

# Addressing the Skills Needs Arising from the Potential Trade Implications of Brexit

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Special thanks are due to the many industry executives, academics and staff at expert organisations and State agencies who gave their valuable time and insights through interviews and at workshops.

The Expert Group on Future Skills Needs would also like to acknowledge the high quality and expertise of AECOM Limited whose work included the literature review, the undertaking of consultations and workshops with companies, organisations and key informants, and the modelling of the skills demand forecasts contained in the report, as well as the integration of the various research elements into the final report.

The EGFSN would also like to extend its thanks to the Skills and Labour Market Research Unit (SLMRU) in SOLAS, which compiled the overview of Education and Training provision; the Trade Division and Embassy Network of the Department of Foreign Affairs and Trade, which facilitated the development of the review of EU-27 responses to Brexit to date; and the Managers of the Regional Skills Fora, who shared their insights on Brexit related skills needs and measures at a regional level.



## Introduction to the Expert Group on Future Skills Needs

The Expert Group on Future Skills Needs (EGFSN) advises the Irish Government on the current and future skills needs of the economy and on other labour market issues that impact on Ireland's enterprise and employment growth. It has a central role in ensuring that labour market needs for skilled workers are anticipated and met.

Specifically, the EGFSN:

- Carries out research, analysis and horizon scanning in relation to emerging skills requirements at thematic and sectoral levels. Steering Groups comprising of experts from relevant enterprise sectors and the education and training sector may oversee sectoral research studies to be undertaken or commissioned by the EGFSN. Drawing on statistical input and analysis from the SLMRU and consultation with the enterprise/education experts as part of the study, draft reports setting out the projected needs are prepared by the EGFSN.
- Engages with the HEA, SOLAS, QQI, the Regional Skills Fora, education and training providers in the course of its research.
- Engages with DES, HEA, SOLAS and other relevant bodies to produce agreed action plans to address the skills needs identified.
- Submits the findings of its research and agreed Action Plans to the National Skills Council prior to publication.
- Disseminates its findings to the Regional Skills Fora and other relevant groups.

The Strategic Policy Division within the Department of Business, Enterprise and Innovation provides the EGFSN with research and analysis support.



## Foreword



This Expert Group on Future Skills Needs report, which forms part of the whole of government response to the UK decision to leave the European Union, has sought to identify the skills needs arising from the potential trade implications of Brexit. Examining the potential impact on a number of key internationally trading sectors, as well as the wider Freight Transport, Distribution and Logistics sector that underpins this trade, the study is an attempt to build the evidence base on the anticipated impact of Brexit, determine the skills response required to offset or mitigate this impact, and avail of any opportunities that arise.

The UK has been a key partner and conduit for Ireland's international trading activity since the foundation of the State, with the volume of exports and imports to and from the UK market and the integral role played by the UK landbridge as a channel for Ireland's international trade. Such is the interrelationship between the Irish and UK economies, on a North-South as well as East-West basis, that the UK's departure from the European Union- and potentially both the Single Market and Customs Union- poses one of the greatest challenges for the Irish economy since independence.

Brexit poses two significant trade related challenges for Ireland. The potential emergence of a more complex trading environment vis-à-vis our second largest export market could impact on the efficiency of trade flows, creating disruption, imposing additional business costs, and impacting on supply chains. Our indigenous SME exporters and importers, more reliant on the UK market and regionally spread, can expect to be hardest hit. More restricted access to and lesser growth in such a key market will also place an additional onus on the diversification of Irish trade towards non-UK markets- already a core objective of Irish trade policy.

The report finds that a Hard Brexit scenario will have a pronounced impact on skills requirements across international trading and Logistics and Supply Chain activities, with the impact varying across sectors- some of which will require a fundamental change in the markets they serve, and how they transport goods to market, in order to offset its impact. Even those sectors not as directly exposed to the UK market will be affected by the potential implications for the UK landbridge, regulatory divergence and financial considerations.

Overall, there is a lack of preparedness and understanding within sections of the enterprise base on what Brexit will require from a skills perspective, with clear gaps in areas such as customs expertise, financial management, and a need for skills measures to facilitate international traders and logistics and supply chain enterprises to explore new markets. In particular, there will be a



need for a large number of new entrants into Freight Transport, Distribution and Logistics professions and to establish such roles as attractive career options.

On the basis of this research and analysis, this study makes eight overarching recommendations, with 46 associated sub-actions, both short term and longer term in nature. These are directed towards enhancing the skills base from which Ireland can draw, for both diversifying into new markets and the smooth and efficient facilitation of international trade, in what going forward could potentially be a more restrictive trading environment with the UK.

I would to thank all of those who contributed to the preparation of this report. Particular thanks are due to the many enterprises and stakeholders who contributed their time and expertise through workshops and other engagements with the project consultants and EGFSN Secretariat. In particular, I would like to thank Dr Pat Ivory who chaired the steering group that oversaw the completion of the report and to each member of the Steering Group for their commitment and for sharing their expertise. Finally, I would like to thank the EGFSN Secretariat for their research and analysis input, and for managing this project to a successful conclusion.

I would encourage the prompt implementation of the set of recommendations made in this report which will, when implemented, help increase the resilience of the Irish economy in the face of the challenges posed by Brexit, as well as the efficiency and diversity of Ireland's international trade more generally.

Tony Donohoe  
Chairperson, Expert Group on Future Skills Needs





## Executive Summary

### E.1 Background

The Expert Group on Future Skills Needs commissioned this report to address the Skills Needs arising from the Potential Trade Implications of Brexit.

This report is a cross-sectoral piece of contingency analysis, which identifies and, through its recommendations, seeks to address the skills needs for the Irish enterprise base arising from the potential trade implications of Brexit.<sup>1</sup> Its focus is mainly on those skillsets associated with the facilitation of trade across international borders, and its diversification into and from new markets.

The Expert Group on Future Skills Needs (EGFSN) has undertaken two studies relevant to the facilitation and diversification of Ireland's international trade (both import and export) in recent years:

- 2012's Skills for Enterprise to Trade Internationally<sup>2</sup>, and;
- 2015's Addressing the Demand for Skills in the Freight Transport, Distribution and Logistics Sector in Ireland 2015-2020.<sup>3</sup>

This study builds on the findings of these reports and acts as a stocktake of recommendations, prepared for a trading environment less restrictive, complex and disruptive than that potentially posed by Brexit. It establishes the exact state of readiness of the Irish enterprise base for the potential new reality from a skills and competence perspective.

### E.2 Methodology

This study has adopted the following methodology:

- A concise literature review
- A research exercise conducted through structured telephone interviews, face to face meetings and workshops with companies, organisations and stakeholders
- Skills demand scenarios for the Freight Transport, Distribution and Logistics sector, on the basis of the continued availability or otherwise of the UK landbridge after Brexit
- Review of responses to Brexit by a selected number of EU-27 economies
- An overview of the current education and training provision for international trading sectors and Freight Transport, Distribution and Logistics

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1 For an indication of what this entails, see the approach adopted by the Department of Finance in *UK EU Exit: Trade Exposures of Sectors of the Irish Economy in a European Context (September 2017)*- <http://igees.gov.ie/wp-content/uploads/2017/10/UK-EU-Exit-Trade-Exposures-of-Sectors-of-the-Irish-Economy-in-a-European...pdf>

Also see InterTradeIreland's *Potential Impact of WTO Tariffs on Cross-Border Trade*- <http://www.intertradeireland.com/media/InterTradeIrelandPotentialImpactofWOTariffsResearchReportFINAL.pdf>

2 See <https://dbei.gov.ie/en/Publications/Key-Skills-for-Enterprise-to-Trade-Internationally.html>

3 See <https://www.dbei.gov.ie/en/Publications/Addressing-the-Demand-for-Skills-in-the-Freight-Transport-Distribution-and-Logistics-Sector-in-Ireland-2015-%E2%80%93-2020.html>



On the basis of the research undertaken, the study proposes adaptations or measures required to enhance the skills related resilience of the Irish enterprise base directly, in terms of trade diversification skills, and indirectly, in the robustness of the wider freight transport, distribution and logistics sector in meeting the new trading environment that might arise, as well as opportunities identified.

### **E.3 Literature Review**

As part of this study into the skills needs and demand in light of Brexit, a wide range of reports regarding the issue were assessed. The literature review looked at the skills needs and changes in trade facilitation and the transport sector including the effects of Brexit on the industry.

It was clear from the literature review that Brexit is likely to have a pronounced impact on skills requirements in Ireland, which is exacerbating underlying and in some cases growing skills gaps, due in part to falling unemployment.

These challenges are likely to impact on trade and the economy both in the short term and long term. Customs procedures, potential delays at border crossings, changes to transport routes and markets are likely to create short term challenges while regulatory divergence potentially presents a long term challenge, even to those sectors more insulated from the impact of Brexit.

Virtually every economic sector is considered to be vulnerable to a varying extent. The majority of sectors are likely to lose jobs, especially low margin sectors such as agri-food, which areas outside of Dublin are more reliant upon.

### **E.4 Primary Research: Profiles of International Traders and FTDL sector**

In order to ensure detailed and wide-ranging responses were elicited from across the internationally trading and Freight Transport, Distribution and Logistics sub-sectors, 20 in-depth consultations were undertaken with key informants i.e. stakeholders in a position to offer a perspective on the key trends and influences impacting on the demand and supply of trade related skillsets in the context of Brexit.

In addition to these key informant interviews, telephone surveys were undertaken with 49 enterprises engaged in international trading, and across the wider Freight Transport, Distribution and Logistics sector.

Further to this, two three-hour workshops were held, one in Dublin on Thursday 15th February 2018 and one in Cork on Friday 16th February, to validate the findings of this research. The workshops covered elements such as current skills requirements (e.g. training, operational knowledge) and future skills needs (perceived challenges and opportunities) and the particular implications of Brexit.



### International Traders

Organisations were consulted in relation to the following sectors, which represent key exporters for the Irish economy:

- Agri-food
- Health Life-sciences
- Technology
- High-value Manufacturing
- Construction Products and Services

Key findings of this element of consultation included:

- Generally, skills requirements have become more pronounced since the 2012 report was produced, due in part to the economic recovery making the labour market more competitive. However, the UK is an important market for a lot of respondents and customs clearance and financial management were deemed to be areas where there are skills gaps, particularly in SMEs.
- Agri-food is very exposed to Brexit. The UK not only represents a major market, but is also used as a landbridge for exports to Europe. The Agri-food sector also often has very integrated manufacturing processes with the UK, particularly with Northern Ireland. While evidence suggests the sector is growing new markets, skill sets relating to language and cultural skills are important in exploiting these further.
- Health Lifesciences firms generally have the skills and resources to deal with challenging trading conditions and territories. It is an integral part of many businesses in the sector, and its highly competitive nature (amongst the most adaptable in the world) means that upskilling is related to striving to be 'best in class'. However, there is concern about regulatory divergence in this sector.
- In Technology, Ireland has excelled, and attracted by a skilled workforce, open economy, low corporation tax and English speaking population has established itself as a major centre for MNCs in the sector. The sector pays well and is able to attract highly skilled individuals from across the world. It is generally less reliant on the UK as a key market and less still as a landbridge function as the value is high but the volume is low.
- With regards to High Value Manufacturing, exposure to the UK varies depending on the organisation; however, companies in this sector tend to have a diversified market across many geographies. Dedicated global trading teams and experience of dealing with challenging and changing markets are common in MNCs and they are therefore well equipped to cope with the challenges of Brexit.



- The construction sector is relatively relaxed about the impact of Brexit, with some seeing benefits associated with relocation of organisations from London to Dublin, despite competition from other European cities. Some respondents who manufacture products for the construction sector were found to be exposed to the UK market and may need to look to new markets.

### **Freight, Transport, Distribution and Logistics (FTDL) sector**

Consultation with the FTDL sector reveals that a number of the issues the sector faces in relation to skills identified in the 2015 report are still prevalent. These include a poor profile, low wages in certain roles, perceived lack of career progressions and unattractive hours and conditions. This has contributed to shortages in roles across the sector, particularly certain positions such as lorry driving.

Particular challenges of Brexit were identified as:

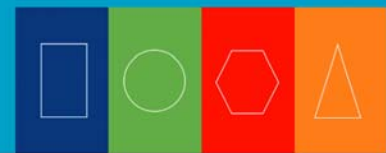
- Lack of customs clearance expertise
- Change in import and export markets
- Lack of certainty as to what Brexit represents, leading to a lack of willingness to invest in skills and training
- Exposure to the landbridge
- Regulatory divergence
- Lack of Authorised Economic Operator (AEO) status amongst many operators
- SMEs being more exposed and less prepared

It was clear that interventions are required to help upskill in facilitating trade with 3rd countries (particularly SMEs), ensure that the sector is fully informed on the negotiations as far as possible, and that organisations get the support they need to explore new markets and adapt to a very different trading relationship with the UK.

## **E.4 Demand scenarios**

The study seeks to quantify the potential demand for the main occupations in the Freight Transport, Distribution and Logistics activities. The 2015 Expert Group on Future Skills Needs study on FTDL included quantified forecasts of the future labour requirements of the sector, the likely level of retirements and hence, the number of new workers who would have to enter the sector to meet future labour needs. For this study, these forecasts have been updated.

It is anticipated that there will be a major external shock to the Irish economy when the UK leaves the EU in March 2019 (or when any transition deal ends). The impact of Brexit cannot be predicted as it will depend on the form that the post-Brexit relationship between the UK and the EU takes. To address this uncertainty we have developed a set of scenarios that aim to explore the range of potential effects of Brexit on the labour needs of the Freight, Transport, Distribution and Logistics sector. These scenarios highlight that Brexit will have two types of effect:



- By reducing the growth of the Irish economy it will slow the growth in the labour needs of the Freight, Transport, Distribution and Logistics sector; and
- By making the physical transport of goods to and from Ireland more difficult, for example by making the use of Britain as a landbridge less timely and cost-effective, Brexit will tend to increase the labour needs of the sector.

The size of these effects will depend on the form that Brexit takes. The closer that the UK is to the EU single market after Brexit the smaller these effects will be. Table E.1 below summarises the results of the scenarios developed for this study:

- Baseline: No change i.e. Brexit has only a minimal effect on the Irish economy
- Reduced Trade: Brexit has no effect on physical movement of goods, but growth is less than it would be without Brexit
- No Landbridge: Baseline scenario growth, but physical movement of goods is more difficult
- Hard Brexit: Combination of "Reduced Trade" and "No Landbridge" scenarios

It shows that under all scenarios there are significant skills requirements associated with new joiners, but most pronounced under a no-landbridge scenario.

**Table E.1 Freight Transport Distribution and Logistics Labour Force 2025**

	Baseline	Reduced Trade	No Landbridge	Hard Brexit
<b>Forecast Labour Force</b>	66,204	64,098	67,268	64,978
<b>Current Labour Force</b>	49,470	49,470	49,470	49,470
<b>Retirements to 2025 (e)</b>	13,752	13,752	13,752	13,752
<b>New Joiners Needed</b>	30,486	28,380	31,550	29,260

Source: AECOM

## E.5 Education and training supply

An overview of existing education and training supply has been developed to identify the extent of the available provision and how it aligns with skills gaps, both current and prospective.

As per the recommendations for increased course provision under the 2012 and 2015 EGFSN reports, it is clear that there is a significant amount of training and education provision that could help those engaged in international trade exploit new markets and mitigate the impact of Brexit in terms of reduced trade with the UK and challenges to the supply chain.

Given the skills shortages and recruitment difficulties expressed in the research undertaken for this study, it is clear that current training and education provision can be better marketed and promoted to both enterprises and sectors with particular skills requirements, and indeed to prospective students. In the case of the latter, this will require enhancing the visibility and understanding of the career opportunities available in logistics and supply chain activities in particular.



## E.6 Review of EU-27 Responses to Brexit

Ireland is not the only country exposed to Brexit and as such a number of other countries were reviewed to determine their response to the UK leaving the EU. These were Belgium, Denmark, Netherlands and Sweden.

These countries are promoting a number of initiatives to address Brexit's potential impact, including Brexit contact point webpages, outreach to and advice for enterprise, and investigations into technological solutions and upskilling in relation to customs clearance.

Increased demand for logistics and supply chain expertise in these countries could impact on Ireland's potential related talent pool. The danger of an increased peripherality, as felt by Sweden in relation to attracting FDI- especially with the potential for more complex trade and migration channels to and from Ireland post-Brexit- also suggests a need for Ireland to further enhance its visibility to foreign direct investment and skilled overseas talent.

## E.7 Interventions

It is clear from the comprehensive research and consultation undertaken as part of this study that there are clear skills gaps and challenges associated with Brexit which require mitigation.

However, it is also the case that there is a significant amount of existing support, resources and training that can help organisations get 'Brexit ready'.

The following eight interventions are recommended in addressing the skills issues identified in this study. In most cases they build on existing initiatives, ensuring that they are funded, promoted, enhanced and marketed effectively to those who need them.

Where it is felt that a fresh approach is needed it is recommended that new campaigns and initiatives are introduced to address particular skills needs and promote the FTDL sector. These overarching initiatives were derived and tested with stakeholders as part of the consultation and workshop sessions.



## Overarching recommendations

Recommendation	
1	Launch an intensified industry awareness and outreach campaign to enhance understanding amongst internationally trading and FTDL enterprises and to proactively address the skills needs arising from Brexit.
2	Introduce additional customs awareness and higher level customs clearance training and advice for third country trading as the implications of Brexit become clearer.
3	Enhance the provision of financial management advice, training and mentoring for internationally trading enterprises, with a particular focus on currency management, VAT for third country trading, and contract management.
4	Undertake targeted campaigns to attract skilled personnel from overseas.
5	<p>Promote measures to enhance the ability to diversify trade with non-UK markets.</p> <ul style="list-style-type: none"><li>▪ Enhance international trading and Logistics/Supply Chain content in education and training provision</li><li>▪ Build up Ireland's foreign language capability for international trade (particularly with Eurozone markets)</li><li>▪ Enhancement of intercultural awareness and international business experience</li><li>▪ Build up product design and development skills</li></ul>
6	Establish a National Logistics and Supply Chain Skills Group, to manage a coordinated response from the Logistics and Supply Chain sectors to promote the sectors and their skills needs.
7	Develop a schools/communication toolkit and awareness raising campaigns for Logistics, Supply Chain and Transportation careers across all sectors, and an improved understanding of the cross sectoral skills needs, employment numbers and career opportunities in supply chain activities
8	Support the development, and promote the rollout of and engagement with the Logistics and Service apprenticeship programmes.



## Introduction

This report is a cross-sectoral piece of contingency analysis, which identifies and, through its recommended interventions, seeks to address the skills needs for the Irish enterprise base arising from the potential trade implications of a Hard Brexit scenario.<sup>4</sup> Its focus is on those skillsets associated with the facilitation of trade, both import and export, across international borders, and its diversification into and from new markets.

The UK's departure from the European Union, and potentially from both the Single Market and Customs Union, could bring new border controls, additional tariffs, and resulting administrative and technical requirements for Irish based firms trading into and out of the UK market. The continued use of the UK as a landbridge for Irish trade could also be open to question, creating the need for alternative transit routes. By impacting on the efficiency of trade flows, it could create disruption, impose additional business costs, and impact on supply chains. Skillsets associated with freight transport, distribution and logistics will be central in addressing these challenges.

In turn, and as reflected in the Government trade strategy, Ireland Connected: Trading and Investing in a Dynamic Economy,<sup>5</sup> Brexit will also place an additional onus on diversification of trade, be it import or export, towards non-UK markets- a core objective of Irish trade policy- in order to offset these impacts and therefore the skillsets required for enterprises to trade internationally: skills such as global and international management, marketing, sales and global sourcing, as well as customer service and support, use of foreign languages and cultural awareness. Seeking out non-traditional markets may also present issues for enterprise in terms of trade related barriers and regulations.

The Expert Group on Future Skills Needs has undertaken two studies relevant to and seeking to support the facilitation and diversification of Ireland's international trade in recent years, the findings of which this study seeks to build upon:

- 2012's Skills for Enterprise to Trade Internationally<sup>6</sup>, and;
- 2015's Addressing the Demand for Skills in the Freight Transport, Distribution and Logistics Sector in Ireland, 2015-2020.<sup>7</sup>

The 2012 report followed on from the publication of the 2010 Government Strategy and Action Plan for Irish Trade, Tourism and Investment to 2015, and was a key deliverable under the first Action Plan for Jobs in 2012. The study, which focussed on the skills needs of 11 key sectors identified under the Government trade strategy of the time, identified a number of skillsets that were key to

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4 For an indication of what this entails, see the approach adopted by the Department of Finance in *UK EU Exit: Trade Exposures of Sectors of the Irish Economy in a European Context (September 2017)*- <http://igees.gov.ie/wp-content/uploads/2017/10/UK-EU-Exit-Trade-Exposures-of-Sectors-of-the-Irish-Economy-in-a-European...pdf>

Also see InterTradeIreland's *Potential Impact of WTO Tariffs on Cross-Border Trade*- <http://www.intertradeireland.com/media/InterTradeIrelandPotentialImpactofWTOtariffsResearchReportFINAL.pdf>

5 <https://dbei.gov.ie/en/Publications/Ireland-Connected-Trading-and-Investing-in-a-Dynamic-World.html>

6 See <https://dbei.gov.ie/en/Publications/Key-Skills-for-Enterprise-to-Trade-Internationally.html>

7 See <https://www.dbei.gov.ie/en/Publications/Addressing-the-Demand-for-Skills-in-the-Freight-Transport-Distribution-and-Logistics-Sector-in-Ireland-2015-%E2%80%93-2020.html>





driving Ireland’s export potential, and help Irish based enterprise break into new markets, diversify their export footprint, as well as enhance Ireland’s attractiveness to foreign direct investment.

Development of “trade diversification skillsets” was deemed a crucial underpinning to the objective of the time: driving export led growth, and Ireland’s recovery from the post-2008 economic downturn. Those skillsets identified by the 2012 study are highlighted in its recommendations, detailed in the table below.

Recommendations from Key Skills for Enterprise to Trade Internationally	
1	Develop Global/International Management Skills in Managers and Graduates
2	Enhance International Marketing Capability
3	Build up a Cadre of International Sales Professionals
4	Build up Project Management, Logistical and Procurement Skills
5	Enhance International Customer Service/Support Skills
6	Build up International Design and Development Skills Capability
7	Build up a Multi-Lingual Workforce for an increasingly globalised marketplace
8	Develop Soft Skills and competence for successful international customer working
9	Address opportunities for employment in International Business

The 2015 report on the Freight Transport, Distribution and Logistics sector in Ireland up to 2020 meanwhile sought to assess the sector’s skills and competency requirements, and to propose recommendations that would ensure the right skills base to meet enterprise needs- chiefly customs clearance, supply chain management, and logistics (“trade facilitation skillsets”), in particular the HGV driver shortage. A holistic skills assessment of Ireland’s logistics infrastructure for facilitating international trade and domestic freight distribution- by air, sea, road and rail- was adopted, and talent needs were assessed at all levels of educational attainment. That report’s recommendations are detailed in the table below.

Recommendations from Addressing the Demand for Skills in the Freight Transport, Distribution and Logistics Sector, 2015-2020	
1	Develop a Freight Transport, Distribution and Logistics Skills Engagement Group
2	Develop National Occupation Standards for the FTDL sector to create career pathways in a range of roles
3	Develop new Apprenticeship/Traineeship Programmes for the FTDL sector
4	Develop a schools/careers service communication toolkit for the sector
5	Build up FTDL SME Management Capability
6	Build up Global Supply Chain Management Skills
7	Improve training provision for Freight Forwarders and Customs Brokers
8	Introduce short IT user courses for the FTDL sector



9	Develop 'soft skills' managers courses aimed at the FTDL sector. More generally, integrate 'soft skill' development into training/education provision at all levels
10	Encourage a lead centre to act as a single voice for Third level education institutions that deliver programmes relevant to the FTDL sector
11	Boost Third level Logistics course provision and ensure practical experience in courses
12	Ensure a supply chain module is included in relevant Third level business degree courses
13	Improve knowledge of the available range and quality of FTDL courses

Through a focus on their associated skillsets, this study seeks to undertake a stocktake of and update these two reports, prepared for a trading environment less restrictive, complex and disruptive than that potentially posed by Brexit, and establish the exact state of readiness of Irish based enterprise for the potential new reality from a skills and competency perspective.

## Methodology

In undertaking this assessment, the following methodology, composed of several integrated elements, was adopted:

A research exercise was conducted through structured telephone interviews and workshops with companies, organisations and stakeholders across five internationally trading sectors, and the wider Freight Transport, Distribution and Logistics sector.

Internationally trading enterprises were surveyed that are representative of five of the sectors described in the Irish Government's trade strategy Ireland Connected, as being of 'comparative advantage' for the Irish economy from a trade perspective, and in which Ireland is well renowned internationally:

- Agri-Food
- Health Lifesciences
- Technology
- High Value Manufacturing
- Construction Products and Services

A number of those enterprises surveyed were also reflective of a sixth sector highlighted in Ireland Connected- Global Business Services, mainly supply chain or procurement operations of the overarching sector.

The selection of these sectors was made largely on the basis of their relevance to the movement of goods trade across international borders, and therefore the UK's emergence as a third country trading partner from a trade barriers perspective; hence, the omission of equally significant



exporting, but predominantly services sectors of the Irish economy, such as International Financial Services, Tourism and International Education also highlighted in the trade strategy.<sup>8</sup>

Those firms and stakeholders surveyed in relation to Freight Transport, Distribution and Logistics activities reflected the following typology of companies:

- Third Party Logistics Providers
- International Road Freight Transport companies
- Consultancy firms providing logistics services as a significant part of their business activity
- Operators engaged in intermodality and co-modality logistics activities

This mainly qualitative research element was comprised of:

- Structured Interview Survey (by meeting/or telephone) with 20 “key informants”, including sectoral representative organisations
- Structured Interview Surveys by telephone with 49 Irish based enterprises
- Discussions with a wider group of enterprises, organisations and key informants (64 in total) at 2 workshops held in Dublin and Cork to validate the findings of this primary research phase

This comprehensive qualitative research exercise was supplemented by three additional elements:

- Development of skills demand scenarios for the chief Freight Transport, Distribution and Logistics occupations, on the basis of four possible scenarios associated with Brexit and the use of the UK landbridge as a channel for Irish trade to non-UK markets.
- A review of responses and analyses undertaken to date by four EU-27 economies- Belgium, Denmark, the Netherlands, and Sweden- which may prove useful as Ireland considers its skills response.
- An overview of the current education and training provision for international trading and Freight Transport, Distribution and Logistics- categorised by public and private Higher Education programmes, Further Education and Training programmes, and continuing professional development programmes.

On the basis of this research, the study proposes adaptations or measures required to enhance the skills related resilience of the Irish enterprise base- directly, in terms of trade diversification skills, and indirectly, in the robustness of wider freight transport, distribution and logistics activities- in meeting the new trading environment that might arise vis-à-vis the United Kingdom, as well as any opportunities that emerge.

Specifically, this involves the identification of measures for boosting the relevant skills base, and its accessibility to enterprise, in a manner that enhances the efficiency of goods trade flows,

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<sup>8</sup> For the response of these sectors to the challenges or opportunities posed by Brexit, see for example the associated strategies for International Financial Services and International Education- IFS 2020- 2018 Action Plan: <http://www.finance.gov.ie/wp-content/uploads/2018/01/180130-IFS2020-Action-Plan-2018.pdf>  
Irish Educated Globally Connected- An International Education Strategy for Ireland, 2016-2020- <https://www.education.ie/en/Publications/Policy-Reports/International-Education-Strategy-For-Ireland-2016-2020.pdf>



competitiveness, and diversification into and sourcing from new markets, helping to sustain and grow employment.



## Chapter 1. Literature Review

This literature review examines the skills needs and changes in the trade facilitation and haulier sector, as well as internationally trading sectors- including the effects of Brexit on those sectors. The literature review also seeks to demonstrate the current issues facing the sectors and the skills needs that may arise from Brexit.

A list of the literature reviewed as part of this exercise can be found in Appendix 5. While not all are referenced here in the interests of succinctness, they have been used to corroborate findings throughout the report and inform the final recommendations where appropriate.

### 1.1 Background

The Irish economy has been steadily strengthening in recent times with unemployment currently at a nine-year low of 5.8% in May 2018. This contrasts with 16% in early 2012. As of Q3 2017, 313,000 more people were at work compared with Q1 2012. Several think tanks have warned that at unemployment levels below 6% the Irish economy is close to full employment, which presents challenges for sectors which are less competitive in the labour market.

In conjunction with this growth in employment, Irish goods and services exports have increased by over a third between 2011 and 2016, from €175 billion to €258 billion and the economy is now ranked the 12th most competitive in the world; this compares with 24th in 2011. Also, according to the “IMD Competitiveness Yearbook 2018” the Irish Workforce is number one in the world for flexibility and adaptability.

### 1.2 Trade facilitation and the freight and logistics sector

The following sections explore the FTDL sector in further detail and what impact Brexit may have.

Facilitating the vitally important movement and distribution of goods throughout the country and playing a key role in Ireland’s export drive, the transport and logistics sector also contributes in excess of €1 billion a year to the Exchequer in the form of PAYE, PRSI and road taxes. A recent Road Freight Transport Survey published by the Central Statistics Office (July 2016) shows that Irish-registered firms carried just over 118 million tonnes of goods during 2015. Of this, 66.97 million tonnes, or 56.7%, was attributable to licensed hauliers who transport goods ranging from building products and heavy machinery right through to agricultural and forestry outputs and food and drink products.<sup>9</sup>

The continuing growth in volume of freight trade also demands good international maritime access in the form of increasingly sophisticated, high quality and cost competitive sea freight services to get products to market efficiently.<sup>10</sup> Additionally, Irish businesses, people working in services,

<sup>9</sup> AIB: Transport & Logistics Outlook: The Lifeblood of the Economy (May 2017)

<sup>10</sup> Ireland Connected: Trading and Investing in a Dynamic World (2017)



prospective investors, visitors, international students and researchers will all need easy access to competitively priced air transport links to and from a range of international locations.

Significant changes to the supply chains of a majority of businesses in Ireland are expected to occur as a direct result of Brexit which is likely to increase the need for skills in the freight and logistics industry. Skilled and experienced personnel in the sector will be required to deal with complex issues and to help identify cost efficient solutions for affected businesses.

### 1.2.1 Labour market

The Addressing the demand for Skills in the Freight Transport, Distribution and Logistics Sector report demonstrated that the age profile of various roles shows that a large proportion of managers and directors, supervisors and HGV drivers are aged over 45 years. This is not a particular cause for concern for managerial or supervisory roles as these are typically roles where individuals are promoted or employed in later life as they gain skills and experience. For the HGV driver role however this statistic is a cause for concern, requiring urgent attention. The 2015 report forecast a demand for just under 7,000 HGV drivers between 2015 and 2020, under an economic recovery scenario. This is representative of the European wide situation whereby more HGV drivers are exiting the industry than entering it.

The industry however remains unattractive to young people compared to other sectors. The transport sector has been less successful than many other sectors in recruiting younger workers due in part to a negative perception based on the idea that work in the sector is generally low skilled and involves long hours. A large proportion of the current labour force in the sector has less than upper secondary education qualifications. Despite this, the wage for the transportation sector remains competitive, ranked seventh out of 14 different sectors in terms of regular earnings.<sup>11</sup>

### 1.2.2 Geographic shifts associated with the movement of goods

Not only is the UK an important market but Ireland is also heavily reliant on UK products. Imports from Great Britain increased by €111 million (+8%) to €1,485 million in October 2017 compared with October 2016. The main increases were in the imports of Mineral fuels, lubricants and related materials and Food and live animals. Imports from Great Britain for the first ten months of 2017 increased by €1,117 million (+9%) to €13,961 million compared with the same period of 2016.<sup>12</sup> The UK purchases 50% of Ireland's beef exports, 42% of Ireland's food and drink exports and 55% of Ireland's timber and construction sectors' exports. Supply chains for these products and others are set to incur significant change as a result of Brexit with 40% of UK businesses with European supplies reportedly looking for UK replacements and 63% of European business expecting a larger portion of

<sup>11</sup> CSO: Earnings and Labour Costs Annual 2016

<sup>12</sup> CSO statistical release, 15 December 2017, 11am



their supply chain to be outside the UK.<sup>13</sup> This potentially offers an opportunity for the Irish FTDL sector.

However, the likely additional trade facilitation costs associated with Brexit, occurring from border administration requirements, will be translated into higher prices being paid by the consumer. The competitiveness of firms exporting to the UK- particularly within the SME sector- might therefore be affected.

### 1.2.3 Transport routes

A significant proportion of Irish exports (approximately 53% in volume terms, according to research undertaken by the ESRI<sup>14</sup>) are shipped through the UK land bridge as it is the quickest route to continental Europe other than airfreight. Depending on the terms of the future trade agreement between the EU and the UK, Brexit has the capacity to seriously threaten the reliability of this transit route and the operations of the ports in the UK and those that link to it.

Roll-on/Roll-off freight traffic between Britain and Ireland has remained steady since the Brexit vote. There are, however, a number of new routes coming on stream. French company Brittany Ferries launched a new route between Ireland and Spain in April 2018 with two weekly round trips between Cork and Santander; in mid-2017 Neptune lines introduced a once weekly direct service from Rosslare to Santander. This will be the first ferry service linking the countries. Additionally, Brittany Ferries is chartering a vessel from Stena Roro for an initial period of two years. The ro-pax vessel, which offers around 2,225 lane metres for vehicles, is to be renamed the Connemara and will also be used to provide a second weekly round trip on the company's Roscoff-Cork service.<sup>15</sup> The introduction by Irish Ferries of the W. B. Yeats, scheduled for 2018, will increase frequency on the Dublin/Cherbourg route from once weekly to 3 to 3.5 times weekly. The Rosslare/Cherbourg and Rosslare/Roscoff services will operate on a seasonal basis.

In October 2017, W.E.C. Lines opened a direct container service linking Dublin with Huelva on the Spanish/Portuguese Border and Leixoes, linking with their services to African destinations.

In 2016 Maersk Line also introduced a new feeder loop for Irish cargo that linked to Algeciras on the south coast of Spain rather than the English Channel or Benelux Port. This saves up to 10 days on some routes and explores the possibility of an alternative which may also open up new opportunities for Irish exporters. There are also airfreight alternatives, for example the 2017 arrival of Qatar Airways in Dublin further increases the airfreight options for Asian and African markets. Increased services to and from Irish airports leads to more possibilities for Irish trade;<sup>16</sup> however, the

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<sup>13</sup> Chartered Institute of Procurement & Supply (CIPS): The Brexit Storm - How procurement and supply chain professionals are tackling the issues

<sup>14</sup> "Ireland and the Impacts of Brexit" Copenhagen Economics, March 2018

<sup>15</sup> Lloyds List: Brittany Ferries to launch Ireland-Spain route

<sup>16</sup> Irish Exporters Association: The Potential Impacts of Brexit on Irish Exports (9<sup>th</sup> March 2017)



suitability of these trade routes as replacements for cargo currently travelling via the UK land bridge will need to be investigated further.

Airfreight also plays an important role in the international trade market for Ireland with Dublin Airport estimating that in 2008 although only 0.5% of import/export volume was transported by air, this equated to 29% of the import/export value.<sup>17</sup> Those sectors with the highest value, and which are lighter/smaller, are more likely to be transported by air.

### 1.2.4 Challenges associated with the UK landbridge

The UK is a key commercial partner for Ireland - both as a trader and for access to the wider EU market, through the UK land-bridge.<sup>18</sup> The dependence of Irish exports on the UK landbridge is significant with one respondent to academic research stating the “UK landbridge is not that you decide to use it, it is that you have to use it because there is no other option. It is too long a distance otherwise”. A freight forwarder industry representative stated “it would be great to have a direct sea shipping service out of Ireland but you have to have the traffic first.”<sup>19</sup> However, other freight forwarder representatives also suggested that no suitable alternatives are available since none are currently required. If the UK landbridge becomes a more expensive and complex option as a result of Brexit, this may cause enough demand to be created for a shipping option to provide a suitable alternative.

### 1.2.5 Warehousing and inventory implications

Warehousing and inventory activities are an important element of any business supply chain that can often be difficult to manage. Due to the nature of warehousing and the tendency of warehousing facilities to be relatively inelastic assets with large capital value, changes to the supply chain can result in changing needs for warehousing and significant inefficiencies.

In recent times, shrinking Irish domestic demand has forced importers to implement just-in-time transport processes designed to reduce warehousing costs- therefore, increasing their demand for shorter delivery times. Brexit is likely to impact on the volume of goods being imported and exported; thus it is likely the warehousing market may need to adapt.

### 1.2.6 Customs and freight forwarding procedures

No sectors are immune from the challenges that new tariffs and customs compliance regulations pose to supply chains. Dealing with these issues is complex and requires support and preparation to mitigate potential supply chain delays. According to research undertaken by InterTradelreland

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<sup>17</sup> InterTradelreland: Freight Transport Report for the Island of Ireland

<sup>18</sup> “Ireland and the Impacts of Brexit” Copenhagen Economics, March 2018

<sup>19</sup> Vega; Evers NUI Galway: Implications of the UK HGV road user charge for Irish export freight transport stakeholders





covering SMEs in both the Republic and Northern Ireland,<sup>20</sup> there is limited experience in complying with official requirements relating to the import or export of goods from/to non-EU locations. Respondents in a number of sectors were asked whether they had any experience of dealing with a number of import/export requirements; the percentages in Table 1.1 represent those who responded yes.

**Table 1.1 SME experience in trade compliance measures across 5 sectors (Republic of Ireland and Northern Ireland) (% of all enterprises surveyed)**

	Manufacturing and production	Construction	Professional Services	Leisure, Hotel and Catering	Retail Distribution and other services
Tariffs	26	14	12	2	19
Rules of Origin	23	13	10	1	17
Quantity limits (quotas)	22	13	10	1	15
Licensing	24	19	12	9	17
Use of Freight Forwarding (customs brokers)	24	13	9	2	13
Standards (e.g. labelling, sanitary and phyto-sanitary rules)	23	19	10	4	19
Customs	29	13	13	1	17
Import deposits	21	8	11	1	15

Source: InterTradeIreland

White papers published by the UK Government on Ireland, Customs and Trade<sup>21</sup> detail their proposed thinking on future trading and customs arrangements with Ireland and the EU. The UK hopes to pursue a “rules based trading environment” as it is believed that this will “enable economic and security cooperation, encourage predictable behaviour by states and the peaceful settlement of disputes”. Regulatory alignment between the EU and UK would work if they are part of a customs union while hauliers have also warned that anything less than a full customs union could result in the UK entering a deep recession.<sup>22</sup> A downturn in the UK economy is likely to also impact on the Irish economy, given the strong economic linkages between the two countries.

Dublin Port has begun to make arrangements for a scenario where a full customs union is not achieved, planning for the new infrastructure required to deal with additional customs checks. Due

<sup>20</sup> On a base of 754 companies- 528 in the Republic of Ireland, and 226 in Northern Ireland

<sup>21</sup> Press release: Government sets out vision for post EU trade and customs policy

<sup>22</sup> The Irish Times: Welsh government finds common cause with Irish hauliers



to the lengthy process required to build new infrastructure, the port is unable to wait for political solutions.<sup>23</sup> Port stakeholders have also expressed fears that the additional checks at the Port required in the case of a non-full customs union could lead to nine kilometre tailbacks.

Data indicates that there are some 12,000 businesses in Ireland exporting to the UK, and over 60,000 importers. In addition, an unknown number of businesses regularly move goods in transit across Northern Ireland and across the UK. Most of these businesses are unfamiliar with Customs procedures, because at present customs controls do not apply to such movements.

At present, Ireland is ranked 2nd in the EU for ease of customs procedures. Revenue processes around 1.4 million customs declarations every year. Of these 53% are imports and 47% exports, and around 57,000 transit arrangements.

Exports are generally checked only for safety and security reasons, and in 2016 less than 0.5% of export declarations were checked. Customs checks mainly apply to imports. In 2016, 6% of import declarations were checked and less than 2% were physically checked.<sup>24</sup>

### 1.2.7 Implications associated with Northern Ireland

Northern Ireland accounts for between 10 and 12% of total exports from Ireland to the UK and accounted for 7 to 8% of imports. Given that the population of Northern Ireland makes up less than 3% of the UK total, this shows the closeness of the economic ties between the two jurisdictions. Trade in intermediate products and the large role of two-way traders shows that supply chain links are a major element of cross-border trade. A very significant share of cross-border trade is accounted for by firms that trade simultaneously in both directions. In addition Cross-border traders continuously adjust their products, showing evidence of flexibility and innovation.<sup>25</sup>

A hard border in Northern Ireland would complicate many different supply chains, some of which cross the border multiple times before becoming final products. Approximately 177,000 lorries and 250,000 vans cross the border each month.<sup>26</sup> The Irish food and drink sector would be particularly at risk as Northern Ireland is relied upon as a source of raw material and as a processing location.<sup>27</sup> In addition to being integrated into many Irish supply chains, Northern Ireland is also a popular export destination with over one quarter of Irish export firms relying on Northern Ireland for the majority of their trade.<sup>28</sup>

23 The Irish Times: Dublin Port to build customs checks ahead of expected 'hard Brexit' (Feb 2018)

24 Committee on Finance, Public Expenditure and Reform, and Taoiseach- Opening Statement by Niall CODY, Chairman of Revenue, May 31<sup>st</sup> 2017

25 InterTradeIreland: Cross-Border Trade & Supply Chain Linkages Report (2017)

26 Joint Committee on the Implementation of the Good Friday Agreement- Brexit and the Future of Ireland: Uniting Ireland & Its People in Peace and Prosperity, August 2017

27 Ibec: Brexit: challenges with solutions (September 2017)

28 InterTradeIreland: Cross-Border Trade & Supply Chain Linkages Report (2017)



### 1.2.8 Language and culture

Languages and the ability to adapt practices based upon a customer's or business' cultural background are set to become increasingly desirable business skills as diversification of exports to other markets may be required to combat negative effects from Brexit. All markets with significant exports to the UK will be required to diversify into other non-English speaking countries to maintain their level of performance. To do this, language skills, cultural awareness and international sales and marketing experience will be in high demand, especially in services and high value goods sectors.

### 1.2.9 Financial Implications of Brexit - Hedging and VAT

Financial management is expected to become more complex for internationally trading enterprises in the event of Brexit. If a business generates revenues or cost in different currencies, it is exposed to Foreign Exchange (FX) risk whereby currency movements can affect the margin the business earns. To mitigate this many companies choose to hedge their exposures. Hedging will:

- Protect against adverse movements in FX rates.
- Enable accurate forecasting and budgeting.
- Be the prudent approach where cashflow or margins are tight.

Traditional methods of hedging FX include natural hedging, spot rates, forward contracts, vanilla FX Options and FX market Orders. Many organisations, particularly SMEs, have little knowledge of hedging and are therefore exposed to fluctuations.

In addition, for the acquisition of goods from the EU, VAT registered Irish businesses do not pay VAT in the country of the supplier, if they can provide the supplier with their Irish VAT number and the supplier can obtain relevant evidence that the goods have left their country and been transported to Ireland.

On arrival in Ireland, the goods are not held up at customs while import VAT is paid, but instead acquisition VAT is accounted for on the next VAT return. This acquisition VAT is then recoverable as input VAT based on the business' usual VAT recovery position.

Were the UK to leave the single market, the most likely consequence for these transactions would be that rather than being treated as acquisitions, with the VAT accounted for on the next VAT return, they would instead become imports. This results in a potentially longer lead time for duty to be repaid, affecting cashflow.

## 1.3 International trade

The key internationally trading sectors examined in this study, as identified by the Irish Government's trade strategy Ireland Connected, are discussed in further detail below. These sectors, identified as sectors of 'comparative advantage' for Ireland, include goods and services as well as high and low value products; however, each plays an important role and contributes



significantly to the Irish economy. Changes in the market resulting in a reduction in performance for any of these sectors are likely to be felt at a national level.

### 1.3.1 Agri-food

The UK is Ireland's largest market for food and drink, accounting for 35% of all the food and drink exports in 2017, or over €4.4 billion. Perhaps surprisingly, given currency headwinds, this figure represented an increase in value from 2016, when exports to the UK were €4.1 billion, or 37% of total exports. As with all sectors, current trade between the two countries is undertaken within the EU Single Market.

Ireland also imports a significant amount of its food from the UK and EU. In 2017, Ireland imported over €7 billion of food and live animals, a significant majority of which came from Great Britain (41.8%) or the EU (42.4%).<sup>29</sup> The US accounted for €225 million, or 3% of the rest of the food imports, with a further €868 million of food imports sourced from the rest of the world. There is also a significant amount of agri-food trade over the Irish border, which increases its complexity. Every year 400,000 pigs are exported live to Northern Ireland for processing, and 400,000 lambs imported from Northern Ireland for the same purpose.<sup>30</sup>

The food and beverage sector has almost 80% of its employment based outside of Dublin. This is suggestive of the sector's high importance in regional employment. There is also increased difficulty in recruiting into the sector given that other sectors can pay more, which in turn is placing upward pressure on labour costs.<sup>31</sup>

#### Impact of Brexit

Brexit has been described as the most serious threat to Irish farming and the agri-food sector in the history of the state.<sup>32</sup> Of all Irish food exports, Board Bia state that 35% go through the UK and no other member state and no other sector is as exposed. Brexit is already having a negative impact on Irish agriculture, particularly in terms of currency fluctuations and investment uncertainty. Additionally, new tariff barriers are likely to have a particularly negative impact of the agri-food industry, potentially increasing prices of Irish produce in the UK by up to 60%.<sup>33</sup>

The food and agriculture policy that the UK will adopt outside of the EU will be of huge importance for Irish agri-food exports. If there is a reduction in standards, this will have serious implications for the food and agricultural industry in Ireland.

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29 CSO Trade Statistics Jan-Dec 2017

30 AgendaNi: All-island farming and food

31 Expert Group on Future Skills Needs: Update on Future Skills Needs in the Food and Drink Sector

32 IFA: Brexit: The Imperatives for Irish Farmers & the Agri-Food Sector

33 Ibec: Brexit: a guide for your business (September 2017)



### Implications for skills requirements

Due to the low-margin nature of the agri-food industry, on the job training has been identified as a difficulty by many companies with demand for work-ready employees in terms of experience and qualifications. Foreign languages and international selling skills have also been identified as increasingly important skills as exporters look to diversify their client base.

### 1.3.2 Health Lifesciences

Ireland is a globally recognised centre of excellence in the lifesciences industry. This industry now employs over 50,000 people directly and exports over €45 billion of pharmaceuticals annually making Ireland the largest net exporter of pharmaceuticals in the world. A central feature of the Irish ecosystem is its dynamic, burgeoning and progressive indigenous company base. Irish companies are now competing in international markets throughout the world and are using the many competitive levers of price, cost, quality, speed, flexibility and innovation to secure a continually increasing share of the global market.<sup>34</sup> The pharmaceutical and chemicals sector is by far the largest contributor to corporation tax receipts in the goods sector of the Irish economy.<sup>35</sup> This sector also records the highest level of profit per employee.

#### Impact of Brexit

The two biggest concerns about the impacts of the referendum decision on the pharmaceutical and life sciences industry were described as being in relation to supply chain and the impact on regulation. Ireland is a significant manufacturing hub for the industry. Relationships with suppliers, finishing plants, distribution hubs and third party customers will all need to be examined. Transactions between the UK and Ireland and the EU will need to be considered from both a customs duty and import VAT perspective. Duty could represent a real cost for businesses with import VAT having associated cash flow implications.<sup>36</sup>

Increased uncertainty will also exist for the regulatory side of the industry, which may result in a longer lead time for products to market across the EU. Cross border research funding and collaboration may also be at risk in the medium to long-term, depending on what exit package is negotiated between the UK and the EU. Ireland has always been a powerful magnet for the pharmaceutical industry, attracting a significant level of foreign direct investment (FDI). Post-Brexit, Ireland will continue to be an attractive location for pharmaceutical and life sciences FDI.

At a recent meeting hosted by the Irish Health Products Regulatory Authority (HPRA), representatives from industry, government and the regulator discussed the potential effects of Brexit on the sector. Overall, the general message was one of pragmatism and preparation. HPRA reaffirmed that it is open for business and will assist the industry through their Brexit planning.

<sup>34</sup> Enterprise Ireland: The Irish Life Sciences Directory <https://www.enterprise-ireland.com/en/Source-a-Product-or-Service-from-Ireland/Sector-and-Company-Directories/Life-Sciences-Directory.pdf>

<sup>35</sup> Report on the Accounts of the Public Service 2016, Office of Comptroller and Auditor General

<sup>36</sup> PwC Ireland: Brexit and the Irish Pharmaceutical and Life Science Industry (July 2016) <https://www.pwc.ie/campaigns/brexit/brexit-insights/2016-pwc-ireland-brexit-Brexit-and-irish-pharma-life-science.html>



However, stark warnings were issued to companies to approach them early to discuss their plans, and avoid a backlog of applications on the eve of Brexit, currently set for March 2019.<sup>37</sup>

### **Implications on skills required**

With such a high importance placed on exports in the lifesciences sector, it is the skills such as international selling, cultural awareness, market research and business planning that are valued in the highest regard. Additionally, with China likely to increase its importation of life science products from Ireland, intellectual property specialists have also been identified as a desirable resource for companies. Brexit will not significantly impact the supply of these skills; however, it is likely to increase the level of trade Ireland has with non-English speaking countries and therefore may increase the demand for these skills.

### **1.3.3 Technology**

The technology sector is well established in Ireland and is estimated to have contributed over €30 billion to the Irish economy in 2017.<sup>38</sup> It has a global reputation, access to talent, pro-business environment and common law system. This will mean that Ireland will continue to attract additional inward investment over time as companies focus on their future location, investment and expansion decisions. The sector was estimated to contribute over €57 billion in exports during 2015.<sup>39</sup>

#### **Impact of Brexit**

The technology sector is one area that may benefit from the UK's decision to leave the EU. London may suffer from a reduction in freedom of movement and therefore tech start-ups may choose Ireland over the UK.<sup>40</sup> Much of the impact will depend on what the UK changes with regards to its laws, since the industry is heavily regulated in the EU. Although changes to net neutrality are not expected the uncertainty could be another factor in several tech companies looking to relocate.

The positive environment and infrastructure that has been developed for technology companies over recent decades, and more recently for the newer forms of technology including social media, should result in the attraction of additional incremental investment into Ireland and counterbalance some of the negatives.

### **Implications on skills required**

Highly skilled project managers and marketers will always be in demand to ensure the technology sector in Ireland continues to grow. Brexit may help to increase the number of tech start-ups and resources available to Ireland; however, this may also increase the need for experienced management and marketing professionals. Approximately 3% of workers in the sector identified as being from the UK meaning the risk of losing access to UK talent is relatively low.<sup>41</sup>

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37 Arthur Cox: Group Briefing – Brexit and the Irish Life Sciences Industry (September 2017)  
<http://www.arthurcox.com/wp-content/uploads/2017/09/Brexit-and-the-Irish-Life-Sciences-Industry.pdf>  
38 Brexit and the Irish Technology Sector, Technology Ireland (2017)  
39 Brexit and the Irish Technology Sector, Technology Ireland (2017)  
40 Deloitte: How will Technology, Social Media and Telecoms (TMT) companies in Ireland be affected post Brexit?  
41 Brexit and the Irish Technology Sector, Technology Ireland (2017)



### 1.3.4 Global Business Services

Global Business Services (GBS) groups focus on managing many of the general and administrative tasks that happen on the back end of a transaction, leaving the business units more time to focus on customer- or product-specific activities. Traditional shared-services organisations focus on supporting tasks associated with a single function only. By contrast, GBS groups comprise specialists from multiple functional areas—IT, finance, human resources, supply chain, and the like. They handle a range of end-to-end tasks, such as procurement-to-payment and employee on-boarding. GBS groups’ overarching mandate is to provide the business with a comprehensive set of services at a low cost and at agreed-upon levels of quality.<sup>42</sup>

There are approximately 45,000 people employed in the GBS sector in Ireland.<sup>43</sup> The availability of a highly-skilled workforce, a low-risk, low-tax business environment, a low risk European base and proactive workforce with an innovative mind-set has made the country an attractive location for international companies to centralise the functional support activities. Over the past two decades, companies in various industries have pursued shared-services opportunities by deploying a GBS model.

#### Impact of Brexit

Based on a study conducted by Deloitte, there are five key factors<sup>44</sup> relevant for shared services that might be impacted. The two factors most relevant to Ireland are:

- Regulation: The UK’s departure from the EU could see a divergence of regulations between the two. For example, regulations on Data Protection may evolve in different directions potentially leading to issues in sharing data.
- Tax: Brexit may result in a change to the relatively consistent tax environments between the UK and EU.

#### Implications on skills required

Brexit is unlikely to increase the demand for skills in the GBS sector, but more likely to result in a smaller market available to Ireland for GBS services with British based companies potentially re-locating their general and administrative tasks back to the UK.

42 Digital McKinsey: Does the global business services model still matter? <https://www.mckinsey.com/business-functions/digital-mckinsey/our-insights/does-the-global-business-services-model-still-matter>

43 IDA Ireland: Global Business Services - Vision 2017 & Beyond

44 Other factors include Business Structure, Currency and Migration- Deloitte: The impact of Brexit on Shared Services. <https://www2.deloitte.com/uk/en/pages/global-markets/articles/the-impact-of-brexit-on-shared-services.html>



### 1.3.5 High value manufacturing

Ireland provides a competitive high value manufacturing location for foreign companies enabled by the pragmatic, pro-business approach of the Irish Government, a 12.5% corporate tax rate and a 25% tax credit for research, development and innovation (RD&I). A unique feature of the Irish business environment is the productive collaboration between industry, academia and government agencies. These stakeholders work together as a national team to consolidate Ireland's position as a knowledge-based economy and as a prime location for high value manufacturing.

Ireland offers a highly-skilled workforce, world-class RD&I and advanced manufacturing technologies that deliver continuous innovation and sustainable success in high value manufacturing. Because of this, global companies in the life sciences, ICT and engineering sectors, like Merck, Apple and ABB have been in Ireland for more than 30 years and have expanded their Irish manufacturing operations to span the full range of business functions.

Working with companies of this calibre, Ireland has developed value propositions for four distinct areas of high value manufacturing where it offers an attractive combination of experience, skills and infrastructure (capital and skills intensive operations, high value products, short production/pilot runs and demand fulfilment). Meanwhile, Ireland's universities and institutes of technology provide companies with a pool of highly educated people with the right skills while also playing a vital role in the research landscape.<sup>45</sup>

#### Impact of Brexit

The recent IBM survey Global Locations Trends identified Ireland as the best country in the world for attracting high value foreign direct investment (FDI) for the sixth year in a row.<sup>46</sup> This suggests that Brexit has not yet influenced the confidence in Ireland to continue developing its high-value manufacturing sector. The challenge to the industry will come from maintaining the highly skilled workforce required and dealing with any supply chain implications associated with Brexit.

#### Implications on skills required

Similar to the health lifesciences sector, high value manufacturing will be required to diversify into foreign markets to cope with a likely reduction in exports to the UK after Brexit. This may result in an increased demand for skills required to trade with non-English speaking countries such as foreign languages, cultural awareness and international sales/marketing skills.

### 1.3.6 Construction Products and Services

The construction sector is one of the key sectors in the Irish economy contributing approximately €15 billion to GDP in 2016.<sup>47</sup>

<sup>45</sup> IDA Ireland: A Winning Proposition for High Value Manufacturing

<sup>46</sup> The Irish Times: Ireland names best country for high-value FDI for sixth year in a row (August 2017)

<sup>47</sup> Construction Industry Federation (CIF): Outlook on the Construction Sector (2017)





In Q3 2017 Construction employed 128,300 people, up from a low of 80,400 in 2013 but down from a high of 240,000 in 2007. These significant changes highlight the inherent volatility in the sector.<sup>48</sup>

The Central Bank of Ireland said that the Irish economy expanded in GDP terms by 3.5% in 2017 and predicts 3.2% in 2018. These growth projections pose challenges, as the industry grapples with sourcing adequate levels of trades/professions to fill important vacancies. According to the 2017 SCSi/PwC Construction Survey<sup>49</sup>, 63% of respondents indicated that they expect the number of employees to increase in the next 12 months. However, the number one issue was the lack of skilled trades people, particularly plumbers and wet trades such as plasterers and dry lining specialists.

### Impact of Brexit

The 2017 SCSi/PwC Construction Survey focused on how stakeholders in the construction industry view the impact of Brexit on their industry, with the majority (36%) stating that they are uncertain of the impact of Brexit while 34% said it will have a negative impact on their business activity in 2017. For those respondents who indicated that Brexit would impact negatively on their businesses, 73% thought that if the UK were to exit the European Union it would increase uncertainty generally on investment decisions and 27% said that their revenues from UK projects would be impacted due to the uncertainties. On the positive side, some of the comments provided by respondents indicate that they expect it may increase demand for office space in Dublin and development overall. Others said they would expect more foreign direct investment to come to Ireland, which may potentially result in lower materials costs on goods imported from the UK.

The most obvious impact of currency fluctuations is the competitiveness of Irish companies trading with the UK, where Ireland may now be in a situation that the cost of goods and services might be negatively impacted by the movements in currency. Some Irish companies have already been observed to be looking at reducing their product prices for the UK market in order to allay these concerns. The intangible confidence has been eroded to a degree as a result of the Brexit vote as investment wavers and builders are less certain about raising funds to carry out construction work.

The real impact of Brexit will very much depend on the nature of the ultimate withdrawal agreement. However, as it currently stands, it would appear that Ireland and Dublin in particular may benefit from some additional foreign direct investment which would have normally gone to London- as evidenced by the fast growing property rental figures in Ireland, where the market is heading towards capacity at present in terms of Grade A offices in the central business districts.<sup>50</sup>

### Implications on skills required

The construction sector has already identified the lack of skilled trades' people as a primary concern and barrier to growth in the industry. Additionally, as mentioned above, most construction companies expect to increase their number of employees over the next 12 months. Brexit has been

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48 CSO data

49 SCSi/PwC Construction Survey Report 2017 (May 2017)

50 Grant Thornton: The Construction Sector - Impact of Brexit <https://www.grantthornton.ie/insights/blogs/brexit/the-construction-sector--impact-of-brexit/>



identified as a potential catalyst for an increase in construction activities which is likely to exacerbate the existing shortage of skills.

## 1.4 Conclusion

It is clear from the literature review that Brexit is likely to have a pronounced impact on skills requirements in Ireland, which is exacerbating underlying and in some cases growing skills gaps.

These challenges are likely to impact on trade and the economy both in the short term and long term. Customs procedures, changes to transport routes and markets are likely to create short term challenges while regulatory divergence potentially presents a long-term challenge, even to those sectors more insulated from the impact of Brexit.

Virtually every economic sector is considered to be vulnerable to a varying extent. The majority of sectors are likely to lose jobs, especially low margin sectors such as agri-food, on which areas outside of Dublin are more reliant.

It is therefore clear that interventions are required to assist all sectors- but particularly those in more exposed areas of the economy- in mitigating the adverse impact that Brexit may present.



## Chapter 2. Primary Research: Profiles of International Traders and FTDL sector

To inform this study, primary research was undertaken with a range of key informants and enterprises across a range of internationally trading sectors and Freight Transport, Distribution and Logistics activities. Their responses have been anonymised for this report.

### 2.1 Key Informant Interviews

In order to ensure detailed and wide-ranging responses were elicited from key stakeholders from across the internationally trading and Freight Transport, Distribution and Logistics sub-sectors, 20 face-to-face and telephone interviews were undertaken. These included public sector enterprise and regulatory agencies, industry representative organisations, representatives of various transport modes (air, road, sea) and education and training providers. The impact of Brexit on internationally trading and freight transport, distribution and logistics activities was explored.

These organisations were consulted in January 2018 and their views have been used to inform the study's understanding of the current issues affecting skills and training requirements and trends likely to impact on those requirements.

### 2.2 Telephone Interviews with Enterprises

In addition to key informant interviews, telephone surveys were undertaken with 49 enterprises engaged in international trade, and across the wider Freight Transport, Distribution and Logistics sector.

This research covered areas such as:

- Size of the organisation
- Revenues across key markets
- Customs skills
- How goods are transported
- Impact on business and subsequent changes
- Changes in ability to recruit
- What support and initiatives could be introduced to address associated issues and opportunities.

Feedback from these surveys provided invaluable insight into the readiness of International Traders and FTDL organisations under a Brexit scenario and the extent to which they are exposed to a different trading relationship with the UK.



## 2.3 Workshops

A key element of the primary research task was the facilitation of workshops bringing together organisations representing all aspects of the internationally trading and freight transport, distribution and logistics activities. The aim of the workshops was to initiate discussion and learning through debating the key issues affecting international traders and the FTDL sector.

Two three-hour workshops were held, one in Dublin on Thursday 15th February 2018 and one in Cork on Friday 16th February. Efforts were made to ensure that representatives from all sectors and modes were present to get an accurate understanding of the issues facing the various subsectors.

The workshops covered elements such as current skills requirements (e.g. training, operational knowledge) and future skills needs (perceived challenges and opportunities) and the particular implications of Brexit.

Particular attention was paid to skills which could facilitate the diversification of export destinations for Ireland's trade and those that can prevent or mitigate the impacts of direct and indirect trade barriers in the context of challenges posed by Brexit.

### Profile: International Traders

This section details the findings of the research work focused on the five internationally trading enterprise sectors examined for this study:

- Agri-food
- Health Lifesciences
- Technology
- High Value Manufacturing
- Construction Products and Services

A number of those enterprises surveyed, it should be noted, also meet the definition of 'Global Business Services' within their particular sectors (Finance, HR, IT, Supply Chain/Procurement, Customer Management).

In total, 27 International Traders were consulted with as part of this exercise. A typology of some of the firms engaged as part of this consultation prefaces each of the following sector overviews, together with an overview of existing skills gaps, as well as those anticipated due to Brexit.



## 2.4 Agri-food

Table 2.1 Typology of firms consulted in Agri-food sector

Typology	Firm A	Firm B	Firm C	Firm D
Size	Large	Large	Large	Medium
Product Type	Processed Food	Sandwiches	Varied incl. dairy and animal nutrition	Seafood
UK Market	20-49%	0-19%	20-49%	0-19%
Brexit-related Skills Requirement	✓	✓	✓	✗
Perceived impact of Hard Brexit	Unsure	Focus on domestic market	Supply chain implications	Currency issues/tariffs
Looking to upskill/recruit as a result	✓	✓	✓	✗

### Existing skills gaps were reported in relation to:

Supply chain management  
 Machine engineers/technicians  
 Supply chain auditing  
 Sourcing  
 Technology

### Skills requirements likely to become more pronounced due to Brexit:

Cultural: non-verbal communication and awareness  
 Regulatory Divergence: Tailoring products to reflect specific market regulations.  
 Business development  
 Expert food scientists  
 Customs  
 Trade Financing: Managing VAT  
 Languages: Translation, business, N.A. + Asia: French, Mandarin  
 Food Scientists/Meat technicians (Research and Development)  
 Administration staff

The Agri-Food industry in Ireland encompasses a wide variety of activities from primary activities such as the rearing of animals for meat and dairy, fishing, and the cultivation of crops and forestry, to secondary processes which add value to these raw products (e.g. processed meat).

The industry is a diverse sector consisting of food suppliers, manufacturers, producers, processors and retailers. The sector's main outputs are:

- Dairy



- Meat
- Prepared Consumer Foods
- Beverages
- Other Goods (Seaweed, Aquaculture, Edible Horticulture, Cereals, Forestry and Tillage)

In 2016 the Agri-food industry employed 166,300 people.<sup>51</sup> Agri-food exports in 2016 totalled €12.2 billion<sup>52</sup> or 7.2 million tonnes (€1,681 per tonne). Conversely, there is a significant inflow of goods equating to €10.1 billion or 23.4 million tonnes of goods (€431 per tonne). This high tonnage value of exports in comparison to imports demonstrates the high-value nature of Irish Agri-food products.

Demand for Irish Agri-food products is driven by a rapidly growing global population and changes in consumer preferences due to a burgeoning middle-class in emerging markets. In Ireland (in common with the UK, but less so further afield) the retail of agri-food produce is dominated by a small number of large retailers who possess considerable purchasing power over suppliers. It is therefore necessary for new entrants to scale quickly to populate the shelves of these retailers, although it should be noted that a majority of Irish exporters are ‘business to business’ rather than solely to retail. It is important to note that some suppliers are uniquely exposed to logistics disruption due to the highly-integrated nature of the island’s agri-food industry.

Products may travel between the UK and Ireland two or three times as part of the manufacturing and packaging process. This currently happens seamlessly; however, in a Hard Brexit scenario tariffs and customs procedures could feasibly be applied each time the products cross borders. Time delays associated with customs could be as detrimental as tariffs, particularly when dealing with perishable goods such as milk. Hundreds of millions of litres of milk are transported from Northern Ireland to Ireland every year where it is processed into finished goods for export.

Under World Trade Organisation (WTO) rules the tariffs imposed on the food and drink sector can be amongst the most punitive, making exporting to the UK less viable. In this scenario, in order to avoid a decline in the sector, alternative markets may need to be explored. This is not straightforward as alternative markets often represent very different cultures and tastes, are geographically distant and may have 3rd country status, meaning it is likely that the UK will remain a key market for many international traders.

Any increased focus on trading with the EU can be facilitated by the single market and, to some extent, proximity; however, language and cultural barriers remain. This has implications for skills requirements in the sector. Feedback suggested that some respondents were seeing Brexit as an opportunity to diversify their customer base and explore new markets.

Consultation with organisations in the sector and those who represent them support the view that the Agri-food sector is significantly exposed to the UK as a key market. This is due to similar

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51 CSO Labour force Survey, 2017 - Quarter 4

52 CSO Exports and Imports 2016



cultural tastes in food and drink as well as the integrated supply chain described above. For example, Ireland produces a significant amount of cheddar cheese for the UK market, which is not in demand in large quantities on the continent or in rapidly growing non-EU markets. Therefore, for those producers a technical piece may be required to either change the product offer or market cheddar as a commodity.

While the final destination of goods is known from export data, intermediate stops are not recorded in current metrics. It is therefore assumed that the majority of Agri-food products are moved via haulage across the UK landbridge<sup>53</sup> in order to reach other EU markets, or major international ports. As a significant portion of Agri-food products are perishable, time to market is a critical factor and places limitations on the geographical reach of certain products such as fresh produce e.g. mushrooms. The mushroom sub-sector could be described as one of the first casualties of Brexit, being significantly exposed to the UK and with low margins. The significant drop in the value of the pound immediately after Brexit led to some mushroom farmers going out of business.

However, recent developments in GPS and other technologies have enabled exporters/importers to monitor cargo in real time and to adjust the climate within the container so as to maintain the product in good condition for a longer time than would previously have been the case. Technological advances could therefore alleviate dependency on the landbridge for the sector to some extent, with many key exporters in the sector utilising Lo-Lo movements direct to the continent.

It was also felt that there are not enough resources to issue health and veterinary certificates and associated permits. Once the UK leaves and becomes a 3rd country they may need to deal even more with different regulatory requirements. Even without this change the system struggles to maintain current volumes.

Encouragingly, the Agri-food sector has become adept at exploring new markets in recent years, with much of the growth occurring in new markets, rather than the UK. This has required a change in emphasis of product type. Ambient products, which are less challenging to transport over long distances are seen as a growth area. Of particular note is the increase in infant pharma products (e.g. baby milk powder) to China. There are many large multinational producers in the agri-food sector, which have the scale, skills and the vision to do this. Respondents who had existing relationships on the continent and Asia felt there were fewer barriers to growing business elsewhere.

The sector will need to be supported to encourage growth in new markets and offset the impact of a more difficult trading relationship with the UK. It is essential that any products can carry the cost of being transferred over longer distances. It was reported that there may need to be more administrative staff since if the UK market is lost then it is likely that smaller contracts will be needed to make up shortfall, which require resources to administer.

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<sup>53</sup> In some case high-value perishable products may be exported via air freight i.e. fresh seafood.



This will require investment in exploring new markets, upskilling the existing workforce and recruiting skills from elsewhere. Language skills will be central to this but only in conjunction with other attributes such as cultural awareness.





## 2.5 Health Lifesciences

Table 2.2 Typology of firms consulted in Health Lifesciences sector

Typology	Firm A	Firm B	Firm C	Firm D
Size	Large	Large	Large	Small
Product Type	Design, manufacture and sell medical devices	Drug manufacturer	Pharmaceuticals, health care products	Medical products/health lifestyle
UK Market	0-19%	0-19%	Not provided	20-49%,
Brexit-related Skills Requirement	✗	✗	✗	✓
Perceived impact of Hard Brexit	Minimal	Supply chain issues	Unsure	Challenges derive from customs and duties.
Looking to upskill/recruit as a result	✗	✗	✗	✓

Existing skills gaps were reported in relation to:

Science and technology

I.T

Engineering

Languages skills

Data analysts with supply chain expertise

Skills requirements likely to become more pronounced due to Brexit:

Customs clearance

Regulatory requirements

Languages (Germany was described as a preferred “entry point” but language barriers may prove a stumbling block i.e. translations of Specific products and services)

Health Lifesciences can be considered to encompass two industries in Ireland, ‘Medical Technology’ and ‘Bio-Pharma-Chem’. The distinction between these two industries demonstrates the growing complexity of healthcare in the 21st Century, the blurring of industries and the growing need for a more specialised workforce.

Bio-Pharma-Chem companies are engaged in what are traditionally seen as activities of large healthcare companies. These businesses manufacture both biological and chemical products to treat illness. Bio-Pharma-Chem is a highly regulated industry with strict compliance with legislation and regulation relating to patenting, testing, production, marketing and sale of end products.



Demand for Bio-Pharma-Chem is driven by ageing and longer living populations, increased health insurance coverage, changing lifestyles and technological development. The industry is composed of a mixture of very large multi-national corporations and small biological or generic manufacturers. It is important that the storage of product is subject to heavy regulation and certain products may require specialist cold-chain distribution.

In total the Bio-Pharma-Chem industry employs 41,300 in Ireland<sup>54</sup> and was responsible for exporting €30.4bn or 183,514 tonnes (€165,000 per tonne) in 2016. Conversely, there was a significant inflow Bio-Pharma-Chem imports of €4.9 billion or 73,300 tonnes of goods (€67,407 per tonne). On a net basis Ireland is a significant net contributor €25.4 billion or 6.2 times total imports of Bio-Pharma-Chem Goods on a value basis.

The Medical Technology sector,<sup>55</sup> in contrast to the Bio-Pharma-Chem industry, focuses on the development of engineering or IT based health solutions. Product segments include, but are not limited to the development and production of:

- Cardiovascular products;
- Diagnostic products;
- Health Software; and
- Orthopaedic products

The Medical Technology sector exported €11.4 billion worth of goods or 61,961 tonnes in 2016 (€183,332 per tonne). As is the case with Bio-Pharma-Chem, Medical Technology companies are highly export orientated. Conversely, €2 billion worth or 23,102 tonnes of Medical Technology Goods were imported from other countries (€88,767 per tonne) on a net basis.

As major exporters and with fewer cultural barriers in relation to exploring new markets, Ireland can be described as a global centre of excellence in Health Lifesciences. Organisations typically employ tens of thousands of people across the world and trade with large numbers of countries. The skills and resources to deal with challenging trading partners and territories is an integral part of many businesses in the sector and the highly competitive nature of the sector means there is a natural upskilling related to striving to be ‘best in class’.

However, the consultation exercise suggested that there is a dearth of experienced professionals in the sector, particularly those with over five years’ experience.

Products are often airfreighted due to their high value and time-sensitive nature, although a number of respondents stated that they currently use the landbridge as it is quicker than direct sailing to the continent. It is common for products to be temperature controlled during transit,

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54 CSO Labour force Survey, 2017 - Quarter 4

55 Composed Medical of NACE codes: Dental Instruments (32.5) and Irradiation, Electromedical and Electrotherapeutic Activities (26.6)

Employment in Medical technology cannot be determined from the Labour Force Survey as Medical Technology employees are aggregated with other manufacturing employees.



which necessitates its own skills requirements. Air freight costs significantly more than the road transport equivalent and therefore could add to costs if the landbridge is significantly affected.

While many pharmaceutical products are tariff free, component parts (e.g. plastics) are not, so there may be increased costs associated with goods sourced from the UK.

However, a key challenge in this sector is the issue of regulatory alignment. Currently the UK is part of the same regulatory body as the EU. Medical devices need to satisfy strict standards which guarantee the products meet the required quality. If the UK leaves then there is a concern that over time the difference between EU standards and UK standards will grow which will cause a range of issues, such as increased costs.

The standards that products have to meet are complex and if there is a divergence then this will result in a requirement for ensuring that products meet the new UK requirements as well as those of the EU. This will require a particular skillset.

Medicines are also an area where regulatory divergence may have a particularly pronounced impact. A significant proportion of medicines have UK-based authorisation holders, for both human and veterinary uses. The European Medicines Agency is relocating from London to Amsterdam and it is unclear what implications this will have for regulations and standards.



## 2.6 Technology

Table 2.3 Typology of firms consulted in the Technology Sector

Typology	Firm A	Firm B	Firm C	Firm D
Size	Large	Small	Micro	Large
Product Type	Tech support / commercial services / finance	Software	Software and hardware	High-performance analogue and mixed-signal products
UK Market	20-49%,	50-79%,	20-49%,	0-19%
Brexit-related Skills Requirement	x	x	x	x
Perceived impact of Hard Brexit	Slight negative impact	Very negative - currency issues	Limited impact	Inconvenient but not a huge issue
Looking to upskill/recruit as a result	✓	3rd party support to explore markets	x	✓

### Existing skills gaps were reported in relation to:

Supply chain orchestration dealing with imports and exports

Digitisation of processes and gaining insights from data

Software developers

Hardware developers

Pure IT specialists

Accounts, customer service specialists

### Skills requirements likely to become more pronounced due to Brexit:

Customs clearance

The Technology sector can be subdivided into three sub-sectors:

- Software Products and Services;
- Electronics, Hardware and Firmware; and,
- IT-Related Services.

Software, Products and Services<sup>56</sup> includes on-premises and internet/cloud based software solutions, mobile applications, and development and analytical tools. The provision of software services through the cloud as a Software as a Service (SaaS) and Platform as a Service (PaaS) are becoming increasingly common.

<sup>56</sup> Defined using NACE as Computer Programming (62) and Consulting and related activities (63)



IT-Related Services<sup>57</sup> includes IT related installation, integration, testing, monitoring, consulting, design and processing services. The pervasive nature of IT means that computers impact upon all businesses and sectors. As IT becomes more integrated with other products and services, demand for IT-Related Services will increase.

In total the Software, Products and Services industry and IT related Services employed 100,400<sup>58</sup> in Ireland during 2017. In addition, the computer services were responsible for €64.6 billion of services exports in 2016. The industry is intensely export focused. Inflows of Software products and services totalled €1.2bn in 2016. Therefore, exports were 54 times imports.

Electronics, Hardware and Firmware includes the manufacture of semi-conductors, integrated circuits, networking, computing storage devices and appliances. The Internet of Things is regarded as the next form of digital revolution. It is expected that the Internet of Things will lead to the production of increasingly more complex products which can be controlled wirelessly by other devices such as phones.

In total the Electronics, Hardware and Firmware industry employed 19,500 in Ireland in 2017.<sup>59</sup> During 2016, €8.7 billion<sup>60</sup> or 25,089 tonnes of goods (€347,719 per tonne) were exported, making it by far the most valuable exported good on a per tonne basis.

Conversely, the inward flow of Electronics, Hardware and Firmware totalled €6.2 billion, despite only weighting 48,378 tonnes, rendering it the most expensive imported good on a per tonne basis.

In total, the IT sector employed 119,900 people in 2017. The sector was responsible for €73.3 Billion exports in 2016 through a mixture of physical goods and services. The total inflows of goods by comparison totalled €7.3 billion.

Ireland has a long history in the Technology sector, having previously been a centre of manufacturing and key exporter of physical products such as PCs. However, production of hardware has largely shifted elsewhere (primarily Asia) and as such the focus of activity has been on software and services.

In this, Ireland has excelled and attracted by a skilled workforce, open economy, low corporation tax and English speaking population has established itself as a major centre for MNCs in the sector. Certain functions such as Supply Chain Management are often based in Ireland, even if the production and transportation of goods occurs elsewhere. A particular challenge of managing the supply chain in this sector is the need to consider the movement of dangerous goods (e.g. lithium batteries).

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57 Defined using NACE as Telecommunications (61)

58 CSO Labour force Survey, 2017 - Quarter 4

59 CSO Labour force Survey, 2017 - Quarter 4

60 Excluding the manufacture of Irradiation, Electromedical and Electrotherapeutic equipment



This has led to a growth in demand for highly skilled individuals who are able to manage complex global supply chains. The growth in the importance of Big Data to identify the potential for efficiencies has led to an increase in the demand for data analysts while the increasing technological requirements of moving goods has led to increased requirement for IT specialists in the field. A smaller software developer described how it was difficult to compete with larger organisations with global profiles, while another stated that it would look to procure third party support for marketing to new countries.

Those who work in Supply Chain Management no longer necessarily have a background in logistics (e.g having worked their way up from the warehouse or transport operation as was traditional). As software and services are now generally being delivered by a cloud or remotely, there is much less emphasis and reliance on the FTDL sector to move associated products.

The sector pays well and is able to attract highly skilled individuals from across the world. It is generally less reliant on the UK as a key market and less still as a landbridge function. Regulatory requirements are less burdensome. As a result the sector could be described as less exposed to Brexit than others.



## 2.7 High Value Manufacturing

Table 2.4 Typology of firms consulted in the High Value Manufacturing sector

Typology	Firm A	Firm B	Firm C	Firm D
Size	Small	Large	Large	
Product Type	Electronics	Diversified industrial manufacturing	High value manufacturing	High value manufacturing
UK Market	0-19%	Significant market	50-79%	20-49%
Brexit-related Skills Requirement	x	x	✓	✓
Perceived impact of Hard Brexit	Minor	Minor - have global trading team	Cost of trading and materials would increase	Fairly significant
Looking to upskill/recruit as a result	✓	x	x	✓

### Existing skills gaps were reported in relation to:

Electronic hardware designers  
 Global Procurement managers (which can deliver solutions and drive productivity)  
 Mechanical engineers  
 Global and international management skills  
 International sales skills  
 International marketing skills  
 Customer service/support skills  
 Design and development skills  
 Logistical and Distribution skills  
 Engineers

### Skills requirements likely to become more pronounced due to Brexit:

Foreign languages and cultural awareness  
 Customs clearance

In this section, High Value Manufacturing i.e. the manufacturing of engineered products, excludes the manufacture of Bio-Pharma-Chem, Medical Devices, Food, and IT Software Systems and Services, which are all accounted for in other sectors. Engineering is crucial to all manufacturing sectors and produces a vast array of products.

High Value Manufacturing is likely to undergo significant disruption over the next number of years due to the development of new technologies. Increased automation of manufacturing processes has



been a feature of manufacturing for a number of years, but developments in 3D printing and the Internet of things are likely to have a disruptive impact on the industry and increase the demand for highly skilled workers.

In total, the High Value Manufacturing<sup>61</sup> industry employs 68,400 people in Ireland as of 2017,<sup>62</sup> and was responsible for exports of €34.7 billion or 1.25 million tonnes (€27,725 per tonne) of goods exports in 2016.

Low-value manufacturing<sup>63</sup>, traditionally undertaken in Ireland, has largely shifted to Asia, due in part to the low cost of labour. However, Ireland is the site of much high value manufacturing activity, supporting key sectors both here and abroad. As with the technology sector, Ireland has been successful in attracting MNCs in this sector, which in some instances have chosen to relocate their headquarters to the country.

MNCs were more likely to have reported a proactive response to Brexit, such as individuals tasked with looking at the impact, dialogue with Third Party Logistics providers and economic appraisals of the impacts of Brexit commissioned- despite the fact that they are generally less exposed than SMEs.

Exposure to the UK varied depending on the organisation; however, companies in this sector tend to have a diversified market across many geographies. One respondent stated that the UK was decreasing in importance as a business-to-business marketplace due to product design and engineering increasingly being undertaken in Asia. Dedicated global trading teams and experience of dealing with challenging and changing markets are common in MNCs and they are therefore well equipped to cope with the challenges of Brexit.

A further respondent in this sector stated they were currently concentrating on alternative markets (such as the US and Nordic countries) to make up for a shortfall in the UK. They stated that they were actively looking for new business, either by visiting the country or cold calling.

As with other sectors, respondents noted it had become more difficult to recruit in recent years, with global and international management skills, international sales skills, international marketing skills, customer service/support skills, design and development skills and logistical and distribution skills all described as being difficult to find. Respondents described this sector as having a high number of vacancies, with issues relating to the quality and quantity of graduates entering the workforce.

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61 Defined as containing NACE codes: Manufacture of Textiles (13), Wearing Apparel (14), Leather and Related Goods (15), Chemicals and Chemical Products (20), Fabricated Metal Products, Except Machinery and Equipment (25), Electrical Equipment (27), Machinery and Equipment n.e.c (28), Manufacture of Motor Vehicles, Trailers and Semi-Trailers (29), Other Transport Equipment (30) and Other Manufacturing (32, excluding 32.5 which has been attributed to Medical Technology). Identification of value is based on Value/Tonnage.

62 CSO Labour force Survey, 2017 - Quarter 4

63 Defined as NACE codes: Manufacture of Wood and of Products of Wood and Cork, except Furniture (16), Paper and Paper Products (17), Coke and Refined Petroleum Products (19), Rubber and Plastic Products (22), Other Non-Metallic Mineral Products (23), Manufacture of Basic Metals (24) and Furniture (31).





## 2.8 Construction Products and Services

Table 2.5 Typology of firms consulted in the Construction Products and Services sector

Typology	Firm A	Firm B	Firm C	Firm D
Size	Medium	Medium	Small	Large
Product Type	Pre-cast concrete solutions	Construction services	Natural stone products	Pre-cast concrete solutions
UK Market	80-100%	0%	0-19%	80-100%
Brexit-related Skills Requirement	✓	✗	✗	✓
Perceived impact of Hard Brexit	Significant, potentially catastrophic	Negligible	Little impact	Tariffs and customs could be problematic
Looking to upskill/recruit as a result	✓	✗	✗	✓

### Existing skills gaps were reported in relation to:

Engineers  
 Site managers  
 Quantity surveyors  
 Huge challenge to get apprentices  
 Project managers  
 Sales and Technology

### Skills requirements likely to become more pronounced due to Brexit:

Languages  
 Customs  
 Procurement  
 Logistics

The Construction Products and Services sector is composed of companies producing physical goods, and support services. Examples of construction products include timber products, building systems, insulation products and fittings, while construction services can include structural engineering services, quantity surveying, mechanical and electrical contracting and other maintenance services.

Demand for construction products and services is anticipated to shift toward South-East Asia and other developing markets due to changes in population growth, economic development and a trend of urbanisation. Innovation in the industry is expected to centre around sustainability and the development of smart buildings.



In total the Construction industry (the services component)<sup>64</sup> employs 173,800<sup>65</sup> as of 2017. Although, primarily a domestic industry in Ireland, it was responsible for €43m (€9,757 per tonne) worth of goods and €182m worth of services exports in 2016. In total, Exports were estimated in 2016 at €225m<sup>66</sup>.

Conversely, €118m worth of goods were imported (€32,805 per tonne) and €128m worth of services were imported into Ireland during 2016. In total, imports totalled €246m in 2016, primarily consisting of the import of services relating to Architectural and Engineering activities, technical testing and analysis.

The health of the construction sector is strongly tied to that of the overall economy. As discussed in the literature review, during the economic downturn, the sector shed a significant proportion of its employees from its peak, many of which left the country, explored careers in other sectors or became unemployed. Skills have therefore been lost, and as a result the perception of the sector as a long-term career was negatively affected and it has struggled to attract people into certain trades. The uptake of apprenticeships is low compared to the 2000s and skills gaps have appeared in a number of areas such as ‘wet trades’, curtain walling and installation skills.

The Construction Industry Federation report Demand for Skills in Construction to 2020 projects that 220,000 people will be needed in the sector representing an increase of 100,000 on 2016 levels. The projected growth in the sector is likely to need new entrants to the sectors workforce across a wide number of trades and roles. A number of respondents reported dissatisfaction with the quality of entrants to the sector, particularly in lower skilled roles. There are a number of initiatives in place to address this, including a campaign led by the sector to attract the Irish diaspora to return home to work in the sector.

Those involved in the construction trade who are focused on developments in Ireland are less exposed to Brexit than those who manufacture products for the sector. Indeed, an increase in construction activity in the Dublin commercial sector can be partly attributed to a relocation of organisations from the UK to Ireland which has boosted construction activity. However, respondents to the consultation were keen to note that if the wider Irish economy is adversely affected by Brexit, so too is the construction sector.

Construction companies are generally not reliant on British workers, with those from Eastern Europe generally filling vacancies in the sector in recent times. However, feedback from the consultation suggested that this has become more difficult to acquire, due in part to the growing economies and greater opportunities afforded in Eastern European countries. This is particularly pronounced outside Dublin, which lacks the infrastructure (e.g. housing) to attract talent to the same extent.

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64 Defined as NACE activities relating to Construction of Buildings, Civil Engineering and Specialised Construction Activities.

65 CSO Labour force Survey, 2017 - Quarter 4

66 This does not include the production of building materials which are split across a variety of statistical sectors.



The UK market has acted as a 'safe haven' when the construction sector in Ireland has experienced a downturn and that may be less of an option post-Brexit.

For those who manufacture goods in the sector, particularly those which serve the construction sector in the UK, the outlook is not as positive. Increasingly, elements of construction are undertaken off-site (e.g. pre-cast concrete) and sold abroad. A number of these companies use the UK as a landbridge and with the UK being the location of many large scale construction projects, Brexit is seen as having a potentially negative (or in some cases fundamental) impact. A number of respondents stated they were exploring new markets as a result, particularly in the EU, which may require language twinned with marketing and selling skills. One respondent stated that 'Germany is biggest challenge at the moment as it's difficult to liaise with local suppliers'.



## 2.9 Overarching findings and conclusions

The exposure to Brexit and the potential impact of the UK leaving the European Union varies both across and within particular sectors. Certain sectors such as agri-food will require a fundamental change in the markets they serve and the way in which goods are transported to key markets. This has direct implications on the skills requirements of those who work directly in or facilitate movement of goods in the sector.

Other sectors, such as construction, have underlying issues affecting their ability to attract talent, which are separate and predate the particular challenges that Brexit may pose. Respondents in all sectors reported difficulties recruiting to some extent, driven in part by an increasingly competitive labour market as Ireland's economy recovers. Respondents based or operating in Dublin were more likely to have reported difficulties recruiting, but also more likely to have access to soft skills such as proficiency in a particular language.

Other sectors could be described as buoyant, with the UK of minor and/or diminishing importance. However, even companies in these sectors reported potential issues with utilising the landbridge and in particular regulatory divergence and financial considerations.

Skills gaps were reported at all levels, with technological advances necessitating IT and data analytics skills and the requirement to explore new markets, or increased trade in established ones, also seeing an increase in demand for 'soft skills' such as languages and sales and marketing. The housing shortage was considered as having a direct impact on the ability of Ireland to attract highly skilled individuals. In addition to this, childcare was identified as of key importance, addressed to some extent by the Single Affordable Childcare Scheme, which will streamline the existing targeted schemes to make them more accessible for both parents and providers.

As with the FTDL sector to be profiled below, many respondents were aware and concerned about the likely need for customs clearance skills. Smaller organisations were less likely to have the skills in-house, but conversely were less likely to have a defined plan in place with the approach amongst many respondents being to review the situation before investing in new staff or upskilling. Similarly, the aforementioned regulatory divergence was less likely to be raised as an issue compared to larger organisations, suggesting that planning for this challenge was not currently considered a priority.

It is important to note that this split between the readiness of larger and smaller organisations may have more pronounced implications with imports. The CSO's Trade by Enterprise Characteristics publication states that the five largest exporters accounted for over €36 billion of goods exports in 2016, equating to 31% of all exports. Almost 75% of total goods are exported by the top 50 exporting enterprises. In contrast, the top five importers accounted for only 12% of all goods imported in 2016 while the top 50 importers were responsible for over 40% of all imports. Over 60% of goods imports were brought in by SMEs (up to 249 employees).



## Profile: Freight, Distribution, Logistics and Transport Sector

This section profiles the freight, logistics and distribution subsector in Ireland. As with the international traders consultation it has been developed from feedback received from the key informant interviews, surveys and workshops and corroborated by additional research where required.

As part of this consultation 22 FDTL sector firms were interviewed. They included hauliers (large and small), own account operators, air freight operators and freight forwarders. In addition, a number of key informants representing the sector were interviewed in depth, including education providers, associations, institutions and those who recruit for the sector.

It covers typical roles in the subsector, various freight modes (of particular importance in Ireland), the skills requirements for entry into the industry, associated issues and opportunities and the potential impact of Brexit.

### 2.10 Roles in the subsector

The freight, distribution and logistics subsector employs many people in Ireland, with a significant variation in the roles performed and skills levels required in different areas of employment. For a breakdown of employment in the sector, see the detailed information provided in chapter 3. This section presents a brief description of the various areas of activity and associated roles.

It should be noted that many of these roles are cross-sectoral, not just restricted to FDTL enterprises. For example, manufacturers of physical products will have ancillary warehouse functions to store goods before and during transit, support services are an essential component of all sectors and supply chain management encompasses the whole production cycle of a finished product from supplier, to producer to customer. Companies in Healthcare, Technology, Agri-food, High Value Manufacturing and construction sectors will have significant numbers of employees in supply chain management and logistics roles that are embedded within their respective sector economic contributions, managing supply chain activity to and from Ireland, regionally and globally.

Figures for this supply chain activity cross sector are not readily available but existing skills shortages in the broader supply chain area in both the traded and the FDTL sectors were reported by respondents.

#### 2.10.1 Transport

Transporting goods is the primary activity of the supply chain and lorry and van drivers perform perhaps the most familiar role in the whole sub-sector. They are directed by Transport Planners, who schedule deliveries and Transport Managers who oversee the management of road freight operations. Mechanics are also vital in ensuring that vehicles are serviced and repaired.

This area also encompasses the multi-modal aspect of freight, including train drivers, pilots, ships officers and captains.



### 2.10.2 Warehouse

The supply chain often requires the storage of goods and materials where they cannot be transported in a single trip from factory to customer. Warehouses perform that role and are significant employers of those in the subsector. Roles include fork lift operators, order pickers, warehouse operatives and managers. Increasingly 'added value' operations take place in warehouses, such as branding, pricing and merchandising of stock in readiness for final delivery to a shop or customer.

The entry requirements to working in a warehouse are often limited to lower skilled positions and as such jobs in this area are often seen as undesirable with little opportunity for progression. However, the increasing use of sophisticated warehouse management systems and stock control means there is a need for skilled staff.

### 2.10.3 Freight Forwarders

A freight forwarder or forwarding agent is a person or company that organizes shipments for individuals or corporations to get goods from the manufacturer or producer to a market, customer or final point of distribution. A forwarder does not move the goods but acts as an expert in supply chain management.

A forwarder contracts with carriers to move cargo ranging from raw agricultural products to manufactured goods. Freight can be booked on a variety of shipping providers, including ships, aeroplanes, trucks, and railways. It is not unusual for a single shipment to move on multiple carrier types. International freight forwarders typically handle international shipments. International freight forwarders have additional expertise in preparing and processing customs and other documentation and performing activities pertaining to international shipments.

### 2.10.4 Supply Chain Management

The purpose of supply chain management is to improve trust and collaboration among supply chain partners, thus improving inventory visibility and the velocity of inventory movement.

Supply chain functions extend from product design, through sourcing, planning, manufacturing, distribution and returns activities. Each of these supply chain functions present career growth opportunities from analyst to manager, director, regional and global leadership roles.

With the advent of technology, these roles have become mobile and the IDA has been successful in attracting a number of MNC companies to locate regional and global supply chain hubs in Ireland.



### 2.10.5 Purchasing

A Purchasing Manager is an employee within a company, business or other organization who is responsible at some level for buying or approving the acquisition of goods and services needed by a company. Within the subsector this can include vehicles, handling equipment, machines, plants, cranes and anything that could be described as facilitating the supply chain.

### 2.10.6 Support Services

There are many roles that are vital to the subsector that aren't generally considered as traditional subsector roles. These include IT specialists, software developers, process engineers, sales and Human Resources personnel.

This includes sales and marketing professionals whose role is to grow the business. When there is an aspiration to grow internationally, this often necessitates a requirement for language skills and cultural awareness.

## 2.11 Features of the FTDL sector

Given that Ireland is an island and net exporter, it is required to have expertise in facilitating a multi-modal supply chain incorporating sea, road, rail and air freight.

As such there is expertise in the workforce of all modes of freight transport.

### 2.11.1 Road Freight

Road Freight is the most common means of transporting goods in Ireland and as such is the largest employer and vital aspect of the supply chain. Road freight in virtually all instances performs some role in the supply chain, even if it is simply to transport goods the 'last mile' from a port or airport to the customer.

The road freight sector is served by a combination of well-known MNCs, large domestic providers that also operate internationally and many smaller operators, some of which are focused on transporting for certain sectors. As discussed, organisations that may be primarily focused on other areas may have their own in-house road freight operation. As a result lorry drivers are the most common role observed in the subsector. This is unlikely to change, unless a dramatic shift in the subsector occurs.

The peripheral location of Ireland means it is less subject to competition from cheaper Eastern European hauliers than countries such as Germany and the Netherlands. This is theoretically limited within Ireland by EU cabotage rules, which restricts foreign hauliers to three cabotage operations within a seven day period starting the day after unloading of international transport. EU legislation has a significant impact on the road freight sector, affecting areas such as the length of time a driver can operate a vehicle for, the professionalism of the industry via the requirement for an operating licence and the types of vehicle coming into the industry.



Irish hauliers currently operate throughout Europe, most often using the UK as a landbridge. There are few barriers to this currently, although as discussed the introduction of customs checks could significantly affect the ability of hauliers to use the landbridge to transport goods to and from the continent.

Unlike other sectors, the road freight sector, although consolidating to some extent, is dominated by SMEs, many with a small number of HGVs (the average fleet size is 4.5 trucks). The all-island economy, strong cultural links and shared language mean that many operate with the UK acting as their sole international territory. This leaves many heavily exposed to Brexit without the in-house skills to cope with the change and/or explore new markets.

### 2.11.2 Air Freight

As discussed, air freight is a particularly important means of exporting goods in Ireland, due to a combination of its island location and the types of goods it exports.

Given the potential risks associated with transporting goods via air freight, knowledge of security and the aviation environment is a key skills requirement for those working in locations such as aviation warehouses. Pay in the airfreight sector is higher than other areas of the subsector and barriers to entry are high, with experience in the sector much sought after. Those in roles related to air traffic control, pilots and load planners routinely earn over €50,000 per annum.

The air freight industry is prone to shocks (e.g. terrorism) and as such staff are required to be flexible and agile in response to external events.

Inexperienced graduates are not commonly recruited into the air freight industry and those in management positions have often progressed from entry level positions. It was felt that structured apprenticeships were missing at entry level, with countries such as Denmark providing freight forwarding apprenticeships.

Training in the sector is often provided in house, although courses are provided by the IATA and IIFA- but organisations' awareness of this offer is not widespread. Refresher in-house training is often based online, which is cheaper than face-to-face training. Training is often specific to the equipment that is being used in lower skilled positions.

However, limitations on the number of destinations that can be reached from Ireland by air has a negative effect on the amount of airfreight being flown directly to and from the country. There has been a loss of potential air freight business to the UK, and in particular Heathrow, with consignments often being transported by HGV to airports in the UK for onward movement. This is facilitated by the number and frequency of ferry crossings linking Britain and Ireland.





A recent study by InterTradelreland established that 26% of all air-freighted goods were actually moved by 'air-truck'.

There is widespread concern amongst Ireland's exporters that this critical 'air truck' transit arrangement, using the UK as a landbridge to reach international airports with large freight hubs - will be jeopardised when Brexit fully kicks in, as the current system is facilitated by the Common European Aviation Area and European Free Trade area.<sup>67</sup> This may result in a requirement for an Irish air freight hub.

### 2.11.3 Sea Freight

As discussed, sea freight is the primary means of exporting and importing goods from Ireland and as such is vital to the supply chain and the wider economy. Shipping by its very nature is international and therefore those forming part of the international supply chain to and from Ireland are drawn from across the world.

As an island nation, Ireland is heavily dependent on ports for trade. While trade of non-transportable services has grown, most of Ireland's merchandise imports and exports of goods are still transported by sea.

There are various roles associated with port operations to ensure that goods are safely and efficiently loaded and unloaded onto ships and stored while awaiting onward transportation. The types of goods a port handles reflect the skills requirements of the associated employees, for example ports that handle containers or bulk goods. These include:

- Stevedores
- Engineers
- Crane operatives
- Plant operatives
- Port operations managers and administration
- Warehouse operatives
- Technical support and maintenance
- Lock operations

Discussions with managers at port operators suggested that, while it was not difficult to find individuals who were willing to work at a port, finding competent people was. Many entry level staff are therefore recruited through referrals via existing employees. Recruiters could be confident that new staff had the requisite basic skills to work at a port. New staff are then often taken on through an apprenticeship programme, which does not have an upper age restriction.

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<sup>67</sup> Irish Examiner Website <https://www.irishexaminer.com/business/air-freight-deals-up-in-the-air-over-brexit-worries-420510.html>, Accessed 9<sup>th</sup> February 2018



Health and Safety training is vital for those working in a port given the hazardous nature of the environment. Larger port operators (e.g. Peel Ports in Liverpool) often have their own training centre, with trainers visiting Irish ports to deliver courses.

There are moves to encourage greater flexibility amongst port employees and as such ports are training staff to be able to work across a number of roles.

Sea freight is key to facilitating trade between the UK and Ireland with a number of regular crossings. Over 80% of Irish Ro-Ro (Roll-on, roll off) traffic moves between the United Kingdom and Ireland.<sup>68</sup> Table 2.6 shows these Sailings. It should be noted that the number of sailings to the UK is significantly higher, occurring several times a day as opposed to several times a week to France and throughout the year (some French routes are seasonal).

**Table 2.6 UK-Ireland and Non-UK-Ireland regular sailings**

Port*	UK Port Regular Sailings	Non-UK Port Regular Sailings*
Dublin	Holyhead Liverpool	Cherbourg
Cork	-	Roscoff
Rosslare	Pembroke Fishguard	Cherbourg Roscoff

\* Belfast/Larne is also regularly used by Irish hauliers, particularly when transporting goods to and from Scotland.

\*\*Cobelfret offer Ro/Ro, Lo/Lo and unitized freight services from Dublin to Belgium, Denmark, the Netherlands and Sweden. Regular weekly direct sailings link Dublin Port to the continental ports of Rotterdam and Zeebrugge.

Feedback from the consultation exercise supports the assessment that landbridge is key for Irish FTDL firms and that the regular ferry crossings between Ireland and Britain are key to this.

While Table 2.6 shows those Ro-Ro services on which 50% or more of the trailers on board are accompanied by tractor unit and driver there is also a significant number of Ro-Ro services on which the majority of trailers are shipped on an “unaccompanied” basis. In the case of Dublin/Liverpool there are up to eight round-trip sailings on mid-week days and this way of doing things is growing rapidly, partly due to driver shortages and costs.

#### 2.11.4 Rail Freight

Rail freight is not a significant means of transporting goods in Ireland, with approximately 1% of all goods moved by rail. Factors such as the small size of the country, the type of products produced, access to rail networks and the comparative advantage of road transportation all affect the attractiveness of rail freight in Ireland.

68 IMDO <https://www.imdo.ie/Home/site-area/news-events/press-releases/irish-consumption-remains-strong-while-bulk-traffic-contracts-%E2%80%9393> Accessed 13th February 2018



Rail freight in Ireland is almost exclusively operated by the state-owned rail company Iarnród Éireann/Irish Rail. There are two elements to the freight business: the core rail freight element and Navigator (the transportation of automotive parts for dealerships in Ireland by road).

Rail freight does not currently facilitate cross border movements and aside from a loss of business associated with an adversely affected overall economy is not overly exposed to Brexit.

### **2.11.5 Multinational Companies (MNCs) and Small and Medium Enterprises (SMEs)**

In the past, the freight, logistics and distribution subsector has been typified by SMEs providing services locally and nationally. Now, large MNCs such as DHL, Kuehne and Nagel and XPO (formerly Norbert Dentressangle) are key players in the subsector. Larger organisations are more likely to employ individuals associated with support services and have their own in-house training or ‘knowledge centres’ than SMEs. As such progression and training is likely to be of a higher standard than that in smaller organisations.

For example, the development of ‘progression stairways’ linked to skills and training frameworks may be provided at those organisations that employ significant numbers of freight, distribution and logistics staff. By providing a clear pathway to progression those organisations can demonstrate to entry level employees that there is potential for a career in the subsector. For example, some companies employ ‘driver trainers’ who are often senior, well respected experienced drivers who are charged with training new staff.

Where SMEs do perform training this is likely to be undertaken by an in-house trainer, often a manager or supervisor. This is likely to be focused on role-specific or essential training such as Health and Safety courses.

Therefore, there is what can be described as a disconnect between the training and progression ‘offer’ at MNCs and SMEs, with the latter requiring more support if the disparity is to be addressed.

### **2.11.6 English Speaking**

English is the Lingua Franca of international trade. As such, Ireland’s English speaking workforce is well placed to facilitate the supply chain both inside and outside the country. It also reduces training requirements as a lack of language skills are not a barrier to employment in the subsector, although this may change in the future as developing markets mature.

A requirement for language skills was described by some respondents as less pronounced in the freight sector than other sectors; however, a number suggested that a lack of language skills in Ireland was affecting the ability of freight and logistics organisations to explore new markets. This is clearly something that may have to happen after the UK leaves the EU.



### 2.11.7 Compliance/Regulation

As a long-established member of the EU, Ireland has been subject to associated regulations for many years. As such those employed in the subsector could be described as more compliant and more knowledgeable in relation to EU regulation than EU accession states.

Feedback from the 2015 study for the Expert Group on Future Skills Needs found that there was a view that not all freight operators in Ireland (specifically road freight operators) were always operating within the boundaries of the law. It was stated that other established EU road haulage markets were more compliant with regulation than those in Ireland.

Regulations can also have a significant impact on how the supply chain operates. EU Drivers hours' rules, Driver CPC requirements, Cabotage rules and Operator Licensing rules have all had an impact on training and skills requirements in the road freight sector.

Brexit presents a particular challenge in relation to regulatory divergence from EU rules. If the UK has a different regulatory regime, Irish hauliers (for example) may be required to observe differing rules relating to drivers hours and qualifications. This will present a significant challenge for those who wish to transport goods to and from (or through) the UK.

It is anticipated that any divergence will occur gradually, with EU rules being 'unpicked' as requirements and policy evolves. Therefore, those in the sector will need to be aware of a changing regulatory regime within the UK.

### 2.11.8 Industry Bodies

There are a large number of industry bodies related to the subsector, both directly and indirectly. These include the Chartered Institute of Logistics and Transport, Freight Transport Association of Ireland, the Irish Exporters Association, the Irish International Freight Association, Irish Road Haulage Association, Enterprise Ireland and various Chambers of Commerce amongst many others.

All offer advice and tools (such as training or online resources) to address skills gaps and many provide Brexit related support. However, this variety of offer may also result in a lack of clarity over what is available and how it relates to particular skills needs.

## 2.12 Particular Skills Requirements of the Sector

Within the sector there are a number of areas where skills requirements are particularly prevalent. These represent key roles within the sector and often the key factors influencing skills gaps are not Brexit but other pressures, many of which were apparent in the 2015 study.

It was stated that the supply chain in Ireland needs individuals who can apply innovative techniques. It is data driven, with the requirement to identify and develop responses based on 'big data' and



systems outputs. As a result skills in statistical analysis are also important (and growing in importance).

In the 2015 study graduates were also said to lack softer skills and organisations often alter role requirements in order to fill them. It was described as hard to source managers with analytical skills. These individuals were reported as not coming from 'shop floor' routes.

Several respondents felt that there was an overemphasis on functional ability rather than leadership, stating that the supply chain is about demand management and not just logistics. However, many respondents were keen to stress that practical education is particularly important in this sector, and employees in management and supervisory positions benefit greatly from first-hand experience of working in, for example, a warehouse.

It was reported that an effective supply chain needs individuals that are trained in a variety of fields such as:

- Software Development
- Data Analysis
- Technical Support In IT
- Risk Management
- Contract Law
- Finance
- Marketing
- Sales
- Process Engineering
- Business analysis
- Entrepreneurship
- Operational Good Practice

Even at lower levels, skills in warehouse handling, dangerous goods acceptance, pharmaceuticals handling, forklift truck driving and security screening (with regards to air freight) are all required in various fields.

How individuals are recruited in the sector is heavily dependent on the role, qualification level required and the skillset of the prospective employee. Individuals in many lower skilled positions were hired in response to their attitude rather than any skills they may have coming into a job in the subsector, although by showing attendance on a course could help demonstrate this.

Generally, supervisory and technical roles are filled by graduates, who start in line management, often with a logistics qualification, and learn the role of managing staff. Depending on the company there may be an internship that incorporates other elements of the business.



It was reported that many of those who work in the sector are not willing or able to progress from lower skilled positions; however, a typical career progression would commence from an 'on the ground' position, move up to line manager, then shift supervisor, before becoming an operations manager.

Bringing in employees with required skills was felt to be a good idea and can have both a positive and negative impact on existing employees. It was reported that Business partners/customers can encourage the development of particular skill sets as much as could the government.

Many new employees are taken on through referrals of existing employees at a lower level. There are also a number of good colleges used to feed candidates into organisations. Recruitment websites and agencies are also used.

The changing nature of employment in Ireland (e.g. manufacturing undertaken in Asia, increased automation etc) has meant that demand for more operatives has been muted- although has increased due to the growing economy- while Supply Chain Management skills requirements have increased significantly.

Traditionally these individuals may have worked their way up from junior positions, often from a manufacturing base; however, it was felt that now manufacturing has reduced in importance in Ireland, the infrastructure was not there to grow these functions. There is now a requirement for education and other functions to provide these individuals

One respondent cited an issue recruiting into entry level roles, stating that, for example, when the construction industry is booming then recruitment becomes harder, as it is a preferred sector.

### 2.12.1 Drivers

As with the 2015 study on the FTDL sector, many respondents and informants stated that there was an acute HGV driver shortage. This was particularly pronounced for ADR drivers i.e. those tasked with transporting dangerous goods such as fuel tankers, which have more stringent qualification requirements. Eastern European drivers are widely used to address the shortfall; however, the growing economies and rising wages of Eastern Europe have meant that some respondents have felt that this labour pool is decreasing in number.

In addition, the average age of those engaged in road freight transport, according to the 2016 Census, is 44.4 years; 32% of the workforce (4,761 of 14,899 in total) was 50 years of age or over. Therefore, there may be an increased shortage in future years if new drivers are not encouraged in to the sector. The requirement to work away, coupled with relatively low pay and the need to undertake extensive training (potentially costing €5,000-€10,000) to get a licence are all barriers to attracting individuals into the sector.



A number of respondents suggested that those being encouraged into the sector on Government programmes were not meeting required standards in both aptitude and professionalism.

Feedback suggested the shortage has become worse in recent years, exacerbated by the more competitive jobs market. The driver shortage was deemed so pronounced that one respondent cited it as a key factor in their decision to cease trading.

### 2.12.2 Supply Chain Specialists

Ireland's skilled workforce, competitive business rates/corporation tax, access to the single market and experience of facilitating multi-modal freight movements means it is an optimum location for supply chain management functions.

Increasingly, organisations are looking to manage the supply chain remotely, even if the manufacture and movement of goods occurs elsewhere in the world.

This brings with it specific skills requirements, particularly individuals educated to degree level and with an ability to manage and improve complex global supply chains. Data analysts are considered vital in this regard (considering the growth in Big Data) as are those with IT expertise.

Digitisation of processes and gaining insights from data will likely increase in importance and as such associated skills are likely to become more in demand.

The challenge for the FTDL sector is that it competes with higher profile sectors for these highly skilled and in demand individuals. This is exacerbated by the low numbers of graduates entering the workforce from Supply Chain Management courses.

It was felt by a number of respondents that there were not a sufficient number of graduates with the right skills sets.<sup>69</sup> For example, the Level 8 Supply Chain Management course at Dublin Institute of Technology is currently undersubscribed, with lower entry requirements compared to other courses.

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<sup>69</sup> SOLAS's Recruitment Agency survey from late October 2016 reported shortages in a number of Supply Chain Management roles, including: Supply chain managers, especially with inventory control/planning/Enterprise Resource Planning (ERP) skills, APICS, and IIPMM; Specialist supply chain roles, in trade and distribution usually requiring both technical (e.g. e-Sourcing solutions, SAP, supplier relations management, inventory control with ERP systems etc), and business skills and relevant industry certification (e.g. APICS); Supply chain demand planning and forecasting (APICCC cert and MRP logic); Supply chain administrative roles for supporting supply chain activities e.g. EDI/SAP administration with languages, freight forwarding etc.



## 2.13 Issues affecting recruitment into sector

### 2.13.1 Profile

As mentioned, the FTDL sector is not an attractive or first choice sector for those considering their career or employment options. Feedback from the consultation suggested that jobs in sectors such as retail and construction were preferred, even when comparable wages were offered.

### 2.13.2 Wages

Certain roles, such as warehouse operatives and drivers do not always have competitive rates of pay. In combination with the lack of desirability of roles in the sector, this is a significant issue for recruitment in particular roles.

A number of organisations and respondents based in the Greater Dublin area suggested that the inability to recruit was particularly pronounced in the capital, due in part to the abundance of alternative job options and the lack of affordable housing.

### 2.13.3 Lack of Career Progression

Many organisations in the FTDL sector are SMEs, which are less likely to be able to offer significant (or any) career progression. This creates the perception of a 'dead-end' job, and adds to the high turnover of staff in lower-paid positions. This in turn affects the efficiency of the sector. One respondent stated that approximately 40% of vacancies in the sector were due to replacement demand.

### 2.13.4 Hours and Conditions

The 24-hour nature of the supply chain means that shift work and night working is not uncommon in the sector. These unsociable hours contribute to the unattractiveness of the sector and to the high turnover in certain roles.

## 2.14 Particular Challenges of Brexit

As discussed, the UK and Ireland have strong historic, cultural and economic ties as well as a Common Travel area that predates the European Single Market. The supply chain (in particular at the border with Northern Ireland) is often complex and crosses land and sea borders multiple times. The vast majority of goods travel between the UK and Ireland without checks or complications.

Therefore, particularly for those organisations that trade or facilitate trade with the UK and/or other EU countries, the requirement to have knowledge and expertise in customs procedures has diminished since the introduction of the Customs Union and European Single Market. Many of those who did have the knowledge have since retired.





These measures, which have significantly reduced the regulatory burden of moving goods, have in turn made a high proportion of freight transactions easier, reducing the number of staff needed to facilitate trade as well as the aforementioned skills requirements.

Under a Hard Brexit scenario this is likely to change, with the potential to cause a shock to the supply chain in Ireland. As discussed, in an economy which relies on exports, and through which 53% of goods (in volume terms) destined for the EU use a potential '3rd Country' as a landbridge the introduction of tariffs and customs clearance requirements is a significant issue.

### **2.14.1 Customs Clearance**

If the UK leaves the Single Market and Customs Union it will assume third country status under a Hard Brexit scenario. A huge quantity of goods moving between the UK and Ireland could therefore be subject to checks. This is likely to take longer than current procedures and without intervention could result in long tailbacks at Dublin Port. For hauliers using the UK as a landbridge, this could be replicated at UK ports such as Fishguard, Holyhead and Dover, causing significant stress and delays to the supply chain.

If customs declarations are incorrect this can lead to delays to goods leaving or entering the country, fines or even prosecutions. It is therefore vital that this is undertaken properly.

Freight forwarders are one group which are likely to have experience of declarations with third countries and could potentially see an increase in demand for their services. SMEs who may have simply procured Third Party Logistics Providers direct (such as a road haulage company) may now look to those with the required expertise, representing an opportunity for growth for those organisations. This expectation was echoed by freight forwarders consulted as part of this study.

However, the costs of using a freight forwarder will need to be factored into the overall costs of transporting goods, as would administration if declarations were undertaken and processed 'in-house'. If HMRC continue to use the same tariff codes and declarations then the impact may not be as significant.

The Office of the Revenue Commissioners is currently undertaking a review of the requirements for Customs Officers and their associated skillsets. Depending on the outcome of that work, there may be a requirement for additional Customs officers to cope with the new arrangement.

### **2.14.2 Incoterms**

The Incoterms or International Commercial Terms are a series of pre-defined commercial terms published by the International Chamber of Commerce (ICC) relating to international commercial law. They are widely used in International commercial transactions or procurement processes as their use in international sales is encouraged by trade councils, courts and international lawyers.



A series of three-letter trade terms related to common contractual sales practices, the “Incoterms rules”, are intended primarily to clearly communicate the tasks, costs, and risks associated with the transportation and delivery of goods.

They play a role in determining the customs value of goods upon importation. To this end, the Incoterm helps optimise customs value rules, and contributes to bolstering the economic performance of firms involved in international trade. Incoterms help facilitate trade with 3rd countries and an enhanced knowledge of them will be required should the UK assume 3rd country status.

### 2.14.3 Change in import and export markets

The UK’s proximity to Ireland means that Irish operators are experienced in facilitating trade between the two countries. The seamless land border with Northern Ireland, frequent ferry services between a number of ports and a good understanding of the UK as a geography has meant there are few barriers for freight operators in operating in the UK.

As freight is a derived demand, operators will be to some extent dependent on where their customers wish to send goods and where they import goods from. However, operators used to dealing with third countries will be better placed to accommodate a new trading arrangement. Those who are not may be more inclined to either focus on the domestic market or work in other EU countries to a greater extent. This is supported by feedback from the stakeholder consultation.

Road freight operators are particularly exposed as very few will have experience of working in non-EU countries. Feedback from the consultation suggests that at present operators are uncertain as to how Brexit will affect them and have done little in relation to exploring new markets, increasing the work they do elsewhere or considering how to mitigate any skills or knowledge gaps they may have.

This can be attributed in part to a lack of clarity on what the future trading relationship with the UK represents. Respondents were concerned about a Hard Brexit scenario; however, there was a feeling that this was unlikely. Many stated that they would continue to serve the UK as a key market and did not envisage a change to their operations- although they highlighted that it is likely to become more difficult.

For those who did indicate that they would explore new markets, or work in them to a greater extent, it was more likely that they were already used to working on the continent or serving markets further afield. One respondent did note that there were challenges with this, particularly serving Eastern European countries where an understanding of the distinction between Ireland and the UK may result in uncertainty regarding which operators are fellow EU nationals.



The aligned regulatory and customs arrangements of other EU countries make growing business with this market less of a challenge. In addition, the need to learn languages and develop a cultural awareness of other countries to work in them is arguably less pronounced in the freight and logistics sector where associated transactions are understood without the need for expansive explanation.

Overall it was clear that the FTDL sector may need support in coping with a Hard Brexit scenario, both in terms of remaining active in the UK and exploring and developing new markets. Many lack the skills and knowledge to do so, particularly SMEs which have limited resources and are focused on the day-to-day requirements of managing a transport operation.

#### 2.14.4 Perceived Impact of Hard Brexit

When asked about the impact of a Hard Brexit scenario the majority of respondents felt that it would have a negative impact on their business. One respondent stated it was a key factor in a decision to cease trading, while others felt it could have a profound impact.

However, despite these views there was little evidence that any mitigation measures were being put in place to address associated issues, with notable exceptions. SMEs were more likely to report that Brexit would have a significant detrimental impact; however, they were less likely to have, for example, investigated alternative markets or looked to upskill or bring in employees to process customs declarations.

One factor influencing this is the uncertainty surrounding what Brexit means and a perception that the final arrangements may be less difficult than what Hard Brexit represents.

Many respondents were holding off on making these arrangements until there was greater clarity, although there was an understanding that there would need to be enhanced customs clearance expertise within their organisation.

This is despite the provision of notices from the European Commission, relating to road, rail and maritime transport as well as customs and indirect taxation. They identify the relevant EU rules in relation to each area (e.g. Driver Certificate of Professional Competence and Driver attestation for third-country drivers). Resources like this can help ensure that freight operators are aware of the impact of Brexit and how it may affect them.<sup>70</sup>

There are of course costs associated with training existing staff or bringing in new expertise. In a low margin sector such as freight and logistics, organisations are often cautious about investments such as this. Few respondents envisaged bringing in a significant number of additional staff even

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<sup>70</sup> For these notices see the 'Brexit preparedness' section of the European Commission website- [https://ec.europa.eu/info/brexit/brexit-preparedness\\_en](https://ec.europa.eu/info/brexit/brexit-preparedness_en)



once the UK has left the customs union, suggesting they would either upskill existing staff or bring in one or two new employees.

Conversely, a number of freight forwarders suggested that they may see additional revenue and an increased demand for their offer.

### **2.14.5 UK as a landbridge**

As discussed, the UK is the primary route for freight travelling between Ireland and the continent. The benefits of this are significantly reduced journey times in comparison with shipping direct to ports on the continent and being much cheaper than air freight alternatives.

As expected, a majority of respondents to the survey currently use the landbridge and were concerned about the impact that additional customs requirements and associated checks might have. A number suggested they would look to utilise direct shipping routes between Ireland and the continent, while those transporting high value goods, such as pharmaceuticals, would look to transfer to airfreight. Respondents were generally unclear as to what the ‘tipping point’ would be for them to consider not using the landbridge.

This is likely to favour organisations with experience and skills in facilitating multimodal freight movements. It is also likely to impinge on certain sectors to a greater extent, e.g. time-sensitive, non-bulk, low value goods such as foodstuffs (particularly dairy and meat).

However, this shift should not be overstated, as it would require significant disruption to the landbridge to affect its competitive advantage over alternative routes.

### **2.14.6 Authorised Economic Operator (AEO) Status**

AEO status is an internationally recognised quality mark indicating that an organisation in the international supply chain is secure, and that customs controls and procedures are efficient and compliant.

While not mandatory, it gives quicker access to certain simplified customs procedures and in some cases the right to ‘fast-track’ shipments through some customs and safety and security procedures. In a Hard Brexit scenario AEO status could assist in providing a faster application process for customs simplifications and authorisations and reductions or waivers of comprehensive guarantees. There are currently 133 AEOs and these account for 82% of all imports and 89% of exports.<sup>71</sup>

Feedback from respondents suggested that while a number of enterprises, particularly medium and large enterprises, either already had or were exploring AEO status, the majority were not looking to pursue this. This was due to either a lack of awareness of the status or lack of resources. Given that

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<sup>71</sup> Committee on Finance, Public Expenditure and Reform, and Taoiseach- Opening Statement by Niall CODY, Chairman of Revenue



lead times for achieving AEO status take approximately 120-180 days this is something that needs to be undertaken in advance of the UK assuming 3rd country status.

### 2.14.7 Regulatory Alignment

Once the UK leaves the European Union, it is no longer bound to adhere to the regulatory and legal requirements associated with membership. This includes directives such as Drivers Hours and Operator Licencing as well as the ability of commercial drivers of any EU nationality to drive on UK roads without additional tests.

Consultation with operators suggested that changes to regulatory alignment was not an immediate concern, again influenced by the uncertainty surrounding Brexit. This is further reinforced by the likelihood that regulatory changes are likely to be gradual if they happen at all. A number of respondents suggested that it would be the early-to-mid 2020s before this is likely to come into effect.

Therefore, there is little evidence that potential changes to regulations are impacting on skills requirements in the FTDL sector at present. This may change, however and freight and logistics organisations will need to ensure that they satisfy UK as well as EU regulations should they diverge.

### 2.14.8 SMEs more exposed, less prepared

During the course of the research it became clear that SMEs in the FTDL sector were less likely to have:

- An understanding of what the skills needs arising from a Hard Brexit Scenario are
- Undertaken an assessment of the impact of Brexit on their business
- A clear plan for exploring new markets
- Employees with experience of dealing with 3rd countries and customs clearance declarations

Therefore it can be considered that SMEs are more exposed to the potential adverse impacts that Brexit may create. This should be addressed when considering what measures should be introduced.

Table 2.7 below outlines a typology of firms in the sector and how exposed they are to the negative impacts of Brexit.

**Table 2.7 Expected impact of Brexit by Firm Size**

	Exposed to Brexit	Less Exposed to Brexit
<b>Size</b>	Small/Micro Enterprise	Multinational
<b>Mode</b>	Primarily Road	Proficient at managing all modes (including air and sea)
<b>Market</b>	Significant proportion with UK or EU using UK as a landbridge	Manage global supply chains (Asia Pacific, Americas) as well as European markets
<b>Skills</b>	No customs clearance skills	Global trading teams used to dealing with 3rd countries



## 2.15 Overarching findings and conclusions

It is clear that many of the issues affecting the FTDL sector are well-established and in many cases becoming more pronounced, aside from any impact that Brexit may have.

Skills gaps in key areas have not been addressed and this has implications across the sector, affecting Ireland's ability to fulfil its potential to be a global supply chain centre of excellence, to lacking the basic ability to move goods by road due to a shortage of drivers.

Interventions are required in a number of areas to raise the profile of the sector, make it more attractive to potential entrants and ensure that those employed in it have sufficient skills to ensure its efficiency and effectiveness.

With respect to the unique challenges that Brexit poses, there is a very real danger that many organisations would struggle under a Hard Brexit scenario. This is backed up by their response to this question during the survey.

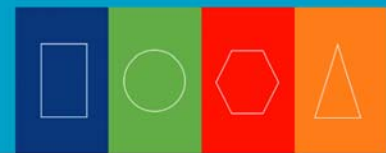
The familiarity and ease of the UK market had left many operators overly exposed to it as a vital through route to the continent and a key market in itself. Responses to the potential shock range significantly, from a cessation of trading to ambivalence as to what the impact could be.

Investment in customs clearance skills and exploration of new markets is not being undertaken to a great extent. In addition, few are actively investigating alternative routes to the continent where the landbridge is currently used- although this could potentially be changed quite quickly given the flexibility of road transport.

Where this has occurred it is often the larger organisations that have prepared or are preparing. These organisations are less exposed to the UK as a key market.

This is being driven to some extent by a lack of certainty surrounding what any agreement between the UK and EU is likely to be and a feeling that a Hard Brexit may not happen.

It is therefore clear that interventions are required to help upskill those in facilitating trade with 3rd countries (particularly SMEs), ensure that the sector is fully informed on the negotiations as far as it can be and that organisations get the support they need to explore new markets and deal with a very different trading relationship with the UK.



## Chapter 3. Demand scenarios for Freight Transport, Distribution and Logistics sector

This chapter seeks to quantify the potential demand for the main occupations in the Freight Transport, Distribution and Logistics activities based on a number of Brexit related scenarios. The 2015 Expert Group on Future Skills Needs study on FTDL included quantified forecasts of the future labour requirements of the sector, the likely level of retirements and hence, the number of new workers who would have to enter the sector to meet future labour needs. For this study, these forecasts have been updated. In addition, scenarios have been developed to explore the potential impact of Brexit on the sector’s labour requirements.

### 3.1 Background

The Census gathers comprehensive data on the current occupations of all Irish residents in the labour force. Census data is coded using a large set of “Detailed Occupational Groups”. For the 2015 study, 14 of these Occupational Groups were identified as comprising the labour force of the Freight Transport, Distribution and Logistics sector. According to the 2016 Census the total labour force of the Sector was 49,470, an increase of approximately 4,000 since the 2011 Census. The relevant results from the two Censuses are summarised in Table 3.1 below:

**Table 3.1. Census Data on Occupational Groups**

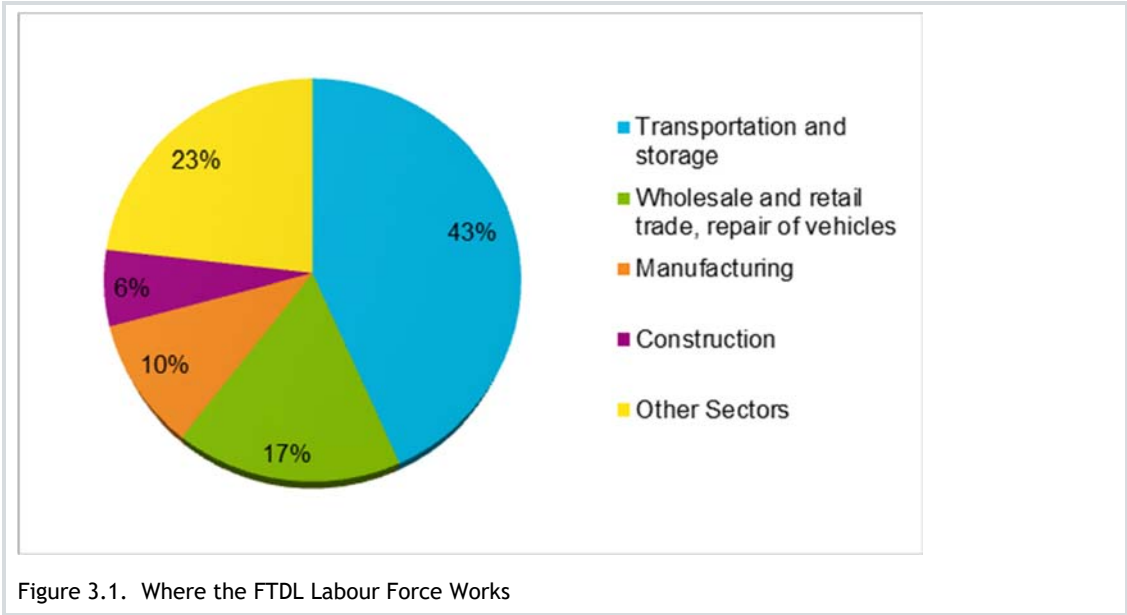
	2011	2016
Managers and directors in transport and distribution	3,497	5,193
Managers and directors in storage and warehousing	4,071	4,392
Aircraft pilots and flight engineers	1,622	1,694
Ship and hovercraft officers	623	484
Importers and exporters	332	305
Transport and distribution clerks and assistants	2,767	3,432
Large goods vehicle drivers	19,758	20,466
Fork-lift truck drivers	3,074	3,163
Mobile machine drivers and operatives n.e.c.	5,426	5,508
Train and tram drivers	670	685
Marine and waterways transport operatives	543	671
Air transport operatives	1,135	1,459
Rail transport operatives	999	1,107
Other drivers and transport operatives n.e.c.	1,278	911
	45,795	49,470

Source: CSO Census 2011 and Census 2016

The Occupational Group of an individual is determined by the work that they do, rather than the industry in which they are employed. These figures include all of the individuals who currently carry out Freight Transport, Distribution and Logistics work, whether they are employees of a specialist firm in the sector or provide these services “in house” in another industry. For example, the figures for “Large goods vehicle drivers” would include drivers employed by retail chains or manufacturing



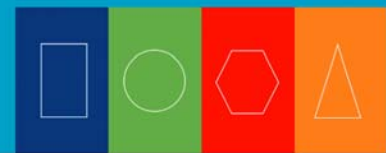
firms that operate their own fleet of large goods vehicles. Figure 3.1 below shows the spread of these workers between the logistics sector and other industries.



### 3.2 Forecasts made in the 2015 EGFSN report

The forecasts in the 2015 EGFSN report were based on data from the 2011 Census. The baseline labour force for 2015 was estimated based on the 2011 Census data and the forecasting model that was developed for the study. Forecasts were also developed for 2020. These forecasts from the 2015 EGFSN report are set out in Table 3.2 below:





**Table 3.2 Forecasts from 2015 EGFSN Report**

	Census		2015 EGFSN Forecasts	
	2011	2016	2015	2020
<b>Managers and directors in transport and distribution</b>	3,497	5,193	3,725	4,460
<b>Managers and directors in storage and warehousing</b>	4,071	4,392	4,337	5,193
<b>Aircraft pilots and flight engineers</b>	1,622	1,694	1,771	2,276
<b>Ship and hovercraft officers</b>	623	484	653	747
<b>Importers and exporters</b>	332	305	354	423
<b>Transport and distribution clerks and assistants</b>	2,767	3,432	2,947	3,529
<b>Large goods vehicle drivers</b>	19,758	20,466	21,047	25,201
<b>Fork-lift truck drivers</b>	3,074	3,163	3,275	3,921
<b>Mobile machine drivers and operatives n.e.c.</b>	5,426	5,508	5,780	6,921
<b>Train and tram drivers</b>	670	685	714	855
<b>Marine and waterways transport operatives</b>	543	671	569	651
<b>Air transport operatives</b>	1,135	1,459	1,239	1,593
<b>Rail transport operatives</b>	999	1,107	1,064	1,274
<b>Other drivers and transport operatives n.e.c.</b>	1,278	911	1,361	1,630
	45,795	49,470	48,836	58,674

Source: EGFSN 2015, CSO Census 2011 and Census 2016

Comparing the forecasts from 2015 with the outturn from the 2011 and 2016 Censuses provides a high level test of the forecasting model developed for the 2015 EGFSN study. In the 2015 study the numbers employed in the Freight, Transport, Distribution and Logistics sector were estimated to have increased by approximately 7%, or 3,000 between 2011 and 2015. According to Census data, the numbers employed in these activities actually increased by 8% or 3,675 between 2011 and 2016.

### 3.3 How the 2015 forecasts were prepared

The model developed to forecast employment needs of the Freight, Transport, Distribution and Logistics sector is described in detail in the 2015 EGFSN report.<sup>72</sup> The authors investigated the potential drivers of past increases in the labour needs of the sector, such as GDP growth, manufacturing output, imports or exports. In general terms, there is a strong correlation between transport and GDP. As shown in figure 3.2 below, changes in the fleet have been very much in line with changes in GDP since 1983.

<sup>72</sup> See chapter 7 of Expert Group on Future Skills Needs, Addressing the Demand for Skills in the Freight Transport, Distribution and Logistics Sector, 2015-2020, 2015

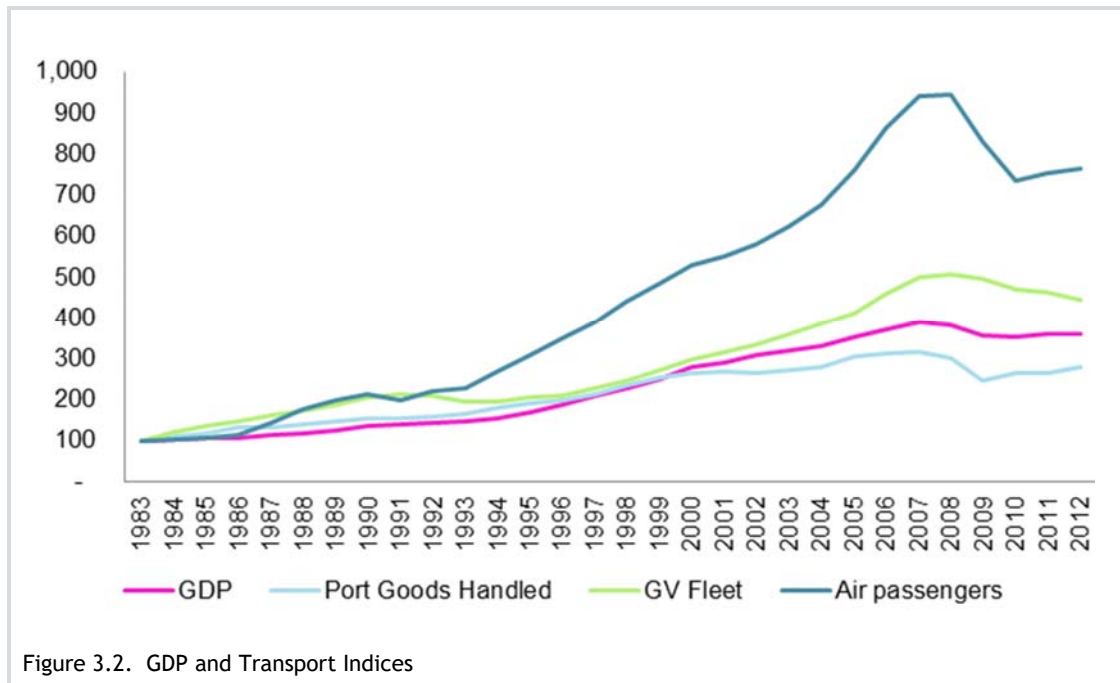


Figure 3.2. GDP and Transport Indices

It is often held that the growth of the services sector will mean that changes in GDP will have less of an impact on goods transport demand than heretofore. Econometric testing demonstrated that economic aggregates that exclude service sector activities do not provide better modelling outcomes. Some possible explanations for the absence of a decline in the goods transport intensity of GDP include:

- The Manufacturing sector continues to have a strong presence in the Irish economy;
- Much of manufacturing activity derives from multinational companies with a high import and export activity, which is transport intensive; and
- Some service sub-sectors are relatively freight intensive.

Other economic aggregates might include the additional impact of imports. However, imports are now comprised of significantly more services than goods imports.

Thus, GDP was deemed to be the most suitable measure of economic progress for use in this analysis. Nonetheless, the question remains as to whether an historic relationship between GDP and goods transport is likely to be replicated in the future.

Econometric analysis of the relationship between GDP and transport demand (as defined by the goods vehicle fleet, total tonnes handled at Irish ports and total air passengers at Irish airports) was undertaken. The following elasticities were estimated based on the analysis:

- 1) Growth rates in GDP and the goods vehicle fleet have a forecast ratio of 1: 0.9
- 2) Growth rates in GDP and aviation have a forecast ratio of 1: 1.3
- 3) Growth rates in GDP and port activity have a forecast ratio of 1: 0.7



For each per cent change in GDP, a 0.9% change is expected in the goods vehicle fleet, a 1.3% change is expected in the number of air passengers and a 0.7% change is expected in the total tonnes handled at Irish ports.

The data covered the period 1983 - 2012 with the exception of aviation demand. The time series of air passenger data was truncated to 1992. Significant deregulation of the aviation market was implemented by the EU in 1992 and, due to this structural change in the market, the data representing years prior to the deregulation was excluded. The models have excellent explanatory power, with adjusted R<sup>2</sup> values of over 90% in all cases,<sup>73</sup> reflecting the close relationship between transport and GDP.

The key results of this work are set out in Table 3.3 below:

**Table 3.3. Relationship between freight activity and GDP**

GDP Growth : Land Transport	1 : 0.9
GDP Growth : Air Transport	1 : 1.3
GDP Growth : Marine Transport	1 : 0.7

Source: EGFSN 2015

Future levels of freight activity, and so of labour demand in the sector were then forecast based on official forecasts of GDP growth and these ratios.

### 3.4 Updating the forecasts for Brexit

For this study the 2015 forecasts were updated with the latest data, particularly the 2016 Census. In addition a set of scenarios were developed to illustrate the potential effects of Brexit on the labour needs of the Freight, Transport, Distribution and Logistics sector.

Forecasting the effect of Brexit is extremely difficult due to the high degree of uncertainty as to what the relationship between the UK and the EU will be after the UK exits the Union in March 2019. Whatever form the new relationship between the UK and the EU takes the Irish Freight Transport, Distribution and Logistics sector will be affected in two main ways:

- 1 Physical trade between Ireland and the UK and the rest of the world will become more difficult, increasing the labour needs of the sector. Trade between Ireland and the UK will obviously become more difficult and time consuming. In a “Hard Brexit” scenario all goods passing between Ireland and the UK might have to undergo a physical check at a border. This would slow down transport between the two markets which would, in itself, increase the resources needed by the Freight, Transport, Distribution and Logistics sector. In addition extra work will be needed to comply with customs requirements, further increasing the labour needs of the sector. In addition the vast majority of the goods carried physically between Ireland and territories beyond the UK travel via Britain. Britain is effectively used as a landbridge between

<sup>73</sup> In statistics, R-squared measures the proportion of the variation in a dependent variable (in this case transport) explained by independent variables (GDP) for a linear regression model.



Ireland and continental Europe. A “Hard Brexit” scenario would also lead to delays and additional costs and labour requirements for the transport of these goods. The magnitude of these effects will obviously depend on the nature of the post Brexit relationship between the UK and the EU.

- 2 The exit of the UK from the EU will reduce the growth of the Irish economy. This will tend to reduce the volumes of freight travelling to and from Ireland and so reduce the labour needs of the Freight, Transport, Distribution and Logistics sector. The magnitude of these effects will also depend on the precise nature of the future relationship between the UK and the EU. In an extreme “Hard Brexit” there could be significant impacts on economic growth in Ireland as:
  - Imports from a state that currently accounts for 24% of our goods imports become more expensive;
  - Access to an export market that currently accounts for 13% of our goods exports is curtailed;
  - Supply chains for a range of food and beverage products that currently operate across the whole island of Ireland are disrupted;
  - Service exports to the UK, which currently amount to €22.5bn per annum (2016) are impeded; and
  - The current extensive flows of capital and labour between Ireland and the UK are interrupted to a greater or lesser extent.

To investigate this wide and uncertain range of outcomes four scenarios were developed. These were chosen to encompass the full range of potential effects that will emerge once the UK leaves the EU in March 2019 and its future relationship with the EU takes shape. The scenarios were:

- Business as usual: Brexit has only a minimal effect on the Irish economy and the freight sector and its labour needs continue to grow in line with economic growth. For this scenario the relationships between economic growth and freight growth identified in 2015 were assumed to persist into the future. GDP is assumed to grow in line with the ESRI Medium Term Outlook<sup>74</sup>, i.e. at a rate of between 3.2% and 3.7% per annum into the future.
- Less access to the UK market: This scenario assumes that Brexit has no effect on the physical movement of goods to and from Ireland, but assumes that economic growth will be less than it would be in the base case with no Brexit. For this scenario the relationships between economic growth and freight growth identified in 2015 were assumed to persist into the future. GDP was assumed to grow by 0.5% per annum less than in the baseline scenario. This reduction is taken from the modelling of the economic effect of Brexit carried out by Copenhagen Economics for DBEI<sup>75</sup>.

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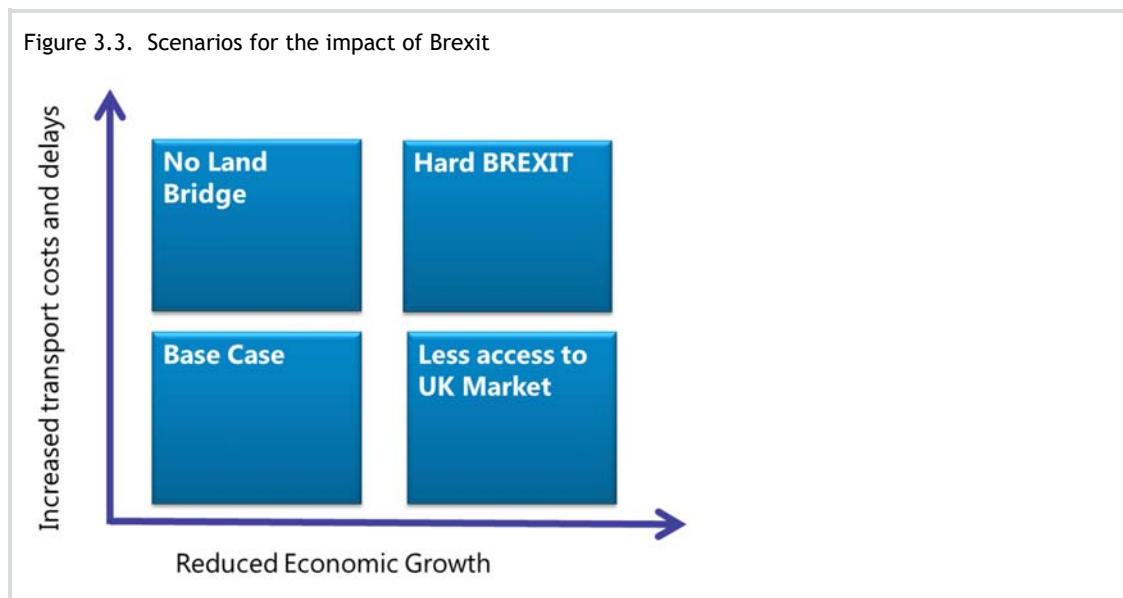
<sup>74</sup> ESRI Medium Term Outlook. Baseline projection. December 2016

<sup>75</sup> “Ireland and the Impacts of Brexit” Copenhagen Economics. March 2018



- **No Landbridge:** This scenario assumes that the economy continues to grow at the same rate as the baseline scenario, but that physical transport of goods between Ireland and the outside world becomes more difficult and labour intensive. This scenario was developed by assuming that the relationship between economic growth and freight identified in 2015 changes. In particular it was assumed that in future there would be a 1:1 relationship between economic growth and the labour requirements of land and maritime transport.
- **“Hard Brexit”** This scenario combined the effects on economic growth of the “Less access to the UK market” with the effects on the labour intensity of freight of the “No Landbridge” scenario.

The relationship between these four scenarios is summarised in Figure 3.3 below:



The results of these scenarios are set out in the following Tables, 3.4-3.7:



**Table 3.4. Baseline Forecast**

	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Managers and directors in transport and distribution	5,193	5,416	5,606	5,813	6,028	6,221	6,420	6,626	6,838	7,057
Managers and directors in storage and warehousing	4,392	4,581	4,741	4,917	5,099	5,262	5,430	5,604	5,783	5,968
Aircraft pilots and flight engineers	1,694	1,789	1,870	1,960	2,054	2,140	2,229	2,321	2,418	2,519
Ship and hovercraft officers	484	499	511	524	538	550	562	575	587	601
Importers and exporters	305	318	329	341	354	365	377	389	402	414
Transport and distribution clerks and assistants	3,432	3,580	3,705	3,842	3,984	4,112	4,243	4,379	4,519	4,664
Large goods vehicle drivers	20,466	21,258	21,928	22,658	23,412	24,087	24,780	25,494	26,228	26,984
Fork-lift truck drivers	3,163	3,285	3,389	3,502	3,618	3,723	3,830	3,940	4,054	4,170
Mobile machine drivers and operatives n.e.c.	5,508	5,721	5,901	6,098	6,301	6,482	6,669	6,861	7,059	7,262
Train and tram drivers	685	712	734	758	784	806	829	853	878	903
Marine and waterways transport operatives	671	691	708	726	745	762	779	797	814	833
Air transport operatives	1,459	1,541	1,611	1,688	1,769	1,843	1,920	1,999	2,083	2,169
Rail transport operatives	1,107	1,150	1,186	1,226	1,266	1,303	1,340	1,379	1,419	1,460
Other drivers and transport operatives n.e.c.	911	946	976	1,009	1,042	1,072	1,103	1,135	1,167	1,201
	49,470	51,486	53,195	55,062	56,995	58,727	60,512	62,352	64,249	66,204

Source: AECOM



Table 3.5 “Less Access to UK Market” Forecast

	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Managers and directors in transport and distribution	5,193	5,416	5,606	5,785	5,970	6,132	6,297	6,467	6,642	6,821
Managers and directors in storage and warehousing	4,392	4,581	4,741	4,893	5,049	5,186	5,326	5,470	5,617	5,769
Aircraft pilots and flight engineers	1,694	1,789	1,870	1,948	2,029	2,100	2,174	2,250	2,329	2,411
Ship and hovercraft officers	484	499	511	522	534	544	554	565	575	586
Importers and exporters	305	318	329	340	351	360	370	380	390	401
Transport and distribution clerks and assistants	3,432	3,580	3,705	3,823	3,946	4,052	4,162	4,274	4,389	4,508
Large goods vehicle drivers	20,466	21,258	21,928	22,559	23,209	23,773	24,351	24,942	25,548	26,169
Fork-lift truck drivers	3,163	3,285	3,389	3,486	3,587	3,674	3,763	3,855	3,948	4,044
Mobile machine drivers and operatives n.e.c.	5,508	5,721	5,901	6,071	6,246	6,398	6,553	6,713	6,876	7,043
Train and tram drivers	685	712	734	755	777	796	815	835	855	876
Marine and waterways transport operatives	671	691	708	724	740	754	768	783	798	813
Air transport operatives	1,459	1,541	1,611	1,678	1,747	1,809	1,872	1,938	2,006	2,076
Rail transport operatives	1,107	1,150	1,186	1,220	1,255	1,286	1,317	1,349	1,382	1,415
Other drivers and transport operatives n.e.c.	911	946	976	1,004	1,033	1,058	1,084	1,110	1,137	1,165
	49,470	51,486	53,195	54,810	56,474	57,922	59,407	60,931	62,494	64,098

Source: AECOM



Table 3.6. “No Landbridge” Forecast

	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Managers and directors in transport and distribution	5,193	5,416	5,606	5,813	6,028	6,221	6,420	6,626	6,838	7,057
Managers and directors in storage and warehousing	4,392	4,581	4,741	4,917	5,099	5,262	5,430	5,604	5,783	5,968
Aircraft pilots and flight engineers	1,694	1,789	1,870	1,960	2,054	2,140	2,229	2,321	2,418	2,519
Ship and hovercraft officers	484	499	511	530	549	567	585	604	623	643
Importers and exporters	305	318	329	341	354	365	377	389	402	414
Transport and distribution clerks and assistants	3,432	3,580	3,705	3,842	3,984	4,112	4,243	4,379	4,519	4,664
Large goods vehicle drivers	20,466	21,258	21,928	22,739	23,580	24,335	25,114	25,917	26,747	27,602
Fork-lift truck drivers	3,163	3,285	3,389	3,514	3,644	3,761	3,881	4,005	4,134	4,266
Mobile machine drivers and operatives n.e.c.	5,508	5,721	5,901	6,120	6,346	6,549	6,759	6,975	7,198	7,429
Train and tram drivers	685	712	734	761	789	814	841	867	895	924
Marine and waterways transport operatives	671	691	708	734	762	786	811	837	864	891
Air transport operatives	1,459	1,541	1,611	1,688	1,769	1,843	1,920	1,999	2,083	2,169
Rail transport operatives	1,107	1,150	1,186	1,230	1,275	1,316	1,358	1,402	1,447	1,493
Other drivers and transport operatives n.e.c.	911	946	976	1,012	1,050	1,083	1,118	1,154	1,191	1,229
	49,470	51,486	53,195	55,202	57,285	59,154	61,086	63,080	65,140	67,268

Source: AECOM





Table 3.7. "Hard Brexit" Forecast

	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Managers and directors in transport and distribution	5,193	5,416	5,606	5,785	5,970	6,132	6,297	6,467	6,642	6,821
Managers and directors in storage and warehousing	4,392	4,581	4,741	4,893	5,049	5,186	5,326	5,470	5,617	5,769
Aircraft pilots and flight engineers	1,694	1,789	1,870	1,948	2,029	2,100	2,174	2,250	2,329	2,411
Ship and hovercraft officers	484	499	511	527	544	559	574	589	605	622
Importers and exporters	305	318	329	340	351	360	370	380	390	401
Transport and distribution clerks and assistants	3,432	3,580	3,705	3,823	3,946	4,052	4,162	4,274	4,389	4,508
Large goods vehicle drivers	20,466	21,258	21,928	22,629	23,353	23,984	24,632	25,297	25,980	26,681
Fork-lift truck drivers	3,163	3,285	3,389	3,497	3,609	3,707	3,807	3,910	4,015	4,124
Mobile machine drivers and operatives n.e.c.	5,508	5,721	5,901	6,090	6,285	6,455	6,629	6,808	6,992	7,181
Train and tram drivers	685	712	734	757	782	803	824	847	870	893
Marine and waterways transport operatives	671	691	708	731	754	775	795	817	839	862
Air transport operatives	1,459	1,541	1,611	1,678	1,747	1,809	1,872	1,938	2,006	2,076
Rail transport operatives	1,107	1,150	1,186	1,224	1,263	1,297	1,332	1,368	1,405	1,443
Other drivers and transport operatives n.e.c.	911	946	976	1,007	1,040	1,068	1,096	1,126	1,156	1,188
	49,470	51,486	53,195	54,930	56,723	58,285	59,890	61,540	63,236	64,978

Source: AECOM



### 3.5 Conclusions

To date, the labour needs of the Freight, Transport, Distribution and Logistics sector are developing as forecast in the 2015 EGFSN report. At the time of 2016 Census there were 49,470 people working in this field. In the absence of a major external shock the labour needs of the sector are expected to increase to 66,204 by 2025. Given the age profile of people working in the sector, approximately 13,752 of those currently working in the sector are expected to retire by 2025. In summary, a total of 30,486 individuals will have to decide to take up careers in the sector and receive all the necessary training between now and 2025 in this baseline scenario.

As is well known, there will actually be a major external shock to the Irish economy when the UK leaves the EU in March 2019. The impact of Brexit cannot be predicted as it will depend on the form that the post-Brexit relationship between the UK and the EU takes. To address this uncertainty a set of scenarios was developed that aim to explore the range of potential effects of Brexit on the labour needs of the Freight, Transport, Distribution and Logistics sector. These scenarios highlight that Brexit will have two types of effect:

- By reducing the growth of the Irish economy it will slow the growth in the labour needs of the Freight, Transport, Distribution and Logistics sector; and,
- By making the physical transport of goods to and from Ireland more difficult, for example by making the use of Britain as a landbridge less cost-effective, Brexit will tend to increase the labour needs of the sector.

The size of these effects will depend on the form that Brexit takes. The closer that the UK is to the EU single market after Brexit the smaller these effects will be. Table 3.8 below summarises the results of the scenarios developed for this study.

**Table 3.8 Freight Transport Distribution and Logistics Labour Force 2025**

	Baseline	Reduced Trade	No Landbridge	Hard Brexit
<b>Forecast Labour Force</b>	66,204	64,098	67,268	64,978
<b>Current Labour Force</b>	49,470	49,470	49,470	49,470
<b>Retirements to 2025 (e)</b>	13,752	13,752	13,752	13,752
<b>New Joiners Needed</b>	30,486	28,380	31,550	29,260

Source: AECOM



## Chapter 4. Review of EU-27 Responses to the Potential Trade Implications of Brexit

While Ireland is expected to be by far the most impacted, aside from the United Kingdom itself, by the latter's departure from the European Union, Brexit is also expected to impact on a number of other EU-27 economies. These economies are at present coming to terms with the potential for more restrictive trading conditions with the UK, and trying to plan accordingly. This chapter provides an overview of the responses to date on the part of four of these countries, chosen on account of their relatively significant levels of trade with the UK, and their comparable size to Ireland: Belgium, Denmark, the Netherlands, and Sweden. This overview is presented as a potential source of policy learning for Ireland, as it considers its response to Brexit from a skills and competency perspective.

### 4.1 Belgium

Belgium considers only Ireland and the Netherlands to be more exposed to the impact of Brexit. The UK is the fourth largest market for Belgian exports, with more than €30 billion of goods and services exported annually. Belgian exports to the UK outweigh imports by €16 billion. The Belgian economy's vulnerability lies particularly in chemical, pharmaceutical, food and textile exports. A 2017 report by the Catholic University of Leuven found that a Hard Brexit could cause the loss of 42,390 jobs in Belgium, with a soft Brexit accounting for 10,000 job losses. Due to the types of exports to the UK, Belgium is particularly concerned about the impact of an introduction of tariffs. Given this level of exposure, each Belgian Federal Ministry has been tasked with analysing the potential impact of Brexit on its area of responsibility.

Trade is a devolved competency in Belgium. The Government of Flanders has placed major emphasis on contingency planning for Brexit- 87% of total Belgian exports to the UK come from Flanders (mainly transport equipment, chemical and pharmaceutical products, machinery and plastics), while its share in total British imports to Belgium is 89%. It has estimated that Flemish GDP would shrink by 2.6% if EU-UK trade relations reverted to WTO rules.

The Flemish transport sector accounts for 19.24% of services exports to the UK. If the EU legal framework for road transport no longer applies in the UK, the carrier must have a bilateral permit for each journey to and from the UK- this permit is subject to quotas. The UK could also impede free access to its transport market, with diverging rules and standards. Overall, there is an expectation that Flemish trade with the UK will be affected considerably by the end of free movement of persons and services- an estimated 35,000 Belgians live and work in the UK, the majority of which are Flemish. About 30,000 British citizens work and live in Belgium.

There is also an expectation that the Port of Zeebrugge will be badly hit, as 45% of its trade is with the UK. More than 1 million cars go to and from the UK through Zeebrugge, and about 5,000 jobs at the Port are linked to UK-Belgian trade. There are fears that volumes will decrease as a result of Brexit and weaker economic growth. The Port is fast-tracking the development of apps and scanners



to reduce paperwork, and developing a UK specific programme for every stage of the logistics chain, which would allow goods to clear customs even when lorries are miles for the port. Additional customs formalities would generate extra costs due to longer waiting times and the need for more storage space.

The Flemish government is arguing for a trade friendly Brexit (i.e. zero tariffs), the most far-reaching customs co-operation with a third country, avoidance of regulatory divergence, and protection of investments and IP rights. It is also calling for new customs formalities that do not lead to longer queues and additional administrative burdens for business, such as through far reaching customs cooperation with a minimum of customs formalities. Potential remedies include: digitisation (e-customs), pre-clearance, mutual recognition of Authorised Economic Operators, investigating various facilitating models (e.g. 'my export/your import', green lanes) thoroughly, and investigating whether funds can be provided for urgent investments in customs infrastructure.

The Flanders Investment and Trade Body is also working to prepare exporters for the fallout from Brexit. It has organised a seminar, featuring experts providing practical tips on customs formalities, exchange risks, standards, labelling and licences. It has also established a 'Brexit Contact Point' webpage,<sup>76</sup> and is offering the following advice to exporters:

- Identify any extra costs from Brexit
- Check the possible impact of import duties, in case of no free trade agreement
- Determine the need to hedge against Sterling exchange rate risks. Negotiate contracts in euros with UK customs, or try and provide an exchange rate clause to allow for price adjustments. Check with your bank whether a forward contract or other financial instruments are necessary.
- Follow standards and packaging regulations closely. Monitor trends through representative organisations, or consult with overarching Standards/Packaging organisations. Inform yourself in good time about the possible extra costs for certification and long-term testing.
- Diversify export activities, by exploring alternative markets. Support in exploring possibilities for diversification will be provided by Flanders Investment and Trade.

In terms of trade diversification efforts, Belgian trade is heavily concentrated amongst its European neighbours. The export and investment agency of Belgium's other region, Wallonia, is working to stimulate exports beyond traditional European markets to large export markets with strong development potential. The BRIC countries are being targeted, as well as potential BRICs like Argentina, Mexico, Malaysia, Thailand, Vietnam, Iran and Nigeria. Trade diversification is being stimulated through representation at major international sector specific trade shows in the Gulf Region and Eastern Asia.

Belgium is also seeking to leverage the opportunities arising from Brexit, particularly in Foreign Direct Investment. Opportunities in the financial and pharmaceutical sectors have been identified, given the country's proximity to European decision-making centres. It is also highlighting its strengths as a multilingual country, its high productivity workforce, its quality of life and available

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<sup>76</sup> <https://www.flandersinvestmentandtrade.com/export/5-tips-om-uw-exportbedrijf-klaar-te-stomen-voor-de-brexit>



office space, and its air and rail connections and accessibility. These assets were highlighted in Brussels' bids for the European Banking Authority and European Medicines Agency.

## 4.2 Denmark

Brexit is also expected to have negative consequences for Danish exports and employment. Britain is the destination for 7% of Danish exports (c.€10 billion annually), making it Denmark's fifth largest export market, with some 53,000 Danish jobs dependent on these exports. These exports span a wide range of sectors and enterprises: from agricultural and food products, mechanical and electronic devices in the energy, environmental and medical industries, and services in the construction, transportation and IT sectors. There are also more than 700 Danish subsidiaries in the UK, employing close to 90,000 people in the country.

A 'cliff edge' Brexit in particular is anticipated as having considerable economic consequences. A Confederation of Danish industry report provides an indication of the potential impact on Danish business.<sup>77</sup> The common rules and standards of the Single Market have enabled not just large Danish corporations but also countless SMEs to sell their products on the British market.

There are concerns amongst Danish businesses across all sectors and sizes about the prospect of reduced access to the British market, through the introduction of tariff and non-tariff barriers. The limited capacity of smaller enterprises in particular to deal with new and different requirements would present considerable obstacles regarding trade with and operations in the UK. There are also worries over the introduction of new bureaucratic procedures regarding rules of origin, forms and certifications, requiring additional time and resources, and a further detrimental impact on SMEs.

Danish businesses, particularly those with interests and investments in the British market, are also expressing concern about the maintenance of a level playing field in the event of the UK's departure from the Single Market- e.g. in regard to competition, state aid, public procurement and work environment. Countries within the Single Market purchase two thirds of Danish exports- so while Britain is an important market, it is superseded by the Single Market. A concern is that any EU-UK trade agreement does not allow British companies to compete on more favourable terms than those European and Danish companies that have to comply with European standards and regulations.

Danish business are concerned that any Brexit deal should ensure that those staff and companies who currently operate in the UK will be able to continue to work and do business in the same conditions. There are also implications for services, through work permits, additional certifications, and outright restrictions on the deployment of employees. This is a concern for many Danish companies with frequent activity in the UK, or existing investment projects. Bureaucratic barriers to movement would increase cost, lower productivity and slow down investments, especially in the Danish energy export sector (the UK represents 77% of total Danish energy utility related investments abroad).

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<sup>77</sup> Confederation of Danish Industry, *Potential Impact of Brexit- The perspective of Danish businesses*, March 2017- <https://di.dk/SiteCollectionDocuments/Europa/DI%20Brexit%20Paper.pdf>



In common with Ireland, one sector highlighted as vulnerable to the impact of Brexit is the Danish food sector, notably Pork exports. Along with the Energy sector, the Confederation of Danish Industry expects this sector will be hardest hit by the impact of Brexit. There were €1.6 billion worth of exports to the UK in 2016, while the UK is also a significant market for foreign direct investment by Danish food companies (c.€1 billion in 2015). Export trade with the UK employs 12,000 people in the sector.

The Danish Agricultural and Food Council published an analysis of a 'No Deal' Brexit for the sector in March 2017. Tariffs of over 30% apply to pork and dairy products; while Britain has the right to unilaterally reduce their Most Favoured Nation rates, this would have to be done for all trading partners- leading to competition for Danish Pork from Brazilian and US produce. Loss of CAP funding and the raising of tariffs to compensate and protect British farmers and British food products against foreign competition would also see Danish business opportunities significantly diminished.

Food exports to the UK risk dropping to €0.405 billion a year in the event of MFN rates. Part of the produce could be sent to other markets, but possibly not at such good prices. Total exports could decline by €0.54 billion, leading to the loss of 4,600 jobs. The industry hopes for a continued UK mirroring of EU regulation on food safety and food quality, food ingredient labelling, animal health, and welfare protection as well as other relevant regulations.

Overall, the Confederation of Danish industry is supporting a deal that secures an orderly British exit with as little market disruption as possible. It has been urging companies to prepare a plan for how they will handle Brexit, particularly in the absence of the single market's overall framework. They should consider the risk, and prepare a list of perhaps 5-10 of the most important issues for their sector and business.

Kroman Reumert, a Danish law firm, is advising businesses that such plans should consider some of the following:

- Staff issues e.g. the effects of the ending of free movement, will residency permit rules in Britain be changed?
- Taxation issues e.g. the possibilities of moving capital between allied companies, the fact VAT, customs duties and fees would no longer apply automatically
- Intellectual Property issues/Competition law e.g. the effect on the establishment of the new Patent Court, the protection of brands and designs in Britain in the absence of existing EU rights, how and for how long copyrights will be protected in Britain
- Financing and the financial sector- how will financial companies' opportunities of selling financial services across borders be affected if financial passporting rules no longer apply
- Dispute settlement i.e. how will be the possibility of enforcement of Danish rulings be effected in Britain, and vice versa
- Mergers and company handovers e.g. the absence of common rules, greater complexity in competition and staff law



- Contracts e.g. what EU legislation will cease to apply for contracts, what are the consequences for contracts entered into under British legislation, could Brexit itself lead to the annulment of a contract
- Personal data protection i.e. the possibilities of personal data drifting between an EU country and Britain, potential British demands on protection of personal data

### 4.3 Netherlands

The Dutch economy is more connected to the UK via trade than to that of the European Union as a whole. Around 35,000 businesses account for a large share of imports and exports to the UK. As a result, Brexit is expected to have a significant effect- by 2030, the cost to the Netherlands could run up to 1.2% of GDP, or €10 billion. GDP losses are expected to be concentrated in ‘chemicals, plastics and rubber’, ‘electronic equipment’, ‘motor vehicles and parts’, ‘food processing’ and ‘metals and minerals’- sectors that together account for 12% of Dutch GDP. They could suffer production losses of around 5%. Dutch businesses are already reporting a decline in UK demand for goods due to uncertainty. Depreciation of sterling against the Euro is also thought to be an adverse factor.

On Brexit, the Netherlands for now is primarily focussing on preparedness in dealing with practical customs issues and preparing for the worst-case scenario. There is a recognition that Brexit will have the largest impact on businesses that currently have no experience in trading with third countries. Measures to support trade diversification may follow. The Dutch Government commissioned a study focussing on the impact of Brexit on individual businesses in six sectors, to inform the approach of the Ministry of Economic Affairs and Climate Policy, and the Ministry of Agriculture, Nature and Food Policy.<sup>78</sup>

The study noted that due to uncertainty, firms were making only limited preparations. The study found that, based on 2016 data, the number of import declarations could increase by 752,000, and the number of export declarations by 4.2 million. The number of business accounts held with the Dutch Customs administration could increase by 40% following Brexit. The total additional costs due to the introduction of customs formalities for imports and exports of goods between the Netherlands and the UK (excluding any customs duties that may apply) could range from €387.2 million to €627.4 million per year.

It was found that there are concerns about insufficient capacity on the part of both the Dutch and UK Customs/regulatory authorities to undertake the additional controls and inspections required. An increased demand for personnel with customs expertise is anticipated, meaning both government bodies and businesses will have to invest in personnel with extensive knowledge of the customs formalities and sector specific NTBs applying to third country trade. The number of job seekers with

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<sup>78</sup> KPMG, Impact of non-tariff barriers as a result of Brexit- Ministry of Economic Affairs and Climate Policy and Ministry of Agriculture, Nature and Food Quality, January 2018- <https://www.government.nl/documents/publications/2018/01/18/impact-of-non-tariff-barriers-as-a-result-of-brexit>



the required knowledge and experience, however, is currently insufficient. Significant delays are expected for some time before these shortages are resolved.

This has been reflected in the concern in the Netherlands about the skills shortage in relation to customs. It is seeking to increase the number of customs officers, as well as veterinary skills for agri and phytosanitary checks.

The capacity of ferry terminals to act as an external border point, in terms of staffing levels, expertise, authorisation and available physical space, is also regarded as insufficient. If no adjustments are made, the combination of passenger and goods flows through the ferry ports will probably lead to additional delays.

Given the large volume of goods in transit passing through the Netherlands, there is a consequent worry that the imposition of border controls and subsequent delays may have an adverse effect on the position of the Netherlands as a major hub for transit trade.

Disruption is also anticipated for enterprise supply chains. Insufficient capacity is expected to result in increased waiting times and costs, leading to unpredictability in the logistics chain. Dutch firms expect to make changes to their supply chains, which could include changing logistics routes, expanding or redesigning distribution centres, or relocating production facilities to avoid additional import or export obligations/delays. IT systems will also have to be changed to accommodate trade with third countries, costing businesses much time and money (between €20,000 and €50,000)- particularly those with no experience in trading with third countries.

The report recommended actions to be undertaken at Government and enterprise level. The Dutch Government is being advised to step up efforts to inform business, to ensure it is optimally prepared for the consequences of Brexit. The Confederation of Netherlands Industry and Employers, as well as SME Netherlands, will also be engaging in an information campaign on Brexit's impact and how business can prepare. Those businesses already trading with the UK are expected to continue to do so after Brexit. Few, however, have experience with the cross border trade in goods with third countries. The Dutch Government for its part is warning companies to initiate their preparations, and has launched a website to share information and assist those who need it (<https://www.rvo.nl/brexit-loket>).

The Government has also been urged to explore the option of linking the Dutch and UK customs systems, to enable automated customs data sharing, to make arrangements with the UK in order to prevent the diverging of quality standards for goods, and to take steps well in advance to expand the capacity and number of inspection locations of customs and regulatory authorities,<sup>79</sup> so they can handle the additional controls and inspections. These authorities are also urged to perform a Brexit analysis.

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<sup>79</sup> Dutch Customs Administration, Netherlands Food and Consumer Product Safety Authority and Quality Control Bureau





Other recommendations are for introduction of a fast/green lane for customs clearance for certain perishable goods, exploration of the options for performing on board customs controls and inspections to avoid delays at ferry terminals, and exploration of the option of setting up an IT system enabling businesses to automatically submit data on goods required for customs formalities.

Firms are advised to perform a Brexit impact analysis, to map the consequences for their business. It suggests that for larger trade volumes, firms may find it more cost efficient to set up their own process for submitting declarations and notifications, rather than outsourcing to a customs agent. To minimise delays and costs, they are also urged to consider using the Automatic Periodic Declaration system, in combination with the Customs Management System, in order to set up an automated customs process; applying for an Authorised Economic Operator authorisation; and applying for an authorisation to have phytosanitary inspections carried out at their business premises.

On the opportunities arising from Brexit, there has been no conscious strategy on the part of the Dutch foreign investment agency to target UK based MNCs- it is expected, however, that MNCs seeking to relocate may consider the Netherlands. Amsterdam was successful in its bid to host the European Medicines Agency, the arrival of which could generate an additional few thousand new jobs in the capital and surrounding region. Specialist lawyers, patent specialists and consultants are also expected to move to Amsterdam, as well as small offices of many pharmaceutical companies, to be close to the EMA. It is also expected to generate a major impulse for research into new medicines.

Dutch inward investment rests on a number of advantages of living and working in the country- connectivity, quality of infrastructure, access to the European market, availability of a multilingual and highly skilled workforce, efficient markets, and quality of living and public services.

#### 4.4 Sweden

Brexit has generated major concern amongst the local business community in Sweden. The United Kingdom is Sweden's fourth largest export market- the third largest recipient of Swedish services, and sixth largest of goods- accounting for about 6% of Swedish exports, and is also an important import trading partner. The UK is particularly important for the services sector, with 38,000 (58%) of the 66,000 engaged in exporting to the UK working in services sectors.

Approximately 90,000 Swedes also live in the UK, while about 1,000 Swedish companies have UK subsidiaries. Demand for Swedish exports has been strong in recent years. There is strong awareness and a great deal of research has been undertaken into the possible impact of Brexit- in relation to both the challenges and opportunities.



One such piece of research was undertaken by Sweden's National Board of Trade,<sup>80</sup> with the mandate to analyse and provide alternatives for the regulation of EU-UK trade after a UK withdrawal from the European Union. The recommendations are pitched at an EU-UK level, but may prove no less informative for an Irish context. The research concluded that no matter which option resulted, it 'will mean a deterioration compared to that which applies today in trade between the EU and the UK'. The reinstating of customs formalities will mean increased administration, higher costs and reduced predictability in the flow of goods.

The Board concluded that there is a need for information and support to businesses and consumers so that neither end up being adversely affected. How companies are affected will depend largely on the extent to which they already trade with countries outside the EU. Large MNCs that already trade with other countries are likely to have both knowledge of regulatory frameworks, expertise and systems to manage the flow of goods between the EU and UK. They will still be affected negatively though in the form of increased costs and reduced predictability in the flow of goods.

For small businesses that currently only deal with countries in the EU, new administrative requirements that impose demands on knowledge of other regulatory environments, increased bureaucracy and completely new costs in terms of administration and possible system requirements, it will be even more burdensome. Brexit will therefore affect small businesses even harder.

An uncertainty is how well the authorities in the UK and Sweden, as well as other EU member states, will be able to handle the increased volume of administrative requirements in the form of customs declarations, authorisations, licences, information measures, and controls. What has until now been intra-EU trade must now be treated as trade with a third country. If authorities are not given reasonable conditions for handling the increased amount of regulatory issues that Brexit will cause, businesses will be adversely affected.

The Board advises that all relevant authorities need to jointly promote coherent information, with the European Union needing to strive to create a clear process for dealing with barriers to trade. Aside from a transitional agreement, gradual negotiation of a free trade agreement, and the UK's membership, like Norway and Switzerland, of the EU's security area (meaning companies would not have to submit an entry summary declaration for safety and security purposes for EU-UK trade), the Board proposes an EU-UK agreement on customs cooperation, and mutual recognition of AEOs, as well as flexible solutions for small and medium sized enterprises that often do not have the potential to become AEOs, and which would be hit hard by the reintroduction of customs formalities with the UK.

The Swedish view is that conditions for reaching a satisfactory agreement with the UK are good. The EU has recently adopted new customs legislation that customs authorities and companies are implementing, and with which the UK was largely satisfied. This fact would probably facilitate the

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<sup>80</sup> Alternatives for a future regulatory framework for customs procedures and trade facilitation between the EU and the UK for the trade in goods- <http://www.regeringen.se/494cc9/contentassets/6fda5c79a5d94ad692e4c65f082b4aa6/english-summary-brexite-analysis.pdf>



conclusion of a customs cooperation agreement, whereby the UK's customs legislation largely conforms to EU customs legislation. Close cooperation to find flexible and efficient solutions, and a continuous further development of cooperation will be desirable. One possibility is to look at solutions similar to the customs cooperation agreement between the EU and Norway, which means the formalities for Norwegian exports and Swedish imports can be carried out in one place.

On trade facilitation, the Board also advises that the EU should strive to attain as smooth handling of proof of origin as possible, so that businesses can more easily take advantage of the duty exemption or reduction of duty with a free trade agreement. There are prerequisites for smooth trade procedures regarding goods that may be subject to health protection measures, SPS measures, and the UK currently has EU based SPS legislation.

This research is being succeeded by identification of which goods and services sectors currently engaged in trade with the UK are of particular importance to the Swedish economy and employment. After an in-depth analysis the Board of Trade will consider how a future trade agreement between Britain and Sweden would affect the country. The board will also assess 'whether there are existing technical solutions in other EU agreements' to ensure there is no unnecessary change.

Sweden has also examined the opportunities potentially open to its economy post-Brexit. British companies have invested 300 billion Kroner in Sweden, which accounts for 13% of foreign direct investment in the country. It is expected that British companies will add production units in EU countries to maintain access to the internal market. It is expected that companies will seek production opportunities in countries with compatible expertise and industry, as well as proximity to customers. This provides good opportunities for Sweden and other EU countries to attract direct investment from the UK.

The challenge for Sweden in this area has been drawn out by research undertaken by Business Sweden, the Swedish Trade and Investment Council.<sup>81</sup> This analysed the new opportunities for foreign investment in the wake of Britain's departure from the EU, and how Sweden can capitalise on those opportunities. It concluded that there is consensus among businesses in the UK on the uncertainty surrounding Brexit. There are no apparent signs yet of a slowdown in foreign investment into the UK. Businesses have, however, signalled that they are deferring major investment decisions, while the fall in Sterling since June 2016 has made UK companies more attractive as takeover targets.

The research found that close to one fifth of Swedish companies with UK operations may shift investment away from the UK as a result of Brexit. A conclusion, however, is that Sweden is perceived as a peripheral location by companies seeking out foreign investment alternatives within the EU. The Council has therefore called for strengthened investment promotion to communicate

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81 Business Sweden, *International Investments After Brexit*- <https://www.business-sweden.se/en/Invest/news-and-downloads/publications/investments-after-brexit/>



Sweden's competitive advantages, its favourable investment climate, and national strengths, including concrete business opportunities.

## 4.5 Conclusions

Of those EU-27 economies surveyed, it is clear that concerns emerging strongly echo those of Irish based enterprises in relation to Brexit. All four economies are worried about the impact on their trading activity with the UK, and the complications the UK's departure from the European Union could introduce in facilitating that trade. There is a recognition that SMEs, generally those with little experience of trading with Third countries, and who lack the resources to remain competitive in the face of trade barriers, are most vulnerable to the UK's departure from the EU's Single Market and Customs Union.

All those countries surveyed are arguing for a trade friendly Brexit, customs co-operation with the UK, and avoidance of regulatory divergence, although the likes of Denmark and the Netherlands are also advising firms that in auditing their level of exposure to the UK market and planning accordingly, that they prepare for a worst-case scenario. The Swedish view is more sanguine, believing that conditions for reaching a satisfactory agreement with the UK on customs cooperation are reasonable, given the UK's satisfaction with the Union Customs Code introduced in 2016.

The potential for long customs delays, a lack of customs expertise, general unpredictability in the logistics chain, and the feared impact this may have on the status of certain countries as transit hubs (e.g. Belgium, the Netherlands), will increase the demand for skilled logistics and supply chain personnel more broadly. This is something that Ireland must bear in mind with regard to developing and retaining its own talent base, or attracting such talent from overseas. Offsetting the increasing complexity of and delays within logistics also appears to be driving the search for technological solutions, suggesting that the need for digital or tech-savvy personnel will also increase.

The importance of embedding the necessary awareness and expertise on customs formalities within internationally trading firms also points to the importance, as highlighted by the Swedish analysis, of promoting coherent information to businesses so they can mitigate Brexit's impact. This could lead to new bureaucratic procedures regarding rules of origin, forms and certifications, requiring additional time and resources.

The advice being offered to exporters in these countries also echoes that in Ireland: identifying additional costs, hedging against Exchange rate risk, monitoring for regulatory divergence, and ultimately exploring new markets. The Danish advice in particular points to the varied issues that could impact on firms trading with the UK: Third country VAT, Intellectual Property issues, dispute settlement, contracts, personal data protection.

The potential opportunities from Brexit are also recognised, in terms of attracting FDI and skilled migrants. The Benelux countries can point to their proximity to European decision making centres, their multilingualism, quality of life and public services, available office space, and air and rail



connections and accessibility. In seeking to attract skilled inward migration, let alone FDI, it is with such locations that Ireland ultimately has to compete.

With Brexit, the emergence of a more restrictive trading route to Ireland, and the potential ending of freedom of movement for EU/EEA nationals through the UK as a landbridge to Ireland, however, there is perhaps a risk that psychologically Ireland becomes more peripheral in the eyes of foreign direct investment and skilled migrants- much as Sweden views itself in terms of FDI. Besides the building up of a world-class logistics and supply chain capability in Ireland, this calls for a re-emphasising of Ireland's attractions and advantages, to maintain visibility in the competition for investment, skills and talent.



## Chapter 5. Education and training supply

This chapter outlines existing training and education provision relevant to Freight Transport, Distribution and Logistics and international trading activities. It has been developed to identify the extent of the available provision and how it aligns with skills gaps, both current and prospective.

As per the recommendations for increased course provision under the 2012 and 2015 EGFSN reports, it is clear that there is a significant amount of training and education provision that could help those engaged in international trade, as well as FTDL activities, exploit new markets and mitigate the impact of Brexit in terms of reduced trade with the UK and challenges to the supply chain.

Given the skills shortages and recruitment difficulties expressed in the research undertaken for this study, it is suggested that current provision can be better marketed and promoted to both enterprises and sectors with particular skills requirements, and indeed to prospective students. In the case of the latter, this will require enhancing the visibility and understanding of the career opportunities available in logistics and supply chain activities.

### 5.1 Freight transport, distribution and logistics

This section provides a list of courses relevant to the supply of skills for the freight transport, distribution and logistics sector. Most of the courses listed are delivered through the further and higher education and training sectors. Where possible, the number of awards made in 2016 or 2017 (whichever is the latest available) is also included. Also included are a small number of courses offered through the private and/or professional education sector.

In the case of Higher Education provision, information on annual intake and potential expansion of capacity within courses is also provided, to give an indication of the under or over subscription in those courses, and their scope for increasing intake in line with the associated skillsets.

In relation to Higher Education there are eight institutions which offer NFQ Level 6-9 degrees, comprising over 20 courses including full and part time as well as distance learning. However, only DIT offer a full time Level 9 degree which had 25 graduates in 2016. Other dedicated Supply Chain Management degrees are not always full time and/or produce very low numbers of graduates each year.

SOLAS funds a number of training courses in the FET sector across five awarding bodies (QQI, DTTAS, RSA, Road Transport Industry Training Board and CILT). These focus on driving and operations roles with the most commonly taken in relation to Driver Certificate of Professional Competence (CPC)/Driver Licence and Forklift training.



QQI awards qualifications in the FET Sector and non-HEA funded third level sector. These range from level 6-9 and include areas such as Public Procurement, Purchasing, Global Operations and Supply chain. Awards last year ranged from 5 to 29 per course.

While of great benefit to the sector, it is clear that the relatively low take up on some courses and limited offer in certain areas means that there is scope to enhance the visibility and availability of training and education provision for the FTDL sector. In particular, it is important that where possible skills gaps associated with the impact of Brexit are also covered.



Table 5.1 Third level provision in freight, transport, distribution and logistics skills (and broader supply chain skills)

Institution	Course Title	NFQ Level	Mode	Number of enrolments 2015/2016	Number of graduates in 2016	Annual Intake for 2017 (unless otherwise stated)	Potential Expansion
Carlow IT	Certificate in Purchasing Strategy, Quality Management and Lean Six Sigma	Level 6	Part-time	26	13	38	Expansion possible-delivered over 3 campuses (Carlow, Wexford, Wicklow)
	Bachelor of Arts in Leadership, Management and Defence Studies (Logistics)	Level 7	Part-time	19	17	7	Expansion possible-delivered over 3 campuses (Carlow, Wexford, Wicklow)
	Higher Diploma in Business in Supply Chain Management	Level 8	Full-time or part-time	56	25	3 FT 129 PT	Expansion possible-delivered over 3 campuses (Carlow, Wexford, Wicklow)
	Bachelor of Business (Honours in Supply Chain Management)	Level 8	Full-time	112 (2017/18)	5	8 (2015/16)	No expansion possible
Cork Institute of Technology	Bachelor of Science Transport Management and Technology (now called BSC in Automotive Technology and Management)	Level 7	Full-time	65	13	19 for 2017/18	To 40
	Bachelor of Science (Honours Transport Management)	Level 8	Full-time	15	14	16 for 2017/18	To 40
	Bachelor of Business Supply Chain and Transport Management	Level 7 or 8	Part-time	27	29	16 for 2017/18	To 32
DIT	Bachelor of Science (Hons) Logistics and Supply Chain Management	Level 8	Full-time	178	34	40	Linked to staff resources
	Bachelor of Science (Hons) Transport Operations and Technology	Level 8	Full-time	91	30	24	Linked to staff resources
	MSc in Supply Chain Management	Level 9	Full-time and part-time	80	25	43	Linked to staff resources





Institution	Course Title	NFQ Level	Mode	Number of enrolments 2015/2016	Number of graduates in 2016	Annual Intake for 2017 (unless otherwise stated)	Potential Expansion
Dundalk IT	Certificate/Diploma in Food Supply Chain Operations	Level 7	Part-time	3	2	2016/17- 7 fee paying, 4 Springboard/ 2017-18 8 Fee paying, 9 Gdf]b[VcUFX	Could potentially double intake
	Certificate in Lean Six Sigma (Green Belt)	Level 7	Part-time	24	22	2016/17- 36; 2017/18- 36	Could potentially expand to intake of 60
	Diploma in Food Supply Chain Operations	Level 7	Part-time	11	4	2016/17 7 Fee paying, 4 Springboard/ 2017/18 8 fee paying, 9 Springboard	Could potentially double intake
Limerick IT	Certificate in Transport Safety Management	Level 6	Part-time	7	8	Minimum of 10 on average	No real limitation on maximum numbers
	Bachelor of Engineering Road Transport Technology and Management	Level 7	Full-time	30	14	12	No real limitation on maximum numbers- new practical facilities coming on stream shortly
University College Cork	Certificate in Supply Chain Management	Level 7	Part-time	20	4	Not running in 2017/18; 2015/16- 25 2016/17- 20	
	Dip in Supply Chain Management	Level 7	Part-time	41	16	2015/16- 16 2016/17- 15 2017/18- 15	To 30
	MComm (Supply Chain Management - Lean SCM Black Belt)	Level 9	Part-time	13	17	2016/17- 21	To 22
	Postgraduate Diploma in Supply Chain Management (Lean SCM Black Belt)	Level 9	Part-time	27	11	2016/17- 24 2017/18- 17	To 30



Institution	Course Title	NFQ Level	Mode	Number of enrolments 2015/2016	Number of graduates in 2016	Annual Intake for 2017 (unless otherwise stated)	Potential Expansion
University College Dublin	MSc Supply Chain Management	Level 9	Full-time or part-time	50	42	40-45 (FT) 5 (PT)	No plans to expand
University of Limerick	Cert. Supply Chain Management (Production and Inventory)*	Level 7	Part-time	10	9	71 (including distance learners)	To 100
	Supply Chain Management (Undergraduate diploma)	Level 8	Distance	n/a	3	22	To 50
	Hons Bachelor Degree in Supply Chain Management	Level 8	Part-time	28	24	27	To 50
	Specialist Diploma in Supply Chain Management	Level 9	Distance/ Online			14	To 50
	Master of Science in Supply Chain Operations	Level 9	Distance/ Online			13	To 50
	Strategic Quality Management (Lean Sigma Systems)	Level 9	Distance	n/a	10	52	To 75
	PG Dip Quality Management (Lean Systems)*	Level 9	Distance	n/a	59	106	To 200
	PG Dip Quality Management (Six Sigma)*	Level 9	Distance	n/a	17	58	To 200
	PG Diploma/Msc in Supply Chain Management	Level 9	Distance	6	8		
	Masters in Quality Management	Level 9	Full-time	1	1	0	To 50

Source: Higher Education Authority

\*Courses have multiple starts each year, Autumn and Spring



Table 5.2 SOLAS funded provision in FET by awarding body

Awarding/Certifying Body	Award Title	Example of course(s)	Number of Certs/Awards 2017
QQI	Logistics & Distribution (major award)	Forklift Truck Operator Logistics and Distribution Warehousing & Distribution	53
	Supply Chain Logistics (major award)	Supply Chain Logistics	18 (in 2016)
	Warehouse Operations (specific purpose award)	Forklift (Counter Balance) Forklift Truck Operator Warehouse Operations Warehouse Operative	224
Dept Transport, Tourism & Sport	Driving - Delivery	Delivery Driver 6 weeks Delivery Driver 9 weeks	109
Road Safety Authority	Driver Certificate of Professional Competence (CPC)	CPC - Health and Safety for the Professional Driver CPC - Professional Bus Driver CPC - Role of the Professional Driver CPC - Control of Vehicle & Eco-Driving Techniques CPC - Professional Truck Driver CPC - Minimising Risks & Managing Emergencies Bus Driving- D Licence HGV Arctic HGV Rigid	651
	Driving Licence Category B (RSA-B)	Delivery Driver - B Licence	
Road Transport Industry Training Board	Forklift Counterbalance Certificate (RTITB1)	Forklift Truck Training for Beginners Heavy Goods Vehicle Driving (HGV) - Rigid RTITB Counterbalance Forklift Truck Operator RTITB Forklift Truck Operator	948
	RTITB Instructor-Counterbalance Novice 10 days (RTITB-CN10)	RTITB Forklift Truck Driving Instructor Training-Counterbalance	



Chartered Institute of Logistics & Transport	ADR Driving DT Digital Tachograph	HGV Driving - Rigid	321
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Source: SOLAS

\* An individual may receive more than one certificate in a year

Table 5.3 QQI awards made in non-HEA funded third level

Provider/Institute	Qualification	Level	Number of awards
Irish Institute of Purchasing and Materials Management	Certificate in Warehousing and Supply (Minor Award)	6	15
Dorset College	Diploma in Global Operations and Supply Chain Management (Special Purpose Award)	7	5
Griffith College	Master of Science in International Procurement and Supply Management (Major Award)	9	7
Irish Institute of Purchasing and Materials Management	Certificate in Public Procurement (Minor Award)	6	3
	Certificate in Purchasing Fundamentals (Minor Award)	6	29
	Higher Certificate in Business (Major Award)	6	29
	Bachelor of Business (Major Award)	7	25
	Bachelor of Business (Honours) (Major Award)	8	20

Source: QQI

Table 5.4 Private Sector and Professional Body courses

Provider/Institute	Qualification	Level	Number of awards
Chartered Institute of Logistics and Transport	Supply Chain Operations Certificate (QQI)	5	Not available
	Continuous Improvement in Manufacturing Certificate (QQI)	5	Not available
	Warehousing Operations Certificate (QQI)	5	Not available
	Lean Manufacturing Tools (QQI)	5	Not available
Irish Exporters Association	Customs Awareness Level 1 (1 day course)		29
	Customs Awareness Level 2 (1 day course)		27
	Brexit Preparation for your Supply Chain (1 day course)		50
	Authorised Economic Operator (AEO)- Preparing for your Application/Certification Process		New course
	Authorised Economic Operator (AEO)- Customs competency for maintaining your AEO Status		New course
	Incoterms 2010® Dublin (1 day course)		
	Warehouse Strategy (2 day course)		25
Introduction to Dual Use Export Control		29	



	Temperature Controlled Logistics Food Law/ Labelling (1 day course) Quality SOP Procedures (1 day course) Good Distribution Practice (full training programme for IEA GDP Passport including online and face to face courses) (1 to 3 day courses)		New course 9 7 961
<b>Irish International Freight Association</b>	FIATA Diploma in Freight Forwarding		32 in 2017

Source: EGFSN Secretariat



## 5.2 International Trade

### Supply of courses

This section focuses on the supply of skills from the education and training system in relation to trading internationally. While it could be argued that graduates from any business-related course could be a potential supply of international business skills, in this report we investigated:

- Third level enrolments in and graduates from international-type courses. International-type in this context is defined as any course in the social sciences, business and law field of learning that contain the words ‘international’, ‘European’, ‘French’, ‘German’, ‘Spanish’, ‘Italian’, ‘Chinese’, ‘Japanese’ or ‘Russian’ in the course title. Data source: Higher Education Authority
- Further education and training awards in international business, ebusiness or marketing. Data source: (QQI-FE).

A number of issues arise when looking at the education and training provision for skills for business to trade internationally, as follows:

- Unlike the situation with, for example, medical doctors or chartered engineers (where there are a specific number of courses in Irish higher education leading to the qualifications necessary to practice in these professions), the number of courses that may ultimately provide the skills for international trade is quite large and varied: possible courses span a range of disciplines (business, engineering, science, agriculture, arts (languages), tourism, manufacturing) and graduates may or may not pursue the international dimension associated with their chosen career; this leads to an overestimation of education/training provision
- The lack of an international component on a course does not mean that it will not be possible for a graduate to pursue an international career; graduates may acquire the necessary skills by other means (e.g. personal interest, exposure to an international environment through experience at work).
- It could be argued that almost all graduates could have availed of the opportunity to gain International experience given the widespread availability of ERASMUS programmes in Irish higher education; therefore, the courses detailed in this section may be an underestimation of the supply of language/International culture skills.

Tables 5.5-5.7 provide the number of third level enrolments and graduates, by NFQ level, from international-type courses in business related fields.

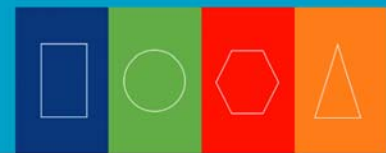


Table 5.5 Number Enrolments in International-Type Business Courses at 3rd Level

Business related field	NFQ 6/7	NFQ 8*	NFQ 8-10**	Total
Social sciences (e.g. economics, political science, etc)	0	369	221	590
Accounting & tax	0	28	7	35
Finance etc	0	35	18	53
Management & admin	25	125	250	400
Marketing & advertising	6	11	107	124
Law	8	314	216	538
Other business & admin***	106	2,640	111	2,857
<b>Total</b>	<b>145</b>	<b>3,522</b>	<b>930</b>	<b>4,597</b>

Source: HEA

\* Honours degree

\*\* Postgraduate data include higher diplomas (NFQ 8), postgraduate dips/certs & master degrees

\*\*\*The other business & admin category includes BComm (international) enrolments

Table 5.6 Number of Graduates from International-Type Business Courses at 3rd level

Business related field	NFQ 6/7	NFQ 8*	NFQ 8-10**	Total
Social sciences (e.g. economics, political science etc)		65	156	221
Accounting & tax		13	2	15
Finance etc		2	20	22
Management & admin	48	30	234	312
Marketing & advertising	28		61	89
Law	9	107	158	274
Other business & admin	31	406	78	515
<b>Total</b>	<b>116</b>	<b>954</b>	<b>723</b>	<b>1,793</b>

Source: HEA

\* Honours degree

\*\* Postgraduate awards include higher diplomas (NFQ 8), postgraduate dips/certs & master degrees

Table 5.7 Further Education and Training Awards (includes ETBs & private providers)

Award Type	Award Title	NFQ Level	Number of awards
Major	eBusiness	5	152
Major	Marketing	5	64
Minor	International Trade Practice	5	7
Minor	International Marketing	6	3
Minor	eBusiness Studies	5	68
Minor	eBusiness Studies	6	150

Source: QQI

Tables 5.5-5.7 demonstrate that International marketing and advertising, accounting and finance had some of the lowest number of enrolments and graduates when compared to other aspects such as management; this is significant, given some of the internationally trading skillsets identified in this study.



At a more granular level, the section below provides a list of higher education courses that may help equip students with the skills relevant to international trade. Over 60 higher education international business courses were identified, spanning NFQ levels 6-9.

The courses listed identify which of the broad skill types that may be required by enterprises are covered in the course content:

- Entrepreneurship skills for exporting
- Export business planning
- Export marketing, negotiation and sales skills
- E-business skills
- Logistics and distribution skills
- Procurement and purchasing skills
- Foreign language fluency and cultural awareness of different traditions
- International trade/export trade
- Food export.

The list of relevant courses includes the provider name, award type (e.g. Master's degree), NFQ (National Framework of Qualifications) level, course title, and the range of course modules relevant to the skills for International trade (mentioned above).

An 'x' in the column indicates that a module relevant to that particular skill forms a part of an undergraduate programme. For postgraduate programmes, given the specialist nature or the area of study, an 'x' indicates that the module is provided, even in cases where it may be optional. The letters 'o' and 'c' indicates that a language or work/study abroad forms an optional or compulsory module of the course respectively.

Table 5.9 is a subset of Table 5.8 where only courses with language modules are included. Table 5.10 contains a list of courses where sales is covered as a module.

## Exclusions

Undergraduate courses where an international component was optional (although postgraduate courses where the international component was optional were retained due to the specialist nature of a master's course).

Tourism courses are excluded.

European Studies: where the course usually involves the study of two European languages and political/geographical sciences. These courses are excluded as the main focus of the course is not directly related to international trade.

Arts programmes focusing on languages or applied languages are excluded.





Table 5.8 Selected courses, by NFQ level, providing Skills for International Trade.

Provider	NFQ Level	Award Type	Course	Study/Work Abroad	Country	Entrepreneurship	International Trade	Export business	International Marketing	E-business	Logistics & distribution.	Procurement	Food Export Sector	Foreign language skills
DIT	6	Higher Cert	Marketing			x			x		x			o
GC Cork	7	BA (Ord)	Marketing				x		x					
IT Tralee	7	BBS (Ord)	Business			x			x		x			
GC Limerick	7	BA (Ord)	Business Studies						x					
GC Cork	7	BA (Ord)	Business Studies						x					
Letterkenbm IT	7	BBus (Ord)	International Business & Languages	o					x					o
Dundalk IT	7	BBus (Ord)	International Business (1-yr add-on)	c	Europe, China		x							c
AIT	7	BBUs (Hons)	International Business Management (for overseas students only)	c	Ireland	x	x	x	x		x			o
IT Tallaght	7	BBus	International business			x								c
Letterkenbm IT	7	Bbus (ord)	Business (with marketing option)			x								o
DIT	8	BA	International Business & language	c	Europe		x	x	x		x			c
American College	8	BA	Event Management					x						
DCU	8	BA (Hons)	Business Studies International	c	Europe; Asia		x	x	x	x	x			c
NUI Maynooth	8	BA	International Finance and Economics	c			x							c



Provider	NFQ Level	Award Type	Course	Study/ Work Abroad	Country	Entrepreneurship	International Trade	Export business	International Marketing	E-business	Logistics & distribution.	Procurement	Food Export Sector	Foreign language skills
American College	8	BA (Hons)	Accounting & Finance					x						
Carlow IT	8	BBS (Hons)	Mgt (add-on)					x						o
UCD	8	BAgrSc (Hons)	Food & Agribusiness Management	o					x				x	
Carlow IT	8	BBS (Hons)	Supply Chain Management (add-on)								x			o
Dundalk IT	8	BB (Hons)	Digital & International Business					x						
Sligo IT	8	Bbus (Hons)	Business in International Marketing & Sales	c	France; Spain; Germany				x					c
Letterkenny IT	8	hons	Business with French / Spanish, German / Irish											
UL	8	BA (Hons)	Business - International Business	c	Europe, US, Asia & Australia	x								c
UCC	8	Bcomm (Hons)	Commerce - international with a modern language	c	Europe									
UCC	8	B Comm (Hons)	Commerce - International with Chinese Studies	c	China									c
DIT	8	BA (Hons)	International Business & language (Chinese, Irish, Fr, Gr, Sp, It)	c					x					c



Provider	NFQ Level	Award Type	Course	Study/ Work Abroad	Country	Entrepreneurship	International Trade	Export business	International Marketing	E-business	Logistics & distribution.	Procurement	Food Export Sector	Foreign language skills
DCU	8	BA (Hons)	Global Business Fr, Ger, Sp, USA	c	France; German; Spain; USA; Canada				x					c
NUI Maynooth	8	Hdip	Economic Science				x							
IT Tralee	8	BBS (Ord)	Business	o			x		x		x			
American College	8	BA (Hons)	International Business						x					
Cork IT	8	BBus (hons)	International Business with language	c	France; Spain; Germany			x	x					c
Waterford IT	8	BA (hons)	International Business	c	Worldwide		x	x	x		x			o
IT Tallaght	8	BBS (Hons)	International business (also at level 7)			x	x		x					c
IT Tallaght	8	BBS (Hons)	Marketing						x	x				c
IT Tallaght	8	BBus (Hons)	International business	o	France; Spain; Germany	x		x	x					c
Limerick IT	8	BBs (Hons)	Marketing and management						x	x	x			o
Letterkenny IT	8	Bbus (Hons)	Marketing						x					
UCD	8	Bcomm (Hons)	Commerce International	c	Europe; China				x					c
NUI Maynooth	8	BBS	International Business	o				x	x					o
TCD	8	BBS (Lang.)	Business studies with a language											c
TCD	8	BBS	Global Business					x						



Provider	NFQ Level	Award Type	Course	Study/ Work Abroad	Country	Entrepreneurship	International Trade	Export business	International Marketing	E-business	Logistics & distribution..	Procurement	Food Export Sector	Foreign language skills
American College	9	MBA	Business Administration (International Specialisation)				x							
IBAT (Swords)	9	MBA	Business					x						
DIT	9	PG Dip	International Business Development (Food & Drink Marketing) / lbec				x	x	x					
DIT	9	PG Dip	International Business Development	c	China; Europe; USA		x						Bord Bia/ lbec	
NUI Galway	9	MSc	International Management						x	x				
DBS	9	MSc	International Business (Inst. Of Commercial Management)					x	x					
IMI	9	MBA	Henley MBA		Europe; China			x						
DIT	9	MBS	Retail Management						x					
GC Limerick	9	Exec Masters	Supply Chain								x			
DCU	9	MBA	Executive MBA			x		x						
DIT	9	MSc	Business & Entrepreneurship			x								
NUI Galway	9	MSc	International Marketing & Exporting					x	x					
Cork IT	9	MSc	Business - International Business					x						



Provider	NFQ Level	Award Type	Course	Study/ Work Abroad	Country	Entrepreneurship	International Trade	Export business	International Marketing	E-business	Logistics & distribution.	Procurement	Food Export Sector	Foreign language skills
American College	9	MB	International Business			x			x					
UCC	9	MSc	Innovation, Commercialisation and Entrepreneurship			x								
Waterford IT	9	MIB	Internationalisation	c		x			x					
UL	9	MSc	International Entrepreneurship Management			x			x					
UL	9	MSC	International management and global business					x	x					
CIT	9	MBA	Global Business Practice				x	x		x				
UCD	9	MSC	International Business			x			x					
UCD	9	MSC	International Management (CEMS)	c										
NUI Galway	9	MSc	Sales & Marketing						x					
DCU	9	MSc	International Management						x					
TCD	9	MSC	International Management	c	China			x			x			



Table 5.9 Third level business courses with foreign language modules

Provider	NFQ Level	Award Type	Course	Study/ Work Abroad	Country	Entrepreneurship	International	Export planning	Int. Marketing	E-business	Logistics/distrib	Procurement	Food Export	Foreign language
DIT	6	Higher Cert	Marketing			x			x		x			o
Letterkenny IT	7	BBus (Ord)	International Business & Languages	o					x					o
Dundalk IT	7	BBus (Ord)	International Business (1-yr add-on)	c	Europe, China		x							c
AIT	7	BBUs (Hons)	International Business Management (for overseas students only)	c	Ireland	x	x	x	x		x			o
IT Tallaght	7	BBus	International business			x								c
Letterkenny IT	7	Bbus (ord)	Business (with marketing option)			x								o
DIT	8	BA	International Business & language	c	Europe		x	x	x		x			c
DCU	8	BA (Hons)	Business Studies International	c	Europe; Asia		x	x	x x		x			c
NUI Maynooth	8	BA	International Finance and Economics	c			x							c
Carlow IT	8	BBS (Hons)	Mgt (add-on)					x						o
Carlow IT	8	BBS (Hons)	Supply Chain Management (add-on)								x			o
Sligo IT	8	Bbus (Hons)	Business in International Marketing & Sales	c	France; Spain; Germany				x					c



Provider	NFQ Level	Award Type	Course	Study/ Work Abroad	Country	Entrepreneurship	International	Export planning	Int. Marketing	E-business	Logistics/distrib	Procurement	Food Export	Foreign language
UL	8	BA (Hons)	Business - International Business	c	Europe, US, Asia & Australia	x								c
UCC	8	B Comm (Hons)	Commerce - International with Chinese Studies	c	China									c
DIT	8	BA (Hons)	International Business & language (Chinese, Irish, Fr, Gr, Sp, It)	c					x					c
DCU	8	BA (Hons)	Global Business Fr, Ger, Sp, USA	c	France; Germany; Spain; USA; Canada				x					c
Cork IT	8	BBus (hons)	International Business with language	c	France; Spain; Germany			x	x					c
Waterford IT	8	BA (hons)	International Business	c	Worldwide		x	x	x		x			o
IT Tallaght	8	BBS (Hons)	International business (also at level 7)			x	x		x					c
IT Hallaght	8	BBS (Hons)	Marketing						x	x				c
IT Tallaght	8	BBus (Hons)	International business	o	France; Spain; Germany	x		x	x					c
Limerick IT	8	BBS (Hons)	Marketing and management						x	x	x			o
UCD	8	Bcomm (Hons)	Commerce International	c	Europe; China				x					c
NUI Maynooth	8	BBS	International Business	o				x	x					o



Provider	NFQ Level	Award Type	Course	Study/ Work Abroad	Country	Entrepreneurship	International	Export planning	Int. Marketing	E-business	Logistics/distrib	Procurement	Food Export	Foreign language
TCD	8	BBS (Lang.)	Business studies with a language											c

Table 5.10 Third level courses with sales modules

College	NFQ	Award Type	Course	Study/Work Abroad	International Trade	Export Business Planning (International Business)	International Marketing, Negotiation & sales skills	E-business Skills	Logistics & Distribution	Foreign Language	Sales Module
DBS	n/a	DBS Diploma	Selling & Sales Management				x				x
DBS	n/a	DBS Diploma	Marketing, advertising, sales & PR								X
DIT	6	Higher Cert	Marketing				x		x		x
LIT	6	Higher Cert	Marketing & Management					x			x
AIT	6	Certificate	Marketing, sales Theory & Practice								x
AIT	7	Bachelor of Business	Digital Marketing					x			x
Galway-Mayo IT	7	Bachelor of Business	Marketing and Sales							o	x
IT Sligo	7	Bachelor Degree (ord)	Marketing and Sales				x			o	x
IT Blanch	7	Bachelor of Arts	Digital Marketing								x
IT Tallaght	7	Bachelor of Arts	Digital Marketing				x			x	x
IT Tallaght	7	BBS (ord)	Marketing							x	x
Cork IT	7	BBS	Marketing				o		o		x
Tralee IT	7	Bachelor of Business (ord)	Marketing								x





College	NFO	Award Type	Course	Study/Work Abroad	International Trade	Export Business Planning (International Business)	International Marketing, Negotiation & sales skills	E-business Skills	Logistics & Distribution	Foreign Language	Sales Module
Dundalk IT	7	BA	Digital Marketing-add on						x	o	x
DCU	8	BBS	Business Studies		x	x	x			x	x
UL	8	BBS (Hons)	Business studies								x
DIT	8	Honours Degree	Marketing	o			X			o	x
LIT	8	Bachelor of Business (hons)	Business with Digital Marketing				x	x			x
LIT	8	BBS (hons)	Marketing & Management				x	x	x		X
Galway-Mayo IT	8	Bachelor of Business (hons)	Marketing and Sales						x	o	x
IT Sligo	8	Bachelor of Business (hons)	International Marketing & Sales with French/German/Spanish	x						x	x
IT Tallaght	8	Bachelor of Business (hons)	Marketing							o	x
Carlow IT	8	BB(Hons)	Marketing				x			o	o
Carlow IT	8	BBS(Hons)	International Business-add on				x		o	o	o
Carlow IT	8	Higher Diploma	Business Marketing				x				x
Cork IT	8	BBS (Hons)	Marketing		o		o		o		x
Tralee IT	8	Bachelor Degree (Hons)	Marketing								x
UCC	9	MSc	Innovation, Commercialisation and Entrepreneurship								x
NUI Galway	9	MSc	Sales & Marketing				x				x
Sligo IT	9	Master Degree by Thesis	Marketing (online/blended)								x



College	NFO	Award Type	Course	Study/Work Abroad	International Trade	Export Business Planning (International Business)	International Marketing, Negotiation & sales skills	E-business Skills	Logistics & Distribution	Foreign Language	Sales Module
Letterkenny IT	9	MSc	Marketing Practice								x

Table 5.11 Abbreviation of Course Providers

Abbreviation	Course Provider
AC	American College
AIT	Athlone Institute of Technology
Carlow IT	Carlow Institute of Technology
Cork IT	Cork Institute of Technology
DBS	Dublin Business School
DCU	Dublin City University
DIT	Dublin Institute of Technology
Dundalk IT	Dundalk Institute of Technology
Galway-Mayo IT	Galway-Mayo Institute of Technology
GC Limerick	Griffith College, Limerick
GC Cork	Griffith College, Cork
GC Dublin	Griffith College, Dublin
IBAT	IBAT College (Swords)
IMI	Irish Management Institute
IT Blanch	Institute of Technology Blanchardstown
IT Tallaght	Institute of Technology Tallaght
IT Tralee	Institute of Technology Tralee
Letterkenny IT	Letterkenny Institute of Technology
LIT & LIT Tipperary	Limerick Institute of Technology (including former Tipperary Institute)
NCI	National College of Ireland
NUI Galway	National University of Ireland Galway
NUI Maynooth	National University of Ireland Maynooth
Sligo IT	Sligo Institute of Technology
TCD	Trinity College Dublin
UCC	University College Cork
UCD	University College Dublin
UL	University of Limerick
Waterford IT	Waterford Institute of Technology



## Chapter 6. Conclusions and Interventions

The comprehensive research and consultation undertaken for this study shows that there are clear skills gaps and challenges associated with Brexit that require mitigation.

However, it is also the case that there is a significant amount of existing support, resources and training that can help organisations get 'Brexit ready'.

The following eight interventions are recommended to address the skills issues identified in this study. In many cases they build on existing initiatives, ensuring that they are funded, promoted, enhanced and marketed effectively to those who need them.

Where it is felt that a fresh approach is needed it is recommended that new campaigns and initiatives are introduced to address particular skills needs and promote the FTDL sector as well as a group to co-ordinate the response. All traded sectors make reference to shortage of supply chain skills in particular.

The primary consultation highlighted overarching issues of a lack preparedness and understanding of what Brexit represents and the impact it may have. Therefore Recommendation 1 (Launch an intensified industry awareness and outreach campaign) has been developed to ensure this issue is addressed.

Customs clearance expertise was identified as a clear skills gap across a variety of respondents across all sectors as well as financial management, both of which are likely to become more important when the UK leaves the EU. This key finding has therefore informed recommendations to that effect.

Important too will be the ability for international traders and the FTDL sector to explore new markets, should the UK become a less attractive trading partner. Many respondents stated they would look to explore new or grow existing markets, particularly in major European economies such as Germany. The promotion of measures to facilitate this will therefore be key.

The Demand Scenario analysis demonstrated that even under a Hard Brexit scenario, there would be a requirement for a large number of entrants into FTDL activities across all sectors due in part to the ageing demographics and continued importance of freight and logistics to the economy.

This will require measures to address the poor perception of careers in the sector and opportunities associated with it. These can be drawn from both the domestic and international markets so it will be important to ensure that skilled personnel are attracted to and retained in Ireland to work in all sectors.



What links all these actions is that even if a Hard Brexit does not transpire then they will add significantly to a more competitive and skilled Irish economy, able to trade with diverse markets and ensure that employers have access to an engaged and effective labour pool.

## Interventions

The following eight interventions are recommended in addressing the skills issues identified in this study. Interventions 1-4 are considered immediate or short-term priorities for action. Interventions 5-8 are directed more to the longer-term enhancement of the skills base from which Ireland can draw, for both diversifying into new markets, and the smooth and efficient facilitation of international trade.

### Overarching interventions

Recommendation	
1	Launch an intensified industry awareness and outreach campaign to enhance understanding amongst internationally trading and FTDL enterprises and to proactively address the skills needs arising from Brexit.
2	Introduce additional customs awareness and higher level customs clearance training and advice for third country trading as the implications of Brexit become clearer.
3	Enhance the provision of financial management advice, training and mentoring for internationally trading enterprises, with a particular focus on currency management, VAT for third country trading, and contract management.
4	Undertake targeted campaigns to attract skilled personnel from overseas.
5	Promote measures to enhance the ability to diversify trade with non-UK markets. <ul style="list-style-type: none"> <li>▪ Enhance international trading and Logistics/Supply Chain content in education and training provision</li> <li>▪ Build up Ireland's foreign language capability for international trade (particularly with Eurozone markets)</li> <li>▪ Enhancement of intercultural awareness and international business experience</li> <li>▪ Build up product design and development skills</li> </ul>
6	Establish a National Logistics and Supply Chain Skills Group, to manage a coordinated response from the Logistics/Supply Chain sectors to promote the sectors and their skills needs.
7	Develop a schools/communication toolkit and awareness raising campaigns for Logistics, Supply Chain and Transportation careers within all sectors, and an improved understanding of the cross sectoral skills needs, employment numbers and career opportunities in supply chain activities.
8	Support the development, and promote the rollout of and engagement with the Logistics and Service apprenticeship programmes.



1. Launch an intensified Industry awareness and outreach campaign to enhance understanding amongst internationally trading and FTDL enterprises and to address the skills needs associated with Brexit

Awareness Raising
<ul style="list-style-type: none"> <li>Through the Department of Foreign Affairs and Trade's Brexit Stakeholder Forum, regularly update key stakeholders, including business and sectoral representative groups, on the Brexit negotiations and discuss the Government's Brexit contingency planning. Lead: DFAT, Industry bodies</li> </ul>
<ul style="list-style-type: none"> <li>Ensure the need for upskilling and reskilling identified in this study is fully represented in the Government's national Brexit preparedness public information and awareness campaign scheduled for rollout in the second half of 2018. Lead: D/Taoiseach, DFAT, DBEI with relevant Departments and agencies</li> </ul>
<ul style="list-style-type: none"> <li>Ensure that the need to address the skills implications of Brexit is fully represented in the series of Prepare for Brexit roadshows and other awareness raising activities aimed at maximising enterprise engagement at a regional level. Lead: Enterprise Ireland/LEOs/InterTradelreland</li> </ul>
<ul style="list-style-type: none"> <li>Continue to direct enterprises towards Enterprise Ireland's Brexit SME scorecard, and InterTradelreland's Brexit Online Planning Tool, which permit self-assessment of an enterprise's exposure to Brexit and is the first step towards developing a robust Brexit plan. Lead: DBEI/Enterprise Ireland/InterTradelreland/LEOs</li> </ul>
<ul style="list-style-type: none"> <li>With support from relevant Government departments and agencies, internationally trading and FTDL industry bodies to continue awareness raising, engagement, and supports (e.g. Ibec's Brexit toolkit, Irish Exporters Association Brexit for Your Supply Chain programme) for memberships on addressing Brexit related skills challenges. This should include guidance, messages and supports tailored to specific internationally trading and freight transport, distribution and logistics sectors. Lead: Industry bodies, with support from relevant Government Departments and agencies</li> </ul>

A number of initiatives can help address the deficit in understanding and recognition of the need for firm level preparedness for Brexit from a skills and competency perspective, in evidence across internationally trading enterprises and Logistics and Supply Chain activities.

From a negotiations perspective, the Tánaiste and Minister for Foreign Affairs and Trade established the Brexit Stakeholder Forum in September 2017. This forum meets every 4-6 weeks, and is charged with bringing together key stakeholders with a view to regularly updating members on the progress of the Brexit negotiations, facilitating the sharing of sectoral concerns, and to enable wider understanding of Ireland's overall priorities for negotiations. It also provides a platform for sectoral and EU expertise to underpin the Government's comprehensive and cohesive approach to Brexit. Industry or sectoral bodies should continue to engage with this Forum, and disseminate its updates to their memberships.



In the coming months the Department of the Taoiseach will also be coordinating a national ‘Brexit preparedness’ public information and awareness campaign, to stimulate and increase preparedness at firm level. The campaign will centre on working with businesses in all sectors, with a strong regional dimension and a focus on the border counties. It will reiterate the need for business to be Brexit ready.

It is essential that the need for enterprises to engage in reskilling and upskilling, to both address the fallout from Brexit and trade with new markets, is fully represented in this information and awareness campaign. Importantly, there will be a particular focus on readiness in terms of operational competitiveness, access to financial skills, knowledge of potential customs and excise procedures, and changes in supply chain management and sourcing strategies.

Roadshows and other awareness raising activities have also been undertaken by bodies such as the Regional Skills Fora (Brexit seminars), Enterprise Ireland (Prepare for Brexit campaign and Roadshows) and InterTradeIreland (Brexit briefings). This outreach activity, aimed at engaging with enterprise at a regional level, should be intensified, and stress the importance of upskilling, reskilling or other skills solutions.

Enterprise Ireland and InterTradeIreland also offer online portals that assist enterprises in determining their level of exposure to Brexit; firms should continue to be directed towards these portals, as a first step towards addressing any challenges. Enterprise Ireland launched the Brexit SME Scorecard in 2017. This is an interactive online platform that can be used by all Irish companies, not just Enterprise Ireland client companies, to self-assess their exposure to Brexit under six business pillars: Business Strategy, Operations, Innovation, Sales and Marketing, Finance and People Management.

Based on answers supplied by the user, the Scorecard generates an immediate report which contains suggested answers and resources, and information on events for companies to attend. The tool is a starting point for SME management teams looking to develop an action plan to help mitigate risks and leverage opportunities arising from Brexit. To date over 2,100 companies (of which 50% are EI clients) have utilised the Scorecard (the Scorecard can be accessed at [www.prepareforbrexit.ie](http://www.prepareforbrexit.ie)).

InterTradeIreland’s Brexit Planning online guide also helps address any questions or concerns firms may have on the impact of freedom of movement in relation to goods, services, people and money, by providing them with information and further links for support (this can be accessed at [www.intertradeireland.com/brexit/planning](http://www.intertradeireland.com/brexit/planning)).

Industry bodies, across both internationally trading enterprises and Freight Transport, Distribution and Logistics activities are also importantly being proactive in awareness raising activities, and with input from Government departments and agencies, are engaging with their membership on Brexit related issues. Initiatives such as Ibec’s Brexit Toolkit for companies, and the Irish Exporters



Association's 'Brexit for Your Supply Chain' course, have been particularly important in enhancing understanding within their memberships. It is important that this engagement, with input from Government, is intensified. This will permit more targeted awareness raising, with messages tailored to the particular issues facing specific internationally trading sectors and freight transport, distribution and logistics activities.



Identification, development and implementation of skills solutions for enterprise
<ul style="list-style-type: none"> <li>Informed by the findings of this study, and by additional Department/agency work and outreach, ensure that skills needs are represented in the development of the adaptive whole of government contingency plan scheduled for development in the first half of 2018. Lead: DFAT, with relevant Departments and Agencies</li> </ul>
<ul style="list-style-type: none"> <li>Where identified through the “Spotlight on Skills” workshops or “Skills for Growth” skills audits: Regional Skills Fora to facilitate Brexit related skills solutions for regional enterprises through education and training providers Enterprise Ireland and LEOs to develop targeted skills interventions for their client companies. Lead: DES/Enterprise Ireland/Irish Management Institute, Industry, Regional Skills Fora, Education and Training Providers, LEOs</li> </ul>
<ul style="list-style-type: none"> <li>Continue to publicise and intensify Enterprise Ireland’s and InterTradeIreland’s Brexit Advisory Clinics, which aim to support companies to take immediate actions to address their potential exposure. Lead: DBEI/Enterprise Ireland/InterTradeIreland</li> </ul>
<ul style="list-style-type: none"> <li>Intensify the Local Enterprise Office ‘Brexit Mentor Programme’, to support LEO microenterprise clients in identifying key areas of exposure arising from Brexit. Lead: LEOs</li> </ul>

The awareness raising campaign is not only expected to develop awareness of the need for preparedness, but also to trigger action on the part of firms- including engagement with the relevant support agencies and implementation of skills related solutions.

Building on Government work and outreach, a whole of government contingency plan is being developed for Brexit; this is scheduled for completion in the coming months. This plan should be informed by the findings of this study, and work towards embedding firm level preparedness for the fallout from Brexit from a skills perspective.

In terms of identifying and developing skills solutions, the nine Regional Skills Fora will play a crucial supporting role. The Fora’s remit is to help foster stronger links between employers and the education and training sector; each forum provides robust labour market information to inform programme development, while encouraging greater collaboration between enterprise and education and training providers, to identify and respond to existing and future regional skills needs.





Each forum includes all the main education and training providers in a region, as well as the Department of Employment Affairs and Social Protection, IDA, Enterprise Ireland, Ibec, Local County Councils, Local Enterprise Offices, ISME, and Chambers of Commerce.

Intensified outreach and engagement with enterprise should be informed by two workshop and audit initiatives that are currently ongoing, and that are helping to establish the evidence base for the identification, and ultimately, the development of skills solutions for enterprise. The Skills for Growth Initiative is aiming to increase the quality and quantity of data available on skills needs in individual enterprises, to enable enhanced engagement between enterprise, education and training providers, and other relevant members of the Regional Skills Fora, in identifying and implementing skills solutions.

As part of the Skills for Growth project, Enterprise Ireland is also providing regional Spotlight on Skills workshops for its client companies. The workshops involve:

- Completing a pre-workshop questionnaire with the senior management team, to prepare for the workshop and get maximum benefit from the process
- Attendance at a practical one day workshop that provides a toolkit and methodology to identify critical skills requirements for a company
- Production of a company skills plan and identification of solution to address skills requirements- this plan is fine tuned after the workshop through a one to one session with an Irish Management Institute representative
- A facilitated engagement with the enterprise's Regional Skills Forum to address its critical skills needs

These workshops have been rolled out nationwide since January 2018.

This targeted, proactive and evidence based approach to identifying and facilitating skills solutions for the enterprise base should also encompass an intensification of the Brexit Advisory Clinics organised by Enterprise Ireland and InterTradeIreland nationally. The clinics are designed to help companies plan and take immediate action to effectively mitigate the risks and avail of the opportunities that Brexit presents. The clinics are focused on three specific operational areas, which Enterprise Ireland has identified as major weaknesses in that part of their client base reliant on the UK market: Financial and Currency Management; Strategic Sourcing; and Customs, Transport and Logistics. The Clinics are free events, open to all, and involve two streams of activities running in parallel:

- One to one 40 minute meetings with independent experts in the three operational areas
- 90 minute seminars on each of the three areas

For the microenterprise base, the Local Enterprise Offices should also intensify provision of their 'Brexit Mentor Programme', which is designed to support LEO clients in identifying key areas of exposure arising from Brexit, and to assist Owner/Managers in developing robust strategies to address issues and maximise potential opportunities. The programme matches up the knowledge,



skills, insights and entrepreneurial capability of experienced business practitioners with small business owners who require practical and strategic one to one advice and guidance on planning for the impact of Brexit.



<p>2. Introduce additional customs awareness and higher level customs clearance training and advice for third country trading as the implications of Brexit become clearer.</p>
<ul style="list-style-type: none"> <li>As part of the wider industry awareness campaign, Revenue Commissioners to intensify provision of guidance and information to traders and transport operators on customs procedures for third country trading. Lead: Revenue Commissioners</li> </ul>
<ul style="list-style-type: none"> <li>Industry bodies to develop or expand their existing customs awareness courses or higher level customs clearance/freight forwarding training. Lead: Industry Bodies</li> </ul>
<ul style="list-style-type: none"> <li>Where identified by industry as a skills need that cannot be addressed through existing provision, industry to engage with Regional Skills Fora with a view to the Fora facilitating the establishment of customs awareness or customs clearance courses by education and training providers. Lead: Industry with Regional Skills Fora, Education and Training Providers</li> </ul>
<ul style="list-style-type: none"> <li>Encourage the development of enterprise-led Skillnet Ireland networks for customs clearance training aligned with sectoral needs. Lead: Enterprise led networks with Skillnet Ireland</li> </ul>
<ul style="list-style-type: none"> <li>Roll out on a cross sectoral basis the Customs and Logistics component of Enterprise Ireland's Act On mentoring programme for identified Enterprise Ireland client companies. Lead: Enterprise Ireland</li> </ul>

The findings of this study have confirmed that awareness and expertise in customs formalities for third country trading are a significant weakness in the enterprise base in Ireland. As the implications of Brexit become clearer, addressing this weakness should be a matter of priority.

At present the Revenue Commissioners, through the Customs Consultative Committee, and in its meetings and outreach activities with industry representative bodies, is listening to the concerns of business and traders, and advising the making of long term plans to assume that customs procedures of some form will apply post-Brexit. Once the implications of Brexit from a customs perspective become clearer, Revenue should intensify its outreach activity, offering clear, relevant and appropriate information to support the preparedness of both internationally trading enterprises, and those engaged in freight transport, distribution and logistics activities- particularly advice on applying for Authorised Economic Operator (AEO) status.

With this clarity and guidance, there should be a significant increase in the provision of customs awareness and higher level customs clearance or freight forwarding training by industry bodies; for example, the Irish Exporters Association customs awareness courses, and the Irish International Freight Association FIATA diploma for Freight Forwarders. This will serve to enhance the customs clearance capability within internationally trading enterprises, and the Freight Forwarding sector's offering to the enterprise base.



The increased demand for such skillsets at enterprise level should be serviced a number of ways. As demand increases, enterprise engagement with the Regional Skills Fora should lead to the provision of customs training through local education and training providers. This provision should be subsidised- customs or trade compliance skillsets should, for instance, be considered in the context of future Springboard+ calls, which offer subsidised training opportunities. The establishment of enterprise led Skillnet Ireland networks, with its competitive matched funding model, for customs clearance training aligned with sectoral needs should also be encouraged.

Enterprise Ireland should also roll out the Customs and Logistics component of its Act On programme, under which it is providing an independent consultant to client companies for a course of two half day sessions, aimed at assisting them in deciding on specific actions over a short period to address some of the risks and opportunities from Brexit.



3. Enhance the provision of financial management advice, training and mentoring for internationally trading enterprises, with a special focus on currency management, VAT for third country trading and contract management.

- Intensify the provision of financial management advice and mentoring by Enterprise Ireland, the LEO network and InterTradelreland, in consultation with industry bodies. In particular, continue the roll out on a cross sectoral basis of the Financial and Currency Management component of Enterprise Ireland's Act On programme; and InterTradelreland's Brexit Start to Plan voucher scheme, which can be used by business to seek specialist financial advice in relation to the impact of Brexit on currency management, VAT and contracts.

Lead: Enterprise Ireland/LEOs/InterTradelreland, Industry Bodies

- Ensure that financial management modules, particularly for currency management and handling third country VAT, are fully represented in leading company management development programmes. Also ensure these programmes are fully responsive to the international business environment and its requirements, and any changes in that environment.

Lead: Enterprise Ireland/Skillnet Ireland/Executive Development programme providers

- Develop, implement and effectively market the Business Finance Advisory Hub to help firms, particularly SMEs, to strengthen their financial planning skills, strategic planning, and awareness of alternative types of finance, and make informed funding/investment decisions.

Lead: DBEI, Enterprise Agencies

As indicated in the research for this study, as well as other studies undertaken by Enterprise Ireland and Bord Bia, the enterprise base, particularly SMEs more reliant on the UK, are lacking in in-house expertise on currency hedging and financial management. Embedding such expertise is crucial to increasing the resilience of these firms in their international trading activities.

There should be an intensification of financial management advice and training for enterprises, as well as targeted mentoring for those most at risk. Such advice and mentoring is already being provided by Enterprise Ireland, the LEO network, and InterTradelreland, and is featuring prominently in their ongoing Brexit events. In particular, Enterprise Ireland should continue to roll out the financial management component of its Act On programme.

Company Management development programmes, such as those provided by Enterprise Ireland, Skillnet Ireland Management Works, as well as other relevant Skillnet Ireland provision, should also ensure financial management is fully represented, and that they are fully responsive to changes in the international trading environment.

Later in 2018 the Department of Business, Enterprise and Innovation will also be rolling out a Business Finance Advisory Hub. The Hub will aim to help SMEs navigate the broad suite of State supports, and also raise awareness among those who provide advice to SMEs of all the available



State supports, through information on the types of finance available, including alternative types of finance and non-bank finance. Primarily an online offering, the Hub will provide standardised information and tools to support financial planning and general financing needs. The Hub should be effectively marketed to SMEs on its introduction.



#### 4. Undertake targeted campaigns to attract skilled personnel from overseas

- Building on initiatives such as TechLife Ireland, a web portal designed to attract skilled ICT professionals to Ireland, engage in a wider strategic communications campaign to highlight Ireland's employment opportunities and status as an attractive place to work to targeted skilled cohorts, particularly those with key languages. This can encompass a mix of social media, advertising, media relations, participation in recruitment fairs and special events. This could be targeted in particular at EU/EEA nationals currently working or ordinarily drawn to the UK labour market.

Lead: Sectoral Industry bodies with specified skills needs, in collaboration with relevant Government Departments and agencies

- Building on the Government's Diaspora policy, invest in targeted overseas job fairs and dissemination of information on job opportunities in key markets to attract back skilled Irish emigrants and leverage their intercultural awareness and international business experience. Ensure the challenges faced by returning Irish emigrants are addressed as far as possible.

Lead: Sectoral Industry bodies, in collaboration with relevant Government Departments and agencies, Interdepartmental Committee on the Irish Abroad

- In the context of changing or emerging skills needs arising from Brexit, and where skills cannot be sourced within the EEA, industry to participate through evidence based submissions in the bi-annual review of the Highly Skilled Eligible Occupations and the Ineligible Categories of Employment Lists, to ensure the responsiveness of the Employment Permit system to skills demands in the economy.

Lead: Industry bodies, DBEI

The UK's departure from the European Union, and the potential for a more restrictive immigration regime for EEA and non-EEA nationals, could present opportunities for Ireland in terms of attracting skilled inward migration. There is also a potential downside risk for Ireland, however, in the ending of freedom of movement for EEA nationals between Ireland and the UK, and the psychological distance or barrier this may create.

Building on current initiatives such as TechLife Ireland, a portal designed to attract skilled ICT professionals to Ireland, there should be a wider strategic communications campaign by Irish industry, with support where needed from Government, to raise Ireland's visibility to targeted skilled cohorts, and highlight the country's employment opportunities and status as an attractive place to work.

This could involve social media, advertising, media relations, participation in recruitment fairs, and other special events. This could be targeted in particular at non-UK or non-Irish nationals currently based in the UK, or who would ordinarily be drawn to the UK labour market. According to the UK Office of National Statistics, in late 2015 to late 2016, the share of EU nationals as a proportion of the total UK workforce was highest in Manufacturing (10.8%), Construction (8.5%), Distribution, Hotels and Restaurants (8.5%), Transport and Communications (8.4%), and Banking and Finance (7%).



Employers should also be encouraged to fully exploit the potential of Eures, the European Job Mobility Portal in addressing their skills needs.<sup>82</sup> This could help meet the foreign language and cultural awareness skills needs of internationally trading employers.

The Government's diaspora policy, Global Irish- Ireland's Diaspora Policy, should also be built upon to engage Irish communities abroad and Irish emigrants abroad who may be considering returning. Of particular importance would be the dissemination of information on job opportunities in Ireland in key markets to attract back skilled Irish emigrants, and leverage their intercultural awareness and international business experience.

This could include identification of key markets/opportunities, and consideration of participation in and/or investment in high potential value overseas jobs fairs for specific skills. In particular, the challenges faced by returning Irish emigrants should be addressed as far as possible, to incentivise and smooth their return. The Department of Foreign Affairs and Trade, which leads on the whole-of-Government diaspora policy, recently commissioned an economic report on 'Addressing Challenges faced by returning Irish emigrants', and its recommendations are currently being considered across Government Departments who will report to the Inter-departmental Committee on the Irish Abroad. Included in the recommendations are proposals relating to improved dissemination of information about employment opportunities in Ireland.<sup>83</sup>

Where skills shortages arising from Brexit cannot be addressed within the EEA, industry, through the submission of detailed evidence, should participate in the bi-annual review of the Highly Skilled Eligible Occupations and the Ineligible Categories of Employment Lists, to ensure the responsiveness of the Employment Permit system to changing skills demands in the Irish economy arising from Brexit, and that such skills needs are promptly met.

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<sup>82</sup> <https://ec.europa.eu/eures/public/en/homepage>

<sup>83</sup> Indecon Economic Report on Addressing Challenges Faced by Returning Irish Emigrants- <https://www.dfa.ie/media/dfa-2017/globalirish/Report-on-Returning-Emigrants-2018.pdf>





5. Promote measures to enhance the ability to diversify trade with non-UK markets.

Enhance provision of international trading and Logistics/Supply Chain content in education and training

- Informed by the findings of this study, ensure industry, relevant Departments and agencies, and education and training providers work closely to ensure that provision at Further Education and Higher Education levels supports the trade diversification and trade facilitation agendas, including employer priorities in the context of Brexit (e.g. financial/currency management, strategic sourcing, customs and logistics). This should involve the review of programmes and/or modules in consultation with employer representatives.  
Lead: Industry, in collaboration with relevant Departments and Agencies, FET and HE providers
- Ensure that future Springboard+ calls, including that scheduled for early 2019, are reflective of the skills needs identified in this study. Also raise awareness amongst employers of the opening of Springboard+ to those in employment, and the subsidised, upskilling opportunities that entails. In particular, well designed upskilling and reskilling courses could be considered for a number of business development roles identified as in short supply by SOLAS's National Skills Bulletin. These included marketing experts required to lead product/brand management and business development (with languages).  
Lead: HEA, HEIs, Regional Skills Fora
- Building on skills related guidance from Government and its enterprise agencies, encourage the engagement of enterprise networks with Skillnet Ireland to access, on a competitive basis, matched funding training solutions for specific Brexit and trade diversification/facilitation related skills needs.  
Lead: Enterprise networks, Skillnet Ireland

Many of the preceding actions focus on the short-term responses to Brexit: industry awareness raising, proactive training and mentoring (including in areas such as financial management/customs and logistics), and targeted recruitment of talent from overseas. Ultimately, however, the way in which Irish based enterprise can best mitigate the effects of more restrictive trading arrangements vis a vis the UK is through further diversification of its trade to non-UK markets- the Eurozone, Americas, Gulf region, Asia-Pacific or Africa. This calls for Ireland to become, in line with the Irish Government's trade strategy, Ireland Connected, a strategic trading nation.

Given the structures now in place to generate greater responsiveness from the education and training system to employer needs, there exists scope for industry, relevant Departments and agencies, and providers to work closely to ensure provision supports the trade diversification and trade facilitation agendas. The enterprise sector is now closely involved in the review of programmes, modules and curriculum design. It is also notable that this year SOLAS has asked Education and Training Boards to ensure that the possible implications of Brexit for integrated services and provision are considered for 2018.



Enterprise Ireland for instance is working closely with its client companies across all sectors to drive their efforts on innovation, competitiveness and diversification, the key attributes of internationally competitive companies, and is seeking to expand the export horizons of its client base, through its Build Scale, Expand Reach 2017-2020 and Eurozone Market Strategy 2017-2020 strategies. With the embedding of this wider export market ambition, employers, with guidance and support from the enterprise agencies, should work closely with the education and training system to ensure provision supports this diversification, and the efficiency of international trade.

This responsiveness can also be reflected in the short term in potential for trade and logistics/supply chain content to be represented in Springboard+ upskilling and reskilling programmes, and Skillnet Ireland training provision. The Springboard+ courses provided through HEIs are based on analysis of skills needs within the Irish economy, for which Higher Education Institutions are invited to develop courses and submit for funding. Crucially, Springboard+, previously targeted primarily at those in receipt of certain welfare payments, has now been expanded to encompass those in employment.

The subsidised upskilling and reskilling opportunities available through Springboard should therefore be brought to the attention of employers. This is in the context of plans to expand the number of available Springboard places by 30% by 2021 in both universities and institutes of technology. The upskilling and reskilling opportunities offered by the programme could be crucial in the coming years, as enterprises seek to adapt to the potential fallout from Brexit, and redirect their focus to non-UK markets. Applications for the competitively based, matched funding training opportunities under Skillnet Ireland should also be further encouraged for groups of companies with common training needs- particularly those related to Brexit or the diversification or facilitation of trade into non-UK markets.



Build up Ireland's foreign language capability for international trade (particularly with Eurozone markets)

- Explore the possibility of a communications campaign, to better utilise the multilingualism of individuals already living in Ireland in helping meet the immediate language needs of Irish based internationally trading enterprises.

Lead: Industry bodies, relevant Government Departments and Agencies

- Promote the graduate stayback permission scheme for international (non-EEA) students, to facilitate the retention of high quality individuals capable of addressing Ireland's critical skills deficits- particularly the language needs of employers, such as those with greater need for native or full professional competence.

Lead: Enterprise Ireland, IDA Ireland, DFAT, Embassies, DES

- Implement in full Languages Connect, the Government's strategy for enhancing the pool and diversity of Ireland's foreign language competence by 2026. In particular, the following initiatives should be highlighted in the push for trade diversification:

Boost the uptake of trade languages, including French, German, Spanish, Italian, Russian, Japanese, Arabic, Mandarin and Portuguese at Junior and Leaving certificate, and at Third Level.

Place an emphasis on Ireland's international trading role, and the professional and economic opportunities that flow from it, in the strategy's awareness campaign to change mind sets and encourage the wider use of languages.

Support 20% of the higher education cohort in studying a foreign language, in some capacity, by 2026, from a current baseline of 4%, particularly for those studying business courses.

Encourage employers with language skills needs to engage with the Regional Skills Fora in order to develop better links with regional education and training providers in identifying and address language skills needs and to promote the career opportunities for people with language skills in each region.

Encourage collaboration between employers with identified language needs and HEIs in their region, including in curriculum and programme design.

Encourage and support businesses in investing in the development of the linguistic skills in their own organisations from which they will benefit directly, including employee exchanges to countries they work with. This should particularly be encouraged for business development roles (e.g. marketing, sales, customer support).

Engage in an awareness raising campaign targeting SMEs that highlights the benefits of employing graduates with language skills.



Enterprise agencies and enterprise representative groups to encourage SMEs to include language skills in their company skills plans, and implement a language management strategy appropriate to their markets. Ensure that the concept of a language management strategy is introduced into MBA courses and other Executive Education programmes.

Lead: Foreign Languages Advisory Group (Implementation body for Languages Connect)

- In tandem with the initiatives described above, Industry bodies, including those in the Freight Transport, Distribution and Logistics sector, to work closely with member companies on awareness raising and measures to build up their language competency for operating in overseas markets.

Lead: Industry bodies across all sectors

A clear message in the research undertaken for this study is the need for enhanced language competency in order to deal with suppliers or customers in new markets, to support the trade diversification agenda. This is particularly important given the increasing growth in non-English speaking markets. Ireland's comparative weakness in foreign language competency was recognised in the 2012 study undertaken by the EGFSN, on Key Skills for Enterprise to Trade Internationally. In order to meet the immediate language needs of employers seeking to expand their trading footprint, a number of initiatives, together with the overseas recruitment efforts in intervention four, should be considered.

Firstly, the multilingualism of individuals already living in Ireland, particularly the 'New Irish' who have arrived since the early 2000s, should be better utilised in the interests of supporting Ireland's overseas trade. The accepted model for the recruitment of native level language competency at present is largely the recruitment of these native speakers overseas by enterprises.

Many of the New Irish are in employment in which this multilingualism is not fully exploited. The possibility of undertaking a communications campaign, which highlights the contribution their skillset could make to Ireland's international trading activity and the associated career opportunities, should be explored by industry and relevant Government Departments and agencies.

Secondly, the Graduate Permission scheme (or stayback option) to incentivise the attraction of high quality international students should continue to be promoted by all stakeholders, including Education in Ireland, as part of the implementation of Ireland's International Education Strategy. The option permits graduates from non-EEA countries the right to work in Ireland for a period of one year following graduation at Level 8, and two years following graduation at level 9 or above. The stayback option is being promoted as a means of helping address critical skills deficits, particularly the language needs of employers- in particular those with greater need for native or full professional competence.

Ultimately, however, in order to be sustainable Ireland needs to enhance its own language competency base. In terms of importing its foreign language requirements, there are concerns



around the difficulty of attracting skilled overseas talent to anywhere other than the main urban centres in Ireland; this is attributed to the younger demographic of these workers and their general preference for urban locations. Often those firms that require the greatest assistance in trade diversification to non-UK markets, however, are regionally dispersed.

One of the key recommendations in the 2012 EGFSN report was the development of a Foreign Languages Strategy with a 5-10 year timeframe, ‘to provide an integrated and coherent approach to language teaching... and cultural awareness at progressive levels of proficiency in all learning contexts’. This was to help build up a multi-lingual workforce for an increasingly globalised marketplace. Such a strategy was developed over a number of years, and published in 2017 as Languages Connect: Ireland’s Strategy for Foreign Languages in Education 2017-2026, along with an associated Implementation Plan for 2017-2022.

The strategy sets out a roadmap to put Ireland in the top ten countries in Europe for the teaching and learning of foreign languages, through a number of measures targeted at improving proficiency, diversity and immersion. The strategy is setting out to change mindsets around and communicate the benefits of language learning; boost the uptake of a diverse range of languages, including those associated with key markets; and raise significantly the Higher Education cohort taking languages as part of their course.

The strategy is also targeting employers, through awareness raising on the benefits of language skills, encouraging engagement with the Regional Skills Fora and with local HEIs to address these skills needs, encouragement and support for businesses in investment in linguistic training, and development of firm level language management strategies; these are a range of techniques to facilitate effective communications with clients and suppliers abroad, through the provision of language training and cultural briefing, and focussed employee recruitment. The Enterprise agencies and enterprise representative groups should also encourage companies to include language skills in their company skills plans.



#### Enhancement of intercultural awareness and international business experience

- Ensure that the ambitious targets set for expanding annual Irish participation in Erasmus+ by 2022 and 2026 are fully realised. Participation in Erasmus+ in Higher Education and other study and Work Placements abroad is to reach 4,400 by 2022, and 5,400 by 2026 (3,135 in 2016) in accordance with the international education strategy.

Lead: HEA, HEIs

- Support Irish participation in the ErasmusPro programme, a new action within Erasmus+ to support long-duration work placements of apprentices abroad.

Lead: HEA/SOLAS

- Maximise HEI student work placements in MNCs and domestic companies engaged with global markets, as part of the wider objective of increasing the number of students undertaking a work placement or work based project as part of their course by 25% by 2021.

Lead: HEA, Enterprise Agencies

- Maximise graduate opportunities for gaining intercultural and international business experience, through the further building up existing international graduate placement programmes (e.g. those run by Bord Bia, Enterprise Ireland, Ibec). Ensure alignment of these programmes with Ireland's trade diversification objectives.

Lead: Bord Bia, Enterprise Ireland, Ibec

Enhanced language training on its own, however, will be insufficient. For effective working in overseas markets, individuals also need a grounding in intercultural awareness, and where possible, international business experience. This in turn is a key underpinning to the learning and effective utilisation of language skills. This requires extended immersive periods in foreign cultures, to which a number of programmes can contribute.

Both Languages Connect and the International Education Strategy, Irish Educated- Globally Connected, promote the European Union's Erasmus+ programme as a strong mechanism for building skills and intercultural competencies. It has a key role to play in ensuring Irish FET and HE students integrate overseas experience into their study.

As part of the wider European Commission target of ensuring that at least 20% of those who graduate in 2020 undertake training or study abroad, and building on the action set out in Languages Connect for increasing the HEI cohort taking a foreign language as part of their course, Ireland has set ambitious targets for increasing the number of Irish participants in the Erasmus+ programme- by at least 50% by 2026 (from 3,135 in 2016, to 4,400 in 2022, to 5,400 in 2026).

Irish participation in the ErasmusPro programme, launched in late 2017, should also be fully supported. Part of the European Commission's Youth Initiative, this is a new dedicated activity within the Erasmus+ programme to support long duration placements of apprentices abroad. Under



this initiative, 50,000 mobile apprenticeship placements of long duration (6-12 months) will become available.

As part of the National Skills Strategy, an objective has been set to increase the number of students undertaking a work placement or work based project as part of their course by 25% by 2021. As part of this initiative greater linkages are being created with MNCs and domestic companies engaged in global markets. This initiative should be fully supported and implemented, to give students exposure to international markets and international business experience.

There are also a number of highly regarded placement programmes, directed towards providing graduates with valuable experience in international management and business.

- Enterprise Ireland's Graduate 4 International Growth, and Graduates Business Growth programmes: These programmes support Irish companies to employ and train a graduate in International business.  
Graduates 4 International Growth assists companies with ambitious growth plans in key markets to acquire a graduate market research resource and possible future business development capability.  
The Graduate Business Growth initiative is a 12 month graduate placement programme, which assists Enterprise Ireland's indigenous client companies to scale and grow their businesses through the introduction of good graduate talent to deliver clearly defined projects.<sup>84</sup>
- Enterprise Ireland's International Graduate Programme: This is a two year programme which offers graduates a placement opportunity in one of Enterprise Ireland's many offices across Europe, the Americas or Asia Pacific. It provides experience for graduates in supporting Irish enterprises to access market opportunities and win global sales.<sup>85</sup>
- Ibec Global Graduate programme (formerly the Export Orientation Programme): In partnership with industry, Ibec developed and designed three programmes to develop a sustainable talent pipeline for enterprise to trade internationally. In 2016 this programme placed 94 graduates with 40 companies across a variety of industries, based in over 30 countries worldwide. Its individual streams include:  
A Food and Drink Programme. This is an 18 month programme run in conjunction with Bord Bia and the Food and Drink Industry Ireland.  
A Tourism Programme. Tourism Ireland and DIT developed a 24 month programme incorporating a Post Graduate Diploma in International Business Development.  
A Multinational Programme- This is a 12 month programme run in conjunction with IDA, where graduates are placed with multinational companies based in Ireland.<sup>86</sup>

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<sup>84</sup> For more information on these programmes, see <https://gradhub.ie/>

<sup>85</sup> For more on the Enterprise Ireland International Graduate programme, see- <https://www.enterprise-ireland.com/en/About-Us/Our-People/Graduate-Opportunities/National-Graduate-Programme/National-Graduate-Programme-2018-2020.html>

<sup>86</sup> For more on the Ibec Global Graduates programme, see- <http://ibecglobalgraduates.ie/>



- Bord Bia’s Origin Green Ambassadors, Marketing Fellowship and Supply Chain and Account Management programmes, all of which are run in conjunction with UCD’s Smurfit School of Business:

The Origin Green Ambassadors programme: This is a two year MSc in Business Sustainability, which includes placements with several of the world’s leading food and drink companies.

The Marketing Fellowship programme: This is an 18 month MSc in International Marketing Practice, with participants based overseas working on specific business development projects for exporting Irish companies.

The Supply Chain & Account Management (UK Retail & Foodservice) Programme: This places participants with key UK customers working on supply chain collaborations.<sup>87</sup>

Programmes such as these, including those run by the private sector, should be further built up, and aligned with Ireland’s trade diversification objectives, in order to maximise graduate opportunities for gaining experience in intercultural awareness and international business.

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<sup>87</sup> For more information on these programmes, see-  
<http://www.smurfitschool.ie/executivedevelopment/programmesforindividuals/mscbusinesssustainability/>;  
<http://www.smurfitschool.ie/admissions/scholarships/bordbiemarketingfellowship/>; and  
<https://www.bordbia.ie/corporate/careers/talentdevelopment/pages/mscretailandsupplychainmanagement.aspx>





### Build up product design and development skills

- Drive innovation in the Irish enterprise base through the implementation of Innovation 2020. In particular:

Support the increase of research personnel in enterprise to 40,000 by 2020

Maintain market-led collaboration between enterprise and the public research system, particularly through enterprise access to research skills through the Science Foundation Ireland Research Centres, EI/IDA Technology Centres, and University-Industry collaborations (Innovation Vouchers, Innovation Partnerships).

Lead: Innovation 2020 Implementation Group
- Implement the STEM Education Policy Statement, 2017-2026, and associated 2017-2019 and associated implementation plans, to enhance the pipeline of Science, Technology, Engineering and Mathematics graduates, and the new ICT Skills Action Plan, 2018-2026 and its associated implementation plans, to address the shortages across internationally trading sectors for software and hardware developers, designers, and data analytics skills.

Lead: STEM Education Implementation Group/High Level ICT Skills Action Plan Steering Group
- Drive the implementation of the recommendations of the EGFSN's 2017 report Winning by Design, in particular:

Examine how best to make design skills training available to microenterprises

Lead: Enterprise Ireland, Design and Crafts Council of Ireland
- Investigate the possibility of forming a panel of design experts and consultants as part of the design offering for SMEs

Lead: Enterprise Ireland
- Explore how awareness raising on the value and importance of design and access to design for innovation and growth can be increased

Lead: Design and Crafts Council of Ireland/Institute of Designers in Ireland/ Industry Research and Development Group, with administration by Design and Crafts Council of Ireland
- Communicate to firms the applicability of the R&D tax credit regarding design, and how Innovation Vouchers can be used for purchasing design services from registered knowledge providers

Lead: Department of Finance/Enterprise Ireland/IDA/Institute of Designers in Ireland

Product design and development skillsets emerged as a concern for a number of enterprises in terms of adapting their offering for new markets. These were also identified as key skills in the 2012 EGFSN study- a key skill for success in international markets being the linking of customer needs research to the design and development of new products and services.



This focus on innovation is central to Irish enterprise policy. Investment in research and innovation is instrumental in strengthening indigenous enterprise, in securing, diversifying and growing foreign direct investment, in licensing new technologies, and establishing new companies. Ireland's 5 year Innovation strategy, Innovation 2020- Excellence, Talent, Impact,<sup>88</sup> aims to make sure that the environment fosters innovation in enterprise, so that companies based in Ireland outperform their competitors on international markets; it targets a step change in RD&I investment within both the public and private sectors, to 2.5% of GNP, particularly for applied or close to market research. The evidence points towards RD&I active companies being more resilient in terms of employment and exports.<sup>89</sup>

It is important that innovation in the enterprise base is driven by full implementation of Innovation 2020, particularly through development and access for enterprise to research and development related skillsets.

Innovation 2020 targets an increase in the number of research personnel directly employed in the enterprise sector from a baseline of 25,000 in 2013 to 40,000 in 2020. This requires an increase in enrolments of research masters and PhD students in the areas most closely linked to enterprise demand. The strategy also aims at increasing collaboration, and particularly the transfer of knowledge, between the public research system and enterprise sector, which permits enterprise to access R&D expertise within academic institutions or research centres. It also aims at strengthening and optimising the network of Research and Technology Centres to better meet the needs of enterprise. Crucially, Innovation 2020 focuses on investment in six areas of market opportunity for Irish based enterprise: ICT, Health and Medical, Food, Energy, Manufacturing and Materials, and Services and Business Processes, which largely align with those sectors of 'comparative advantage' for the Irish economy.

In ensuring a steady pipeline of the necessary research and development skills for enterprise, and enterprise-academic collaboration, it is also important to drive the implementation of both the STEM Education Policy Statement and its associated Implementation Plans, designed to increase the attractiveness of STEM career paths; this will help drive the production of science, technology and engineering personnel reported as in short supply across the internationally trading sectors examined in this study.

With the growing digitisation and pervasiveness of ICT across all sectors, including the Freight Transport, Distribution and Logistics sector (and associated skillsets such as data analytics), ensuring that Ireland has an adequate supply of high level ICT skills to drive innovation and productivity in enterprise will also be important. Hence the new iteration of the ICT Skills Action Plan, scheduled for publication in 2018, will be key in driving the productivity, efficiency and growth in market share of Ireland's international trade, and its journey to and from overseas markets.

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88 See Innovation 2020- Excellence, Talent, Impact- <https://dbei.gov.ie/en/Publications/Publication-files/Innovation-2020.pdf>

89 See Economic and Enterprise Impacts from Public Investment in R&D in Ireland, DBEI- <https://dbei.gov.ie/en/Publications/Publication-files/Economic-Enterprise-Impacts-Public-Investment-RD-Ireland.pdf>



The Expert Group on Future Skills Needs also recently undertook a study of Design related skills (Winning by Design),<sup>90</sup> viewing them as essential for firms to be innovative and competitive in global markets. It made a number of recommendations, directed towards enhancing the adoption of design by non-design businesses, particularly SMEs, to increase their economic output, their innovation and productivity, and to enable them to compete in new markets. The study concluded that for many smaller companies, accessing the necessary training to learn how best to utilise design thinking is difficult; lack of know-how and expense are factors. The study committed to various actions to boost the uptake of design skills by the Irish enterprise base, detailed in the action above; it is important that these actions are followed through, and the design capacity of the SME base enhanced to support their external trading activity.

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<sup>90</sup> Winning by Design- An Introduction to the design skills required for firms to be innovative and competitive in global markets, Expert Group on Future Skills Needs (2017)



6. Establish a National Logistics and Supply Chain Skills Group, to manage a coordinated response from the Logistics and Supply Chain Management sectors to promote the sectors and their skills needs.

Establish a 'National Logistics and Supply Chain Skills Group', composed of Logistics and Supply Chain management industry representatives and bodies, and education and training providers, with a common purpose of enhancing Ireland's logistics and supply chain skills capability, for internal, North-South and international trade. Relevant Government Departments (DTTAS, DBEI) will also be represented on the group. Improved linkages between employers and education and training providers facilitated by such a group will ensure that provision is more optimally aligned with the skills needs of Logistics and Supply Chain Management activities across all sectors. The focus of the group would be to:

- Improve the profile of Logistics/Supply Chain roles, making it easier to recruit talent including by improving knowledge among secondary students of the range of interesting roles available across all sectors
- Make progression pathways available to those entering or already working in the roles, particularly for those at lower skilled levels, with clear role definitions mapped to academic or other vocational awards
- Ensure development opportunities are available to provide the required skills, knowledge and competencies
- Enhance employee retention

The group could share knowledge and help identify new skill gaps and opportunities. It could consider best practice Logistics/Supply Chain Management training/education initiatives introduced in other countries, explore industry led certified training programmes on logistics and supply chain management, and consider whether they might be adapted/implemented in Ireland.

Lead: National Institute for Transport and Logistics (DIT), Logistics and Supply Chain Management Industry bodies, Education and Training Providers, DTTAS and DBEI

A key element in addressing the skills needs arising from Brexit, in particular the potential for more complex trading arrangements, is boosting the attractiveness and perception of careers in Freight Transport, Distribution and Logistics activities. A key recommendation of the 2015 EGFSN report on the Freight Transport, Distribution and Logistics sector was the establishment of an industry 'Logistics Skills Engagement Group', with the objective of enhancing Ireland's Logistics and supply chain skills capability. In the years since the publication of that report, numerous attempts have been made to establish and convene such a group, under the auspices of the National Institute for Transport and Logistics in Dublin Institute of Technology- recommended in the 2015 EGFSN report as a lead centre/single voice for Third level education institutions delivering programmes relevant to the FTDL sector. These efforts, however, have been unsuccessful.

Since the publication of the 2015 EGFSN Report there have been considerable changes to the responses to skills needs. The Regional Skills Fora, in operation since mid-2016, help foster stronger links between employers and the education and training sector, Since the establishment of the RSF



there is now a greater focus on strengthening and establishing positive relationships between employers and the education and training system in the different regions. Their membership includes Higher Education Institutions, Education and Training Boards, and cross sectoral industry representatives. This enables a coordinated approach to current and emerging skills needs on a regional basis, and supersedes some of the role originally envisaged for the Logistics Skills Engagement Group.

Promoting the career opportunities across Logistics and Supply Chain activities, however, and thereby expanding the potential pool of skills and talent for such roles, remains a key issue for the sector, and will be a key responsibility of a National Logistics and Supply Chain Skills Group.



7. Develop a schools/communication toolkit and awareness raising campaigns for Logistics, Supply Chain and Transportation careers across all sectors, and an improved understanding of the cross sectoral skills needs, employment numbers and career opportunities in supply chain activities.

- Prepare an information pack for Guidance Counsellors on the types of roles available in the sector and the opportunities it can provide.

Lead: Industry Bodies, in collaboration with National Logistics/Supply Chain Skills Group

- Explore the introduction of a Transition Year Logistics/Supply Chain programme, similar to Tourism Insight, which involves the state, education and industry in a national effort to inform Transition Year students and other learners about the tourism sector and to present the sector as a career choice.

Lead: Industry Bodies, in collaboration with National Logistics/Supply Chain Skills Group

- Industry bodies to explore development of a social media campaign similar to the Chartered Institute for Logistics and Transport's 'Love Logistics' campaign in the UK. This aims to make people aware of the FTDL industry, and the impact it has on their lives. It includes a series of videos outlining the role of the logistics industry and is aimed at a range of audiences.

Lead: Industry Bodies, in collaboration with National Logistics/Supply Chain Skills Group

- Establish a campaign similar to the Construction Industry Federation's 'BuildingEquality#' campaign, to expand female participation in Logistics and Supply Chain careers.

Lead: Industry Bodies, in collaboration with National Logistics/Supply Chain Skills Group

- Consider undertaking a study to develop an improved understanding of the skills needs, employment numbers and career opportunities in supply chain activities across all sectors, including the Freight Transport, Distribution and Logistics sector. This study could be used to develop a skills action plan to service the future supply chain needs across all sectors.

Lead: EGFSN

Promoting the career opportunities across Logistics and Supply Chain activities, and thereby expanding the potential pool of skills and talent for such roles, will be a key responsibility of the National Logistics/Supply Chain Skills Group. There is currently a lack of knowledge among students of the range of roles available, within both the FTDL and across other internationally trading sectors. This calls for the development of a schools/communication toolkit to promote such careers across all sectors; this echoes a similar recommendation in the 2015 EGFSN report on the FTDL sector.

Linkages should be created with guidance counsellors, who can play a strong role in promoting the sector to potential entrants, particularly women; this can be advanced through the preparation of an information pack, or the Careers Portal website. The introduction of a Transition Year module on Logistics and Supply Chain, similar to that of Tourism Insight, a programme sponsored by Fáilte Ireland, the Irish Hospitality Institute, Irish Hotels Federation and the THEA, should also be explored; the programme seeks to inform the students and other learners about the tourism sector



and present it as a career choice. This should involve the Logistics and Supply Chain industry working with schools on the development of a new 'Transition Unit', curriculum components timetabled for circa 45 hours.

Consideration should be given to the development of a social media campaign by industry bodies, similar to that undertaken by the Chartered Institute of Logistics and Transport in the UK in recent years: 'Love Logistics'. Through a series of videos outlining the role of the logistics industry, this aimed to raise awareness of the industry more generally. Industry bodies should also explore the potential for more targeted initiatives. A campaign similar to the 'BuildingEquality#' female role model, outreach and social media campaign currently being undertaken by the Construction Industry Federation in Ireland, to encourage greater female participation in an industry lacking in gender diversity, should also be established.

At present, approximately 17% of workers in the Transportation and Storage sector are female; this proportion is likely bolstered by administrative, sales and marketing, and management roles, which have a heavier female bias than traditional roles in the sector. Expanding the comparatively low rate of female participation in the labour market, and therefore the pool of talent, is a key Government objective, particularly as the economy approaches full employment and the risk of skills shortages increase. Gender tailored messaging will help ensure that females are aware that there are no barriers to them taking up roles in the sectors. These suggested interventions are also relevant to recommendation 8 below, on the promotion of the Logistics and Service apprenticeship programmes.

Further to the work of the National Logistics and Supply Chain Skills group, one of the key findings of this study has been of skills shortages in broader supply chain roles e.g. data scientists with supply chain expertise, sourcing and procurement, supply chain management, auditing and orchestration, global procurement, enterprise level logistics and distribution skills. There is currently a lack of understanding of the profile of current supply chain numbers within multinational and domestic firms, and the opportunity they provide for high value finance, engineering and operations management careers.

Ireland is currently developing as a location for the global and regional supply chain activities of multinational firms, as part of the wider IDA strategy, Ireland- A Winning Proposition for Global Business Services. If related skills are difficult to source or attract to Ireland, however, these high value supply chain roles will locate to other markets. With this growing reputation in mind, the shortages reported in this study, and the critical importance of supply chain skillsets to the potential post-Brexit environment, the Expert Group on Future Skills Needs should consider undertaking a follow up study on supply chain skills needs- to create that greater understanding of the quantum of skills needs, employment numbers, and the career opportunities available.



<p>8. Support the development, and promote the rollout and engagement with the Logistics and Service apprenticeship programmes.</p>
<ul style="list-style-type: none"> <li>Industry led consortia to maintain progress in, and Apprenticeship Council to facilitate, development and eventual roll out of Logistics and Services apprenticeship proposals approved in 2015 and 2017. Lead: Industry led consortia, Apprenticeship Council</li> </ul>
<ul style="list-style-type: none"> <li>Industry led consortia to develop occupational standards for apprenticeship programmes, following consultation with stakeholders. Following approval of the occupational profile by the Apprenticeship Council, it will then have national status. Lead: Industry led consortia, Apprenticeship Council</li> </ul>
<ul style="list-style-type: none"> <li>On roll-out, industry led consortia to create linkages with career guidance counsellors and the post-primary sector to raise awareness of programmes and the career opportunities available. Lead: Industry led consortia, Career Guidance sector</li> </ul>
<ul style="list-style-type: none"> <li>DBEI enterprise agencies to advise on consortia engagement with SMEs and FDI companies with logistics and service related skills needs wishing to take on apprentices. Lead: DBEI enterprise agencies, Industry led consortia</li> </ul>
<ul style="list-style-type: none"> <li>Regional Skills Fora to encourage employers with logistics and service skills needs to engage with the associated apprenticeship programmes. Lead: Regional Skills Fora</li> </ul>
<ul style="list-style-type: none"> <li>Industry led consortia to engage in the promotional campaign for apprenticeships, which includes a focus on SMEs, FDIs, and is guided by Enterprise Ireland and IDA. Lead: Industry led consortia, SOLAS, DBEI enterprise agencies</li> </ul>

Supporting the development, rollout and engagement with apprenticeship programmes associated with Logistics and Supply Chain roles will be crucial in enhancing their attractiveness, and growing the skills base Ireland needs to leverage in facilitating trade in the potentially more complex trading environment for Irish based enterprise after Brexit.

The 2015 Expert Group Report on the Freight Transport, Distribution and Logistics sector recommended the development of structured entry apprenticeship and traineeship programmes to provide progression pathways within FTDL roles, as a step towards standardising and professionalising entry into such roles; it gave priority to the development of a HGV driver and warehousing and storage apprenticeship programme.

Following on from the establishment of the Apprenticeship Council in 2014, this coincided with the publication of the National Skills Strategy to 2025, development of the Action Plan to Expand Apprenticeships and Traineeships in Ireland, 2016-2020, and the setting of a target to provide 31,000 apprenticeship places over that period across all sectors and roles.





Under this new system and strategy, the development and roll-out of new apprenticeships is overseen by industry led groups (consortia) working with education and training providers and other partners.

As part of this general expansion of the apprenticeship system, a 'Logistics and Services' family of apprenticeships has now been firmly established, with six programmes approved under the 2015 and 2017 Apprenticeship calls, and currently under development by industry led consortia. These are:

- HGV Driver NFQ Level 5 (3 years): This apprenticeship, approved under the 2015 call, was proposed by the Irish Road Haulage Association, and will be coordinated by Cavan and Monaghan ETB. There has been a delay in the introduction of this programme. Originally scheduled for 2016, commencement is now anticipated in 2018.
- Logistics Associate NFQ Level 6 (2 years): This apprenticeship, approved under the 2017 call, was proposed by the Freight Transport Association of Ireland, and will be coordinated by Dublin Institute of Technology Aungier Street. The programme is working towards a first intake in September 2018. It will lead to a wide range of careers in the logistics sector, such as logistician, freight forwarder, distribution manager, transport manager, transport planner/coordinator, warehouse manager, inventory manager, process engineer, supply chain manager, or shipping agent.
- IPICS- The Supply Chain Management Institute, has proposed three apprenticeship programme, approved under the 2017 call- all of which will be coordinated by the University of Limerick  
Supply Chain Associate NFQ Level 7 (3 years):  
Supply Chain Specialist NFQ Level 8 (2 years):  
Supply Chain Manager NFQ Level 9 (2 years):
- Lean Sigma Manager NFQ Level 9 (2 years): This apprenticeship, approved under the 2017 call, was proposed by Teleflex, and will be coordinated by the University of Limerick.

These consortia should maintain progress in developing and ultimately roll out these six apprenticeships, with the support and guidance of the Apprenticeship Council. A key step in validating the programmes will be the development by the industry led consortia- following consultation with stakeholders- of occupational standards for the roles, which as per a recommendation under the 2015 EGFSN report will help create career pathways through:

- Providing a statement of competence which brings together the skills, knowledge and understanding necessary to do the work.
- Providing a framework for training and development.
- Improving recruitment by standardising the selection and interview process.

Once developed, individual standards will be approved by the Apprenticeship Council, giving them national status and providing an important basis for programme development and validation.



On roll out, it is also crucial that the industry led consortia are proactive in engaging in awareness raising, and with enterprises with associated skills needs, to publicise the programmes and the career opportunities available- through for example the creation of linkages with the career guidance and post-primary sectors, with Enterprise Ireland and IDA Ireland and their respective client bases, and through participation in the wider promotional campaign for apprenticeships, being run by SOLAS in partnership with a number of other bodies.<sup>91</sup> The Regional Skills Fora also have a key role to play, in encouraging employers with logistics or supply chain skills needs to engage with the apprenticeship programmes.

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<sup>91</sup> HEA, Apprenticeship Council, THEA, Education and Training Boards, Education and Training Boards Ireland, Enterprise Ireland, IDA, Regional Skills Fora, employer bodies, unions and professional bodies



## Appendix 1: Terms of Reference

As a matter of contingency planning, the study will seek to identify the skills needs that would be required for enterprise to mitigate and/or circumvent the impacts of a WTO/Hard Brexit scenario<sup>92</sup> on Irish goods trade, and develop a suite of recommendations that can be drawn upon to meet this objective. Both export and import goods trade will be examined. It will focus on qualifications, skillsets, competencies and workforce roles relevant to:

- The diversification of goods trade (i.e. those relevant to international selling and sourcing) at enterprise level; and
- The movement of goods trade across international borders (trade facilitation), at both specified enterprise sector level and in the wider Freight Transport, Distribution and Logistics sector.

This study will update and build on the findings of two earlier EGFSN reports, and adapt them to the prospect of a ‘Hard Brexit’ scenario: 2012’s Skills for Enterprise to Trade Internationally, and 2015’s Addressing the Demand for Skills in the Freight Transport, Distribution and Logistics Sector, 2015-2020.

### Rationale

This study will be a cross-sectoral piece of contingency analysis, which will identify and address the skills needs for the Irish enterprise base arising from the potential trade implications of Brexit under a World Trade Organisation or Hard Brexit scenario i.e. UK Departure from both the EU Single Market and Customs Union.<sup>93</sup> Its focus will be on those skillsets associated with the facilitation of goods trade across international borders, and its diversification into and from new markets (this aspect will also incorporate a number of strategic services sectors).

The expected outcome of this study is the preparation of an evidence based action plan that, if required, can be drawn upon and implemented, and through implementation contribute towards the development of a relevant base of talent and cross sectoral skills that can help the Irish enterprise base navigate the potentially more complex and diverse trading environment post-Brexit, in a manner that enhances competitiveness and that sustains and grows employment.

The UK’s departure from the European Union, and potentially from both the Single Market and Customs Union, could bring new border controls, barriers, and resulting administrative and technical requirements for Irish based firms trading into and out of the UK market. The continued use of the UK as a landbridge for Irish trade could also be open to question, creating the need for alternative transit routes. By impacting on the efficiency of trade flows, all will create disruption,

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92 Namely UK departure from the both Single Market and Customs Union.

93 For an indication of what this entails, see the approach adopted by the Department of Finance in *UK EU Exit: Trade Exposures of Sectors of the Irish Economy in a European Context (September 2017)*- <http://igees.gov.ie/wp-content/uploads/2017/10/UK-EU-Exit-Trade-Exposures-of-Sectors-of-the-Irish-Economy-in-a-European....pdf>  
Also see InterTradeIreland’s *Potential Impact of WTO Tariffs on Cross-Border Trade*- <http://www.intertradeireland.com/media/InterTradeIrelandPotentialImpactofWOTariffsResearchReportFINAL.pdf>



impose additional business costs, and impact on supply chains. Skillsets associated with freight transport, distribution and logistics will be central in addressing these challenges.

In turn, and as reflected in the recently published trade strategy, Ireland Connected: Trading and Investing in a Dynamic Economy,<sup>94</sup> Brexit will also place an onus on diversification of trade, be it import or export, away from the UK market in order to offset these impacts- and therefore the skillsets required for enterprises to trade internationally: global and international management, marketing, sales and global sourcing, as well as customer service and support, and foreign languages and cultural awareness. Seeking out non-traditional markets may also present issues for enterprise in terms of trade related barriers and regulations.

The Expert Group on Future Skills Needs has undertaken two studies relevant to the facilitation and diversification of Ireland's international trade (both import and export) in recent years, and on which it is intended that this study build: 2012's Skills for Enterprise to Trade Internationally<sup>95</sup>, and 2015's Addressing the Demand for Skills in the Freight Transport, Distribution and Logistics Sector in Ireland 2015-2020.<sup>96</sup>

The 2012 report, which arose out of 2010's Government Trade, Tourism and Investment Strategy, was focused on the development of the skills and talent base required by enterprise to drive export sales performance, and enhance Ireland's proposition for attracting inward business investment, through provision of the quality, diversity and quantity of skills required. Special attention was paid to the 9 sectors highlighted in the 2010 Trade Strategy.<sup>97</sup>

The 2015 Freight Transport Distribution and Logistics report meanwhile examined the skills associated with the planning, implementation and control of the physical movement of products and information flow to and from each segment of the supply chain- including the handling and storage of raw materials, semi-finished and finished products, from point of origin to the end consumer- in the most efficient and effective way possible. The sector was highlighted as a key enabler of trade for Irish based enterprise.<sup>98</sup>

Through a focus on their associated skillsets, the research will undertake a stocktake and update these two reports, prepared for a trading environment less restrictive, complex and disruptive than that potentially posed by a Hard Brexit scenario, and establish the exact state of readiness of the Irish enterprise base for the potential new reality from a skills and competence perspective.

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94 <https://dbei.gov.ie/en/Publications/Ireland-Connected-Trading-and-Investing-in-a-Dynamic-World.html>

95 See <https://dbei.gov.ie/en/Publications/Key-Skills-for-Enterprise-to-Trade-Internationally.html>

96 See <https://www.dbei.gov.ie/en/Publications/Addressing-the-Demand-for-Skills-in-the-Freight-Transport-Distribution-and-Logistics-Sector-in-Ireland-2015-%E2%80%93-2020.html>

97 The recommendations from this report related to the building up of: global/international management skills, international marketing capability, a cadre of international sales professionals, international customer service/support skills, international design and development skills capability, a multi-lingual workforce, soft skills and competence, and opportunities for employment in international business.

98 This report's recommendations included: development of a Skills engagement group for the sector, development of national occupation standards, development of new apprenticeships, a schools/career service communication toolkit for the sector, the building up of SME management capability, the building up of Global Supply Chain Management Skills, improved training provision for freight forwarders and customs brokers, short IT user sector specific courses, soft skills managers courses, and the boosting of third level logistics course provision.



Where identified, the study will propose adaptations or measures required to enhance the skills related resilience of the Irish enterprise base- directly, in terms of international selling and sourcing skills, and indirectly, in the robustness of the wider freight transport, distribution and logistics sector- in meeting the new trading environment that might arise. Specifically, this will involve the identification of measures for boosting the relevant skills base, and its accessibility to enterprise, in a manner that enhances the efficiency of goods trade flows, competitiveness, and diversification into and sourcing from new markets, helping to sustain and grow employment.

The study will do so in a manner that is aligned with the targets set out in Ireland Connected for Irish trade: the maintenance, as far as possible, of existing UK market share; and diversification of trade outside of the UK market. Maintaining the stability and competitiveness of enterprise supply chains will also be a key concern.

## Methodology

As per the earlier EGFSN report, the approach to examining the skills needs associated with trading internationally, given their cross-sectoral application, will be largely qualitative in nature.

Following on from the 2015 report, the approach for the wider Freight Transport, Distribution and Logistics sector will represent a mix of qualitative and quantitative, with preparation of a demand scenario depending on the continued availability or otherwise of transit routes for Irish trade through the UK.

The skillsets to be examined for trading internationally are the following:

- Global and international management skills
- International sales skills
- International marketing skills
- Customer service/support skills
- Design and development skills
- Foreign languages and cultural awareness
- Logistical and Distribution skills (at enterprise level)

The typology of enterprises to be covered in this element of the research will be those for whom the UK is a significant goods export market, as well as those seeking to diversify or step up their goods exporting activity in non-UK markets. In the case of those seeking to diversify, they will reflect the sectors identified in the Government's trade strategy, Ireland Connected: Trading and Investing in a Dynamic World, as sectors of 'comparative advantage' (i.e. Agri-Food, Health Lifesciences, Technology, High Value Manufacturing (Engineering), Construction Services).

For the freight transport, distribution and logistics sector, and building on the 2015 report on the sector, the following 14 core occupations (CSO SOC 2010 occupational codes) will be examined:

- Managers and directors in transport and distribution



- Managers and directors in storage and warehousing
- Aircraft pilots and flight engineers
- Ship officers
- Importers and exporters
- Transport and distribution clerks and assistants
- HGV drivers
- Fork-lift truck drivers
- Mobile machine drivers and operatives n.e.c.
- Train and tram drivers
- Marine and waterways transport operatives
- Air transport operatives
- Rail transport operatives
- Other drivers and transport operatives

The typology of companies and organisations to be covered for these activities are:

- Third Party Logistics Providers
- Large Irish Food companies which undertake their own international logistics
- Large Retail multiples which undertake their own logistics and warehousing activities
- International Road Freight Transport companies
- Consultancy firms providing logistics services as a significant part of their business activity
- Operators engaged in intermodality and co-modality logistics activities
- Public bodies who provide a service related to efficient international trade logistics

The methodology for this study will comprise several integrated elements.

The consultants appointed by DBEI/the EGFSN will undertake elements B, C and D, described below.

DBEI/the EGFSN, with the assistance of the Project Steering Group, will undertake elements A, E and F. The findings from all elements will be integrated into a report which will contain recommendations aimed at addressing the skills needs arising from the potential trade implications of a Hard Brexit scenario.

These elements are as follows:

(A) Review of implementation of recommendations in previous EGFSN reports (Skills for Enterprise to Trade Internationally, Addressing the Demand for Skills in the Freight Transport, Distribution and Logistics Sector, 2015-2020)

This review, which will be undertaken by the Department of Business, Enterprise and Innovation, will entail follow up with the responsible bodies identified in the original reports, as well as liaison with the Project Steering membership, to establish the quality and sufficiency of



implementation, and what problems/difficulties were encountered. There will be scope for complementing this review in the qualitative research phase (see part C), in particular in adapting the recommendations of these earlier reports to the specific challenges posed for the Irish enterprise base by a Hard Brexit scenario.

#### (B) Concise Literature review

The focus of this review, to be prepared by the appointed consultants, will be on available international or domestic information and research highlighting the potential implications of a Hard Brexit scenario, in particular their impact on the demand for skillsets associated with international trade, and trade facilitation. It is envisaged that, in co-operation with the Project Steering Group established to help oversee this project, the Department of Business, Enterprise and Innovation will facilitate the appointed consultant in accessing other relevant documentation for this review.

#### Á (C) Research exercise conducted through structured telephone interviews and workshops with companies, organisations and stakeholders

The aim of this phase of the research, to be undertaken by the successful contractor, will be to:

- Identify the main trends and drivers that would impact on the demand for skills in a Hard Brexit scenario, on the numbers employed and their skillsets, competences and qualifications requirements (with particular reference to the trade diversification and trade facilitation requirements of the Irish enterprise base)
- Identify the main trends and drivers that would impact on the supply of skills in a Hard Brexit scenario, including the nature of employment on offer and availability of career pathways
- Identify any current/anticipated skills and competency gaps that would arise
- Consider how enterprises would plan to address any such skills gaps, including through further and higher education, upskilling/reskilling, continuing professional development, or inward migration
- Elicit proposals in relation to the building up of an adequate talent pool within trade diversification and trade facilitation activities in Ireland

This mainly qualitative research element will comprise of:

- Structured Interview Surveys by telephone with 44 Irish based enterprises, from the typology of firms listed. A balance will be struck between enterprises focused on international selling and sourcing, and those engaged in the freight transport, distribution and logistics sector, with separate surveys addressing the distinct issues to be faced in the two areas. The enterprises/organisations will be selected by the Department of Business, Enterprise and



Innovation, with the co-operation of the Project Steering group established to oversee this study.

- Structured Interview Survey (by meeting/or telephone) with 20 key informants, including sectoral representative organisations. A balance will be struck between informants focused on international selling and sourcing, and those engaged in the freight transport, distribution and logistics sector.
- Discussions with a wider group of enterprises, organisations and key informants at 2 workshops. One workshop will focus on international selling and sourcing, and one on the freight transport, distribution and logistics sector.

(D) Demand scenario for Freight Transport, Distribution and Logistics sector, on basis of continued availability or otherwise of UK landbridge (and Hard Brexit scenario)

This element, to be undertaken by the consultants, will present two possible alternative demand scenario forecasts for the main freight transport, distribution and logistics occupational categories. The 2016 Census figures indicating the current employment of the core FTDL occupations will represent the baseline for each scenario. This exercise will outline the current and emerging qualifications, skillsets and competences required for the main categories. The key assumptions upon which the outcome for each of the scenarios will depend are the following:

Scenario 1: Continued use of the landbridge through the UK for the facilitation of Irish trade.

Scenario 2: Lesser dependence on the landbridge through the UK for the facilitation of Irish trade, and diversion of trade towards alternatives to maximise economic competitiveness and efficiency.

Á (E) International review of actions by selected countries to develop and attract a supply of relevant skillsets (DBEI)

This element, to be undertaken by the Department of Business, Enterprise and Innovation with the co-operation of the Project Steering Group, will include an assessment of actions in a selected number of countries, for both international selling and sourcing, and trade facilitation. A particular focus will be on actions undertaken in EU member states in response to Brexit.

(F) An assessment of the current and planned supply of skills at NFQ levels

This element, to be undertaken by the Skills and Labour Market Research Unit, SOLAS, on behalf of the Department of Business, Enterprise and Innovation, will be an assessment of the current and planned supply of skills at NFQ levels categorised by those participating on public and private:

Higher education programmes

Further education and training programmes

Continuing professional development programmes





## Outputs

A report, with an Executive Summary, to be prepared by the successful tenderer, which will include the following:

- The mapping of identified skills needs against existing/planned programme provision for both international selling and trade facilitation
- Identification of any current/anticipated gaps in skills provision for international selling and trade facilitation; and the scale and nature of the developmental response(s) required to address any such gap
- Demand scenarios outlining how continued availability or otherwise of the landbridge through the UK will impact on the mix of skills required in the Freight Transport, Distribution and Logistics sector in a Hard Brexit scenario
- Recommendations on any tailored measures to build up the domestic skills supply of talent in addressing the potential trade implications of a Hard Brexit, including through (a) the third level education and further education systems; (b) upskilling/reskilling, (c) continuing professional development; (d) inward migration; and (e) any other supply. Recommendations made will advise on optimising the use of existing resources- both Government and private sector.



## Appendix 2: Members of the Steering Group

<b>Dr Pat Ivory (Chairperson)</b>	Ibec
<b>Joanne Tobin</b>	Department of Education and Skills
<b>Alma Ni Choighligh</b>	Department of Foreign Affairs and Trade
<b>Martin Diskin</b>	Department of Transport, Tourism and Sport
<b>David Kennedy</b>	Bord Bia
<b>Cathy Holohan</b>	Enterprise Ireland
<b>Ray Bowe</b>	IDA Ireland
<b>Kerry Curran</b>	InterTradeIreland
<b>Dr Selen Guerin</b>	SOLAS
<b>Aidan Flynn</b>	Freight Transport Association of Ireland
<b>James Milligan</b>	Hays
<b>Kathryn O' Donovan</b>	Ibec
<b>Howard Knott</b>	Irish Exporters Association
<b>Brian Murphy</b>	Irish Exporters Association
<b>Ross McCarthy</b>	ISME
<b>David Moffitt</b>	Kayfoam
<b>Dr Eoin Plant</b>	National Institute for Transport and Logistics, Dublin Institute of Technology
<b>Lorcan Sheehan</b>	PerformanceSC
<b>Kevin Daly</b>	Department of Business, Enterprise and Innovation
<b>Dr Alan Power (Project Manager)</b>	Department of Business, Enterprise and Innovation



## Appendix 3: Members of the Expert Group on Future Skills Needs

<b>Tony Donohoe (Chairperson)</b>	<b>Ibec</b>
<b>Kevin Daly</b>	Head of Secretariat and Principal Officer, Skills and Education Policy Unit, Department of Business, Enterprise and Innovation
<b>David Hegarty</b>	Assistant Secretary, Department of Business, Enterprise and Innovation
<b>Mary Doyle</b>	Assistant Secretary, Department of Education and Skills
<b>Kathleen Gavin</b>	Principal Officer, Department of Education and Skills
<b>Mark Christal</b>	Enterprise Ireland
<b>Dr Vivienne Patterson</b>	Higher Education Authority
<b>Dr Peter Rigney</b>	Irish Congress of Trade Unions
<b>Ray Bowe</b>	IDA Ireland
<b>Dr Bryan Fields</b>	SOLAS
<b>Dr Selen Guerin</b>	Skills and Labour Market Research Unit, SOLAS



## Appendix 4: Glossary of Terms

AEO	Authorised Economic Operator
CILT	Chartered Institute for Logistics and Transport
CSO	Central Statistics Office
DBEI	Department of Business, Enterprise and Innovation
DES	Department of Education and Skills
DFAT	Department of Foreign Affairs and Trade
DIT	Dublin Institute of Technology
D/Taoiseach	Department of the Taoiseach
DTTAS	Department of Transport, Tourism and Sport
EEA	European Economic Area
EGFSN	Expert Group on Future Skills Needs
ERP	Enterprise Resource Planning
ESRI	Economic and Social Research Institute
EU	European Union
FDI	Foreign Direct Investment
FET	Further Education and Training
FTDL	Freight Transport, Distribution and Logistics
FX	Foreign Exchange
GBS	Global Business Services
GDP	Gross Domestic Product
GNP	Gross National Product
HE	Higher Education
HEA	Higher Education Authority
HEIs	Higher Education Institutions
HGV	Heavy Goods Vehicle
HPRA	Health Products Regulatory Authority
HR	Human Resources
ICT	Information and Communications Technology
ISME	Irish Small and Medium Enterprises Association
IT	Information Technology
LEO	Local Enterprise Office
MFN	Most Favoured Nation
MNC	Multinational Company
NFQ	National Framework of Qualifications
NTB	Non-Tariff Barrier
PAYE	Pay as You Go



PRSI	Pay Related Social Insurance
Q	Economic Quarter
QQI	Quality and Qualifications Ireland
RD&I	Research Development and Innovation
Ro-Ro	Roll On-Roll Off
RSA	Road Safety Authority
SME	Small and Medium Enterprise
THEA	Technological Higher Education Association
UK	United Kingdom
US	United States
VAT	Value Added Tax
WTO	World Trade Organisation



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