



Rialtas na hÉireann  
Government of Ireland

# National Risk Assessment 2019

## Overview of Strategic Risks



Prepared by the Department of the Taoiseach  
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## Overview of Strategic Risks

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## Foreword

The great American poet, Maya Angelou believed that we should always be ‘hoping for the best, prepared for the worst, and unsurprised by anything in between’. The National Risk Assessment serves a vital function in helping us to do exactly that.

As we know, the economy continues to perform well, but we are not complacent or taking that for granted. The next twelve months will see us face challenges of significant scale and impact, including those emerging from Brexit and Climate Change. Internationally, we see continued trade tensions and the emergence of a global economic slowdown. Domestically, we want to continue to ensure our public finances are robust and sustainable, so we can respond to the risks identified here. The scale and potential impact of these risks underlines how important it is that we are aware of every possible problem, and the National Risk Assessment: Overview of Strategic Risks enables us to face these risks head on.

The National Risk Assessment ensures that all voices are heard across the nation. In this way we avoid repeating the mistakes of the past, by taking into consideration the concerns and views of businesses, academics and researchers, civil society groups, and members of the public, as well as the public sector. The ultimate goal is to avoid “group think” when it comes to recognising and discussing risks at an early stage.

This year, I am delighted to see over 650 submissions through the public consultation, a substantial increase on the number received last year, and a strong endorsement of the value of the National Risk Assessment. In particular, it was noteworthy that Climate Change & Biodiversity emerged as the most important priority for respondents.

As we publish the Report for the sixth year, it is important to note how the risks identified have developed and evolved. There is a constantly changing risk backdrop. For example, this year we have included a ‘Capacity in Higher and Further Education System’ risk, as well as discussing the risks around perceived rural and regional imbalances.

Some risks have increased in significance since last year’s report including the Brexit risks in both the Geopolitical and Economic categories, ‘Climate Change & Biodiversity’ and ‘Cyber Security’. These risks are ongoing and evolving, and the changes here reflect this. All of the risks identified are monitored to ensure we can respond effectively to every challenge that arises.

The 2019 National Risk Assessment provides an important context for Departments and Agencies to develop the necessary mitigating actions, as appropriate. So, it is right that we promote discussion and awareness of the most important strategic risks facing Ireland. Continuing to be vigilant of the risks facing our country will help us to make better-informed decisions on how to prepare for them.



A handwritten signature in black ink, which appears to read "Leo Varadkar". The signature is fluid and cursive, written on a light-colored background.

**Leo Varadkar**  
**Taoiseach**

**July 2019**



# 1. Introduction 2019



- 1.1. Overview of the National Risk Assessment Process**
- 1.2. List of Risks 2019**
- 1.3. Overview of Strategic Risks**

## **1.1. Overview of the National Risk Assessment Process**

The National Risk Assessment (NRA) provides an opportunity for the identification, discussion and consideration of risks facing Ireland over the short, medium and long term. Since the NRA was first published in 2014, the annual Report has served as an important indicator of national-level risks, and has called attention to various risks that subsequently became major issues for Irish society, including Brexit, and risks around housing supply, and cybersecurity.

The National Risk Assessment plays an important part in the early identification of potentially significant risks that Ireland may face. It is vital to learn from the mistakes of the past, and this exercise was introduced to ensure that we, as a Government and as a wider society, encourage and participate in these necessary horizon-scanning discussions to ensure that we identify risks early and can robustly prepare for them. While not intended to replicate or displace the detailed risk management that is already conducted within government departments and agencies, the National Risk Assessment does aim to provide a systematic overview of strategic risks that can form an important, and inclusive part of the overall process of risk management.

Detailed risk management being conducted separately to the National Risk Assessment process includes the work of the Department of Finance and the Central

Bank of Ireland with respect to financial and macro-prudential risks; and the work of the Government Task Force (GTF) on Emergency Planning, supported by the Office of Emergency Planning (OEP), who produce a National Risk Assessment for Ireland centred on risks relating to potential civil emergencies at national level which is conducted in the context of the Strategic Emergency Management National Structures and Framework approved by Government in 2017 and Ireland's reporting commitments under the EU Civil Protection Mechanism. In addition, a National Security Analysis Centre (NSAC) is being established by the Government as part of the implementation of the report of the Commission on the Future of Policing in Ireland. The NSAC will bring the various agencies relevant to national security together to pool expertise and information, so as to produce a comprehensive picture of the threats to the State and develop an integrated national security strategy.

The Departments and agencies involved in these risk management exercises also feed in to this National Risk Assessment process, thereby ensuring coherence and alignment with other elements of the overall risk management approach.

Separately, and in accordance with a commitment made by Government, an Update of the White Paper on Defence (2015) is currently being finalised by the Department of Defence. An important strand of this is a fully updated assessment of the security

environment carried out by an inter-departmental/inter-agency group. When approved by Government, the update will include an outline of developments in important aspects of the security environment since the publication of the White Paper on Defence in 2015.

The Departments and agencies involved in these risk management exercises also feed in to this National Risk Assessment process, thereby ensuring coherence and alignment with other elements of the overall risk management approach.

A broad and diverse range of contributions to the National Risk Assessment are encouraged through several layers of debate and engagement, to ensure we avoid the possibility of ‘group think’. At the initial stage of the National Risk Assessment process, a Steering Group, chaired by the Department of the Taoiseach and comprising representatives from all Government Departments and agencies, worked together to draw up an initial draft list of risks, as in previous years.

As mentioned above, one of the original impetuses behind the National Risk Assessment process was to avoid the possibility of ‘group think’ when identifying strategic risks to the country. To this end, each iteration of the NRA has involved an open public consultation to gauge whether there are any significant risks that have been overlooked or underplayed, and to ensure inclusive engagement from all corners of society. For this exercise to be robust, comprehensive and inclusive, it is important that all voices – including discordant or minority ones – are heard. A more rigorous and wide-ranging debate will bolster our ability to identify and quantify the risks we face and our ability to make the right choices for the future.

In that context, the draft National Risk Assessment 2019 was published for public consultation in May and laid before the Houses of the Oireachtas. Over 650 submissions were received as part of this consultation, and these are outlined at Annexes 3 and 4.

In parallel with this consultation, work also continued within government departments to further strengthen the quality of Ireland’s risk governance mechanisms and to ensure that appropriate mitigation frameworks are in place. As outlined above, this includes the work of the Government Task Force on Emergency Planning, supported by the Office of Emergency Planning, the work of the Department of Finance and the Central Bank of Ireland with respect to financial and macro-prudential risks, the new NSAC, and the Steering Group representing government departments and agencies, which oversees preparation of the NRA.

The final list of strategic risks for Ireland in 2019 is included on the following page. The risks are grouped across geopolitical, economic, social, environmental and technological categories, in line with the World Economic Forum’s annual ‘Global Risks Report’<sup>1</sup>. This National Risk Assessment 2019, therefore, is the result of extensive consultation and engagement, including a significant public consultation element with over 650 responses, and it sets out a broad view of the high-level strategic risks facing the country today.

<sup>1</sup> World Economic Forum, Global Risks Report 2019 available at: <https://www.weforum.org/reports/the-global-risks-report-2019>

## 1.2. List of Risks 2019



### Strategic Geopolitical Risks

1. Departure of the UK from the EU
2. Instability in Northern Ireland
3. Future direction and stability of the EU
4. Changing distribution of global influence and move away from a rules-based system
5. Terrorist incidents and armed conflicts

6. Economic Impact of Brexit
7. Risk of Overheating
8. Public Expenditure Pressures
9. Global Slowdown, including changes to international trading environment
10. International Tax changes
11. Reliance on multinational corporations and sectoral concentration



### Strategic Economic Risks



### Strategic Social Risks

12. Capacity of Higher and Further Education System
13. Skilled Labour Shortages
14. An Ageing Population including pensions and health system challenges
15. Impact of Social Media on Public Debate
16. Social cohesion including perceptions of Regional and Rural imbalances
17. Migration and Integration

18. Climate Change & Biodiversity
19. Ensuring an affordable, sustainable and diverse energy supply
20. Delivery of Public Infrastructure
21. Food safety
22. Supply and Affordability of Housing



### Strategic Environmental Risks



### Strategic Technological Risks

23. Cyber security
24. Disruptive technology trends
25. Anti-Microbial Resistance
26. Major Pandemics
27. Nuclear contamination

### 1.3. Overview of Strategic Risks

While many of the Strategic Risks discussed in the 2018 National Risk Assessment continue to be relevant for 2019, the context and pressures around several of them have shifted and evolved in the interim period.

For example, we have seen the uncertainties around the form Brexit will take persist and indeed increase over recent months, bringing with it a stronger focus on the potential risk of a no-deal Brexit and the impact such an outcome could have on the Irish economy and on stability in Northern Ireland, as well as wider implications across the entire risk spectrum. Potential risks for the open Irish economy arising from a continued increase in trade tensions evident at the international level, and exacerbated by the emergence of a global economic slowdown, also continue to be areas of concern for us, warranting close discussion and awareness. Domestically, emerging spending pressures must be closely monitored and controlled, to ensure that our public finances continue to be sustainable and stable, and to ensure we can respond to the challenges arising from these risks.

In addition, several of the risks have evolved in new directions, including those around the capacity of the Higher and Further Education system, identified as a strategic social risk this year. While risks around human capital and skills needs for a growing economy were discussed last year, and in previous years, and are dealt with this year under a 'Skilled Labour Shortages' risk, an additional risk for 2019 focuses around the important role the HE and FET sectors play in the Irish economy, and the importance of ensuring adequate levels of funding for the HE sector are maintained, and that an appropriate, sustainable model of funding is in place, especially in light of demographic

challenges and the increasing demand for third level places over the coming years that is now forecast.

Another strategic social risk that has emerged this year revolves around risks to social cohesion and in particular risks around perceived imbalances in a regional and rural context, versus urban areas and cities. In line with similar trends in other countries in both Europe and the US, there are significant perceptions of a focus on job creation and infrastructure investment concentrated in cities, and to the detriment of rural communities.

Other ongoing risks such as international tax changes and the Irish economy's reliance on multinational corporations' in an economic context, the social risks associated with our changing demographics and ageing population, environmental risks such as supply and affordability of housing and overcoming infrastructure gaps, and ongoing and evolving cybersecurity risks are still relevant, and are discussed throughout the Report.

For some ongoing risks, while they may not be new risks identified for the first time this year, greater public awareness and an increased sense of urgency and responsiveness to the risks can be felt, for example, in the case of both Climate Change risks, where an increased demand for action can be felt from the public and the political system, and in the case of the impact of social media on public debate, with both the political and policy system and industry ramping up action in this area.

As always, and as evident through the above discussions, the inter-connections between these risks are ever apparent and must be to the forefront in any discussion of individual risks. We know that Brexit,

regardless of the form it takes, will impact negatively on the Irish economy, which in turn will have implications both for other potential risks for the economy including the risk of overheating and loss of competitiveness on the one hand, as well as impacting on social risks identified, including expectations for public expenditure, and risks and issues around migration and integration, to name but two. Indeed, Brexit can be seen as an overarching, umbrella risk, interacting with and amplifying the majority of the risks identified across the geopolitical, economic, social, environmental and technological spheres.

Similarly, inter-connections and knock-on implications can be seen between underinvestment in Higher Education, the impact of disruptive technology trends on jobs and the economy, and perceptions of regional and rural imbalances. And of course, we know that nuclear contamination could have serious implications for food safety and animal disease, that challenges arising from biodiversity risks have economic and sectoral impacts as well as environmental impacts, and that risks around supply and affordability of housing have both social and economic aspects, as well as environmental.

While we categorise the risks in this Report on the basis of the model used by the World Economic Forum (geopolitical, economic, social, environmental and technological), for the purposes of both organisation and ease of consideration, many of the risks cross-cut several categories, and the Risks and Report should be read and considered with that in mind.

In addition, this year we are including a thematic piece (at Annex 2), which takes a more detailed look at one of our Social risks, 'An Ageing Population including pensions and health system challenges'. It details the

changing structure and projected future trends in Ireland's population, against an international backdrop. While it is clear that Ireland's population is ageing, in line with trends in other countries, this work sets out the impacts this will have across a range of sectors, and highlights the importance of appropriate policy responses. These include, for example, increasing the State Pension Age, increasing participation rates of older people in the workforce, increasing savings for private pension provision, delivering on reforms for the health system, and consideration of policies that would stem the further decline in fertility and birth rates.

### Geopolitical Risks

As a small open economy, we know that Ireland is particularly vulnerable to geopolitical risks. While the top 5 strategic geopolitical risks identified for the 2019 National Risk Assessment mirror those discussed in 2018, it is clear that in each case the risks have evolved and, in some cases, increased significantly.

As mentioned above, the risks around Brexit have continued to intensify in the months since the 2018 Report was published, with both uncertainty and the possibility of a no-deal Brexit persisting throughout the negotiations to date. Allied to this are potential impacts and risks to the stability of Northern Ireland, and to the Good Friday Agreement. These, and other risks continue to be relevant in the context of risks to the stability and future direction of the EU, as it looks to the start of a new legislative cycle in 2019 with both European Parliament elections in May and a new European Commission later in the year.

Outside of Europe, the last twelve months have also seen an increase in geopolitical tensions at a regional and global level, as well as the continued withdrawal of the US

from the free trade model and increasingly strained relations with Russia, with associated risks of reduced global economic growth, and increased instabilities in the global economy, and for the Irish economy. Risks arising from potential terrorist incidents and armed conflicts endure, with significant public safety and security impacts, as well as longer-term reputational damage, should such an attack happen here.

In this increasingly tense geopolitical landscape, and with such high stakes, we must ensure that we are as prepared as possible for how these risks – both near and far – might impact on Ireland economically and socially, as well as in the context of peace and security.

### **Economic Risks**

While Ireland's economy continues to perform strongly, its growth is against a backdrop of continuing high indebtedness (both public and private) which impacts on our scope to build meaningful fiscal buffers in the coming years, against a backdrop of Brexit, the shape and impact of which is still unclear, and in the context of emerging spending pressures which risk destabilising the public finances if not tightly controlled.

We know that any form of Brexit would have negative impacts for the Irish economy, but the impacts of a no-deal Brexit would be particularly harsh, and these risks are set out in Section 3.2 of the Report, with a particular focus on the most vulnerable sectors of the economy in this regard.

Notwithstanding the possible effects of Brexit, the risks of overheating in the economy, and related loss of competitiveness continue to be relevant for 2019. As the labour market continues to tighten and the economy potentially reaches and exceeds its sustainable level of production in the

coming years, and in the context of ongoing difficulties around infrastructure constraints and housing, we could see risks to our competitiveness and overheating pressures emerge.

In addition, public expectations of additional expenditure are an increasing concern, especially at this point in the economic cycle, and in the context of significant domestic and external risks, and the importance of maintaining appropriate control on expenditure is discussed in Section 3.3.

There are indications that escalating trade conflicts at the international level now appear to be impacting growth, with the IMF warning national governments to prepare for an 'economic storm' as global growth levels undershoot expectations. As a small open economy Ireland is highly exposed to such fluctuations in global economic and trading conditions, and the economic risks in this context for Ireland are significant.

Work on international tax reform continues, and continues to be highly relevant for Ireland, particularly in the context of the importance of Ireland's competitive corporate tax offering which is an important part of our wider competitiveness offering, and the emergence of challenges to our corporate tax regime. Related to this, and as discussed in previous years, our economy and employment are heavily influenced by a relatively small number of multinational corporations, concentrated in a few enterprise sectors. While, on the one hand, this multinational investment has been transformative for the Irish economy, it also creates a vulnerability to changes in Ireland's attractiveness as a location for those companies, as well as to sector-specific changes or risks, and these are discussed in Section 3.6 of the Report.

### Social Risks

As mentioned above, some of the risks identified in the social category have taken a slightly new direction in this year's Report, including risks around the capacity of the Higher and Further Education system and the potential impacts on our economy, discussed in Section 4.1 and risks around a growing public discourse on rural and regional imbalances in the context of social cohesion as the economic recovery continues, which are discussed in Section 4.4.

As previously mentioned, while the risks arising from the impact of social media on public debate were included in the 2018 Report, increasing public awareness and a greater sense of responsiveness on all fronts is apparent, with both the political and policy system and industry ramping up action in this area. With large numbers of citizens now obtaining their news from social media platforms, there are clear implications for the generation, rapid dissemination, and impact of online disinformation. Large-scale disinformation or 'fake news' campaigns spread online are a high-risk issue for society globally, including Ireland, and in particular where they target the electoral process, and electoral outcomes. Developments in this area are outlined in Section 4.3.

This chapter also outlines the risks emerging from demographic issues, and in particular pension and health system difficulties in the context of our ageing population, as well as expectations for public expenditure and associated risks, and the risks involved if we fail to maintain our positive track record in terms of migration and integration, made all the more pertinent in the context of Brexit.

### Environmental Risks

As mentioned above, while the risks around Climate Change and Biodiversity have been

discussed in previous years, greater public awareness and an increased sense of urgency and demand for action on related risks are apparent this year. Research finds that Earth is currently losing biodiversity at a rate seen only during mass extinctions. In addition, Irish biodiversity is highly vulnerable to the impacts of climate change and has a low adaptive capacity compared to other vulnerable sectors.

In terms of climate change mitigation, we know that the cost of inaction exceeds the cost of action, and that this differential will rise steeply with time. Potential costs to the exchequer include those associated with not achieving compliance with our EU GHG emissions and renewable energy targets to 2020 and 2030. It will also be critical both to price the cost of carbon into our economic model to provide appropriate long-term signals, and to define our approach to carbon neutrality for the agriculture sector in a way that allows for the achievement of our climate targets and decarbonisation goals while respecting sustainable food security.

In terms of energy-related risks, disruptions to the supply or price of oil, gas, or electricity could have significant economic, social or competitive impacts, and our geographic position renders us particularly vulnerable to such disruptions. Brexit poses a particular risk as Ireland imports the vast majority of its energy requirements, oil, gas and transport fuels, from or via the UK. This provides an added impetus to increase the use of our renewable resources and to diversify our sources of supply by developing further electricity interconnection to neighbouring markets including France. As we electrify vital services, new associated risks around development costs, and societal provisions and acceptance for necessary infrastructure development will emerge.

Related to this, wider risks around our capacity to overcome infrastructure gaps, in the context of challenges in delivering a significant increase in capital investment under Project Ireland 2040, are still relevant, particularly when coupled with an ongoing undersupply of housing and associated affordability issues, a tightening labour market and continued strong economic growth (as discussed in the context of overheating risks).

Risks around food safety continue to be relevant, as in previous years, with significant health, trade, and reputational implications should a food scare or incident occur, and are discussed in Section 5.4. Again, inter-linkages between risks are pertinent here, with the agri-food sector one of the sectors particularly exposed to Brexit.

Finally, the supply and affordability of housing persists as a significant risk in this year's National Risk Assessment, with economic and social, as well as environmental implications. While CSO statistics for 2018 show that supply is increasing, difficulties around homelessness and affordability are persisting, and overall housing demand is also increasing. In the coming years, housing shortages are likely to act as a constraint on economic activity and competitiveness, and reflect one of the most prominent risks facing the country.

### **Technological Risks**

In terms of technological risks, risks around cybersecurity, including potential disruption to critical information infrastructure, and data fraud and theft, continue to be pertinent and continue to evolve as the extent to which society relies on digital technology increases. With Ireland positioning itself as a technological society, with a growing dependence on online services, the impact of an attack or incident on the provision of

services, and on the reputation of businesses and public service would be significant.

Disruptive technology trends likewise continue to advance, and these advances bring related risks as they predict significant jobs shifts and disruption. Automation is expected to replace some jobs, re-shape others, and also create new ones. In a regional context, research also highlighted the greater risks for regions from automation and job loss. The risks, therefore, if our education and skills system don't respond appropriately and in time, are substantial.

As in previous years, risks around Anti-Microbial Resistance and Major Pandemics, and Nuclear Contamination are relevant. Anti-Microbial Resistance is an increasing concern globally, with the extensive use, misuse, and overuse of antimicrobials in human health raising levels of resistance in a wide range of pathogens in all countries and in patients of all age groups. In the animal population, the rate of development and spread of antimicrobial resistance has also increased. In addition, the risks arising from a potential Major Pandemic have relevance across several risk categories, including financial, geopolitical, social, environmental, and technological. In terms of nuclear contamination, while the probability for Ireland is low, the obvious risks to public health and well-being, as well as negative economic impacts are clear, and both awareness and planning is important in this regard.





## 2. Geopolitical Risks

- 2.1. **Departure of the UK from the EU**
- 2.2. **Instability in Northern Ireland**
- 2.3. **Future direction and stability of the EU**
- 2.4. **Changing distribution of global influence and move away from a rules-based system**
- 2.5. **Terrorist incidents and armed conflicts**

## 2.1. Departure of the UK from the EU

The decision of the UK to leave the EU presents uniquely significant and unprecedented political, economic, social and diplomatic challenges for Ireland, given the extent of the inter-connectedness of our economies and people. These are challenges both to Ireland's peace and prosperity, and how they are dealt with in the months and years ahead may have significant impacts for Ireland into the future.

Ireland's priorities have remained consistent throughout the process: minimising the impact on Ireland's trade and economy; protecting the Peace Process and the Good Friday Agreement in all its parts; maintaining the Common Travel Area with the UK; and securing Ireland's future in a strong EU. As a result of intensive and sustained engagement at the EU level, Ireland's unique issues and concerns have been fully understood by the EU27 and have been to the fore of the EU's negotiating approach.

Following two years of intensive Article 50 negotiations between the European Union and the United Kingdom, the European Council endorsed the Withdrawal Agreement and the Political Declaration on the future relationship in November 2018. The Withdrawal Agreement was subsequently passed to the European Parliament and is

awaiting its consent. The British Government has also agreed to both the Withdrawal Agreement and the Political Declaration. However, the Withdrawal Agreement is still subject to ratification by the UK Parliament.

The Withdrawal Agreement establishes the terms of the UK's departure from the EU. It ensures that the withdrawal will happen in an orderly manner and offers legal certainty once the Treaties and EU law cease to apply to the UK. The Withdrawal Agreement covers all elements of the UK's withdrawal from the EU including citizens' rights, the financial settlement, a transition period, Protocols on Gibraltar and Ireland, as well as a range of other separation issues. It includes a Protocol on Ireland and Northern Ireland and a legally operational 'backstop' to ensure that there will be no hard border between Ireland and Northern Ireland. It contains UK commitments not to diminish the rights set out in the Good Friday Agreement 1998 and recognises that people in Northern Ireland will continue to enjoy EU citizenship rights, and to protect North South cooperation. It acknowledges the maintenance of the Common Travel Area arrangements between Ireland and the UK, and for the preservation of the Single Electricity Market on the island of Ireland.

There is persisting uncertainty regarding the ratification of the Withdrawal Agreement

## Short-term risks of a no-deal Brexit

The Government published its Contingency Action Plan Update in early July, noting that despite the extensive mitigation measures being undertaken at EU level by the Irish Government and by businesses, significant short-term risks in the event of a no-deal Brexit include:

- Disruption of East-West trade between Ireland and Britain due to delays at ports and/or inability of businesses to meet regulatory requirements;
- Delays to transit of exports and imports through the UK landbridge, with knock-on impacts on wholesale and retail supply chains;
- Closure of businesses and/or loss of jobs in Ireland due to trade disruption and associated costs, tariffs and currency movement, in particular in the agri-food, fisheries, manufacturing and tourism sectors;
- Regional economic and labour market impacts due to the location of most-exposed business sectors;
- Deterioration in Ireland's macroeconomic position, including deterioration in the public finances;
- Community relations undermined, and political instability in Northern Ireland and potential related security concerns;
- Significant negative impact on the Northern Ireland economy, especially in the area of agri-food exports;
- Loss of or limited access to rights and entitlements for Northern Ireland residents entitled to EU citizenship;
- Disruption in North-South trade and the all-island economy due to tariffs and the imposition of various regulatory requirements;
- Disruption to North-South cooperation in areas such as energy, road and rail connectivity;
- Loss of access to fishing landings from UK EEZ, and displacement of other EU fishing activity into Irish waters;
- Notwithstanding mitigation measures in place, potential disruption to daily life in areas such as online retail purchases from UK, access to medicines and medical devices, and financial services sourced from the UK

in the UK parliament. The decision of the European Council to extend the Article 50 process until 31 October 2019 provides the UK with more time to ensure an orderly withdrawal. However, the possibility of the UK leaving the European Union without an agreement – a no-deal scenario – remains a significant risk.

Due to the close, highly integrated and concentrated nature of our trading relationship with the UK, amongst all EU Member States Ireland could be the most adversely affected by Brexit and to the greatest extent in a no-deal scenario. In numerous Government

publications<sup>1</sup>, and the recently published Contingency Action Plan Update lists a number of significant short-term risks that may arise in the event of a no-deal Brexit. In addition to the economic impact and risks, which are discussed in detail in Chapter 3, Brexit-related impacts include those to the Common Travel Area (CTA) between Ireland and the UK, which allows Irish and British citizens to move freely

1. These include previous National Risk Assessments, Budget 2019 documentation, the Copenhagen Economics report "Ireland and the Impacts of Brexit" published by the Minister for Business, Enterprise and Innovation (available: <https://www.copenhageneconomics.com/publications/publication/ireland-the-impacts-of-brexit>), the 2019 ESRI/Department of Finance report "Ireland and Brexit: modelling the impact of deal and no-deal scenarios" (available: <https://www.esri.ie/news/new-study-estimates-the-impact-of-various-brexit-scenarios-on-the-irish-economy>), and the Contingency Action Plan, Dec 2018 (available: <https://www.dfa.ie/brexit/getting-ireland-brexit-ready/governmentcontingencyactionplan/>)

and reside in either jurisdiction and enjoy associated rights and entitlements including access to employment, healthcare, education, social benefits and the right to vote in local and national parliamentary elections. As well as the East-West dimension, the CTA arrangements also underpin the Good Friday Agreement in all its parts, as well as the cross-border freedoms central to the lives and livelihoods of the people of Northern Ireland and the border region. Any diminution of the CTA could have a destabilising impact on the peace process and on North-South relations. The Irish and British Governments have committed to the continuation of the CTA in all circumstances and a Memorandum of Understanding on the Common Travel Area was signed by both Governments on 8 May 2019. Separate, sectoral agreements to underpin the rights of the CTA have already been, or will shortly be introduced. For example, the agreement required to maintain the current arrangements in the field of social security after the UK leaves the EU is in place – it was signed by both States on 1 February 2019 and completed the required Parliamentary procedures in both States during March.

Brexit will also impact on the operation of a wide range of EU legal instruments concerning law enforcement and judicial cooperation. Of greatest concern to Ireland is the future of the European Arrest Warrant, as well as EU instruments that provide for the recognition and enforcement of judgements in civil, commercial and family law matters. Disruption to law enforcement and judicial cooperation arrangements would have a

particular impact at North-South level<sup>2</sup>.

In the context of immigration, Brexit may also give rise to an increase in illegal movement of third country nationals into Ireland from the UK, as well as possible consequences for secondary movements of asylum seekers and illegal migrants from the UK to Ireland in the event of UK divergence from EU asylum law.

A no-deal Brexit would be an exceptional economic event which would be met with exceptional measures to support the continued operation of the Irish economy and our international trading links. Extensive contingency planning and preparedness work is underway across all Government Departments and Agencies for a possible no-deal Brexit. This response would be implemented in close co-operation with our EU partners.

## 2.2. Instability in Northern Ireland

The results of the referendum on the UK's membership of the European Union in June 2016 showed that a majority of voters in England and Wales voted to leave whilst a majority in Northern Ireland and Scotland voted to remain within the EU. This has given rise to considerable issues for Westminster and the devolved administrations to consider.

The breakdown of the NI Executive and the collapse of the talks on the formation of a new Executive together with increases in cross community tensions created by the

<sup>2</sup> The Political Declaration setting out the Framework for the Future Relationship between the EU and the UK outlines the basis for a Security Partnership which references measures to ensure cooperation in law enforcement and judicial cooperation in criminal matters. If a Withdrawal Agreement is ratified the application of the full EU acquis to the UK during a transitional period is of great importance. In the event that a Withdrawal Agreement is not ratified, domestic legislation is being prepared to ensure workable extradition and immigration arrangements with the UK can continue. However, any contingency measures will not and cannot mitigate the overall impact of a no-deal scenario.

Brexit vote, means that Northern Ireland is facing a challenging period ahead. The inability of the Northern Parties to reach a compromise on contested issues during the talks process has allowed the development of a political vacuum in Northern Ireland, along with the increased possibility of the re-introduction of direct rule by the UK Government in Northern Ireland. This is something to which the Irish Government is opposed.

The restoration of the institutions is essential in the context of full implementation of the Good Friday Agreement. Following the tragic killing of Lyra McKee in Derry, the two Governments convened a new short and focussed talks process aimed at restoring all the institutions of the Good Friday Agreement.

The Government will continue to engage with the British Government and the parties in Northern Ireland as a co-guarantor of the Good Friday Agreement to support the re-establishment at the earliest opportunity of the power-sharing institutions.

Brexit has added an additional and significant challenge to the political situation in Northern Ireland. The lack of a power-sharing Executive in representing and pursuing Northern Ireland's interests in the context of the EU-UK negotiations, with the UK and Irish governments as appropriate, is of significant concern in relation to the specific challenges of Brexit for Northern Ireland. An Executive is also required for the functioning of the North South Ministerial Council, to oversee and further cross-border cooperation in the agreed sectors and to consider and address the all-island issues raised by Brexit. The lack of an Executive has resulted in a tangible slowdown in North South engagement at political level and has had a detrimental effect on the effective opera-

tion of the North South bodies set up under the GFA.

Both the Irish and the UK governments have affirmed that the principles, procedures and institutions of the Good Friday Agreement remain the basis for their engagement in Northern Ireland. Ensuring that the Good Friday Agreement and the benefits of the peace process are not disturbed by a UK exit from the EU is priority for the Government.

As mentioned above as regards the UK withdrawal from the EU, the Withdrawal Agreement also includes a Protocol on Ireland and Northern Ireland and a legally operational backstop to ensure that there will be no hard border between Ireland and Northern Ireland. There is continuing uncertainty regarding the ratification of the Withdrawal Agreement in the UK. The Governments objectives in any Brexit scenario are clear – to avoid a hard border on the island of Ireland and to ensure the integrity of the single market and the customs union.

A number of submissions, out of the 650 plus submissions received under the public consultation, related to the “border poll question”. Although a border poll would not be regarded as a risk, and the very important and sensitive policy issues related to it would not be dealt with in the National Risk Assessment process, the question of relationships on the island of Ireland, and between the two islands, are always considered as part of the annual National Risk Assessment. The National Risk Assessment was one of the first official acknowledgments of the risks posed by a potential Brexit including associated risks for Northern Ireland. Since the National Risk Assessment was first introduced, these issues have featured prominently, and been supported by accompanying text in the published annual reports.

The Preparing for the withdrawal of the United Kingdom from the European Union – Contingency Action Plan Update published in July 2019 also identifies that a no deal Brexit risks significantly undermining wider community relations and political stability in Northern Ireland, with potential related security concerns and elaborates that calls for a border poll to be held would increase in such a scenario. This could also have implications for the stability of the institutions if they are in place, or the process to restore them to operation. The longer the uncertainty of a no deal scenario persists, the more political and community relationships in Northern Ireland would be tested.

Uncertainty around a physical border on the island could also be expected to become a focus for dissident republican paramilitary recruitment and activity. Garda and PSNI authorities have said publicly that any border infrastructure or personnel would become targets for dissident republican paramilitaries and require police or other protection.

A no deal Brexit also has the potential to become a focus for increased loyalist paramilitary recruitment and activity, including in response to dissident republican paramilitary actions and an increased public focus on a border poll.

If the institutions were not in place at the time of a no deal Brexit, there is a risk that the UK Government might initiate a move to Direct Rule in Northern Ireland as a response to managing the transition to new arrangements in the timeframe involved.

The central priority of the Government in this regard is to work urgently and in partnership with the UK Government to support the restoration of the institutions of the Good Friday Agreement to full operation on

a more sustainable basis, and to address key issues of division between the main parties that have affected partnership government in Northern Ireland. Having the institutions working on behalf of all the people of Northern Ireland would be crucial in managing the impacts of any Brexit scenario on the island.

The Government has always recognised the need for advance preparations for referenda and this would be of particular importance in the case of a border poll given the potential impact on all the people of the island of Ireland. The lessons of the UK Brexit Referendum are of particular resonance in this context.

Brexit has also played significantly into the debate in Scotland about its future within the UK, raising questions in relation to the devolution settlement and the possibility of a further independence referendum. Disagreements have arisen between the Scottish and UK Governments in relation to the operation of current devolution arrangements, and in particular the handling post-Brexit of matters of EU competence that were not reserved to Westminster under the terms of the Scottish devolution settlement. The status of Scotland in the United Kingdom is an internal matter for the people of Scotland and the people of the United Kingdom, and therefore a matter on which the Irish Government does not and will not engage.

Questions have been raised regarding the applicability to Scotland of any arrangements made to address the challenges posed by Brexit for Northern Ireland and for the island of Ireland. However, the situation in Northern Ireland is unique and not directly comparable to that in Scotland in particular, given the nature of the political and constitutional settlement of the Good Friday Agreement.

### 2.3. Future direction and stability of the EU

Europe has undergone a series of crises in recent years: the eurozone crisis, the migration crisis, terror attacks in a number of Member States and the shock of Brexit. These have played out against the background of a rise of populism as shown in electoral advances by extreme right-wing and/or Eurosceptic parties in a number of EU states while in some Central and Eastern Member States, there is a growing defiance of EU values and norms.

In addition, concerns about adverse market reactions as monetary policy normalises, and vulnerabilities in the broader euro area remain, particularly in the context of the unwinding of the ECB's Quantitative Easing programme, and significant amounts of debt in some EU economies, including Ireland, with related risks around the sustainability of the Eurozone.

On the other hand, employment in Europe is at a record high and unemployment at a record low<sup>3</sup>. The European economy is expected to grow for the seventh consecutive year in 2019, but at a more moderate pace at a time of more pronounced global uncertainty.

This year marks the start of a new legislative cycle in the EU. In May, there will be European Parliament elections and, in turn the new Parliament will elect the next European Commission President and approve the appointment of a new European Commission.

The European Council is responsible for determining the general political direction and priorities of the EU and in June it will adopt a new Strategic Agenda for 2019-2024.

But a recent European Council on Foreign Relations (ECFR) report provides a worrying snapshot of the potential disruptive effect a one-third “anti-European” Parliament could have on foreign trade, the rule of law, migration, foreign policy, and the appointment of the next Commission<sup>4</sup>.

The new European Parliament will also have an impact on the EU budget for 2021 to 2027, the Multiannual Financial Framework (MFF). This is the first time Ireland will enter a new MFF as a net-contributor. It will be a challenge to ensure the final outcome reflects Irish priorities such as the protection of the Common Agricultural Policy and provides adequate funding for new challenges such as migration.

Additional ongoing or continuing risks to the unity and effectiveness of the EU include:

- Risk of negotiations breaking down, causing divisions amongst Member States – for example, in relation to the EU budget;
- Risk that the loss of the UK voice in EU decision-making could tip the balance of interests towards a more conservative or protectionist stance; and
- Risks specific to Ireland's interests and influencing power within the EU which could emerge from a disruptive European Parliament and the loss of the UK as a negotiation partner.

### 2.4. Changing distribution of global influence and move away from a rules-based system

Geopolitical volatility and uncertainty continued throughout 2018 and into 2019, giving rise to heightened threats to

<sup>3</sup> Available here: <https://ec.europa.eu/social/main.jsp?langId=en&catId=89&newsId=9316&furtherNews=yes>

<sup>4</sup> Available here: [https://www.ecfr.eu/specials/scorecard/the\\_2019\\_European\\_election](https://www.ecfr.eu/specials/scorecard/the_2019_European_election)

international peace and security, exacerbated by efforts to weaken the multi-lateral rules-based system.

The last twelve months have seen an increase in geopolitical tensions at regional and global level, including (though not limited to) the Korean Peninsula, between Russia and the US, Russia and UK, China and the US, the US and Iran, and India and Pakistan. The serious conflicts ongoing in Syria and Yemen are causing significant humanitarian crises and irregular migration. The humanitarian and political situation in the Occupied Palestinian Territory deteriorated further in 2018, with settlement building increasing in the West Bank, and significant unrest in Gaza being met by seemingly disproportionate Israeli military force. The US withdrawal from the Iran nuclear agreement has increased tensions across the Middle East, and risks damaging the potential to resolve other global conflicts by means of international agreements. The marked increase in the use of chemical weapons in recent years has seriously threatened to undermine the universal prohibition on the use of chemical weapons.

The current US administration's withdrawal from the Joint Comprehensive Plan of Action with Iran, as well as the Trans-Pacific Partnership (TPP), re-negotiation of the North American Free Trade Agreement (NAFTA), reduced role at the World Trade Organisation (WTO), and introduction of several rounds of tariffs on Chinese products over 2018 and 2019 all further strengthen previous indications that the US are moving away from the free trade model, with associated risks of reduced global economic growth, and increased uncertainties and instabilities in the global economy.

Russia - US relations are increasingly strained, as are relations between Rus-

sia and the UK and Western allies. This is reflected, for example, in the expulsion by the UK of 23 diplomats following a poisoning incident in the UK in March 2018 with suspected Russian involvement, and the subsequent expulsions by a number of EU and Western states, including Ireland, and the US and NATO in solidarity. The Russian government retaliated with the subsequent expulsion of 59 diplomats from 23 countries, including 1 from Ireland.

Previous NRA Reports discussed globalisation trends involving an ongoing and significant shift of political and economic power towards countries in the East and South, representing a challenge to the existing international order. Comments that such trends necessitate more strategic and deeper engagement with Asian, African and Latin American countries continue to be valid, in terms of protecting and promoting Ireland's trade, tourism and investment interests.

As an open global economy, any move away from a rules-based multilateralism system at the international level would not be in line with Ireland's interests, and could pose significant risks for us.

## 2.5. Terrorist incidents and armed conflicts

The risks arising from terrorist incidents and armed conflicts, as highlighted in previous Reports, remain. 2018 saw continuing high tensions in the Middle East and in North East Asia (Democratic People's Republic of Korea) as well as terrorist incidents and attacks across Europe, in particular in the UK. Ongoing tensions between India and Pakistan represent a threat to regional stability and thus Irish interests in the region. In addition, as both are nuclear powers, increased conflict is a threat to Ireland's policy



position on and efforts to support nuclear non-proliferation.

Over the past 12 months, conversations around the risks to Ireland and the Irish response capacity in this regard have also increased, highlighting increased awareness of the risks involved in the Irish context.

Europol data suggests that the overall threat from jihadist terrorism remains high, with the number of arrests totalling 705 in 2017, down slightly from 718 in 2016. There has also been a significant slowdown in the number of foreign-born fighters travelling to Syria and Iraq. There has been a marked rise in right-wing extremist attacks, with a jump from 99 attacks in 2016 to 137 attacks in 2017. This trend is evidenced by the recent mosque attacks in New Zealand. Left wing and anarchist terrorism has declined slightly between 2016 and 2017<sup>5</sup>.

Like other countries, Ireland and its citizens could be negatively affected by terrorist incidents, depending on the location of such incidents and their wider impact. The 2017 attacks in London, Manchester and the recent attacks on a Mosque in Christchurch and Synagogue in Pittsburgh serve to highlight the challenging nature of the threat and the need for continued co-operation among partner states to counteract it. Such an attack here could have significant impact in terms of public safety and security in the short term, and there could possibly be longer-term reputational damage to Ireland as a safe and secure destination to live and work in, and to visit. Any impacts on the tourism sector, for example, could have potentially serious economic consequences.

Likewise, a breakdown in international peace and security arising from inter-state

wars or other armed conflicts could have significant repercussions for Ireland and the EU, including potential impacts on energy supplies, transport routes or the environment.

On the island of Ireland, the Good Friday Agreement has delivered a stable peace process that commands overwhelming cross community support. Nonetheless, certain groups in both communities, albeit with very limited levels of support, remain intent on disrupting the significant progress which has been achieved and perpetrating acts of violence. Recent high-profile incidents, including attacks on security personnel in Northern Ireland, the car bomb in Derry and the murder of journalist Lyra McKee, are a reminder that we cannot be complacent. Accordingly, the relevant authorities need to continue their work to combat these groups and their activities. Legacy issues arising from conflict in Northern Ireland and current social and economic challenges also need to be addressed. Both the Irish and British governments have reaffirmed their commitment to ensuring that the benefits of the peace process are preserved in any new arrangements arising from the UK's exit from the EU.

<sup>5</sup> European Union Terrorism Situation and Trend Report 2018; <https://www.europol.europa.eu/activities-services/main-reports/european-union-terrorism-situation-and-trend-report-2018-tesat-2018>

The background features a large, abstract graphic composed of overlapping geometric shapes. A large, light yellow shape is positioned in the upper left, while a darker yellow shape is in the lower left. A grey shape is located in the upper right, overlapping the yellow shapes. The overall composition is clean and modern.

# 3. Economic Risks

- 3.1. Economic Impact of Brexit**
- 3.2. Risk of Overheating**
- 3.3. Public Expenditure Pressures**
- 3.4. Global Slowdown, including changes to international trading environment**
- 3.5. International tax changes**
- 3.6. Reliance on multinational corporations and sectoral concentration**

### 3.0. Introduction

While the Irish economy continues to perform strongly, there are various factors that could present significant risks. The risks are outlined in the following sections in detail. They should be seen against a backdrop of continuing high indebtedness (both public and private) and emerging expenditure pressures. The State's comparatively high level of debt means that, at an advanced stage of the economic cycle, Ireland exhibits minimal scope to build meaningful fiscal buffers in the coming years. In dealing with these issues, to date Ireland has benefited from a benign international financial environment. Any reversal in low global interest rates, such as the expected normalisation in ECB monetary policy, would lead to increased debt servicing costs and associated impacts on the public finances over time. These factors, and a lack of meaningful fiscal space, would amplify the impact on the economy, should emerging spending pressures risk destabilising the public finances, and should any of the economic risks outlined below materialise.

#### 3.1. Economic Impact of Brexit

The exit of the UK from the EU is an unprecedented event in modern economic history. There continues to be considerable uncertainty regarding many issues, not least of which is the likely format of the UK's exit. However, as set out in the Contingency Action Plan

Update, published on 9 July, it is the Government's assessment that there is now a significant risk of a no-deal Brexit on 31 October or thereafter.

It is clear that due to our close economic and trading relationship with the UK, Ireland will be impacted more than any other EU country. Brexit will have a significant impact on our economy, including the all-island economy, the labour market and the public finances, with the most negative impacts likely to be in agri-food and indigenous manufacturing sectors.

The UK's departure from the EU is an event without precedent in modern economic history, and quantifying the impact of this is challenging. Nonetheless, estimating the impact is important to help Government to understand the possible macroeconomic implications and to design the appropriate policy response.

In March 2019, the ESRI and the Department of Finance produced updated estimates of the potential macroeconomic impacts of Brexit on the Irish economy. This work takes account of substantial new microeconomic research on the impact of tariff and non-tariff measures, along with revised assessments of the impact on the UK that have been produced since the initial impact assessment of Brexit by the ESRI and Department of Finance in 2016. The

various Brexit scenario results show that the impacts on the Irish economy are large and that Brexit will ultimately negatively impact firms, households, the labour market and the public finances.

This study finds that, compared to a no Brexit baseline, the level of GDP in Ireland ten years after Brexit would be around 2.6 per cent lower in a deal scenario and 5.0 per cent lower in a ‘Disorderly No Deal’ scenario, respectively.

A no-deal Brexit would result in a sharp reduction in growth with negative consequences throughout the economy. The reduced growth would feed through the fiscal channel as the automatic stabilisers would be activated. Specifically, tax revenue would be lower and there would be upward pressure on expenditure areas, in particular, social protection transfers. Ireland’s EU budget contribution, funded from the Exchequer, might also increase in a no deal scenario, given that the EU’s contingency measure in relation to the EU budget is for 2019 only.

The study also emphasises the negative impact Brexit will have on the Irish labour market. The results from the study show that employment, in the long run, would be 1.8 per cent lower in a deal scenario and 3.4 per cent lower in a “Disorderly No Deal” scenario, compared to a scenario where the UK stays in the EU.

The deterioration in Ireland’s fiscal balance would be structural, not cyclical, in nature. This would reflect a permanent reduction in the size of the economy and, consequently in the amount of tax revenue it generates. Under the disorderly Brexit scenario, this could involve a headline deficit in the region of  $-\frac{1}{2}$  to  $-1\frac{1}{2}$  per cent of GDP for next year, depending on the magnitude of the

economic shock. The wide range reflects the uncertainty surrounding the budgetary impact of such an unprecedented shock.

It is important to recognise that such estimates may not capture the full impact, and the figures may be conservative. In the event of a no deal Brexit, there would be significant disruption with further negative material impacts on Ireland and the all-island economy, particularly in the early years, arising from issues such as significant market volatility, further sterling depreciation, and disruption to trade with the UK including Northern Ireland. The full impact will also depend on decisions taken by the UK in relation to tariffs imposed on goods from the EU, including Ireland.

There are also significant sectoral and regional dimensions to this economic impact and some sectors and regions will be more affected than others. Indeed, the negative impacts will be most keenly felt in those sectors with strong export ties to the UK market – such as the agri-food, manufacturing and tourism sectors and also SMEs generally – along with their suppliers. The impact will be particularly noticeable in the regions where there is a reliance on these sectors and businesses as firms adjust to potentially higher tariff and non-tariff barriers, as well as currency fluctuations. Further, given Ireland’s unique macroeconomic and sectoral exposures to the UK, these impacts would be disproportionate relative to the rest of the EU.

The unprecedented nature of the event means forecasts are subject to greater uncertainty and variance than during normal times. An alternative study by the Central Bank of Ireland suggests the short-run and long-run impacts of a disorderly Brexit could be more negative than the Department of Finance/ESRI study suggests. This

study puts greater weight on the effects of uncertainty on consumer and business decisions. The Central Bank's estimate, as published in January 2019, is that a disorderly Brexit could reduce the growth rate of the Irish economy by up to four percentage points in the first year. Over ten years, the Central Bank estimates that a disorderly Brexit could reduce the overall level of Irish output by 6.1 per cent, as compared to 1.7 per cent in the case of a transition to a Free Trade Area-like arrangement.

The Government is currently planning its approach to Budget 2020 based both on an orderly and a disorderly scenario. The Government will closely monitor developments in the UK over the coming months and decide which scenario is the most likely and base Budget 2020 on that.

The services sector too faces significant disruption. In some areas where firms have not done adequate contingency planning consumers will no longer be able to access financial services from UK providers. Risks to consumers are significantly reduced as the five largest retail banks are authorised in Ireland and large parts of the insurance sector are similarly authorised in the EEA or will be authorised there before Brexit. The most material risk is for customers of insurance firms and distributors who have not completed an adequate contingency plan in time. This issue has been solved through the Brexit Omnibus Bill. In other sectors of financial services customers may be dealing with firms in the UK who cannot transact with them post-Brexit and competition may be lessened in some niche lines of business. While this may arise it is not expected to be material and we expect that such customers will have alternative providers available and authorised in the EU27. But the risk cannot be eliminated.

In terms of regulatory risks, a no-deal Brexit will introduce both immediate and longer-term disruption for Irish businesses and industries who carry out significant trade with the UK. In advance of the outcome of negotiations, the level of risk is difficult to fully assess. Less demanding regulation could put UK firms at a competitive advantage whilst further advantages could emerge should the UK be able to aid its industries and business through the use of State Aid in the future. Regulatory divergence would also introduce barriers to trade, potentially interrupting the supply of goods and services, disrupting supply chains etc.

More generally, Brexit has introduced a level of uncertainty which may result in foreign enterprises holding off on investment decisions until greater clarity emerges. There is a need to maintain a focus on enhancing Ireland's competitiveness as a result of the increasingly competitive market for international investment, and as other EU Member States compete to attract foreign investment looking for access to the EU market.

### 3.2. Risk of Overheating

Following on from the period of fiscal consolidation in the years 2008 to 2014, it has been possible to once again increase expenditure on the delivery of public services. Budgets since then have set about increasing expenditure in key priority areas while also ensuring the viability of the public finances. The enhanced engagement with the Oireachtas, particularly the Select Committee on Budgetary Oversight, has also assisted in formulating Budgets while reaching broad consensus on key priorities.

As the economic recovery continues, the expectations, from a range of sources, that

additional resources will be made available to meet growing demands for new services and service improvements may not be consistent with the available resources both in the short and medium term. This requires a continued focus on the effectiveness and sustainability of public expenditure and a broad understanding of the need to ensure that public expenditure increases are affordable both today and over the longer term, and that cost over-runs and additional expenditure is controlled. At this stage of the economic cycle, emerging spending pressures must be closely monitored and controlled, to ensure that our public finances remain sustainable and stable, and to ensure we can respond to the challenges arising from the risks discussed throughout this Report. The Irish Fiscal Advisory Council, for example, in their November 2018 Fiscal Assessment Report, warned that “repeated failures to prevent unbudgeted spending increases have left the public finances more exposed to adverse shocks”.

Public Services are delivered through the work of public servants. Consequently, the public service pay bill is an important element of overall public expenditure. Expectations in relation to increases in public service pay need to be managed within the context of ensuring sustainable public finances and effective delivery of services.

Further, Ireland’s public debt, and the potential for rising interest rates, market volatility, Brexit-related matters and other factors to impact on the cost of servicing our public debt, could have consequent impacts on the appropriate fiscal stance for the economy. Sustainability metrics show that although declining, public indebtedness remains high in Ireland. These metrics include the absolute level of debt, debt interest payments as a share of revenue and debt to GNI\*.

The UK’s departure from the EU will have significant impacts for sectoral policy, public expenditure and the wider economy. Dedicated measures to prepare for Brexit were announced in Budgets 2017, 2018 and 2019, to ensure that Ireland is in the best possible position to respond to the challenges that Brexit will bring. However, the extent of the impacts and the nature of risks will depend on the basis on which the UK departs the EU. Given this risk in the external environment, it is all the more important that expenditure pressures arising from other areas, including demographic growth, capital investment needs and public demands for increased services, are managed, with unplanned additional expenditure controlled to ensure sustainability over the economic cycle.

### 3.3. Public Expenditure Pressures

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### 3.4. Global Slowdown, including changes to international trading environment

Ireland, as a highly open, export-focused economy is particularly sensitive to a slowdown in world trade and overall economic growth. Adverse external developments could impact the Irish economy through numerous channels, including through exchange rate fluctuations, reduced demand for exports, increased public and private sector borrowing costs, and deteriorating consumer and market sentiment. In addition, increased tariff and non-tariff barriers could create barriers to trade that would adversely affect the exports of Irish firms and MNCs operating in Ireland.

The outlook for the global economy has been worsening since the second half of 2018. The latest economic data, high frequency indicators and economic forecasts all point to the pace of global growth slowing. The IMF warned national governments to prepare for an ‘economic storm’ as global growth levels undershoot expectations. The IMF referenced ‘trade tensions and tariff escalation, financial tightening, uncertainty surrounding Brexit and an accelerated Chinese slowdown’ as the four crucial factors

undermining global economic growth<sup>1</sup>. In addition, the ECB cut its euro area growth projections for 2019<sup>2</sup>, signifying increased uncertainty regarding the overall economic outlook. Similarly, the World Bank predicts global growth to be moderate as economic slack dissipates, monetary policy accommodation in advanced economies is removed, and global trade gradually slows, and the OECD suggest that global GDP growth though strong, has peaked.

As a small open economy, and one in which multi-national corporations play an important role, Ireland is highly exposed to changes in global economic and trading conditions. The Euro Area accounts for the largest proportion of Ireland's trade. Some 29 per cent of our goods and services exports were destined for the Euro Area in 2017, compared to 15 per cent of goods and services exports destined for the UK in 2017. Having outperformed expectations in 2017, growth in the Euro Area has moderated. The European Commission's latest forecasts show the Euro Area growth rate in 2019 will be almost half the rate in 2017, reflecting growing uncertainties.

Momentum in major economies is slowing. Several advanced economies, such as Japan and Germany, experienced contractions in the third quarter of 2018. The Italian economy fell into a technical recession (two consecutive quarters of economic contraction) in the second half of 2018. The pace of growth in the Chinese economy has also slowed. UK economic growth continues to be modest, as uncertainty surrounding Brexit continues.

Furthermore, escalating trade conflicts are negatively affecting the growth outlook

<sup>1</sup> <https://www.worldgovernmentsummit.org/events/annual-gathering/session-detail/a-conversation-with-christine-lagarde>

<sup>2</sup> <https://www.reuters.com/article/us-ecb-policy-forecasts/ecb-cuts-growth-inflation-forecasts-idUSKCN1QO1O9>

in all countries. There are clear indications that trade tensions are beginning to impact growth with trade volumes, industrial production and manufacturing purchasing managers index (PMIs) declining. Leading indicators are also a cause for concern. The US yield curve, which has good signalling properties, is pointing to a slowdown in the US economy. Similarly, the OECD's Composite Leading Indicators point to moderating growth in the UK, the Euro Area including Germany, France and Italy, and in the OECD area as a whole.

Whilst there is a cyclical downturn in world demand, some of which is related to country-specific idiosyncratic factors (e.g. car industry in Germany, trade tensions etc.), there are also longer-term structural factors at play which have resulted in almost no expansion in globalisation over the last decade.

In a European context, the slowdown can be seen to be exacerbated by specific euro area vulnerabilities, for example, Italian borrowing costs continue to be elevated and a weaker euro area outlook combined with a possible global economic downturn could present further challenges with contagion to the euro area continuing to be a significant risk. The conclusion of Quantitative Easing (in terms of net bond purchases) will bring an end to a prolonged period of low interest rates, presenting a more challenging funding environment in the years ahead. Quantitative tightening may also filter through to the real economy vis-à-vis higher SME borrowing costs or mortgage interest rates, placing additional pressure on an already highly indebted household sector in the Irish context.

In addition to this, a slowdown in the US and Chinese economies, further intensification of trade tensions and a continued move



towards protectionist policies, increasing global indebtedness, changing global financial conditions, and the timing and nature of Brexit, amongst other uncertainties, pose risks to the global economic outlook going forward.

As mentioned, this slowing world growth momentum has important implications for Ireland's economy. Sensitivity analysis in the Budget 2019 Economic and Fiscal Outlook shows that an external shock of 1 per cent in world demand would reduce the level of output by around 0.3 per cent in the first year and by around 1.0 per cent after 5 years relative to a baseline projection. This deceleration would be reflected in the labour market and fiscal balances. This underlines the importance of improving the resilience of the economy by building fiscal buffers, maintaining appropriate control on expenditure, and focussing on competitiveness.

Overall, recent external developments suggest that there has been a noticeable deceleration in global economic activity, partly driven by adverse trade policy developments in some of Ireland's main trading partners.

### 3.5. International tax changes

Ireland's corporation tax regime is a major factor in creating favourable conditions in which Irish-based enterprises operate, as well as in ensuring a stable environment, transparency and predictability for inward investment. It continues to be an important part of Ireland's wider competitiveness offering to assist enterprises based in Ireland invest, innovate and compete internationally<sup>3</sup>. However, the high dependence of

Ireland's output and value added on Foreign Direct Investment (FDI) presents a vulnerability in terms of how anchored foreign multinationals are to the Irish economy, which is further complicated by the ongoing procedure of international tax reform.

Ireland has played an active role in implementing international tax reforms through the BEPS project, and is amongst the countries who have adopted early the country-by-country reporting for large firms. In addition, US tax reform should lead to some behavioural change and should eliminate the ability for US companies to pay very low tax rates on their global profits. Nevertheless, there is a strong narrative that large firms continue to have the ability to operate within a jurisdiction without paying an appropriate amount of tax. Work on international tax reform continues with additional proposals under discussion at EU and OECD level as to how digital companies are taxed. While an EU level digital tax appears less likely, the proposals currently under discussion at OECD have widened to encompass the broader economy. Ultimately, any reform which seeks to allocate greater taxing rights to users or customer location poses challenges for small countries like Ireland.

Ireland has taken significant actions on corporate tax over recent years and has introduced measures, both domestically and as part of the wider international effort, to tackle tax evasion and avoidance. The OECD's BEPS project, and the related Directives agreed at EU level, have again demonstrated that co-operative, multi-lateral agreements are the most effective means to facilitate international trade and counteract cross-border tax evasion. Changes to Irish corporate tax residency rules implemented in 2014 and 2015 have reduced opportunities for aggressive tax planning. The Irish Knowledge Development Box,

<sup>3</sup> National Competitiveness Council (2017) Ireland's Competitiveness Challenge 2017

introduced in 2015, has been approved by the Code of Conduct on Business Taxation Group and the OECD Forum on Harmful Tax Practices. The Government published an Independent Review of the Corporation Tax Code<sup>4</sup> in 2017 and carried out a consultation on the implementation of some of its recommendations<sup>5</sup>. The Department of Finance published its Corporation Tax Roadmap in September 2018 which lays out the next steps in Ireland's ongoing work on corporate tax reform. Work is also progressing on the transposition of the Anti-Tax Avoidance Directives (ATADs), with Controlled Foreign Company (CFC) rules and a new Exit Tax introduced in Finance Act 2018, and a public consultation conducted in early 2019 on implementation of the ATAD anti-hybrid and interest limitation measures.

It is important that Ireland's tax offering continues to be competitive for firms seeking an EU base for operations, and to attract and develop knowledge-based investment related to R&D and IP. As the international tax environment is changing rapidly, maintaining a good reputation has become increasingly important for the sustainability of corporation tax policy here in Ireland<sup>6</sup>. In this context, and in parallel with domestic reforms and restructuring, it is essential that the Government continues to be proactive in the ongoing international efforts to co-ordinate tax standards.

### 3.6. Reliance on multinational corporations and sectoral concentration

4 <https://www.gov.ie/en/publication/fa53d4-review-of-irelands-corporation-tax-code/>

5 <https://www.gov.ie/en/consultation/47e576-consultation-on-cof-fey-review/>

6 National Competitiveness Council (2017) Ireland's Competitiveness Challenge 2017; <http://www.competitiveness.ie/News-Events/2017/Competitiveness%20Challenge%202017.pdf>

As discussed in previous National Risk Assessments, Ireland's economy and employment are heavily influenced by a relatively small number of multinational corporations (MNCs), concentrated in a few enterprise sectors. While multinational investment has been transformative for the Irish economy, this also creates a particular vulnerability to changes in Ireland's attractiveness as a location for those companies, as well as to sector-specific changes or risks.

Foreign-owned multi-national corporations (MNC's) are concentrated in Ireland's most competitive export sectors, such as modern manufacturing and ICT, and account for a disproportionately large share of output, value-added and productivity<sup>7</sup>. The most recent available CSO data indicates that a small number of 'foreign-owned MNC dominated' sectors<sup>8</sup> accounted for 39 per cent of total Gross Value Added (GVA) in 2017<sup>9</sup>. While on one hand, this evidence shows how successful Ireland has been at attracting and retaining FDI, on the other it seems to correspond with much more modest performance amongst Irish-owned firms in the same sectors.

Despite several decades of FDI-led growth in Ireland, there are prevailing and increasing gaps in GVA, productivity (GVA per employee) and wages by ownership, with foreign-owned enterprises generally seeing much higher and increasing productivity and wages, relative to Irish-owned enterprises. Indeed, despite Ireland's strong productivity performance in an international context,

7 Dept. Finance, Patterns of Firm Level Productivity in Ireland, March 2018, see link: <https://www.gov.ie/en/publication/975f17-patterns-of-firm-level-productivity-in-ireland/>

8 The term 'foreign-owned MNE dominated' sector – used frequently in the paper – refers to a group of sub sectors where foreign-owned MNEs create more than 85 per cent of the sector turnover.

9 See link: <https://www.cso.ie/en/releasesandpublications/er/gvafm/grossvalueaddedforforeignownedmultinationalenterprisesandothersectorsannualresultsfor2017/>

research by the National Competitiveness Council<sup>10</sup> shows that most businesses have experienced a decline in productivity in recent years. The narrow base of enterprises in high value-added sectors, and within sectors, therefore disguises the majority of underperforming firms where productivity growth is stagnant or falling. The research suggests that the top 10 per cent of firms account for 87 per cent of value-added in manufacturing and 94 per cent in services; this highlights Ireland's exposure to firm-specific shocks.

The high dependence of Ireland's output and value added on FDI presents a vulnerability in terms of how anchored foreign multinationals are to the Irish economy. Many of the foreign-owned enterprises that operate in the Irish economy today have a long-standing and substantive investment in Ireland. However, Ireland's relationship with FDI is likely to be complicated by the ongoing procedure of international tax reform and rising anti-globalisation and protectionist sentiments, in particular in the US and UK (the two largest sources of FDI in Ireland), as discussed above. These developments present a risk to the sustainability of FDI in Ireland, and highlight the increasing exposure of the Irish public finances to potentially volatile corporate tax receipts.

There are many reasons why firms choose to invest in Ireland. However, the EU's Digital tax proposals for a common consolidated corporate tax base and the current discussions for further BEPS reform at OECD have the potential to significantly impact foreign investment flows in future. As mentioned above, the emergence of the prospect of a trade war between the world's largest economies could disrupt global trade and investment flows, which would signifi-

cantly impact Ireland as a small open economy highly dependent on foreign trade and investment.

In addition, the narrow portfolio of MNCs may give rise to negative spill-over effects to other sectors of the labour market. Industry sectors that are dominated by foreign-owned enterprises exhibited the highest average earnings in 2018, and these sectors also displayed the highest share of non-Irish workers in recent years. There is the potential of crowding out of employment in other sectors as more persons seek employment opportunities in MNC-dominated sectors. As these firms are typically located within a small number of urban areas, this risk could give rise to increasing pressures in rental markets and the wider construction sector. High concentration may also dampen competition and innovation.

It is worth noting that Irish corporation tax is highly concentrated, with the top 10 payers contributing close to 40 per cent of this tax. Reflecting the large number of small and micro enterprises in the economy, 75 per cent of corporation tax payers paid an amount less than or equal to €20,000; these account for slightly less than 2 per cent of total net corporation tax receipts. The rising share of corporation tax receipts within overall taxation (circa 19 per cent of total revenue in 2018) and the concentration of receipts within a small number of firms poses a significant risk to the public finances<sup>11</sup>.

The 2018 performance of the corporation tax heading was exceptionally strong which in turn helped to offset under-performances in other headings. About two fifths of this final corporation tax over-performance was not anticipated on Budget day which underscores the inherent volatility of this

<sup>10</sup> National Competitiveness Council, Productivity Statement 2018, see link: <http://www.competitiveness.ie/Publications/2018/NCC-Productivity-Statement-2018.html>

<sup>11</sup> Department of Finance, Annual Taxation Report, February 2019

tax heading in either direction. However, it should be noted the surge in corporation tax receipts from 2015 onwards has occurred in tandem with a surge in corporation profitability since then. This is very much consistent with data from the Revenue Commissioners, which show that trading profits (excluding balancing charges) increased by €63 billion (66.5 per cent) between 2014 and 2016 (latest available data).

While corporation tax income volatility has been positive to date, in a scenario where economic growth slows or adverse international tax and/or trade developments reduce corporate tax income, Ireland's current finances could encounter difficulties. In this context, there is a risk of the State becoming dependent on volatile sources of national income.

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# 4. Social Risks

- 4.1. Capacity of Higher and Further Education System
- 4.2. Skilled Labour Shortages
- 4.3. An Ageing Population including Pensions and Health System Challenges
- 4.4. Impact of Social Media on Public Debate
- 4.5. Social Cohesion including Perceptions of Rural and Regional Imbalances
- 4.6. Migration and Integration

### 4.1. Capacity of Higher and Further Education System

An adequately resourced, flexible, responsive and aligned Higher Education (HE) and Further Education & Training system has a crucial role to play in sustaining enterprise growth in Ireland. Skills are the global currency of 21st century economies, and many countries are placing a major focus on talent development and investment in education and training. Research commissioned by the Irish Universities Association (IUA), and published in April 2019<sup>1</sup>, found that the Irish economy benefited by €8.9 billion last year from Ireland's seven universities, with the universities generating €386 million per annum in export earnings and €1.5 billion in R&D impacts.

Ireland's Higher Education Institutions (HEIs) have been central to differentiating Ireland's talent pool in an international context, aiding the establishment of a successful entrepreneurship ecosystem, growing indigenous multinational enterprises, and continued attractiveness for foreign direct investment. Ensuring this alignment between enterprise skills needs and graduate output helps drive in-firm productivity, innovation and ultimately the competitiveness of the Irish economy.

#### Any diminution in resources for the HE sector

1 Indecon International Economic Consultants; [https://saveourspark.ie/wp-content/uploads/2019/04/Delivering\\_for\\_Ireland\\_An\\_Impact\\_Assessment\\_of\\_Irish\\_Universities\\_2019.pdf](https://saveourspark.ie/wp-content/uploads/2019/04/Delivering_for_Ireland_An_Impact_Assessment_of_Irish_Universities_2019.pdf)

would, however, pose a challenge to this continued role, placing as it would a strain on the sector's potential to respond with flexibility and agility to the evolving skills needs of the economy - including to the required scale - as well as the supporting role played by Industry-Academia collaboration in driving the innovation of indigenous and foreign-owned enterprises, and in turn the ability of Irish-based firms to compete in overseas markets.

Recent years have seen a worrying downward trend of Irish universities in global rankings, attributed mainly to post-recession under-investment in the sector, and an increase in student enrolment numbers<sup>2</sup>. There has also been a significant increase in the number of students enrolling for a university education, with over 120,000 students enrolling in 2017, up 40 per cent from 2008<sup>3</sup>.

Notwithstanding that significant progress has been made in recent budgets in increasing investment in HE as well as other developments such as a new Human

2 It should be noted that while rankings can impact on international perceptions of universities, they represent a perception of quality in the sector only.

3 As per Higher Education Authority statistics, available at: <https://hea.ie/statistics-archive/>

Capital Initiative<sup>4</sup>, there is a risk around failing to sustain these levels of re-investment in future budgetary cycles, to ensure the quality of the HE sector is maintained, and to accommodate the strong demographic growth that is predicted. Recently published statistics estimate that demand for third level places will increase each year up to 2030, rising from the base level of 184,000 (in 2017) to peak at over 220,000 students by 2030. The continued re-investment in HE, combined with the development of a longer-term sustainable funding model, will be necessary in order to continue to aid the growth and quality of our HE system in the years ahead.

The Department of Education and Skills is currently engaged in a procedure to identify a more sustainable funding model for HE in the years to come, including an economic analysis of the three policy options identified by the Expert Group on Future Funding in 2016. This analysis will assist the Joint Oireachtas Committee on Education and Skills in trying to build political consensus around the most appropriate future funding model for higher education.

## 4.2. Skilled Labour Shortages

As the economy continues to expand, increasing the participation rate and sourcing skilled international talent will be important supplements necessary in the context of growing labour market demand as well as existing skills shortages in specific areas. Despite Ireland's recovery in the labour market, the participation rate continues to be below its 2007 peak level<sup>5</sup> and in fact,

the overall participation rate has continued to be broadly flat since 2011 and is at the same level as the participation rate in the early 2000s. In addition, while sourcing international talent will also be necessary to overcome capacity constraints in the short term, in the post-recession world it is likely to be more difficult to attract foreign talent. Ireland must compete with other countries to attract both high and intermediate level skilled labour.

Risks around skills shortages in the area of Digital/ICT are particularly pertinent. The availability of appropriate skills for developing, implementing and using ICT, as well as general Digital skills, are an important condition for the competitiveness and innovation capability of the Irish economy. The strong European competition for skills, especially in a region where there is free movement of labour, makes it important for Ireland to develop, attract and retain the right high level, and intermediate level Digital and ICT skills to satisfy the demand across the Irish economy. It is likewise imperative for Ireland to be able to continue to attract and serve the R&D activities, high tech manufacturing and global services companies that are important for Ireland's economic growth.

The education and training system, encompassing both the HE sector and Further Education and Training Sector, will play a crucial role in tackling existing and emerging skills needs, providing education, training and skills development opportunities to new entrants as well as ongoing upskilling and reskilling of existing labour market participants. In addition to the risks to jobs from automation, the new digital world of work will also create jobs not even thought of today. We need to ensure our education and training system is sufficiently adaptable, and appropriately resourced, to meet the

<sup>4</sup> Budget 2019 also announced a new Human Capital Initiative that will involve investment of €300 million in higher education over the 5 year period from 2020 to 2024, with €60 million being made available in each of those years.

<sup>5</sup> ESRI Quarterly Economic Commentary, Winter 2018. See link: <https://www.esri.ie/system/files/media/file-uploads/2018-12/QEC2018WIN.pdf>

needs of the future.

Continued investment to develop talent and skills to meet emerging skills needs is therefore important. This is particularly evident in terms of the full implementation of Project Ireland 2040, to ensure additional economic costs are not incurred from capacity issues in this context. There is a need to continue cooperation between providers and employers to ensure that training is meeting emerging skills needs.

### 4.3. An Ageing Population including pensions and health system challenges

Ireland faces significant risks in terms of an ageing population. The share of population aged 65 and over is projected to increase from one in eight to one in six by 2030, and the number of people aged 85 and over is projected to almost double<sup>6</sup>. Older age cohorts tend to be the highest users of most health and social services and have more complicated care needs. The results from Census 2016 show that Ireland's population increased from 4.588 million in 2011 to 4.762 million in 2016. The natural population increase was 196,100 with net outward migration estimated at 22,500<sup>7</sup>. Planning for demographic changes in the population so resources and services can be directed where needed is difficult, and the uncertainties associated with Brexit will only accentuate this problem.

Notwithstanding the uncertainties associated with population projections, two related issues are highly probable. The first is that the number of people aged over 65 will

continue to grow<sup>8</sup>. The second is that the dependency ratio - i.e., the ratio of persons under 15 and over 65 to persons of working age (15-64) - will increase into the future, in the absence of improbably large immigration of people of working age, which will impact on areas such as education, child income supports, healthcare, long-term care, transport, employment, housing and pension provision. Each of these will be an area of acute concern but pensions, and challenges for the health system may be among the most serious.

The European Commission estimates that pension-related expenditure will increase by 4 percentage of GDP points by 2070, when taking only demographic factors into account<sup>9</sup>. While Ireland has a comparatively young population relative to other European countries, it nevertheless faces the same longer-term ageing challenges. A leading issue in this regard is the sustainability and coverage of pensions in Ireland. State pensions account for the single largest block of social welfare expenditure, and the Irish pension system faces multiple - very serious demographic, adequacy and sustainability challenges. The task of financing increasing pension spending will fall to a diminishing share of the population as projections indicate the ratio of people of working age to every person aged over State pension age will reduce from its current rate of 4.9:1 to 2.3:1 over the next 40 years. This presents significant funding challenges with the Social Insurance Fund forecast to accumulate a potential deficit of up to €335bn<sup>10</sup> over the next fifty years. Notwithstanding the

<sup>6</sup> ESRI, 2017. Available here: <https://www.esri.ie/system/files?file=media/file-uploads/2018-02/RS67.pdf>

<sup>7</sup> Central Statistics Office (2016) Census 2016 Summary Results – Part 1 (Dublin: CSO).

<sup>8</sup> The Central Statistics Office estimates that the number of people aged over 65 will almost treble to 1.45 million people between 2011 and 2046.

<sup>9</sup> European Commission (2019) European Semester Country Report Ireland. Available here: [https://ec.europa.eu/info/sites/info/files/file\\_import/2019-european-semester-country-report-ireland\\_en.pdf](https://ec.europa.eu/info/sites/info/files/file_import/2019-european-semester-country-report-ireland_en.pdf)

<sup>10</sup> Department of Employment Affairs and Social Protection 2017 Actuarial Review of the Social Insurance Fund 2015. Available here: <http://www.welfare.ie/en/downloads/actrev311215.pdf>



gradual increase in State pension age from 65 in 2010 to 68 in 2028, it is estimated that the number of persons at State pension age and older will more than double from 586,000 in 2015, to 1,402,000 by 2055.

In addition, Ireland also has a very low level of private pension coverage, with approximately only 35 per cent of the private sector-employed population covered by a supplementary pension. This suggests that a high percentage of the working population is not saving enough, or is not saving at all, for retirement, reflecting a significant risk both in terms of the funding and sustainability of pensions in Ireland.

A risk also exists in how our workplaces will adapt and encourage older people to continue participating in the workforce. Whilst a significant number of people feel retirement comes too early and wish to continue to work, it is likely that this cohort may require specific assistance or adaptations. Older people may wish to reduce levels of responsibility or work patterns in their roles, and this will require an “Age Friendly” approach by employers to utilise and enable this cohort effectively. Employed people over 50 are less likely to avail of or have access to lifelong learning opportunities; less than one in ten people (8.0 per cent) aged 50+ participate in informal education and training<sup>11</sup>. Reduced opportunity to maintain and increase skills levels will also reduce the likelihood of older people staying in the workforce beyond the traditional retirement age. While the employment rate for adults aged 50-64 has increased in the years 2014-2016, the employment rate for 65+ continues to be even<sup>12</sup>.

#### The significant increase in the number

<sup>11</sup> Healthy & Positive Ageing Initiative – Positive Ageing National Indicators Report (2016)

<sup>12</sup> Healthy & Positive Ageing Initiative – Positive Ageing National Indicators Report (2016)

of people in older age cohorts will create significant additional demand for a range of health and social care services, including nursing home care, homecare, and medicines.

In the context of the health system, Irish health expenditure continues to be well above the OECD average, notwithstanding our young population<sup>13</sup>. According to the European Commission’s 2018 Ageing Report, long-term care expenditure will see an increase by 1.9 percentage points of Irish GDP between 2016 and 2070, with an increase of 1 percentage point of GDP for healthcare spending, both above EU average expenditure growth.

Future healthcare demand and the cost of healthcare provision will be impacted by a variety of factors including demographics; increasing incidence of non-communicable diseases (i.e. heart disease, stroke, diabetes, cancer, chronic lung disease, and dementia); lifestyle risk factors; changes to modes of healthcare delivery (e.g. ambulatory emergency care reducing admissions from Emergency Departments, shift to day case surgery); availability of new drugs and other technological developments; changes in the socio-economic structure of the population (education level, income, employment) and changes in people’s expectations of health services; proportion of the population with private health insurance; and supply-induced demand (e.g. additional funding allocated to service provision).

The major chronic diseases of cardiovascular disease, cancer, diabetes and chronic lung disease already account for a significant proportion of healthcare activity, including 40 per cent of hospital admissions

<sup>13</sup> Houses of the Oireachtas (2017) Irish Health Expenditure: the comparative context, available at: <https://www.oireachtas.ie/parliament/media/housesoftheoireachtas/libraryresearch/lrsnotes/irish-health-expenditure---the-comparative-context.pdf>

and 75 per cent of hospital bed days. In addition, the population with lifelong disability who are ageing is also increasing, leading to additional demand for residential care places, and to increasing complexity and cost of care for those receiving disability services<sup>14</sup>. Some 60 per cent of those aged over 50 report having at least one chronic condition. The level of multi-morbidity is increasing with 18 per cent of adults over 50 having two or more chronic conditions. It is estimated that within the next decade, the number of adults with chronic diseases will increase by around 40 per cent, with relatively more of the conditions affecting those in the older age groups. The economic burden of healthcare expenditure regarding chronic diseases is considerable, not only for the health system but also in terms of families and society as a result of reduced income, early retirement, an increased reliance on social care and welfare support and diminished productivity and absenteeism.

At the same time, there are difficulties attracting and retaining suitably qualified healthcare workers to meet demand. Our workforce is ageing, with 21 per cent aged 55 years or over. The European Commission has estimated a potential shortfall, within the EU, of around 1 million health workers by 2020. Global developments in technology will also impact on our workforce with unpredictable consequences, including the potential for new roles and skill development but also the automation and redundancy of other roles.

#### 4.4. Impact of Social Media on Public Debate

Social media has become an integral part

<sup>14</sup> Working Group 1, Transforming Lives (2018) Report on Future Need for Disability Services. Department of Health. <https://health.gov.ie/wp-content/uploads/2018/06/Working-Group-1-Report-on-future-need-for-disability-services.pdf>

of how billions of people around the globe connect and communicate. While social media platforms offer many benefits, the relative lack of oversight of both social media users and their data has led to a greater risk of the spreading of disinformation or so-called 'fake news', with associated challenges for and risks around regulatory systems readily apparent. The targeting of social media users with political advertisements and sponsored news stories to influence their beliefs, opinions and possibly voting intentions, for example, is of considerable concern. Balanced and representative discourse and debate is vital to ensure the integrity of any referendum or electoral process. There is also a risk that the multiplicity of information platforms could lead to more polarised societal viewpoints.

Large-scale disinformation<sup>15</sup> or 'fake news' campaigns spread online by malicious actors are a high-risk issue for society globally, including Ireland. There is international consensus that the risk of public harm is substantial when online disinformation is designed to influence public debate on political issues and attempt to influence or manipulate the outcome of electoral processes. A major driver of this risk is that large numbers of citizens now get their news from social media platforms; this has clear implications for the generation and potential impact of online disinformation and how it is rapidly disseminated. Results of a 2018 Eurobarometer Survey indicate that levels of awareness of the risk are high in Ireland - 81 per cent of Irish internet users were found to be concerned about disinformation or misinformation online

<sup>15</sup> Disinformation is defined by the EU as: "...Verifiably false or misleading information that is created, presented and disseminated for economic gain or to intentionally deceive the public, and may cause public harm. Public harm comprises threats to democratic political and policy-making processes as well as public goods such as the protection of EU citizens' health, the environment or security. Disinformation does not include reporting errors, satire and parody, or clearly identified partisan news and commentary."

during the pre-election period<sup>16</sup>.

A significant number of recent election campaigns across Europe and elsewhere have been characterised by substantive reports of apparent deliberate attempts to manipulate outcomes using a variety of different means including online disinformation. In certain jurisdictions, official investigations into such alleged activities continues to be ongoing.

Ireland is also vulnerable to this risk, as was seen, for example, during the referendum in May 2018 on the Thirty-sixth Amendment of the Constitution Bill 2018. The Transparent Referendum Initiative (TRI)<sup>17</sup> built a public, searchable database of political ads being targeted at Irish voters related to the referendum and information on the social media accounts promoting them, and found that ads from untraceable groups were used to 'mislead voters, discredit political figures and groups, mimic official or neutral information sources, gather voter data and share disturbing images'.<sup>18</sup> In its first published Report, the Interdepartmental Group (IDG) on the Security of Ireland's Electoral Process and Disinformation found that while risks to the electoral process in Ireland are relatively low, taking into account the mitigating factors already in place, a more substantial risk is posed by the spread of disinformation online and the risk of cyber-attacks on the electoral system. This is in line with EU findings and recent international experience. Given the rapid pace of technological change, it is therefore important that policy

responses are comprehensive, continuously assess the phenomenon of disinformation, and adjust policy objectives in light of its evolution.

Recognition at an EU level of the significant threat of online disinformation to democracy is also clear, as evidenced by various counter measures being progressed, including an Action Plan against Disinformation, launched in December 2018, which sets out measures to tackle disinformation in a coordinated approach among the EU institutions and in cooperation with Member States. Measures include a Rapid Alert System (RAS) – an information-sharing mechanism on disinformation activities; an EU-wide voluntary Code of Practice on Disinformation; and supporting an independent network of fact-checkers, media literacy initiatives and tools to promote quality journalism.

In the context of data protection, the disclosure of harvesting of third-party data and its use in targeting certain groups and cohorts, as well as ongoing investigations and commentary in both the US and UK around election manipulation by third parties (including foreign actors), underline the need both for greater protection of citizens' privacy rights, and greater transparency from organizations on how they are using any personal data they collect. The General Data Protection Regulation (GDPR), which came into effect across the European Union in 2018, is designed to achieve these goals. In addition, the Data Protection Act 2018 includes a provision to limit the scope of any processing of personal data revealing political opinions to prevent misuse.

These wider concerns also raise broader questions around the sustainability of traditional media, which have been viewed hitherto as custodians of the public interest,

16 Special Eurobarometer 477 Democracy and Elections, European Union, 2018. p.56; <http://ec.europa.eu/commfrontoffice/publicopinion/index.cfm/survey/getsurveydetail/instruments/special/surveyky/2198>

17 The TRI is a volunteer-led, civic initiative that was established to advocate for increased transparency of digital advertising during electoral campaigns in Ireland. See <http://tref.ie/>

18 Policy Proposals for regulating online advertising - Transparent Referendum Initiative – June 2018 <https://docs.google.com/document/d/1zGdjWuily9gms7NkHjYRXyYbR7Vdn3OzBeCGrg8uRvQ/edit>

and their role both in Ireland and globally. A thriving, independent media is essential to a healthy society, especially in this increasingly online era, where risks to traditional print media and their audiences and readership levels are becoming increasingly apparent.

#### 4.5. Social cohesion including Perceptions of Rural and Regional Imbalances

The most recent recession, and the consequent need to stabilise the public finances has raised concerns, aired in other countries also, about income distribution and inequality. According to the OECD, growing income inequality can have a negative effect on social cohesion and impede economic growth<sup>19</sup>. The OECD has said that economic recovery since 2010 in the OECD area has not led to inclusive growth, and has not reversed the trend of increasing income inequality<sup>20</sup>.

As discussed above (Section 2.3), the global trend of rising populism and anti-establishment sentiment, evident in France, Poland, Hungary and Austria among others, is further contributing to risks around this erosion of social cohesion and trust in institutions. This international populism can be seen as partly rooted in great divides, such as those based on age, geography and wealth, as well as a phenomenon of increasing urbanisation.

In line with developments in other countries, we are seeing increasing perceptions of regional and rural imbalances in Ireland. Issues arising from growing inequality, coupled with a rise in populism and perceptions of regional or geographic differences, may

be further exacerbated by the role of social media in public debate, discussed further in Section 6.3. Conversely, in the context of social media, there is potential for an increasing sense of isolation and exclusion for those who may not have the necessary resources or skills in terms of access to social media and services delivered online, again with a rural dimension in the Irish context.

In Ireland, taxation and social transfer policies have been effective in offsetting market income inequality. In 2017, transfers reduced the at-risk-of-poverty rate from 32.3 per cent to 15.7 per cent, a poverty reduction effect of 51.4 per cent. Ireland is one of the best performing EU member states in this regard, underlining the effectiveness of social transfer policies and taxation in offsetting income inequality<sup>21</sup>. Similarly, the quintile share ratio, i.e. the ratio between total incomes received by the top 20 per cent of earners compared to the bottom 20 per cent of earners, stood at 4.8 in 2017<sup>22</sup>, slightly above the 2016 figure of 4.7. This figure is, however, down from 5.1 in 2012 at the height of the economic downturn. In recent years there has been some improvement in measures of poverty and inequality, with the Gini coefficient<sup>23</sup> for disposable income falling below the EU average in 2015, and falling further in 2016 to 29.3 (Figure 1 below). Nonetheless, measures of consistent poverty remained substantially above the targets set for 2020 and despite the considerable impact of social transfers on poverty, social transfers alone will not resolve issues of income distribution and inequality. Migration, discussed in Section 4.5 below,

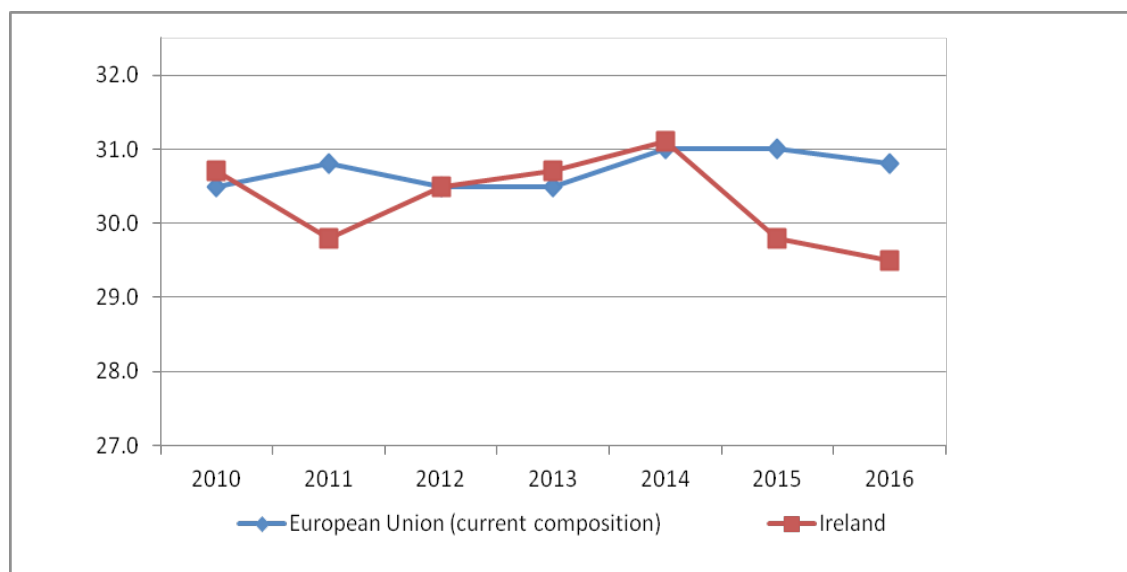
<sup>19</sup> OECD (2015) In it Together: Why Less Inequality Benefits All (Paris: OECD).

<sup>20</sup> OECD Income Inequality Update (Paris: OECD) <http://www.oecd.org/social/OECD2016-Income-Inequality-Update.pdf>

<sup>21</sup> <http://cso.ie/en/releasesandpublications/er/silc/surveyonincomeandlivingconditions2016/>

<sup>22</sup> <https://www.cso.ie/en/releasesandpublications/ep/p-silc/surveyonincomeandlivingconditionssilc2017/introductionandsummaryofresults/>

<sup>23</sup> The Gini coefficient measures the extent to which the distribution of income among individuals or households within an economy deviates from a perfectly equal distribution. A Gini coefficient of zero represents perfect equality.

**Figure 1: Gini coefficient Ireland versus EU, 2010-2016**

Source: Eurostat

can be another factor and potential challenge concerning the erosion of social cohesion. The continued successful integration of second and third generation immigrants in Ireland will be important in ensuring that risk does not materialise in an Irish context. Social groups that continue to be disproportionately affected by poverty include jobless households, those living in social housing (often associated with spatial concentrations) and lone-parent households (mainly female-headed) across the lifecycle, with children more likely to be in poverty than adults. Eurofound, OECD, ILO, NESCI and the ESRI have all commented on the fact that the route out of social exclusion is promotion for individuals to be in work, and that enhanced training and education can be beneficial in achieving this. Although the labour market has seen significant recovery in recent years, risks persist in this area in terms of access to and the quality of work. Access to stable employment continues to be a challenge, in particular for young people, and the use of temporary and precarious employment practices by industry also continues to be a concern, although legislation has been

introduced to deal with this in the form of the Employment (Miscellaneous Provisions) Act 2018<sup>24</sup>.

Another consequence of the recent recession in Ireland was a damaging effect on public trust. The OECD notes that the decline of people's trust in institutions in the aftermath of the global financial crisis has been a "key policy concern" in recent years. Furthermore, lower public trust in institutions limits the capacity of Governments to implement their policies, and has been linked to increasing dissatisfaction with democracy.<sup>25</sup> The report also reflects the extent to which the population feels it has a say in what government does. According to the report, Ireland is below the OECD average in terms of the percentage of the working-age population who feel that they have a say in what the government does<sup>26</sup>. The 2019 Edelman Ireland Trust Barome-

<sup>24</sup> The Employment (Miscellaneous Provisions) Act 2018 was signed into law on 25 December 2018.

<sup>25</sup> OECD How's Life 2017 [https://read.oecd-ilibrary.org/economics/how-s-life-2017\\_how\\_life-2017-en#page186](https://read.oecd-ilibrary.org/economics/how-s-life-2017_how_life-2017-en#page186)

<sup>26</sup> OECD How's Life 2017 [https://read.oecd-ilibrary.org/economics/how-s-life-2017\\_how\\_life-2017-en#page185](https://read.oecd-ilibrary.org/economics/how-s-life-2017_how_life-2017-en#page185)

ter finds that the media is the least trusted institution in Ireland, mainly driven by a distrust in social media (27 per cent) rather than traditional media (67 per cent), however trust has risen slightly since 2018. The most trusted institutions in Ireland are NGOs, which also saw a modest rise in trust since 2018. Globally, trust in employers has risen to 75 per cent, which is shared by Irish respondents to the survey as 69 per cent of Irish employees have trust in their employer. While trust in Government, the media, and NGOs rose between 2018 and 2019, trust in business decreased marginally, and Ireland is among 20 of the 28 countries surveyed who displayed overall distrust in institutions. The Trust Barometer also highlights that 64 per cent of people surveyed in Ireland are worried about fake news being used as a weapon. Overall, the Edelman report notes that distrust is at a record high globally<sup>27</sup>.

As mentioned, there is an increased risk to social cohesion, and of undermining the work done in recent years in this area, should perceptions of rural and regional imbalance persist or increase. In a growing economy, there can be a perception that rural and regional areas are not benefitting equally from the economic prosperity taking place, including job creation. There can be a perception of a focus on job creation within certain cities, and therefore that the recovery and benefit is more urban centric, with investment in larger infrastructure projects located in these urban areas, to the detriment of rural communities. Whether this perception is a reality can be challenged by evidence. However, the perception itself, which can be strongly felt, can lead to a reduced confidence of rural and regional dwellers and entrepreneurs, and can therefore contribute to an increased

risk of reduced social cohesion. In line with developments in other countries, for example including Brexit-related discourse in the UK, and similar trends in the US, public discourse in Ireland exhibits signs that this perception exists, and this risk must therefore be managed and mitigated by increasing public awareness through clear, positive, and evidence-based messaging.

In addition, and as mentioned above in the Economic Risks section, in the context of the economic impacts of Brexit, we know that some sectors will be harder hit than others, and that for these sectors – the agri-food and fisheries, and indigenous manufacturing sectors – their regional spread is more concentrated in rural regions, which have had a comparatively slower post-crisis recovery than the Dublin region. As discussed in Section 6.2 on Disruptive Technologies, a study by the ESRI found that at a regional level, Dublin is the region at least risk from automation (2 per cent at high risk, mainly in Retail and Hospitality sectors), while the Midlands region (5 per cent at high risk and 64 per cent at medium risk) and Border region (5 per cent at high risk and 62 per cent at medium risk) are the regions' most at risk. In addition, actions needed to tackle climate change could potentially impact more adversely on rural and regional areas over the coming years. The differing levels of impact from Brexit, Climate Change, and other risks on regional, rural and Gaeltacht areas, must therefore remain to the forefront as we tackle these challenges.

#### 4.6. Migration and integration

Migration has become one of the most contentious and contested issues in political debates across many countries in recent years. It played a significant role in the UK's

<sup>27</sup> Edelman 2019 Trust Barometer [https://www.edelman.com/sites/g/files/aatuss191/files/2019-02/2019\\_Edelman\\_Trust\\_Barometer\\_Global\\_Report\\_2.pdf](https://www.edelman.com/sites/g/files/aatuss191/files/2019-02/2019_Edelman_Trust_Barometer_Global_Report_2.pdf)

referendum on Brexit, it has fuelled the rise of extreme nationalist political parties in some countries and it has caused other countries to re-establish some form of border controls within Europe. Even though Ireland's location in Europe means that to date it has not felt a direct impact from many of these pressures, this should not induce complacency about the issues that migration and integration can generate, particularly in the context of continuing pressures from the Mediterranean and Africa, and the sheer volumes seeking to migrate into the EU.

In addition, as mentioned in Section 1.1 above, Brexit introduces new potential risks around immigration including an increase in illegal movement of third country nationals into Ireland from the UK, as well as legal divergence possibilities regarding asylum matters. As Brexit evolves there may also be significant labour market implications for Ireland. To give one example, the expansion of the construction sector in Ireland may attract many Eastern European Construction workers currently based in the UK. This has both positive and negative implications for Ireland, depending on the scale of immigration of such workers from the UK.

In terms of internal integration risks, Ireland has changed from an ethnically homogeneous society to a much more multi-ethnic one in slightly over a generation, a transformation reflected in rural as well as urban communities. Census 2016 shows that 810,406 people or 17.3 per cent of the population were born outside the State (this figure includes people of Irish nationality who were born outside the State, including in Northern Ireland), and that 535,475 people or 11.6 per cent of the population do not hold Irish nationality<sup>28</sup>. While this

represents a small decrease on the 2011 Census<sup>29</sup>, it represents an increase of almost 139 per cent in the number of people without Irish nationality since 2002, the first time the Census included a question on nationality<sup>30</sup>.

This brings with it a need to be responsive to the changing nature of society, for example in terms of the needs of a now multilingual society and the potential for language to become a barrier in accessing Government communications and services.

Structural risks, including barriers to migrants accessing employment or progressing within the workplace, thereby creating potential social exclusion, and increased incidences of racism against migrant communities, have been identified by numerous sources. These include reports by the Economic and Social Research Institute (ESRI) and the European Agency for Fundamental Human Rights (FRA), the Migrant Integration Strategy Monitoring and Coordination Committee, Government Departments and stakeholders. Ireland has a Migrant Integration Strategy (2017-2020), led by the Department of Justice and Equality, which defines the actions to be taken on integration during that period.

The increase in the immigrant population in Ireland has happened in a very short time and without any of the upheaval that has occurred in other countries with such dramatic movements of the population. Failure to maintain this level of cohesion, especially as second and third generation migrant communities emerge, represents a significant risk of negative consequences similar to those experienced by other countries.

28 Central Statistics Office (2016) Census 2016 Summary Results – Part 1 (Dublin: CSO).

29 The 2011 Census showed that 544,357 people, or 12 per cent of the population, did not have Irish nationality

30 In the 2002 Census, 224,261 people were recorded as not having Irish nationality.

# An Overview of Specific Strategic Risks

## Irish GDP 10 Years Post Brexit



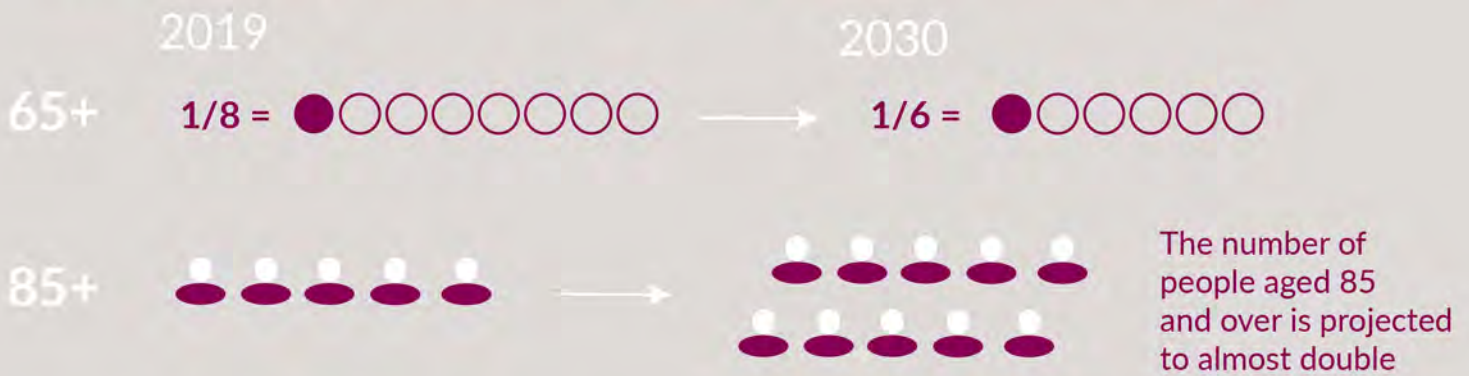
Compared to a no-Brexit baseline, 10 years after Brexit, Irish GDP would be 2.6% lower in a deal scenario, 4.8% lower in a no deal and 5% lower in a disorderly no deal

## Impact of Brexit



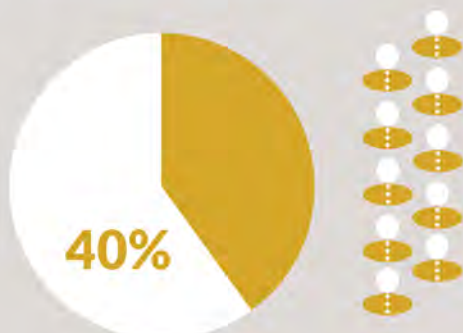
The UK accounted for 11% of total goods exports in 2018 and 22% of total goods imports.

## An Ageing Population including pensions & health system challenges

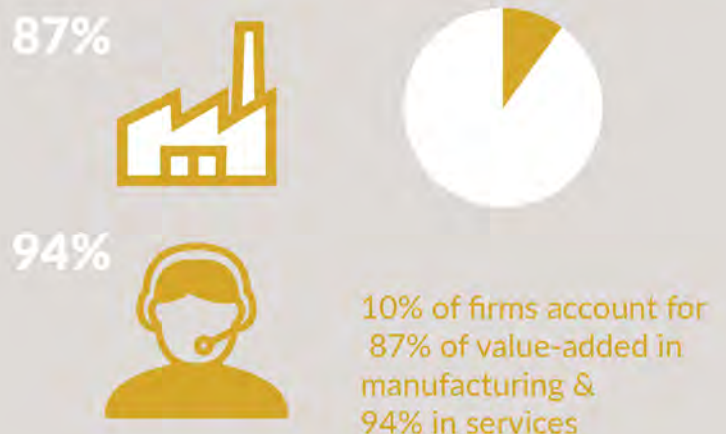


## International Tax Changes

The top 10 payers contribute 40% of Ireland's corporation tax.



## Reliance on multinational corporations' & sectoral concentration



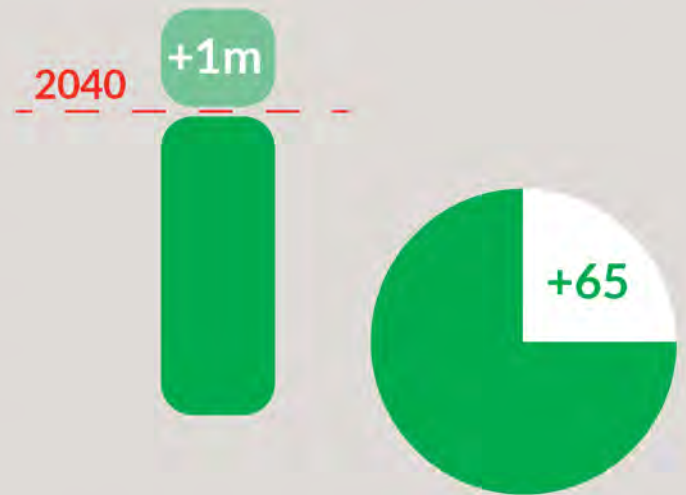


## Climate Change & Biodiversity



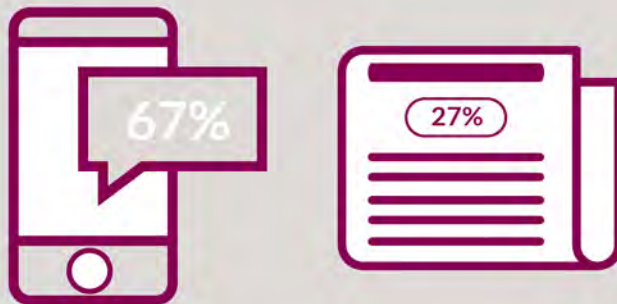
The Biodiversity Indicator Survey for 2017 states that 91 per cent of our habitats designated under EU law are “inadequate” or of “bad” status

## Delivery of Public Infrastructure



By 2040 an additional one million people will live in Ireland, almost a quarter of whom will be over 65 (double the current levels).

## Social cohesion including perceptions of Regional and Rural imbalances



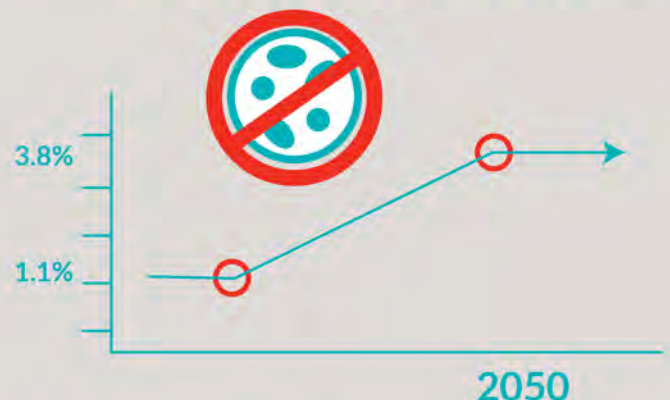
The 2019 Edelman Ireland Trust Barometer finds that the media is the least trusted institution in Ireland, mainly driven by a distrust in social media rather than traditional media.

## Impact of disruptive technology trends on jobs and the economy



14% of jobs in OECD member countries have a high probability of being automated.

## Anti-Microbial Resistance



Anti-microbial resistance would exert a drag on global GDP of between 1.1% and 3.8% as well as costing \$100 trillion and killing 10 million people over that period.



# 5. Environmental Risks

- 5.1. Climate Change & Biodiversity**
- 5.2. Ensuring an affordable, sustainable and diverse energy supply**
- 5.3. Delivery of Public Infrastructure**
- 5.4. Food safety**
- 5.5. Supply and Affordability of Housing**

### 5.1. Climate Change & Biodiversity

Observations show that Ireland’s climate is changing and the observed scale and rate of change is consistent with regional and global trends. The most immediate risks to Ireland which can be influenced by climate change are predominantly those associated with changes in extremes, such as floods, precipitation and storms. However, future impacts of climate change are also predicted to include sea level rise; water shortages in summer; wildfires; and adverse impacts on water quality. Indeed, sea level rise is already being observed and is projected to continue to rise into the future, which will increase both flood and erosion risk to our coastal communities and infrastructural assets, as well as threaten coastal squeeze of inter-tidal habitats. In addition, it is projected that the number of heavy rainfall days per year may increase, which could lead to an increase in flooding incidents. Some effects of climate change are inevitable and increased severe weather poses a risk to lives, livelihoods, property and environments. It will be vital to take prudent precautionary steps now to build resilience into our society and systems, shore up vulnerabilities and develop strategies to cope with conditions that may arise in the future.

There are significant threats to Ireland’s biodiversity, with the Biodiversity Indicator Survey for 2017 stating that 91 per cent of our habitats designated under EU law are

“inadequate” or of “bad” status<sup>1</sup>, and trends in the status of threatened species, insects and birds all registering as at intermediate risk. Headline results from the 2018 Living Planet Report, published by the World Wildlife Fund, reveal that Earth is currently losing biodiversity at a rate seen only during mass extinctions. A more recent biodiversity report from the UN, published in May 2019, outlined the impact of humans on nature and found that nearly one million species is at risk of becoming extinct within decades, and it noted that current efforts to conserve the earth’s resources will likely fail without radical action<sup>2</sup>. This requires Ireland to develop a comprehensive series of measures to maintain and where necessary restore these habitats. As a Party to the UN Convention on Biological Diversity, Ireland is also committed to prepare Action Plans towards the achievement of the Convention’s targets. Implementation of the National Biodiversity Plan (2017-2021) will be a fundamental part of tackling these risks, and the National Development Plan also recognises the need for increased funding for biodiversity.

Irish biodiversity is highly vulnerable to the impacts of climate change and has a low adaptive capacity compared to other vulnerable sectors. Climate change has major indirect impacts on Irish biodiversity

<sup>1</sup> <https://indicators.biodiversityireland.ie/>

<sup>2</sup> <https://www.un.org/sustainabledevelopment/blog/2019/05/nature-decline-unprecedented-report/>

through its interaction with other stressors, in particular habitat fragmentation and loss; over-exploitation; pollution of air, water and soil; and spread of invasive species.

In terms of Climate Change Mitigation, there is an economic rationale for taking early action to mitigate greenhouse gas (GHG) emissions, invest in renewable energy, improve energy efficiency and implement adaptation measures to the effects of climate change. The cost of inaction exceeds the cost of action and this cost differential will rise steeply with time. It will be critical to take action on climate change, as set out in the National Development Plan, the National Adaptation Framework and the new All of Government Plan on Climate Disruption, to avoid threats to human health, economic development, property, infrastructure and ecosystems, as well as reputational damage.

Potential costs to the exchequer include those associated with not achieving compliance with our EU GHG emissions and renewable energy targets to 2020 and 2030. There is a range of economic risks associated with failing to price the cost of carbon into our economic model. Providing appropriate long-term price signals on the cost of carbon will be important in order to inform medium to long term investment decisions in the private sector and to encourage behavioural change in broader society. It will also be critical to define our approach to carbon neutrality for the agriculture sector in a way that furthers the achievement of our climate targets and decarbonisation goals while respecting sustainable food security and to make investments to develop new and innovative economic opportunities, for example in the bioeconomy. Diversification of agri-business will be crucial to maintaining competitiveness in the low carbon economy and creating viable economic opportunities for rural Ireland. An associated risk is the mismanagement and over-exploitation of our

bio-resources, and effective stewardship will be required to ensure the integrity of our natural resources.

As we transition to a low carbon economy and traditional industries and practices are disrupted, decoupling our economic growth from carbon emissions will become increasingly critical in maintaining our competitiveness. It will also be important to plan for the societal disruption caused by this transition and prepare retraining and reskilling opportunities to ensure individuals and communities can make the necessary changes.

A related risk is failing to plan for success and economic growth in this context. Ireland's green reputation could also be impacted by a climate-change related degradation in the quality of our natural environment.

Both political and societal willingness to tackle the longer-term risks of climate change could present a challenge, as significant up-front investment is required, which may not yield benefits for many decades. Fundamental behavioural change will be necessary in this regard, from the public and private sectors as well as the general public, given that our efforts to tackle climate change effectively are predicated on significant buy-in from these groups. Engagement with these groups can be facilitated through initiatives such as the National Dialogue on Climate Action.

## 5.2. Ensuring an affordable, sustainable and diverse energy supply

Ireland's situation as an island on the periphery of Europe renders it particularly vulnerable to disruptions to the supply or price of oil, gas or electricity which would

have significant economic, social and competitive impacts. Such disruption could arise from natural disaster, economic trends or geopolitical change, such as Brexit, disruption to oil supplies in the Middle East, Russian sanction impacts on gas supplies and OPEC cuts.

Brexit poses a particular risk as Ireland imports the vast majority of its energy requirements, oil, gas and transport fuels, from or via the UK. The potential impact of Brexit on the Single Electricity Market is also of particular note. This provides an added impetus to increase the use of our renewable resources and to diversify our sources of supply by developing further electricity interconnection to neighbouring markets including France.

As Ireland electrifies vital services, such as transport and heating, which will be necessary to meet climate change obligations, the challenges, development costs and risks around energy security will continue to shift and evolve. With energy demand increasing from a growing population and economy, there is a real need to ensure that we can build societal support and acceptance to develop appropriate levels of infrastructure to service this growth.

A large proportion of Ireland's energy needs are met through imports - circa 66 per cent in 2017. However, it is worth noting that indigenous energy production is increasing - from 12 per cent of the total primary energy supply in 2015 to 34 per cent in 2016. This is in part due to the coming on stream of natural gas production from the Corrib project. Increasing levels of renewable energy will help offset our dependency on imported fossil fuels, introduce more certainty in the energy fuel mix and move Ireland toward its future renewable energy targets as set out in the National Energy and Climate Plan (NECP).

Ensuring an energy supply that is not only

affordable, sustainable and diverse but also secure will be extremely important as pressure increases on the world's resources due to climate change and increased environmental concerns. There are also geopolitical implications contributing to this risk, with international relations and tensions, including increased pressure on global free trade agreements, creating doubt over the security and price of energy supply.

In the last few years, the price of fossil fuels, particularly oil, have been more volatile, with international prices beginning to rise after a period of sustained low prices. This has been passed through to the consumer with price increases evident in the gas, electricity and transport fuel sectors.

### 5.3. Delivery of Public Infrastructure

Ireland was again the fastest growing economy in the EU in 2018<sup>3</sup>, and its population is continuing to grow, expanding by 3.8 per cent over the inter-censal period 2011-2016. This context, coupled with an under-supply of housing and associated affordability issues, a tightening labour market and the continued strength of economic growth, could give rise to overheating in the economy (see Section 2.4 for more discussion on risks around overheating). This brings with it the risk of negative impacts for Ireland's competitiveness and value for money concerns for the State in terms of capital programmes, as well as for the individual consumer.

Following a significant reduction in public capital expenditure over the course of the recession, the level of capital expenditure has increased as the economy has returned

<sup>3</sup> On the basis of GDP; <https://www.cso.ie/en/releasesandpublications/er/na/quarterlynationalaccountsquarter42018/>

to growth, and the public finances recovered. However, while Project Ireland 2040 was launched in February 2018, and set out both the 20-year National Planning Framework 2040 and a detailed capital investment plan for the period 2018 to 2027 (the National Development Plan 2018-2027), risks around capacity constraints which could prove challenging for its full implementation are apparent. In particular, risks in terms of both institutional capacity and capacity in the economy including skills constraints can be seen, with skills constraints particularly evident in the construction sector, as well as concerns regarding supply chain capacity in the sector. These challenges could hinder the implementation and delivery of projects under the NDP and NPF, with the associated risk of contributing to price inflation if these constraints are not alleviated in order to ensure infrastructure constraints are dealt with in a sustainable way<sup>4</sup>. As mentioned above in Section 3.2, the impact of construction cost inflation on the delivery of major infrastructure projects is also a risk.

By 2040 an additional one million people will live in Ireland, almost a quarter of whom will be over 65 (double the current levels). An additional two-thirds of a million people will work here, and an additional half a million homes will be needed to accommodate this growth.

A plan-led approach to infrastructural investment is therefore vital. Historically, constraints on public finances and a market- and developer-driven development environment has resulted in infrastructure following, rather than driving, change and development for the benefit of society. Failing to renew and enhance our infrastructural capabilities through a strategic plan will impact on competitiveness,

<sup>4</sup> In response, the Government has established the Construction Sector Group which will lead the development of policies and industry practices which can drive an improvement in productivity, attract young people to pursue careers in the construction sector and help the industry become more environmentally sustainable.

quality of life and our ability to meet new environmental challenges.

Preparing for and managing progressive and sustainable growth requires careful preparation and planning for all regions. In addition, decoupling growth from adding to environmental pressures such as climate change and declining biodiversity is critical. In response, the National Planning Framework was developed in parallel with the National Development Plan. The strategies combine to present a map for effective spatial planning and strategic investment in infrastructure, which will allow Ireland to accommodate anticipated population growth while ensuring growth continues in a balanced way.

The risks and implications of not delivering on the objectives in Project Ireland 2040 are clear. The delivery and maintenance of competitively-priced world-class infrastructure (e.g. energy; telecoms; transport; water and environmental services) and related services is critical to bolster competitiveness, which in turn determines the sustainability of living standards. In addition to the capacity and skills constraints outlined above, the National Competitiveness Council (NCC) quotes IMF estimates which show that an increase of 1 percentage point of GDP in investment spending can increase output by approximately 0.4 per cent in the same year and by 1.5 per cent four years after the increase in investment.<sup>5</sup> Overall, in delivering upon the objectives of Project Ireland 2040, it is important to ensure that efficiency, effectiveness and value for money continue to be at the centre of programme and project implementation.

The ability of the public service to deliver infrastructure projects on time and on

<sup>5</sup> National Competitiveness Council (2017) Ireland's Competitiveness Challenge, available at: <https://dbe.gov.ie/en/Publications/Publication-files/Irelands-Competitiveness-Challenge-2017.pdf>

budget is critical. While Ireland has made much progress in delivering projects on time and within budget over recent years<sup>6</sup>, with projects coming in on budget across most sectors, it is clear that the recent experience of certain projects, such as the National Children’s Hospital, exceeding their initial cost estimates must be drawn upon, and lessons learned, to ensure that this risk is avoided in future. A range of reforms are therefore being progressed, including the revision of the Public Spending Code and the development of the next generation of the Capital Works Management Framework<sup>7</sup> in the Office of Government Procurement to ensure better project appraisal mechanisms, the deployment of stronger commercial skills in the delivery of projects and better estimation and management of project costs.

Furthermore, in addition to potential risks to cross-border infrastructure projects in the context of Brexit, impacts on road infrastructure from an increase in severe weather events, and unforeseen budgetary pressures on planned capital funding over the course of Project Ireland 2040, a significant threat to delivery of Project Ireland 2040 is rising levels of litigation leading to delays in infrastructure delivery. There is also a risk that the growing influence of social media may become a relevant factor in the context of opposition of citizens and communities to the implementation of infrastructure projects. Wider communities have in some cases opposed projects despite rigorous planning, environmental assessment and consultation processes. Enhanced

<sup>6</sup> In particular, recent years have seen major progress in the professionalism of project management in the water sector, motorways and public transport area, with a norm now well-established that all such projects should come in on time and on budget. Reforms are currently being developed which are designed to extend the same levels of discipline, professionalism and performance across the public capital programme more broadly.

<sup>7</sup> The Capital Works Management Framework (CWMF) is a structure that has been developed to deliver the Government’s objectives in relation to public sector construction procurement reform. It consists of a suite of best practice guidance, standard contracts and generic template documents. All the documents that make up the framework are available online.

mechanisms to create better community ownership of and participation in required investment projects may go some way to mitigating this opposition by allowing those most affected to benefit more directly from the development of such infrastructure. Ireland’s development consent systems need to be robust and efficient to maximise certainty and minimise delay in converting capital to projects that deliver.

## 5.4. Food safety

Potential risks around food safety and animal disease clearly represent both a human health risk and, as a consequence of that, risks to international trade in Irish food. Our food safety and production standards, which include a favourable animal health and welfare status, are important to consumer confidence in Irish food and drink products both at home and abroad. While the possibility of food contamination or an outbreak of food-borne human illness clearly represents a risk to the health of citizens, a food safety incident of Irish origin or a major disease outbreak in farmed animals in Ireland could also jeopardise international trade in Irish food.

Any such adverse incident could lead to immediate exclusion from certain markets and it could take a considerable period of time to recover consumer confidence and market share. Given the vital importance of the agri-food sector, and its high dependence on exports, this would lead to significant implications for the Irish economy, particularly in rural areas. The agri-food sector is highly export dependent. In 2018, the value of agri-food exports was over €13.7 billion, representing a growth of 74 per cent since 2009. 41 per cent or €5.55 billion of this is exported to the UK, leaving the sector particularly exposed to risks related to Brexit.

## 5.5. Supply and Affordability of Housing

One of the most critical challenges currently facing the State is the supply of housing. Housing supply, both social and private, is essential for societal well-being and economic growth. However, housing and related markets have displayed marked volatility in recent decades, including the price correction during the recession years, which acted as a severe shock to the construction sector, in addition to wider fiscal, consumption, credit market and other macro-economic impacts.

This has negatively affected the country both socially and economically with challenges in the provision of social housing in the face of increased demand, lack of affordability for those on average incomes, an increase in homelessness, and constraints on competitiveness.

Underlying housing demand has outpaced actual supply in recent years, manifesting in stronger growth in house prices and rents, with such increases being rapid in Dublin and other urban areas compared with the rest of the country. Housing undersupply has been compounded by the rapid growth of the Irish economy in recent years resulting in affordability issues and rental property prices rising above their previous peaks.

The lack of affordable accommodation has translated to rising levels of homelessness, with significant social and financial costs. In addition to the increased number of rough sleepers recorded in recent years, homeless families have been living for long periods of time in emergency accommodation with considerable impacts on family life. Difficulties accessing affordable accommodation are a major source of concern for many people.

There is now a growing risk around the issue of affordability as, even as supply increases, affordability pressures persist. This is of particular concern in Ireland's cities. These pressures may further exacerbate already increasing wage pressures, which may then lead to a further increase in house prices, which could in turn result in continuing affordability challenges. In terms of increasing wage pressures from the public sector, such risks are linked with increasing expectations for public expenditure, which is discussed above in Section 4.3.

Collectively, these challenges present a risk to the continued relative competitiveness of the economy, with potentially adverse impacts on Ireland's ability to continue to attract Foreign Direct Investment (FDI), as availability of housing is a fundamental concern for large multi-nationals considering locating here.

Currently, pressures on the housing market have led to overcrowding and lowering of quality of life. The immediate task is to moderate price movements and improve affordability in rental and purchase markets by encouraging greater supply of housing in the right locations and increasing the supply of social housing in a planned and sustainable manner.

Increasing supply to meet demand also carries with it risks for the construction industry and credit sector, which is undergoing a lengthy and as yet unfinished recovery. A longer-term task is to dampen volatility and suppress the cyclical nature of housing markets, so that we have a housing system in which real house price growth (and rents) do not deviate for lengthy periods from real economic growth.

While the CSO statistics for 2018 show that supply of housing is increasing in line



with the goals under the Government's Rebuilding Ireland programme<sup>8</sup>, and there is strong growth in the supply of social housing by local authorities, overall housing demand is increasing too, and in the coming years housing shortages are likely to act as a constraint on economic activity and competitiveness, and reflect one of the most prominent risks and challenges facing the country.

The potential effects of Brexit<sup>9</sup>, in whatever form it occurs, are also likely to have an impact, with risks including constraints on the availability of construction materials, impacts on availability of construction workers, impacts on construction timelines and potentially a higher demand for housing. The Department of Housing, Planning & Local Government continues to monitor the situation in this regard and continue to prepare to mitigate the effects of Brexit.

<sup>8</sup> <http://rebuildingireland.ie/>

<sup>9</sup> [https://data.oireachtas.ie/ie/oireachtas/committee/dail/32/joint\\_committee\\_on\\_housing\\_planning\\_and\\_local\\_government/reports/2019/2019-02-07\\_examining-the-potential-impacts-of-brex-it-on-ireland-s-housing-market\\_en.pdf](https://data.oireachtas.ie/ie/oireachtas/committee/dail/32/joint_committee_on_housing_planning_and_local_government/reports/2019/2019-02-07_examining-the-potential-impacts-of-brex-it-on-ireland-s-housing-market_en.pdf)



# 6. Technological Risks

- 6.1. Cyber Security
- 6.2. Disruptive technology trends
- 6.3. Anti-Microbial Resistance
- 6.4. Major Pandemics
- 6.5. Nuclear contamination

## 6.1. Cyber Security

### Disruption to critical information infrastructure

Cybersecurity matters because the extent to which society relies on digital technology is now so all-encompassing that this technology can no longer be viewed as being at a remove from everyday life. Almost all aspects of our lives have a digital dimension, and the ubiquity of connected devices - the “Internet of Things” (IoT) - has brought truly massive benefits to our society but has also opened up various new and unpredictable threat vectors, and a wide range of significant risks for major national infrastructure including energy, transport, telecoms systems and financial systems. With Ireland positioning itself as a technological society with a growing dependence on online services<sup>1</sup>, the impact of an attack or incident on the provision of services, and on the reputation of businesses and the public service is significant.

Europol currently judges the risk of cyber-terrorism to be one of high potential but low probability, though the probability may be increasing. This is an issue of growing concern at EU and international levels reflecting the importance of continuing to build our expertise and capacity in cyber security to enable us to identify these threats effectively.

<sup>1</sup> Such as build-to-share and financial management Shared Services projects which require network connectivity, and cloud-based services which require connectivity from an external provider

In addition, criminal enterprises operating in different parts of the world have growing capabilities in terms of launching disruptive cyber-attacks and also holding entities to ransom where they succeed in encrypting business and personal data. Two recent incidents highlight the continued threat of cyber-attacks. On a European front, the data of hundreds of German politicians was leaked from regional, national and European parliaments at the end of 2018. This came on foot of a long line of previous attacks on politicians, militaries and several embassies. More locally, the data of almost 3,500 users of the Luas website was hacked at the beginning of 2019. According to the European Union Agency for Network and Information Security (ENISA) Threat Landscape Report for 2018, the threat of malware continues as the top cyberthreat, with the threat of web-based attacks and phishing increasing. This indicates that the threat of phishing attacks, and other attacks, may become more focussed, personalised and strategically targeted.

The possibility of such attacks are increased by risks including the rise of Artificial Intelligence (AI) in the context of open platforms which have put these systems into the hands of everyone, including malicious actors; the risks around criminals and external attackers by-passing security measures by attacking the authorised users of the systems; and risks through personal technology, i.e. as devices become more useful

for users we risk exposure to risk through their own devices interacting with our systems.

The risk of further attacks continues, attacks which could have serious effects on the economy and on the cohesion of society in general<sup>2</sup>. The potential impact on the provision of services has the potential to lead to civil unrest in addition to significant disruption for citizens<sup>3</sup>, while prolonged or repeated incidents risk creating a backlash against digitization, with further economic consequences and reputational damage to businesses and the public service. Related to this is the risk of Cyber-activism where civil unrest or protest is expressed through disruptive practices on public bodies or critical infrastructure.

Cyberspace is an integral part of the rules-based international order. The best guarantee for a future with an open, free and stable internet is a common understanding among nations that existing international law, norms and principles for state behaviour on the international stage also apply in cyberspace. To protect national interests, mitigate risks, and enhance the security of Internet users, there is a need for continued cyber diplomacy between countries. The focus of the EU is the governance and application of international law in cyberspace, including protecting the free and open Internet, reducing cybercrime, building capacity in third world countries, enhancing international stability, and protecting the digital economy.

We have seen activity by non-state actors who are ready and willing to move in to fill a void ignored by states. The security and

<sup>2</sup> For example, the First Report of the Inter-departmental Group on Security of Ireland's Electoral Process and Disinformation identifies the primary cyber-related risks to the security of the electoral process as Destabilisation Events, Manipulation of the Electoral Register, and Data Exfiltration; See more here: <https://www.gov.ie/en/news/37e936-government-publishes-first-report-of-the-interdepartmental-group-on/>

<sup>3</sup> For example, any attack that affects the availability of cash such as at Banks, Post Offices or ATMs will restrict access to cash for society and depending on the downtime could have serious effects on those dependent on Social Protection Payments and the economy in general.

resilience of cyberspace can only be fully achieved through collaboration and cooperation with various actors, including nation states and the private sector.

### Data fraud and theft

As mentioned above, the internet is an important enabling infrastructure for economic growth and prosperity. Side-by-side with its increasing importance, however, has been a growth in attempted cyber-attacks, due to the high value of personal and corporate data. Although there have been significant improvements in building resilience to attacks, this continues to be a growing challenge for businesses and individuals, and society in general, including in regard to the protection of government digital assets.

Immediate risks for businesses and individuals include the loss or theft of personal or business information, or even the destruction of property or critical records like medical records. The impersonation of individuals in order to make fraudulent transactions is a major issue involving billions of euro globally. Significant data breaches have been reported over the past several years by various multinational companies.

Any challenge to the quality of Ireland's data regulation environment, which has been a critical factor in the continuing expansion and growth of the digital economy in Ireland, creates a risk of business disruption as well as reputational damage. Ireland has the potential to leverage the significant expertise that exists in our private sector, as well as information-sharing and cooperation with agencies in other countries, in order to tackle this risk.

The public service is also a major collector and processor of data. A specific risk is the targeting of public service data repositories

and the theft, exfiltration, denial of access to, or compromising of, that data. A successful incident would have the immediate effect of reducing confidence in public service administration and the use of technology for public services.

The General Data Protection Regulation (GDPR), which came into force in May 2018, is a regulation to strengthen and unify data protection within the EU. It will give the right to a person who has suffered material or non-material damage to seek compensation from a data controller.

A significant data breach could result in significant compensation payments being made.

The challenges discussed above are just some of the many forms that cybercrime may take. The cyber dimension to conventional crime brings with it significant demands in terms of the tools needed to gather evidence, identify perpetrators and undertake prevention initiatives. Attacks on the data stored on computers or the systems themselves is another aspect of cybercrime that poses both law enforcement issues and in some cases, State security issues. The international dimension to investigating cybercrime brings with it many challenges in terms of international cooperation and jurisdiction. There are further challenges faced by law enforcement agencies including loss of data, encryption, virtual currencies, loss of location, the need for expedited measures, managing online investigations, and managing public-private cooperation, amongst many more.

## 6.2. Disruptive technology trends

Disruptive technology trends are continuously bringing new ways of conducting business, manufacturing products and making decisions which could disrupt traditional methods and lead to significant job shifts and losses

in affected sectors and roles. Legislative and regulatory challenges may come with advances in digital technologies, as well as threats to current forms of employment. The speed of adoption of technological advances is seeing the emergence of new global business models, products, markets, sectors and activities; as well as disrupting ways of working and impacting on skills needs.

A 2018 OECD study (Nedelkoska and Quintini) suggests that 14 per cent of jobs in OECD member countries have a high probability of being automated. It should be noted that alternative models and measurement tools have been used in other studies in this area which have generated significantly higher estimates of job losses arising from automation. In addition, and as mentioned in Section 4.2 above in discussing Skilled Labour Shortages, while the impact of automation on jobs is expected to vary between countries and regions, the OECD have found that on average as much as two out of every five jobs could be significantly impacted by automation over the next two decades<sup>4</sup>. Automation is likely to replace some jobs, re-shape others but also create new ones. Therefore, in the coming years it will be critical that workers can acquire the skills necessary to transition successfully as technology transforms the world of work, including in the context of the FET Sector in terms of developing intermediate level skills.

In terms of regional impacts in Ireland, the Expert Group on Future Skills Needs (EGFSN) published a report<sup>5</sup> in December 2018, which found that Dublin is the least

<sup>4</sup> Job Creation and Local Economic Development 2018, Preparing for the Future of Work, see link: [https://read.oecd-ilibrary.org/employment/job-creation-and-local-economic-development-2018\\_9789264305342-en](https://read.oecd-ilibrary.org/employment/job-creation-and-local-economic-development-2018_9789264305342-en)

<sup>5</sup> EGFSN (2018) 'Digital Transformation: Assessing the Impact of Digitalisation on Ireland's Workforce' Available here: <http://www.skillsireland.ie/Publications/2018/Digital-Transformation.pdf>

at risk from automation (2 per cent at high risk, mainly in Retail and Hospitality sectors), while the Midlands region (5 per cent at high risk and 64 per cent at medium risk) and Border region (5 per cent at high risk and 62 per cent at medium risk) are the regions' most at risk. Given the likely impact of Brexit on these regions, and with unemployment already higher than average in these two regions, this is particularly challenging, especially in light of concerns of rural and regional imbalance expressed earlier in the Report (Section 4.4).

In addition, a UCC study<sup>6</sup> identifies the towns in Ireland that are most at risk from job automation<sup>7</sup>. The report finds that the automation risk for towns is mainly explained by population differences, education levels, age demographics, the proportion of creative occupations in the town, the town size, and differences in the types of industries across towns. The results suggest that the pattern of job risk from automation across Ireland demands policy that is not one-size-fits-all, but rather a localised, place-based, bottom-up approach to policy intervention. The report found wide differences between the average numbers of jobs at high risk of automation across towns, from a low of 26 per cent to a high of 58 per cent. In addition, the analysis found that many 'at high risk' towns have 'at low risk' nearby towns and many 'at low risk' towns have 'at high risk' neighbours. The analysis also found that there are some concentrations of 'at lower risk' towns and separately, concentrations of 'at higher risk' towns. For example, in the Dublin city region, Malahide, Skerries and Donabate are all at lower risk of automation. The Report pointed out that towns exposed to agriculture and manufacturing should be main concerns as they are likely to be the towns most disrupted by future automation. It notes that making skills develop-

ment and education more financially accessible and remotely possible will help to curb 'brain drain' and unlock local competencies in peripheral towns.

While no sector will be immune to the impact of disruptive technology, jobs and functions that require greater degrees of cognition, subjective thought and personal interaction will be somewhat cushioned. The acquisition of new skills is vital to keep pace with advances in technology. Similarly, the availability of the right skills is an important enabler of enterprise performance and growth. Jobs as we know them are undergoing a system of change with the skills required with many jobs changing significantly. Numerous academic studies and reports have identified that re-skilling/up-skilling of the workforce is a requirement of the future as jobs become increasingly digitalised. Thus, it is essential that the workforce is equipped with the requisite skills to fully unlock the benefits of the digital economy.

In addition, there are risks associated with disruptive technologies around failing to communicate the value that they can provide in growing the economy, and failing to capitalise on economic opportunities, and failing to deploy them in public sector rapidly to provide concurrence (and ensure value for money) with the private sector. Failing to assess and mitigate the adverse societal, workplace and social impact of disruptive technologies on the lives of our citizens, associated regulatory challenges, and failing to adequately plan for employment shifts, are also risks to be considered and tackled at an early point.

Technological advances will also lead to new jobs being created, as well as economic benefits associated with more efficient ways of doing business. According to PwC

<sup>6</sup> [https://www.ucc.ie/en/media/projectsandcentres/srerc/SRERCWP2019-1\\_upload.pdf](https://www.ucc.ie/en/media/projectsandcentres/srerc/SRERCWP2019-1_upload.pdf)

<sup>7</sup> Across the 200 towns which have a population of 1,500 or more using data from the 2016 census

analysis, smart automation has the potential to add \$15 trillion to global GDP by 2030. However, there is a risk that these new jobs will be less dependent on human labour, or will require significant re-skilling. The scale of the re-skilling problem is becoming a priority for the European Commission, as it has been suggested that in the near future, 90 per cent of existing jobs will require some degree of digital skills. While this presents both opportunities and threats the research generally indicates that, across all countries, workers with a lower level of education are at the highest risk of displacement. As artificial intelligence (AI) continues to develop it could also be that in the future higher skilled occupations may face higher risk of automation than the current state of technology implies. While this is not a risk unique to Ireland, it requires actions across a range of areas including a significant increase in our delivery of lifelong learning and skills development as well as the need for continued investment in the digital economy and R&D, and appropriate social safety net measures.

Ireland has participated in the creation and agreement of the EU Coordinated Plan on the Development and Use of Artificial Intelligence which was published by the European Commission in December 2018. The Plan sets out a framework of issues, together with suggested initiatives, which need to be dealt with by Member States in order to enable the EU to compete globally in the field of AI. The Plan also speaks to the need to ensure that AI solutions are ethically sound, making sure that they are free from bias and unintended consequences. Ireland is currently developing a National Artificial Intelligence Strategy to align with EU-related initiatives. The Government also established, under Project Ireland 2040, a €500 million challenge-based Disruptive Technologies Innovation Fund, reflecting the importance of action, and investment in this area.

### 6.3. Anti-Microbial Resistance

Anti-microbial resistance (AMR) is an increasing concern across the globe, with the World Health Organisation (WHO) describing it as “a crisis that must be managed with the utmost urgency”<sup>8</sup>. Antimicrobials have been essential for the provision of modern medical care since the 1940s, substantially reducing mortality and morbidity from infectious diseases and complications. These advances are now being put at risk by a significant rise in the prevalence of bacteria that are resistant to one or more antimicrobials, with knock-on consequences for human health as well as the economy in terms of more expensive treatment costs and lost productivity.

The World Economic Forum’s Global Risks Report for 2018<sup>9</sup> included a reflection on the evolution of this risk on the world stage. This quoted research from the World Bank, the UK Government and the Wellcome Trust estimating AMR would exert a drag on global GDP of between 1.1 per cent and 3.8 per cent between now and 2050, as well as costing \$100 trillion and killing 10 million people over that period. That report also noted that resistance to even the strongest antibiotics continues to spread, as they are increasingly used to combat diseases resistant to weaker antibiotics. It notes that research conducted in 2017 demonstrated that bacteria resistant to colistin, the “antibiotic of last resort”, had spread throughout the world within 18 months of the resistant strain first emerging. Additionally, the OECD predict that resistance to second and third-line antibiotics, which are a last line of defence in treating infections, is expected to increase by 70 per cent across OECD countries by 2030, over the anti-microbial

<sup>8</sup> WEF Global Risks Report 2018 <http://reports.weforum.org/global-risks-2018/anti-microbial-resistance/>

<sup>9</sup> <https://www.weforum.org/reports/the-global-risks-report-2018>

resistance rate seen in 2005<sup>10</sup>.

The extensive use, misuse and overuse of antimicrobials in human health has increasingly raised levels of antimicrobial resistance in a wide range of pathogens in all countries and in patients of all age groups. In the animal population, the rate of development and spread of antimicrobial resistance has also increased. The increasing global demand for affordable food, and in particular animal protein, has led to intensification in certain animal sectors, which can result in higher potential risks of disease outbreaks. Therefore, a strong reliance on availability of effective antimicrobials to treat disease and protect animal welfare has occurred.

There are also increasing concerns about the role the environment may play in the spread of clinically relevant antimicrobial resistance. Environmental regulators monitor and control some of the possible pathways responsible for the release of antimicrobials into the environment, e.g. through water contamination and agricultural run-off. However, a greater understanding of many of the issues concerning the environmental role will further enhance the delivery of environmental protection from AMR. The rise in antimicrobial resistance is thus one of the greatest potential threats to human health at global, European and national levels with serious consequences for public health, animal health and welfare. Given that the natural responses of microbes to the use of antimicrobials is resistance, they therefore need to be used as prudently as possible to retain their efficacy.

## 6.4. Major Pandemics

Every few years a new pathogen emerges. The vast majority are vector borne and, as a result,

<sup>10</sup> OECD Stemming the Tide Report, October 2018. [https://read.oecd-ilibrary.org/social-issues-migration-health/stemming-the-superbug-tide\\_9789264307599-en#page18](https://read.oecd-ilibrary.org/social-issues-migration-health/stemming-the-superbug-tide_9789264307599-en#page18)

are not a significant risk in Ireland.

Pandemic influenza was determined as the reasonable worst-case scenario in the Irish context. The influenza virus mutates continuously and there have been 12 pandemic influenzas since 1895, the most recent of which was in 2009. Historical evidence shows that such pandemics have the potential to cause death and illness on a significant scale and to disrupt normal social and economic activity. Advance planning and preparedness are critical to help mitigate the impact of a pandemic. When the next pandemic occurs, it will require a whole-of-government response to ensure that threat to public health and disruption of services and society are minimised.

The International Health Regulations (IHR) (2005), together with Decision no. 1086/2013/EU, provides the legal framework for the timely and effective management of a broad range of serious and potentially international public health risks and events. Through these, Ireland is represented on the EU Health Security Committee, and the Department of Health and the Health Service Executive maintain close contact with the European Centre for Disease Prevention and Control and the World Health Organisation. These close contacts are used to monitor, predict and mitigate the spread and impact of pandemic influenza, and other infectious diseases.

## 6.5. Nuclear contamination

Contamination as a result of fallout from a nuclear accident is a risk that has to be acknowledged, despite the low probability associated with this for Ireland. Obvious risks to public health and well-being arise, as well as the potential for negative economic impact. This is significant, in partic-



ular in respect of the potential reputational risk to the agricultural sector. There is a risk of consumer resistance to even miniscule levels of radioactivity in the food chain and Ireland's competitors portraying Ireland's food products as unsafe, were contamination to occur.

A paper published by the Economic and Social Research Institute (ESRI) examined the potential cost to the Irish economy under multiple scenarios involving varying levels of contamination<sup>11</sup>. While stressing the very low risk of a nuclear accident and without measuring the likelihood of any particular scenario, the study assessed potential costs to Ireland in four hypothetical scenarios: costs ranged from €4.1 billion in a scenario with no contamination where losses are reputational, through to €115 billion, where high levels of radioactive contamination would necessitate a prolonged period of food controls and agriculture protective actions. The paper also estimates that indirect losses in the Irish economy would range from €287 million in a scenario where losses are reputational, to €44 billion in a scenario with high levels of contamination.

The intersections of this risk with Food Safety are highlighted in the ESRI paper where it is stated that meat and dairy produce account for 57 per cent of the lost value, where losses are purely reputational. In the most extreme scenario dealing with high levels of contamination, the total value of loss of export markets is some €84bn, with meat, dairy and seafood produce accounting for over €50bn.

In view of the potentially catastrophic humanitarian consequences of a nuclear detonation, it will continue to be important to continue international engagement relating to nuclear safety, as well as on nuclear disarmament and non-proliferation.

<sup>11</sup> ESRI Disaster cost assessment: A case study of the potential economic impact of a nuclear accident affecting Ireland: <https://www.esri.ie/events/disaster-cost-assessment-a-case-study-of-the-potential-economic-impact-of-a-nuclear-accident-affecting-ireland>

## Annex 1. Government Task Force on Emergency Planning – National Risk Assessment for Ireland 2017

This National Risk Assessment complements the detailed risk assessment work carried out by the Government Task Force on Emergency Planning, chaired by the Minister with responsibility for Defence, which is conducted in the context of the Strategic Emergency Management National Structures and Framework approved by Government in 2017 and Ireland's reporting commitments under the EU Civil Protection Mechanism (UCPM). Through the Office of Emergency Planning, under the Department of Defence, a three year National Risk Assessment process and methodology is applied, which focuses on risks relating to potential civil emergencies at national level.

The White Paper on Defence (2015) sets out the Government's commitment to maintain and further develop a robust strategic emergency management framework, and the Government Task Force (GTF) on Emergency Planning conducts a cyclical process of hazard analysis and risk assessment as an essential step in the process of identifying the challenges that may have to be addressed by society, particularly in the context of emergency management.

The GTF risk assessment process was first carried out in 2012 and led to the publication of the first National Risk Assessment for Ireland 2012, which was accepted by the European Commission as meeting the requirements of the Union Civil Protection Mechanism (UCPM). Following a review in 2016 by the Office of Emergency Planning and Dublin City University Business School, the GTF incorporated a number of methodological changes to this process, which were designed to reflect current risk management standards and international good practice.

This led to the production of a further National Risk Assessment for Ireland 2017, which considered specific risks relating to potential civil emergencies at national level and was adopted by the GTF in March 2017 and was subsequently noted by Government, submitted to the EU Commission and published at [www.emergencyplanning.ie](http://www.emergencyplanning.ie).

The National Risk Assessment for Ireland 2017 has specifically identified twenty key national risks that will be used to guide future mitigation, planning and preparation activities at national and regional level and will help inform future assessments of risk management capabilities. Flooding remains one of the highest likelihood/impact risks on this National Risk Matrix 2017, with Infectious Disease, Food Contamination, Nuclear Incidents (abroad), Disruption to Energy Supplies and Network and information Security/Cyber Incidents highlighted as having potentially the highest impact on Ireland.

In line with good practice and the UCPM requirements, which are currently under review, the aim is to repeat this process at three yearly intervals so as to capture new and emerging threats and changing trends. The revised UCPM and the subsequent Guidelines being developed will require Participating States to report on their National Risk Assessments and Risk Management Capability Assessments again by the end of 2020.

**Annex 2.****Ireland's Changing Demographics and related risks****Introduction**

As has been thoroughly documented<sup>1</sup>, Ireland's demographic structure continues to change. As modern medicine continues to advance, life expectancy rises and hence mortality rates fall. The decrease in mortality rates leads to increased numbers of older people continuing to live longer and healthier lives.

The most recent 2016 Census shows that the number of people aged 65 and over has seen the largest increase of any age cohort since the last census in 2011, increasing by 19.1%, or 102,174 people<sup>2</sup>. There has been a steady increase in the number of older people living in Ireland since the 1980s, which demonstrates a constant rise in the older age cohort, shifting Ireland's population structure upwards.

To feed into the development of the National Planning Framework<sup>3</sup>, the ESRI formulated population projections, which indicate that Ireland's population will grow by just under 900,000 people. This will bring the population of Ireland to c.5.7 million people by 2040<sup>4</sup>, which is broadly in line with the CSO's population projections to 2046<sup>5</sup>.

In the context of projecting population growth, migration rates are generally factored in. In Ireland, however, migration rates have historically varied significantly over time reflecting the small, open nature of the economy and historic patterns. This can make forecasting actual population growth difficult. The ESRI used a mid-range scenario to input into the National Planning Framework, which is based on sustained in-migration and economic growth to 2040.

These changes in our demographic structure are extremely significant in terms of their implications for the State and for Irish society, as they raise challenges across a range of areas. Challenges include related pressures on expenditure on pensions and healthcare, as well as implications for the education system, and appropriate housing supply, among others. By firstly setting out the projected demographic changes for Ireland, in the context of similar EU and international trends, secondly outlining the most significant impacts for the economy and society, and lastly discussing the interlinkages with many of the other Risks identified in this year's National Risk Assessment, this work will attempt to highlight how pertinent, timely and significant the risks and implications of our ageing society truly are.

1 See references to IGEEES, The Department of Finance, The Parliamentary Budget Office and the ESRI throughout, amongst others.

2 CSO Press Statement: Profile 3 – An Age Profile of Ireland. Available here: [www.cso.ie/en/csolatestnews/presspages/2017/census2016profile3-anageprofileofireland/](http://www.cso.ie/en/csolatestnews/presspages/2017/census2016profile3-anageprofileofireland/)

3 published as part of Project Ireland 2040 in February 2018

4 ESRI: Prospects for Irish Regions and Counties (January 2018). Available here: <https://www.esri.ie/publications/prospects-for-irish-regions-and-counties-scenarios-and-implications>

5 CSO Population and Labour Force Projections 2016-2046. Available here: <https://www.cso.ie/en/statistics/population/populationandlabourforceprojections2016-2046/>

## Part 1: Changing Population Structure in Ireland

As mentioned above, we are seeing a steady rise in Ireland's older age cohort. In addition, as the number of people growing older increases, the number of younger people is not growing at a rate fast enough to replace those leaving the workforce. The Age Dependency Ratio (ADR) has grown in Ireland, a measure which the CSO calculate as the sum of younger (0-14 years) and older (+65 years) people as a percentage of the working age population (15-64). Between 2011 and 2016, this percentage grew by 3.4 percent<sup>6</sup> and is forecast to continue to grow in the future.

To look specifically at the dependence of the older age cohort on the working age population, the old-age dependency ratio (OADR) is the most useful metric. Currently, according to the 2016 Census, the population in the older bracket (65+), is 0.6 million people, while the working age cohort currently stands at 3 million people. This indicates the OADR is approximately 20 percent at present. In other words, there are 5 people working for every 1 retiree. In the context of an increasing number of older people, and a declining number of younger people to replace the working population, the OADR is forecast to increase significantly. The Department of Finance state that this figure is to grow to 45.7 percent<sup>7</sup> by mid-century (using Eurostat projections), and the Parliamentary Budget Office (PBO) estimate the figure to be 44 percent<sup>8</sup> in 2051<sup>9</sup>. These forecasts indicate that the ratio of working age population to the older population is set to decline from 5:1 to 2:1 in the next 30 years. Table 1 illustrates the population of Ireland 20 years previous to the most recent census, and the projection for 20 years later. As is clear, Ireland's population is set to get increasingly older, which will steadily increase the OADR.

### International Comparison

The demographic challenges currently facing Ireland are not unique. When compared internationally, we can see the same trends in other countries, in some cases to an even more extreme degree. In the European Commission's 2018 Ageing Report, the OADR is calculated from 2016 to 2070 for all EU countries. Table 2 sets out the projections for 2016, 2050 and 2070. While we can see that Ireland's OADR is projected to be one of the lowest in the EU27 in 2050, and the lowest in 2070, the graph illustrates the extent of the change between 2016 (21%) and 2050 (46%) with Ireland's OADR more than doubling in that period.

Work by the Department of Finance also compares the EU average with Japan and the US with the OADR in the US expected to reach 43.1 percent by 2070, while Japan is expected to reach 69.6 percent by the same year<sup>10</sup>. Japan's population, in particular, is ageing at an alarming rate, as deaths now outnumber births by an average of 1,000 per day, indicating a

<sup>6</sup> CSO Press Statement: Profile 3 – An Age Profile of Ireland. Available here: [www.cso.ie/en/csolatestnews/presspages/2017/census2016profile3-anageprofileofireland/](http://www.cso.ie/en/csolatestnews/presspages/2017/census2016profile3-anageprofileofireland/)

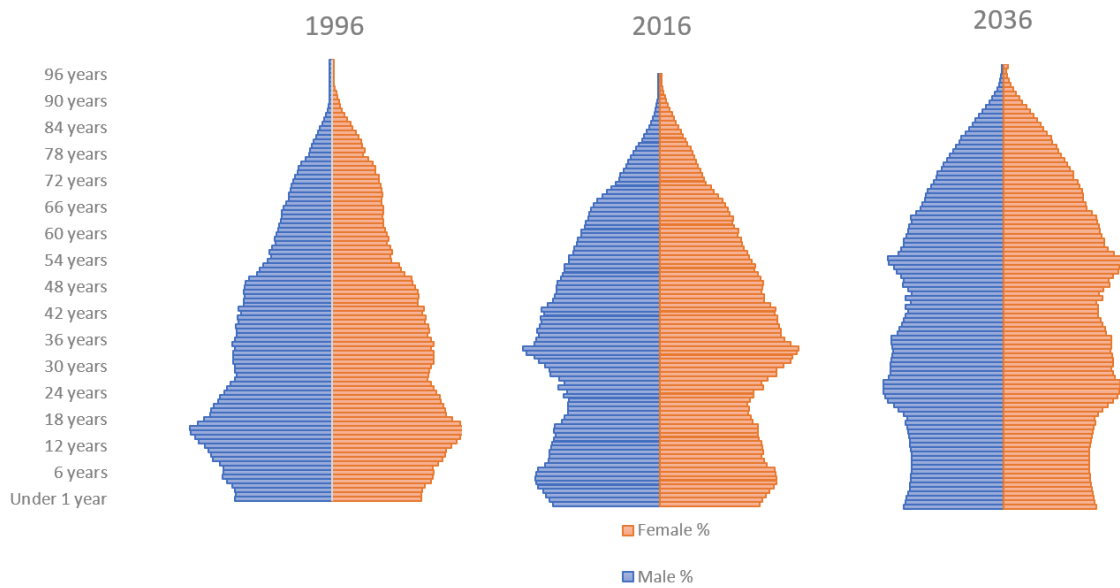
<sup>7</sup> Department of Finance: Population Ageing and the Public Finances (August 2018). Available here: <https://www.gov.ie/en/publication/2e8463-population-ageing-and-the-public-finances/>

<sup>8</sup> Parliamentary Budget Office: Demographics and Voted Expenditure (2019). Available here: <https://www.oireachtas.ie/en/search/?q=demographics+and+voted+expenditure>

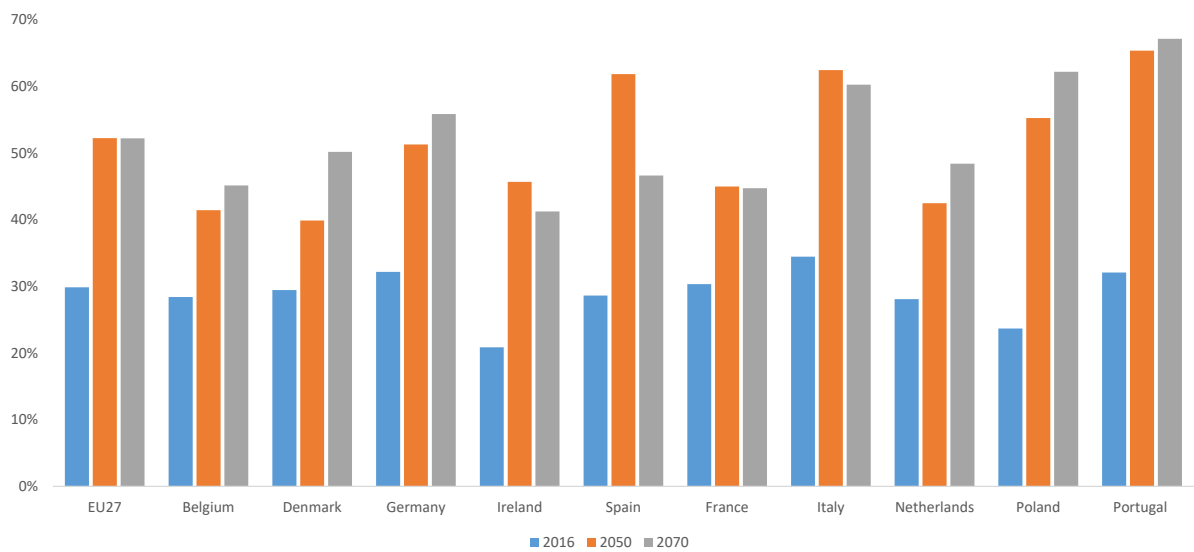
<sup>9</sup> Results can differ due to assumptions used when projecting population growth, particularly around migration and fertility rates. In its population projections, the CSO provide three different migration rate scenarios and two different fertility rate scenarios when projecting population, which means population can be projected in a multitude of fashions.

<sup>10</sup> Department of Finance: Population Ageing and the Public Finances (August 2018). Available here: <https://www.gov.ie/en/publication/2e8463-population-ageing-and-the-public-finances/>

**Table 1: Population Pyramids for Ireland**



**Table 2 - OADR EU Projections**



decline in the population by about 842,000 by 2020<sup>11</sup>.

In the context of OECD data, we see the same trends, with the OECD expecting Ireland's OADR to more than double by 2075<sup>12</sup>. While the OECD ratios reported are not directly comparable to other figures outlined here (as the OECD calculates the OADR using a working age population of 20-64 as opposed to 15-64), it is clear that the trend is the same internationally with all indicators pointing to an OADR that is set to increase significantly in the future.

## Part 2: Impact of our Changing Demographic Structure

As Ireland's demographic structure shifts towards an ageing population, it will have wide-ranging impacts on the economy and society. Certain sectors will see the most impact from these demographic changes, and are outlined in this section. These sectors have been recognised by research institutes and policy makers as acute areas of risk, with policy responses already being implemented to tackle many of these issues.

### - State and Public Pension pressures

One of the sectors that will be most affected by an ageing population is the pensions sector. As increasing numbers of people retire, and are set to live longer, this increases the demand for both the State and Public Service Pension, as greater numbers of people will withdraw pensions over a longer period of time. With decreasing numbers of people within the working age population to replace these retired workers, this will further increase pressure on the pensions system as the tax base narrows.

An actuarial review of the Social Insurance Fund 2015, carried out by KPMG for the Department of Employment Affairs and Social Protection in 2017, forecasts and identifies the scale of these pressures. The pension support ratio, which KPMG define as the ratio of workers to individuals over the age of 66 (similar to the OADR), is projected to decline from 4.9 workers for every person over 66 currently, to 2.9 workers by 2035, and 2.0 workers by 2055.

This projection is eased slightly by the increase in the State Pension Age (SPA), set to increase to 67 and 68 in 2021 and 2028, respectively. The increase in the SPA will increase the pension support ratio in 2035 from 2.9 workers to 3.4 workers, and from 2.0 worker to 2.3 workers in 2055. It is also anticipated the number of persons of SPA and older will almost double from 586,000 in 2015 to 1,136,000 in 2045<sup>13</sup>.

While the increase in the SPA alleviates some of the pressures on the pensions system, it is worth noting that the *effective* retirement age, that is the age people actually retire at, is usually lower. This effective retirement age drives the requirements for benefits and funding, which is likely to happen at an earlier stage than the SPA.

The Government's Road Map for Pensions Reform 2018-2023, however, published in February 2018, represents a major reform of future State, private and public service pension provision in Ireland. Under the Road Map, a Total Contributions Approach (TCA) for the State Pension (Contributory) is due to be introduced from 2020, and a new 'Automatic Enrolment'

11 Financial Times: Japan's ageing population milestone intensifies investor focus (19 April 2017). Available here: <https://www.ft.com/content/be6bf7ac-43bd-11e8-803a-295c97e6fd0b>

12 OECD: Pensions at a Glance 2017. Available here: [https://www.oecd-ilibrary.org/social-issues-migration-health/pensions-at-a-glance-2017/old-age-dependency-ratio\\_pension\\_glance-2017-22-en](https://www.oecd-ilibrary.org/social-issues-migration-health/pensions-at-a-glance-2017/old-age-dependency-ratio_pension_glance-2017-22-en)

13 KPMG, Actuarial Review of the Social Insurance Fund (2017). Available here: <http://www.welfare.ie/en/downloads/actrev311215.pdf>

retirement savings system is due to be introduced from 2022 to support and encourage personal savings provision. Through these and additional measures, the Road Map aims to address challenges facing pension provision in the coming years in Ireland, which include implications arising from an ageing population, with an expected cost of €400 billion to the Social Insurance Fund over the next 50 years<sup>14</sup>.

#### **- Healthcare pressures**

The implications of an ageing population on the healthcare system are significant, in terms of increased demand and related capacity issues. Although there have been improvements in the general health of western populations as modern medicine continues to advance, challenges surrounding access to care, support for the elderly (including nursing homes, community care etc.) and the greater demand for health care services among the older age cohorts are increasing.

As the dependency ratio continues to increase, i.e. the ratio of persons under 15 years and over 65 years to persons of working age (15-64), it poses two related risks in the context of healthcare; the risk of a depleted tax base due to a lower volume of the population contributing income tax, and the greater need for services to care for the elderly including increase complexity and the need for new packages of services to meet that complexity. While much research has been carried out on these issues<sup>15</sup> and relevant policy has been developed within this context (e.g. including the Sláintecare Implementation Strategy, and the “Fair Deal” Statutory Nursing Home Support Scheme), the implications of an ageing population will continue to pose significant risks and challenges to the future of health services provision both here in Ireland and elsewhere.

As discussed in Section 4.2 of the main Report, future healthcare demand and the cost of healthcare provision will be impacted by a variety of factors in addition to demographics, including increasing incidence of non-communicable diseases (i.e. heart disease, stroke, diabetes, cancer and chronic lung disease), and lifestyle risk factors. Older age cohorts tend to be the highest users of most health and social services and have more complex care needs. It is estimated that within the next decade, the number of adults with chronic diseases will increase by around 40 per cent, with relatively more of the conditions affecting those in the older age groups. The ESRI estimate that in the years to 2030 demand for public hospital services will increase by up to 37 per cent for inpatient bed days and up to 30 per cent for inpatient cases, and that demand for GP visits will increase by up to 27 per cent<sup>16</sup>. These figures demonstrate clearly the increased pressures health services will face within the next decade from an ageing population.

The ESRI predict that this projected additional demand will give rise to demand for additional expenditure, capital investment and additional staffing and will have major implications for capacity planning, workforce planning and training in the health sector. The ESRI add that additional investment will be required for most forms of care to meet the needs of a rapidly growing and ageing population in Ireland.

#### **- Education**

Compared to the sectors above, where demand pressures continue to rise in the longer-term, education demand and cost pressures are more acute in the nearer-term, and then begin to

<sup>14</sup> A Roadmap for Pensions Reform 2018-2023. Available here: <https://www.gov.ie/en/publication/abdb6f-a-roadmap-for-pensions-reform-2018-2023/>

<sup>15</sup> ESRI and IGEEES to name two, and referenced throughout this section

<sup>16</sup> ESRI, 2017. Available here: <https://www.esri.ie/system/files?file=media/file-uploads/2018-02/RS67.pdf>

moderate, especially in the cases of primary and secondary education. In a paper estimating the budgetary impact of changing demographics in the years 2017-2027, IGEES note that primary pupil enrolment is set to peak in

2018 and second level enrolment in 2025<sup>17</sup>. This creates a need for additional teachers in the short-term, with associated implications, particularly in terms of retirement, redeployment and recruitment.

Third level cost pressures are also expected to rise given the strong demographic growth in the school system. IGEES estimate increasing numbers of pupils attending third level up to 2027 (the cut off year for their research), with the Expert Group on Future Funding for Higher Education reporting that this number is set to peak in 2029<sup>18</sup>. Demand for associated third level exchequer funding (grants to Higher Education Institutions and Student Support payments) will continue to increase as a result of this trend, placing further demographic budgetary pressures on State spending.

The Report of the Expert Group on Future Funding for Higher Education, published in 2016, found that additional funding of €600 million will be needed to fund higher education by 2021, increasing to €1 billion by 2030. In addition to this, the Expert Group estimates that €5.5 billion will also be needed in capital investment over the next 15 years. Lastly, the Expert Group recommends that an additional €100 million is needed to a delivery a more effective system of student financial aid.

### **- Housing**

When discussing changing demographic structures, it is also important to be cognisant of the effect on housing capacity and needs. We have seen above that the population in the age cohort of 65+ will increase dramatically, with the ESRI projecting that the number of people aged 80+ will increase by between 89 per cent (128,000 people) and 94 per cent (135,000 people) from 2015 to 2030<sup>19</sup>. Housing provision will need to adjust in order to support this increase in older persons.

Unlike the budgetary pressures discussed for the three sectors above which will require large increases in current expenditure to meet future demands in pensions, healthcare and education, capital expenditure (Exchequer and/or private) will be required to transform the housing sector to meet the requirements of an ageing population i.e. once-off spending to transform/build new homes which are fit for purpose.

In terms of policy initiatives being developed to tackle these issues, the Department of Housing, Planning and Local Government, along with the Department of Health, have developed a policy statement<sup>20</sup> which aims to “encourage and facilitate timely planning by older people, and to rebalance the care model away from inappropriate residential and/or acute care, to supporting older people to remain living independently in their own homes and communities for longer, as opposed to fast tracking into long term stay or acute settings”.

17 IGEES, Budgetary Impact of Changing Demographics 2017 – 2027 (September, 2016). Available here: <https://igees.gov.ie/budgetary-impact-of-changing-demographics-2017-to-2027/>

18 Investing in National Ambition: A Strategy for Funding Higher Education (March, 2016). Available here: <http://www.education.ie/en/Publications/Policy-Reports/Investing-in-National-Ambition-A-Strategy-for-Funding-Higher-Education.pdf>

19 ESRI, 2017. Available here: <https://www.esri.ie/system/files?file=media/file-uploads/2018-02/RS67.pdf>

20 Housing Options for our Ageing Population (2019). Available here: <https://health.gov.ie/blog/publications/housing-options-for-our-ageing-population-policy-statement/>



## - Budgetary Pressures and Capital Expenditure

IGEES identifies three key drivers of public expenditure in the Spending Review Paper 2018, *Trends in Public Expenditure*; demographics, public service pay and pensions, and the labour market<sup>21</sup>. Over the next 10 years, additional costs of over €400 million a year are expected from 2023 to 2027 across the health, education and social protection areas due to demographic pressures<sup>22</sup>.

The Department of Finance have also investigated the effects of changing demographics on public finances and note that the current debt-to-GNI\* ratio, which currently stands at 104 per cent<sup>23</sup>, will cause further difficulties in terms of the ability of the public finances to absorb age-related spending. Research conducted by the Department in 2018 finds that, in a scenario where no further policy responses are implemented, the impact of population ageing would cause a significant increase in the debt-to-GNI\* ratio by 2070 (circa 50 percentage points)<sup>24</sup>. The Department of Finance find that a range of policy responses, such as an increase in both the employment rate of older workers and of those of working age could help to mitigate the impact of population ageing on the public finances. The Department, however, warn that additional measures will be required to ensure sustainability of public finances. The increased demand on Exchequer funding will create associated opportunity costs. Although capital expenditure is already set out in the National Development Plan to 2027, under Project Ireland 2040, there is a risk that additional pressures on the public finances could threaten the delivery of the planned projects and programmes under the Plan.

## Conclusion

Mentioned above are only some of the risks Ireland faces as our population transforms. Evidence and research can illustrate the tangible risks to the economy and related sectors, however it is difficult to fully forecast the risks society faces as a result of these demographic changes. It is important to remain cognisant of the potential emotional, mental and societal impacts, as well as the financial pressures that the economy will face, as our society ages.

## Part 3: Ireland's Changing Demographics and the 2019 Risks

This thematic piece grew out of a deeper analysis of one of the risks discussed in the report, 'An Ageing Population including pensions and health system challenges', and its inter-linkages with the other risks identified in this year's report. While changing demographics are not necessarily relevant to all of the risks, as for example with nuclear contamination, and terrorist incidents and armed conflicts, what is striking is the impact changing demographics will have on the vast majority of the risks discussed, underlining both the significance and the urgency of planning now for these changes.

21 IGEES, Spending Review Paper: Trends in Public Expenditure (2018). Available here: <https://www.gov.ie/en/collection/6551ae-spending-review-2018/#public-sector-staffing-pay-and-pensions>

22 IGEES, Budgetary Impact of Changing Demographics 2017 – 2027 (September, 2016). Available here: <https://igees.gov.ie/budgetary-impact-of-changing-demographics-2017-to-2027/>

23 CSO: Quarterly National Accounts and International Accounts results for Quarter 1 2019. Available here: <https://cso.ie/en/csolatestnews/pressreleases/2019pressreleases/prnaq119/>

24 Department of Finance: Population Ageing and the Public Finances (August 2018). Available here: <https://www.gov.ie/en/publication/2e8463-population-ageing-and-the-public-finances/>

**Economic & Environmental Risks:** *Public Expenditure Pressures; Delivery of Public Infrastructure; Risk of Overheating; Supply & Affordability of Housing*

Given current budgetary pressures, as outlined in Section 3.3 above, ‘Public Expenditure Pressures’, it is important to recognise the risks that demographic changes will pose for the Exchequer. As outlined above, an ageing population is set to increase the number of Exchequer-funded pension payments, and their span over a longer period of time, and to create additional pressures on the provision of healthcare services, to name but two sectors. As discussed in Part 2 above, a range of other sectors, including transport, housing and education, will need to adjust to changing demographics requiring the public finances to absorb the related demands for additional current and capital expenditure.

As mentioned in Section 5.3 above, ‘Delivery of Public Infrastructure’, increases in population coupled with an under-supply of housing and associated affordability issues, a tightening labour market and the continued strength of economic growth, could give rise to overheating in the economy. This is also linked with Section 3.2, ‘Risk of Overheating’, which also discusses the need to maintain Ireland’s competitiveness in order to ensure strong economic growth. Discussed in the main report, issues around the supply of housing remain one of the most critical challenges currently facing the State. This has led to challenges around affordability as prices and rents increase. As mentioned above, as the population increases and gets older the supply of additional and adequate housing may become a more significant challenge over the long-term.

It is clear that forward planning is vital to ensure infrastructure needs are met, to ensure sufficient capacity is developed in line with both the increase in population and its changing structure, and also to ensure that public finances remain stable in order to be able to respond to current and future spending levels linked with a changing demography.

**Economic, Social & Technological Risks:**

*Reliance on MNCs & sectoral concentration; International Tax changes; Capacity of Higher & Further Education System; Skilled Labour Shortages; Impact of Disruptive Technology trends on jobs & the economy*

In outlining the risks around reliance on multinational corporations’ and sectoral concentration, the main Report discusses how Ireland’s economy is heavily influenced by multinational corporations (MNCs), concentrated in a few enterprise sectors. Ireland’s attractiveness for FDI is comprised of a multitude of factors, including a favourably low corporation tax rate. The availability of a young, skilled and educated workforce, however, is also a pull-factor for MNCs to conduct business in Ireland.

As the size of our workforce narrows, coupled with questions around the sustainability of the funding model for the Higher Education sector, this risks a reduction in Ireland’s attractiveness as a country to invest in. Given Ireland’s reliance on corporation tax receipts to date, this could have knock on effects to the public expenditure pressures, mentioned above. As discussed above in Part 2 of this thematic piece, demographic movements will place increasing pressures on the higher education system over the short-to-medium term. This continued growth of enrolments is set to peak in 2029. In order to maintain the same level of quality education, there may be calls for public funding to rise to meet this demand.

Following on from 2029, as the number of students predicted to enrol begins to decline, and while related public expenditure pressures may ease, a reduction in the number of students with third level education may reduce Ireland's attractiveness to MNCs, as above, and may result in a reduction in the economic benefits associated with both our high level of FDI, and our university sector. As mentioned in Section 4.1 above, the Irish Universities Association estimate that the Irish economy benefitted by €8.9 billion in 2018 from Ireland's seven universities.

An ageing population may also have implications for productivity. Research has been inconclusive about the effects an ageing population has on productivity<sup>25</sup>, however recent work by the IMF found that an ageing workforce reduces growth in labour productivity, due to the negative effect on total factor productivity growth<sup>26</sup>. The IMF also state that the largest negative impact will occur in countries where rapid workforce ageing is anticipated in conjunction with high debt burdens, and they site Ireland as an example in this context.

Section 4.2 discusses the risks around skills shortages in the labour market, and in particular the low participation rates in the economy. As the labour force declines in the future due to an ageing population, this risk may be exacerbated, particularly post 2029 as the number of higher-level graduates begins to decline.

As discussed in the risks around disruptive technology trends, the likelihood of automation replacing jobs and impacting others is increasing, with 2 out of every 5 jobs at high risk of automation. If automation results in an increase in unemployment, this displacement of jobs could have a negative knock on effect to the collection of income taxes, one of the least volatile tax revenue streams (in addition to the wider societal effects that would arise). As discussed, a narrowing tax base would present challenges in future years in order to meet future demands caused by changing demographics. The impact of these disruptive technology trends will need to be monitored and optimised for Ireland to unlock some of the opportunities they may bring. In particular, it will be important to ensure we plan for these trends through increasing life-long learning and upskilling opportunities for those at risk of displacement.

***Social Risks:*** *Social Cohesion including Perceptions of Rural and Regional Imbalances; Migration & Integration*

Growing levels of inequality have been a cause for concern both nationally and internationally. Section 4.5, 'Social Cohesion including Perceptions of Rural and Regional Imbalances', notes that taxation and social policy transfers have been effective in offsetting market income inequality. As we have seen already, increases in the OADR are likely to create pressures on the provision of social services and payments. It is important to consider the effects of changing demographics on income inequality and ensuring that levels of poverty do not increase as a result of a possible decline in tax revenue streams to redistribute.

Although demographic changes can lead to negative consequences in the case of the risks mentioned above, when discussing risks around migration and integration, increased immigration could have a positive effect on Ireland's demographic structure. Generally,

<sup>25</sup> Maestas et al. (2016) finds that an ageing population reduces the growth rate of GDP, mainly driven by a slowdown in the growth rate of labour productivity of workers across the age distribution (available here: <https://www.nber.org/papers/w22452>), while Burtless (2013) finds that's workers aged between 60-74 are more productive than younger workers and finds little evidence that an ageing workforce has hurt productivity (available here: [https://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=2275023](https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2275023)).

<sup>26</sup> IMF Working Paper: The Impact of Workforce Aging on European Productivity (2016). Available here: <https://www.imf.org/en/Publications/WP/Issues/2016/12/31/The-Impact-of-Workforce-Aging-on-European-Productivity-44450>

immigrants are of a working age when entering a country, with the latest CSO Census data showing that nearly half of all non-Irish nationals were aged between 25 and 42 compared with less than a quarter of Irish nationals. Persons aged 65 years or over accounted for less than 5 per cent of the non-Irish population in sharp contrast to the nearly 15 per cent for Irish nationals and the younger age cohort (0-14 years) accounted for 12.3 per cent of non-Irish nationals, compared with 22.5 per cent of Irish nationals.

Predictions of migration trends can be difficult, as these are influenced by economic performance, however if net migration remains positive, i.e. the number of people entering Ireland is greater than people leaving, this could improve the projected number of people in the Irish workforce in years to come.

#### ***Environmental Risks: Climate Change & Biodiversity***

Climate action is currently one of the highest-priority issues for many countries, including Ireland. As the number of people living in our country increases, so too does the demand for food, transport services, housing etc. Increased demand for goods and services stemming from a growing population may result in an increased carbon footprint. The Government's recently published Climate Action Plan on Climate Breakdown refers to Ireland's predicted population growth of 1 million people by 2040, which may result in greater demand for transport across various modes, intensifying the decarbonisation challenge.

Transport, however, is not the only sector of the economy in which greater demand may lead to an increase in emissions. Agriculture, to use one other example, historically and currently is the largest greenhouse gas-emitting sector in the country. There is a risk that as the population increases, we will see related increases in demand for housing and transport, as well as an increase in economic growth. These risks, however, may be mitigated, now and into the future, as plans to tackle climate change take full effect, and new technologies are developed.

#### ***Environmental and Technological Risks: Food Safety; Anti-Microbial Resistance; and Major Pandemics***

As discussed in Part 2 above, pressure on the provision of health care in Ireland will increase due to increases in the population in the older age cohort. Risks around 'Food Safety', 'Anti-Microbial Resistance' and 'Major Pandemics', as discussed in the main report, could be exacerbated if these risks come to pass. It is also worth noting that these risks, having major health consequences, could potentially disproportionately affect older people, which could place even greater pressure on the health system and its capacity to deal with such a crisis.

## **Conclusion**

In taking a closer look at the changing structure and projected future trends in Ireland's population, and setting these trends against an International backdrop, it is clear that Ireland's population is ageing, in line with trends evident in many other nations. These changes bring about significant risks and implications for future planning, both here and elsewhere.

These risks are discussed throughout Part 2 of this piece, highlighting those sectors that

are most vulnerable to population changes and the effects of an ageing population. While these sectors are seen as most at risk, we can see from Part 3 that the implications of a changing demographic structure are truly cross-cutting, impacting on, and in some cases exacerbating many of the risks facing Ireland currently.

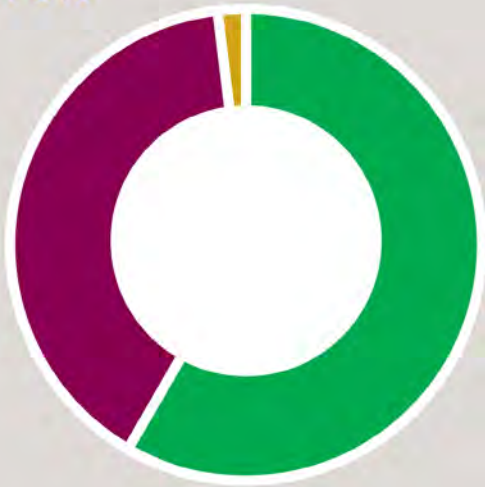
In this context, while some of the changes and implications may be viewed as medium or longer-term trends, the implications are so wide-ranging and pervasive as to underscore the importance of continuing to plan now for the consequences they may bring across all spheres within Ireland's economy and society.

These demographic trends, as a driver across a range of risks, therefore highlight the importance of policy responses including increasing the State Pension Age, increasing participation rates of older people in the workforce, increasing savings for private pension provision, delivering on reforms for healthcare and the health system, and consideration of policies that would stem the further decline in fertility and birth rates, in working to mitigate the risks of ageing population.

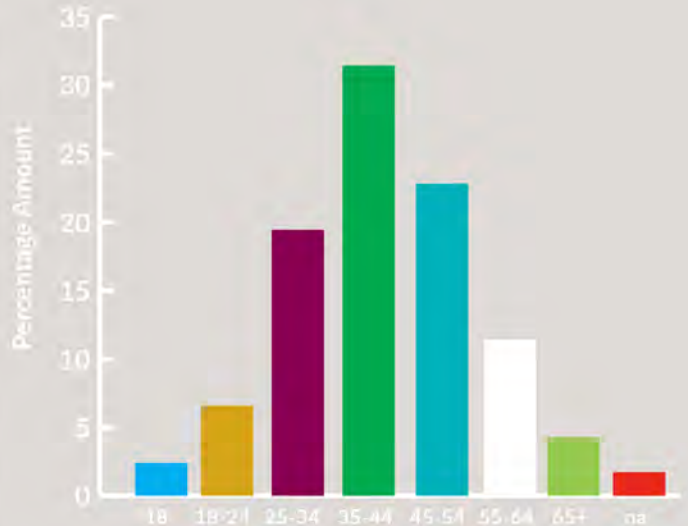
**Annex 3.**  
**Snapshot of results from public consultation**

A Quick Snapshot of Results from the Public Consultation

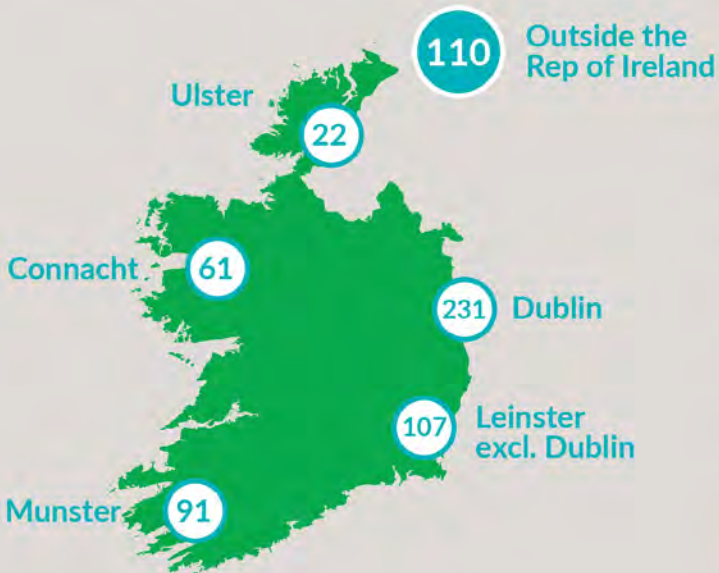
Male 58.48%  
 Female 39.62%  
 N/A 1.90%



Gender Breakdown



Age Breakdown



Location Breakdown



**Geopolitical**  
 Instability in Northern Ireland



**Economic**  
 Economic Impact of Brexit



**Social**  
 An Ageing Population including pensions & health system challenges



**Environmental**  
 Climate Change & Biodiversity



**Technological**  
 Cyber security

Risk Breakdown

Highest-Ranked Risk in terms of Priority

**Annex 4.**  
**National Risk Assessment Public Consultation**  
**– groups/individuals that made a submission**

Apartment Owners Network  
BirdWatch Ireland  
CARI  
Cisco  
Ervia  
European Platform Against Wind Farms  
Feasta  
Get up and Goals, A Partnership with Africa  
ICMSA  
Irish Congress of Trade Unions  
Irish Environmental Network  
Irish Farmers Association  
Pegasus Risk Consulting  
c.640 Private Individuals  
Seán Fleming, T.D. and Senator Mark Daly  
Social Justice Ireland  
Society of Chartered Surveyors Ireland  
Union of Students in Ireland  
Zero Waste Alliance Ireland

**Annex 5.****National Risk Assessment Public Consultation – risks highlighted by respondents**

The following table summarises the risks highlighted by the 650+ respondents to the public consultation. It also outlines how the risks are reflected in the final Report, as appropriate.

The responses were submitted in answer to the question: **‘Have the correct strategic risks been identified or are there other significant risks that should be included?’**

Category	Individual Risk	Comments
<b>Geopolitical Risks</b>	<p>Risks around the direction &amp; stability of the EU:</p> <ul style="list-style-type: none"> <li>• The financial exposure to the state from the investment arbitration systems in EU Free Trade Agreements;</li> <li>• Risk to our agriculture sector and to the planet’s climate from trade agreements being negotiated by the EU with the Mercosur countries;</li> <li>• Current post 2020 Common Agriculture Policy negotiations;</li> <li>• Increased military competition in Europe leading to increased militarisation. Increased use of hybrid activity (terror, assassinations, information, disinformation, cyber means, social media, etc);</li> <li>• The instability in sub Saharan Africa and the Middle East create a potential uncontrollable impact in Europe which will cause social unrest similar to that seen in Eastern Europe;</li> <li>• Conflict between EU and non-EU states such as Russia.</li> </ul>	<p>Risks around terrorism, information &amp; disinformation, cybersecurity and social media are discussed in the ‘Terrorist incidents’, ‘Impact of Social Media on Public Debates’ and ‘Cyber Security’ risks. Geopolitical tensions including regarding Russia are referenced in ‘Changing Distribution of Global Influence and move away from a rules-based system’, and general risks for the stability and future direction of the EU are discussed in the GeoPolitical category, including challenges in ensuring Irish priorities are reflected in the outcomes of discussions and agreements, with specific mention of both the post-2020 Common Agriculture Policy, and the EU-Mercosur trade agreement.</p>
	<p>Economic crime and organised crime in relation to banking fraud, white collar crime, money laundering, financing of terrorism (including international financing</p>	<p>This specific issue is not included as a strategic risk this year</p>



	of sectarian groups), and tax fraud	
	The shift in politics around the world to the extreme right	This issue is reflected in discussions under ‘Future Direction and Stability of the EU’
	Security & Defence	
	<ul style="list-style-type: none"> <li>• Inadequate or incoherent national security policy;</li> <li>• creation of independent domestic intelligence service;</li> <li>• organisation of cyber defence through a new independent national agency/reform of Department of Defence;</li> <li>• Foreign deception in domestic affairs e.g. through social media, and espionage/intelligence gathering by hostile states, or aggressive posturing by other countries including the UK;</li> <li>• Rogue police force;</li> <li>• Public Safety;</li> <li>• Political polarisation and radicalisation;</li> <li>• The lack of security infrastructure and agency in the state including erosion of and underinvestment in Ireland's Defence Forces, including regarding equipment (including intercept capacity by air force, and expansion of naval surveillance).</li> </ul>	<p>The establishment of a new National Security Analysis Centre, and the work of the Government Task Force (GTF) on Emergency Planning, supported by the Office of Emergency Planning (OEP), who produce a National Risk Assessment for Ireland centred on risks relating to potential civil and security emergencies at national level, are also referenced in the Introduction.</p> <p>The risks around interference through social media are discussed in the ‘Impact of Social Media on Public Debate’.</p> <p>Issues in relation to political polarisation are mentioned under both ‘Future Direction and Stability of the EU’ and ‘Impact of Social Media on Public Debate’, and risks around radicalisation are reflected under ‘Terrorist Incidents and Armed Conflict’.</p>
	<p>Risks around a potential re-unification of Ireland:</p> <ul style="list-style-type: none"> <li>• the increased likelihood of a vote on Irish Unification due to Brexit;</li> <li>• failure to prepare for a united Ireland;</li> <li>• lack of strategic planning for the event of a Border Poll.</li> </ul>	Instability in Northern Ireland is recognised as a strategic risk in the Report, with reference made to a possible border poll on a united Ireland.
<b>Economic Risks</b>	<ul style="list-style-type: none"> <li>• Impact of Brexit on small business</li> </ul>	The impact of Brexit on the economy, including for SMEs and

	<ul style="list-style-type: none"> <li>• Impact of Brexit on the agricultural sector including:             <ul style="list-style-type: none"> <li>○ Maintenance of the Regularity Alignment;</li> </ul> </li> </ul>	<p>particularly vulnerable sectors (including the agri-food sector) is discussed under ‘Economic Impact of Brexit’.</p>
	<ul style="list-style-type: none"> <li>○ On-farm challenges including transit of cattle across the border, Basic Payment Scheme challenges and nitrates issues;</li> <li>○ Co-operation on animal health issues between North and South;</li> <li>○ Disturbance to efficient trade transit arrangements.</li> </ul>	
	<p>The economic impact of a referendum on a new agreed Ireland.</p>	<p>Instability in Northern Ireland is recognised as a strategic risk in the Report, with reference made to a possible border poll on a united Ireland.</p>
	<p>Lack of regulation and sanctions in banking sector</p>	<p>This specific issue is not included as a strategic risk</p>
	<ul style="list-style-type: none"> <li>• Over-reliance on FDI vs SMEs;</li> <li>• Loss of a stable and secure environment for global businesses to maintain regional headquarters in Ireland.</li> </ul>	<p>Risks around Ireland’s on MNCs and FDI, with a relatively small number of MNCs concentrated in a few enterprise sectors, including our vulnerability should there be a reduction in Ireland’s attractiveness as a location of choice for these companies, are discussed under ‘Reliance on Multinational Corporations and sectoral concentration’.</p>
	<p>Risks around loss of competitiveness:</p> <ul style="list-style-type: none"> <li>• Increased electricity prices and fuel costs;</li> <li>• Less sustainable farm produce being imported into the EU displacing Ireland's carbon efficient model of food production and undermining Ireland's exports;</li> <li>• Operation of and lack of competition in the legal profession;</li> <li>• Cost of living impacting on Ireland's economic competitiveness and social cohesion;</li> </ul>	<p>Risks around loss of competitiveness and economic overheating are discussed in Section 3.2, and specifically mention risks around our RDI intensity targets.</p>

	<ul style="list-style-type: none"> <li>• Lack of greater investment in research and innovation in order to underpin the future competitiveness;</li> <li>• Failure of the Irish government to take measures to control overheating economy.</li> </ul>	
	Risk of economy underheating stemming from overly risk-averse fiscal policy	This specific issue is not included as a strategic risk this year.
	Shortage of skilled labour is an economic rather than a social risk.	While the National Risk Assessment categorises risks across 5 categories (GeoPolitical, Economic, Social, Environmental, and Technological), as mentioned in the Introduction, the inter-linkages are as important as the categorisation, and many of the risks have implications across several of the categories. The categorisation, therefore, in no way attempts to be definitive.
	The impact of construction inflation on major infrastructure projects.	This risk is mentioned under both 'Risk of Overheating' and 'Delivery of Public Infrastructure'.
	<p>Global financial system instability. Ireland needs to diversify and democratise its banking sector in order to increase its robustness.</p> <p>Ireland's particular exposure to a financial system collapse given its high levels of public and private debt.</p>	The introductory section to the Economic Category mentions Ireland's vulnerability, in the context of still high levels of debt, to any changes in the international - including financial - environment.
<b>Social Risks</b>	<ul style="list-style-type: none"> <li>• Continuing increase in gangland influence in communities;</li> <li>• Growth in use of class A recreational drugs.</li> </ul>	These specific issues are not included as strategic risks this year.
	<ul style="list-style-type: none"> <li>• Lack of free speech and erosion of critical thinking of society;</li> </ul>	These specific issues are not included as strategic risks this year.

	<ul style="list-style-type: none"> <li>• Disenfranchised citizens not willing to vote;</li> <li>• A decline in democracy globally.</li> </ul>	
	<ul style="list-style-type: none"> <li>• Over reliance on Dublin as the centre of economic activity;</li> <li>• Report should not refer to ‘perceptions’ in discussing regional and rural imbalances, as the European Commission’s draft Country Specific Recommendations for 2019 and 2020 urge Ireland to take regional disparities into account when deciding investment-related economic policy.</li> </ul>	Risks around perceptions of rural and regional imbalances are discussed in Section 4.5.
	Market concentration in media ownership	Risks to the sustainability of traditional media, and how a thriving, independent media is essential to a healthy society, are discussed under ‘Impact of Social Media on Public Debate’.
	Decentralisation of civil service offices, in terms of collusion fraud, as multiple closely linked individuals tend to work together in decentralised offices for decade	This specific issue is not included as a strategic risk this year.
	Gender inequality	This specific issue is not included as a strategic risk this year.
	Risks relating to healthcare: <ul style="list-style-type: none"> <li>• Shortage of consultants to provide timely healthcare;</li> <li>• Lack of mental health services provision;</li> <li>• Ageing population;</li> <li>• Access to adequate, timely and effective health and social care;</li> <li>• Medical, nutrition and health misinformation spread and the monetisation of ‘alternative’ treatments;</li> </ul>	While healthcare risks associated with an ageing population are discussed in ‘An Ageing population including pensions and health system challenges’, other more general risks around the health system are not included as a strategic risk.

	<ul style="list-style-type: none"> <li>• Impact 5G on public health;</li> <li>• Cervical health screening and access to abortion services;</li> <li>• Counselling services need to be more readily available for all types of income homes.</li> </ul>	
	High cost of childcare on middle-income earners	This specific issue is not included as a strategic risk this year.
	Insufficient prison facilities to house prisoners	This specific issue is not included as a strategic risk this year.
	<p>Risks associated with migration:</p> <ul style="list-style-type: none"> <li>• Economic migration carried out by people posing as refugees;</li> <li>• Large scale immigration and its consequence on the balance of ethnicity;</li> <li>• Loss of indigenous culture and loss of the Irish language.</li> </ul>	Risks around migration are discussed under 'Migration and Integration'.
	<p>Political risks:</p> <ul style="list-style-type: none"> <li>• Loss of connection to North American diaspora due to current US leadership;</li> <li>• Early identification and countering of external disinformation campaigns that might harm internal politics;</li> <li>• Disinformation from foreign and domestic actors, particularly political disinformation and narrative-shaping propaganda from adversarial foreign nations. It is not merely an issue of social media, but rather a more complex matter of the entire information environment.</li> </ul>	Risks around disinformation are discussed under 'Impact of Social Media on Public Debate'.
	<p>Skills shortage:</p> <ul style="list-style-type: none"> <li>• The current lack of experienced/middle management resources in the engineering sector;</li> </ul>	Risks around skills shortages are discussed under 'Skilled Labour Shortages', and the importance of an adequately resourced, flexible, responsive and aligned Higher Education and Further Education & Training system are discussed

	<ul style="list-style-type: none"> <li>The impact of the collapse of the traditional apprenticeship path in Ireland on the manufacturing and construction/engineering sectors.</li> </ul>	under 'Capacity of Higher and Further Education System'.
	<p>Risks relating to social cohesion:</p> <ul style="list-style-type: none"> <li>Ireland has the highest level of market income inequality in the EU, which appears to be increasing;</li> <li>Persistence of the poverty rate above 15%;</li> <li>Social mobility and wealth redistribution;</li> <li>Homelessness;</li> <li>Increased fuel/energy poverty due to increased electricity prices;</li> <li>Underemployment and the lack of quality of employment;</li> <li>Temporary and precarious employment is more than a risk; it is a reality;</li> <li>the increasing disparity between rural and urban development.</li> </ul>	Risks around social cohesion, as mentioned, are included under 'Social Cohesion including Rural and Regional Imbalances', and 'Supply and Affordability of Housing' (in the Environmental category).
	Social unrest due to housing crisis and high costs of living for young workers	While this specific issue is not included as a strategic risk this year, issues around supply and affordability of housing are discussed under the risk of that title in the Environmental category.
	The costs of untreated child sexual abuse	This specific issue is not included as a strategic risk this year.
<b>Environmental Risks</b>	<p>Housing, Planning, and Public Infrastructure Delivery:</p> <ul style="list-style-type: none"> <li>Accessible and affordable housing, including the generational impact of the housing crisis</li> <li>Risks relating to apartment development:</li> </ul>	Both economic and social risks around the supply and affordability of housing, including issues regarding homelessness, quality of life, and impacts on the construction sector are discussed under 'Supply and Affordability of Housing'. High-level strategic risks around the delivery of infrastructure projects are

	<ul style="list-style-type: none"> <li>○ Potential for under-funded Owners Management Committees to require bailing out from local authorities for re-instatement/insurance value of estate common areas;</li> <li>○ Costs of remediation of building defects in apartment blocks.</li> <li>● Impact that Government action in response to crises has had on the urban and social landscape, including recent changes to the Planning &amp; Development Act, in terms of increasing homelessness and decreasing affordability for the private individual.</li> <li>● The prolonged duration of the Irish planning approval process which has a significant schedule impact for public infrastructure projects.</li> <li>● The challenge in relation to supply chain capacity within the construction sector which has the potential to obstruct delivery of key infrastructural projects.</li> </ul>	<p>discussed under ‘Delivery of Public Infrastructure’.</p>
	<p>Environmental risks arising from Brexit:</p> <ul style="list-style-type: none"> <li>● The risk of divergent regulations north and south of the border and in particular environmental regulations;</li> <li>● Transboundary contamination, invasive alien species, IAS, and bio-security risk.</li> </ul>	<p>Risks around divergent regulations in the context of Brexit are mentioned under ‘Economic Impact of Brexit’ in the Economic category.</p>
	<p>New Common Agricultural Policy:</p> <ul style="list-style-type: none"> <li>● Flexibility of new Common Agricultural Policy rules as proposed for biodiversity protection;</li> </ul>	<p>The challenges in ensuring Irish priorities are reflected in the outcomes of EU discussions and agreements are discussed under ‘Future Direction and Stability of the EU’ in the GeoPolitical category, with specific mention of</p>

	<ul style="list-style-type: none"> <li>• Significant reductions in the direct payment to Irish farmers in real terms as part of CAP Post-2020 proposals.</li> </ul>	the post-2020 Common Agriculture Policy.
	Forest & Gorse fire risk	This specific risk is mentioned under 'Climate Change & Biodiversity'.
	Fracking and offshore drilling	This specific issue is not included as a strategic risk this year.
	Historic and ongoing lack of effective conservation management in Ireland	This specific issue is not included as a strategic risk this year.
	Inability of the State to respond to threats due to public services having inadequate resources, capabilities, numbers etc	This specific issue is not included as a strategic risk this year.
	Insurance issues relating to environmental events	This specific issue is not included as a strategic risk this year.
	Risk associated with Battery Energy Storage Facilities, including the risk of Lithium in Fire, the huge effects it will have on air quality with the release of hydrogen hydroxide.	This specific issue is not included as a strategic risk this year.
	<p>Risks under Climate Change:</p> <ul style="list-style-type: none"> <li>• Need to recognise that environmental risk is existential in nature and the climate and biodiversity crises threaten humanity's capacity to survive;</li> <li>• Need for more emphasis on climate adaptation, climate proofing (rather than carbon proofing) or emergency management;</li> <li>• Citizen participation in climate transition;</li> <li>• Lack of sustainable planning for environmental future which balances human and nature needs</li> <li>• Rising sea levels;</li> </ul>	Risks around climate change are discussed in a strategic, high-level manner in the 'Climate Change & Biodiversity' risk including many of the risks mentioned here.



	<ul style="list-style-type: none"> <li>• Sustainable transport via active travel within 10km zones to combat climate change;</li> <li>• Reliance on concrete as a building material;</li> <li>• Planned and perceived obsolescence of products/fast fashion, and linear economy and capitalism/an economy that focuses on GDP growth instead of quality of life;</li> <li>• Sustainable financing for renewable energy projects;</li> <li>• Global financial system overly dependent on access to cheap (fossil fuel) energy;</li> <li>• The slow rate at which government, big industry and energy companies are adapting to the climate crisis;</li> <li>• Risks of failing to adapt agricultural practices away from beef/dairy and towards a more diverse range of crops;</li> <li>• Increased diversity of crops and foods produced in Ireland, to increase our self-reliance; sustainability, and reduce reliance (and climate impact) from food imports;</li> <li>• Ireland’s waste management;</li> <li>• Significant investment requirement in water services infrastructure to increase its resilience to climate change impacts;</li> <li>• Increased diseases and death;</li> <li>• Destruction and loss of economic means of subsistence;</li> <li>• Destruction of crops and impact on food production;</li> <li>• Water quality and water shortages which impact both the supply of drinking water and the impact on water quality and the environment from wastewater discharges;</li> <li>• Scarcity in natural resources, water and food, leading to conflict;</li> <li>• Creation of climate refugees;</li> <li>• Increased droughts in rivers and lakes;</li> <li>• Soil erosion;</li> <li>• Coastal erosion and;</li> <li>• Increased flooding.</li> </ul>	
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	<p><b>Biodiversity:</b></p> <ul style="list-style-type: none"> <li>• The risk to biodiversity of habitat loss, disturbance, displacement, pollution and cumulative impacts from intensification of agriculture, inappropriate forestry, land-use change, inappropriate siting of wind farm infrastructure, modifications to rivers including flood protection measures pollution;</li> <li>• Risk to plant health from invasive plant pests and pathogens.</li> </ul> <p>If biodiversity risk is not addressed additional risks include:</p> <ul style="list-style-type: none"> <li>• Failing to meet our obligations to the CBD and the European Commission;</li> <li>• Species extinction;</li> <li>• Permanent loss of our national heritage;</li> <li>• Failing to protect nature for its own intrinsic value, species extinction;</li> <li>• Failure to secure the free services that nature provides: i.e. carbon sequestration (from peatland habitats (all have bad ecological status)), water filtration and regulation, climate regulation, pollination, health and wellbeing etc.;</li> <li>• There is a need to separate the challenges of climate change and biodiversity as climate change challenges are more widespread than mere biodiversity, and the potential human cost is profound.</li> </ul>	<p>Risks around biodiversity are discussed in the 'Climate Change &amp; Biodiversity' risk including many of the risks mentioned here.</p>
	<p>Failure to draft an EU Member State electricity power outage preparedness plan</p>	<p>This specific issue is not included as a strategic risk this year.</p>
	<p><b>Energy:</b></p> <p>Access to off-shore energy resources, including ease of access to oil. Oil is</p>	<p>Risks around energy supplies, including oil, are discussed under 'Ensuring an Affordable,</p>

	diminishing steadily, and renewables cannot do all the tasks that oil can do.	Sustainable and Diverse Energy Supply'.
<b>Technological Risks</b>	<p>Cyber-Security:</p> <ul style="list-style-type: none"> <li>• Significant cyber risks for Ireland due to its increasingly prominent role as a digital technology hub and with increased digitalisation across the economy and society;</li> <li>• Data privacy;</li> <li>• Critical infrastructure for cyber security risks;</li> <li>• Cyber risks in the Maritime environment, threatening Ireland's imports and exports.</li> </ul>	Risks in relation to cyber-security, including the majority of these issues, are discussed under the 'Cyber Security' section.
	Ireland's ability to properly track and assess nuclear risks	High-level risks around nuclear contamination are discussed in Section 6.5.
	Over reliance on expensive and unreliable Lithium Ion Battery Energy Storage Systems and Interconnectors	This specific issue is not included as a strategic risk this year.
	Public access to advanced technology (including broadband)	This specific issue is not included as a strategic risk this year.

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