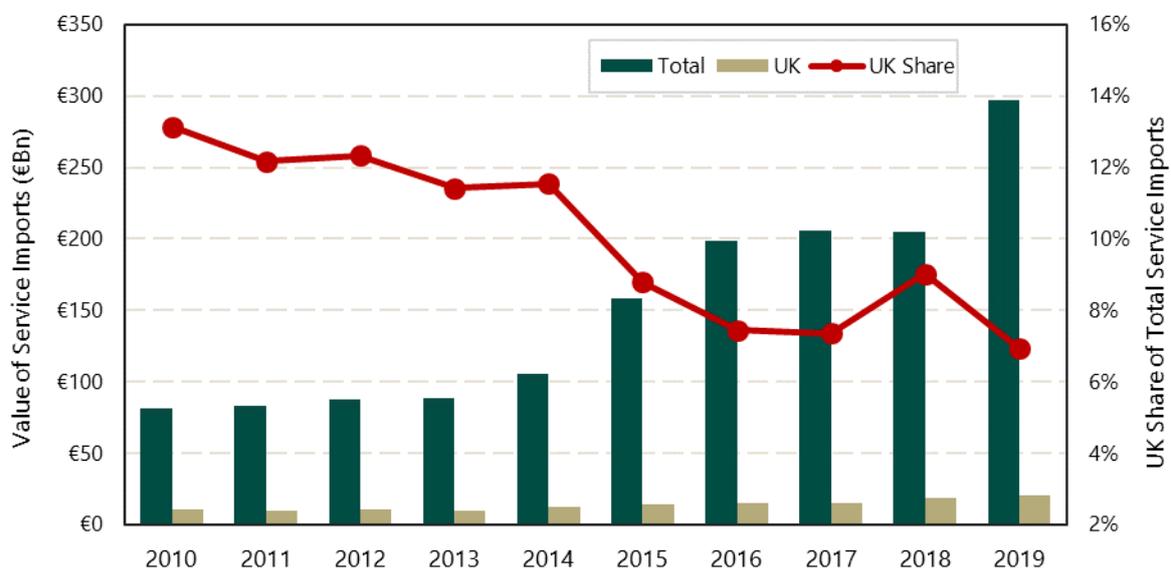
Despite these declines in proportional reliance however, it should be re-iterated that the UK market continues to be a major and important market for Irish trade in both goods and services.

Figure 1.4: Irish Goods Imports, 2010-2020



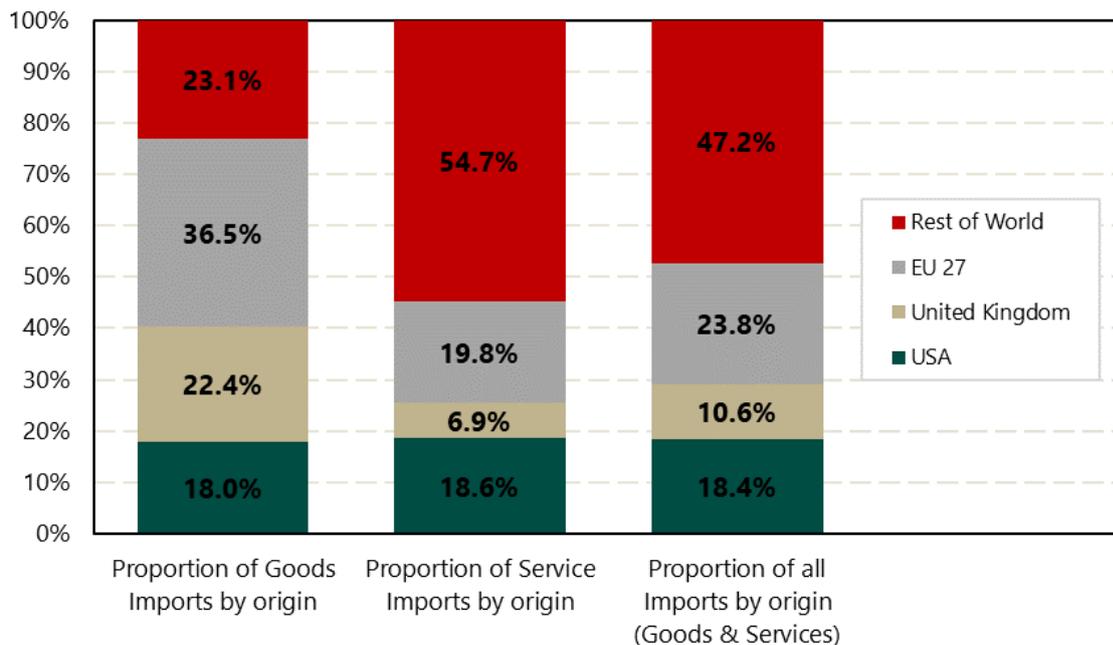
Data source: CSO, External Trade data.

Figure 1.5: Irish Services Imports, 2010-2019



Data source: CSO, Balance of Payments data.

Figure 1.6: Composition of Ireland's Goods and Services Imports by Region 2019 (in value)



Data source: CSO, External Trade (goods), Balance of Payments (services) and authors' calculations.

1.2 – Trade Exposures to the United Kingdom

This section uses exposure index methodology set out in Smith et al (2016), which produced a trade exposure analysis of sectors of the Irish economy, in the context of Brexit. Noting that the overall economic consequences that will arise as a result of Brexit, will ultimately depend on the nature of the UK's withdrawal, the authors highlighted the widely accepted assessment that the impacts will not be spread equally across the Irish economy, with some sectors likely to be more vulnerable than others. The methodology used captures two dimensions of export and import exposure to the UK; size and proportional exposure. Size exposure examines the value of each commodity group's exports (or imports) to the UK, as a share of Ireland's total exports (or imports) to the UK. Proportional exposure, meanwhile, examines the exports (or imports) to the UK for each individual sector, as a proportion of the sector's total goods exports (or imports) globally. The two measures are defined as follows:

$$\text{Size Exposure} = \frac{\text{Sector's Goods Exports (or imports) to the UK}}{\text{Total Goods Exports (or imports) to the UK}} \quad (1)$$

$$\text{Proportional Exposure} = \frac{\text{Sector's Goods Exports (or imports) to the UK}}{\text{Sector's Total Goods Exports (or imports)}} \quad (2)$$

The formulae above refer to goods. However, they are also applied to services sectors; as will be seen in the subsequent sections. Smith et al (2016) combine the two measures into a joint

'Exposure Index', e , which seeks to capture both components of exposure and is defined as follows in the case of exports^{4,5}:

$$e = \sigma \frac{\text{Sector's Goods Exports to the UK}}{\text{Total Goods Exports to the UK}} + (1 - \sigma) \frac{\text{Sector's Goods Exports to the UK}}{\text{Sector's Total Goods Exports}} \quad (3)$$

Or, alternatively:

$$e = \sigma(\text{Size Exposure}) + (1 - \sigma)(\text{Proportional Exposure}) \quad (4)$$

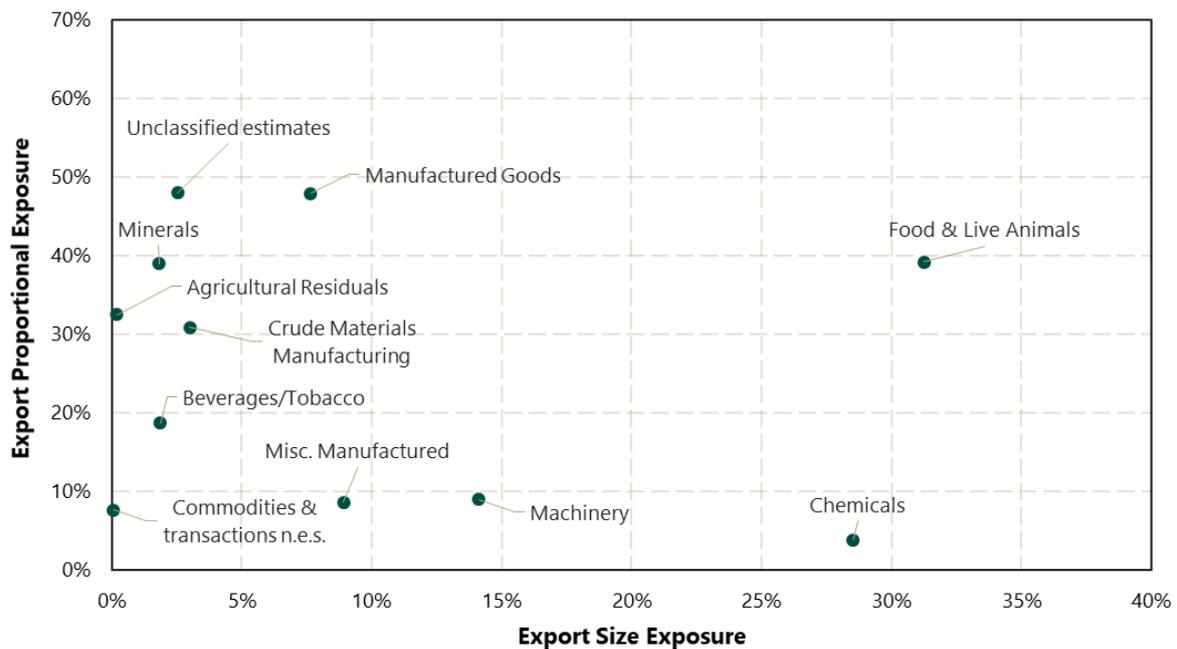
Figure 1.7 below presents a combined view of Irish goods exports to the UK, showing both the proportional and size exposure by sector. We can see that the food and live animals, and chemicals represented the two largest contributors to Irish goods exports to the UK in 2020 (size exposure). Examining the proportional exposure axis, highlights the within sector shares of UK goods exports; with manufactured goods and unclassified estimates the two largest sectors.

Similarly, Figure 1.8 presents a combined view of Irish service exports to the UK in 2019, showing both the proportional and size exposure by sector. It shows that the computer services and financial services represented the two largest contributors to Irish services exports to the UK in 2019 (size exposure). Examining the proportional exposure axis, highlights the within sector shares of UK service exports; with 'other services not-elsewhere-specified' (n.e.s) and financial services the two most exposed sectors by this measure.

⁴ As outlined in Smith et al (2016), size and proportional exposure are said to be of equal importance and so $\sigma = 0.5$. $e \in [0,1]$.

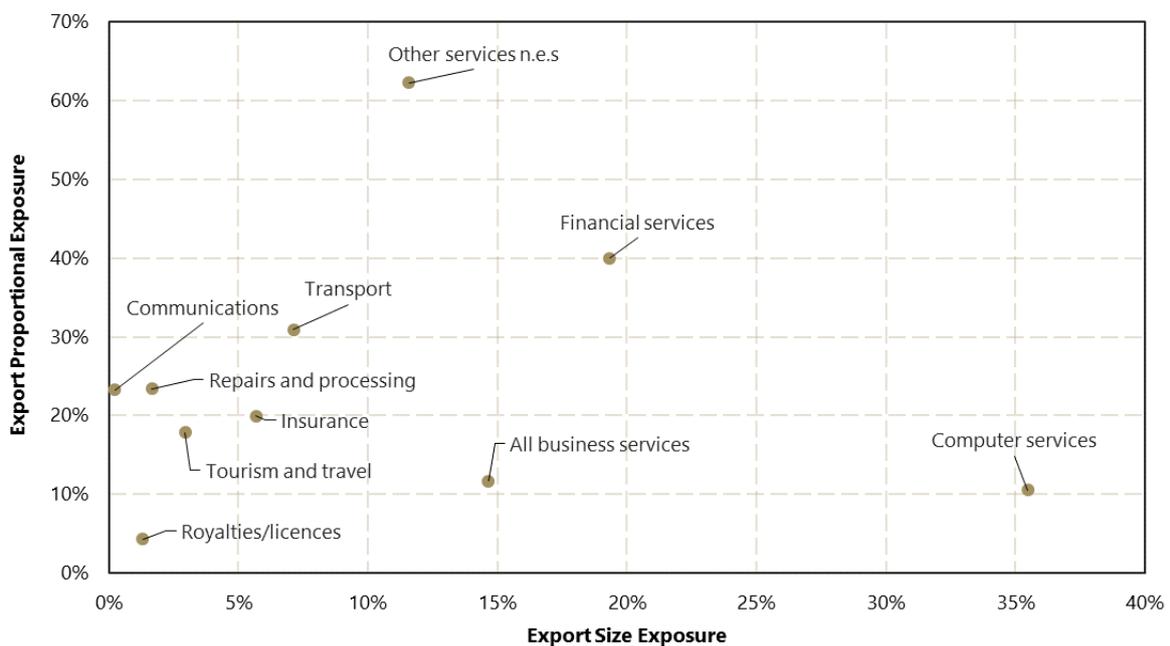
⁵ Same formula used in calculating the exposure index for import sectors.

Figure 1.7: Goods Export Exposure by Sector/Commodity Group (2020)



Data source: CSO, External Trade data and authors' calculations.

Figure 1.8: Services Export Exposure by Sector (2019)



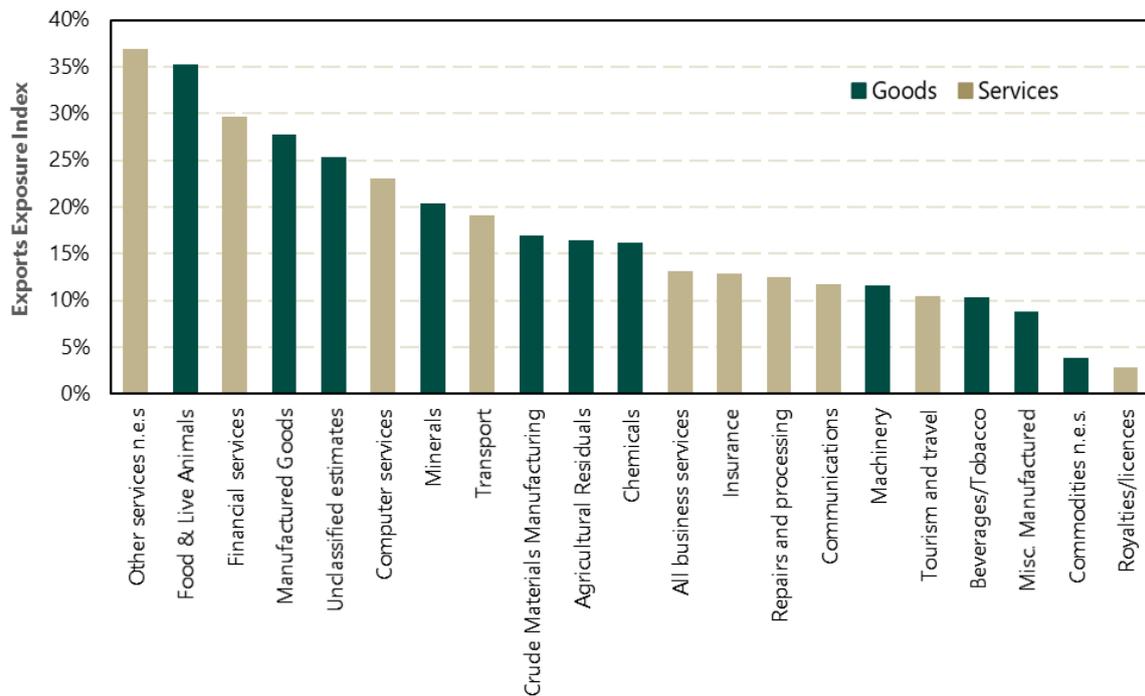
Data source: CSO, Balance of Payments data and authors' calculations.

Figure 1.9 combines our two exposure measures (size and proportional) to an overall exposure Index, for both goods and services exports to the UK in 2019/2020.⁶ 'Other services

⁶ Latest available annual trade statistics from the Central Statistics Office covers the period 2010 – 2020 for goods/merchandise and 2010 – 2019 for services.

n.e.s' presents the highest exposure index, followed by food and live animals, financial services and manufactured goods.

Figure 1.9: Combined Goods and Services Exports Exposure Index for 2019/2020



Data source: CSO, External Trade (goods), Balance of Payments (services) and authors' calculations.

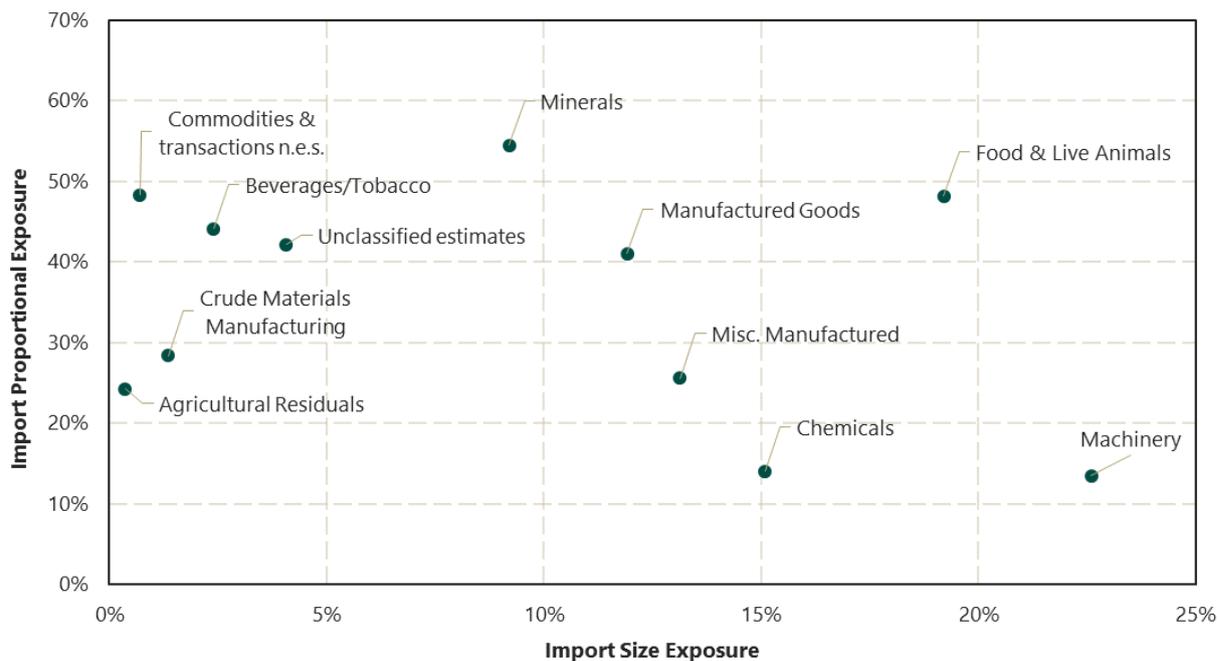
Figures 1.10 and 1.11, repeats the analysis above for imports to the UK, showing both the proportional and size exposure by sector.

From Figure 1.10 we can see that the machinery and food and live animals represented the two largest contributors to Irish goods imports from the UK in 2020 (size exposure). Considering the proportional exposure axis highlights the within sector shares of UK goods imports; with minerals, and food and live animals the two largest sectors in that regard.

Similarly, Figure 1.11 below, shows both the proportional and size exposure by sector of Irish service imports from the UK in 2019. It is clear that the 'all business services sector' and financial services represented the two largest contributors to Irish services imports from the UK (size exposure).⁷ Examining the proportional exposure axis, highlights the within sector shares of UK service imports; with 'other services n.e.s' and financial services the two largest sectors in this regard.

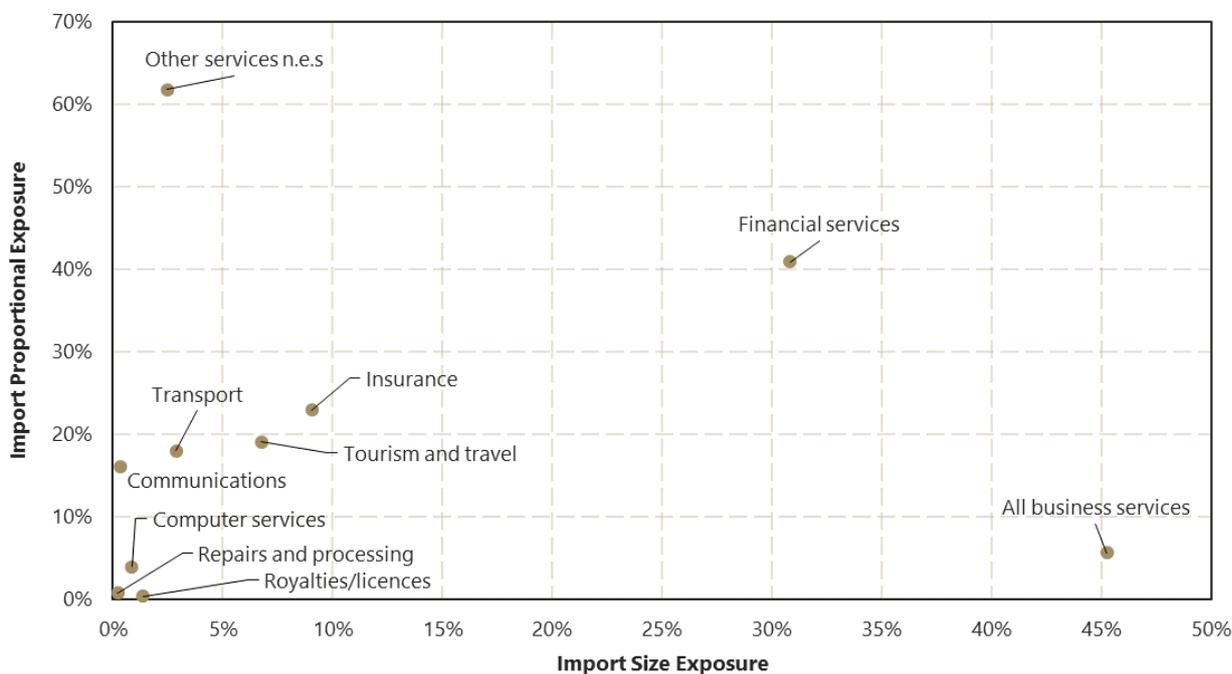
⁷ 'All Business Services' include services such as; research and development, trade related services and legal, accounting and other professional services.

Figure 1.10: Goods Import Exposure by Sector/Commodity Group (2020)



Data source: CSO, External Trade data and authors' calculations.

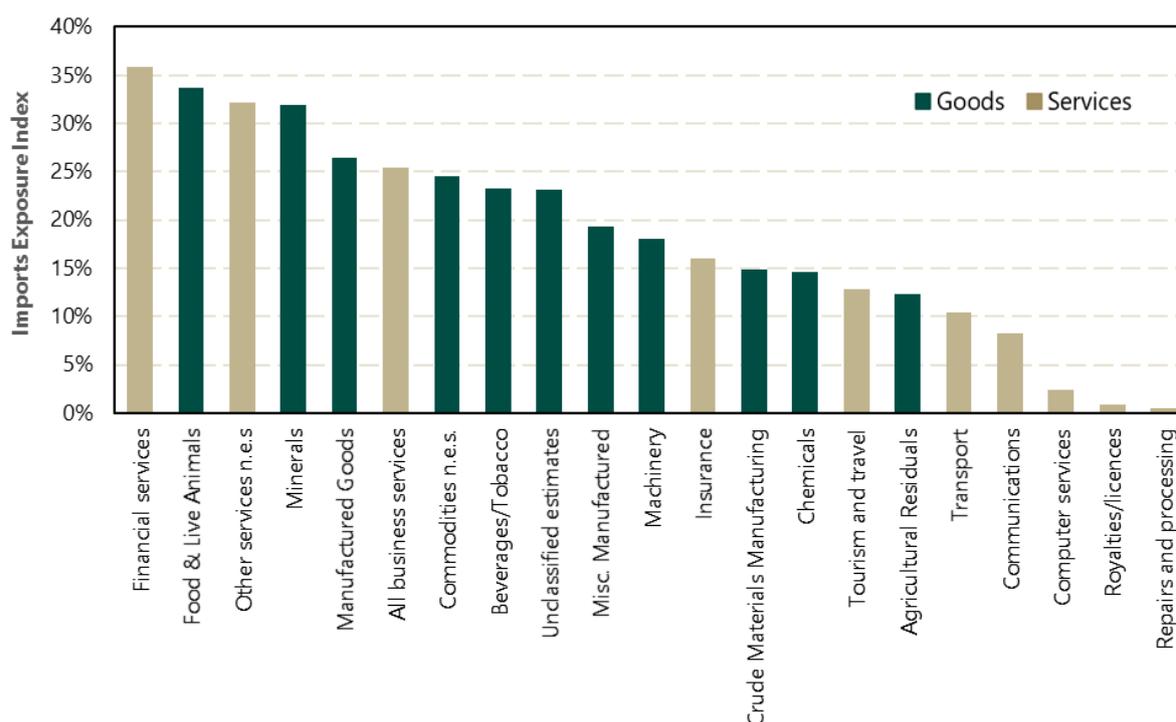
Figure 1.11: Services Import Exposure by Sector (2019)



Data source: CSO, Balance of Payments data and authors' calculations.

Figure 1.12 combines our two exposure measures (size and proportional) to an overall exposure Index, for both goods and services imports to the UK in 2019/2020. Financial services present the highest exposure index followed by food and live animals, 'other services n.e.c.' and minerals.

Figure 1.12: Combined Goods and Services Imports Exposure Index for 2019/2020



Data source: CSO, External Trade (goods), Balance of Payments (services) and authors' calculations.

1.3 – Recent Development in Ireland-UK Trade Flows, including Post-Brexit.

Building on recent analysis conducted by the Department of Finance (2021), early trade data up to July 2021 suggests that while Irish good exports to the UK have been much more resilient, Irish goods imports from the UK, specifically Great Britain, have declined significantly so far this year.^{8,9}

As shown in Figure 1.13, the value of total Irish goods exports to Great Britain fell sharply in January 2021, likely owing to initial logistical disruptions. However, exports have largely recovered in recent months, standing – as of July 2021 – above pre-Brexit levels at €1.5bn - c.11.7 percent of total exports. Over the same post-Brexit period the proportion of total Irish good exports to Northern Ireland has increased by over 30 percent (c.€64m) compared to the same 7-month period in 2019, albeit from a low initial level. In July 2021, the value of monthly merchandise exports to Northern Ireland stood at €275m.

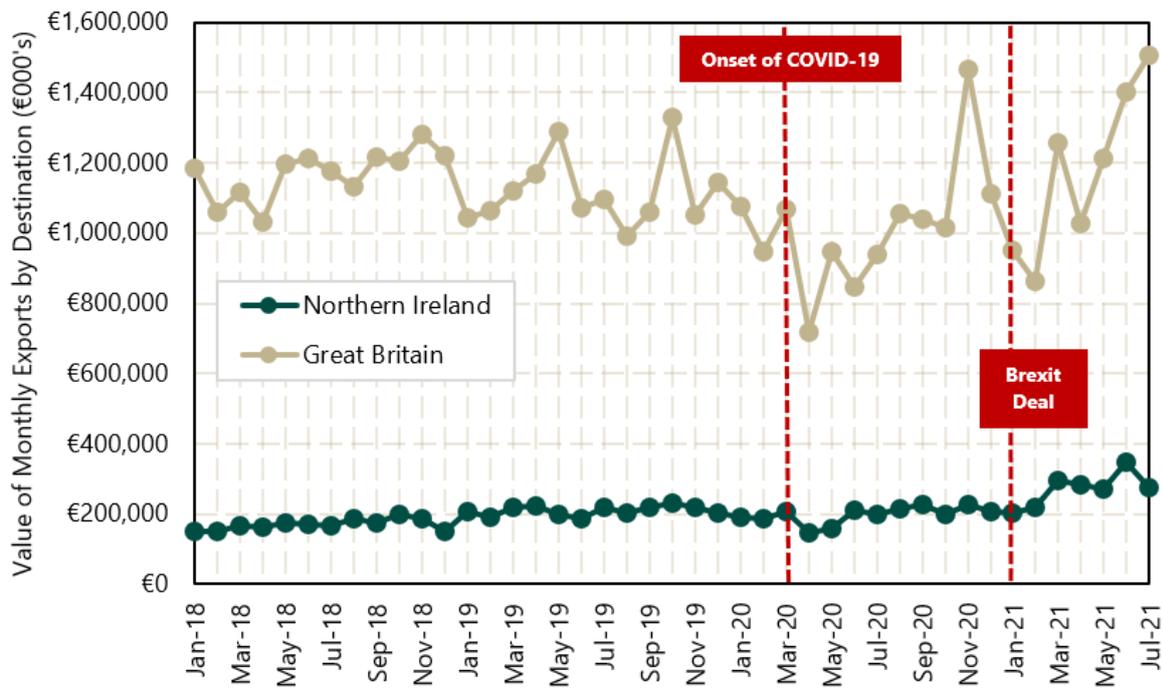
As shown in Figure 1.14 below, the value of total Irish goods imported from Great Britain fell by almost €1.3bn in January 2021 following the conclusion of the TCA and imposition of EU customs procedures. Since this time, they have remained at a similar level, accounting for approximately 12.7 percent of total Irish imports as of July 2021. In financial terms, in the 7-months since Brexit, this equates to an average fall in the value of merchandise imports from Great Britain of over €560m, almost 39 percent, compared to the same period in 2019. It is

⁸ [gov.ie - Economic Insights Summer 2021 \(www.gov.ie\)](http://www.gov.ie)

⁹ It should be noted that export and import volumes in some sectors can display a high degree of volatility on a monthly basis – such as trade in aircraft and pharmaceuticals – which have the potential to skew some data points.

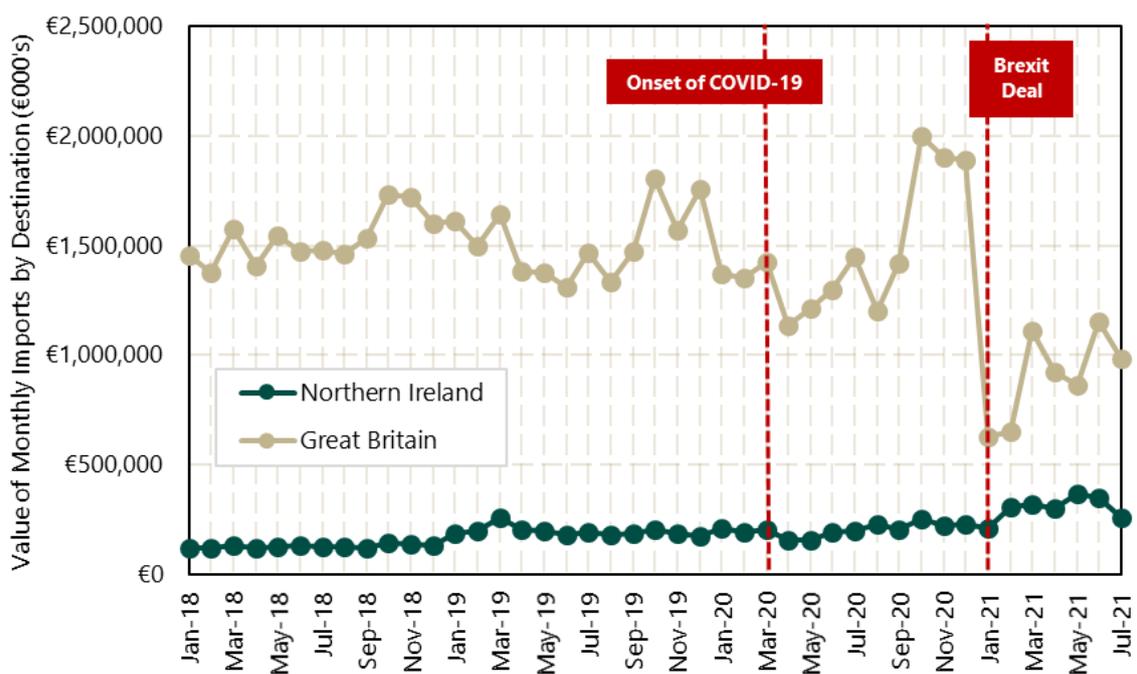
important to note however, that the value of imports coming from Northern Ireland has increased by almost 48 percent (or €97m) to close to 4 percent of total Irish imports, partially offsetting the decline from Great Britain.

Figure 1.13: Value of total Irish Goods Exports to Great Britain and Northern Ireland between January 2018 and July 2021.



Data source: CSO, External Trade (goods)

Figure 1.14: Value of total Irish Goods Imports to Great Britain and Northern Ireland between January 2018 and July 2021.



Data source: CSO, External Trade (goods)

As mentioned above, the EU introduced the TCA customs procedures and additional Sanitary and Phytosanitary (SPS) checks for imports from the UK from January 1st 2021. In contrast, the UK has opted for a phased implementation of new procedures and customs checks on its imports from the EU which is only expected to be fully in place by mid-2022. This phased approach is expected to have a further impact on Irish-UK bilateral trade, particularly exports, as they come into effect. As such, the full impact of Brexit on Irish-UK trade will not be known for some time to come. The divergent implementation timelines of the TCA procedures between the UK and EU can likely add some explanation for the resilience in the proportion of Irish good exports to the UK and the sharp reduction in good imports.

Furthermore, the increase seen in the proportion of trade with Northern Ireland is to be expected, given that it is not subject to the new customs and regulatory checks of the TCA due to the provisions contained within the 'Protocol on Ireland and Northern Ireland'. As alluded to by the recent analysis from the Department of Finance (2021) this has somewhat offset the significant decline in imports from Great Britain and may point to, at least an initial, substitution of goods trade, and an associated change in UK supply chains in the wake of Brexit.

Unfortunately, isolating the immediate impact of Brexit on bilateral trade between Ireland and the UK is complicated by a number of other factors. For example, pre-Brexit stockpiling of goods by firms in the run up to the 31st of December 2020, as well as the re-introduction of stringent public health measures to curb the spread of COVID-19 are likely to have affected trade flows since the TCA was formally agreed in late December. Despite these factors however, the preliminary evidence suggests that the diverging non-tariff barriers to trade between the EU and the UK have had, at least to some degree, a significant impact on Ireland's bilateral trade with the UK.

1.3.1 – Sectoral Overview and Developments in the Food and Live Animals Sector

According to the recent analysis conducted by the Department of Finance (2021), while Irish merchandise exports values to the UK experienced an initial shock across almost all sectors, they have proven to be quite resilient to date with most showing strong year-on-year growth compared to their 2020 levels.

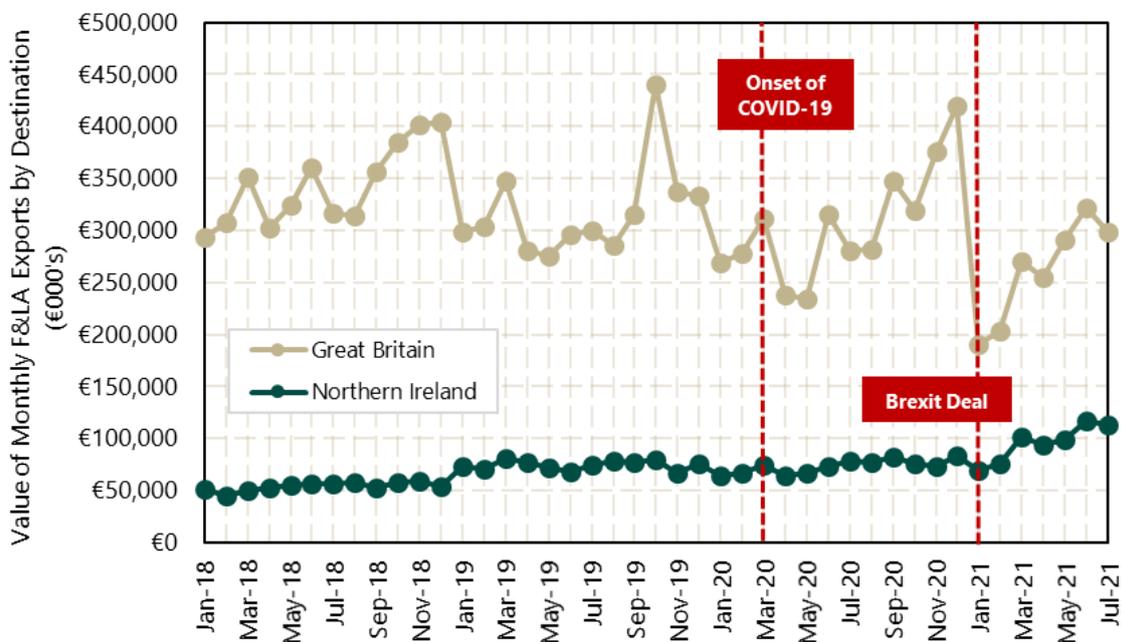
With regard to merchandise imports, following the introduction of the TCA procedures, their decline at a sectoral level was largely broad-based, with significant falls recorded in almost all sectors. While some sectors have started to see a recovery in more recent months, most continue to be depressed to some degree.

For illustrative purposes, Figures 1.15 and 1.16 below show respectively, the value of total Irish Food and Live Animal exports and imports to Great Britain and Northern Ireland since January 2018. This sector is among those identified in Section 1.2 above as being potentially most exposed to the Brexit trade shock as well as most impacted by non-tariff trade barriers,

such as customs and Sanitary and Phytosanitary (SPS) checks. These non-tariff barriers lead to increased border waiting times which proves particularly disruptive and costly to time-sensitive and perishable goods, such as food and live animals.¹⁰

Similar to the overall changes in Ireland-Great Britain-Northern Ireland trade outlined above, the preliminary data suggests that while trade in Food and Live Animals with Great Britain has declined sharply following Brexit, this fall has been partly offset by the increase in trade with Northern Ireland. In financial terms, comparing the seven months from Jan-July 2021 against Jan-July 2019 shows that the average value of export trade with the United Kingdom has declined by €17m in this sector while imports have declined by a far greater amount, falling by almost €103m.

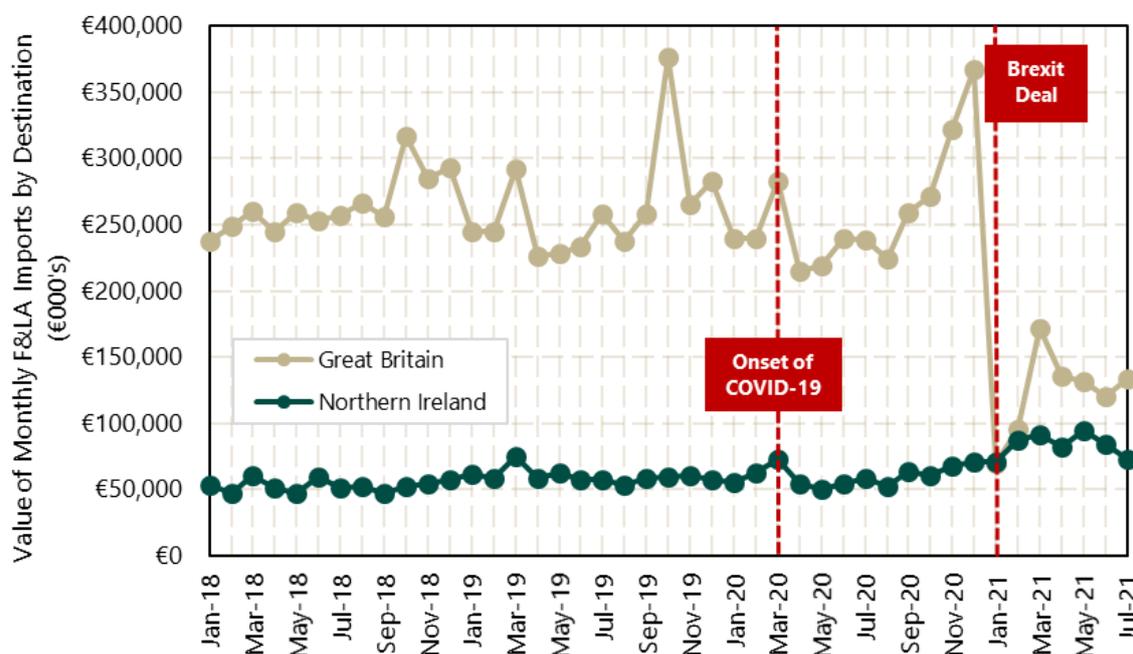
Figure 1.15: Value of total Irish Food and Live Animal Exports to Great Britain and Northern Ireland between January 2018 and July 2021.



Data source: CSO, External Trade (goods)

¹⁰ [Trade costs and Irish goods exports \(Department of Finance, 2020\)](#)

Figure 1.16: Value of total Irish Food and Live Animal Imports to Great Britain and Northern Ireland between January 2018 and July 2021



Data source: CSO, External Trade (goods)

1.4 – COVID-19 & Brexit Sectoral Overlaps

1.4.1 – A Review of Recent Literature

Since the announcement of the UK’s decision to leave the EU in 2016, there has been an extensive amount of research conducted – and literature published – on the potential impact of Brexit on Ireland’s trade flows with the UK. Among these are an analysis of non-tariff barriers on Ireland’s goods trade with the UK, by Byrne and Rice (2018).¹¹ Their examination suggests a particularly negative impact on the trade of time sensitive perishable goods, such as agri-food, as a result of increased delays and additional administrative burdens – a finding consistent with the analysis presented above. As referenced previously, the Department of Finance (2021) also publishes regular updates of recent trends in Ireland-UK trade volumes as the reality of Brexit continues to gradually unfold. The Central Bank of Ireland and the ESRI have also published quarterly commentary on Brexit implications, as well Working Papers on the subject.

In the case of the aforementioned ESRI Working Paper, this was produced before the completion of the TCA. Daly and Lawless (2020) examined the sectoral overlap between the dual shocks of Brexit and COVID-19. The authors assigned a ranking based upon the exposure of 57 sectors of Ireland’s economy to both shocks. They note that while there is extensive research on the economic impact of a hard Brexit, it focuses on the pre-pandemic

¹¹ [Non-Tariff Barriers and Goods Trade: a Brexit Impact Analysis \(repec.org\)](https://www.repec.org/)

outlook, meaning that the weakened state of the Irish economy could exacerbate the potential impacts of Brexit. The authors, however, found limited overlap between those sectors exposed to Brexit and those sectors exposed to COVID-19 with the sectors exposed to each shock not being particularly closely connected to those affected by the other shock (i.e. limited interaction effects).

In terms of estimating the sectoral effects of Brexit (or a projected export change by sector), Daly and Lawless sought to update the results of previous research regarding Irish-UK trade in goods and services. In order to do so, the ESRI Working Paper used detailed trade flows data for 2018 and applied the tariff schedule announced by the UK Government in May 2020. Specifically, these were the proposed tariffs applicable to all imports into the UK originating from those countries with which the UK had no trade agreement (including EU member-states in the absence of agreed trading arrangements before end-2020). Given the foregoing, this research estimated an export change affect for each sector on foot of a tariff-induced price increase¹².

In the period following the publication of the paper by Daly and Lawless, the TCA was agreed thereby setting aside the tariff schedule that would have applied to trade between Ireland and the UK in the absence of an agreement. This, however, does not negate the value of the results presented by the ESRI for several reasons. In the first instance, the sectoral exposures identified in this work were not merely predicated upon any potential price increases but rather, these also reflected Ireland's close trade links with the UK and the high share of exports to the UK market for certain sectors of Ireland's economy. Secondly, those same sectors that are most exposed to Brexit are – and will continue to be – facing a variety of non-tariff considerations which may ultimately impact upon employment levels (and job creation) in those sectors. These challenges will include uncertainty; supply chain disruption; additional bureaucratic and administrative burdens; and increased competition for UK custom over time.

With regard to the forecasted estimate of the impact of either Brexit and/or COVID-19, Daly and Lawless classify sectors as being: (i) 'red' (severely affected); (ii) 'amber' (moderately affected); or (iii) 'green' (unaffected). In terms of the likely sectoral impact of Brexit, the ESRI identified a variety of (sub-)sectors¹³ as being most at-risk of a severe or moderate shock. These included those in the areas of Agriculture, Forestry and Fishing; Manufacturing (including food production, beverages and tobacco, and minerals); Financial Services and Insurance; Transport and Storage Services; and Information and Communication (including computer services).

¹² In other words, the authors assumed that the full tariff amount would be incorporated into the price for each product and used sector-level price elasticities to estimate the impact on trade values by sector/product.

¹³ For instance, the ESRI Working Paper identifies several sub-sectors within NACE REV.2 sector K (64-66): Financial and Insurance Activities as being potentially 'severely' affected including sub-sectors 64-66.

It should be noted that the results presented by the ESRI are broadly in line with our own high-level analyses of exposures based upon both imports and exports for goods and services. For instance, our own examination of sectoral dependency upon the UK market up to 2020 has also noted the degree of exposure for producers operating in sectors such as Food and Live Animals; Manufactured Goods; and Financial Services.

Nevertheless, the ESRI note that there will be some firms for which either impact is exacerbated by the other. To date, the full employment impact of COVID-19 has been mitigated to a degree by the introduction of the Pandemic Unemployment Payment (PUP) as well as other temporary employment supports. Administrative data from the Department of Social Protection, however, can be examined to gauge the sectoral impact of COVID-19. Recent research using this data suggests that those sectors most impacted over the course of the pandemic, and consequently with the highest number of individuals reliant on the PUP have been 'Accommodation and food service activities (I)', 'Wholesale and retail trade and 'Administrative and support service activities (N) (Brioscú, Dwan O'Reilly and Coates, 2021).¹⁴

Table 1.1: LFS Estimates of Number of People in Employment in Selected Sectors, 2019-2021 (000's) – Non-seasonally adjusted.

Quarter	Accom. & food service (I)	Admin. & support service (N)	Agriculture, forestry & fishing (A)	Transport. & Storage (H)	Financial, insurance and real estate (K,L)	Wholesale & retail trade (G)
2019 Q1	174.9	110.4	103.4	105.8	110.9	304.1
2019 Q2	180.8	109.7	100.6	105.8	112.8	297.8
2019 Q3	176.7	109.2	99.3	103.7	114.2	300.9
2019 Q4	179	111.8	106.8	108	115.1	309.3
2020 Q1	169.5	111.7	107.2	103.5	119.5	309.4
2020 Q2	110.1	86.8	97.6	90.4	130.8	272.3
2020 Q3	137.2	92.1	98.3	100.1	123.4	302.3
2020 Q4	124.6	80.8	106.1	106.6	124.3	312.9
2021 Q1	100.2	81.7	106.4	91.3	122.5	303.7
2021 Q2	120.9	97.4	107.9	100.4	131.6	302.7

Data Source: DSP analysis of CSO LFS data (QLF03)

Table 1.1 also presents the most recent employment values for selected sectors from the Labour Force Survey. While the CSO produced a COVID-19 adjusted measure of employment and unemployment (accounting for those in receipt of the PUP) in order to improve the understanding of the pandemic's impacts on the labour market, these are not available on a sectoral basis. Even so, examining the most recent Labour Force Survey employment series still provides insights into the significant COVID-19 impact across the sectors mentioned above, most notably accommodation and food (I). However, there appears to be little impact

¹⁴ [The Covid-19 Pandemic and Ireland's Labour Market: Insights through the Lens of the Pandemic Unemployment Payment and the Characteristics of Impacted Workers | The Economic and Social Review \(esr.ie\)](#)

in agriculture, forestry and fishing (A), for example, where the Brexit impact could be substantial in 2021 or 2022.

1.4.2 – Regional and Sectoral dependence on pandemic related emergency supports (PUP & EWSS)

As previously discussed, the confounding influence of the COVID-19 pandemic on Ireland's labour market makes it impossible to isolate those impacts specifically caused by Brexit. With the onset of COVID-19 in Ireland, and the introduction of rolling public health restrictions, conditions in Ireland's labour market deteriorated significantly in March of 2020. In response to the widespread impacts on businesses and workers, the Irish Government, as part of a broader suite of policy measures, introduced the Pandemic Unemployment Payment (PUP) as well as the Temporary Wage Subsidy Scheme (TWSS; now the Employment Wage Subsidy Scheme (EWSS)).¹⁵

The continued availability of these income support schemes may have mitigated or temporarily masked the employment impacts of Brexit. As such, in this section we endeavour to examine existing State income and employment supports by both region and sector to investigate the degree to which the employment effects of Brexit, if any, have been masked. Particular attention is paid to the Border region given its proximity to Northern Ireland and the likelihood of higher levels of cross border trade.

A) Regional Analysis

As of September 10th, 2021, 9.2 percent of the Border region's pre-pandemic labour force is on the Live Register. This compares to a national average of 7.4 percent¹⁶. Historically, however, the Border region typically exhibits a higher reliance on the Live Register than other regions. So, this in of itself cannot be taken as evidence of Brexit-related impacts.

Additionally, as shown in Figure 1.17 below, with regards to regional labour force dependence on the PUP, the Border region is only slightly above the national average, with 4.4 percent of its pre-pandemic labour force in receipt of the PUP, as of September 14th, 2021. Similarly, examining proportional reductions in PUP recipients on a county level since the 2021 peak in payments on February 9th 2021, shows that most Border counties are seeing faster outflows from the PUP than the national average of approximately 78 percent. Only Co. Louth¹⁷ seems to be lagging somewhat in outflows from the PUP, although this may be explained by its sectoral composition and proximity to the Dublin region which itself is well below the national average. Furthermore, proportional monthly changes in PUP figures for the Border region almost exactly track those of the rest of the country¹⁸. Therefore, to date,

¹⁵ The TWSS closed on September 1st, 2020 and was replaced by the Employment Wage Subsidy Scheme (EWSS).

¹⁶ Pre-pandemic labour force figures from CSO (Q1 2020).

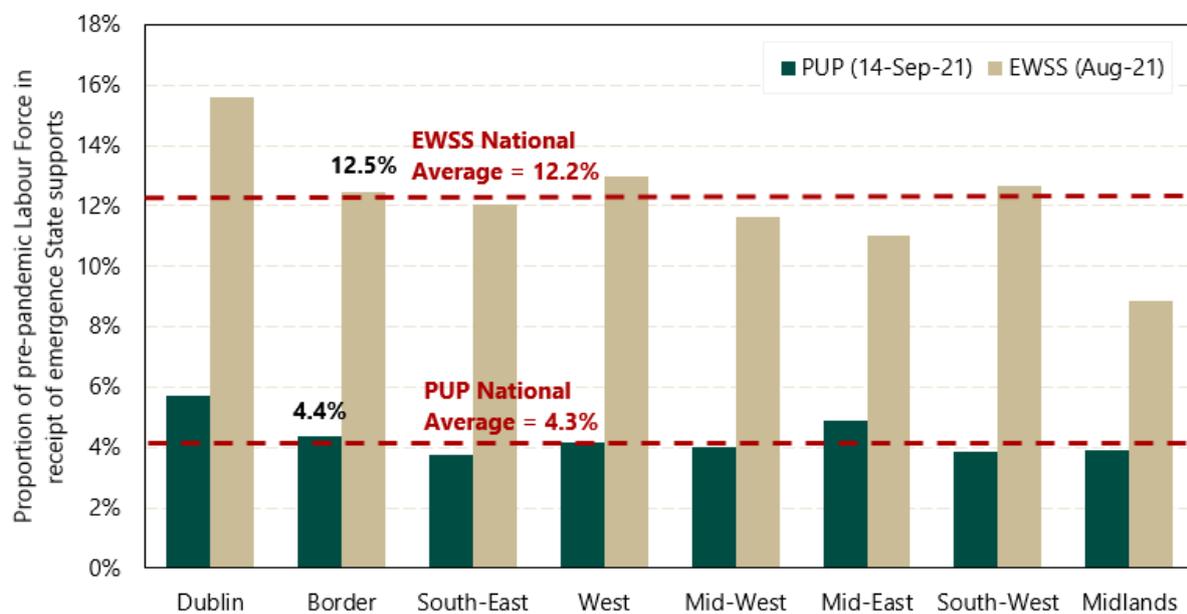
¹⁷ Co. Louth is not classified as a Border county under NUTS3 regional classification but does border Northern Ireland.

¹⁸ Tracking monthly proportional changes in the number of PUP recipients in the Border counties, against those non-Border counties excludes Dublin owing to its unique sectoral composition.

there is little indication that Brexit may be impeding returns to work or exits from the PUP specifically in the Border region and associated counties.

Examining the proportional reliance of the Border region’s pre-pandemic labour force on the EWSS reveals a similar finding. As of the end of August 2021, the proportion of employees benefitting from the EWSS amounted to fractionally more than the national average, 12.5 percent compared to 12.2 percent. As such, there is limited evidence to suggest that significantly higher shares of individuals in the Border region are reliant on the State’s temporary pandemic-related income supports.

Figure 1.17: Number of people by region in receipt of State temporary pandemic related income or employment supports, as a proportion their pre-pandemic labour force.



Source: CSO LFS (Q1 2020) and DSP & Revenue administrative data.

B) Sectoral Analysis (Examination of Exposed sectors)

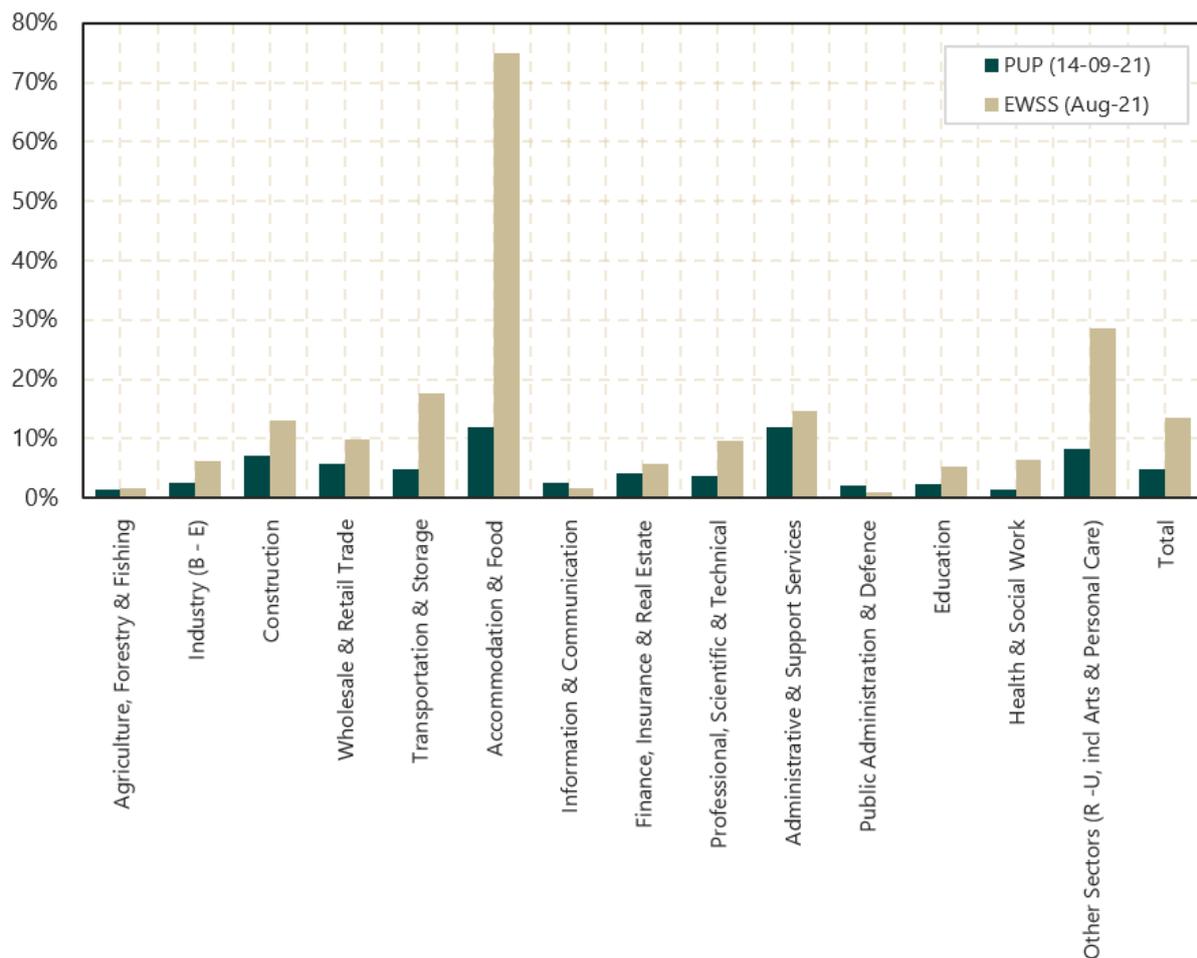
Examining changes in numbers in receipt of the PUP since the 2021 peak in February, reveals a broad-based recovery with outflows anchored to each sector’s given reopening phase. As of September 14th, some of those key sectors identified as potentially being most exposed to a Brexit shock, such as agriculture and manufacturing, have seen their numbers in receipt of the PUP fall faster than the total sectoral average of 72 percent. However, other sectors such as transportation and storage, as well as financial services have lagged behind, declining by circa 63 percent since the 2021 peak.

Considering PUP movements by region also reveals limited evidence of border and non-border difference in sectoral recovery since the 2021 peak.¹⁹

¹⁹ It is interesting to note however, that in the run-up to Brexit (from September 2020) the numbers in receipt of the PUP from the Border region increased faster than that of the rest of the country in the Agriculture, Forestry and Fishing and although it has declined since February 2021 at the same pace as non-Border counties it remains at a somewhat elevated level.

In general, as shown in Figure 1.18 below, those sectors most reliant on emergency State supports as at the beginning of September 2021, are those same sectors most directly impacted by the COVID-19 public health restrictions. Specifically, these include accommodation and food, administrative and support services and 'other sectors' (including arts, entertainment and personal care services).

Figure 1.18: Proportion of those employed pre-pandemic in receipt of the PUP or currently supported by EWSS, by NACE sector classification.



Source: CSO LFS (Q1 2020), DSP & Revenue administrative data and authors' calculations.

Overall, the data does not presently show any clear Brexit-related employment effects underlying the COVID-19 income supports. To date, it is largely the status of public health restrictions that are influencing numbers in receipt, and in turn exits from, the PUP. However, as final public health restrictions begin to ease and the temporary supports are progressively scaled back in the coming months, it will be important to continue to monitor the sectoral composition of those in need of State assistance. As outlined earlier, the full impact of Brexit on the Irish labour market is unlikely to be felt for some time to come.

1.5 – Methodology and Data sources

As outlined in section 1.4.1, the schedule of (sub-) sectors identified by the ESRI as being exposed to the consequences of Brexit (from severe to moderate) are broadly consistent with the results of the author's own exposure analyses with regard to Ireland's export/import trade with the UK. As a consequence, we have opted to use the former's classification of 'exposure' as our starting point. Thereafter, we have utilised a broad array of datasets in order to present a detailed exposition of these sectoral exposures in employment terms. This includes an examination of the regional concentration of employment in these sectors and a profile of the characteristics of those working in these sectors.

An understanding of the potential impact of Brexit across regions in Ireland is facilitated by analysis of a number of datasets. The CSO's Labour Force Survey for quarter 4 2019 (as detailed in Section 1) was combined with further datasets to determine an approximation of the distribution of employment in each region by detailed sector and type of firm. While none of the datasets provide a complete picture on their own, together they offer a comprehensive analysis of the complexities of employment across regions. The datasets included are outlined below:

1.5.1 Labour Force Survey

The CSO's Labour Force Survey provides significant details on the profile of those employed in sectors potentially impacted by Brexit across a wide range of attributes, such as gender, age and education level. For the purposes of this analysis, quarter 4 2019 was examined in order to remove any effect on employment brought about by the onset of COVID-19 restrictions in early 2020. The data is available at broad sectoral level and region; county level data is not available, and a more detailed breakdown of sectors/occupations is not possible due to the sample sizes involved in the survey.

1.5.2 CSO Census data 2016

Although the Census data relates to 2016, it provides a wealth of information at a level of detail not otherwise available. The data used for the purposes of this analysis²⁰ provides us with detailed sectoral and county level information of persons in employment in 2016. The inter-censal population estimates are published each August. In advance of these estimates, it is difficult to identify the extent to which populations have shifted over 2020 and 2021, particularly those of working age in employment.

1.5.3 CSO Business Demography data 2018

The CSO's annual business demography dataset²¹, with 2018 the latest available, provides information on the number of active enterprises in each county in Ireland along with the number of persons engaged. The dataset includes the NACE Rev. 2 sectors B-N (excluding

²⁰ The data is available at: <https://data.cso.ie/table/EB031>

²¹ The data is available at: <https://data.cso.ie/table/BRA18>

the activities of holding companies) and excludes the following activities: agriculture and the public sector (i.e. education and health). At present, data is not available for the size of enterprises by sector at regional level.²²

1.5.4 Kompass data

Kompass (DataIreland) is a directory of approximately 100,000 companies in Ireland. The data is provided by company name, county, company size (based on the approximate number of employees), and detailed sectoral activity (NACE rev 2). While Kompass data does not capture all companies operating in Ireland, and the sectoral assignment is not always accurate, it nonetheless provides an indication of the firms operating in each county which is not otherwise available.

²² Business Demography data is based on the location (region) of the business. This contrasts with the Labour Force Survey and Census 2016 datasets which are based on the region in which an individual resides rather than works. The difference between the two is relatively small, with the exception of the Dublin and Mid-East regions, where many people commute across regional boundaries to work in Dublin.

Section 2:

An Examination of the Employment Exposures to Brexit

This section presents a profile of persons employed in sectors potentially impacted by Brexit in order to inform policy makers where interventions may be required at a skills level. Employment in each sector is ranked in terms of its exposure to Brexit by three categories: severely affected, moderately affected and unaffected sectors. These categories were identified and used by the Economic and Social Research Institute (ESRI) to assess sectoral exposure to Brexit shocks in their working paper.²³ It is worth noting that being employed in sectors expected to be impacted by Brexit does not directly imply that all of those employed will be affected – the extent of the impact on employment levels is yet to be determined and may apply only to specific cohorts within a sector. Indeed, it is also the case that although some sectors have been classified as unaffected by Brexit, many of these have been directly impacted by COVID-19 and may see a fall in employment for reasons other than Brexit.

All employment data in Section 2 relates to the CSO's Labour Force Survey (LFS) Quarter 4 2019. The LFS provides significant details on the profile of those employed in sectors potentially impacted by Brexit across a wide range of attributes, such as gender, age and education level. For the purposes of this analysis, quarter 4 2019 was examined in order to remove any effect on employment brought about by the onset of COVID-19 restrictions in early 2020. A traffic light colour system is used to denote the sectors, with "red" for severely affected sectors, "amber" for moderately affected sectors and "green" for unaffected sectors.

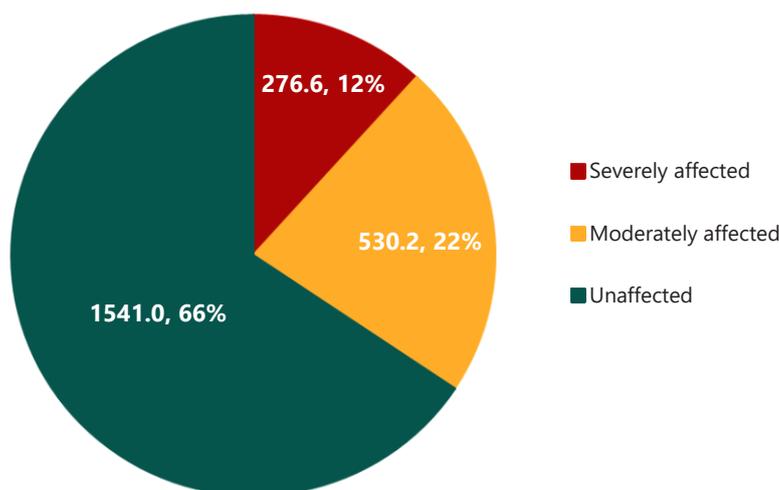
Section 2 provides an overview of the characteristics of those employed across all three levels of affect. This is followed in Section 3 by a more detailed analysis at regional level of the potential impact of Brexit on skills.

²³ Daly, L., and M. Lawless. *Examination of the sectoral overlap of COVID-19 and Brexit Shocks*. ESRI Working Paper No. 677. September 2020.

2.1 – National Employment by Brexit Impact Sector

In quarter 4 2019, 2.34 million persons were in employment nationally. Of those, two thirds (66%), or 1,541,000 persons, worked in sectors which have been identified as unaffected, or “green”, by Brexit, as defined by the ESRI research (see Appendix A); a further 22% worked in sectors expected to be moderately affected, or “amber”, (530,200 persons) and 12% in sectors considered potentially severely affected, or “red”, (276,600 persons) (Figure 2.1).

Figure 2.1: Employment (000s, %) Nationally by Brexit Impact Sector, Quarter 4 2019



Source: SLMRU (SOLAS) analysis of CSO LFS data.

2.2 – Employment by Sector and Brexit Impact by Sector

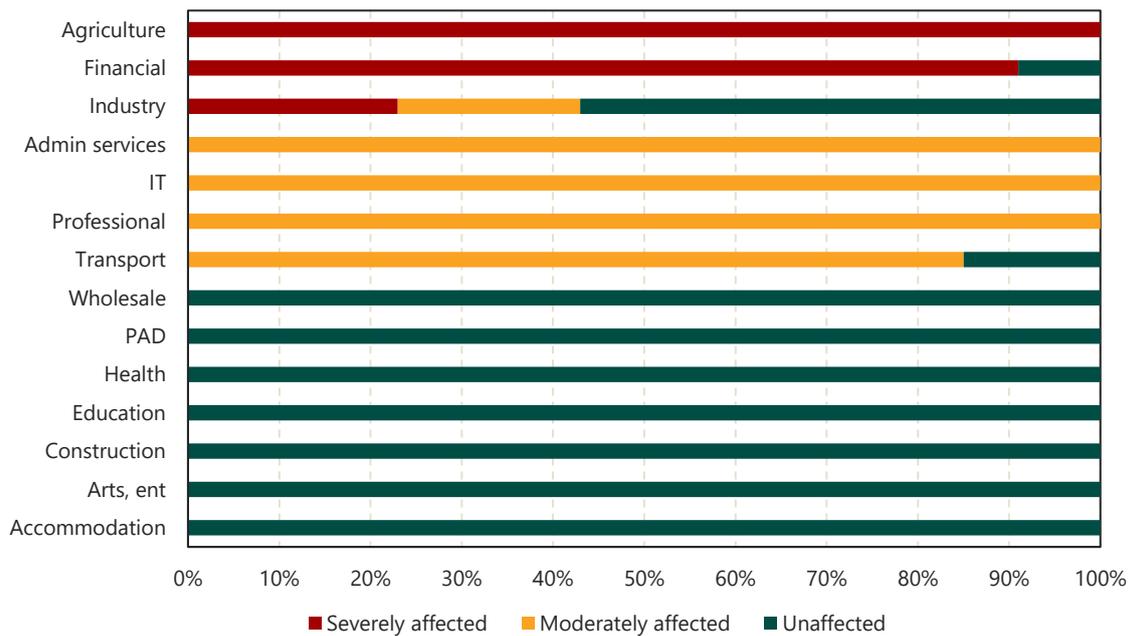
In quarter 4 2019, the share of employment classified as severely, moderately and unaffected by Brexit varied by sector (Figure 2.2).

The sectors most severely affected by Brexit include:

- **Agriculture** (all sub-sectors were included relating to 106,800 persons employed)
- **Financial services** (91% of employment, or 104,900 persons)
- **Industry** (23% of employment, or 64,900 persons)

This is not surprising as the agriculture and industry (food and traditional manufacturing) sectors are highly reliant on the UK as an export destination, while the financial services sector is potentially highly exposed to changes in market access between the UK and EU.

Figure 2.2: Employment by Sector and Brexit Impact Sector, Quarter 4 2019



Source: SLMRU (SOLAS) analysis of CSO LFS data

The sectors most moderately affected include:

- **Administrative services:** all sub-sectors of employment (112,100 persons)
- **ICT:** all sub-sectors of employment (127,600 persons)
- **Professional services:** all sub-sectors of employment (141,100 persons)
- **Transport:** 85% of employment, relating to 92,000 persons
- **Industry:** 20% of employment, or 57,300 persons

The sectors most unaffected include:

- **Wholesale & retail:** all sub-sectors of employment (310,200 persons)
- **Public admin (PAD):** all sub-sectors of employment (117,000 persons)
- **Health & welfare:** all sub-sectors of employment (294,300 persons)
- **Education:** all sub-sectors of employment (191,600 persons)
- **Construction:** all sub-sectors of employment (147,100 persons)
- **Arts & entertainment:** all sub-sectors of employment (55,700 persons)
- **Accommodation & food:** all sub-sectors of employment (179,200 persons)

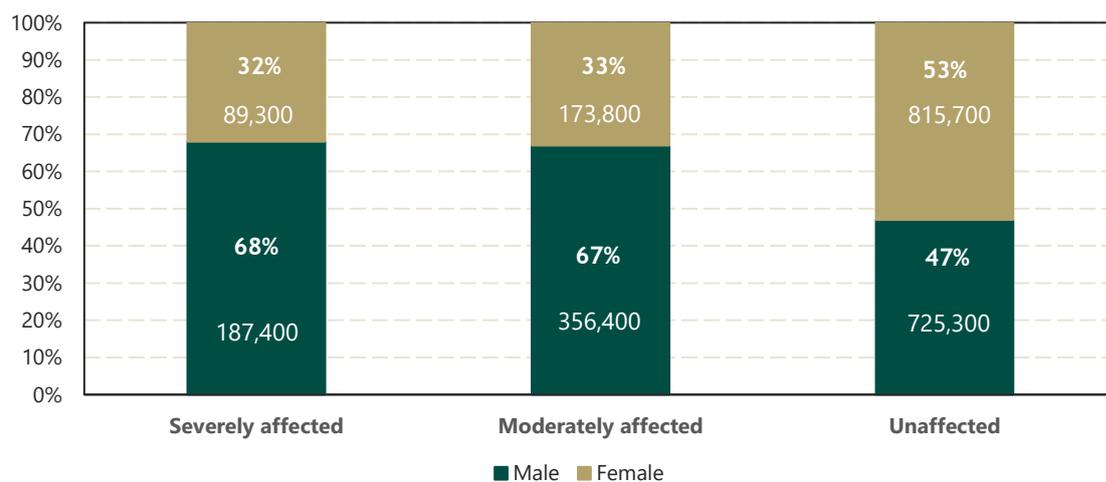
While these sectors are not expected to be directly impacted by Brexit, many have already been significantly impacted by COVID-19.

2.3 – Employment in Brexit Impact Sectors by Gender

In terms of the gender distribution of employment in the three Brexit impacted sectoral groups:

- In quarter 4 2019, males represented approximately two-thirds of persons employed in both severely and moderately affected Brexit sectors (187,400 and 356,400 persons respectively), compared to one third each for females (89,300 and 173,800 persons respectively) (Figure 2.3).
- Employment in unaffected sectors was more evenly balanced between the genders (with females accounting for 53% (815,700 persons) and males for 47% (725,300 persons)).

Figure 2.3: Employment by Brexit Impact Sector and Gender, Quarter 4 2019



Source: SLMRU (SOLAS) analysis of CSO LFS data

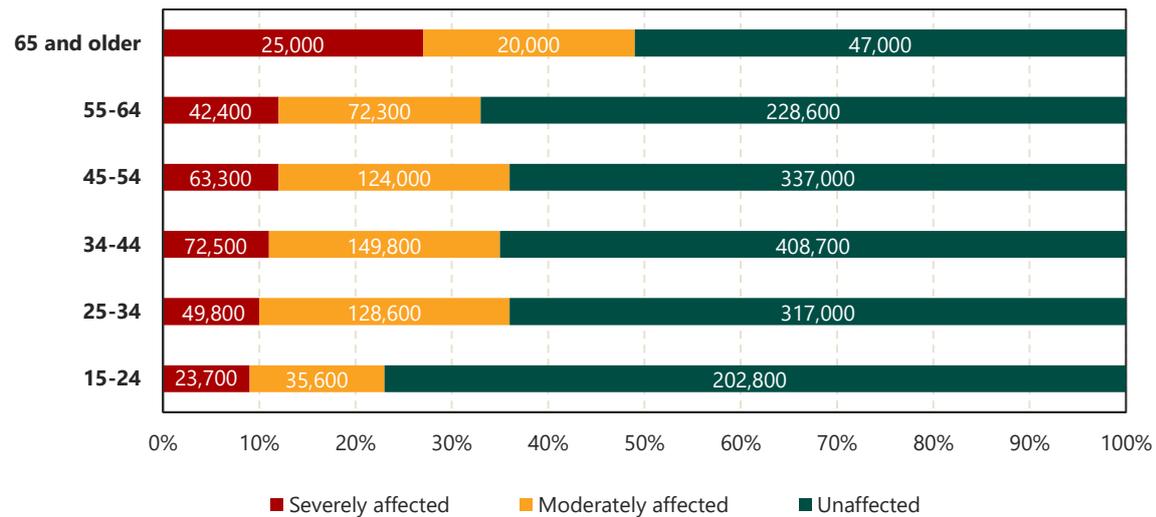
Note: Total figures exclude those who did not state their gender

2.4 - Employment by Age and Brexit Impact Sector

- In quarter 4 2019, of the 1,650,600 persons in employment nationally who were aged 25-54 (**prime age workers**), **64% (or 1,062,700 persons) worked in unaffected Brexit sectors** – compared with 24% (402,400 persons) in moderately affected sectors and **11% (185,600 persons) in severely sectors**.
- **Those aged younger than 25 years** had lower employment shares in either the severely or moderately affected sectors than all other age groups (Figure 2.4).

- Of the 435,200 **workers aged 55 years or older**, 15%, or 67,400 persons, were employed in the severely affected sectors.
- Overall, those employed in the severely affected sectors had an older age profile than those in either the moderately or unaffected sectors, with 24% aged 55 years and older in the severely affected sectors compared to 18% for each of the other two categories; this is most likely to be driven by the high number of farmers who are in older age cohorts.

Figure 2.4: Employment by Age and Brexit Impact Sector, Quarter 4 2019



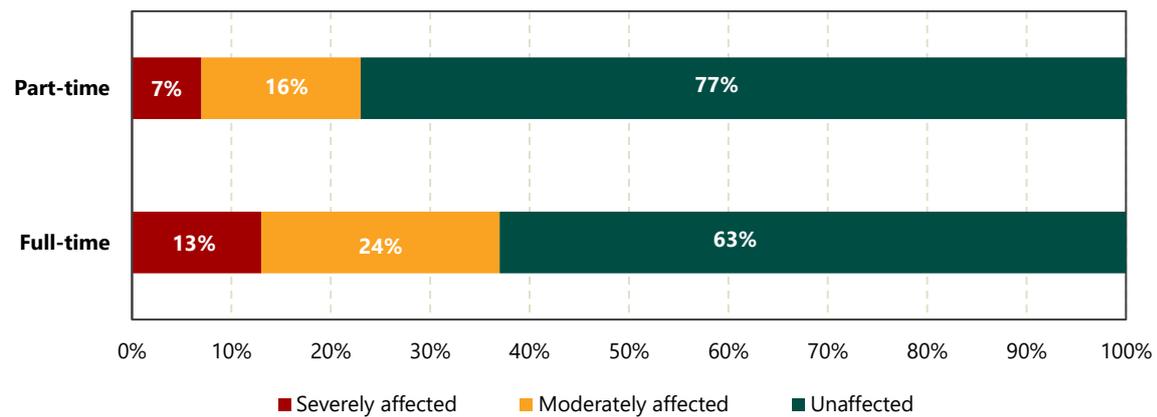
Source: SLMRU (SOLAS) analysis of CSO LFS data

Note: Total figures exclude those who did not state their age

2.5 – Employment by Employment Type and Brexit Impact Sector

- In quarter 4 2019, of the 1,858,200 persons who worked full-time nationally, 63% worked in unaffected sectors, 24% in moderately affected sectors and 13% in severely affected sectors (Figure 2.5).
- Of the 489,700 persons who worked part-time, 77% worked in unaffected sectors, 16% in moderately affected sectors and 7% in severely affected sectors.
- In terms of the sectoral profiles, those in severely and moderately affected sectors had higher shares of persons employed who were working full-time (88% and 86% respectively) compared to those in the unaffected sectors (at 75%).

Figure 2.5: Employment by Employment Type and Brexit Impact Sector, Quarter 4 2019



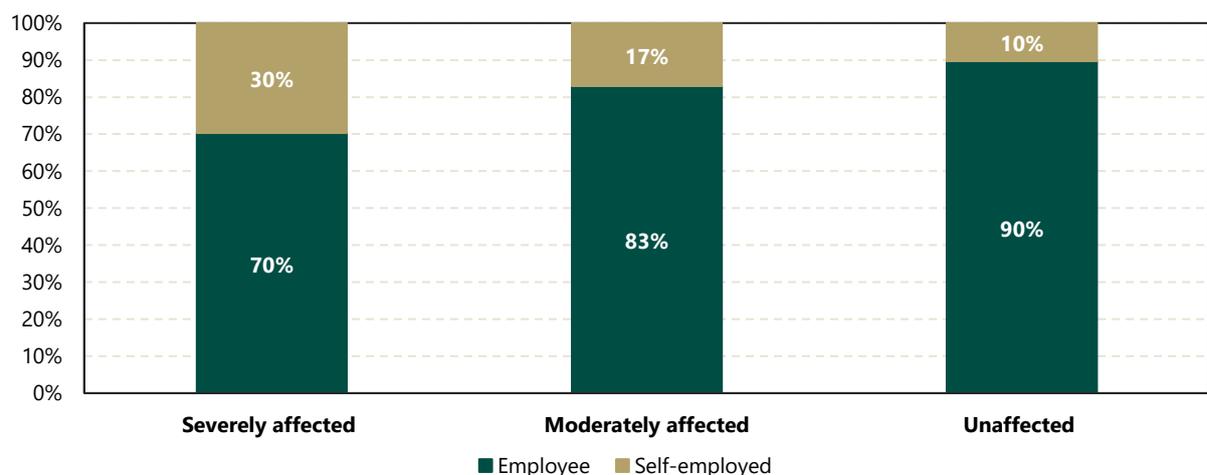
Source: SLMRU (SOLAS) analysis of CSO LFS data

Note: Total figures exclude those who did not state whether they worked full-time or part-time

2.6 – Employment in Brexit Impact Sectors by Employment Status

- In quarter 4 2019, the workforce of unaffected sectors had the highest share of employees (90%), above the national average; in contrast, the workforce of severely affected sectors had the lowest share (70%) (Figure 2.6).
- At 30%, the share of persons who were self-employed in the severely affected sectors was considerably higher than those in moderately affected sectors (17%) and those sectors considered unaffected by Brexit (10%). Again, this is most likely driven by the high number of farmers in this category.

Figure 2.6: Employment by Brexit Impact Sector and Employment Status, Quarter 4 2019



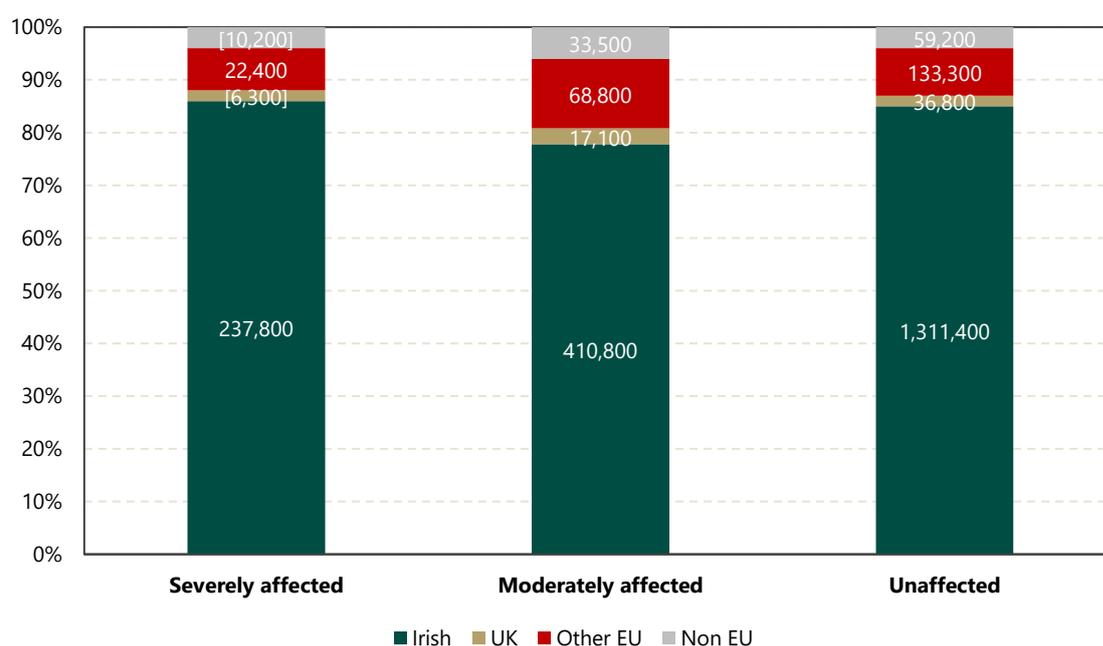
Source: SLMRU (SOLAS) analysis of CSO LFS data

Note: Total figures exclude those who were assisting relatives and did not state their employment status

2.7 – Employment in Brexit Impact Sector by Nationality

- In quarter 4 2019, the workforce across all three Brexit impact sectors was predominantly Irish (Figure 2.7).
- Non-Irish national workers accounted for 23% of employment, or 120,000 persons, in moderately affected sectors (mostly other EU nationals), higher than the share observed for the other two sectors; this most likely relates to the high number of non-Irish nationals employed in the ICT sector.

Figure 2.7: Employment by Brexit Impact Sector and Nationality, Quarter 4 2019



Source: SLMRU (SOLAS) analysis of CSO LFS data

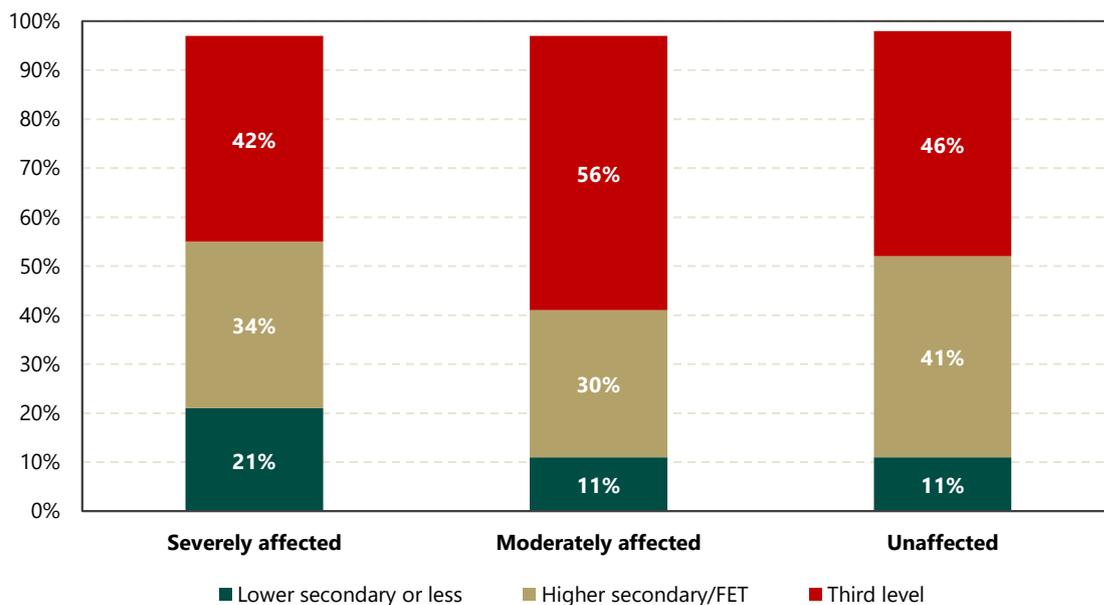
[] Numbers in brackets are small and should be treated with caution.

Note: Total figures exclude those who did not state their nationality.

2.8 – Employment by Education and Brexit Impact Sector

- At 21%, severely affected sectors had the highest share of employed persons who had, at most, lower secondary education (Figure 2.8).
- Over half (56%) of those employed in moderately affected sectors held third level qualifications, the highest share across all three sectoral groups.

Figure 2.8: Employment by Education and Brexit Impact Sector, Quarter 4 2019



Source: SLMRU (SOLAS) analysis of CSO LFS data

Note: Total figures exclude those who did not state their highest level of education attained.

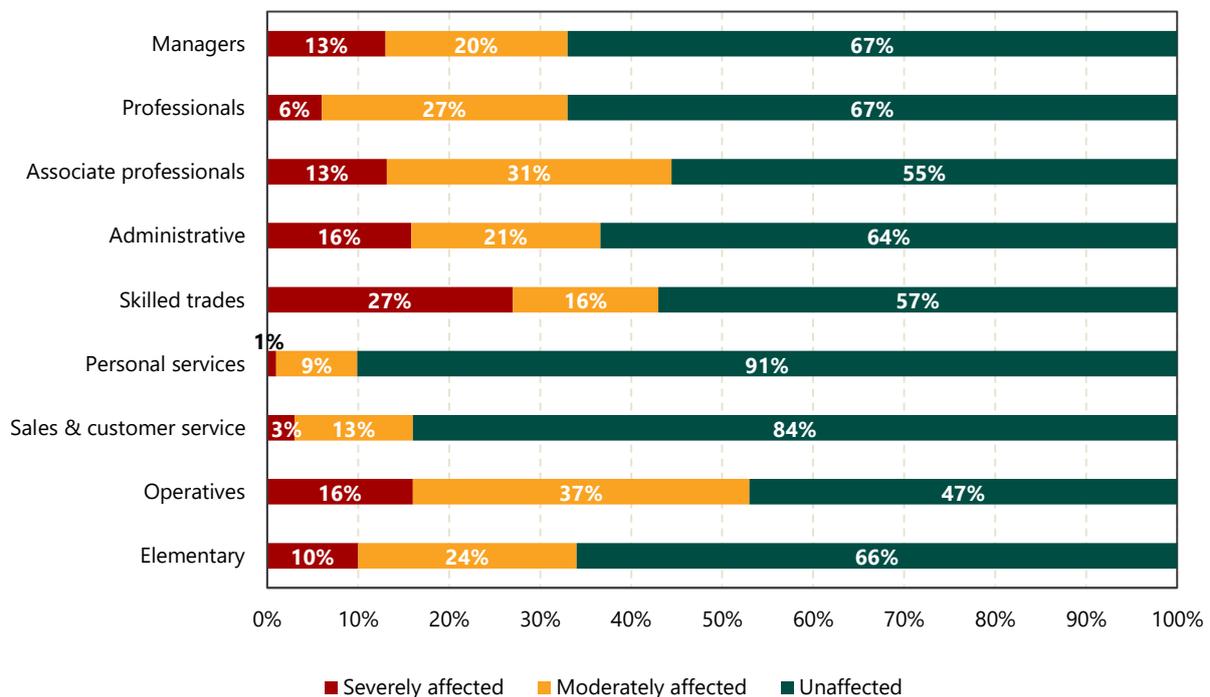
2.9 – Employment by Broad Occupational Group and Brexit Impact Sector

- In quarter 4 2019, the share of persons employed in the severely, moderately and unaffected Brexit sectors varied by broad occupational group (Figure 2.9).
- **Employment in broad occupational groups by severely impacted sectors**
 - At 27%, skilled trades workers (e.g. farmers) had the highest share employed in sectors severely impacted by Brexit (translating into 85,000 persons, the highest number in absolute terms), followed by administrative and operative workers (at 16% each, corresponding to 37,800 and 30,500 persons respectively) (Figure 2.9).
- **Employment in broad occupational groups by moderately affected sectors**
 - Almost 40% of operative workers and 31% of associate professional workers were employed in sectors moderately affected by Brexit, the highest shares observed among the broad occupational groups.
 - In absolute numbers, professional (135,300 persons) and associate professional workers (85,700 persons) and those in operative roles (67,600 persons) were by far the largest groups employed (Figure 2.9).

– **Employment in broad occupational groups by unaffected sectors**

- Across the occupational groups, the highest shares employed in unaffected Brexit sectors were observed for personal services workers (91%) and sales & customer service (84%).
- In absolute terms, by far the largest numbers were observed for professionals (331,400 persons), skilled trades workers (181,600 persons), personal service workers (176,000 persons), elementary workers (168,100 persons) and sales and customer service workers (161,700 persons) (Figure 2.9).

Figure 2.9: Employment by Broad Occupational Group and Brexit Impact Sector, Quarter 4 2019



Source: SLMRU (SOLAS) analysis of CSO LFS data

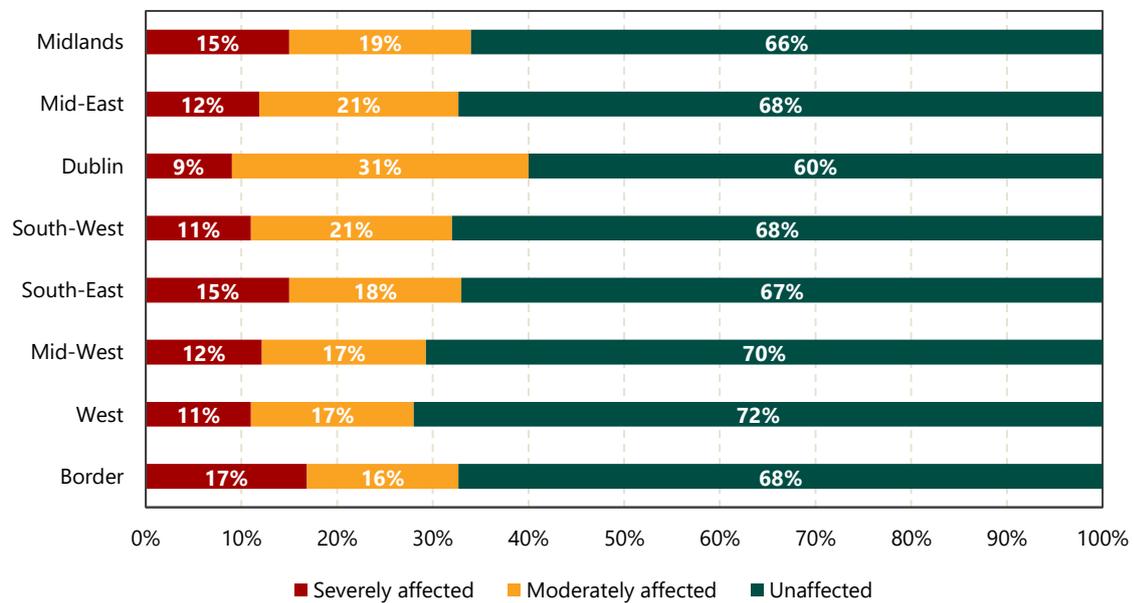
2.10 – Employment by Region and Brexit Impact Sector

In quarter 4 2019, the share of employment in the three Brexit affected sectors varied by region

- **Severely affected sectors:** ranging from 9% in Dublin to 17% in the Border; other regions with relatively high shares included the South-East and Midlands (15% each).
- **Moderately affected sectors:** ranging from 16% in the Border to 31% in Dublin; other regions with relatively high shares included the South-West and Mid-East (21% each)
- **Unaffected sectors:** ranging from 60% in Dublin to 72% in the West.

The potential impact of Brexit for employment across the regions is explored in more detail in Section 2.

Figure 2.10: Employment by Region and Brexit Impact Sectors, Quarter 4 2019



Source: SLMRU (SOLAS) analysis of CSO LFS data

Section 3:

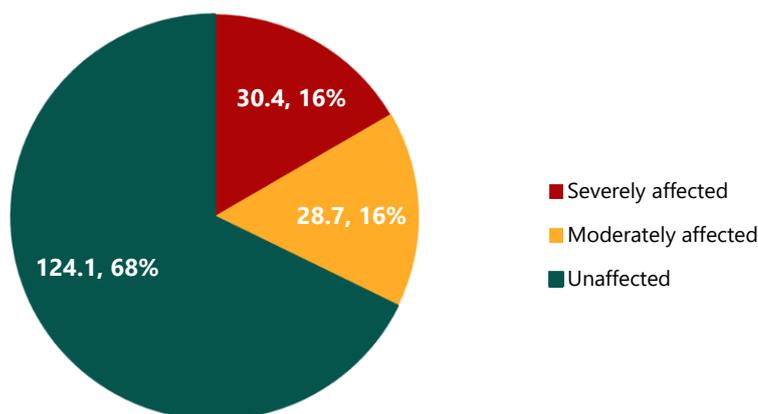
Impact of Brexit at Regional Level

In this section, the potential impact of Brexit across sectors (as defined by the ESRI research) is further examined at a regional level. An analysis is provided for each region in Ireland to profile those employed in both the severely and moderately affected sectors, with details including age, gender, nationality and employment type. A detailed analysis of the type of sub-sectors and companies operating in each region is also provided. The primary aim is to detail the type of people by region who may require assistance in the event of a fall in employment in certain sectors as a result of Brexit.

3.1 – Impact of Brexit on the Border region

Approximately **60,000 persons** employed in the Border region in quarter 4 2019 were in sectors considered to be either severely or moderately affected by Brexit, accounting for **32% of employment** for the region. The Border region had a higher share of persons employed in severely affected sectors than nationally (16% compared to 12% nationally), and conversely, a lower share in the moderately affected sectors (16% compared to 22%).

Figure 3.1: Employment (000s, %) in the Border Region by Brexit Impact Sector, Quarter 4 2019



Source: SLMRU (SOLAS) analysis of CSO LFS data

Table 3.1: Employment in the Border Region by Brexit Impact Sector and Key Indicators, Quarter 4 2019

	Severely affected		Moderately affected	
Sectors	Agriculture	17,500	Professional activities	[6,600]
	Financial*	***	Admin & support	[6,500]
	Industry*	9,000	Industry*	[6,400]
			Transport & storage*	[5,100]
Occupations	Farmers	42%	Professionals	[16%]
	Operatives	[17%]	Skilled trades	[19%]
			Operatives	27%
Gender	75% male		76% male	
Full-time/part-time	86% FT		81% FT	
Education	Lower sec	41%	Lower sec	[18%]
	Higher sec/FET	34%	Higher sec/FET	41%
	Third level	[22%]	Third level	38%
Age	15-34	[22%]	15-34	[24%]
	35-44	[20%]	35-44	32%
	45-54	24%	45-54	26%
	55+	34%	55+	18%
Nationality	88% Irish		89% Irish	
Employment status	% self-employed	42%	% self-employed	22%

Source: SLMRU (SOLAS) analysis of CSO LFS data

* See Appendix A for a detailed breakdown of the sub-sectors included

** Square brackets indicate that numbers are small and should be treated with caution

*** Too small to report

Overall

Those employed in the severely affected category in the Border region were primarily employed in agriculture, had a lower level of education than the national average, were more likely to be self-employed (driven by the number of farmers) and over a third of those employed were aged 55 years and older. Employment in the moderately affected category was spread more broadly across sectors; the share with a third level education was lower than the national share of persons employed in the moderately affected sectors (38% compared to 56% nationally); over a quarter of persons were employed as operatives.

Agriculture

The agriculture sector, and in particular farmers, in the Border region accounted for a significant share of persons classified as employed in potentially severely affected sectors by Brexit. Census 2016 data indicates that agricultural employment was mostly in **crop & animal production (raising of animals)**, at **just over 90%**, with farming of animals/mixed farming accounting for the majority.

Industry

Of those employed in industry in the Border region, 9,000 were in sub-sectors expected to be severely affected by Brexit with a further 6,700 employed in sub-sectors expected to be moderately affected, combined accounting for 63% of all employment in industry in the Border region in quarter 4 2019.

Of those categorised as employed in severely affected manufacturing sectors, almost three quarters were concentrated in the **manufacture of food products** in Census 2016, with **meat and meat products** accounting for the highest share, at 40% followed by dairy products at 17%; with over 500 persons employed, the Border region had the highest number of persons employed in fish manufacturing. According to Kompas data, within food manufacturing, meat processors were slightly more numerous than dairy processors; meat processors include fish processing which is concentrated in Donegal.

For those considered potentially moderately affected by Brexit, **fabricated metal products** and **rubber & plastic products** accounted for the largest share of employment (28% and 21% respectively) in Census 2016. Kompas data indicates that of these companies are SMEs serving the high-tech manufacturing sector (medical devices) either in terms of **tool making or plastics extrusion/packaging**.

Financial activities (excluding real estate activities)

The numbers employed in the financial sector in the Border region in quarter 4 2019 were too small to report. In Census 2016, there were **3,600 persons employed** in the sub-sectors expected to be severely affected by Brexit. There were 273 active enterprises in the financial sector, accounting for a 3% share of all active enterprises in this sector in the State. The

Kompass data further reveals that amongst financial and insurance services, approximately 30% of the small firms are related to the activities of **credit unions**.

Professional, scientific & technical activities

There were 6,600 persons employed in professional activities in quarter 4 2019 in the Border region. Census 2016 indicates that the predominant sub-sectors of employment were **legal & accounting** activities (accounting for almost 40%), and **architectural & engineering** activities (accounting for 30%). With 2,160 active enterprises, this sector accounted for a notably smaller share of active enterprises in the Border region than nationally (10% compared to 16%).

Transportation and storage (excluding postal and courier services)

Approximately **5,000 persons** in the Border region were employed in sub-sectors of the transport and storage sector considered moderately at risk due to Brexit in quarter 4 2019. Most employment in Census 2016 was in **freight transport by road** and **taxi and other passenger land transport**. Kompass data indicates that two thirds of companies were involved in **freight transport (road)**. There were 1,518 active enterprises in the transport sector in the Border region in 2018, with 5,400 persons engaged (this includes postal and courier services which have been excluded from the other datasets as it is not considered at risk of Brexit).

Administrative & support services

Approximately **6,500 persons were employed** in the administrative and support services sector in the Border region in quarter 4 2019. There were 1,160 active enterprises in this sector with over 4,000 persons engaged; this translates into an average of fewer than 4 persons per active enterprise, indicating that many firms in this region are smaller than for administrative and support services nationally (where the average number employed per enterprise was almost 8 persons). Donegal accounted for the highest number across both categories. Census 2016 data indicates that employment was spread across a number of activities in this sector, with **services to buildings and landscape activities** accounting for a 38% share. The second highest subsector, after services to buildings and landscape activities was rental and leasing activities, which according to the Kompass directory included **a substantial number in plant hire for construction**.

Information and communications

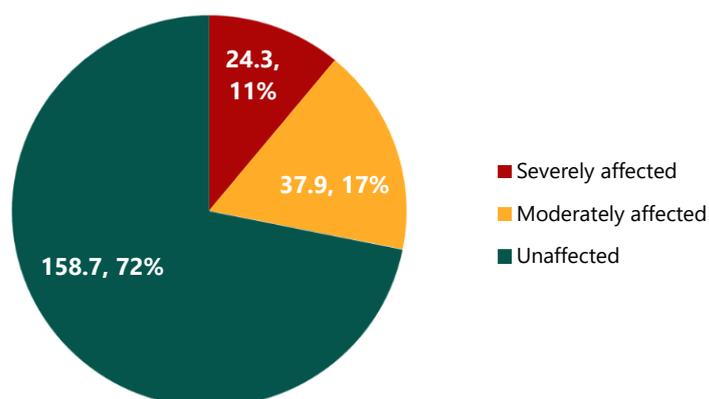
The numbers employed in the information and communications sector in quarter 4 2019 were too small to report. In the 2016 Census, there were almost **3,400 persons employed** with approximately two thirds employed in computer programming activities. There were 552 active enterprises according to the 2018 Business demography, with 3,000 persons engaged, with Donegal accounting for the largest number of persons engaged. Persons

engaged in this sector in the Border region accounted for approximately 3% of all persons engaged in this sector in the State.

3.2 – Impact of Brexit on the West region

Approximately **62,000 persons** employed in the West region in quarter 4 2019 were in sectors considered to be either severely or moderately affected by Brexit, accounting for **28% of employment** for the region. This compares to a share of 34% nationally, with the West region having the lowest share across all regions in these exposed sectors.

Figure 3.2: Employment (000s, %) in the West Region by Brexit Impact Sector, Quarter 4 2019



Source: SLMRU (SOLAS) analysis of CSO LFS data

Table 3.2: Employment in the West Region by Brexit Impact Sector and Key Indicators, Quarter 4 2019

	Severely affected	Moderately affected
Sectors	Agriculture Financial* Industry* ***	Professional activities Admin & support Industry* Transport & storage* ICT
	15,400 [5,000]	12,600 [7,100] [5,300] [5,500] [7,400]
Occupations	Farmers 46%	Professionals Operatives 32% [16%]
Gender	80% male	65% male
Full-time/part-time	84% FT	85% FT
Education	Lower sec Higher sec/FET Third level 34% 33% [29%]	Lower sec Higher sec/FET Third level *** 30% 57%
Age	15-34 35-44 45-54 55+ *** *** [24%] 40%	15-34 35-44 45-54 55+ [24%] 30% 26% 19%
Nationality	94% Irish	82% Irish
Employment status	% self-employed 54%	% self-employed 19%

Source: SLMRU (SOLAS) analysis of CSO LFS data

* See Appendix A for a detailed breakdown of the sub-sectors included

** Square brackets indicate that numbers are small and should be treated with caution

*** Too small to report

Overall

Employment in severely affected sectors in the West region was mostly concentrated in agriculture (accounting for just over 60%), with farmers the predominant occupation of employment. Over 50% were self-employed (more than double the national average for those employed in severely affected sectors) and, at 94%, this region had the highest share of persons employed in severely affected sectors who were Irish. The share employed with a third level qualification was lower than the overall share for persons employed in severely affected sectors nationally (almost 30% compared to 43%), and 40% were aged 55 years or older.

Employment in moderately affected sectors in the West was concentrated in services (professional, administrative, ICT and transport) and industry, with professional activities accounting for one third. The education profile of persons employed was broadly similar to those employed in moderately affected sectors nationally. Almost one third of those employed in moderately affected sectors in the West worked in professional occupations.

Agriculture

There were approximately 15,000 persons employed in agriculture in the West region in quarter 4 2019. Census 2016 data indicates that agricultural employment was mostly in crop & animal production (at just over 90%), with farming of animals accounting for the majority.

Industry

Of the 34,500 persons employed in industry in the West region in quarter 4 2019, approximately a quarter were employed in sub-sectors expected to be either severely or moderately affected by Brexit. Of those categorised as severely affected in manufacturing, almost 60% of persons employed were concentrated in the manufacture of food in Census 2016, with meat and meat products accounting for the highest share. Within food manufacturing, meat processing firms outnumbered any other type of food manufacturing according to Kompas data; this is followed by baked goods and dairy products.

For those in manufacturing considered potentially moderately affected by Brexit, fabricated metal products accounted for the largest number employed in manufacturing (Census 2016). Kompas data indicates that metal and plastic product firms (mostly small firms) made up a third of the manufacturing companies moderately affected by Brexit, with a small but significant share of these involved in precision engineering (including tool, die or moulding activities).

Financial activities (excluding real estate activities)

The numbers employed in the financial sector in the West region in quarter 4 2019 were too small to report. Based on the 2016 Census, there were almost 4,100 persons employed in the sub-sectors expected to be severely affected by Brexit. There were 362 active enterprises in

the financial sector, accounting for 4% of all active enterprises in this sector in the State (Business Demography 2018).

Professional, scientific & technical activities

There were almost 12,600 persons employed in professional activities in the West region in quarter 4 2019 (employment in all sub-sectors of professional activities is expected to be moderately affected by Brexit). Census 2016 data indicates that the **predominant sub-sectors of employment** were **legal and accounting** activities (accounting for **almost 40%**), and **architectural and engineering** activities (accounting for 25%). In 2018, there were almost 3,100 active enterprises in this sector, accounting for 7% of all active enterprises in the region (less than half the share nationally, at 16%). Kompass data further reveals that almost 40% of companies in the professional services sector were involved in legal & accounting activities.

Transportation and storage (excluding postal and courier services)

Approximately 6,600 persons were employed in transportation & storage in the West region in quarter 4 2019, with most sub-sectors of employment considered moderately at risk due to Brexit. Based on Census 2016 data, almost 75% of employment was concentrated in moderately at-risk sub-sectors, mostly in land transport (freight by road and taxi and other land transport, employing over 2,600 persons). In 2018, there were 1,762 active enterprises in the transport sector in the West region (Business Demography), with 4,592 persons engaged (this includes postal and courier services which have been excluded from the other datasets as it is not considered at risk of Brexit).

Administrative & support services

There were 7,100 persons employed in the administrative and support services sector in the West region in quarter 4 2019, although this number is small and should be treated with caution. Census 2016 indicates that 40% of employment in this sector was in services to buildings & landscape activities. In 2018, there were 1,473 active enterprises in administrative & support services in the West region (accounting for 8% of all active enterprises in this sector in the State), with 8,209 persons engaged in this sector in the region (accounting for 6% of all persons engaged in this sector in the State). Galway accounted for 55% of all active enterprises and almost 75% of persons engaged in this sector in the West.

Information and communications

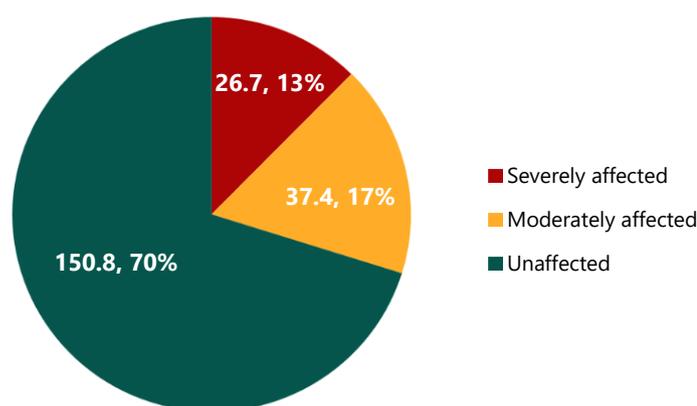
The numbers employed in the information and communications sector in quarter 4 2019 were too small to report. All sub-sectors of ICT are expected to be moderately affected by Brexit. In the 2016 Census, there were almost 6,000 persons employed in ICT (with almost two thirds employed in computer programming activities). Based on the 2018 Business Demography data, there were 1,012 active enterprises in ICT, with 3,153 persons engaged. This sector had a smaller share of active enterprises and persons engaged in the West than

in the State. Galway had the largest number of active enterprises in ICT in the West (accounting for almost three quarters) and the largest number of persons engaged (accounting for 65% of all persons engaged in active ICT enterprises in the region).

3.3 – Impact of Brexit on the Mid-West region

Approximately **64,000 persons employed** in the Mid-West region in quarter 4 2019 were in sectors considered to be either severely or moderately affected by Brexit, accounting for **30% of employment** for the region (compared to a share of 34% nationally). The Mid-West region had a share of persons employed in severely affected sectors almost on par (at 12%) with that nationally, and a lower share in moderately affected sectors (17% compared to 23%).

Figure 3.3: Employment (000s, %) in the Mid-West Region by Brexit Impact Sector, Quarter 4 2019



Source: SLMRU (SOLAS) analysis of CSO LFS data

Table 3.3: Employment in the Mid-West Region by Brexit Impact Sector and Key Indicators, Quarter 4 2019

	Severely affected		Moderately affected	
Sectors	Agriculture	14,500	Professional activities	8,200
	Financial*	[5,900]	Admin & support	10,300
	Industry*	[6,300]	Industry*	[6,200]
			Transport & storage*	6,900
			ICT	[5,800]
Occupations	Farmers	30%	Professionals/assoc. prof	33%
			Skilled trades	20%
			Operatives/elementary	24%
Gender	74% male		68% male	
Full-time/part-time	85% FT		84% FT	
Education	Lower sec	25%	Lower sec	[11%]
	Higher sec/FET	44%	Higher sec/FET	40%
	Third level	28%	Third level	45%
Age	15-34	[29%]	15-34	23%
	35-44	[22%]	35-44	25%
	45-54	[20%]	45-54	28%
	55+	29%	55+	24%
Nationality	85% Irish		88% Irish	
Employment status	% self-employed	36%	% self-employed	[14%]

Source: SLMRU (SOLAS) analysis of CSO LFS data

** See Appendix A for a detailed breakdown of the sub-sectors included*

*** Square brackets indicate that numbers are small and should be treated with caution*

**** Too small to report*

Overall

Those employed in the severely affected Brexit sectors in the Mid-West region were primarily employed in agriculture, had a lower level of education than the national average (almost 30% had a third level qualification, compared to 48% nationally), were more likely to be self-employed (driven by the number of farmers) and had a higher share of persons employed who were aged 55 years or older than nationally (29% compared to 19%). Employment in moderately affected sectors in the Mid-West was more evenly spread across sectors, with the highest share concentrated in administrative services; almost a half held third level qualifications, with professional and associate professional occupations combined accounting for a third of employment.

Agriculture

There were approximately 14,500 persons employed in agriculture in the Mid-West region in quarter 4 2019 (just over half were farmers). This sector accounted for 54% of the 26,700 persons employed across all sectors classified as potentially severely affected by Brexit in the region. In Census 2016, agricultural employment was mostly in crop & animal production (at just over 90%), with farming of animals accounting for the majority.

Industry

Of those employed in industry (32,000 persons) in the Mid-West region in quarter 4 2019, almost 40% (12,500 persons) were in sub-sectors expected to be severely or moderately affected by Brexit. Of those categorised as severely affected, 66% of persons employed were concentrated in the manufacture of food products (mostly meat & meat products) in Census 2016. Within food manufacturing, more than a quarter of firms were involved in meat processing, followed by baked products and dairy processing; Kompass data further reveals that there were also a small number of firms involved in the manufacture of nutritional products (e.g. whey proteins).

Those employed in manufacturing sub-sectors considered potentially moderately affected by Brexit were concentrated in fabricated metal products and the repair/installation of machinery & equipment.

Financial activities (excluding real estate activities)

There were approximately 6,500 persons employed in financial activities in the Mid-West in quarter 4 2019. Based on the 2016 Census, there were 4,800 persons employed in the financial sub-sectors expected to be severely affected by Brexit. In 2018, there were 446 active enterprises in the financial sector (with 2,012 persons engaged), accounting for 5% of all active enterprises and 2% of all persons engaged in this sector in the State (Business Demography).

Professional, scientific & technical activities

There were 8,200 persons employed in professional activities in the Mid-West region in quarter 4 2019 (all in sub-sectors expected to be moderately affected by Brexit). Census 2016 data indicates that legal & accounting and architectural & engineering activities were the predominant sub-sectors of employment (accounting for 40% and 26% respectively). In 2018, there were 3,366 active enterprises in professional, scientific & technical activities, accounting for 8% of all active enterprises in this sector in the State. Over 40% of companies in the professional services sector were involved in legal or accounting services, based on Kompass data.

Transportation and storage (excluding postal and courier services)

Of the 8,300 persons employed in the transportation and storage sector in the Mid-West in quarter 4 2019, 83% (or 6,900 persons) were concentrated in sub-sectors considered moderately at risk due to Brexit. Based on the 2016 Census, just over half of employment was in land transport (freight transport by road and taxi & other passenger transport). In 2018, there were **1,773 active enterprises** in the transport sector in the Mid-West region, with 6,096 persons engaged (this includes postal and courier services which have been excluded from the other datasets as it is not considered at risk of Brexit). The share of active enterprises in the sector in the region (7%) was lower than the share of 9% for the State.

Administrative & support services

There were approximately 10,300 persons employed in the administrative & support services sector in the Mid-West in quarter 4 2019 (all sub-sectors of this sector are considered moderately at risk due to Brexit). Census 2016 data indicates that most employment in the sector was in services to buildings and landscape activities. In 2018, there were **2,062 active administrative & support services enterprises**, with 10,083 persons engaged.

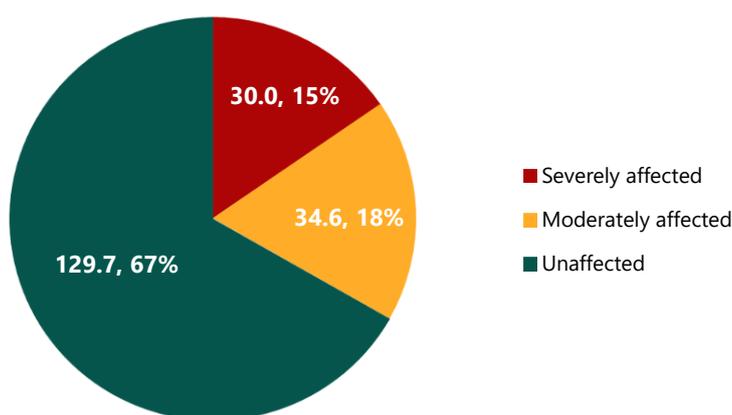
Information and communications

There were approximately [5,800] persons employed in the information and communication sector in the Mid-West in quarter 4 2019 (all sub-sectors of this sector are considered moderately at risk due to Brexit). In Census 2016, there were almost 5,000 persons employed in the sector, with almost 60% in computer programming, consultancy & information service activities. In 2018, there were **881 active enterprises** in ICT, with 4,218 persons engaged (according to the 2018 CSO Business Demography). The share of active enterprises in ICT and persons engaged in those enterprises in the region was lower than the corresponding shares for the State.

3.4 – Impact of Brexit on the South East region

Approximately **65,000 persons employed** in the South East region in quarter 4 2019 were in sectors considered to be either severely or moderately affected by Brexit, accounting for **33% of employment** for the region (compared to a share of 34% nationally), The South East region had a higher share of persons employed in severely affected sectors than nationally (15% compared to 12% nationally), and conversely, a lower share in the moderately affected sectors (18% compared to 22%).

Figure 3.4: Employment (000s, %) in the South East Region by Brexit Impact Sector, Quarter 4 2019



Source: SLMRU (SOLAS) analysis of CSO LFS data

Table 3.4: Employment in the South East Region by Brexit Impact Sector and Key Indicators, Quarter 4 2019

	Severely affected		Moderately affected	
Sectors	Agriculture	13,300	Professional activities	7,500
	Financial*	9,200	Admin & support	10,800
	Industry*	[7,600]	Industry*	[6,100]
			Transport & storage*	[5,100]
			ICT	[5,100]
Occupations	Skilled trades (incl. farmers)	34%	Professionals/assoc. prof	30%
			Skilled trades	[14%]
			Operatives/elementary	30%
Gender	68% male		63% male	
Full-time/part-time	89% FT		79% FT	
Education	Lower sec	[19%]	Lower sec	[18%]
	Higher sec/FET	48%	Higher sec/FET	39%
	Third level	31%	Third level	39%
Age	15-34	30%	15-34	[26%]
	35-44	29%	35-44	29%
	45-54	[20%]	45-54	23%
	55+	[20%]	55+	22%
Nationality	90% Irish		83% Irish	
Employment status	% self-employed 31%		% self-employed 19%	

Source: SLMRU (SOLAS) analysis of CSO LFS data

* See Appendix A for a detailed breakdown of the sub-sectors included

** Square brackets indicate that numbers are small and should be treated with caution

*** Too small to report

Overall

Agriculture accounted for 44% of employment in the severely affected sectors with skilled trades occupations (primarily farmers) accounting for over a third. As such, there was a high share who were self-employed, the share with third level qualifications was lower than the national share and those employed were predominately Irish. For those employed in the moderately affected sectors, the administrative and support services sector accounted for the highest share; 30% were employed in operative or elementary occupations with a further 30% as professionals/associate professionals; this region had the lowest share of persons working full-time.

Agriculture

The agriculture sector, with **13,300 persons employed** was the largest sector across both the severely and moderately affected sectors in the region. Almost 60% of those employed in agriculture were farmers. Farming of animals/mixed farming accounted for 80% of agricultural activities according to the Census 2016. Kompass data also indicates the presence of firms involved in the raising and breeding of horses.

Industry

Of the 28,300 persons employed in industry in quarter 4 2019, almost 60% were employed in either the severely or moderately affected sectors. There were over 1,700 active enterprises in manufacturing in the South East region in the 2018 Business Demography data, with Wexford accounting for a third; there were almost 24,000 persons engaged in these active enterprises with Waterford accounting for the highest share at 39%.

In terms of those employed in the severely affected sectors, three quarters were employed in the manufacture of food products, primarily relating to meat and meat products but also dairy and bakery products (Census 2016). Kompass data indicates that within food manufacturing, a small but sizeable share were in the manufacturing of prepared meals which includes value-added products such as animal nutrition (Glanbia) and infant nutrition (Nutrica) products as well as the more traditional (and more numerous) meat and poultry processing and to a lesser extent dairy processing (e.g. cheddar-style cheese).

The manufacture of fabricated metal products accounted for the highest share of persons employed in manufacturing in the moderately affected sectors.

Financial activities (excluding real estate activities)

There were **9,200 persons employed** in financial activities considered to be severely affected by Brexit in quarter 4 2019 in the South East region. There were 289 active enterprises (Business Demography 2018), with Waterford and Wexford combined accounting

for the majority; there were almost 1,900 persons engaged with Wexford accounting for 42%. Financial services activities accounted for almost a half of employment, over a quarter in insurance activities and 10% in fund management activities (Census 2016).

Professional, scientific & technical activities

There were **7,500 persons employed** in professional activities in quarter 4 2019 in the South East region. Architectural and engineering activities accounted for 29% of all employment in this sector in the Census 2016, the highest share across all regions; accounting and legal activities combined accounted for a further third. There were almost 2,800 active enterprises in the region with 7,400 persons engaged; this ratio between the numbers of enterprises and persons engaged (1:2.7) indicates that many firms are micro enterprises. Kompass data suggests that most firms in this sector are involved in legal/accounting services or engineering/architectural services.

Transportation and storage (excluding postal and courier services)

Approximately **5,000 persons** in the South East region were employed in sub-sectors of the transport and storage sector considered moderately at risk due to Brexit in quarter 4 2019 (although this number is small and should be treated with caution). Over 40% of employment in this subsector in Census 2016 was in **freight transport by road**, a considerably higher share than that of the state (23%) for this sector and the second highest share after the Border region. As such, employment in this subsector in the South East may be particularly exposed to the risks associated with Brexit.

Administrative & support services

The administrative and support services sector accounted for the highest number of people employed in moderately affected sectors in the South East region in quarter 4 2019, with **10,800 persons employed**. There were over 1,200 active enterprises in this sector (Business Demography 2018) and 7,500 persons engaged. Census 2016 data indicates that services to buildings and landscape activities (e.g. cleaning, security) accounted for a third of employment, while office administrative activities (e.g. contact centres and outsourcing companies) accounted for a quarter, the highest share across all regions. Kompass data reveals that there is also a significant number of firms involved in renting and leasing, especially for machinery, plant and tool hire.

Information and communications

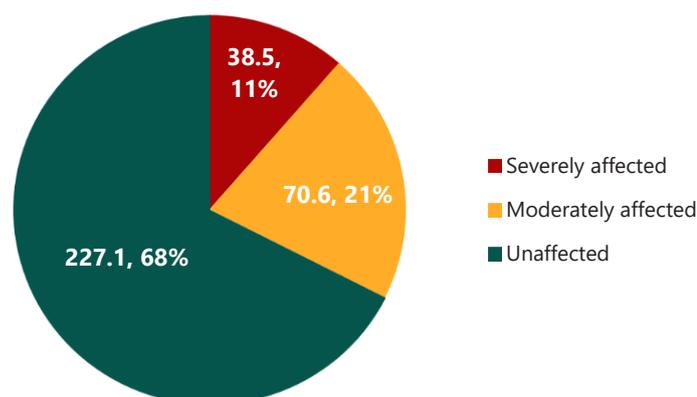
Approximately **5,000 persons** in the South East region were employed in the ICT sector in quarter 4 2019 (although this number is small and should be treated with caution). Census 2016 data indicates that computer programming activities accounted for 55% of employment with telecommunications accounting for a further 22%. There were 730 active enterprises and 4,200 persons engaged (Business Demography 2018) in the South East region. Census 2016 and Kompass data indicate a notable share of employment and firms

are involved in radio/tv broadcasting and film production (e.g. Cartoon Saloon), accounting for approximately 14% of employment, the highest observed across any region.

3.5 – Impact of Brexit on the South West region

Approximately **109,000 persons employed** in the South West region in quarter 4 2019 were in sectors considered to be either severely or moderately affected by Brexit, accounting for **32% of employment** for the region (compared to a share of 34% nationally). Compared to the State overall, the South West region had lower shares of persons employed in both the severely affected sectors (11% compared to 12% nationally) and the moderately affected sectors (21% compared to 22%).

Figure 3.5: Employment (000s, %) in the South West Region by Brexit Impact Sector, Quarter 4 2019



Source: SLMRU (SOLAS) analysis of CSO LFS data

Table 3.5: Employment in South West Region by Brexit Impact Sector and Key Indicators, Quarter 4 2019

	Severely affected	Moderately affected
Sectors	Agriculture 19,800 Financial* 6,800 Industry* 11,900	Professional activities 18,500 Admin & support 18,400 Industry* 8,900 Transport & storage* 9,200 ICT 15,600
Occupations	Skilled trades (inc. farmers) 42% Operatives [15%]	Professionals/assoc. prof 33% Administrative 14% Operatives/elementary 23%
Gender	73% male	66% male
Full-time/part-time	85% FT	85% FT
Education	Lower sec 28% Higher sec/FET 35% Third level 33%	Lower sec 11% Higher sec/FET 30% Third level 55%
Age	15-34 22% 35-44 24% 45-54 24% 55+ 31%	15-34 33% 35-44 28% 45-54 22% 55+ 17%
Nationality	88% Irish	78% Irish
Employment status	% self-employed 40%	% self-employed 17%

Source: SLMRU (SOLAS) analysis of CSO LFS data

* See Appendix A for a detailed breakdown of the sub-sectors included

*** Square brackets indicate that numbers are small and should be treated with caution*

**** Too small to report*

Overall

Of those employed in the sectors considered potentially severely affected by Brexit, over half were employed in agriculture (primarily farmers), with a further 30% in industry. They were primarily male, working full-time and Irish, with a higher share than average who were self-employed, in the older age cohorts, and were less likely to have attained third level qualifications. Employment in the moderately affected sectors in the South West region was primarily in professional activities, administrative and support services and ICT; a third of those employed were in professional or associate professional roles, over a half held third level qualifications and over 60% were aged under 45 years.

Agriculture

Farming of animals accounted for the highest share of employment in agriculture in the West region (at 87%), as was the case across all regions (Census 2016). **Fishing** accounted for 4% of all agriculture-related employment – with over 600 persons employed in 2016, this region had the highest number of persons employed in fishing across all regions.

Industry

Of those employed in industry in the South-West region, almost 12,000 were employed in quarter 4 2019 in areas considered potentially severely affected by Brexit and a further 8,900 in those considered moderately affected.

County Cork accounted for over 80% of persons engaged in manufacturing, with Kerry accounting for the remaining 20% (Business Demography 2018). Within manufacturing, the **dairy processing** was significant in the region, with 2,000 persons employed in the Census 2016; the South West region accounted for a third of national employment in this sub-sector. Kompass data also indicates the importance of the manufacture of prepared meals (e.g. Kerry Foods) for the region, including the production of nutritional products. In terms of food products, the manufacture of meat, fish and beverages are also of importance for the region.

In terms of the moderately affected sectors in manufacturing in the South West region, these were primarily focus in the **manufacture of plastic and fabricated metal products**, combined accounting for over 3,500 persons employed in the Census 2016.

Financial activities (excluding real estate activities)

In quarter 4 2019, there were 6,800 persons employed in the financial sector in the South West region. There were 638 active enterprises in the financial sector in 2018 (Business Demography) with Cork accounting for 84% of these; this region **had the second highest number of active enterprises in this sector** after Dublin. Kompass data indicates that

amongst financial and insurance services, approximately a fifth of small firms were **credit unions**.

Professional, scientific & technical activities

There were 18,500 persons employed in professional activities in quarter 4 2019 in the South West region. This region accounted for the second highest share of active enterprises (after Dublin), with Cork accounting for 85% of these. Combined, accounting and legal activities accounted for the highest share of employment in this sector, at 34%, with architectural and engineering activities accounting for a further quarter.

Transportation and storage (excluding postal and courier services)

Approximately **9,200 persons** in the South West region were employed in sub-sectors of the transport and storage sector considered moderately at risk due to Brexit in quarter 4 2019. Freight transport by road accounted for a quarter of all employment in these sub-sectors in Census 2016, with almost 2,000 persons employed. Kompass data also indicates that the largest number of firms relate to road hauliers, followed by taxi operators and coach companies. Both Kompass and Business Demography 2018 data indicate that many enterprises operating in this area are small, with a ratio of persons engaged to active enterprises of 2.7:1.

Administrative & support services

There were over 18,000 **persons employed** in the administrative and support services sector in the South West region in quarter 4 2019. Over a third of employment was in services to buildings/landscape activities (Census 2016) most likely relating to cleaning and security roles. Kompass data shows that there was also a significant number of firms involved in rental and leasing activities, chiefly for machinery, plant and tool hire.

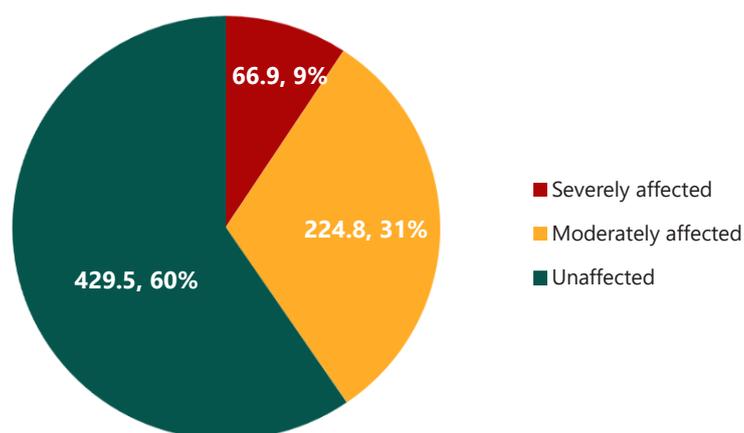
Information and communications

The ICT sector in the South West region employed over 18,000 persons in quarter 4 2019; this was the highest number employed for this sector outside of Dublin. According to Census 2016, 12% of ICT employment was in publishing/broadcasting and TV production; Kompass data indicates that about half of this 12% relates to software publishing (e.g. Aisling software (for book-keeping), BioVia (for science research)).

3.6 – Impact of Brexit on the Dublin region

Approximately **292,000 persons employed** in Dublin in quarter 4 2019 were in sectors considered to be either severely or moderately affected by Brexit, accounting for 40% of employment for the region (higher than the national share of 34%). Compared to the State overall, Dublin had a lower share of persons employed in severely affected sectors (9% for Dublin compared to 12% nationally) and a higher share of persons employed in moderately affected sectors (31% compared to 23% nationally). Compared to all other regions, Dublin had the lowest share of employment in severely affected sectors and the highest share in moderately affected sectors.

Figure 3.6: Employment (000s, %) in Dublin by Brexit Impact Sector, Quarter 4 2019



Source: SLMRU (SOLAS) analysis of CSO LFS data

Table 3.6: Employment in Dublin by Brexit Impact Sector and Key Indicators, Quarter 4 2019

	Severely affected		Moderately affected	
Sectors	Agriculture	***	Professional activities	62,800
	Financial*	54,700	Admin & support	40,200
	Industry*	8,800	Industry*	10,400
			Transport & storage*	38,700
			ICT	72,600
Occupations	Managers	12%	Professionals/assoc. prof	52%
	Professionals/assoc. prof	52%	Administrative	8%
	Administrative	20%	Operatives/elementary	20%
Gender	56% male		66% male	
Full-time/part-time	91% FT		88% FT	
Education	Lower sec	***	Lower sec	9%
	Higher sec/FET	19%	Higher sec/FET	23%
	Third level	74%	Third level	66%
Age	15-34	35%	15-34	36%
	35-44	33%	35-44	28%
	45-54	22%	45-54	20%
	55+	11%	55+	15%
Nationality	78% Irish		70% Irish	
Employment status	% self-employed	***	% self-employed	16%

Source: SLMRU (SOLAS) analysis of CSO LFS data

** See Appendix A for a detailed breakdown of the sub-sectors included*

*** Square brackets indicate that numbers are small and should be treated with caution*

**** Too small to report*

Overall

The profile of persons employed in severely affected sectors in Dublin was significantly different from most other regions in the country. While the agricultural sector featured strongly in most regions, the numbers were too small to report for Dublin. Instead, the financial activities sector was the predominant sector of employment, accounting for just over 80% of total employment in severely affected sectors in the region (higher than for any other region), while a further 13% was in industry. Farmers were the primary occupations in many regions, whereas for Dublin over half of those employed in severely affected sectors were in professional or associate professional roles, with almost three quarters having attained third level qualifications; almost 70% were aged 15 to 44 years (higher than the national average share of 53% for severely affected sectors). The workforce of severely affected sectors in Dublin was also the most gender balanced compared to any other region, with males accounting for 56%.

In terms of employment in sectors considered moderately affected by Brexit in Dublin in quarter 4 2019 (which stood at 225,000 persons), the highest share (at approximately one third) was in ICT, with a further 28% in professional, scientific & technical activities. Just over half of those employed in moderately affected sectors in Dublin worked in professional or associate professional occupations (particularly ICT, business & financial and sales, marketing & customers services roles). Two thirds of those employed had a third level qualification (higher than the national average for those employed in moderately affected sectors and for any other region), and just over 60% were aged 15 to 44 years.

Agriculture

The numbers employed in agriculture in Dublin in quarter 4 2019 were too small to report. Based on Census 2016, **Dublin had only 2% of persons employed** (or approximately 2,000 persons) in the sector, **lower than any other region**.

Industry

Of the approximately 48,000 persons employed in industry in Dublin in quarter 4 2019, almost 9,000 persons were employed in sub-sectors considered potentially severely affected by Brexit, while a further 10,400 persons were in sub-sectors considered moderately affected.

Dublin differs from other regions in that employment within severely affected manufacturing sectors is concentrated in beverages, bakery and other food products (Census 2016), rather than meat and dairy processing. Indeed, Dublin accounted for 30% of all Ireland's employment in beverages and 24% in bakery and other food products. Kompass data indicates that within food manufacturing, firms involved in prepared meals and baked goods were prominent.

In terms of those employed in potentially moderately affected sectors, Census 2016 indicates that the largest number and share were employed in printing & reproduction of recorded media and fabricated metal products, at 36% and 28% respectively. Kompass data reveals that while metal fabrication makes up the larger share of firms in most regions, in the Dublin region, printing firms are almost twice as numerous.

Financial activities (excluding real estate activities)

There were almost **55,000 persons employed** in the financial sector in Dublin in quarter 4 2019. Based on Census 2016, just over half of employment was concentrated in financial service activities (excluding insurance & pension funding) and 25% was in insurance, reinsurance & pension funding.

According to the CSO Business Demography, there were almost 5,700 active enterprises in the financial sector in Dublin in 2018, accounting for two thirds of active enterprises in the sector nationally. There were 89,218 persons engaged²⁴ in those active enterprises, accounting for 85% of all persons engaged in the sector nationally. Kompass data indicates that unlike all other regions, the most prominent activities within the financial and insurance sector were the activities of insurance brokers, followed by financial services (compared to insurance brokers followed by credit unions in all other regions). In most other regions except the South-West, credit unions made up between a fifth and a quarter of the sector, in Dublin they made up about 10%.

Professional, scientific & technical activities

There were almost 63,000 persons employed in professional, scientific & technical activities in Dublin in quarter 4 2019. Census 2016 indicates that legal & accounting activities accounted for the highest share of employment in the sector, at just over 40%. There were almost **18,000 active enterprises** in the sector in Dublin in 2018, accounting for just over 40% of all active enterprises in the sector nationally. There were almost 85,500 persons engaged²⁵ in those active enterprises.

Transportation and storage (excluding postal and courier services)

Approximately **39,000 persons** in the Dublin region were employed in sub-sectors of the transport and storage sector considered moderately at risk due to Brexit in quarter 4 2019. Census 2016 indicates that almost half of employment was in land transport (taxi, other land passenger and freight), while almost 30% was in warehousing & support activities for transportation and 20% in water and air transport. Indeed, with over 5,000 persons employed in air transport, Dublin accounted for 60% of all employment in this sub-sector nationally. In

²⁴ This number is considerably higher than the LFS due to different methodologies: the Business Demography region is based on the location of the business; LFS employment is based on the region in which a person lives.

²⁵ *ibid*

2018, there were 10,829 active enterprises in the sector in Dublin, accounting for 44% of all active enterprises in the sector nationally.

Administrative & support services

Approximately **40,000 persons were employed** in the administrative and support services sector in the Dublin region in quarter 4 2019. Census 2016 indicates that employment in the sector was spread across a number of activities in Dublin, with the highest share (at 36%) concentrated in services to building & landscape activities. Employment in this sub-sector in the region accounted for almost 40% of national employment in building & landscape activities. Kompass data reveals that Dublin differs from other regions in that activities relating to employment agencies dominate amongst the number of firms in administrative & support services.

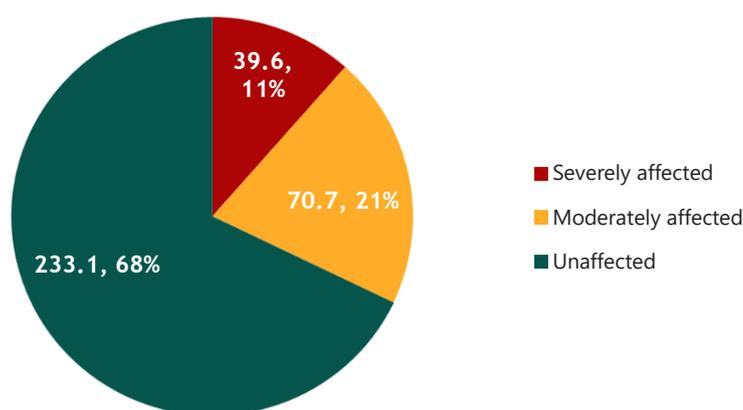
Information and communications

There were almost 73,000 persons employed in ICT in the Dublin region in quarter 4 2019. Census 2016 indicates that two-thirds of employment in the region was in computer programming & consultancy. In 2018, there were 8,437 active enterprises in the sector in Dublin (according to CSO Business Demography), accounting for just over 50% of all active enterprises in the sector nationally. There were 77,233 persons engaged in those active enterprises. ICT accounted for 10% of all active enterprises in Dublin, higher than a share of 6% nationally and the share for any other region.

3.7 – Impact of Brexit on the Mid-East region

Approximately 110,000 persons employed in the Mid-East region in quarter 4 2019 were in sectors considered to be either severely or moderately affected by Brexit, accounting for 32% of employment for the region (just below a share of 34% nationally). Compared to the State overall, the Mid-East region had a broadly similar share of persons employed in severely affected sectors (11% compared to 12%), but a lower share employed in moderately affected sectors (21% compared to 23%).

Figure 3.7: Employment (000s, %) in the Mid-East Region by Brexit Impact Sector, Quarter 4 2019



Source: SLMRU (SOLAS) analysis of CSO LFS data

Table 3.7: Employment in the Mid-East Region by Brexit Impact Sector and Key Indicators, Quarter 4 2019

	Severely affected		Moderately affected	
Sectors	Agriculture	12,300	Professional activities	19,000
	Financial*	15,400	Admin & support	13,900
	Industry*	11,900	Industry*	9,300
			Transport & storage*	16,300
			ICT	12,100
Occupations	Professionals/assoc. prof	28%	Professionals/assoc. prof	39%
	Administrative	[16%]	Administrative	9%
	Skilled trades (inc. farmers)	27%	Operatives/elementary	24%
Gender	63% male		70% male	
Full-time/part-time	90% FT		85% FT	
Education	Lower sec	17%	Lower sec	9%
	Higher sec/FET	33%	Higher sec/FET	39%
	Third level	47%	Third level	49%
Age	15-34	22%	15-34	24%
	35-44	29%	35-44	28%
	45-54	27%	45-54	29%
	55+	21%	55+	18%
Nationality	89% Irish		84% Irish	
Employment status	% self-employed	23%	% self-employed	18%

Source: SLMRU (SOLAS) analysis of CSO LFS data

* See Appendix A for a detailed breakdown of the sub-sectors included

*** Square brackets indicate that numbers are small and should be treated with caution*

**** Too small to report*

Overall

There were approximately 40,000 persons employed in sectors considered potentially severely affected by Brexit in the Mid-East region. Of those employed, almost 40% worked in financial & insurance activities, while a further 30% each worked in agriculture and industry. The largest numbers worked in professional or associate professional occupations and skilled trades (particularly farmers). Over half (at 51%) were younger than 44 years and almost half had attained a third level qualification.

Of the approximately 71,000 persons employed in sectors considered potentially moderately affected by Brexit in the Mid-East region in quarter 4 2019, almost 30% were in professional, scientific & technical activities, while almost a further 25% were in transportation & storage and 20% in administrative services. Almost 40% worked in professional or associate professional occupations, while a quarter worked in operative or elementary roles. Just over a half were younger than 44 years and approximately a half had attained a third level qualification.

Agriculture

Approximately 12,300 persons were employed in agriculture in the Mid-East region in quarter 4 2019. Almost 60% (or 7,100 persons) of those employed in agriculture were farmers. Census 2016 indicates that almost 80% of agricultural employment was concentrated in crop & animal production (mostly farming of animals/mixed farming). With 1,800 persons employed, this region accounted for almost 40% of total national employment in horseracing activities, Indeed, Kompass data reveals that approximately 30% of firms in agriculture were involved in the equine industry (i.e. stud farms).

Industry

There were 41,400 persons employed in industry in the Mid-East region in quarter 4 2019. Of those employed, approximately 11,900 persons were employed in sub-sectors considered potentially severely affected by Brexit, while a further 9,300 persons were in sub-sectors considered moderately affected, combined accounting for over half of total industrial employment in the Mid-East.

Census 2016 indicates that food manufacturing (particularly meat & meat products, bakery & other food products) accounted for 63% of employment in severely affected industry sub-sectors. According to Kompass data, the share of firms involved in the manufacture of wood and wood products in the Mid-East was the highest of any region except the Midlands (and was the second largest number, after Dublin). In 2018, there were almost 2,600 active enterprises in industry in the Mid-East (Business Demography), of which 94% (approximately 2,400) were in manufacturing. The Mid-East had the highest number of active enterprises in

manufacturing and accounted for 15% of all active enterprises in manufacturing nationally, the second highest share after the South-West.

In terms of employment in moderately affected industry sub-sectors in the Mid-East region, the highest number (almost 2,000 persons) and share (at almost 30%) was in the manufacture of fabricated metal products. Kompass data reveals that metal fabrication accounted for the largest component of manufacturing sectors moderately impacted by Brexit in the region, where approximately one quarter was in the area of precision engineering, with many serving a variety of sectors including high-tech. Printing accounted for the second highest share.

Financial activities (excluding real estate activities)

There were 15,400 persons employed in financial activities considered to be severely affected by Brexit in the Mid-East region in quarter 4 2019, representing almost 40% of all persons employed in severely affected sectors in the region (broadly similar to the share nationally). In 2018, there were 604 active enterprises in financial activities in the Mid-East, accounting for 7% of all active enterprises in the sector nationally. Kildare had the largest number of active enterprises in finance in the region, accounting for 33%. There were 2,980 persons engaged²⁶ in those active enterprises, accounting for 3% of all persons engaged in financial activities in the State.

Professional, scientific & technical activities

There were 19,000 persons employed in professional, scientific & technical activities in the Mid-East region in quarter 4 2019). In 2018, there were 5,655 active enterprises in the sector in the Mid-East, accounting for 13% of all active enterprises in the sector in the State, the third largest share after Dublin and the South-West. There were 13,535 persons engaged in those active enterprises in the Mid-East, accounting for 9% of all persons engaged in the sector in the State.

Census 2016 indicates that legal & accounting activities accounted for the largest share of employment in professional, scientific & technical activities in the region (at 36%), while architectural & engineering activities accounted for a further 26%.

Transportation and storage (excluding postal and courier services)

Approximately 16,300 persons in the Mid-East region were employed in sub-sectors of the transport and storage sector considered moderately at risk due to Brexit in quarter 4 2019. Based on Census 2016, just over 50% of employment was in land passenger & freight transport and a further quarter was in warehousing & support activities. In 2018, there were 3,525 active enterprises in transportation and storage in the Mid-East, accounting for 14% of

²⁶ This number is considerably lower than the LFS due to different methodologies: the Business Demography region is based on the location of the business; LFS employment is based on the region in which a person lives.

all active enterprises in the sector in the State (the second highest number and share after Dublin). There were 9,751 persons engaged in those active enterprises in the Mid-East.

Administrative & support services

Approximately 14,000 persons were employed in the administrative and support services sector in the Mid-East in quarter 4 2019 (all its sub-sectors are considered moderately at risk due to Brexit). In Census 2016, almost 40% of employment was in services to buildings & landscape activities. In 2018, there were 2,377 active enterprises in administrative & support activities in the Mid-East region, accounting for 12% of all active enterprises in the State (according to the CSO Business Demography). There were 11,172 persons engaged in those active enterprises in the region, accounting for 8% of all persons engaged in administrative & support services in the State.

Information and communications

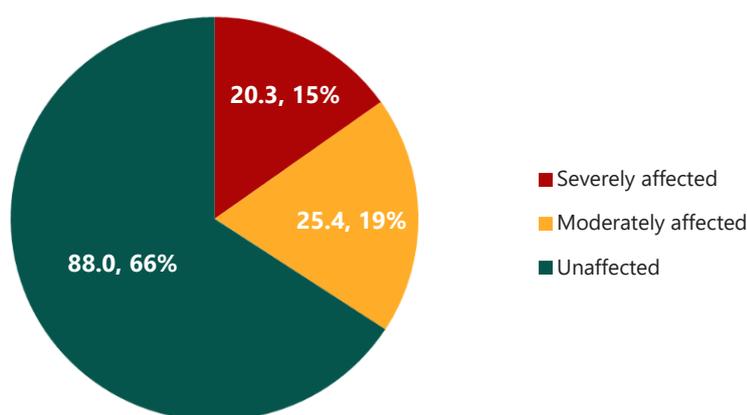
Approximately 12,000 persons were employed in the information and communications sector in the Mid-East in quarter 4 2019. In Census 2016, just over 60% of employment was in computer programming & consultancy related service activities. In 2018, there were 1,910 active enterprises in ICT in the Mid-East, accounting for 12% of all active enterprises in the sector in the State, the second highest number and share after Dublin. There were 5,088 persons engaged²⁷ in active enterprises in the sector in the region, accounting for 5% of all persons engaged in such active enterprises in the State.

²⁷ Ibid

3.8 – Impact of Brexit on the Midland region

There were approximately **46,000 persons** were employed in sectors considered to be either severely or moderately affected by Brexit in the Midland region, accounting for 34% of total employment in the region, which was on par with the national share. Compared to the State overall, the Midland region had a higher share of persons employed in severely affected sectors (15% compared to 12%) and a lower share employed in moderately affected sectors (19% compared to 23%).

Figure 3.8: Employment (000s, %) in the Midland Region by Brexit Impact Sector, Quarter 4 2019



Source: SLMRU (SOLAS) analysis of CSO LFS data

Table 3.8: Employment in the Midland Region by Brexit Impact Sector and Key Indicators, Quarter 4 2019

	Severely affected		Moderately affected	
Sectors	Agriculture	10,700	Professional activities	[5,800]
	Financial*	***	Admin & support	[4,900]
	Industry*	[5,500]	Industry*	[4,700]
			Transport & storage*	[5,200]
			ICT	[4,800]
Occupations	Skilled trades (incl. farmers)	42%	Operatives	[24%]
Gender	72% male		74% male	
Full-time/part-time	87% FT		82% FT	
Education	Lower sec	[30%]	Lower sec	[17%]
	Higher sec/FET	44%	Higher sec/FET	38%
	Third level	[26%]	Third level	45%
Age	15-34	***	15-34	[34%]
	35-44	[26%]	35-44	[25%]
	45-54	[21%]	45-54	25%
	55+	30%	55+	***
Nationality	83% Irish		81% Irish	
Employment status	% self-employed	40%	% self-employed	***

Source: SLMRU (SOLAS) analysis of CSO LFS data

** See Appendix A for a detailed breakdown of the sub-sectors included*

*** Square brackets indicate that numbers are small and should be treated with caution*

**** Too small to report*

Overall

There were approximately 20,300 persons employed in sectors considered potentially severely affected by Brexit in the Midland region in quarter 4 2019. Over half were employed in agriculture (mostly farmers). Those employed were primarily male, working full-time and a large share were self-employed (driven by the high share of farmers). Almost a third of persons employed were aged 55 years or older and most were Irish nationals. They were less highly educated than those nationally; three quarter had at most higher secondary/FET qualifications.

Employment in the moderately affected sectors was spread more broadly across sectors, almost a quarter worked in professional activities, while approximately a fifth each worked in administrative & support services, industry, ICT and transport. & storage. The share with a third level qualification was lower than the national share of persons employed in moderately affected sectors (45% compared to 57%), and almost 60% were younger than 45 years of age.

Agriculture

The agriculture sector in the Midland region accounted for just over half of all persons classified as employed in potentially severely affected sectors. Census 2016 data indicates that agricultural employment was predominantly in crop and animal production (just over 90%), with farming of animals/mixed farming accounting for the majority. Kompass data indicates that while small, a number of firms were involved in the equine industry (i.e. stud farms), especially in Westmeath.

Industry

Of the 20,100 persons employed in industry in the Midland region in quarter 4 2019, approximately a half were in either severely or moderately affected sub-sectors. Of those employed in severely affected sectors in manufacturing, Census 2016 indicates that approximately two-thirds were concentrated in the manufacture of foods (with meat and meat products accounting for half). The region accounted for 25% of national employment in the manufacture of prepared animal feeds (higher than any other region). In 2018, there were approximately 1,800 active enterprises in manufacturing in the Midland region, accounting for 9% of all active enterprises in the region (compared to 7% nationally). Kompass data reveals that there were a number of firms involved in the manufacture of wood and wood products in the Midland region (the share in this sector was the highest of any region).

In terms of moderately affected sectors in manufacturing in the Midland region, Census 2016 indicates that fabricated metal products and articles of concrete, cement & plaster

accounted for the largest share of employment in the sector (at 28% and 20% respectively). Kompass data also indicates that after metal fabrication, the second largest number of manufacturing firms in this category was in non-metallic mineral products (e.g. cement, stonework).

Financial activities (excluding real estate activities)

The number of persons employed in the financial sector in the Midland region in quarter 4 2019 was too small to report. However, Census 2016 indicates that approximately **2,700 persons** were employed in financial sub-sectors expected to be severely affected by Brexit. In 2018, there were 182 active enterprises in the financial sector, accounting for 2% of all active enterprises in the sector in the State. Kompass data further reveals that amongst financial and services, a quarter of small firms were credit unions.

Professional, scientific & technical activities

Fewer than 6,000 persons were employed in professional activities in the Midland region in quarter 4 2019, although the number is small and should be treated with caution. Census 2016 indicates that almost 40% of employment in professional activities was concentrated in legal & accounting, while almost 30% was in architectural & engineering activities. In 2018, there were 1,518 active enterprises in this sector in the region, accounting for 3% of all active enterprises in the sector nationally. This sector accounted for a smaller share of active enterprises in the Midland region than nationally (11% compared to 16%).

Transportation and storage (excluding postal and courier services)

Census 2016 indicates that most employment in the Midland region in sub-sectors of the transport and storage sector considered moderately at risk due to Brexit was concentrated in either passenger road transport (e.g. taxi, coach) or road freight transport, making up just under a third each. In 2018, there were 1,063 active enterprises in the transport sector in the Midland region, with 3,518 persons engaged (this includes postal and courier services which have been excluded from the other datasets as it is not considered at risk due to Brexit).

Administrative & support services

Approximately 5,000 persons were employed in the administrative and support services sector in the Midland region in quarter 4 2019, although this number is small and should be treated with caution. Census 2016 data indicates that employment was spread across a number of activities in this sector, with services to buildings & landscape activities accounting for a 40% share and renting & leasing and security & investigation activities accounting for almost a 20% share each. In 2018, there were 746 active enterprises in this sector in the Midland region, accounting for the lowest share of active enterprises in the sector nationally compared to all other regions. Kompass data reveals that firms involved in rental and leasing activities were chiefly for machinery, plant and tool hire.

Information and communications

Approximately **5,000 persons were employed** in the information and communications sector in the Midland region in quarter 4 2019, although this number is small and should be treated with caution. Based on **Census 2016, just over 50% were employed in computer programming** and almost a third were in telecommunications. According to the 2018 Business Demography, there were 394 active enterprises in the region, accounting for the lowest share of active enterprises in the sector nationally compared to all other regions.

Section 4: Conclusions

The objective of this paper has been to study Ireland's employment exposures to Brexit, by examining those sectors with the highest trade exposures to the United Kingdom. Using this information, we endeavoured to profile those persons employed in the most exposed sectors, across each of Ireland's regions and in doing so, have sought to provide useful analysis for both Intreo – Ireland's Public Employment Service – and the wider Public Employment Service network, including the Further Education and Training Sector and other regional skills groups as part of their Brexit preparedness efforts. It is hoped this analysis, by providing insights into the characteristics of those workers in exposed sectors and regions, will inform the development of any targeted interventions, including active labour market programmes (ALMPs) and skills provision, that may be required in the event of a delayed, Brexit-related labour market impact.

As we have shown in Section 1, there are a number of sectors, with respect to both imports and exports, that are particularly exposed to any Brexit-related shock due to their dependency on trade with the UK market. The sectors identified using our methodology, which include Food and Live Animals, Financial Services and Manufactured Goods, are largely aligned with recent literature on the subject, particularly that of the Economic and Social Research Institute (ESRI, 2020). Similarly, we concur with previous research in finding that, to date, there is limited evidence of overlap between those sectors exposed to Brexit and those sectors most impacted by COVID-19.

In Section 2, using CSO Labour Force Survey data, we provided an overview of the scale and demographic characteristics of those workers employed in the sectors (as defined by the ESRI) considered to be potentially most exposed to shocks in trade with the UK. This was followed by Section 3, where we presented a more detailed analysis at a regional level of the potential impact of Brexit on skills, considering those employed in both the severely and moderately affected sectors. Unsurprisingly perhaps, given its geographic proximity to Northern Ireland, Ireland's Border region was shown to have the highest proportion of 'severely' exposed sectors to a potential Brexit trade shock.

In summary, the primary aim of this detailed exploration has been to uncover both the type and number of people by region who may require assistance in the event of a fall in employment in certain sectors as a result of Brexit. By identifying the characteristics of those whose employment is most likely to be affected – such as their age, occupation and level of education – the regional Public Employment Service network can better plan and respond to the precise needs of different individuals, as the full impact of Brexit unfolds in the coming years.

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Appendices

Appendix A

Table A.1 NACE sectors by ESRI assigned Brexit impact level

NaceLevel1	NaceLevel2	ESRI assigned
Agriculture	Crop and animal production, hunting and related service activities	Red
	Forestry and logging	Red
	Fishing and aquaculture	Red
Mining & quarrying	Mining of coal and lignite	Green
	Extraction of crude petroleum and natural gas	Green
	Mining of metal ores	Green
	Other mining and quarrying	Green
	Mining support service activities	Green
Manufacturing	Food products	Red
	Beverages	Red
	Tobacco products	Red
	Textiles	Red
	Wearing apparel	Red
	Leather and related products	Red
	Wood and wood products, except furniture	Red
	Paper and paper products	Red
	Printing and reproduction of recorded media	Amber
	Coke and refined petroleum products	Green
	Chemicals and chemical products	Amber
	Basic pharmaceutical products and preparations	Green
	Rubber and plastic products	Amber
	Other non-metallic mineral products	Amber
	Basic metals	Amber
	Fabricated metal products, except machinery and equipment	Amber
	Computer, electronic and optical products	Green
	Electrical equipment	Amber
	Machinery and equipment n.e.c	Green
	Motor vehicles, trailers and semi-trailers	Amber
	Other transport equipment	Amber
	Furniture	Green
Other manufacturing	Green	
Repair and installation of machinery and equipment	Amber	
Utilities	Electricity, gas, steam and air conditioning supply	Green
	Water collection, treatment and supply	Green
	Sewerage	Green
	Waste collection, treatment and disposal activities; materials recovery	Green
	Remediation activities and other waste management services	Green
Construction	Construction of buildings	Green

	Civil engineering	Green
	Specialised construction activities	Green
Wholesale & retail	Motor trades	Green
	Wholesale trade	Green
	Retail trade	Green
Transport & storage	Land transport	Amber
	Water transport	Amber
	Air transport	Amber
	Warehousing and support activities for transportation	Amber
	Postal and courier activities	Green
Accommodation & food	Accommodation	Green
	Food and beverage service activities	Green
Information & communications	Publishing activities	Amber
	Picture, video and television programmes, sound recording and music publishing activities	Amber
	Programming and broadcasting activities	Amber
	Telecommunications	Amber
	Computer programming, consultancy and related activities	Amber
	Information service activities	Amber
Financial, insurance and real estate activities	Financial service activities, except insurance and pension funding	Red
	Insurance, reinsurance and pension funding, except compulsory social security	Red
	Activities auxiliary to financial services and insurance activities	Red
	Real estate activities	Green
Professional activities	Legal and accounting activities	Amber
	Activities of head offices; management consultancy activities	Amber
	Architectural and engineering activities; technical testing and analysis	Amber
	Scientific research and development	Amber
	Advertising and market research	Amber
	Other professional, scientific and technical activities	Amber
	Veterinary activities	Amber
Admin & support	Renting and leasing activities	Amber
	Employment activities	Amber
	Travel agency, tour operator and other reservation service and related activities	Amber
	Security and investigation activities	Amber
	Services to buildings and landscape activities	Amber
	Office administrative, office support and other business support activities	Amber
PAD	Public administration and defence; compulsory social security	Green
Education	Education	Green
Health & social work	Human health activities	Green
	Residential care activities	Green
	Social work activities without accommodation	Green
Arts, entertainment & rec	Creative, arts and entertainment activities	Green
	Libraries, archives, museums and other cultural activities	Green
	Gambling and betting activities	Green

	Sports activities and amusement and recreation activities	Green
Other services	Activities of membership organisations	Green
	Repair of computers and personal and household goods	Green
	Other personal service activities	Green

Source: ESRI (Daly and Lawless, 2020)

Appendix B

Appendix B.1: Specific goods sub-sectors (commodity groups) with significant export values and particularly high reliance on UK market.

Goods Sub-Sector	Value of Exports 2019 (€ Millions)	Proportion of Total Export Value to UK 2019
Cereals and cereal preparations	500	93.3%
Non-metallic mineral manufactures, n.e.s.	413	82.0%
Vegetables and fruit	236	74.9%
Live animals except fish etc.	340	74.8%
Cork and wood manufactures, excluding furniture	212	72.4%
Feeding stuffs for animals, excluding unmilled cereals	254	69.1%
Coffee, tea, cocoa, spices and manufactures thereof	271	66.0%
Unclassified estimates	405	62.1%
Road vehicles	235	61.6%
Meat and meat preparations	1,759	45.5%
Petroleum, petroleum products and related materials	281	40.0%
Manufactures of metal, n.e.s.	257	34.4%
Dairy products and bird's eggs	884	29.0%
Machinery specialised for particular industries	202	26.2%

Data source: CSO, External Trade (goods) TSA09.

Note: For Value of merchandise Exports to the UK 2019, those cells in red indicate exports values in excess of €500 million, those cells in orange export values in between €350 million – €499 million and those in yellow are export values in between €200 million – €349 million. For the proportion of total export value to the UK 2019 those figures in red are those in excess of 75%, those in orange between 50% - 74.9% and those in yellow 25% - 49.9%.

Appendix B.2: Specific goods sub-sectors (commodity groups) with significant import values and particularly high reliance on UK market

Goods Sub-Sector	Value of Imports 2019 (€ Millions)	Proportion of Total Import Value to UK 2019
Gas, natural and manufactured	902	94.9%
Live animals except fish etc.	260	80.8%
Dairy products and birds' eggs	582	67.2%
Cereals and cereal preparations	703	55.2%
Coffee, tea, cocoa, spices and manufactures thereof	354	54.1%
Paper, paperboard and articles of paper pulp, paper	519	52.3%
Unclassified estimates	918	50.5%
Miscellaneous edible products and preparations	374	49.8%
Iron and steel	455	49.5%
Meat and meat preparations	491	48.4%
Beverages	434	47.2%
Non-metallic mineral manufactures, n.e.s.	276	41.6%
Petroleum, petroleum products and related materials	1,789	41.4%
Essential oils, perfume materials, toilet preparations	572	41.4%
Manufactures of metal, n.e.s.	558	38.2%
Chemical materials and products, n.e.s.	345	34.9%
Vegetables and fruit (05)	461	34.6%
Feeding stuffs for animals, excluding unmilled cereals	280	31.1%
Miscellaneous manufactured articles, n.e.s.	1,035	29.4%
General industrial machinery and parts, n.e.s.	541	29.2%
Machinery specialised for particular industries	469	28.9%
Road vehicles	933	25.6%

Data source: CSO, External Trade (goods) TSA09.

Note: For Value of merchandise Imports to the UK 2019, those cells in red indicate imports values in excess of €500 million, those cells in orange import values in between €350 million – €499 million and those in yellow are import values in between €250 million – €349 million. For the proportion of total import value to the UK 2019 those figures in red are those in excess of 75%, those in orange between 50% - 74.9% and those in yellow 25% - 49.9%.

Appendix B.3: Services sectors export values by reliance on UK market.

Services Sub-Sector	Value of Exports 2019 (€ Millions)	Proportion of Total Export Value to UK 2019
Other services, not elsewhere stated	4,046	62.2%
Financial services	6,745	40.0%
Transport	2,488	30.9%
Repairs and processing	580	23.4%
Communications	78	23.3%
Insurance	1,980	20.0%
Tourism and travel	1,026	17.9%
All business services	5,115	11.7%
<i>Business services: Trade related services</i>	574	20.7%
Computer services	12,379	10.6%
Royalties/licences	460	4.3%

Data source: CSO, External Trade (goods) BPA04.

Note: For Value of service Exports to the UK 2019, those cells in red indicate exports values in excess of €5 billion, those cells in orange export values in between €1 billion – €4.9 billion and those in yellow are export values in between €200 million and €999 million. For the proportion of total export value to the UK 2019 those figures in red are those in excess of 30%, those in orange between 20% - 29.9% and those in yellow 10% - 19.9%.

Appendix B.4: Services sectors import values by reliance on UK market.

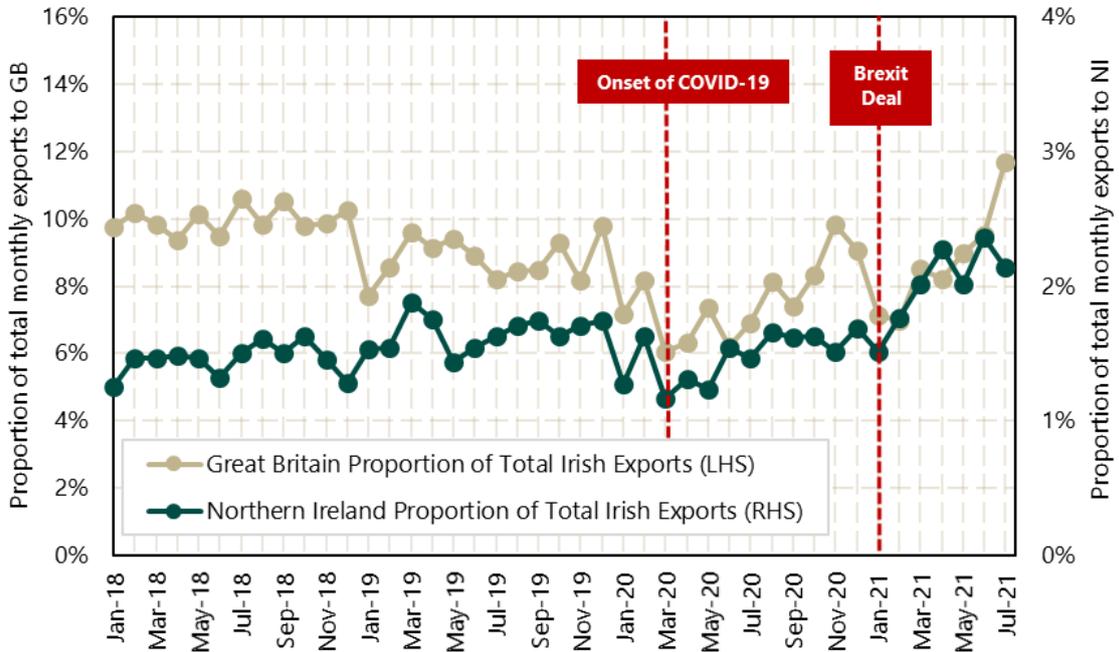
Services Sub-Sector	Value of Imports 2019 (€ Millions)	Proportion of Total Import Value to UK 2019
Other services, not elsewhere stated	506	61.8%
Financial services	6,337	40.9%
Insurance	1,862	22.9%
Tourism and travel	1,386	19.0%
Transport	590	18.0%
Communications	73	16.0%
All business services	9,299	5.6%
<i>Business services: Trade related services</i>	3,777	17.1%
Computer services	176	3.9%
Repairs and processing	45	0.7%
Royalties/licences	279	0.3%

Data source: CSO, External Trade (goods) BPA04.

Note: For Value of service Imports to the UK 2019, those cells in red indicate imports values in excess of €5 billion, those cells in orange import values in between €1 billion – €4.9 billion and those in yellow are import values in between €200 million and €999 million. For the proportion of total import value to the UK 2019 those figures in red are those in excess of 30%, those in orange between 20% - 29.9% and those in yellow 10% - 19.9%.

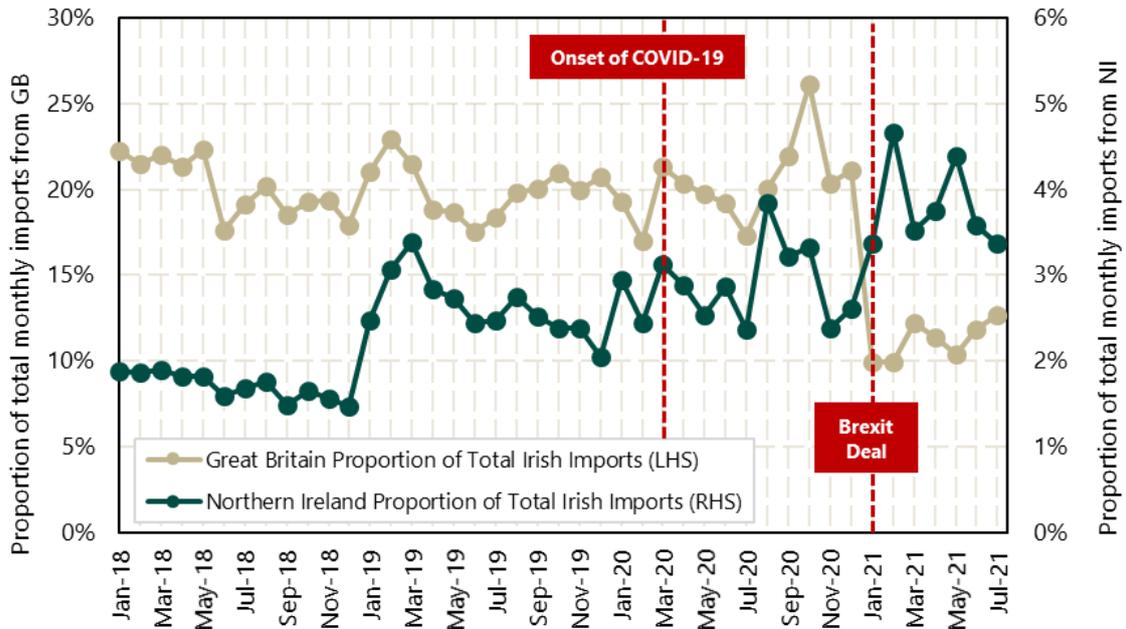
Appendix C

Appendix C.1: Proportion of total Irish Goods Exports to Great Britain and Northern Ireland between January 2018 and July 2021.



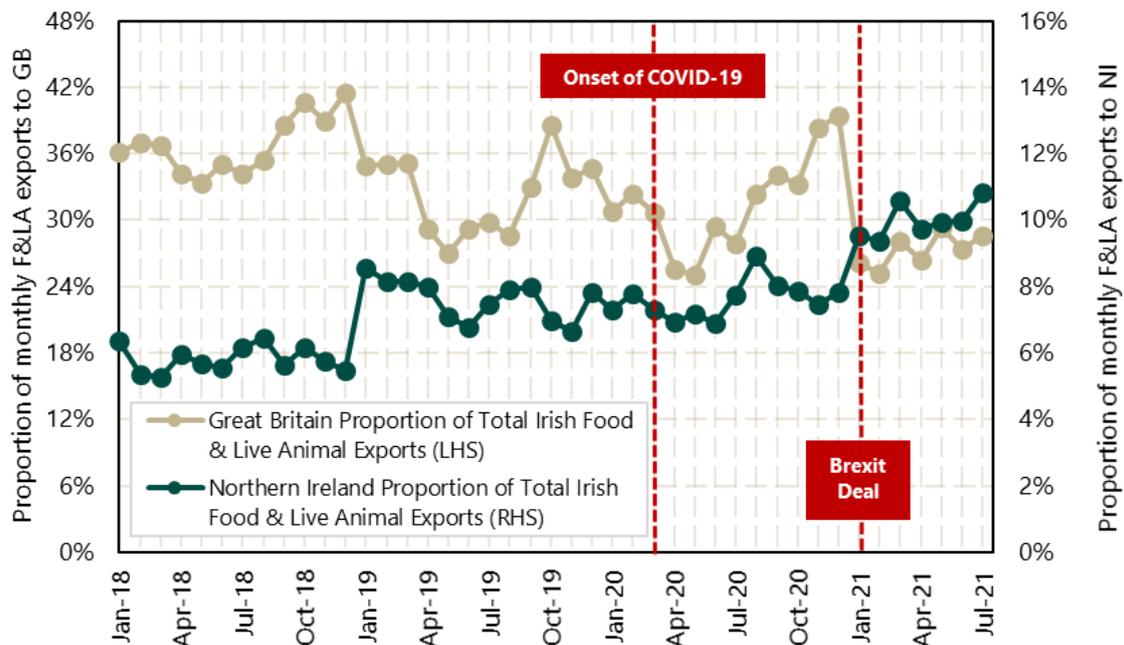
Data source: CSO, External Trade (goods) – TSM09, TSM10 and authors' calculations.

Appendix C.2: Proportion of total Irish Goods Imports to Great Britain and Northern Ireland between January 2018 and July 2021.



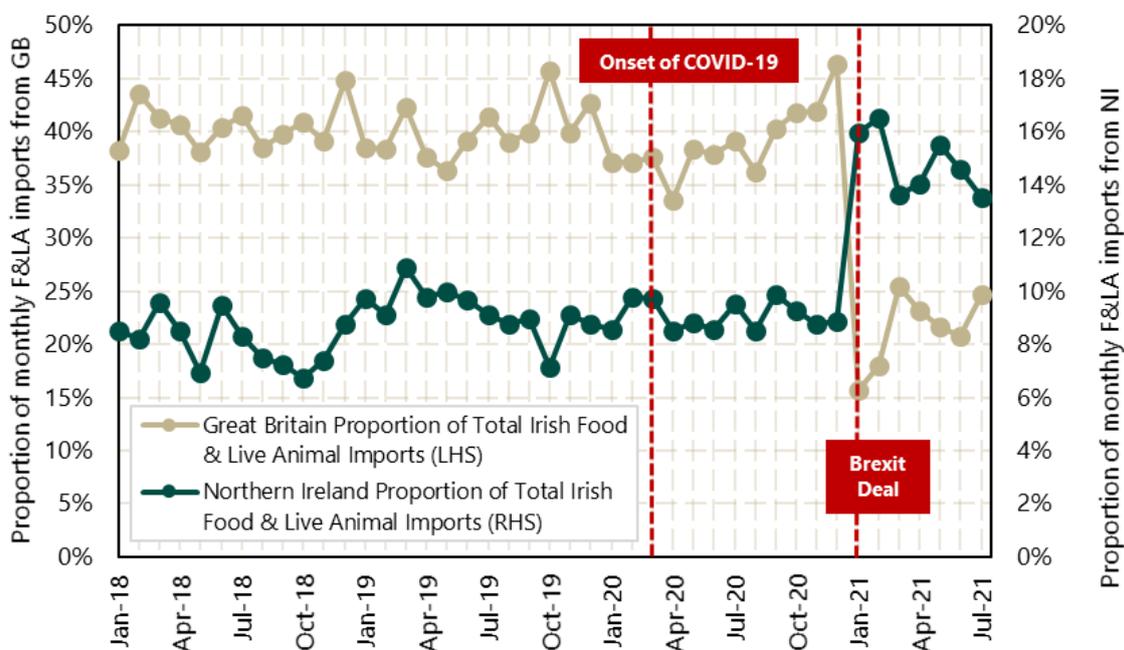
Data source: CSO, External Trade (goods) – TSM09, TSM10 and authors' calculations.

Appendix C.3: Proportion of total Irish Food and Live Animal Exports to Great Britain and Northern Ireland between January 2018 and June 2021.



Data source: CSO, External Trade (goods) – TSM09, TSM10 and authors' calculations.

Appendix C.4: Proportion of total Irish Food and Live Animal Imports to Great Britain and Northern Ireland between January 2018 and June 2021.



Data source: CSO, External Trade (goods) – TSM09, TSM10 and authors' calculations.