

The Dublin-Belfast Economic Corridor: Current Profile, Potential in Recovery & Opportunities for Cooperation

Final Report

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Foreword

We believe that the time has come for fresh impetus to be given to the development of the Dublin-Belfast Economic Corridor. There have been some successes along the Corridor since the 1990s, particularly in terms of employment opportunities, peace-building and the removal of barriers, and the rolling out of new transport infrastructure. Much of this success is due to cooperation at both the all-island and more local cross-border levels.

As we enter a new decade we believe that much more collaboration is possible for mutual benefit between the cities of Dublin and Belfast and the regions between. In 2018 a network of the eight Councils located along the Corridor and two universities came together to work collectively to find ways of realising the potential benefits of further development of the Corridor. This report is the first output of this collective work.

We are conscious that this report and the work of the local government network does not exist in a vacuum. As we finalise this report the COVID-19 pandemic has provided a severe shock to economies and communities across the globe. The impacts of having to shutter large parts of the economy and asking people to stay at home, in order to assist with public health, are only beginning to work their way through our systems. The role of local government in providing key frontline services and offering an important point of contact between central government and citizens has rarely been more obvious. The need for greater collaboration has also been highlighted.

There is also the still-unresolved final outcome of Brexit, which adds further to the need for the Corridor and the island as a whole to remain competitive in a changing world. The climate emergency is another factor which must shape our thinking about the future development of a region, almost all of which bounds the East coast.

As Councils each of us are involved in regional, county and community spatial and inclusive strategies. All of these identify the challenges and the possibilities attached to demographic changes, housing pressures, and the need to secure employment opportunities for all of our populations. In some areas we will compete with one another but we also hold a shared recognition of the potential benefits attached to any initiative to develop the Corridor.

These potential benefits associated with the Dublin-Belfast Economic Corridor are regularly mentioned by central governments, most recently in *Ireland 2040* and *New Decade, New Agreement*. We recognise the crucial role that will be played by government departments, economic development and other agencies and many other stakeholders from across our communities, including the voluntary and private sectors. We are

publishing this report as our contribution to the wider conversation that will be necessary in developing any larger strategy to develop the Dublin-Belfast Economic Corridor.

Our immediate objective, as members of a local government and higher education network, will be to leverage the network's resources in areas which we believe can have a positive impact and add significant value to the economic development of the Corridor at a time of great economic and social uncertainty. To this end, we have already established a partnership steering group of the Chief Executives and heads of the two universities committed to meet quarterly and a working group of local government and university staff tasked with developing a series of cooperative initiatives and projects which can begin to realise this objective.

We commend this report to you as an initial contribution to this work.

To be signed by
8 Council CEOs and UU/DCU

Executive Summary

1. The concept of a Dublin-Belfast or Eastern Economic Corridor is one that has been in circulation since the early 1990s when the ideas of high growth zones, regions or corridors were emerging. Since then economic corridors entered mainstream policy and they have also developed from purely transport infrastructure into more complex economic zones attractive to inward investment and a potential tool to tackle regional disparities.
2. In this report the geographical definition used for the Dublin-Belfast Economic Corridor is intended to combine both administrative and functional geography. The administrative boundaries reflect the eight Councils gathered in a local authority network who have driven the idea of looking afresh at the economic profile of the Corridor. The functional geography is intended to reflect a region which contains the significant road and rail infrastructure links between Dublin and Belfast.
3. The report has been commissioned by a local government network formed by eight Councils located in the Dublin-Belfast Economic Corridor, who then asked staff from Ulster University and Dublin City University to research and write the profile in cooperation with the Councils.¹ The network came together with a shared recognition of the potential benefits that could arise from such an initiative and the challenges that might face it in the coming years, not least the outcome of a UK exit from the EU. In the course of its work the COVID-19 pandemic struck and the economic trajectory has shifted significantly.
4. This report sets out the recent strong economic performance of the Corridor and some idea of the significant impacts that COVID-19 is likely to have on local labour markets. The report also begins the work of identifying potential areas for cooperation which could create a stronger trajectory for growth.
5. As noted above a key reason for the appearance of the report at this time is that the Corridor faces some significant risks. There are also opportunities which present themselves. Not least, the initiatives and investments which will flow from the Belfast Region City Deal and the *Ireland 2040* plans.

Reflections from other economic corridors

6. Examples of economic corridors in other places, from other parts of the island of Ireland to GB, to continental Europe and further afield in emerging economies, offer a variety of rationales for deeper cooperation and collaborative initiatives on the Dublin-Belfast Economic Corridor.
7. Learning from elsewhere is useful in identifying next steps for the Corridor. Although it is important to note the caution that 'no one-size fits all approach for achieving good governance in establishing partnership among towns, cities

and rural regions' (ESPON, 2015), a case does exist for exploring further dimensions of partnership. Looking specifically at the experience of promoting cross-border economic corridors, two key success factors suggest themselves:

- 1) *Know the cross-border territory, know each other within the territory* – both the strengths, weaknesses, and complementarities of the different sides of the cross-border territory, but also economic and knowledge flows that characterise it.
- 2) *Organise the governance of cross-border economic development* and involve all relevant territorial stakeholders active within the cross-border territory including all levels of government

8. The examples of economic corridors in Oresund, the Cambridge/Milton Keynes/Oxford and East Asia all have one thing in common: the need **for a clear vision of what additional economic growth might arise from the development of regional and local inter-governmental collaboration**. This ranges from aspirational doubling of additional economic output growth by 2050 in the case of Cambridge/Milton Keynes/Oxford, to the realized growth in the share of strong economic growth in the case of the corridors of the Mekong region in Asia.
9. The lessons from other corridors also help to identify a number of ingredients for successful cooperation:
 - It is important to agree upon the current stage of development of any corridor. ***The Dublin-Belfast Economic Corridor project currently looks like it is at the 'Know the cross-border territory, know each other within the territory' stage.***
 - Cooperation among actors on a corridor needs (consistent) time, energy and support to be nurtured and to grow.
 - Local actions can deliver strategic objectives in a practical way, particularly in areas such as innovation centres and skill strategies.
 - A medium- to long-term perspective, less 'big bang' than 'slow burn', is critical, in particular around developing governance and securing resources.
 - Early wins can help cement the partnership, give support to the agreed governance and ensure sustainable cooperation.

Recent performance in the Dublin-Belfast Economic Corridor and COVID-19

10. In terms of population, the Dublin-Belfast Economic Corridor has experienced strong growth in recent decades. Since 2006 alone there has been a 12% increase and, at the time of the 2016 Census in Ireland, more than 2 million people were living in the eight Council areas. Growth in the working age population (16-64 year olds) is also strong, and stands at 1.4 million people. There are high levels of diversity within this population, with 15% born outside the island.

11. Dublin city dominates the skyline when we think of population with more than 1 in 4 of the population in the Corridor living in the capital city. However, with Belfast and Fingal (between them more than the population of Dublin) to act as counter-balances this dominance lessens somewhat and perhaps points to how the Corridor, if treated as a region, might lessen some of the emphasis or pressure on the capital.
12. The labour market in all parts of the Corridor has been very buoyant in recent years. By late 2019, unemployment rates were close to or at historical lows, between 3% and 5% in most places. This was due to recent strong growth in employment numbers. On the eve of the COVID-19 pandemic, close to 1 million residents of the Corridor were in work. An even larger number of jobs are located on the Corridor, pulling in numbers of commuters, particularly to Belfast and Dublin at either end.
13. It has been a different story for the economically inactive, those not participating in the labour market due to ill health, caring duties or for other reasons. Across the Corridor there are pockets of high levels of inactivity, particularly in the Belfast, Dublin, Armagh, Banbridge & Craigavon (ABC) and Newry, Mourne & Down (NMD) council areas. This problem is often correlated with high levels of people with no formal qualifications and difficulties faced in retraining, and this poses the question of how to improve employability opportunities for up to two fifths of residents in some places. In any recovery from a COVID-19 recession, these issues will never be far away.
14. More than a third (34%) of residents of the Corridor have educational attainments greater than NVQ Level 4, a share of the population ahead of other parts of the island. Although this share varies from 40% in Dublin or Fingal to less than 30% in ABC and Louth, and the share also varies within individual Council areas, **the overall picture is of a well-educated and available population.**
15. The presence of such a population – young and relatively well-educated – is certainly **a strength for the Corridor as skills (or the availability of these) is regularly cited by businesses – both large and small – as a key challenge.** However, in every Council area on the Corridor, the demand for NVQ level 4 and higher skills has been greater than the supply. As the economy slowly recovers from the shock in 2020, this demand/supply imbalance is likely to return unless an opportunity is taken to address it. The voracious appetite of businesses for talent will not slacken, even at a time when we might be looking at high levels of unemployment. The current recognition of this issue by local authorities across the Corridor, many of whom have developed skills strategies or skills fora to address the challenge of future skills, is work that will continue to be important in order to stay out in front of competing regions.

16. Currently, the question of the ready supply, access and shortage of advanced and intermediate skills on the Corridor is being answered by commuting patterns and in-migration from off the island. At present, more than 5% of the million plus jobs on the Corridor are filled by commuters onto the Corridor from other parts of the island, often with an even higher skills profile than its residents.
17. The demand for skills has partly been a result of **a strong pipeline of inward investment jobs in recent years**. This has been especially the case in Belfast, Dublin, Louth and, to a lesser extent, Meath. These location choices are supported by the recent results from FDI Intelligence which found that the two cities feature prominently among the cities of choice globally. Dublin is No.1 among the 'large cities' locations, while Belfast is No.2 among 'mid-sized and small cities'. Both cities score highest on what is called 'business friendliness', but less so on connectivity, suggesting one challenge to future potential.
18. Of course, the inward investment pipeline is one that cannot be taken for granted. The Corridor faces different challenges at either end: an uncertainty surrounding future plans due to Brexit for the NI locations; and internal competitiveness issues, in particular around suitable property availability and the costs of these.
19. Beyond FDI, the enterprise base on the Corridor has been a buoyant one. Almost 2 in 5 (38%) of the island's businesses are located there and the rates of firms per capita are strong too. The Corridor, as a whole, has a higher share of mid-sized businesses (with between 50 and 250 employees) than elsewhere, which may point to the successful scaling-up processes there.
20. However, the **business demography patterns mirror the economic divergence between North and South**. There are much higher birth rates and enterprise stocks in Council areas in the southern end of the Corridor than in Belfast and others, reflecting other findings around entrepreneurship and appetite for risk. The scaling-up processes also appear on first look to be differing between North and South, which may reflect other issues of innovation and export intensity and levels of productivity.
21. Alongside the recent positive performance, there have been challenges facing the Corridor before the public health crisis. These are associated with demographics and will remain after the Coronavirus. There are particular challenges around housing provision (which could worsen in the short term), affordability of this for the 'adult' life cycle group, in particular, and slower population growth in Belfast city than in its neighbouring Council areas. In line with elsewhere, rising dependency ratios (ratio of the young and old on the working age population) pose healthcare and employment issues for local and central government. These trends pose questions for future planning, service provision and measures to deal with increasing congestion.

Future prospects for the Dublin-Belfast Economic Corridor?

22. Before the COVID-19 emergency began it is was proposed that this report would include a section outlining a series of population and employment forecasts, which would be based upon 'baseline' or 'current trends' assumptions, while adjusting for potential impacts of Brexit.
23. Such a 'baseline' scenario² out to 2040 contains some trends that remain useful to consider. The forecasts pointed to the current divergence in growth rates between NI and Ireland continuing. They also found that the Corridor would continue its trajectory to becoming the location for a third of the island's population, perhaps reaching a total of 2.5 million people by 2040. And, even allowing for the severe shock of COVID-19 the 'baseline' scenario identifies the possibility that 35% of the island's jobs – nearly 1.3 million jobs – could be located on the Corridor by 2040.
24. ***None of this underestimates the certain economic impact of a COVID-19 related recession.*** The estimates of impact on GDP/GVA in both parts of the island, at time of publication, hover at a 12% decline in 2020 – and this could worsen – with a high level of uncertainty about the shape of any recovery. In the meantime the early indicators are that perhaps as many as 45% of the jobs in the Corridor could be impacted, temporarily or otherwise, by furloughs and lay-offs.
25. Expectations for the most positive scenario (a V-shaped recovery) have weakened in recent weeks with many forecasters not expecting economic output to recover to 2019 levels until 2022 at the earliest. The extent to which the economy in the Dublin-Belfast Corridor can act as a driver to the island's economies may help dictate the speed and sustainability of the recovery.
26. Allowing for the impacts of COVID-19 it is clear that all cohorts of the population will increase with working age population providing a strong labour force into the future. One pattern to note is that there will continue to be stronger growth demographically in the southern part of the Corridor, when compared to the northern section. Another is that the growth patterns in the two cities are likely to continue to be outstripped by neighbouring areas, pointing again to the need for sustainable transport options.
27. Although we are likely to avoid a tight labour market for a number of years again, there will be a continuing strong demand for skills. Between expansion demand and replacement demand (as measured in a future skills assessment), there may be an annual net requirement of 30-40,000 people from education and net migration for the Corridor.
28. Much of this net requirement or demand will be in the professional occupations, such as science & technology professionals, health professionals

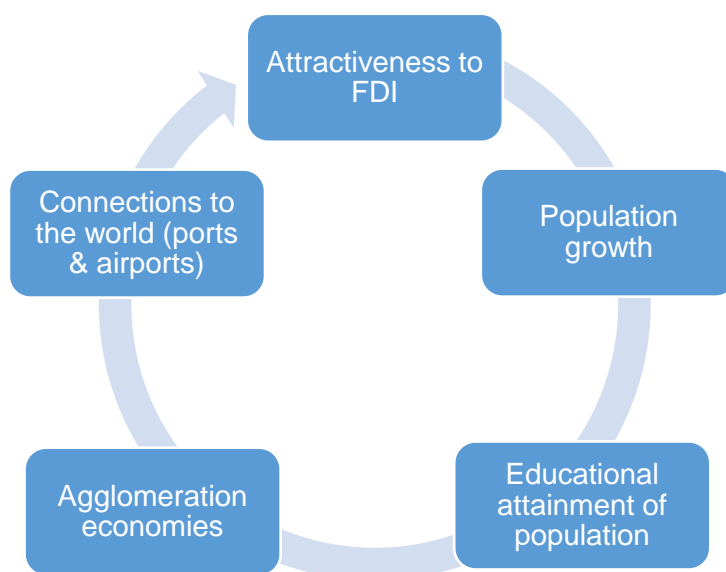
and business & service professionals. This points to ***the need to create a higher educational attainment profile than exists at present in the Corridor.***

29. While this report did develop a 'baseline' or 'current trends' scenario before COVID-19, there are at least two alternative scenarios which should be developed in any subsequent research:
- One alternative is to hold the all-island population and employment totals constant but to propose different types of spatial development, where the Belfast-Dublin Economic Corridor accounts for or takes a greater (or smaller) share of total growth than in the 'current trends' scenario. This might arise due to planning policies or an industrial strategy based principally on further developing agglomeration or high growth regions (Katz & Wagner, 2014).
 - Another alternative is that the forecasts would include the additional impacts of any infrastructure investment or other policy interventions on the Corridor. There is an argument that these would create higher growth not only for the region but the island as a whole. An alternative scenario like this would require details on the proposed investments or interventions, which could then be built into the modelling of a 'high growth' scenario.

Strengths of the Corridor and sectoral priorities

30. Figure 1 summarises the general strengths of the Corridor as it is currently functioning, highlighting demographic trends, skills levels and connectivity. These strengths hold even in light of the current events and public health crisis.

Figure 1: Summary of the strengths of the Corridor



31. The report identifies the sectoral concentrations and strengths in the Corridor, particularly across tradeable services (including ICT, Professional Services and Financial Services), as well as high tech Manufacturing and Construction. Concentration analysis show how the services sectors are particularly strong in individual Council areas such as Dublin, Fingal and, to a lesser extent, Belfast. Manufacturing also has its local concentrations in ABC, Louth and Meath.
32. Alongside these concentrations the Councils themselves have identified sectoral priorities for their areas, based on current strengths and aspirations around capturing emerging sectoral trends. The aim here is to develop networks and clusters of firms and related research strengths. These typically reflect the concentrations in tradeable services, though at a more granular level the likes of cyber security (Belfast), creative industries (Dublin and Belfast), 'digital' (ABC, Louth and NMD), all feature. Showing the general importance of Agri-Food, in spite of threats from Brexit, Louth, ABC and Meath all regard this as a priority sector for them.
33. ***One sector that is ubiquitous and important to every Council area is Tourism with 68,000 jobs currently located across the Corridor. In 2018, over 10 million trips were made in the Corridor,*** with access onto the island being especially beneficial. A high proportion of these in the two cities but opportunities also for the development of niche tourism packages in areas in between. This sector is likely to be a key one for impact from COVID-19 given the social distancing measures required. Supporting the sector through the difficult 2020 season and assisting it to refocus on the domestic market is probably key in the short term.
34. Figure 1 also identifies the importance of agglomeration economies or the benefits of location in a same area/city, or in proximity to firms in your sector or related sectors (Duranton and Kerr, 2016). The advantage of these agglomeration economies is the opportunity to promote areas in certain ways as *the location* for certain activities or to build research, innovation and capabilities infrastructure to support current economic growth and find sources of future accelerated development.
35. Development plans for Corridors often begin with a plan to mobilise key 'hard' and 'soft' infrastructure assets in order to support such agglomeration economies. The first category includes physical infrastructure such as roads, bridges, ports and so on, while the second are enabling institutions, such as education and health structures or organisations.
36. The report includes a short assessment of the current state and performance of the transport assets (detailed in Box 1) and the importance of national and EU investment programmes for these. This assessment shows how the Corridor has a varying level of transport connectivity depending upon the mode of travel. Connectivity off the island, through five different ports and

three airports, is well-served although access to some or all of these assets is an issue, as is the performance of public transport along the Corridor.

37. 'Soft' infrastructure refers less to physical engineering projects and more to the institutional, educational and research supports which could enable economic development. The Corridor is well-endowed in these with five university campuses, a technological university and an Institute of Technology are located on the Corridor, all bar one of these in Dublin and Belfast alone. Almost 110,000 students were enrolled in these institutions in the 2017/2018 academic year, but the potential goes wider than that. Research contributions from the HEIs can act a particular asset for the Corridor, as they house numerous research and incubation centres, and facilitate public and private collaborations through their Technology Transfer Offices.

Potential areas for cooperation

38. The final section of the report proposes a number of broad areas and possible actions which might be used as a beginning of a discussion of potential cooperation along the Corridor. These arise from different sources: proposals from the Councils and universities involved in the network;³ areas identified in the research, such as 'soft' and hard' infrastructural improvements, which have underpinned successful interventions in other economic corridors; and areas which the current profile and future prospects of the Corridor suggest, such as skills development. All of the areas are included on the basis that ***they could deliver additional economic value to the region and the island more generally.***
39. The potential areas in this final section are organised under two key themes for cooperation, which reflect both the priorities identified by Councils and which have been successfully used in other corridors. These are:
 - **Promotion:** Many of the economic corridors have pursued the goal of successfully branding and promoting their *location*. This is often done for the purposes of attracting investment from both inward private and domestic public sources. The focus for promotion differs from place to place but there is a tendency to promote the presence of a highly skilled workforce and population, of sectoral strengths (eg: Medicon Valley in Oresund), of supports for innovative and entrepreneurial firms.
 - **Infrastructure:** Some economic corridors (such as Oresund or the proposed Oxford/Milton Keynes/Cambridge arc) the emphasis is increasingly on the 'soft' forms of infrastructure, such as research and innovation centres, Smart Cities initiatives, and investment in environmental and energy management projects. Growth corridors in East Asia and examples such as the Basel Tri-national

Agglomeration and the 'Cascadia' Seattle/Vancouver Corridor have all based cooperation on networks of research institutes, knowledge transfers and joint research programmes in order to benefit the larger region. 'Hard' infrastructure, such as transport connectivity, has also been crucial to corridor development and will involve advocacy by the network partners at a regional and national level for further investment.

1. Introduction

1. The concept of an Eastern (or Belfast/Dublin) Economic Corridor is not a new one and was first circulated by Sir George Quigley in the early 1990s. The argument then was that such a Corridor could develop with improved transportation infrastructure, more intense interaction between firms in the region and stronger linkages between the universities located there, and between these and industry.
2. In the early 1990s three interlocking priorities were identified by the business bodies CBI and IBEC:
 - Embracing the growing forces of economic globalisation and the emergence of the (then) new Single European Market, which would reduce barriers to trade and investment and open new opportunities for the whole island of Ireland.
 - Promoting the combined scale of Dublin, Belfast and the region between the two cities to allow the island to compete in global export and inward investment markets, at a time of growing competition between regions.
 - Improving interaction along the corridor – through investment in infrastructure, and enhanced political, business and community cooperation – in order to benefit different parts of the island.
3. Sir George Quigley's argument can be summarised by the quote below and provides the basis for much of what follows in this paper.

...THE ISLAND'S POTENTIAL WILL NOT BE REALISED UNTIL THERE DEVELOPS BETWEEN BELFAST AND DUBLIN THE NORMAL ECONOMIC AND BUSINESS INTERACTION WHICH ONE WOULD EXPECT TO SEE BETWEEN CITIES ONLY 100 MILES APART... AND IT NEEDS TO BE GENUINELY AN ECONOMIC CORRIDOR AND NOT SIMPLY A TUNNEL, WITH NOTHING HAPPENING IN THE SPACE BETWEEN THE TWO CITIES.

Source: Sir George Quigley, 'Developing the North/South Economic Corridor' (1995)

4. Significant progress has been made in realising the ambitions of the 1990s for an economic corridor. Economic growth, the numbers in employment, improvements in transport connectivity and greater levels of interaction have all been realised.
5. However, almost a quarter century on, the concept of a Dublin/Belfast Economic Corridor needs re-energising. This raises the question 'Why Now?'. The first reason is the continued aim of both governments on the island to see further development of the Corridor. This is captured in National Policy

Objective 46 in *Ireland 2040*: 'In co-operation with relevant Departments in Northern Ireland, to further support and promote the sustainable economic potential of the Dublin-Belfast Corridor and enhance its international visibility' (NPF, 2018). The agreement to restore a power-sharing Executive in NI (*New Decade, New Approach*, 2020) echoes this with mention of a 'Better Dublin Belfast Connectivity strategy as an infrastructure funding priority (p.52) and that the Irish Government will support 'serious and detailed joint consideration' of the feasibility of high-speed rail connections between Belfast, Dublin and Cork (p.59).

6. Fresh energy has also arisen out of a series of meetings since 2018 between the local authorities along the Corridor. This network of Councils decided that a profile of the current state of the economy along the Corridor and the potential for further development and cooperation was needed. The network approached Dublin City University and Ulster University to work with a steering group and produce a report which could include such a profile and draw out the lessons from other economic corridors on the development of further cooperation.
7. The geographical definition of the Dublin-Belfast Economic Corridor which is used in this study is an attempt to reflect both the administrative geography of the local authority network behind the profile, and the functional geography based on the areas through which the road and rail links between Dublin and Belfast pass. It is a compact area of just over 7,300 km² (or 8.7% of the island).
8. A second answer to the question 'Why now?', lies in the risks and challenges facing the Dublin-Belfast Economic Corridor due to the current economic and political uncertainty. This arises from two events, the most immediate of which is the COVID-19 pandemic. The virus has not only led to an enormous public health crisis with tragic consequences across the island but it has also changed the economic trajectory of the Corridor from one of probable slowing growth in 2020 to one of a deep recession. And the shape of a recovery in 2021 and 2022 remains very unclear.
9. The other event is Brexit, which seems set to change both UK-EU and Anglo-Irish relations in fundamental ways. The existing and potential flows and inter-connections along the Corridor will certainly feature in any efforts to minimise the resulting cross-border and all-island frictions which are likely to arise from Brexit. Minimising such frictions in movement of goods, knowledge or people is key to all parts of the Corridor remaining competitive.
10. At the same time as risks there lie opportunities and pressures linked to the success of the Corridor, and particularly Dublin and Belfast, in attracting significant levels of inward investment in recent years. This success emphasises the need to ensure ongoing and future-proofed competitiveness in areas such as skills, infrastructure and entrepreneurship. It also points to

the need to develop a counter-balancing source of indigenous growth on the Corridor, in both established sectoral concentrations and emerging clusters, in order to create new start-ups and businesses of scale.

11. The final part of this answer to 'Why Now?' lies in the potential for fresh policy alignment and impetus for cooperation at all levels of government along the Corridor. Some progress has been made in the new structures arising from the National Planning Framework for Ireland (seen in the Mid & East Regional Assembly), the Belfast Region City Deal and initial work on a growth deal for the Mid, South & West region of NI.
12. A framework for this cooperation is already in place (DRDNI/DOELG, 2013) and is outlined in *Ireland 2040*. The reconfiguring of local authorities and the addition of fresh planning powers provides a basis for local leadership in the Corridor in three key areas:
 - Regional cooperation arrangements or the exploring of opportunities to achieve larger ambitions through collective strength.
 - Local initiatives, which could include joint branding of sectoral strengths (eg: tourism).
 - Coordinated spatial planning, specifically around developing a critical mass along the Corridor which can compete with other major city regions.
13. The final of these three areas points to the competing needs, which have to be balanced in any call to promote or develop the Corridor. The call for balanced regional development in both NI and the Republic of Ireland has remained strong in the 25 years since Sir George Quigley first developed a Dublin-Belfast Corridor concept. Therefore, the case remains to be made that a concentration of growth in one place can benefit other places. This point holds equally true for those benefits which can be gained by the parts of the Corridor between Belfast and Dublin.
14. There are other pressing issues for the coming decade on the Corridor. First, the need to manage environment and landscape, while at the same time seeking to deliver economic growth in all its parts. Second, the changing shape of the economy and the importance of factors such as digitalisation and automation, mean that support for current sectoral strengths will need to be accompanied by a focus on emerging sectors with their disruptive impacts on incumbent businesses.
15. One final point is that the Corridor, as a concept, is both outward and inward-looking at the same time. To successfully present the Dublin-Belfast Economic Corridor as a global proposition which can attract inward investment, there is a requirement for practical cooperation by local authorities and other stakeholders along the Corridor. The next section looks at the lessons that can be learned from other Corridors when pursuing this aim.

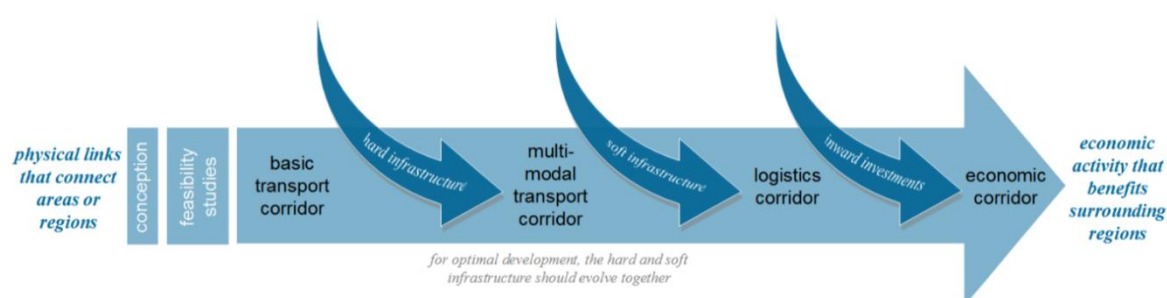
2. Lessons from other Corridors

1. This section of the report explores the concept of corridors with reference to definitions and international exemplars, before turning to the ingredients (conditions) for successful development of these.

2.1 What exactly is a corridor?

2. Corridors feature globally as a tool for the spatial management of regions and associated dynamics that impact across society, economy and environment. The term 'corridor' is used variously to explain actual (observed) patterns of development, and describe future (aspirational) forms of growth. Form can vary, for example as a transport route, or evolution into a more complex economic corridor.
3. As noted above, the World Bank refers to transport, trade, or freight corridors, which can consequently *contribute toward* economic development (Hope and Cox, 2015, p.1 emphasis added). Indeed, at the heart of any successful corridor must be the 'presence of inherent economic potential' that serves as a platform by which public and private sector investment is maximised in order to 'multiply economic returns and benefits' (Kunaka and Carruthers, 2014, p.21). Mature development corridors not only impact on immediate urban areas, but can also benefit surrounding regions (see Figure 1 below).

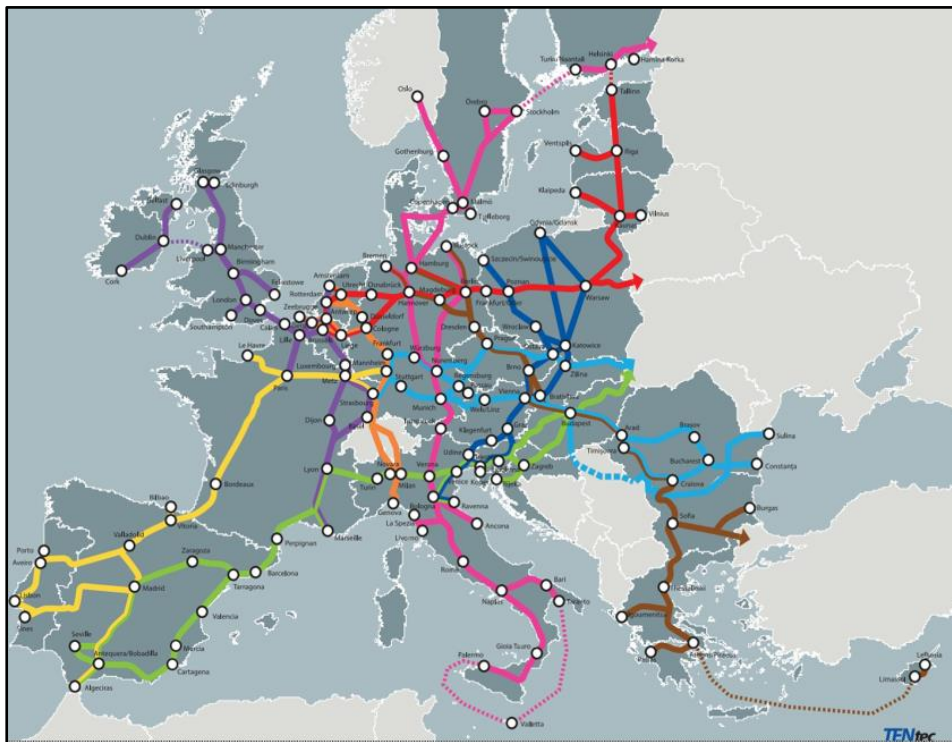
Figure 1: Evolution of a development corridor



Source: Hope and Cox, 2015, p.3.

4. The focus on freight and transport, linked to both economic growth and regional political cohesion, is core to the Nacala Corridor (southern Africa) and is mirrored in the aspirations of corridor development across Europe, underpinned by the various European Regional Development Funds and Trans-European Transport Network (TEN-T) initiatives. Figure 2 shows how the geography of the TEN-T core networks actually includes the Dublin-Belfast Economic Corridor.

Figure 2: Core Network Corridors



Source: European Commission, 2019

5. Across Europe, gateways and corridors exist for economic, social and territorial cohesion and are considered as “key delivery vehicles to achieve ... strategic intra- and inter-regional spatial rebalancing” (Pain, 2011, p.1160). This featured particularly strongly in both the *National Spatial Strategy (NSS, 2002)* for Ireland and in the *Regional Development Strategy (RDS, 2001 and 2012)* for Northern Ireland.
6. The latest spatial plan for Ireland – *Project Ireland 2040, National Planning Framework (2018)* – continues to refer to corridors as a tool for encouraging balanced regional development through the *Atlantic Economic Corridor (AEC* – see Figure 4) and the *Dublin-Belfast economic corridor* (see Figure 3). Indeed, in the case of the AEC funding for a network of Enterprise Hubs and Digital Spaces was announced in April 2019.

Figure 3: Strategy Map, Ireland 2040 (showing the Eastern Corridor)

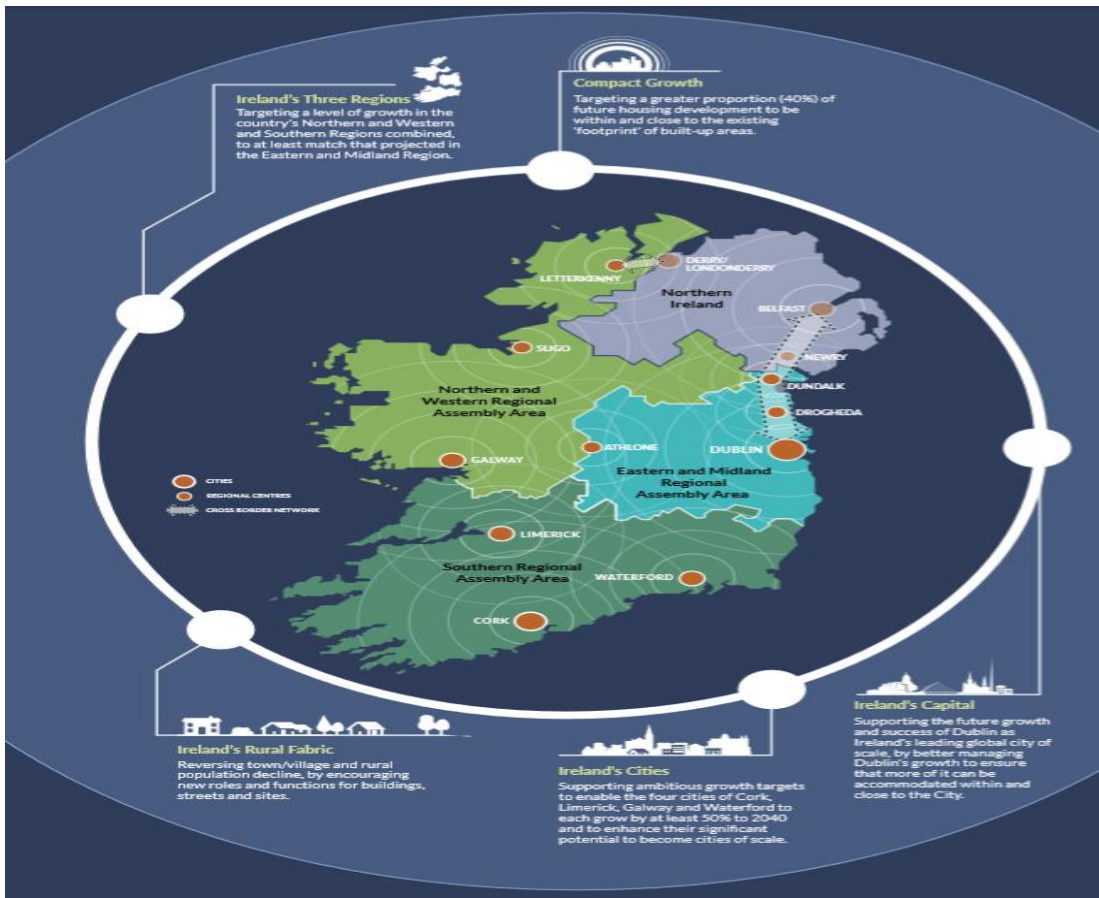
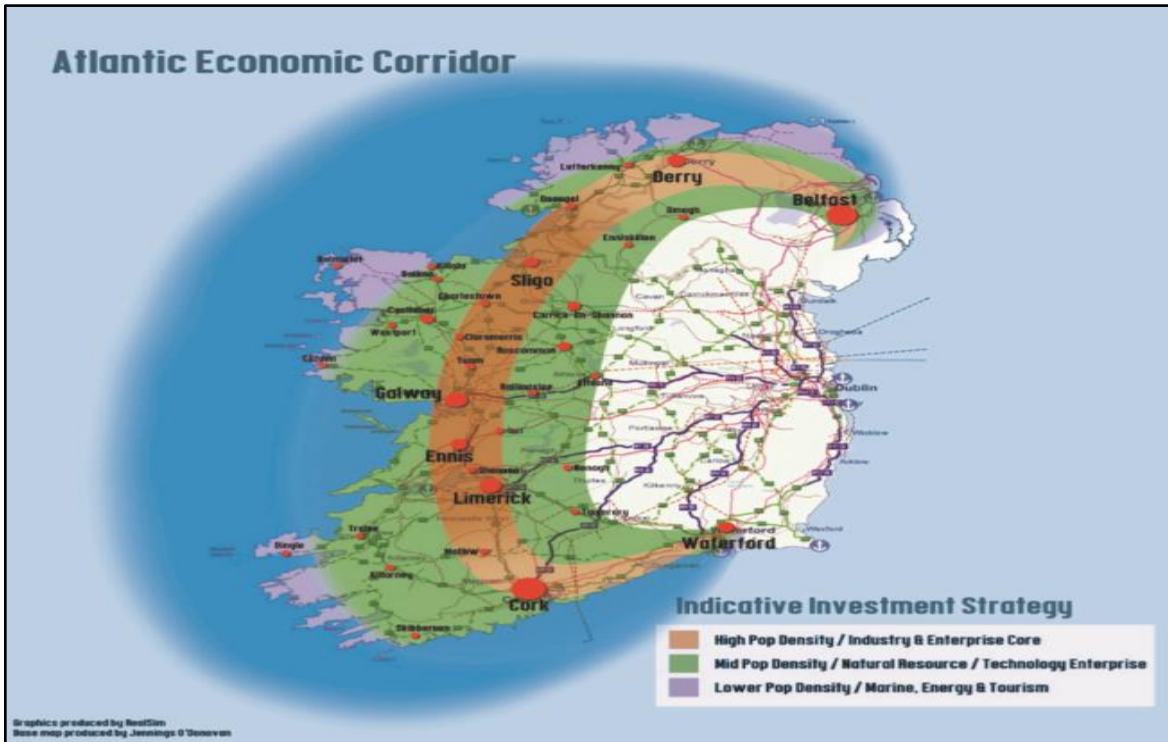


Figure 4: Map of the Atlantic Economic Corridor (showing the Western Corridor)



2.2 Ingredients (conditions) for success

7. Having scoped the corridor concept, and briefly located contemporary strategic spatial policy on the island of Ireland, the focus turns now to identification of ingredients (or conditions) for success. Experience shows there is no guarantee that designation of a corridor, for example in public sector policy, will lead to generation – or indeed implementation – of a formal plan or strategy. That said, the existence of two key factors – potentiality and partnership – are critical factors for success; the latter is more often where the gap lies in corridor development. Potentiality has been demonstrated through earlier economic analysis in this report; attention turns now to consider the partnership strand.
8. Experience elsewhere highlights that cooperation across and between public and private sector actors and agencies is essential for successful corridor development (Kunaka and Carruthers, 2014). More precisely, multi-sectoral representation and participation of the private sector are “*sine qua non* conditions for successful trade and transport corridors” (p.23). What this looks like in relation to corridor development requires more detail.

Stakeholder participation and commitment

9. Partnership can take many forms, and weak partnerships occur where there is varying buy-in from stakeholders. Consequently, cross-jurisdictional corridors thrive when linked “not only geographically but also by the same willingness and commitment to develop the corridor” (p.14, Kunaka and Carruthers, 2014).

Definition of corridor is necessary

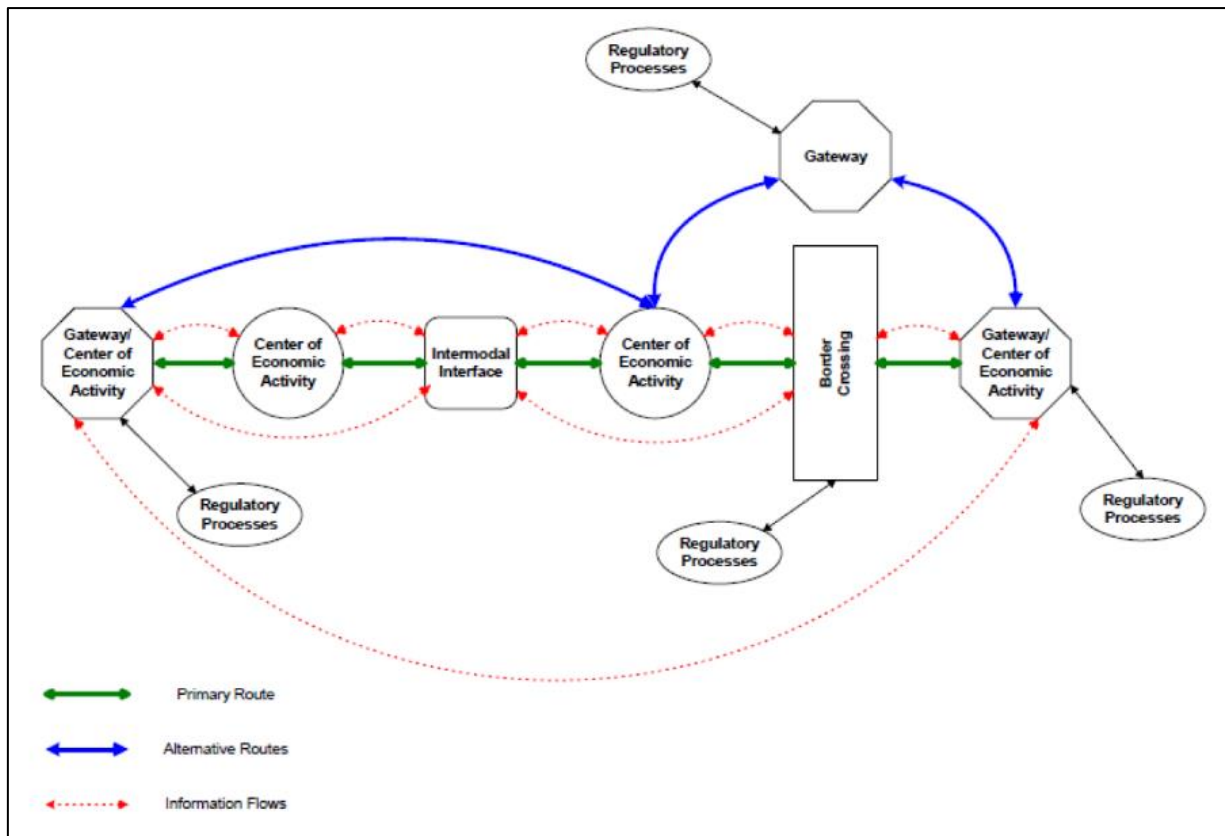
10. Designation of corridor geography, alongside identification of local and regional government administration, is required as a framework for strategy or plan development. This will help ensure development is not limited to gateways but that the benefits are more widely distributed. Figure 29 over is an example of the complex interconnectedness of corridors, which requires management both formally and informally through agreed strategy and other interventions.

Government involved locally, regionally and nationally

11. All levels of government need to be involved in corridor development. This is recognised in the Cambridge-Milton Keynes-Oxford Arc where realising the vision is dependent on “effective leadership” at national and local levels (NIC, 2017, p.3). This is to ensure enabling processes including strategic policy-making, infrastructure investment, and fiscal leverage (where appropriate) are coordinated for maximum effect. Such reciprocal multi-level cooperation is, however, not a given. With the *Oresund* initiative, for example, Danish and Swedish national authorities have been criticised for a lack of dedicated

engagement and joint actions (Nauwelaers et al, 2013, p.37-38). Central government is absent from the Oresund Committee (see details below). Furthermore, the OECD reported “mixed” commitment to the Oresund at regional and local level. One regional authority – Skåne – highly values the bridge as a “necessity” for economic survival, whereas the Danish Capital Region, with a stronger economic profile, considered cooperation as positive though not essential.

Figure 5: Components of a corridor



Source: Hope and Cox, 2015, p.2.

Corridor Governance is key

12. Good governance, with hallmarks of stakeholder inclusivity and transparency in decision-making, is another essential component of partnership. Substantial literature exists on international best practice. Preparedness amongst stakeholders to innovate can assist the corridor achieve development goals. This may require new forms of partnership. Examples here include the Oresund Committee, a forum of local and regional authorities established in 1993 for voluntary political cooperation. The Committee acted as driver for development of a vision for Oresund in 2020, and enabled local and regional authorities to develop joint land use, transportation, and environment strategies. Additional structures, including a Secretariat and external organisations, support collaboration in Oresund.

That said, arrangements in Oresund have been criticised for being overly-reliant on local and regional government, with other key actors – such as universities – not included in core structures, detrimentally impacting on strategy delivery (Nauwelaers et al, 2013).

13. Not all locations have the institutional capacity or available time to devise new governance structures. Considerable resource is required where strategy development follows a co-creation pathway to “effective inclusive planning” (Atlantic Economic Corridor, p.8). This is not a short-term action. Therefore, a trade-off may be necessary between optimal governance arrangements and leading, rather than reacting to, strong development dynamics as experienced in the Cambridge-Milton Keynes-Oxford arc:

“It is important that debate on new governance structures does not divert partners’ attention from work to develop a powerful arc-wide vision and supporting plans. It is equally important that partners avoid changes to governance structures that would introduce delay, disruption and unnecessary cost.” (NIC, 2017, p.79)

Purpose and vision

14. A central tenet of corridors is creation of a purpose and vision for development, common in spatial planning, around which strategy, actions, administration and management will coalesce. This is evident across a variety of case study examples: Oresund; Basel Tri-national agglomeration; and Cambridge-Milton Keynes-Oxford. The Oresund Committee (see above) vision for the region in 2020 is *“By maximising the benefits of integration and cross-border dynamics, the Oresund Region will stand out as the most attractive and climate-smart region in Europe”*. Whilst certainly ambitious, the vision was criticised (Nauwelaers et al, 2013) as there was no prioritisation given to twelve objectives contained in the Oresund Regional Development Strategy published in 2010. In realising a vision, coherency and continuity is necessary:

“Corridor development is not a single project. It is a complex combination of hard and soft infrastructure projects with different durations, often overlapping and interacting... throughout the stages of a corridor’s evolution.” (Hope and Cox, 2015, p.30)

15. In summary, corridor development reflects the five key dimensions of territorial governance:
 - Coordinating actions of actors and institutions;
 - Integrating policy sectors;
 - Mobilising stakeholder participation;
 - Being adaptive to changing contexts;
 - Realising place-based/territorial specificities and impacts (ESPON, 2015).

2.3 Island of Ireland

16. Learning from elsewhere in Europe is useful in identifying next steps for the Dublin-Belfast Economic Corridor. A case exists for exploring further dimensions of partnership, with the caution that “there is no one-size fits all approach for achieving good governance in establishing partnership among towns, cities and rural regions” (ESPON, 2015). Based on experience of promoting cross-border economic development, MOT (2019) identifies two key success factors applicable to the island of Ireland context:

Know the cross-border territory, know each other within the territory

“For public authorities, a joint assessment of the strengths, weaknesses, and complementarities of the different sides of the cross-border territory, and of the economic flows that characterise it, can demonstrate the interest of developing cooperation, for example around cross-border research or competitiveness clusters or centres.”

Organise the governance of cross-border economic development

Involve all relevant territorial stakeholders active within the cross-border territory including all levels of government

17. Local authorities should reference *Framework for Co-operation–Spatial Strategies of Northern Ireland the Republic of Ireland*, published June 2013. This provides opportunities for local government in both jurisdictions to work together and is noted in *Ireland 2040* as the enabler for cross-border collaboration in spatial planning.

2.4 Concluding points

18. It is clear from Oresund, the Cambridge/Milton Keynes/Oxford Growth Corridor or Arc and from the emerging corridors in East Asia, such as the Northern Corridor Economic Region in Malaysia,⁴ that a clear vision of *additional* economic growth is critical. In the case of Cambridge/Milton Keynes/Oxford Arc some initial modelling refers to baseline growth doubling over a 35 year period if the interventions around transport, housing and research infrastructure are in place (NIC, 2017).
19. The ingredients for successful cooperation along other economic corridors can be summarized into the following points:
 - a. Dublin-Belfast Economic Corridor project *looks like* it is at the ‘Know the cross-border territory, know each other within the territory’ stage
 - b. Cooperation needs (consistent) time, energy and support to be nurtured and to grow
 - c. Local actions can deliver strategic objectives in a practical way

- d. Not a 'big bang' but rather a 'slow burn': medium- to long-term perspective
- e. Early wins can help cement the partnership and ensure sustainable cooperation

3. The Island Economy: Two Places, One Crisis

1. The start of 2018 saw an important milestone for the all-island economy when it passed the previous three million employment peak seen in 2008. As the table below shows this employment growth has continued for another year and, by late 2019, there were nearly 3.3 million jobs in the economy. The economic impacts of the COVID-19 pandemic will send many of these gains into a rapid reverse.
2. However, before we come to this point, it is important to note that during the last recovery a significant change has occurred in sectoral structure of the island's economy. Sectors such as Construction lost large numbers of jobs, with Manufacturing (a sub-set of Industry) also shedding employees over the decade. The big sectoral gainers, in terms of jobs, have been (the ever-growing) Health, ICT, Accommodation (Tourism) and Professional Services.

Table 1: Change in employment by sector, All-island, 2008-2019

	2008 Q4	2019 Q4	Change	% share in 2019
Agriculture	144,200	131,300	-12,900	4.0%
Industry	404,600	403,200	-1,400	12.3%
Construction	280,700	215,300	-65,400	6.3%
Wholesale and retail	474,700	448,700	-26,000	13.8%
Transport	123,400	141,100	+18,700	4.3%
Accommodation and food	186,200	234,900	+48,700	7.2%
ICT	107,600	159,200	+52,600	4.8%
Finance	141,700	134,700	-7,000	4.1%
Professional services	159,000	192,000	+33,000	5.8%
Administration	144,900	174,100	+29,200	5.3%
Public administration	163,000	168,800	+5,800	5.1%
Education	216,100	264,700	+48,600	8.1%
Health	357,400	435,400	+78,000	13.3%
Other	147,600	174,600	+28,000	5.2%
All sectors	3,055,000	3,282,000	+227,000	100%

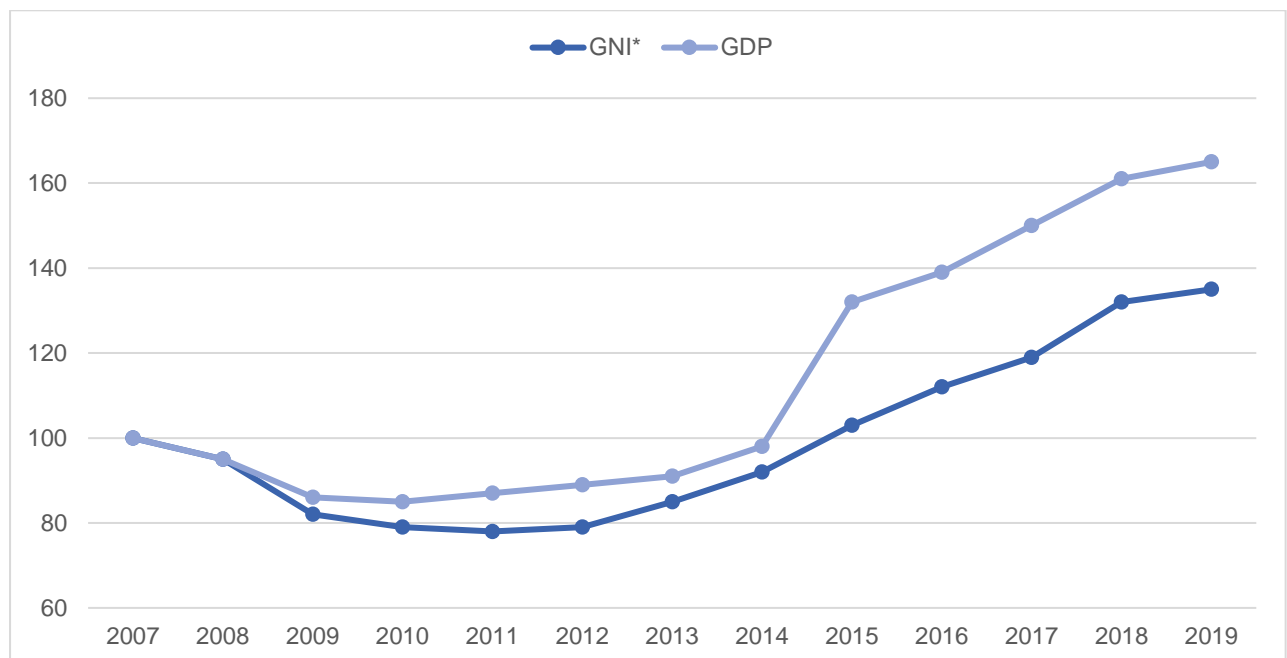
Source: ONS Workforce Jobs; CSO Labour Force Survey; UUEPC analysis

3. This ongoing restructuring in the economy is critical to the future development of the Dublin-Belfast Economic Corridor, raising a key question about the types of jobs, workforce skills and living environments needed in the next two decades. The development of the Corridor is complicated by a second feature: the divergence in economic growth rates between the Republic of Ireland and Northern Ireland. These are issues returned to later in the report.

3.1 Republic of Ireland: Recent growth but severe recession ahead

4. The December 2019 ESRI *Quarterly Economic Commentary* described how 2019 had been another year of strong growth (possibly 5.5% growth in GDP), driven by both domestic and external sources of demand (ESRI, 2019). Even allowing for the difficulty in measuring GDP in the Irish economy, the recent trend has been for very strong growth.
5. Figure 6 shows the sharp recovery since 2012 that has made the Republic of Ireland one of the strongest growth performers in the Eurozone. Reflecting this underlying strength, the Gross National Income (GNI) growth rates in for each of the four years to 2019 have been between 3% and 5%.

Figure 6: Index of GDP and GNI, RoI, 2007-2019 (2007=100)

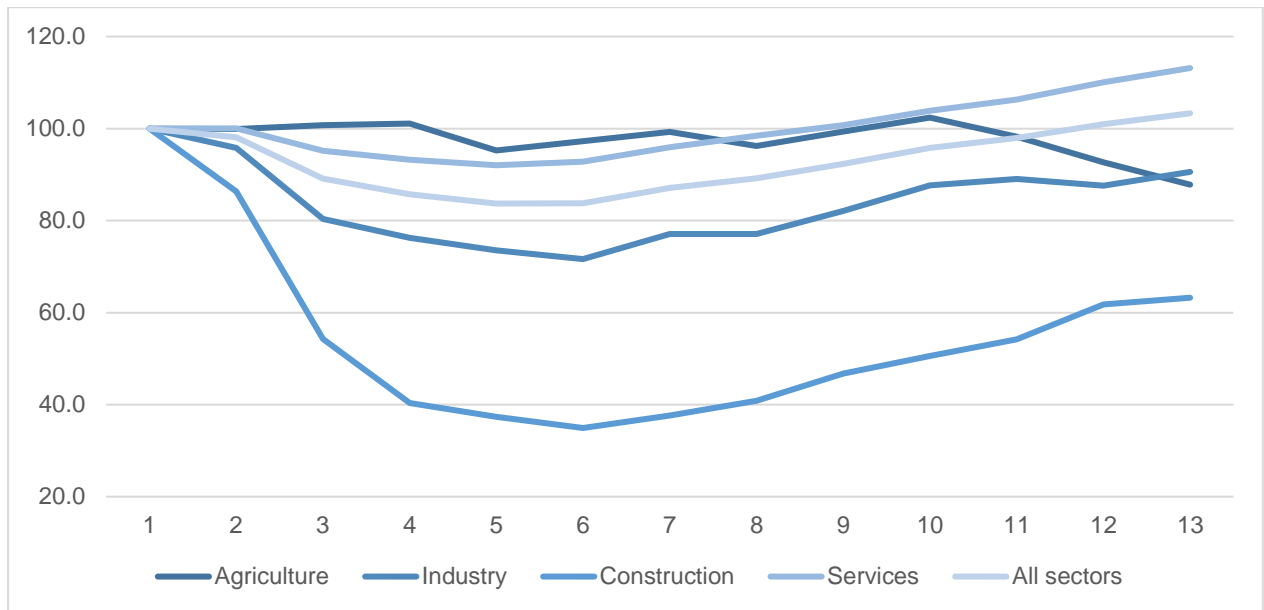


Source: UUEPC analysis

6. It is little surprise, then, that the Irish labour market performed strongly in 2019, adding on almost 80,000 jobs over the year to reach a new record of 2,261,200 people in employment. At the same time, earnings and incomes both experienced growth and inflation remained low.
7. Figures 7 and 8 show two quite different aspects of the buoyant labour market. Figure 7, looking at sectors, shows how much of the recovery has come in Services and, to a lesser extent, Industry. While Construction jobs have been increasing (an annual rise of 2.1% to Q4 2019), the numbers remain well

below the peak of 2007. This suggests that a lack of skilled and available people may well be one factor holding back the supply of new housing.

Figure 7: Index of employment by sector, RoI, 2007-2019 (2007=100)

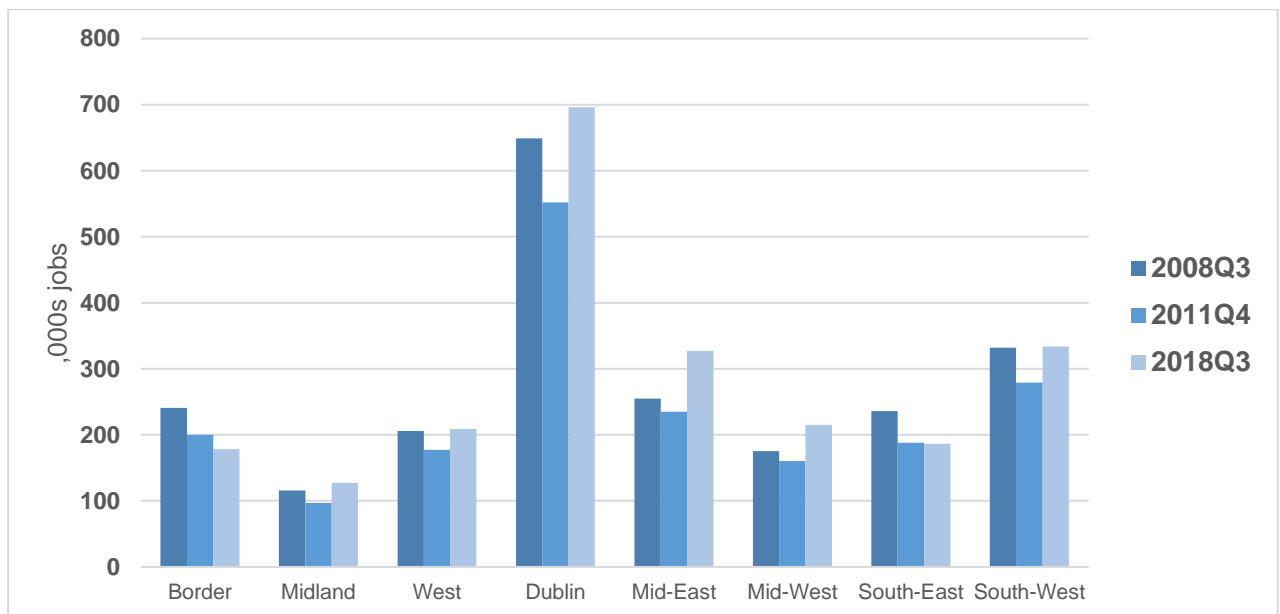


Source: CSO Labour Force Survey (Q3 2019); UUEPC analysis

Note: Index based on 2007=100 with values taken from Q3 2007 on an annual basis.

8. Figure 8 shows how employment growth has been quite evenly distributed across Ireland’s regions with most showing that ‘V’-shaped trend of recession and recovery. However, two regions – Border and the South-East – are exceptions to this, and had not yet, by late 2018, returned to the levels of 2008.

Figure 8: Total employment, RoI by region, 2008-2018



Source: CSO Labour Force Survey (Q3 2018); UUEPC analysis

9. At the end of 2019 the outlook for the Irish economy was one of growth with some uncertainty (ESRI, 2019). The key factor was the many 'unknowns' about the final shape of a new UK/EU trade relationship after Brexit. The baseline growth scenario was one of slowing growth but still above 3% per annum, with the potential for Brexit to reduce these rates between 2.6% and 5.0% (this being in the case of no trade deal being reached in 2020) (Bergin et al, 2019).
10. By the time this report is being published all of this has changed because of the COVID-19 pandemic and the measures taken to stop its spread. The forecasts from the ESRI in Table 2 offer a sense of the likely economic impact of the public health crisis and social distancing measures under three scenarios: Baseline, where social distancing measures last until the end of 2020; Benign, where the measures ease more quickly than that; and Severe, where restrictions are re-applied perhaps in light of a second wave of the virus (ESRI, 2020). In each case, the impact is very severe with unemployment rates ranging from 15% to 19%, a trebling or quadrupling of the rates in 2019.

Table 2: Economic forecasts, Republic of Ireland, 2020

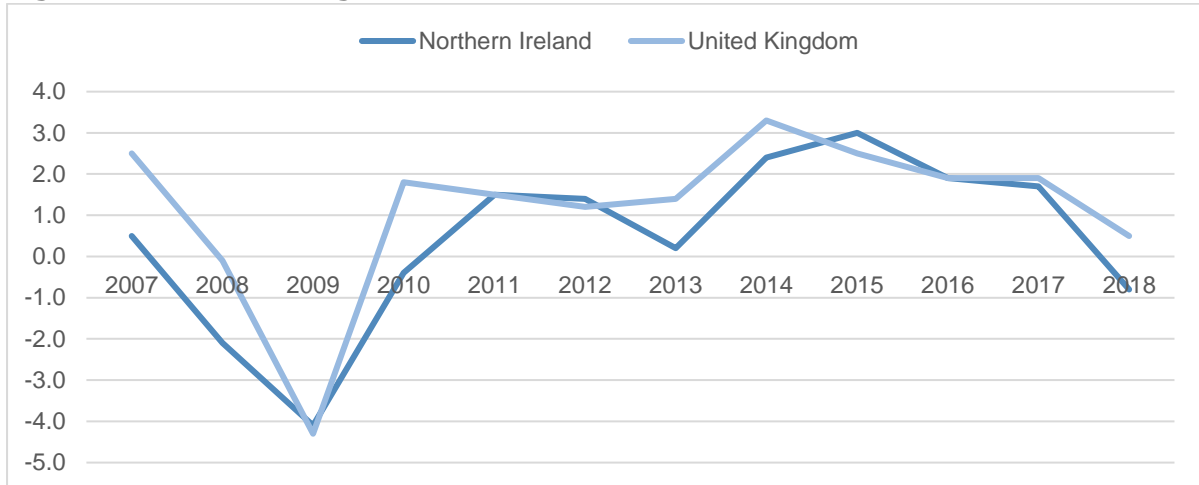
	2019	2020 Baseline	2020 Severe	2020 Benign
GDP (% p.a. growth)	6%	-12%	-17%	-9%
Unemployment (% of Labour Force)	5%	17%	19%	15%

Source: ESRI (May 2020)

3.2 Northern Ireland: Risks ahead in an historic recession

11. The recent NI economic indicators have presented a mixed picture as shown in Figures 9 and 10. There are record levels of employment and historical lows for unemployment but, with a weaker productivity performance and lower income levels, a sizeable transfer from Westminster is necessary.
12. Figure 9 shows how annual Real GVA growth rates in NI since 2007 have generally been lower than the UK average. In the recovery since 2013 total GVA in NI is now 7% larger while the UK figure is 11%. This means, in effect, that NI has been falling further behind UK growth and not closing the gap with the Republic of Ireland either.

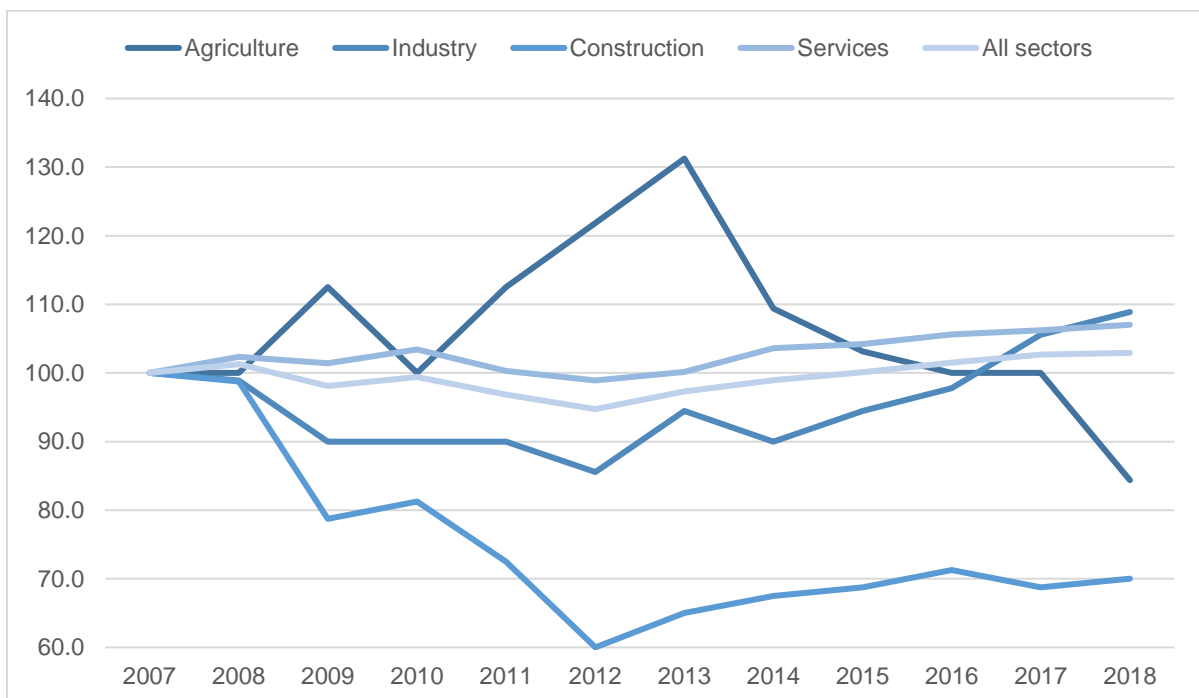
Figure 9: Annual GVA growth rates, NI and UK, 2007-2018



Source: ONS Regional GVA (Dec 2019)

13. Figure 10 shows the recovery in the labour market which is a more positive story. Between 2012 and 2019 almost 90,000 jobs were created in NI, with the previous peak (in 2007) being passed in 2015. This has resulted in record low levels of unemployment in NI, a full point below the UK average, even if rates of economic inactivity remain stubbornly high. Figure 12 shows how the recession was sharpest in Construction, which remains well below peak, while recovery has been driven mainly by Industry (Manufacturing has added more than 17,000 jobs since 2012) and Services.

Figure 10: Index of employment by sector, NI, 2007-2018 (2007=100)



Source: ONS workforce jobs; UUEPC analysis

Note: Index based on 2007=100 with values taken from Q3 2007 on an annual basis.

14. The outlook for the Northern Ireland economy, like that for the Republic of Ireland, is shaped by the same uncertainty and severe shift since late 2019. At that point Brexit was the key factor likely to affect not only future trade prospects for NI, but also consumer decisions, business investment and government spending decisions. Forecasts from the UUEPC at that point looked to very modest growth in GVA of 1.5% or less for the years to come.
15. This has all changed with COVID-19. The NI economy is now expected to enter a deep recession in 2020 and while some forecasters expect to see growth in 2021 this would still leave a smaller economy than existed in 2019. A sense of the negative direction of travel since March 2020 can be seen in Table 3 below, suggesting that there could be a similar 12% or greater decline in GVA in NI as is likely to be experienced in the Republic of Ireland.

Table 3: Estimates of GVA growth rates, NI, 2020

Forecaster and month of forecast	EY 03/20	UUEPC 04/20	Danske Bank 05/20	EY 04/20	UUEPC 06/20
GVA (% p.a. growth)	-6.7%	-9.6%	-7.5%	-9.0%	-12.7%

Sources: UUEPC, EY, Danske Bank

3.1 COVID-19: Economic impacts and prospects

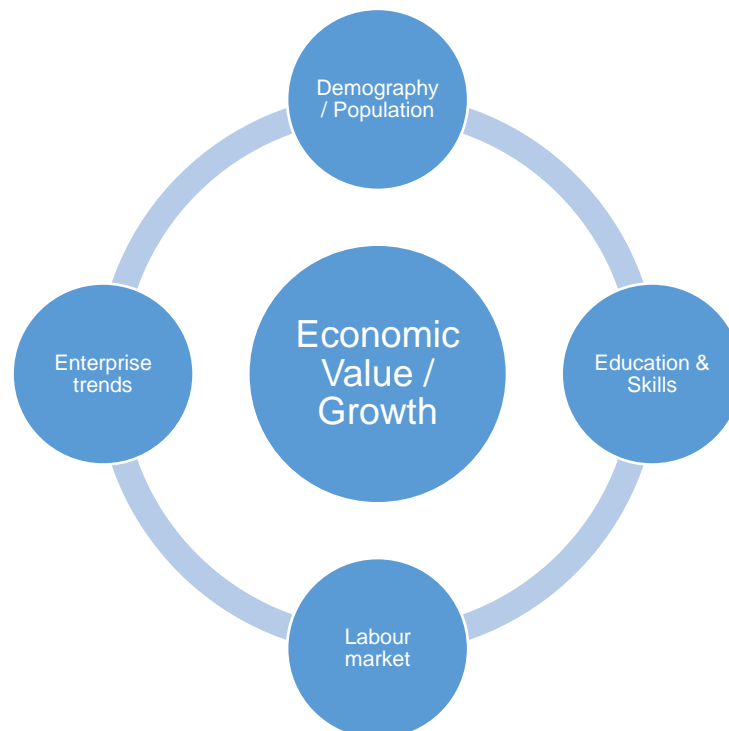
16. The COVID-19 pandemic is a true “Black Swan event”,⁵ something completely random with enormous impacts that, in this case, could be completely unlike anything from recent experience. Thus we have seen the development of a policy framework as events have unfolded, with radically new responses to economic fallout.
17. The steps taken to date to restrict social interaction and the knock-on effects on economic activity will almost certainly keep deaths lower than they might otherwise have been. However, from an economic perspective, the impacts of more than 80% of the world’s economies being affected by government containment and public health measures are still being assessed.
18. The economic shock comes in a number of forms. The pandemic containment measures have meant that employees either work from home (where they can) or have been laid off or placed on government-supported furlough or wage subsidy. Unemployment numbers have increased rapidly and many businesses have been shuttered.
19. The economic prospects are affected by the length of the shutdown and then the way in which restrictions are likely to be eased. The discussion, North and South, is now centred on ‘roadmaps’ to ‘unfreeze’ national, regional and local economies in order to minimise the economic and societal damage. However, there are also debates on the impact that loosening and then re-imposing controls may have on economic activity (the potential of a ‘second wave’ of the virus).

20. The local economic impacts of COVID-19 will take some time to become clearer (UUEPC, 2020). Looking at the labour market impacts only we can see that every part of the Dublin-Belfast Economic Corridor has been impacted.
21. By late April 211,000 people in Counties Louth, Meath and Dublin were in receipt of the Pandemic Unemployment Payment (these numbers may have fallen slightly in May), 36% of the total number in the Republic. The same counties accounted for 36% of the employers and 44% of the employees covered by the Wage Subsidy Scheme. In NI we have not got the same breakdown of figures but the UUEPC have estimated that 54% of the 250,000 jobs furloughed and/or laid off are located in the four council areas in the Corridor (UUEPC, 2020).
22. These numbers alone – upwards of 490,000 people and jobs – which have been impacted by COVID-19 gives a sense of the size of the shock. Excluding those working in essential services, those who can work remotely and the self-employed – who face very different and difficult challenges – this could be around 45% of the active labour market impacted by lay-off or adoption of a government jobs retention scheme. The challenge in any recovery will be to prevent as many people as possible from entering unemployment and then stimulating the economy to ensure the large numbers of those that do, can find work relatively quickly.

4. Profile of the Dublin-Belfast Economic Corridor

1. This section of the report contains the current economic profile of the Dublin-Belfast Economic Corridor. This offers readers the best possible estimate of the economic value of the Dublin-Belfast Economic Corridor and, in turn, provides an evidence base which can be used to support potential local government-led cooperation along the Corridor.
2. The profile offers a picture of the available data at the level of local government districts just before the first Coronavirus cases appeared. The profile includes a series of insights (through workshop and consultations) on key assets and business sectors along the Corridor.
3. The sections that follow will provide detail on five different groups of indicators shown in Figure 11. The five groups of indicators have been developed with the twin goals of providing the best possible overview of the economy of the Corridor and utilising the best-available sets of sub-regional data in both NI and the Republic of Ireland. They follow the indicators used in the recent Regional Spatial and Economic Strategies, drawn up in the Republic of Ireland by Regional Authorities, and those used at local Council level in Northern Ireland for community planning purposes. The indicators have also been chosen to allow the greatest measure of cross-border comparability.

Figure 11: Indicators of the Corridor's economy



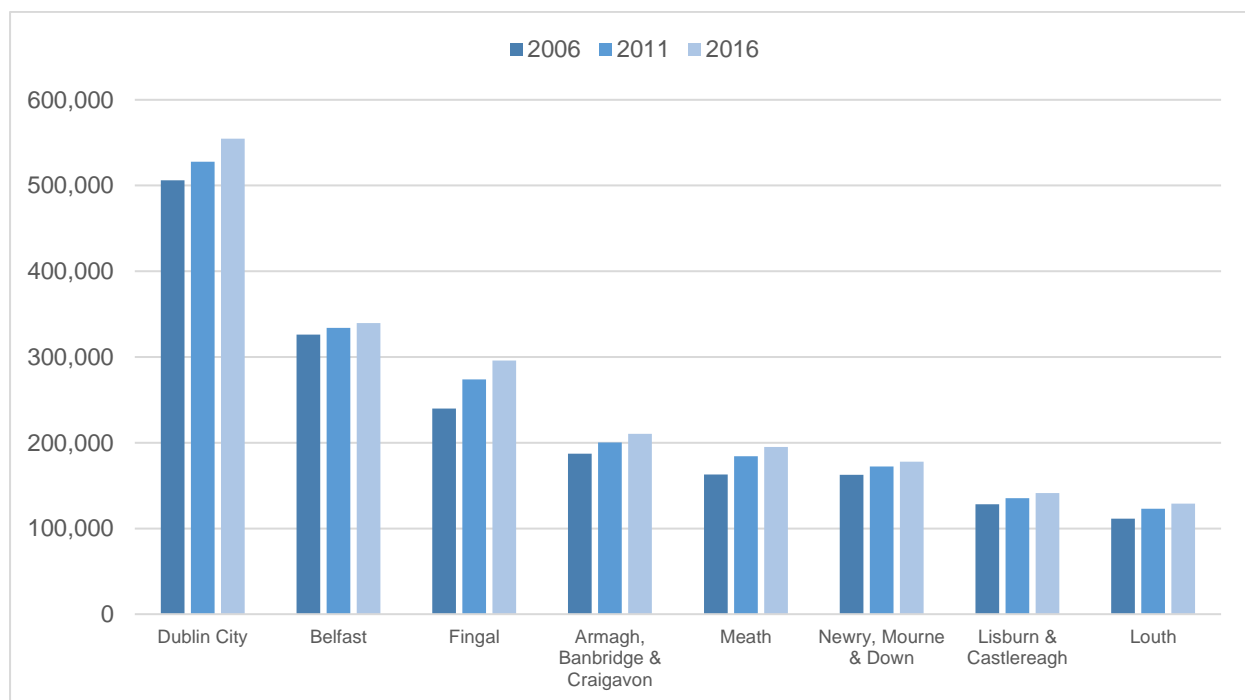
Source: UUEPC

- The profile and the economic case for the Dublin-Belfast Economic Corridor will undoubtedly change in light of the COVID-19 crisis. As noted in the previous chapter, the effects of this are likely to be most striking in the labour market and enterprise trends where the question will be one of how quickly we can return to the levels seen in 2019. All of this depends not only on the shape of the recovery but also on the supports and mitigating measures that occur on the Corridor, the island and the global economy more generally.

4.1 Demography / Population

- In 2016 there were 2.04 million people living in the eight Council areas which make up the Corridor.⁶ Given the island’s two largest urban centres, Dublin and Belfast, are at either end, it is little surprise that the Corridor contains 31% of the total population. Figure 12 shows these cities’ primary importance, with close to half (44%) of the Corridor’s population living in Dublin or Belfast.

Figure 12: Total population by LGD, 2006, 2011, 2016



Source: Census data and Mid-Year Population Estimates from CSO & NISRA

- Table 4 shows the actual population growth between the 2006 and 2016 censuses. There was an increase of nearly 93,000 people, and annual rates of growth of 1.1%. This growth rate is a little ahead of all-island growth rates over the past decade (1.0%) and therefore the Corridor’s share of total population increased slightly (+0.5%) since 2006. One possible reason for this small increase in share is that, while the two major cities have continued to grow, they have done so more slowly than their average respective rates, as shown in Table 4. This also means that the share of the Corridor’s population living in the two cities fell slightly (by just over 1%) in the decade since 2006.

Table 4: Population growth by numbers, % growth and annual growth rates, 2006-2016, by LGD

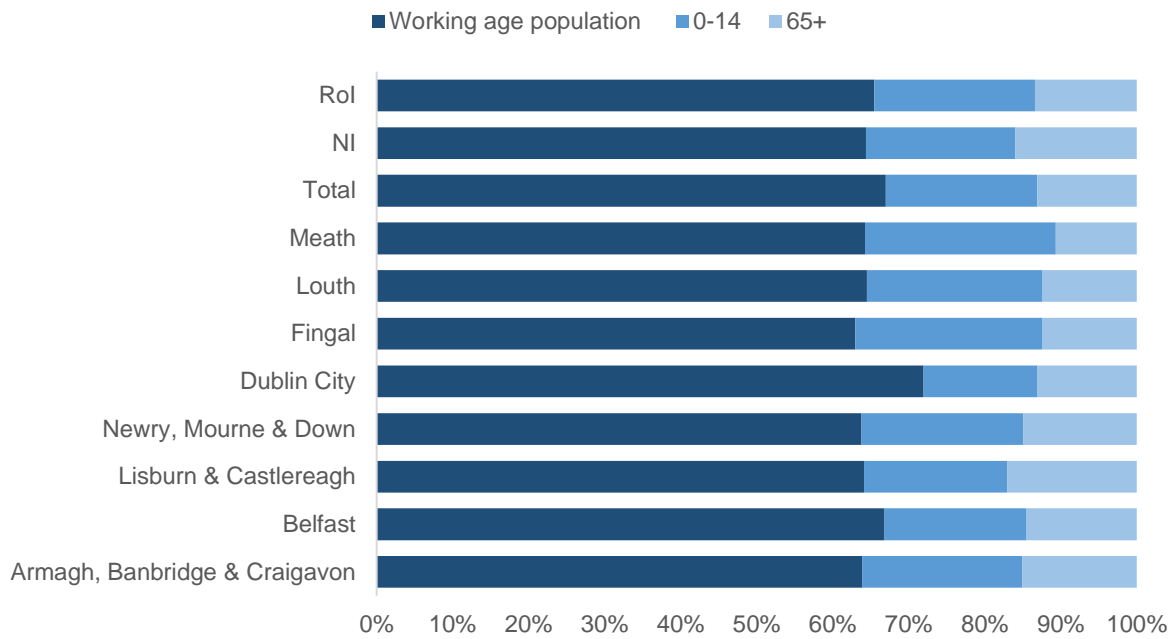
Geography	Total Population	Numerical Increase	% change	CAGR*
Dublin City	554,554	26,942	9.5%	0.9%
Belfast	339,579	5,684	4.2%	0.4%
Fingal	296,020	22,029	23.3%	2.1%
Armagh, Banbridge & Craigavon	210,260	9,962	12.3%	1.2%
Meath	195,044	10,909	19.8%	1.8%
Newry, Mourne & Down	177,816	5,540	9.3%	0.9%
Lisburn & Castlereagh	141,181	5,901	10.1%	1.0%
Louth	128,884	5,987	15.8%	1.5%
Dublin-Belfast Economic Corridor	2,043,338	92,954	12.0%	1.1%
Northern Ireland	1,862,137	47,819	6.8%	0.7%
Republic of Ireland	4,761,865	173,613	12.3%	1.2%

* CAGR stands for Compound Annual Growth Rate

Source: Census data from CSO & NISRA; UUEPC analysis

7. The working age population (15-64 year olds) of the Corridor has grown alongside the total population to stand at 1.4 million people in 2016. Of particular note is that the largest shares of total population taking up by those of working age exist in the two cities, especially in Dublin (72% of the total). The numbers of young people (15-23 year olds) has also grown to just over 400,000. However, the rate in growth of the 65+ year olds (to 270,000 people) has been highest as life expectancy increases.
8. The growth in older age cohorts has seen a changing dependency ratio (of the young and old on the working age population) over time. Figure 13 shows the different shares of age bands in 2016 and shows that the dependency ratio is now 2:1. The proportion of dependent people is growing on the Corridor but is behind ratios in other parts of the island, largely because Dublin and Belfast, to a lesser extent, are a magnet for residents of working age.
9. One final point on age bands is that at a more granular level of stage of life cycle (for example 'adult' and 'empty nest' as described by the CSO), very high shares of 25-44 year olds – the 'family stages' – can be found in Dublin City (37% of population) and Fingal (33%). In Louth and Meath and on the Northern side, the shares are much closer to the state averages of 29% and 26% (NI).

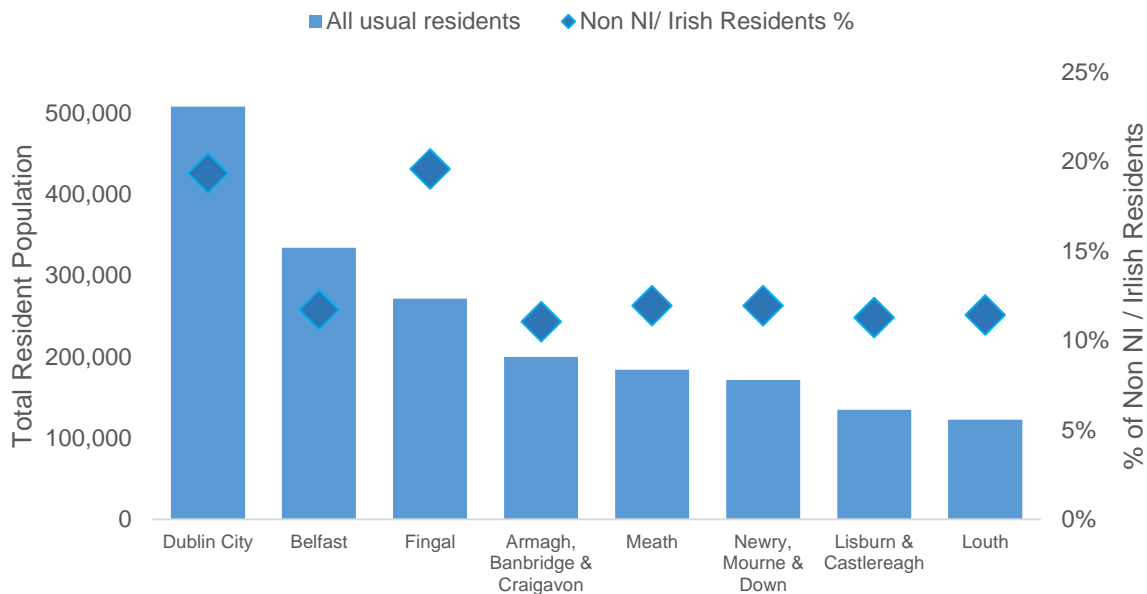
Figure 13: Shares of total population, 2016, by age bands and LGD



Source: Population data from CSO & NISRA; UUEPC analysis

10. Another sign that the Corridor acts as a population magnet is the higher proportion of residents born outside the island of Ireland. Data from the 2011 censuses shows that 15% of the residents on the Corridor had been born off the island, compared to 11% for NI and 13% for the Republic. Figure 14 shows the highest share to be living in Dublin and Fingal (both around 19%), with other parts of the Corridor closer to average.

Figure 14: Resident population and shares of those born outside the island, D-BEC, 2011



Source: Population data from CSO & NISRA; UUEPC analysis

11. In summary, the trends show that the Dublin-Belfast Economic Corridor continues to be the location of almost a third of the population of the island of Ireland. Nearly 42% of the population increase on the island since 2006 – either natural or due to migration – has occurred on the Corridor.
12. Dublin and Belfast have accounted for a third of the increase since 2006, more if the growth in neighbouring council areas is included by being related to the availability of affordable housing in the cities. However, growth has occurred throughout the Corridor in both urban centres and rural hinterlands. The highest growth rates since 2006 were actually recorded in Fingal, Meath, Louth and Armagh, Banbridge & Craigavon, while Newry, Mourne & Down has seen similar growth rates to Dublin. This has an impact on the pattern of population density, as research from the ESRI shows, with much of the southern part of the Corridor becoming increasingly urban (Morgenroth, 2018: 49-51).
13. The population trends (covered here) and projections (dealt with in Section 4.1) raise several questions around the sources of future growth and the consequences of this. First, will population growth come from natural increase or from migration to the Corridor from other parts of the island or from off the island? Second, how will the changing nature of the population pyramid – where dependency rates are increasing, albeit more slowly than elsewhere on the island – impact on the broader environment? Third, what do the demographic trends mean for housing provision and planning for future supply of this?
14. The population trends present both opportunities and challenges, in particular for the two cities. Without a major shock, the Corridor will continue to slowly grow its share of the island's population, especially of its working age population. On current trends this population growth will be spread along the Corridor with increasing density in various urban centres: Drogheda, Dundalk, Newry and Craigavon. However, there is a challenge to increase density and grow the two cities by making these places sustainable ones to live in and raise families in. Will policy address issues of affordability and attractiveness, especially for those renting or seeking to buy a first home within the cities, in order to increase metropolitan population? Will this be undertaken as part of an attempt to make the two cities and the Corridor as a whole attractive to future economic growth? And what does this mean for the lives led by those working, settling, starting family life or moving into other stages on the Corridor?

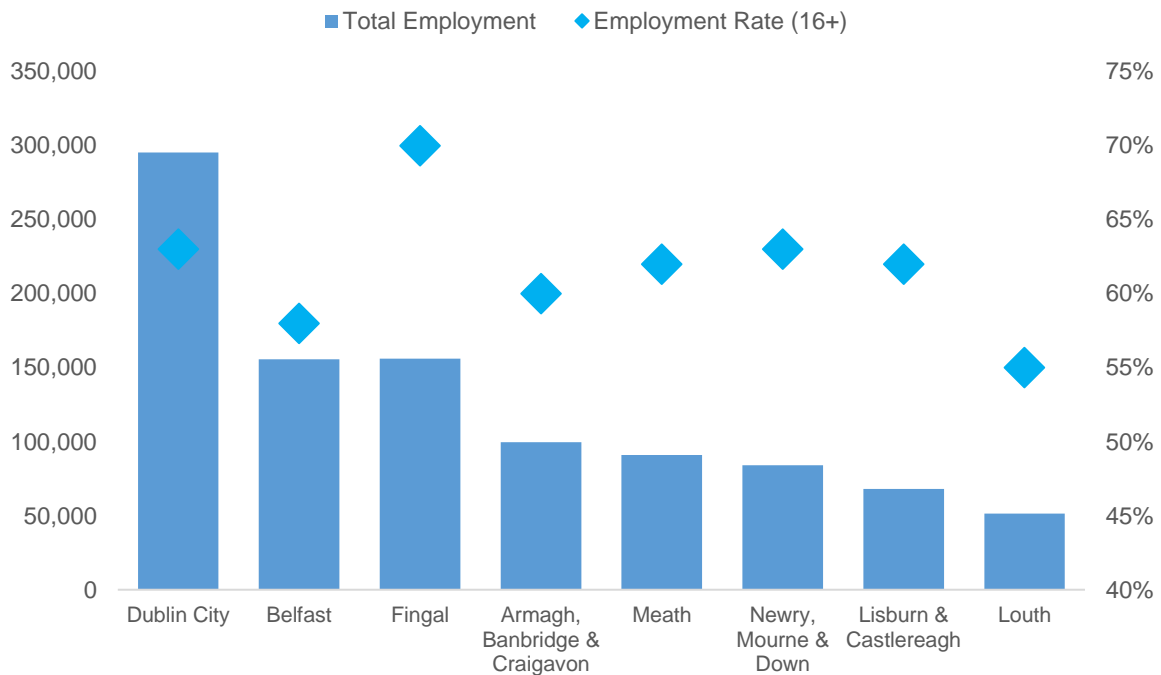
4.2 Labour Market & Commuting

15. The labour market on the Dublin-Belfast Economic Corridor is the most buoyant it has been since the crash of 2008. Several years of strong growth has seen a new record in employment: more than 3 million people across the island. This growth has also occurred – perhaps at its most intense – on the

Corridor. Almost a third (just over one million residents) of the total of those in employment in 2019 were living (and possibly) working in the Corridor.

- Therefore, employment rates on the Corridor (64% of residents over 16 years old) are slightly higher than the NI and Republic of Ireland rates. Figure 15 shows the highest resident employment rates in those Council areas closest to the cities – Fingal, Lisburn & Castlereagh and Newry, Mourne & Down – with lower rates in Belfast and Dublin. This shows the commuting effect.

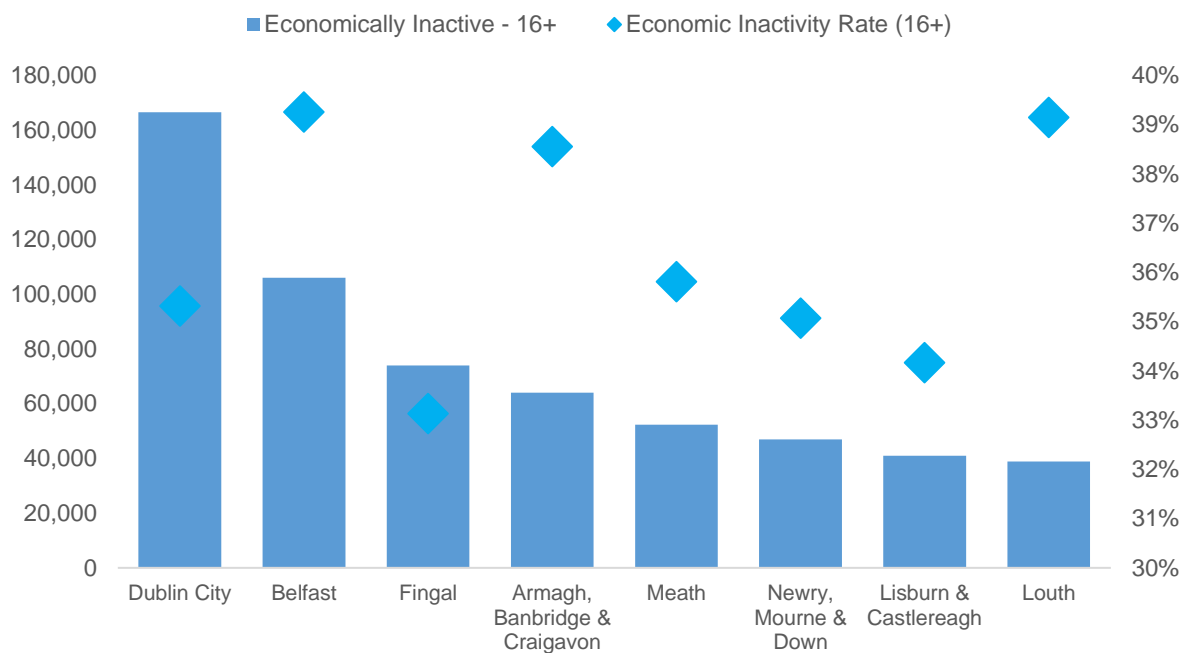
Figure 15: Total employment and employment rates, D-BEC, 2019



Source: Labour Force Survey data from CSO & NISRA; UUEPC analysis

- An obvious consequence of the buoyant labour market is the falling rate of unemployment. These have been falling steadily throughout the Corridor since the peak years (2011 in RoI and 2012 in NI) and are now heading towards 4% in Southern end (a 10 year record) and 2% in NI (an historic low).
- The fall in unemployment is welcome news, but there remains a long-standing challenge to get economically inactive people into the labour market. This is particularly the case in some parts of Belfast and Dublin, and in other towns where the economy has significantly changed over time. Figure 16 shows the 2018 numbers and rates for economic inactivity (or those of working age who are not in the labour force for health, education, caring or other reasons). This is a problem often correlated with high levels of no qualifications and difficulties faced in retraining.

Figure 16: Inactivity rates, D-BEC, 2018



Source: QNHS data from CSO & LFS data from NISRA; UUEPC analysis

What do people work at?

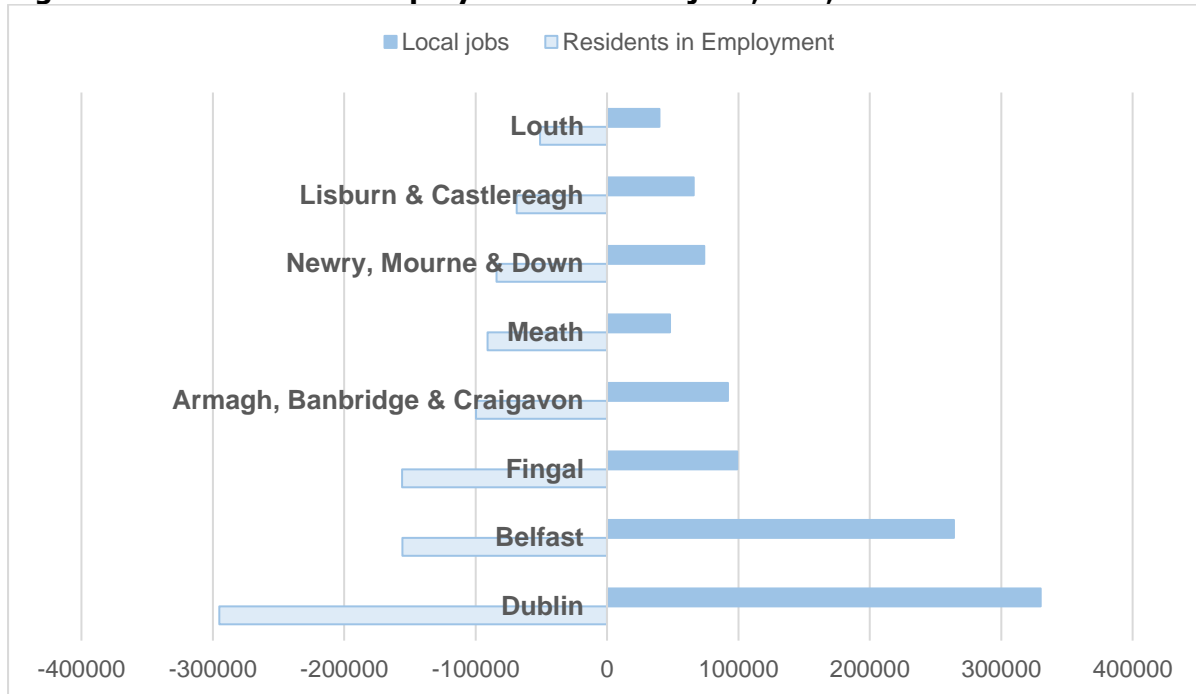
19. This question is answered in more detail in Section 5.2 below which looks at both resident⁷ and workplace⁸ employment by sector in order to identify sectors with significant growth potential and where the Corridor has some specialisation. What we will see below is that the Corridor has particular sectoral concentrations, not only in tradeable services sectors (such as ICT, Professional Services and Financial Services) but also, more locally in Manufacturing, Agriculture and Construction.
20. However, it is important to remember that the two most jobs-rich sectors remain, unsurprisingly, Retail and Health. Between them, the two sectors generate a third (32%) of all jobs based on the Corridor. They are also the sectors that close to a third (29%) of residents work in.

Where do people work?

21. According to Labour Force Survey data, one million residents of the Corridor are in employment, while the workforce data gives us a figure of over 1.1 million jobs in the same Council areas. Therefore, in 2016, the Corridor had almost 100,000 more jobs than residents in employment. Commuters from outside the Corridor will fill the gap, often some of the higher skilled ones which people will travel to do.
22. Figure 17 shows the differences at Council level between the numbers of local jobs and that of employed residents. The two cities have more jobs than

employed residents, while, the other six Council areas see more residents employed than local jobs. This balance produces the significant amount of commuting along the Corridor to either end of it that we see currently.

Figure 17: Residents in Employment vs Local jobs, EEC, 2018



Source: Census data from CSO & LFS/Workforce data from NISRA; UUEPC analysis

23. Turning to the commuting patterns, the census data for NI (2011) and Ireland (2016) provide an earlier snapshot of this very picture. Table 5 and Table 6 show how more than a third of the residents of Fingal and Lisburn & Castlereagh commute into nearby Dublin City and Belfast. This percentage falls to around 12% of residents of Louth and Meath travelling to Dublin and around 10% of the residents of NMD and ABC going into Belfast.

Table 5: Commuting patterns (by place of residence) in RoI, 2016

County of Workplace	Dublin City	Fingal	Louth	Meath	NI part of Corridor	Elsewhere
Resident County						
Dublin City	58.3%	7.6%	0.1%	0.4%	0.08% (210)	33.5%
Fingal	34.1%	36.1%	0.5%	1.6%	0.08% (109)	27.6%
Louth	7.7%	5.6%	57.2%	5.5%	1.5% (707)	22.5%
Meath	16.2%	12.3%	4.5%	36.2%	0.1% (85)	30.7%

Note: Percentages based on declared places of work only and excludes those who are mobile workers.

Table 6: Commuting patterns (by place of residence) in NI, 2011

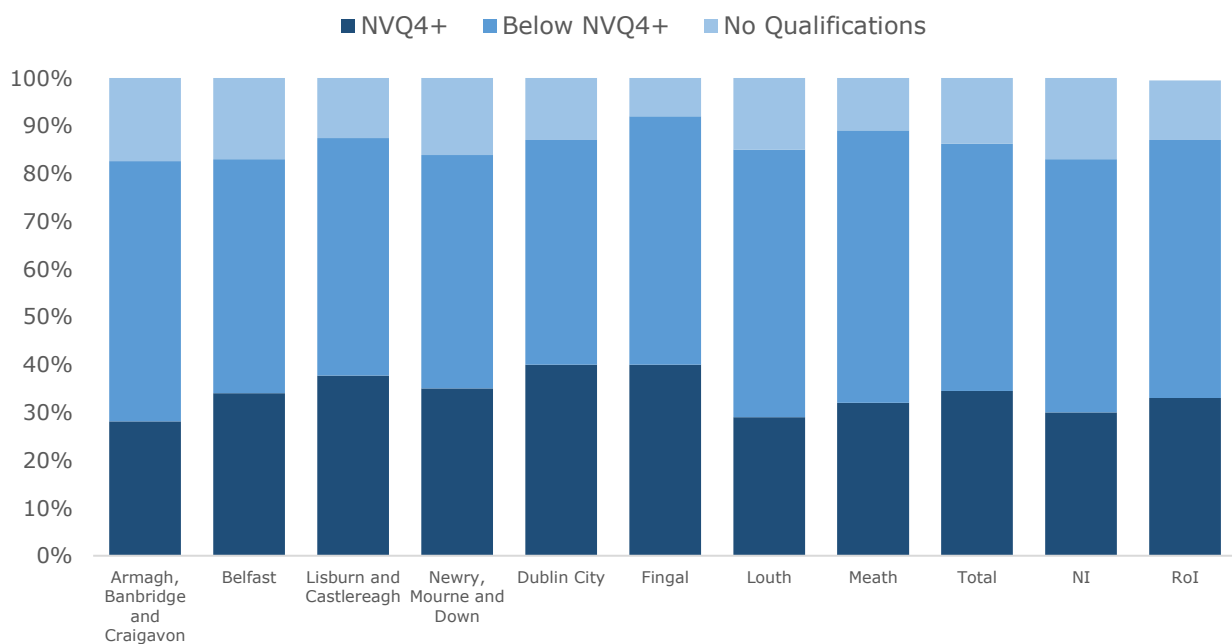
County of Workplace	Belfast	ABC	L&C	NMD	RoI part of Corridor	Elsewhere
Resident County						
Belfast	83.9%	0.9%	6.1%	0.6%	0.1% (110)	8.4%
Armagh, Banbridge & Craigavon	9.2%	74.0%	3.9%	3.7%	0.3% (254)	8.9%
Lisburn & Castlereagh	37.4%	3.4%	49.4%	1.7%	0.1% (67)	8.0%
Newry, Mourne & Down	11.1%	4.5%	4.0%	76.6%	1.9% (1300)	1.9%

24. Another key feature revealed in the tables is the different levels of mobility and self-containment between the two parts of the Corridor. In other words, the levels of people moving outside their own LGD and *within* the Corridor, is much higher in the Southern part of the Corridor than in the Northern part (with the exception of Lisburn & Castlereagh). Also, the share of residents in the Northern part of the Corridor travelling to other parts of the North is less than 10%, compared to between a fifth and a third of residents on the Southern side commuting to other parts of the Greater Dublin and Mid East regions.
25. A final point on the commuting data is that cross-border commuting numbers are very small. Less than 3,000 people say they daily cross the border to work in the Corridor, though this may underestimate the numbers in construction and other trades doing so for work on a more irregular basis. Much of the daily commuting is local, with Louth and NMD acting as origin and destination for almost half of the cross-border movements along the Corridor.
26. In conclusion, the labour market on the Corridor shows signs of being a tight one. The last two years have seen some large announcements of new jobs in the pipeline, particularly from the multinational, technology-based services sectors. The IrishJobs.ie tracker of vacancies show that Dublin, Meath and Louth have all high vacancy levels, as has Belfast. Given the higher than average employment rates on the Corridor, recruitment in many sectors is problematic.
27. However, a tight labour market can also suggest that there exists a mismatch between jobs on offer and the skills of the labour force available to fill them. The next section will look further at the skills base, increasingly the most critical element for a growing regional economy.

4.3 Educational Attainment and Skills

28. The current and future ready supply of skilled people is a necessary foundation for a competitive economy. In particular, availability of suitable skills is directly tied to attractiveness to investment from both outside the country and by businesses already located there.
29. At the present time, private, public and third sector organisations on the Corridor – as in many other parts of the island – often argue that a lack of available skilled people is **the** key issue preventing their growth. At the same time, however, there are significant levels of economic inactivity among residents of the Corridor, as noted above. Given that a significant number of the economically inactive express a wish to take up employment opportunities, there is a need to ensure that people can be brought closer to the labour market.
30. These concurrent challenges are well recognised by stakeholders on the Corridor. Local government across the Corridor is involved in the skills area and similar messages come from various local skills forums, including:
 - The need for better alignment of educational qualifications to the necessary skills for current and future workplaces; and
 - The desire for a better clarity around what we mean by ‘missing **employability** (or people) skills’, and a pathway to improving these.
31. Figure 18 shows that the Corridor, as a whole, has a higher than average percentage of the resident population with third level qualifications. There are particularly high shares of those with third level educational attainment residing in Dublin, Fingal and Lisburn & Castlereagh (all close to 40%).

Figure 18: Educational Attainment (16-64 year olds), D-BEC, 2016



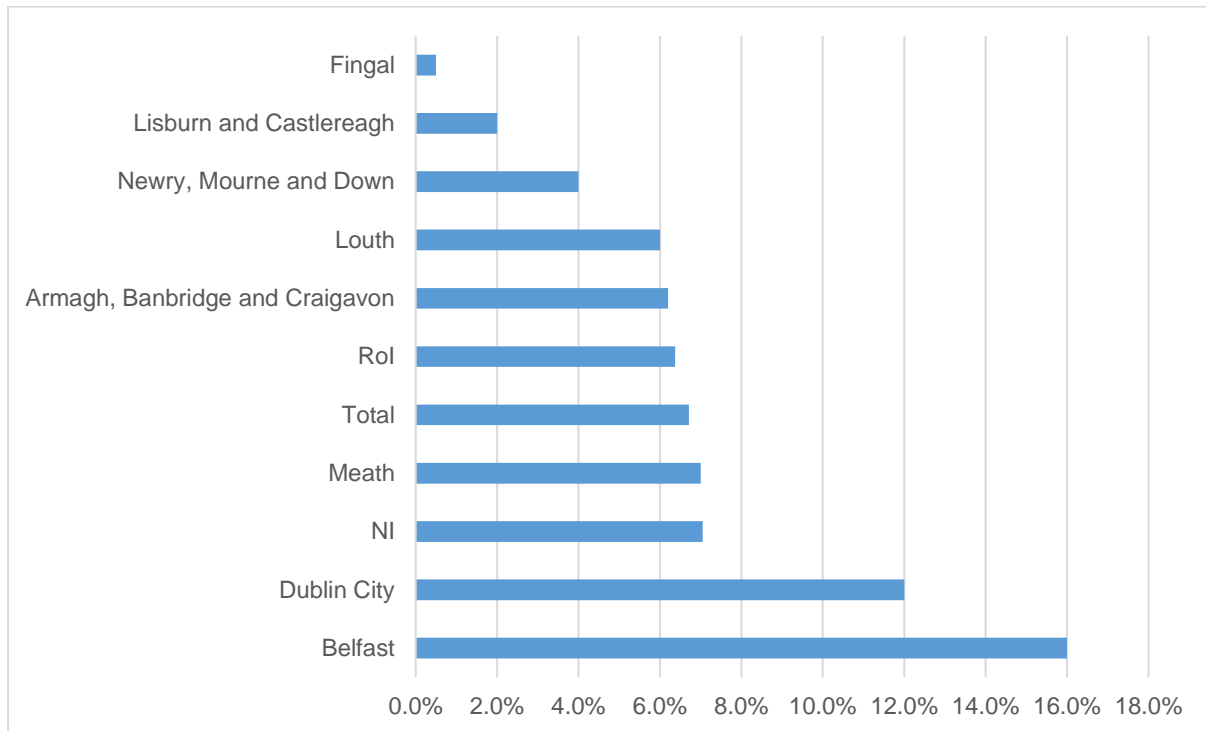
Source: Data from CSO & NISRA; UUEPC analysis

Note: The figures are for 2016 at the time of the latest Census in Ireland.

32. The share of the general population with above NVQ4 or third level qualifications has been rising over time but the share varies both between and within regions. For example, ABC, Louth and Meath have lower shares of residents with above NVQ4 qualifications. Within Council areas there are also spatial concentrations. In Meath, for example, the county's 32% share reaches over 40% in commuter towns such as Dunboyne or Ratoath, but falls below 25% in Kells or Duleek.
33. There is also a strong pipeline in terms of HE enrolments along the Corridor. In the 2018/19 academic year, the percentages of 15-24 year old residents enrolled in HE (25% for the island as a whole) ranges from a high of 29% in NMD and 27% in Dublin and Fingal to the lowest level (22% of Belfast's residents) with the other five Council areas closer to the island's average share. These levels may be helped by proximity to an institution. Given the location of the island's HE institutions, with five university campuses and a technological university in Dublin and Belfast alone, it is little surprise that almost half of the 280,000 students currently enrolled in HE on the island are studying at institutions based on the Corridor.
34. These participation rates will help increase the share of the population with third level qualifications, which is a key part of the puzzle in ensuring future economic growth. This concentration is especially strong among 25-55 year olds where it reaches over 50% of the population. It also bears out a point made by research that people tend to settle close to where they studied in HE and that areas with high stocks of skills tend to have pipelines to replicate these (Audretsch et al, 2005).
35. There is a similar variety between Councils in the share of the population with 'No Qualifications' (14% for the island). As Figure 19 shows, ABC, Belfast, Louth and Newry, Mourne & Down all show higher than average levels. Age may be one key factor in this, mirroring a general picture where a higher share of 55+ year olds are without formal qualifications, when compared to those below that age. However, living in an area of social or economic deprivation is probably more critical. For example, both Dublin and Belfast have places where the levels of residents with No Qualifications can be 50% higher than the Council average.
36. In terms of the availability of skills on the Corridor there are two important considerations, both connected to commuting flows along and into it:
 - In every Council area (see Figure 19), the skills profile of the workforce means that there are more jobs requiring graduates than there are residents with HE qualifications. This is especially the case for Belfast (16% deficit) and Dublin (12%). This necessitates in-flows of skilled people into the Corridor from elsewhere on the island as well as flows along the Corridor in order to fill the skilled jobs.

- This is supported by other research (UUEPC, 2019), which has shown that commuters along or onto the Corridor usually have higher skills profiles than residents of the individual Council areas. In the Northern part of the Corridor 32% of residents have NVQ Level4 or higher qualifications, while 41% of commuters into those Council areas are qualified to that level.

Figure 19: Difference in workplace vs resident NVQ level 4 qualifiers, EEC, 2016



Source: Data from CSO and ONS; UUEPC analysis

Note: The figures are for 2016 at the time of the latest Census in Ireland.

4.4 Future Skills

19. The broad sectoral trends can be used to take a view of what future economic activity might look like, albeit allowing for the reshaping that may take place in the wake of the COVID-19 pandemic. Future skills forecasts can provide a useful insight into the likely skills demand on the Corridor and in this section we draw on other recent research from different parts of the Corridor (UUEPC, 2019; Fingal, 2019).
20. The research points to additional growth in the numbers of jobs in the Corridor (called expansion demand) as well as demand created by people leaving their jobs (called replacement demand). Some of this demand will be filled by those presently within the labour market (for example, people moving from one job to another), but there will be a net requirement from education and migration.
21. This net figure is often much larger than the additional jobs referred to in the forecasts. The UUEPC research for the Belfast City Region found that between 2017 and 2027 there would be an *annual* expansion demand of 5,950 people

but an annual net requirement of 18,080.⁹ If this pattern was repeated across the Corridor, the respective annual figures would be approximately 13,000 in expansion demand and between 33,000 and 40,000 in net requirement.

22. The replacement demand figures emphasise the continuing importance of sectors with large numbers of employees, as these will create large numbers of job opportunities, especially from replacement demand. The Corridor, like elsewhere, will see continued demand of this type from sectors such as healthcare and the public sector, as well as tourism and retail as these slowly recover.
23. The occupations which are forecast to grow fastest are the professional ones, such as science & technology professionals, health professionals and business & service professionals. Even allowing for this process perhaps slowing after COVID-19, there will be a need to create a higher educational attainment profile than exists at present in the Corridor. In the Belfast City Region, 33% of the net requirement to 2027 will be associated with third level qualifications and only 10% with lower than NQF level 2 (UUEPC, 2019: 52).
24. The profile above noted a mismatch between the (lower) skills levels of residents of the Corridor and the demands of the jobs located there. In the case of both the Belfast City Region and Fingal the research points to this situation continuing and perhaps worsening unless action is taken. In the case of Fingal this has been quantified into annual skills gaps up to 2023 numbering 7,600 and 40% of these in professional occupations (Fingal, 2019: 15).
25. The recent research points to two clear skills challenges on the Corridor:
 - The supply pipeline of those entering the labour market will not meet the net requirement to fill all of the vacancies in the next decade. As noted above, this is likely to impact on some occupational groups more than others, but it can be applied across almost all groups.
 - There is also a misalignment between the skills in the pipeline and the requirements for the future. This imbalance changes from place to place. In some places (eg: Belfast, Fingal and most likely Dublin) the numbers of graduates and higher qualified being produced will undershoot requirements. In other places, the additional requirements are for those with intermediate skills and skilled trades.
26. To date, the answer to meeting the demand for skills has been a mixture of ensuring an improving profile of the skills of residents, facilitating commuting to the places of highest demand and an openness to net international migration. All three have certainly played a role in ensuring that the Corridor has been able to promote the availability of a skilled workforce.
27. The pressures to continue to supply such a workforce are likely to intensify into the future, given the skills profile of job opportunities. Much of the attention is likely to be on the continued supply of labour market entrants with

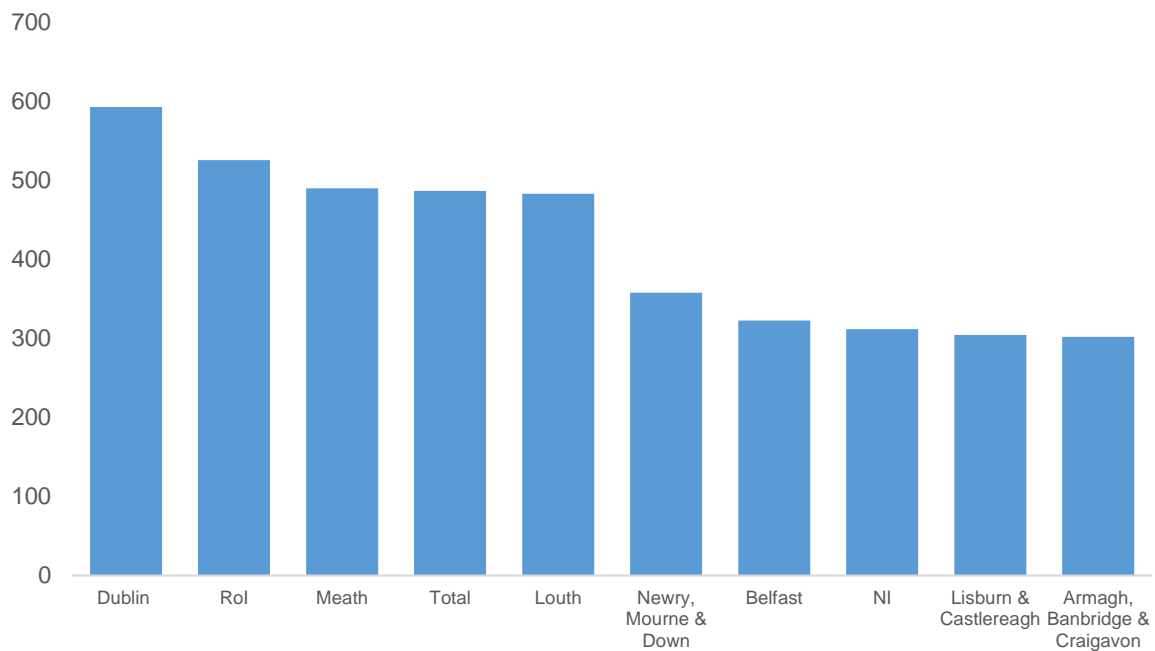
third level and higher qualifications by the higher education institutes. There will also need to be attention paid to the housing, connectivity and planning consequences of commuting flows along the Corridor and of internal migration from other parts of the island and international migration from further afield.

28. However, finally it is clear how those individuals with low levels of qualifications are increasingly disadvantaged in the labour market. The need to minimise the numbers of those entering the labour market with less than NVQ level 2 qualifications must be an imperative for any idea of inclusive growth. Breaking that particular cycle will be equally important to meeting the future skills needs of the Corridor.

4.5 Enterprise trends

- 29 The trends in entrepreneurship, business births and survival rates are all important to economic and employment growth. Whilst large jobs announcements, both by multinationals and indigenous firms, are very important, the evidence from across the EU suggests that most jobs continue to be created in smaller lots by small and medium-sized enterprises or SMEs.
- 30 Therefore, the rate of business formation is a key sign of the future health of a region (McCoy et al, 2018), as they show how business decisions are based upon current incentives and circumstances, rather than just past performance. Entrepreneurs and new businesses also contribute to levels of competition or innovation in an economy, which can lead to both productivity improvements and employment growth. For all of these reasons, understanding the nature of the enterprise trends along the Corridor is critical to the economic profile.
- 31 In terms of the stock of businesses, 38% of the island's firms are located on the Corridor, a significantly higher proportion than population share (31%). This suggests a concentration of firms in a region with both a large locally-traded market (for example, for retailers) and access to export markets.
- 32 However, Figure 19 shows a strong North/South variation in the stock of businesses per 10,000 people. County Dublin¹⁰ has the highest numbers (592), with Meath (490) and Louth (482) a distance behind this but close to the Corridor average of 486. All Northern Council areas and the NI average of 312 trail well behind the other parts of the Corridor, a further sign of the divergence between NI and a more vibrant economy in Ireland.

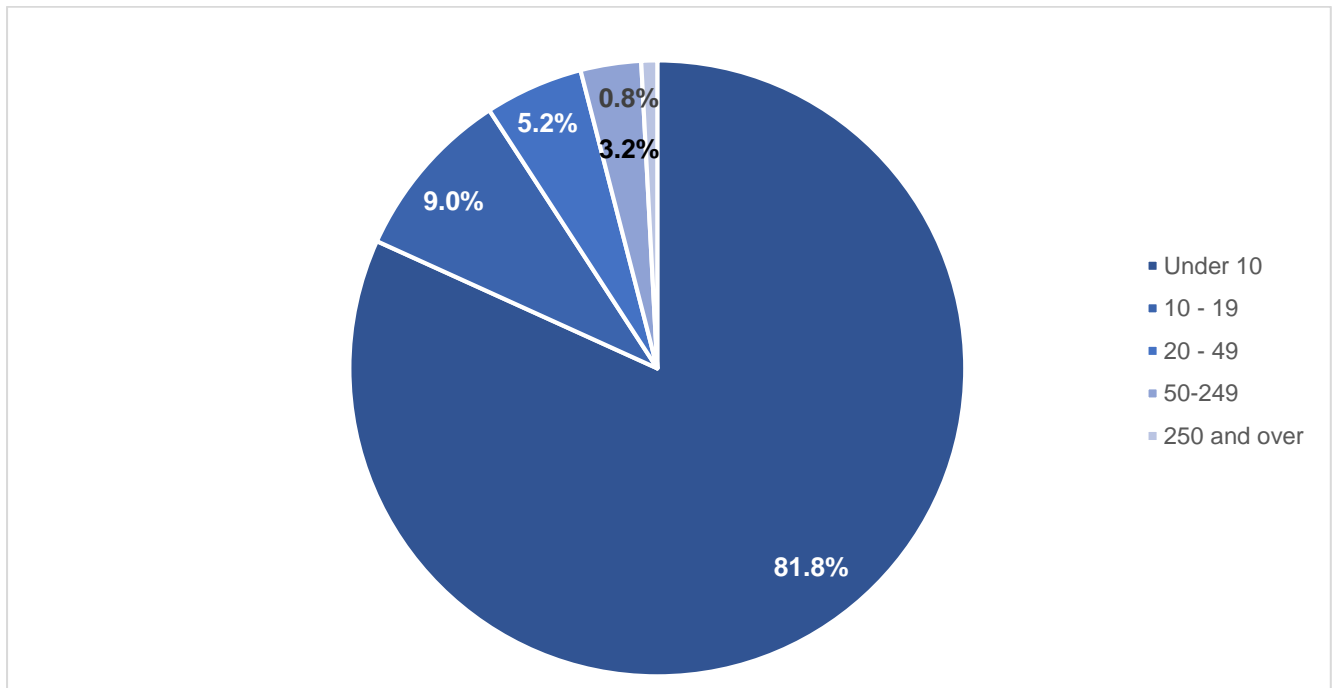
Figure 19: No. of Businesses per 10,000 people, D-BEC, 2017



Source: Data from CSO & ONS; UUEPC analysis

- 33 Business birth rates follow a similar pattern. The most recent figures show more than 8,000 business births on the Corridor, more than third (34%) of the island's total. The birth rates vary from the highest in Dublin (48 per 10,000 people) to the lowest rates in ABC and Lisburn & Castlereagh. In NI, only NMD came close to the Southern rates.
- 34 Section 5.2 looks at enterprises by sector on the Corridor, where, as expected, it has a higher share than nationally of Professional Services and ICT businesses, through these concentrations vary significantly within the Corridor.
- 35 The size profile of businesses (as shown in Figure 20) on the Corridor is also slightly different to the all-island one. On the Corridor micro-enterprises account for 82% of firms, compared to 88% on the island. There tend to be more larger SMEs – employing between 50 and 250 people – on the Corridor (17.4%) than on the island generally (11%). The share of large firms employing more than 250 people is similar (at 1%).

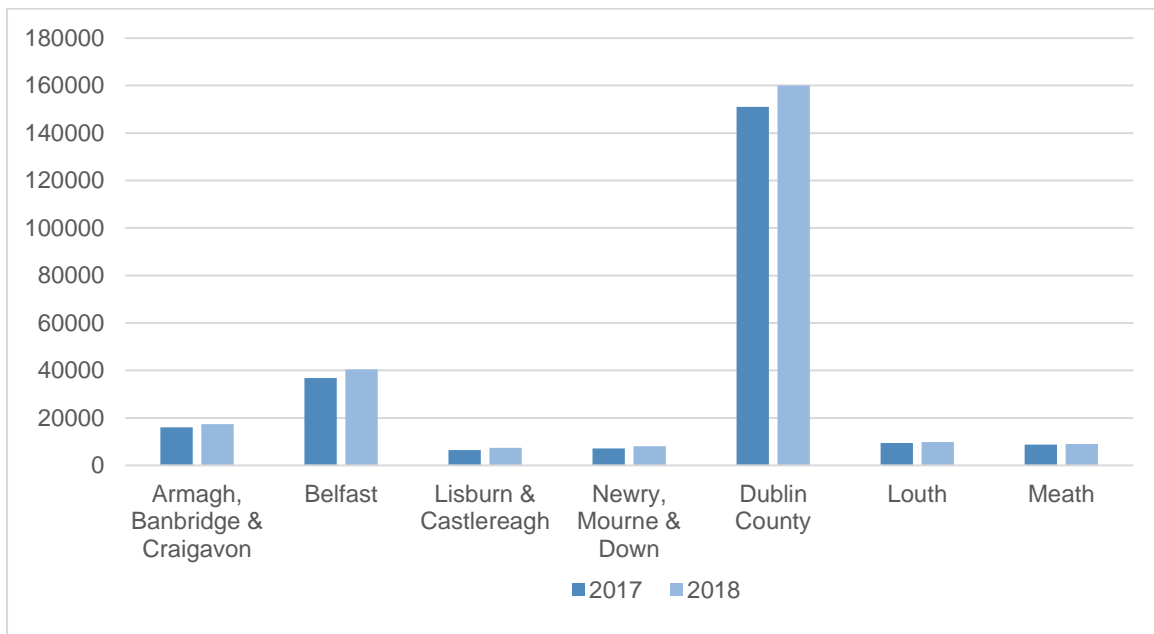
Figure 20: Enterprises by size, D-BEC, 2017



Source: Data from CSO & ONS; UUEPC analysis

- 36 Two other enterprise patterns of note stand out on the Corridor. First, in some of the Council areas with the highest levels of business births – Louth, Meath and NMD – more than 96% of firms employ less than 20 people. This may be due to a satisfaction with running a successful micro-enterprise and desire to keep this manageable.¹¹ Or there may be an unfulfilled desire to grown and therefore a potential pool of firms with ambition to build greater scale.
- 37 Second, in Dublin and Belfast and, to a lesser degree ABC, the large businesses employ a much higher share of the total number of workplace employees – closer to a half than a third – than is normally the case across NI and Ireland. The hunger of these firms for talented people necessitates larger labour markets. Related to this, the Corridor is not only a key location of larger businesses and those in the internationally-trade services (including ICT) but it also where almost half (48%) of employees in agency-supported firms work. Figure 21 shows the dominance of Greater Dublin as the location along the Corridor for these export and innovation-intensive firms.

Figure 21: Employment in agency-supported firms, LGD, 2017-2018



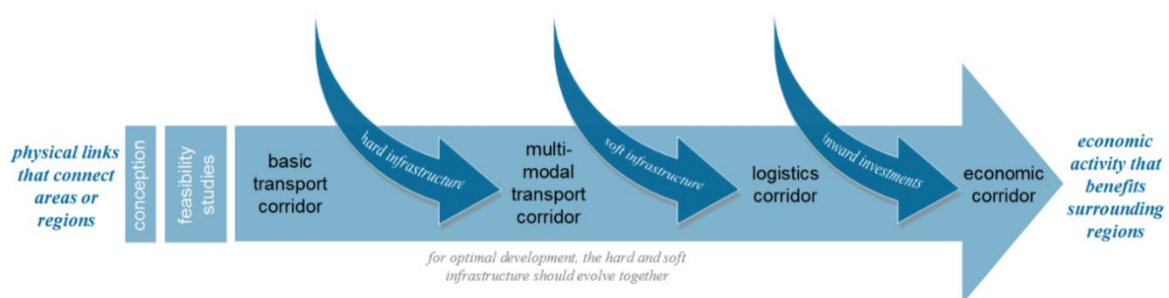
Source: Data from DBEI & INI; UUEPC analysis

5. Strengths of the Dublin-Belfast Economic Corridor

5.1 Key assets on the Corridor

1. Development plans for Corridors often begin with a plan to mobilise key 'hard' and 'soft' infrastructure assets. The first category includes physical infrastructure such as roads, bridges, ports and so on, while the second are enabling institutions, such as education and health structures or organisations.
2. Transport infrastructure, usually designed to increase internal cohesion or connect exporters to international markets, is a key 'hard' form in many corridors. In Canada, for example, transport is at the heart of both the existing east/west corridor (hinging on the Trans-Canada Highway and the Canadian Pacific Railway) and the new, putative 7,000 km Northern Corridor. In Asia, the emerging corridors focus on freight and transport, while, in Europe, the plans are underpinned by a combination of European Regional Development Funds and the Trans-European Transport Network (TEN-T) initiative.
3. As noted above in section 2.1, the World Bank has chosen not to refer to transport, trade, or freight corridors, rather than 'economic corridors'. The idea that corridors consequently *contribute toward* economic development (Hope and Cox, 2015, p.1) is a growing one. For the purposes of this part of the report, Figure 22 shows the evolution of corridors and the expected role of infrastructure assets.

Figure 22: Evolution of a development corridor



Source: Hope and Cox, 2015, p.3.

4. Figure 24 notes how 'hard' and 'soft' forms of infrastructure take a corridor along the development from purely physical links between two places or nodes to a growth region with benefits for the surrounding area. Our register of assets in the Corridor therefore encompasses both forms of infrastructure.

'Hard' infrastructural assets

- In the case of the Dublin-Belfast Economic Corridor, the 'hard' infrastructure around transport connectivity has been critical to growth. Given the island location of the Dublin-Belfast Economic Corridor, the intent behind this infrastructure has been as much about connectivity off the island as about cross-border connections between NI and the Republic of Ireland. To take the current TEN-T plan (2014-2020) as an example, this includes investment in Cork and Dublin ports as well as upgrades to the Cork to Dublin and Dublin to Belfast rail network. The island of Ireland is part of a TEN-T Corridor, the North Sea-Mediterranean one, which connects Ireland and GB, through the Channel, with France, the Netherlands and Belgium.
- The results of national and EU investment can be seen in the current state and performance of the transport assets detailed in Box 1. This shows how the Corridor has a varying level of transport connectivity depending upon the mode of travel. Connectivity off the island, through five different ports and three airports, is well-served although access to some or all of these assets is an issue.

Box 1: Transport Assets on the Dublin-Belfast Economic Corridor

Road Infrastructure: M1/A1

The key arterial road between Dublin and Belfast is the 166km M1/A1 route with an average journey time (according to the AA) of 2 hours 10minutes (or 76km/h). The table below shows the average daily traffic numbers at different points along the main route. As might be expected, the three busiest points are at either end, closest to the two city centres and all are in the top ten busiest junctions on the island. Evidence for the economic recovery can be found in the increase in traffic volumes since 2013 at every point along the route, with the highest increase (57%) at the M1/M50 junction.

Table 7: Average traffic counts on the M1/A1 road, 2013-2017/19

Junction	2013 (%HGV)	2017/2019 (%HGV)
M1 Stockman's Lane, Belfast	82,740 (5.1%)	91,610 (4.5%)*
A1 Hillsborough	40,980 (7.2%)	42,699 (7.6%)*
A1 Banbridge	27,110 (10.3%)	31,485 (10.1%)*
Dublin Road, Newry	20,260 (11.9%)	25,076 (13.6%)*
M1 Jn20 Jonesborough	23,444 (11%)	27,298 (10.6%)
M1 Jn14 Ardee	33,352 (9.3%)	39,647 (9.1%)
M1 Jn7 Julianstown	32,536** (8.4%)	35,193 (9.1%)
M1 Jn5 Balbriggan South	52,228 (6.4%)	60,399 (6.5%)
M1 Jn2 Dublin Airport	90,276 (5.4%)	101,715 (5.8%)
M1/M50 Jn1	86,056 (5.1%)	135,440 (5%)

Sources: DfI, Northern Ireland and TFI, Ireland.

Notes:

* 2017 data the most recent for NI

** 2017 data the earliest available

Rail: Belfast-Dublin Enterprise Service

The Enterprise service has been a significant addition to connectivity along the EEC since the 1990s. However, the officering of 8 bi-directional services (5 on a Sunday) is similar to the provision from Dublin to Waterford and Galway and the journey time of 2 hours 15 minutes is no quicker than driving. The most recent numbers for passenger use (from 2016/17) show that 850,000 journeys were made on the Enterprise service, which marks an 18% increase on the previous year in 2016/17. Most journeys involve joining the service at intermediate stations (in particular Dundalk and Drogheda) to travel into Dublin. Therefore, just over a fifth of all Enterprise journeys are inter-city. In 2015 the 21% share of end-to-end journeys between Dublin and Belfast was lower than the Limerick (24%) and Cork (27%) (Arup, 2018; NTA, 2017).

Airports

Annual passenger numbers at Dublin Airport have increased by 45% since 2014 making it one of the fastest-growing large airports in Europe. It recorded 31.5 million passengers during 2018, with continental Europe the largest market, though transatlantic traffic has doubled since 2014 and EMEA numbers are now just over 1 million annually. Such is the growth that the Dublin Airport Authority is reviewing a capital investment plan to improve airfield and airport operational works.

In 2018 Belfast International Airport recorded passenger numbers of 6.27 million passengers and Belfast City handled 2.51 million, both more than 10% increases on the year before. For both the GB market is key, with around two thirds of passengers travelling there.

Looking at the Corridor as a whole there are now close to 40 million passengers using the three airports, three quarters of these going through Dublin given the range of available routes and connections. In 2017 there were newspaper reports that as many as 600,00 people had crossed the border to fly from Dublin Airport (McDonnell, 2018). More importantly, for inward passengers, 60% of non-British Isles tourists come to NI via an air or sea port in Ireland (NISRA, 2019).

Air freight traffic is also an important and growing part of the business of the three airports, with close to 200,000 tonnes (usually high value goods) being flown in 2017, 70% of this via Dublin Airport (CSO, 2019).

Ports

The region is home to seven of the island's ports (Belfast, Dublin, Dundalk, Drogheda, Greenore, Larne and Warrenpoint), among them three and the five busiest. The ports act as strategic assets for trade, logistics, tourism, and offshore renewable energy. Between them, the six handled 51.5 million tonnes in 2017 (+3.8% on 2016), almost two thirds (64%) of the island's total (CSO, 2018; NISRA, 2018). Unsurprisingly, the city ports managed the majority of traffic on the Corridor - Dublin Port (43%) and Belfast Harbour (35%). Warrenpoint is the next largest, followed by the Port of Larne, Drogheda and Greenore.

Although imports constitute over 60% of overall tonnage for the ports, exports have increased from 2016. More than three quarters of the total tonnage of goods handled in the seven ports was accounted for by trade with Great Britain (48%) and other EU countries (30%).

Ports are crucial for tourism, given the access for passenger ferries (Dublin, Belfast and Larne) and a growing number of cruise ships calling into Dublin and Belfast, For example, the numbers of passenger visits from cruise ships has grown by 50%, from 97,316 in 2014 to 146,429 in 2018. These cruise ships not only have knock on impacts along the Corridor for visitor attractions but have also provided access for a further stop into Belfast. However, the redevelopment of Dublin Port and a reduction in the capacity for cruise ship berths during the work presents a challenge which has been recognised.

Finally, ports and harbours provide economic opportunities for offshore renewable energy (ORE) generation which can contribute towards meeting EU and national emissions reduction targets (Irish Maritime Development Office, 2018). A recent report has found that there is an interest from energy companies to invest in the construction of offshore wind farms, and that emerging new technology could then lead to subsequent investment in wave and tidal energy. For example, the D1 facility at Belfast Harbour is already creating the combination of facilities, infrastructure and support services, and access to engineering skills which could facilitate the development of these ORE technologies.

7. *Ireland 2040* has identified the need for a focus on improving and protecting key road networks, in particular the 'key strategic function of the Dublin to Belfast road' (p.110). One planned improvement is the Southern Relief Road, near Newry, which will both improve connectivity between the two cities and also access to Warrenpoint Port for the high numbers of HGVs using the road network. Proposals from the IBEC/CBI Joint Business Council has identified the need for an entire inter-urban motorway or high quality dual carriageway network for the island (JBC, 2016).
8. The shortcomings of the Enterprise service – in terms of frequency, journey times, reliability and onward connections from Belfast Central and Dublin Connolly – are all well-known (Arup, 2018). The provision of a more frequent (hourly) service with a small reduction in journey time has made a significant change to the Dublin/Cork service and research suggests that this might be a positive choice for the Enterprise also (Morgenroth, 2011). There is a commitment in *Ireland 2040* to examine the feasibility of high-speed rail connections right along the eastern seaboard, from Belfast to Cork.

'Soft' infrastructural assets

9. The idea of 'soft' infrastructure refers less to physical engineering projects and more to the institutional, educational and research supports which could enable economic development.
10. Five university campuses, a technological university and an Institute of Technology are located on the Corridor, all bar one of these in Dublin and Belfast alone. Almost 110,000 students were enrolled in these institutions in the 2017/2018 academic year.

11. The importance of HEIs as a 'soft' asset in the region goes beyond their role of providing an educated and skilled workforce. HEIs generate knowledge and build social capital which are key determinants in regional growth and prosperity. McCoy et al. (2018:524) found that 'both inverse drive-time to the nearest third-level institute and the proportion of the population with third-level qualifications are significant factors in new foreign and domestic firm formation'.
12. The research potential for wider contributions from HEIs is a particular asset for the Corridor, not only in promoting the Corridor itself, but also to address specific challenges, for example, Brexit and climate change. This reflects the fact that the HEIs along the corridor are home to numerous research and incubation centres, and facilitate public and private collaborations through their Technology Transfer Offices.
13. The most recent mapping of research centres on the island showed the alignment which exists between Irish and Northern Ireland authorities in supporting research centres in similar fields such as ICT, life sciences, nanotechnology, agri-food and aerospace (InterTradeIreland, 2007). Almost half (104 of 222) of the research centres were located on the Corridor, many of these in the fields noted. This research, if repeated today, could capture the level of potential for complementarities and collaboration on an all-island basis. While there will be differences in funding structures and exact agendas, bringing together research actors with complementary expertise and different networks and markets could be an opportunity of mutual benefit (Nauwelaers et al. 2013:7).
14. Finally, telecommunications assets are regarded as being neither 'hard' nor 'soft' infrastructure and Box 2 provides some detail on those available in the Corridor. Typically, these assets are strongest in urban centres with plans on both sides of the border to tackle remaining rural 'blackspots'.

Box 2: Telecommunication Assets on the Dublin-Belfast Economic Corridor

The Corridor has a cross-border fibre route and direct international fibre connectivity. The presence of these off-shore fibre routes has been key in attracting data centre services to the region. The demand for such facilities is set to grow. There is therefore an opportunity to develop this sector within the region. The demand for additional facilities will also incentivise investment in new renewable technologies to meet the energy demands of such facilities.

The EEC is well served by mobile broadband and telecommunications infrastructure with mobile operators continually investing and upgrading in their networks to meet the exponential demand for data services. Mobile operators have stated their commitment to maintaining roaming agreements regardless of the outcome of Brexit.

It is important to note that in terms of broadband as an asset, McCoy et al. (2018:530, citing Mack, 2014) found that the benefit of broadband for increasing new businesses is greater in areas of higher educational attainment. Therefore it is important to view the relationship between the assets of the region, where broadband is a key factor in dispersing knowledge intensive firms but is not the only factor.

5.2 Key sectors on the Corridor

15. One element of the terms of reference for this study was to explore the degree to which there were sectors in common along the Corridor. This section begins this work by first outlining the existing **sectoral concentrations** and then the **sectoral priorities**, as identified by the eight Councils.

Sectoral concentrations

What sectors do people work in and where?

16. The most recent labour force data suggests that close to a million residents along the Corridor are in employment in different sectors. The last Census figures for the island (2011) show higher than average shares of Corridor residents working in the tradeable services sectors, especially ICT (+1.4%), Professional Services (+1.4%) and Financial Services (+2.8%). The same data shows lower-than-average shares in Manufacturing (-3.2%), Agriculture (-3.1%) and Construction (-1.7%).
17. Within the Corridor different places have different concentrations. Three Council areas accounted for a third of the Corridor's residents working in Manufacturing: ABC, Louth and Meath. And, while every Council area has residents working in Agriculture, three (ABC, NMD and Meath) account for almost three quarters (71%) of the Corridor's residents working in that sector.
18. Workplace data¹² shows the actual location of jobs on the Corridor. The higher-than-average shares are slightly different for the Corridor using this data: Administration Services (+2.1%), Financial Services (+1.8%), ICT (+1.1%), Professional Services (+1.1%) and Construction (+1.2%). There are some similar lower-than-average shares – Manufacturing (-4.0%) and Agriculture (-3.8%) – while Arts & Entertainment (-2.1%) and Education (-2.0%) also show up on the negative side. However, the share of high-tech manufacturing jobs is higher on the Corridor (33%) than in Ireland (28%) or NI (19%).
19. We have used the workplace jobs data for a location quotient analysis which can identify sectoral concentrations by Council area. The results are shown in Table 7 and suggest that each Council area in the Corridor has its own concentrations. For ICT, Financial Services and Professional Services Dublin

City (including Fingal) has strong concentrations, while Belfast has weaker but still positive concentrations (ie: ≥ 1.0).

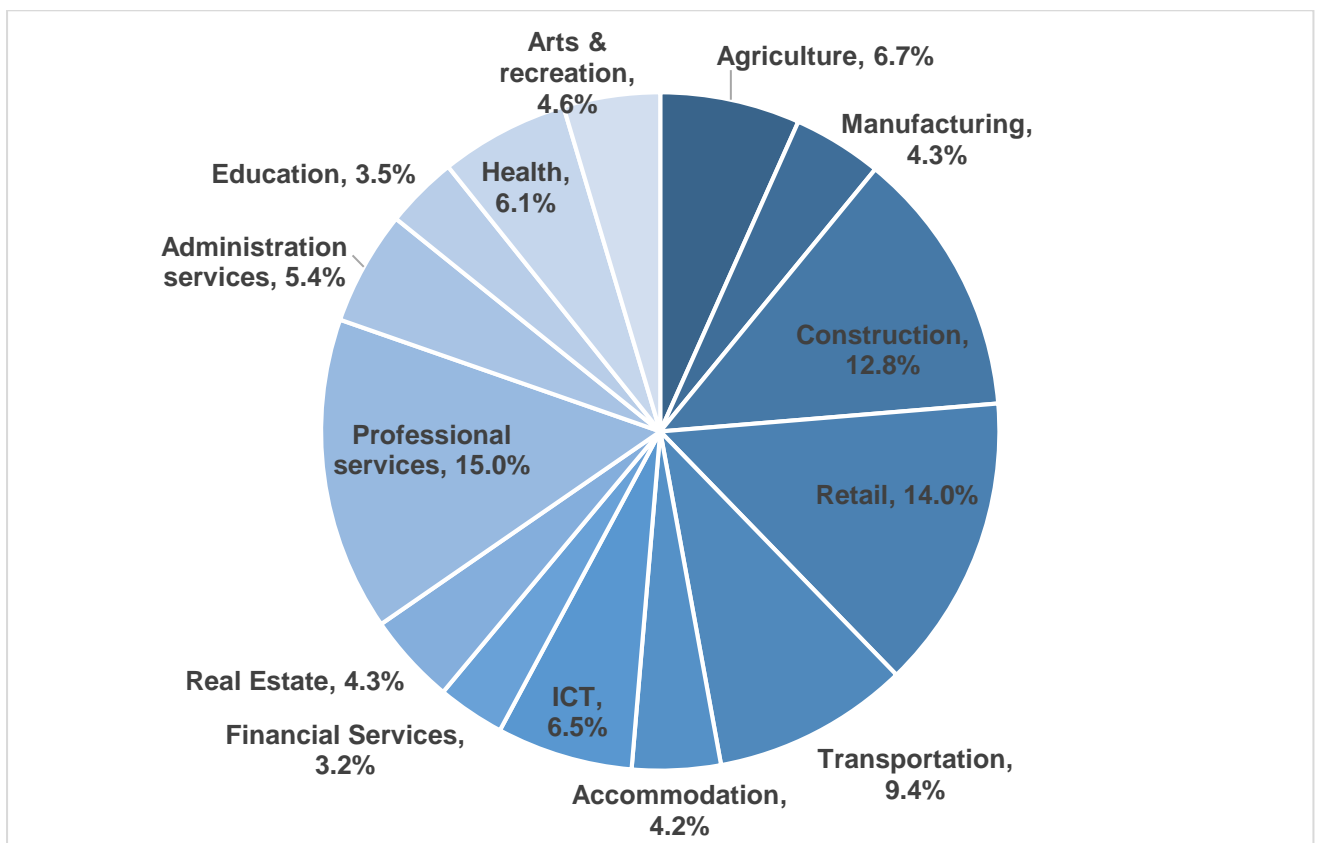
20. Equally importantly there is a diversity of sectors with strong concentrations in Manufacturing (in Louth, ABC and Meath) and weaker ones in NMD and Lisburn & Castlereagh. Construction also shows positive concentrations in every one of the eight Council areas bar Belfast. A similar story can be found for jobs in Education with the exception this time Dublin City.
21. The workplace data also reveals that 70% of the Corridor's jobs are located in the two cities. This can, for some sectors, mean scale without a large share of local jobs. For example, a quarter of all Manufacturing jobs on the Corridor are located in Dublin City and Fingal, but Table 7 shows a negative concentration.
22. The data suggests that some sectoral location preferences are clearly towards the cities. For example, 93% of the Corridor's Financial Services jobs and 92% of ICT are located in Dublin City, Belfast City and Fingal.

Table 7: Sectoral Location Quotients (by workforce jobs), EEC, 2016

LGD	Dublin (inc Fingal)	Louth	Meath	NMD	ABC	L&C	Belfast CC	Total employed	% of island's total
Sector									
Agriculture	0.1	0.6	1.7	0.7	0.7	0.2	0.0	10,600	10%
Mining	0.2	1.3	2.3	1.0	1.2	0.6	0.1	1,000	17%
Manufacturing	0.6	2.3	2.1	1.7	2.3	1.4	0.7	66,300	22%
Construction	1.1	1.1	1.8	1.4	1.0	1.2	0.5	63,300	41%
Retail	1.1	1.2	1.0	1.2	1.1	1.2	0.7	162,900	33%
Transport	1.1	1.2	1.1	0.7	1.1	0.5	0.7	48,900	40%
Accommodation	1.2	1.3	1.2	1.1	0.6	0.8	1.0	67,800	30%
ICT	1.7	0.4	0.4	0.3	0.2	0.3	1.1	50,800	40%
Financial Services	1.8	0.2	0.3	0.2	0.2	0.2	1.0	57,100	48%
Professional Services	1.6	0.9	0.6	0.5	0.6	0.7	1.2	67,700	41%
Administration Services	0.4	0.6	0.8	0.4	0.8	0.7	1.5	83,900	44%
Public Administration	1.5	0.8	0.9	0.9	1.0	1.6	1.3	75,500	43%
Education	0.7	1.2	1.0	1.6	1.2	1.1	1.4	60,600	26%
Healthcare	0.8	1.2	0.7	1.1	1.2	1.6	1.1	127,900	37%
Other Services	0.6	1.7	1.3	1.4	1.2	1.5	1.6	28,400	39%

23. One final point to note is that the workplace data show that the two most jobs-rich sectors are, unsurprisingly, Retail and Health, which generate a third (32%) of all jobs based on the Corridor. As a result they are the sectors that close to a third (29%) of residents work in. Both are key sectors for providing employment at all levels and for all qualifications so that their condition needs to remain a matter of priority.
24. Figure 23 shows the sectoral profile of firms on the Corridor. This is quite different to the island as a whole. The Corridor has a higher share for Professional Services (15% vs 11%) and ICT (7% vs 4%), but lower for Agriculture (7% vs 19%). Along the Corridor, Dublin has a higher than average concentration of ICT firms, while Meath, Louth and NMD have bigger shares of Construction businesses. Finally, Council areas outside the cities have more manufacturing firms than average. This supports the picture provided by the workplace jobs data.

Figure 23: Enterprises by sector, D-BEC, 2017



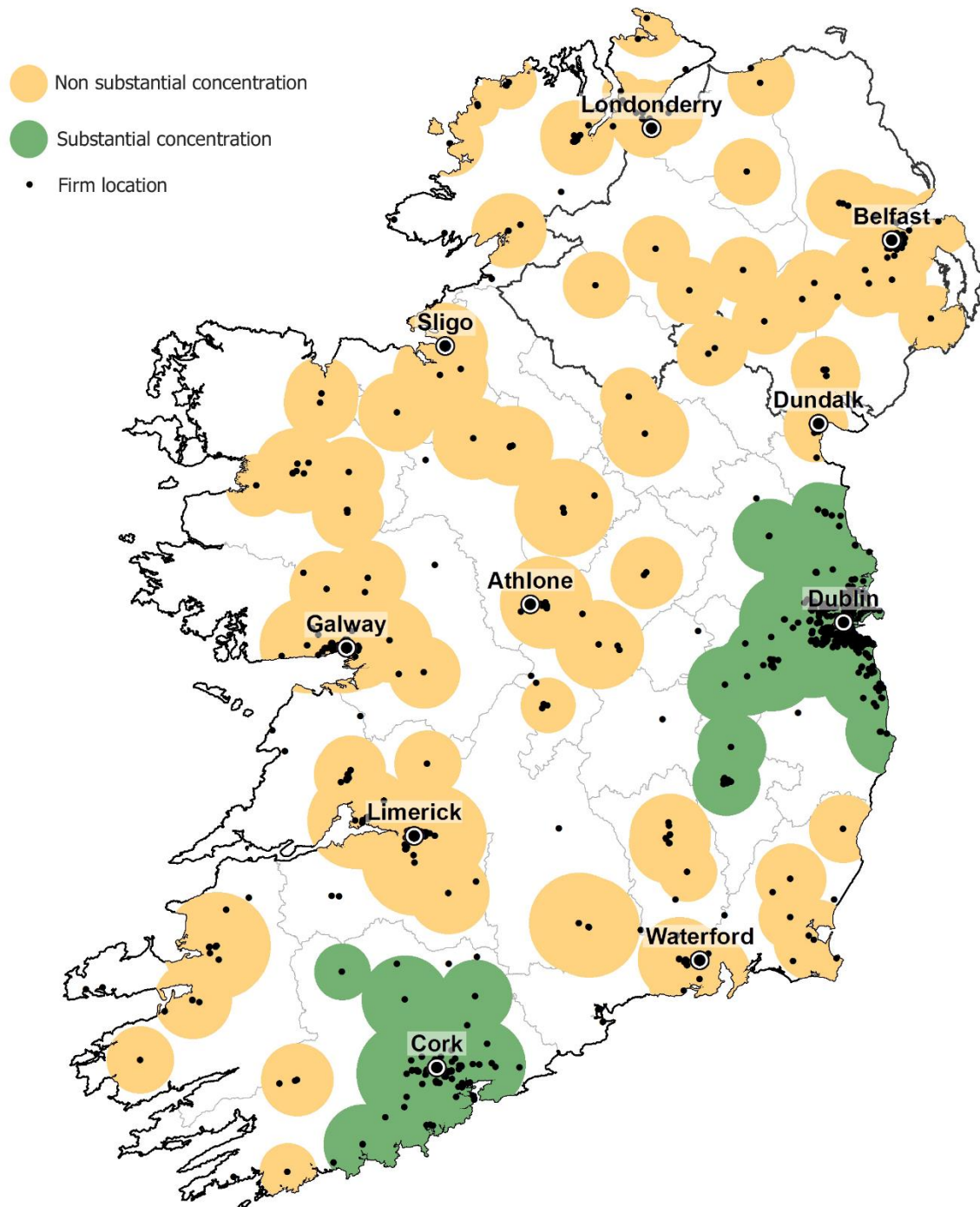
Priority sectors

25. As part of the research the eight Councils identified sectors which they see as a priority for local economic development strategies, community plans and other initiatives. This prioritisation is based upon a combination of knowledge of local business growth and some foresight into areas where future economic growth may come from.
26. The identification of priority sectors is useful in offering a view from the ground up, but also one of potential and emerging sectors for the next decade. Councils have clearly related this to wider digitisation processes taking hold across our economy and society or and societal challenges, such as environmental and demographic change.

Tradeable Services

27. Given the growth in employment in ICT, Financial Services and Professional Services in recent decades and the expectation that further opportunities are likely to arise, both through inward investment and local start-ups, there are two Tradeable Services priorities for not only the two cities but in many other Council areas.
28. **Digital** – many of the Councils recognise the importance of ICT and what is increasingly seen as a 'digital sector'. In part, this is a recognition of the importance of the digitisation process to almost every business and organisation across our economy and society. It also reflects the fact (as seen in Table 7 above) that more than 50,000 jobs are in the ICT sector (40% of the island's total). Thus we find Council priorities in areas such as the development of fintech, sports technologies, creative industry (such as immersive technology, games, etc), data content/ analytics, etc. Councils in Dublin, Belfast, Louth, ABC and NMD are all keen on pursuing a strategy which would make 'digital' a priority, in the knowledge that enterprise supports, and indeed workspace, are likely to be quite different for new start-ups in this area.
29. **Knowledge Intensive Business Services (KIBS)** – this catch-all normally includes existing areas such as Professional Services, Financial Services and other Business Services. Table 7 shows how the more than 150,000 KIBS jobs on the Corridor are most concentrated in the two cities, but can also be found in weaker concentrations in Louth and Lisburn & Castlereagh. KIBS can also include growing areas, such as Logistics, where the Corridor has some strengths, attached to its airport, port and transport assets generally.
30. Research from InterTradeIreland looked at sectoral concentrations across the island of Ireland and provides some support for these sectoral priorities. In the case of some of the KIBS – management consultancy, financial services – there were significant concentrations in both Belfast and Dublin and, less so, in the area between. In the case of Software Development (see Figure 24), or those activities attached to computer programming, the concentrations stretch along the Corridor to Louth with less significant concentrations north of that.

Figure 24: Spatial concentrations in Software



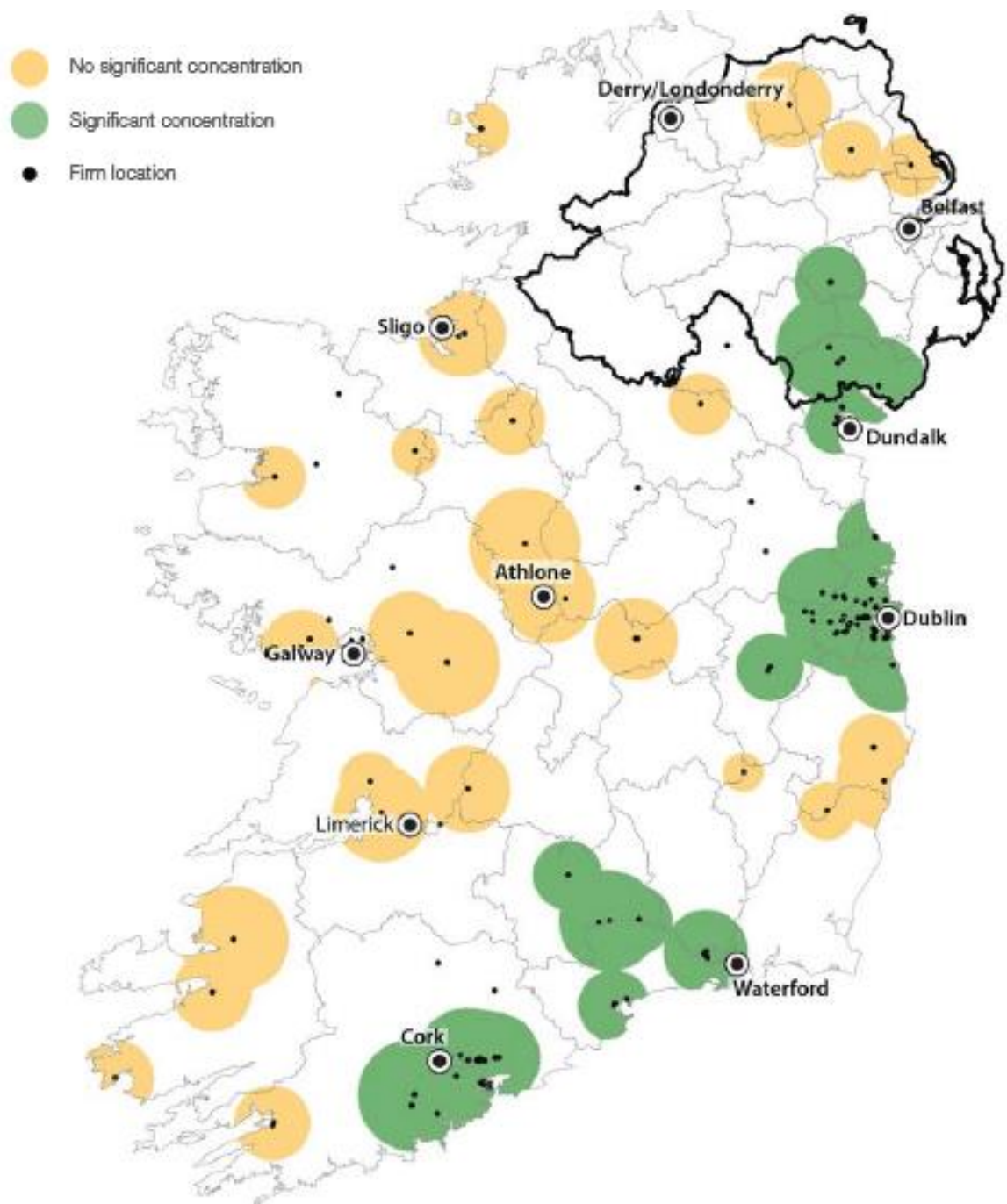
Source: InterTradeIreland, *Sectoral Ecosystems on the Island of Ireland (2015)*

Manufacturing

31. Although tradeable services are a central focus, the Councils are also keenly aware of existing Manufacturing strengths and the presence of some critically important firms and 66,000 jobs in the Corridor. Given this the Councils have identified three Manufacturing priority sub-sectors.

32. **Agri-food Production** – with 23,000 jobs (or 35% of the total) Agri-Food is certainly ubiquitous across the Corridor as across the island. The sub-sector ranges from large dairy and meat processors (such as Dale Farm, Kerry Group and ABP) to smaller, often artisan, food producers, and everything in between. The priority placed on Agri-Food can be seen in the two Council-led brands: the Food Heartland (ABC) and the Boyne Valley Food Network (branded Boyne Valley Flavours, an initiative of Meath and Louth County Councils). The sector faces a great deal of uncertainty, due to Brexit, but is also looking to new markets and building a growing link with the tourism offering to both domestic and overseas visitors.
33. **Advanced Manufacturing and Materials** – this is a collection of Manufacturing activities, from Transport Equipment to Materials Handling, as well as the use of new forms of high technology materials, from plastics through to composites. Merging a number of sub-sectors under Advanced Manufacturing sees 22,000 jobs on the Corridor. This is a particular focus in some or all of the Councils in NI, most notably ABC, as well as Fingal and proposals for Advanced Manufacturing Centres are emerging in City Deal plans. The focus here is increasingly on the fundamental transformation occurring in manufacturing and the impacts of automation on both products and processes). This transformation will mean potential losses in the numbers employed, but also growth in those parts of the sector driven by the development/adaption of technology at both the product and process level. There are also emerging elements here, such as Cleantech or Greentech, which is one area where Louth (and Dundalk IT) has made a focus.
34. **Life and Health Sciences** – the sub-sectors under this heading and the 7,000 jobs on the Corridor are normally captured under Advanced Manufacturing. However, there are also particular concentrations or single, large Pharmaceuticals and Medical Devices firms (often, but not exclusively, in FDI plants) in Meath, Louth, Fingal, NMD and ABC. this sector access to HE institutions and regulatory bodies is of key importance. The Pharmaceuticals map from InterTradeIreland – see Figure 25 – reveals significant concentrations in an area around Dublin and less significant ones in Newry/Dundalk and Belfast.

Figure 25: Spatial concentrations in Pharmaceuticals



Source: InterTradeIreland, *Sectoral Ecosystems on the Island of Ireland (2015)*

Tourism

35. Each Council has identified Tourism or the 'Visitor Economy' as a sector which they would like to prioritise. Tourism, like Agri-Food, is found everywhere on the Corridor and there are almost 68,000 jobs in this sector in the Corridor. This also means that there is likely to be as much competition for numbers and spend as cooperation around promotion in this sector.

36. Although COVID-19 is likely to mean a much-curtailed tourism season in 2020 and a reliance on domestic visitors, there are still several reasons to expect further growth in this sector on the Corridor:
- The trend has been for the numbers of trips onto the island of Ireland and the eight Council areas to increase in recent years leading to significant investment in accommodation, attractions and the 'wrap-around' food and hospitality offerings.
 - Table 7 shows that the Corridor has a below-average share of jobs in the Tourism sector, suggesting potential for growth also.
 - As air travel recovers the access to the Corridor, given the number of air and sea routes in particular through Dublin Airport, brings the promise of more overseas visitors.
37. Table 8 provides data by Council area within the Corridor and shows how Dublin and Belfast dominate the numbers of visitors (84%) and revenue (91%). This supports the market being increasingly led by 'city breaks' and events, a market in which Belfast and Dublin are already competing and must continue to look at new attractions, accommodation and food offerings that can attract repeat business. Other markets, such as conference business, is another area in which the two cities are trying to attract custom.
38. In most other Council areas along the Corridor, the challenge is slightly different. In Council areas, such as ABC, Louth or Meath, there is an emphasis on what might be seen as niche areas of tourism, such as heritage attractions, water-based and other activities and food trails. There is a challenge not only to increase the average number of nights spent but also improving the share of trips made by holidaymakers as opposed to 'visiting friends and relatives', which can reduce the amount of accommodation and hospitality used.
39. This can lead to a tension between promotion of local places and their attractions and a more general and perhaps joint profile-building, perhaps using the "Ireland's Ancient East" brand as a counter to the very successful "Wild Atlantic Way".

Table 8: Tourism figures by LGD, 2018

	No of trips	Revenue (€m)	Average no of nights	% trips = holidays
Dublin	7,400,000	€2,200m	4.28	53%
Belfast	1,500,000	€374m	3.39	44%
Newry, Mourne & Down	590,000	€103m	2.81	51%
Meath	380,000	€73m	3.61	25%
Louth	350,000	€85m	3.71	27%
Armagh, Banbridge & Craigavon	230,000	€38m	3.42	20%
Lisburn & Castlereagh	150,000	€31m	4.1	27%
EEC	10,600,000	€2,811m	3.88	45%

Source: Data from Fáilte Ireland and Tourism NI; UUEPC analysis

Note: Dublin here is the four Council areas in County Dublin.

The potential for clusters

40. When thinking about the potential for clusters to develop in the Dublin-Belfast Economic Corridor, it is useful to heed a call for developing an evidence base which moves away from specialisation-based measures to measures that identify substantial concentrations (Van Egeraat and Doyle, 2018). In other words, this suggests looking away from concentrations within set geographies (eg: the LQ-based analysis of Council areas in Table 7) and looking towards significant concentrations of numbers of firms with substantial areas around them from which they draw staff and skills (InterTradeIreland, 2015). Examples of the second approach can be seen in Figures 24 and 25 above.
41. One cautionary note, repeatedly made by economists who have explored the potential for further development of this Dublin-Belfast Economic Corridor or other corridors, is that clusters are more often proclaimed to exist, rather than the messy reality of building trust and vertical collaboration with suppliers and customers only (Yarwood, 2006).
42. Clusters develop around deep cooperation between competitor firms, development agencies (including Councils) and, very importantly, further and higher education institutions. The latter will be key as sources of innovative knowledge (from research centres) and for current or planned supply of undergraduates and postgraduates for employees. Thus local or regional cluster development will, by necessity, involve a whole of ecosystem approach.
43. Accordingly, there is potential to develop cluster policy at different spatial levels. An all-island approach is likely to best serve some sectors a number of concentrations in different places across the island. For example, Pharmaceuticals has significant concentrations around Cork, Waterford and Dublin as well as less significant concentrations in other parts of the island, including places along the Corridor. A sectoral forum organised by InterTradeIreland, with the involvement of Science Foundation Ireland, IDA Ireland, Enterprise Ireland and Invest NI, is currently identifying sectors and opportunities where all-island interventions might deliver greater economies of scale and scope.
44. At a different spatial level, 'locally or regionally focused cluster policies and actions are suitable for a more limited set of locations, sectors and activities' (Van Egeraat and Doyle, 2018). The Corridor may present an opportunity for the local or regional approach. Agreement on a common understanding of what we mean by 'clusters' and on a number of sectoral priorities – from among those identified by different Councils – might be the most suitable starting point for the Corridor.

6. Areas for cooperation on the Dublin-Belfast Economic Corridor

1. This section outlines a number of potential areas for cooperation along the Corridor and some possible actions which might be used as a beginning of discussion. These arise from a number of sources. First, the Councils and universities involved in the network identified a number of common priority areas at a number of workshops.¹³ The common priorities, including innovation, enterprise supports and environmental management, arise from Community Plans, City Deals under development in NI and Community and Enterprise Strategies across the southern part of the Corridor.
2. Second, the research identified a number of areas for cooperation, in particular 'soft' and 'hard' infrastructural improvements, which have underpinned successful interventions in other economic corridors.
3. Third, the current profile and future prospects of the Corridor suggest a number of cooperative areas, such as skills development, which could deliver economic value to the region and the island more generally.
4. This section lists a number of potential areas under the headings of **Promotion** and **Infrastructure** and begins the early process of suggesting a rationale for cooperation and some possible actions. These will be subject to further development by the network of Councils and universities, before being tested with a wider group of stakeholders.

6.1 Promotion

5. Many economic corridors have pursued the goal of successfully branding and promoting their *location*. This is often done for the purposes of attracting investment from both inward private and domestic public sources. The focus for promotion differs from place to place but there is a tendency to promote the presence of a highly skilled workforce and population, of sectoral strengths (eg: Medicon Valley in Oresund), of supports for innovative and entrepreneurial firms.

Skills

6. The rationale to include skills among the potential areas for cooperation comes from both the pressing need to always improve in this area, and the expertise and remit of the partners involved in the Corridor's network. As noted above the supply of sufficient numbers of people with relevant skills to meet demand is a necessary foundation for a competitive economy, especially for a region aiming to be attractive to inward investment.

7. In addition, the local authorities and universities along the Corridor are well aware of and involved in meeting the twin challenges of a supply of high skilled workers, and of minimising the numbers coming into the labour market with low levels of skills. There is already a great deal of activity at local authority and regional levels along the Corridor, specifically in the work of various statutory and voluntary skills fora.
8. Some initial ideas 'floated' as possible actions in the skills development area include:
 - Developing means of engaging employers in greater levels of skills development among their workforces (with an emphasis on small and micro-enterprises).
 - Rolling out mechanisms involving education providers and employers alike to improve employability prospects and 'soft skills'.
 - The completion of a Skills Barometer – monitoring the changing needs of the labour market and future demand and supply of skills – for the Corridor as a whole.

Sectoral strengths

9. The rationale behind promoting sectoral strengths is that all regions are expected to have not only a level of sectoral specialisation (a concentration of business and employees in certain sectors), but also strong networks or clusters of firms and research in particular sectors. The Oresund region, with its focus on medical devices and the wider life sciences industry, is a case in point.
10. The profile identifies the expected sectoral specialisations in different parts of the Corridor, most particularly in ICT, financial services, pharmaceuticals and professional services. However, there are also localised specialisations in parts of the Corridor in the agri-food sector, tourism and transport/logistics, some of which occur in a number of Council areas. There are also plans afoot to further develop some of these strengths, for example in food and tourism, as well as supporting emerging industries including cyber-security, financial technologies high-tech creative or greentech.
11. Some initial ideas 'floated' as possible actions in the sectoral development area include:
 - Branding of both the existing strengths (eg: in food) and promotion of segments of these, such as heritage, water-based ('blue ways') or other activity tourism.
 - Development of further innovation and research 'hubs' such as Belfast's financial technology centre, the data analytics centre in DCU (INSIGHT), the energy research hub in Dundalk, and those centres proposed in the Belfast Region City Deal (for example in life sciences – the Centre for Digital Healthcare Technology).

Enterprise supports

12. The profile shows a varied performance both in the level of entrepreneurship at the start-up stage (with business birth rates much lower in most NI Council areas) and also in the amount of scaling-up among microenterprises. There is a strong rationale for cooperation among the Councils and universities in this space because of the current provision of supports to individual entrepreneurs, to start-ups and to other businesses by all of the partners.
13. Some initial ideas 'floated' as possible actions in the enterprise supports area include:
 - The Councils and universities already provide enterprise supports and have a remit for further development of these along the Corridor, through the network of LEOs and the joint operation of 'Go for It' in NI by 11 Councils and Local Enterprise Agencies. There is certainly potential for shared resources, learning and perhaps celebration of success stories.
 - The existence of collaborative ventures between the Council partners – such as NMD, Louth and Meath on a precursor to the InterTradeIreland Co-Innovate programme – points to opportunities to develop other offerings in partnership with the economic development agencies working on the Corridor.
 - Potential to pursue some niche areas, such as access to finance and so on for 'tech starts' and HE spin-outs (in partnership with the universities and ITs).

6.2 Infrastructure

14. In some economic corridors (such as Oresund or the proposed Oxford/Milton Keynes/Cambridge arc) the emphasis is increasingly on the 'soft' forms of infrastructure, such as research and innovation centres, Smart Cities initiatives, and investment in environmental and energy management projects. Growth corridors in East Asia and examples such as the Basel Tri-national Agglomeration and the Seattle/Vancouver Corridor have all based cooperation on networks of research institutes, knowledge transfers and joint research programmes in order to benefit the larger region.
15. 'Hard' infrastructure, such as transport connectivity, has also been crucial to corridor development and, as noted above in Section 3.3 on Key Assets much remains to be done. This will certainly involve advocacy by the network partners at a regional and national level for further investment.

Research & Innovation

16. The role of the state in fostering research and innovation-led economic development has been relatively successful, though the institutions of the local government across the island of Ireland and their role as drivers of

innovation is not as developed as other EU member states. This is now improving, with new competences being allocated and greater expectations placed upon local authorities. However the consequences of earlier constraints can be seen in the emphasis on the provision of enterprise space, the recent bedding down of economic development and planning powers, and a continuing underappreciation of the localness and place-based nature of innovative economic activity.

17. Given this set of critical challenges facing local authorities, the rationale for cooperation and indeed partnership with other key institutions on the Corridor (e.g. HE institutions) is strong. The need for cooperation also arises from the need to shift the focus of attention from an individual place or individual firm to a region and clusters or networks of businesses (Rosenfeld, 2007:20).
18. A final challenge in this area for local government relates to managing a variety of relationships, between HE institutions, Councils and businesses. Although these relationships often tend to rely on individuals, there are examples of successful institutional partnerships, for example the Green Way in Dublin, that indicate that successful private sector, local authority and university partnerships are possible.
19. Some initial ideas 'floated' as possible actions in the research and innovation area include:
 - The further expansion of the specific Smart Cities initiative involving Small Business Innovation Research (SBIR) challenges. In recent years this has involved Dublin and Belfast, including the joint 2018 project looking at redesigning the delivery of goods in urban areas.
 - The provision of incubation space by various HE institutions along the Corridor (Alpha in DCU, the RDC in DkIT, etc) offers an opportunity for the development of networks and shared programmes and offerings between the centres and their tenants.
 - The development of some new and the expansion of existing research centres – some with a sectoral focus such as advanced manufacturing, software development or clinical trials and others which have a more general application, perhaps modelled on accelerator centres in Fingal or Belfast's Innovation Factory.
 - The development of measures to facilitate the testing of new digital technology applications, for instance by creating innovation testbeds, regulatory sandboxes, and state-of-the-art facilities and expertise, all of which will aid the diffusion of innovation beyond large firms.

Environmental resilience and management

20. The challenge and rationale could not be clearer as both the UK and Ireland have declared a climate emergency' as global warming is likely to reach 1.5°C between 2030 and 2052 if it continues to increase at the current rate. The

findings of successive IPCC reports are stark 'climate-related risks to health, livelihoods, food security, water supply, human security, and economic growth are projected to increase with global warming of 1.5°C'.

21. Moving to the Corridor, the climate modelling simulations suggest the greatest increase in mean annual temperatures in the east of the country, mean annual spring and summer precipitation levels are projected to decrease, and heavy rainfall events will increase in winter and autumn. Storms affecting Ireland will decrease in frequency but will increase in intensity thus bringing an increased risk of damage and coastal flooding.
22. These challenges will only be met by collective methods of environmental resilience or effectively adapting and planning so that the negative climate impacts can be reduced, while also taking advantage of any positive outcomes, either allowing the system to return to its previous state or to adapt to a new state. Environmental management is equally important and will involve the protection of natural assets, human welfare, local distinctiveness of places, productivity and livelihoods, food security and reputation for stable and secure environments for investment in the Corridor.
23. The alignment of the adaptation frameworks North and South in the Corridor offers the opportunity for collaboration to collectively address these shared challenges which are not confined by spatial or administrative boundaries. Some initial ideas 'floated' as possible actions in the environmental resilience and management area include:
 - Protection of existing critical infrastructure, including energy, communications, roads, public transport, water and coastal and inland flood defence systems.
 - Supporting the harnessing of the potential for the development of new regional renewable energy (wind – onshore and offshore – and wave).
 - Further development of green infrastructure on the Corridor through the provision of long distance cycling and walking routes.
 - Provision of mechanisms to continue the management of the Corridor's offshore resources (energy generation, marine transport and fishing and aquaculture) in light of the particular challenges with Brexit.
 - Developing collaborative frameworks in the areas of information sharing, researching new technologies and shared learning in public sector energy efficiency efforts and developing the circular economy.

7. Notes & References

¹ The network currently has Armagh City, Banbridge and Craigavon Borough Council, Belfast City Council, Dublin City Council, Fingal County Council, Lisburn & Castlereagh Borough Council, Louth County Council, Meath County Council and Newry, Mourne & Down District Council as members.

² The scenario used forecasts/projections out to 2040 from UUEPC's Summer 2019 Outlook for NI and from the long-term forecasts for Ireland from the ESRI (Bergin et al, 2016).

³ An initial workshop in September 2018 for Council officers from across the Corridor identified a number of priority areas shared in common. These were revisited at a later workshop held in May 2019 which discussed the draft final report. The common priorities arise from Local Economic Development and Community Plans, as well as the City Deals under development in NI.

⁴ Economic corridors in Malaysia (Athukorola and Narayanan, 2018) and the Mekong region (Ishida, 2009) are among the most studied phenomena and centre on a mix of investment in transport infrastructure and in innovation and R&D assets.

⁵ Nassim Nicholas Taleb, *The Black Swan: The impact of the highly improbable* (2007).

⁶ There are various population estimates. A figure of 2.5 million in the Arup report arises from the population of the entire Dublin region (ie: Fingal, Dublin City, Dun Laoghaire/Rathdown and South Dublin County Council areas) being included. A different figure, from a 60 minute drive-time from midway between Dundalk and Drogheda, gives an estimate of 2.25 million or 34% of the island's total population (courtesy of Louth LEO).

⁷ Resident employment deals with the sectors which residents of the eight Council areas declare themselves to be employed in. This data is taken from the Census.

⁸ Workplace employment deals with the sectors assigned to the various workplaces across the eight Council areas and the numbers employed in these. In this case a person may be counted in one or more workplace. The data is taken from POWSCAR commuting data for the South and ONS Workforce data for the North. Agriculture and Public Administration are not included in the dataset.

⁹ The skills demand analysis is based upon a 'high growth' scenario whereby expansion demand is three times higher than in the 'current trend' of baseline scenario (UUEPC, 2019).

¹⁰ The business demography data from the CSO is by county with 'Dublin' taking in the four Council areas in the county, including Dublin City and Fingal.

¹¹ Research from the Enterprise Research Centre found that 77% of micro-enterprise owners in NI were happy to keep their firm 'similar to how it operates now', a higher figure than 71% in Ireland.

¹² The data is taken from Census POWSCAR commuting data for the South and ONS Workforce data for the North. Agriculture and Public Administration are not included in the dataset. This data – estimating 962,000 jobs – excludes the 50,000 jobs growth since 2016.

¹³ Workshops held in September 2018 and May 2019 allowed Council officers from across the Corridor to identify a number of priority areas shared in common.

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