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National Risk Assessment 2016

Overview of Strategic Risks

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National Risk Assessment 2016

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Foreword

National Risk Assessment 2016 - Overview of Strategic Risks

The new Partnership Government is determined to deliver on the important work of repairing our economy and making our people's lives better. In doing so we have to ensure that the right decisions are taken so that the benefits of a strong economy and a fair society can be felt by everyone.

While our economic situation continues to improve, with the number of people at work surpassing two million people for the first time since 2009, we recognise that the international environment is as uncertain as ever.

As a small island nation, Ireland is especially susceptible to global forces and trends.

We must acknowledge the consequent risks so that the most appropriate course of action can be chosen.

The *National Risk Assessment 2016* is an effort to understand the key strategic risks facing Ireland.

It nominates several of critical importance including Brexit and greater global economic and political uncertainty.

It also identifies several significant domestic risks including an under-supply of housing and expenditure pressures.

Dealing with these and many other risks will require the engagement of many people across our society. The first step in any such engagement lies in developing a common understanding.

Enda Kenny T.D.
Taoiseach

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National Risk Assessment 2016: Overview of Strategic Risks

1.1 Introduction

In September 2013, the Government announced that, as part of its process of Dáil reform, it would publish annually a National Risk Assessment (NRA) for debate in the Dáil alongside a number of other documents.[1]

The objective is to identify strategic risks that may arise due to potential changes in the economy and the environment and geo-political, technological and social settings. In particular, the National Risk Assessment aims to stimulate and facilitate debate on these broader risks to future national well-being. As such it can be seen as part of the response to failures in the past to identify and address risks beyond a short time horizon.

This exercise is not intended to replicate or displace the detailed risk management that is already conducted within Government Departments and Agencies, or the work of the Office of Emergency Planning (OEP). Rather it aims to provide a systemic overview of strategic risks facing the country.

In developing the National Risk Assessment 2016, the Department of the Taoiseach consulted with other Government Departments to produce a draft National Risk Assessment for 2016 which was published in June of this year. In total, there were 28 risks captured in the draft National Risk Assessment 2016 that were categorised under five different headings: economic, environmental, geo-political, social and technological.[2] The National Risk Assessment 2016 was published for consultation and laid before the Oireachtas in order

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[1] These include the Stability Programme Update and National Reform Programme which are presented to the EU Commission in April, the Spring Economic Statement produced by the Department of Finance and a National Progress Report published by the Central Statistics Office.

[2] This categorisation is derived from the various iterations of the World Economic Forum's *Global Risk Report* which can be found at *http://www.weforum.org/reports?filter[type]=Risks%20Reports*. The use of risk used in this report is broadly similar to the definition used by the WEF: a global risk is an 'uncertain event or condition that, if it occurs, can cause significant negative impact for several countries or industries within the next ten years' (Global Risk Report 2016, p.6). This National Risk Assessment is based on risks to an individual country although it does pay attention to those risks of global scope that pose a threat; it is also based on a shorter time-frame, analysing any changes over a year and pays attention to societal as well as economic impacts.

to stimulate a broader conversation about the risks that Ireland faces and how they can best be addressed.

In doing so, the National Risk Assessment process is a signal that the public service is willing to listen to discordant voices that pose a challenge to set ways of thinking about the future. It is hoped that a more rigorous appraisal of Ireland's future and the risks to its progress might take place whilst also providing greater understanding of some of the constraints on pursuing various policy options.

A number of submissions were received (see Appendix 1) and these have been incorporated into the final National Risk Assessment for 2016 (see Appendix 2 for more details).

1.2 Risks in 2016

The NRA process is conducted annually as Ireland's relative size and openness make it susceptible to rapid changes in the regional and global environment so it is important to keep track of threats to its development. Although there have been many improvements in Ireland's condition and standing since the NRA process was first conducted in 2014, it is still vulnerable to external events.

The draft National Risk Assessment for 2016 identified a number of risks which were believed to have greater importance this year. These were as follows:

- Brexit/Uncertainty over the UK's relationship with the EU
- Weak Global Economic Growth
- Infrastructural Deficits
- International Terrorism
- Expenditure Pressures

Since the draft National Risk Assessment 2016 was published in early June of this year, the British people, in a referendum on membership of the European Union, voted to leave the EU. The risk of a so-called 'Brexit' was identified in previous iterations of the NRA but has now been endorsed by a majority of voters of the United Kingdom. The fact that this option has come to pass does not diminish uncertainty but rather exacerbates it. The specific terms on which the United Kingdom would withdraw from the European Union have yet to be elaborated and confirmed and this will not become clear for some time.

Article 50 of the Lisbon Treaty specifies that a Member State which decides to withdraw shall notify the European Council of its intention. There will then be negotiations to establish arrangements for the UK's withdrawal. EU treaties will cease to apply to the UK upon this withdrawal agreement being concluded or, failing that, two years after the initial notification. The European Council can, with the agreement of the member-state concerned, unanimously extend the period for negotiating a withdrawal. The UK Prime Minister, Theresa May, has stated that the intention to withdraw will be invoked no later than the end of March 2017.

Separate negotiations on a new relationship between the EU and the UK will also need to take place, and it is possible that these will last longer than the withdrawal negotiations. The UK government has not yet outlined the kind of relationship it intends to seek with the EU: the possibilities include membership of the European Economic Area, a Free Trade Agreement or a relationship with the World Trade Organisation.

As the UK Government is actively pursuing the Brexit option, coupled with the fact that this would have momentous consequences for Ireland across a range of policy areas, means that it is worth elaborating on what some of the major impacts might be for Ireland. Devoting such attention to Brexit should not be construed as diminishing the significance of other risks, such as weakening global growth, which might have more significant near-term impacts on Ireland.

1.3 Possible Effects of Brexit

Despite the uncertainties surrounding Brexit,[3] this section attempts to identify in a summary fashion the issues on which it might have the greatest impact. This will be done in more detail under each individual risk where relevant.

[3] This issue was first identified as a risk in early 2014 in the NRA process of that year.

As the future EU-UK relationship is as yet unknown, it is impossible to determine what the outcome of 'Brexit' will be and how it might affect distinct policy areas. It is possible however to highlight those areas that are most vulnerable, from Ireland's perspective, following the referendum on Brexit even if it is not possible here to capture every issue - this will be done more comprehensively under the separate risk headings in the NRA 2016.

The Government has set out that its priorities in the forthcoming Brexit negotiations relate to the following: the economy and trade; Northern Ireland and the peace process; the border and the common travel area and the future of the EU itself.

Trade is likely to be one of the most tangible areas to be impacted by Brexit occurring, given the significant economic linkage between the UK and Ireland, with the two countries trading over €1 billion worth of goods and services every week. Some sectors, such as food and drink, are heavily reliant on the UK market with over 40% of goods being exported there. In terms of imports, the UK is Ireland's largest trading partner and imports are concentrated on oil and higher value-added products.[4]

Brexit could affect trade flows in a number of ways. The first relates to a depreciation of sterling which is currently affecting exporters even if it will make imported goods cheaper; the second relates to a faltering of economic growth in the UK which makes companies and consumers there less likely to buy imported goods and services; and a third is the prospect of tariffs on goods and non-tariff barriers on services traded between the two nations.[5] There are no fixed outcomes associated with each of these possibilities. There is a need to distinguish between short and long-term effects as well as best case scenarios, whereby there is a free-trade agreement between the EU and UK, and worst-case, where there is no such agreement raising the possibility of considerable tariffs. [6]

[4] The share of Ireland's goods imports from the UK in 2015 stood at 27% of the total.
[5] It is important to note that until it formally withdraws from the Union, the UK remains a full Member, with all of its existing rights and obligations which in turn means no tariffs in the short term and no outside negotiations
[6] In relation to the impact for Ireland, estimates made using the ESRI HERMES model suggest that a 1 per cent reduction in UK GDP would reduce Irish GDP by approximately 0.2 per cent, relative to baseline, over two years. This implies a possible fall in Irish GDP relative to baseline in the range of 0.5 to 1.2 per cent based on Treasury and NIESR estimates.

Other serious implications of Brexit include its potential impact on Northern Ireland and the peace process; on retaining the open border with Northern Ireland and the Common Travel Area between Ireland and Britain; and on Ireland's interest in a continued strong European Union.

The Irish and British Governments have both reaffirmed their commitment to the Good Friday Agreement as the foundation for all engagement on Northern Ireland. The Agreement provides an indispensable, legal and agreed base of certainty for Northern Ireland, and must be fully provided for as the full implications and particular form of the UK's exit from the European Union is worked through.

There are a number of potential implications for the current open border on the island of Ireland and the Common Travel Area between Ireland and Britain, depending on the future UK-EU relationship. The Irish and British Governments have both stated that they wish to seek to maintain current arrangements, i.e. an open border and Common Travel Area. The Government has been and will remain actively engaged with EU partners to seek support for this, as a priority in the overall negotiations.

A further risk concerns the possible effect on employment. The status and conditions enjoyed by Irish citizens resident in the UK is an important factor. The UK has long been a favoured source of employment for Irish workers[7] and it is possible that this could be inhibited. It is also necessary to consider whether Ireland would attract migrants from the EU that would have otherwise gone to the UK to work. The ESRI have suggested that the unemployment rate for low-skilled worker could rise by 1%,[8] which heightens an already identified risk, namely long-term exclusion from employment.

There are many other possible risks arising from Brexit – for example, the effects of Brexit on the binding overall EU emissions reductions headline target of at least 40% by 2030

[7] Fitzgerald and Honohan (2016) refer to the UK labour market as an 'important safety valve' for the Irish economy in the recent downturn. See Fitzgerald, J. and Honohan, P. (2016) 'Ireland and Brexit' in Baldwin, R. (ed.) *Brexit Beckons*, vox.eu.org.

[8] In the ESRI's scenario (2015: 59), low-skilled wages are fixed and that all the adjustment in the labour market for low-skilled people occurs through unemployment. See ESRI (2015) *Scoping the possible Economic Implications of Brexit on Ireland*.

(compared to 1990 levels), together with its possible impact on the emissions trading system and on the level of burden sharing between Member States of emissions reduction target. The UK might also adopt less rigorous environmental standards which could put industries in Ireland at a competitive disadvantage.

Other risks could arise from the fact that Ireland sources 85% of its energy imports raising questions about the security of supply.[9] And, to take another example, there are also risks associated with Irish banks' exposure to the UK market which may lead to a 'downturn in operating profits and asset quality' but this risk should remain 'manageable'.[10] These are just some of the issues potentially affected by Brexit.

All things considered Brexit accentuates, both in terms of likelihood and impact, many of the risks previously identified in the draft NRA 2016. That said, the situation may present an opportunity for Ireland in attracting Foreign Direct Investment (FDI), particularly in the area of financial services, which might have otherwise been placed in the UK.[11] Ireland will remain a member of the European Union with full market access and that will be attractive to investors.

The risks elaborated here are distinctive to Ireland but Brexit will also have broader geopolitical implications which are elaborated in Section 4. And the specific impacts of Brexit upon particular risks will be highlighted throughout the NRA 2016.

In addition, Brexit is a significant 'risk-amplifier' given that it may magnify the possible impact of other risks. For example, its effects might be felt on economic growth, competitiveness and the stability of the EU to name just a few. Analysis of the risks documented in the draft NRA shows that at least half of them may be affected by Brexit and this NRA will trace its impact across all categories of risk. However, it is also important to realise that there are many vital risks and challenges such as that posed by chronic diseases or cyber security that are relatively unaffected by the consequences of Brexit.

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[9] SEAI (2015) *Energy in Ireland: Key Statistics.*

[10] IMF (2016) *Ireland Financial System Stability Assessment*. IMF Country Report No. 16/258.

[11] The ESRI, op. cit., has counselled that the 'expected additional attractiveness of Ireland to new FDI projects is likely to be small' (p. 29).

1.4 Other Major Risks

Apart from Brexit and any spill-over effects associated with it, there is no reason to think that any of the major risks listed at the beginning of sec. 1.2 have diminished in significance during the year.

Despite the upturn in Ireland's economy in recent years, risks persist. Ireland's openness makes it more difficult to measure and forecast macro-economic trends via the traditional indicators of economic growth, GDP and GNP. Figures for both in 2015 were revised upwards significantly[12] but it is generally accepted that this headline data reflects, in part, economic activity carried out in other jurisdictions but formally recorded in Irish accounts.

When these factors are accounted for, it seems clear that domestic demand is still strong as other indicators, including tax revenue, consumer spending and labour market data are all growing and consistent with an economy where recovery is firmly established. For example consumer spending continued to grow, supported by a continued reduction in unemployment which fell to 7.9% in September 2016 and rises in earnings. The benefits, or upside risks, associated with strong headline growth figures also cannot be ignored as the new figures also reduced the Government's debt- to-GDP ratio to below 80% from nearly 94%, which has positive implications for Ireland's sovereign debt rating.

The issue around Ireland's GDP/GNP data is associated with a risk documented in previous iterations of the NRA, namely Ireland's reliance on multinational corporations and the associated tax receipts from these entities. Corporation tax grew by nearly 50% between 2014-15, and given that Ireland is a small open economy, there is a risk that the strong growth in these revenues could be temporary.[13] Also there are clear expenditure pressures arising from public expectations, apart from the issues involved in maintaining spending in line with demographic growth and inflation, which could make it difficult to reduce government expenditure if tax revenues decline.

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[12] GDP showed an increase of 26.3% in 2015. Although the scale of this increase is unprecedented in OECD economies historically, the Central Statistics Office compiled these figures in accordance with international rules.
[13] See Central Bank of Ireland (2016) *Quarterly Bulletin No. 3 2016.*

Some of these expectations arise from efforts to address other risks outlined in the draft NRA 2016 such an under-supply of housing and infrastructural development. Government has committed to providing €5.35 billion in funding to support the delivery of 47,000 units of social housing by the end of 2021. It has also committed to providing €200 million to provide enabling infrastructure that opens up large sites for early development. Infrastructural development in general is another area that requires significant amounts of investment if Ireland is to stay abreast of its peer countries and not to do so may represent a risk to future competitiveness and prosperity.[14] The CSO has also provided some preliminary insights from Census 2016 which suggests that the Irish population is growing more strongly than previously thought which will place more demands on infrastructure.

The draft NRA 2016 also highlighted risks that are not domestic in origin - particularly weak global economic growth and international terrorism - and the salience of these has increased. The International Monetary Fund has revised downwards its estimates for global economic growth because of Brexit and the 'sizeable increase in uncertainty' it has brought[15] and has also scaled back its projections for growth in UK GDP by 1% in 2017. The OECD has predicted that world economic growth will be relatively flat in 2017.[16] And the Bank of England has concluded that there will be a 'material slowing down in UK GDP growth in the second half of 2016'.[17] If these projections materialise, they would have a negative effect for Ireland's GDP growth. [18]

Events on the mainland of Europe in the summer of 2016 have demonstrated that the threat from international terrorism is still present. Attacks in Nice and at Istanbul airport were the most serious in terms of fatalities but there were other grave incidents in Germany and France which also resulted in people being killed.

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[14] International Monetary Fund (2016) *Ireland, IMF Country Report No. 16/256.*

[15] International Monetary Fund (2016) *World Economic Outlook Update,* July 2016.

[16] OECD (2016) *Interim Economic Outlook*, 21st September 2016.

[17] Bank of England (2016) *Minutes of the Monetary Policy Committee (MPC) Meeting ending on 14th September August 2016*, p.7. The MPC did note that number of indicators of near-term economic activity were somewhat stronger than expected and attributed this to its intervention in August (see section 2.6).

[18] See footnote 6. In addition, a shock to UK GDP would also be expected to impact on our other trading partners. Estimates from the ESRI HERMES model suggest that if euro area GDP were to also fall by 1 per cent, a level estimated in the Treasury's 'severe scenario', Irish GDP would fall by a further 0.4 per cent relative to baseline.

All of the above means that the previously identified list of five high-level risks should remain.

1.5 Public Consultation

One of the original impetuses behind the NRA process was to avoid the possibility of 'group think' when identifying strategic risks to the country. Each iteration of the NRA has involved a draft document produced for public consultation to gauge whether there are any significant risks that have been overlooked. The same process was followed this year and the submissions received in terms of possible amendments to the risks outlined are detailed in Appendix 1. The submissions broadly concurred with the appropriateness of the set of risks identified in the draft NRA 2016 although there were differences of emphasis concerning particular risks. Appendix 2 sets out in more detail the particular issues that individual submissions raised in terms of risks and how these have been incorporated into the NRA 2016.

1.6 Changes to the Overview of Risks

Having regard to developments since the publication of the draft NRA 2016 and the issues identified in public submissions, the following changes have been made to the NRA 2016:

- **Trading Relations with the UK -** given the importance of Ireland's trading relationship with Britain and the strains that Brexit might place upon it, it is appropriate to include this new risk in the economic category of risks.
- **Northern Ireland and Devolution in the UK -** Brexit is likely to place strains on the political process in Northern Ireland, and potentially also on the United Kingdom's current devolution arrangements. The UK referendum result has crystallised a further divisive political and identity issue in Northern Ireland, with the risk that the wide-ranging upheaval of Brexit will challenge the functioning of the political system in Northern Ireland, at a time when stability is much needed to deal with other pressing economic, social and legacy issues. In Scotland, the Scottish National Party has indicated that they may seek a second referendum on the future of the Union.
- **Risks to the Stability of the EU -** migration had been identified as the issue most likely to destabilise the EU but Brexit is also likely to have an impact through a variety of different effects.

- **Human Capital and the Resourcing of Higher Education -** the importance of cultivating human capital had been recognised in earlier iterations of the NRA. Emerging national skills needs and demands are giving rise to issues about the capacity of the higher education system to respond to them.
- **Demographic changes and the Dependency Ratio -** this had been covered by the term, 'changes in the dependency ratio,' but it is important to underline the significance of demographic changes in their own right and the challenges this brings (provision of childcare, looking after those with dementia etc) as the dependency ratio is primarily concerned with how many workers are available to fund these and other services.

Of course, many of the risks identified in the draft NRA 2016 have not changed since last year, reflecting the fact that they remain significant risks to future national well-being even if their nature or relative importance hasn’t changed significantly. In many cases, they reflect longer-term underlying risks, for example changes in the dependency ratio, loss of competitiveness or increases in chronic diseases. In others they refer to specific events, for example nuclear contamination or major pandemics, which remain significant risks for Ireland. All of the relevant risks are outlined in more detail in the following sections.

Risks for Ireland

ECONOMIC

- Weak Global economic growth and debt sustainability
- Trading relations with the UK
- Loss of competitiveness
- Importance of multinational corporations & risk of unfavourable international tax changes
- Vulnerabilities in the banking system
- Turbulence in the Euro-area debt markets
- Monetary policy uncertainties

ENVIRONMENTAL

- Climate change & extreme weather events
- Ensuring affordable, sustainable and diverse energy supply
- Food safety
- Under-supply of housing
- Infrastructural development

GEO-POLITICAL

- Brexit / Uncertainty over UK's relationship with EU
- Northern Ireland and Devolution in the UK
- Risks to stability of the EU
- Terrorist incidents & armed conflicts
- Changing distribution of global influence

SOCIAL

- Long-term exclusion from employment
- Human capital and the resourcing of Higher Education
- Expenditure pressures
- Demographic Changes and the Dependency Ratio
- Increases in chronic diseases
- Social cohesion & political stability
- Migration & integration

TECHNOLOGY

- Cyber-security
- Major pandemics
- Nuclear contamination
- Technological trends
- Anti-microbial resitance

2. Economic Risks

Weak Global Economic Growth and Debt Sustainability

Trading Relations with the UK

Loss of Competitiveness

Importance of multinational corporations to the Irish economy and risk of unfavourable international tax changes

Vulnerabilities in the Banking System

Turbulence in the Euro-area Debt Markets

Monetary Policy Uncertainties

2.1 Weak Global Economic Growth and Debt Sustainability

Ireland's economic performance is dependent on external demand given the openness of the economy. Up to June, the global economy had performed marginally better than expected with a recovery in financial and oil markets beginning in late February. However, the result of the Brexit referendum in the UK has introduced a 'substantial increase in economic, political, and institutional uncertainty' which is expected to have negative macroeconomic consequence especially in Europe.[19] As a result, the IMF has revised downwards projections for global economic growth in 2016, at 3.1%, and 2017, at 3.4%. These downward revisions reflect a subdued outlook for advanced economies following the vote for a 'Brexit' and weaker than expected growth in the USA.[20]

The OECD also forecasts that world economic growth will pick up only marginally in 2017 - from 2.9% to 3.2% - and surmises that 'the world economy remains in a low-growth trap,

[19] International Monetary Fund (2016) *World Economic Outlook Update,* July 2016.
[20] International Monetary Fund (2016) *World Economic Outlook Update,* October 2016. Projections for economic growth in advanced economies are lower at 1.6% in 2016 and 1.8% in 2017.

with poor growth expectations depressing trade, investment, productivity, and wages' which in turn 'leads to a further downward revision in growth expectations and subdued demand.'[21]

There is emerging evidence of a plateau in global trade volumes since the beginning of 2015 with an increasing resort to protectionist measures which would be damaging to Ireland which is dependent on trading with open economies.[22] These trends are related to geo-political tensions, such as a fraying consensus about the benefits of cross-border economic integration, which could cause firms to defer investment decisions.[23]

Apart from the global concerns and Brexit-induced uncertainties to consumer and business confidence, concerns about growth arise from legacy issues in the banking sector, and the need for substantial fiscal adjustments.

GDP growth for Ireland in 2016 is expected to be about 4.2% and 3.5% in 2017.[24] Of all the Eurozone economies, Ireland is the most exposed to the consequences of the UK vote to leave the EU and will depend on the future relationship between UK and EU.

The sensitivity of Government debt to a rise in interest rates is estimated to be low in the short to medium term, given relatively low projected refinancing needs. However, the continued high level of private debt would be vulnerable to increases in interest rates in the medium-term or a decline in household disposable income.

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[21] OECD (2016) *Interim Economic Outlook*, 21st September 2016, p.2.

[22] *Global Trade Plateaus: The 19th GTA Report* (2016) report that in 2015 policy initiatives harming foreign commercial interests outnumbered trade liberalisation three-to-one. An emerging concern is that 'a negative feedback loop develops where zero trade growth fuels resort to even more zero-sum trade policies which, in turn, discourages cross-border supply of national markets' (p.8). The OECD suggests that on the basis of these figures 'globalisation, as measured by trade intensity, may have stalled' (*Interim Economic Outlook*, Sept. 2016).

[23] International Monetary Fund (2016) *World Economic Outlook Update,* October 2016.

[24] Department of Finance (2017) *Budget 2017 - Economic and Fiscal Outlook*. This is a downward revision from the Department of Finance's *Summer Economic Statement* (2016) which project growth of 4.9% and 3.9% in 2016 and 2017 respectively.

2.2 Trading Relations with the UK

One of the ways in which Ireland is most exposed to Brexit is through trade. As noted, the UK is one of Ireland's most important trading partners with over €1 billion in goods and services traded every week. Some sectors are particularly dependent on UK exports including agricultural and fishing goods, food and beverages and chemicals. And indigenous firms export a greater proportion of their goods (about 44%) than foreign owned firms (about 11%).[25]

In terms of imports, the UK accounts for approximately 30% of Ireland's total goods imports with categories such as fuel, machinery and vehicles being particularly important.[26] Great Britain accounts for about 40% of the tourist numbers coming to Ireland and is particularly important both for its regional distribution and the number of jobs dependent on it.

As stated in section 1.3, there are three ways in which trade could be affected: a depreciation in sterling[27] which raises the price of Irish exports; weaker economic growth in the UK which makes companies and consumers there less likely to buy goods and services imported from Ireland; and lastly through tariffs on goods and non-tariff barriers on services traded between the two nations (a scenario which only arises when the UK leaves the EU).

The ESRI has suggested that bilateral trade flows could be reduced by 20% or more.[28] As noted, smaller, locally owned Irish firms are more reliant on the UK market as it is often the first overseas market for 'home-grown' businesses. But if access to that market was accompanied by tariffs and administrative barriers, it would make the task of expansion more difficult.[29]

[25] ESRI (2015), *op. cit.*, p.22.

[26] Central Statistics Office (2016) *Goods Exports and Imports December 2015* showed that the UK accounted for €1,587 million (27%) of total goods imports in 2015.

[27] Sterling has lost about 18% of its value against the euro since the start of the year, The Department of Finance has estimated that the impact of a 5% sterling depreciation would amount to a loss in Irish GDP of 1 per cent after 2 years (see Stability Programme Update April 2016).

[28] ESRI (2015), op. cit. This is a worst case scenario which may not materialise.

[29] Fitzgerald and Honohan, op. cit.

2.3 Loss of Competitiveness

Ireland's national competitiveness refers to the capacity of enterprises in Ireland to compete in international markets.[30] While it includes labour costs, it is a broad concept encompassing all components of business performance such as productivity, regulation of public utilities, prices, costs and labour supply. As a small regional economy in a single currency zone, Ireland is vulnerable to losses of competitiveness through wage and/or productivity developments that are out of line with those in the euro-area and beyond.

Ireland's competitiveness rankings improved up to 2016[31] but some of this improvement is attributable to benign external conditions such as a favourable exchange rate which could change quickly as has been demonstrated by the recent depreciation in sterling. In addition, domestic factors including the economic recovery and the continued shortage of housing may drive up wage demands which could erode competitiveness in a low inflation environment.[32] However, it is possible that in the medium term Brexit could induce a greater movement of labour into Ireland which could cause a reduction in wages.[33] Whilst wage costs are an important component of competitiveness, in the medium term productivity performance is the key determinant. To facilitate such growth, there must be a continued focus on investing in the development of people, technology and processes.[34]

2.4 Importance of multinational corporations to the Irish economy and risk of unfavourable international tax changes

Ireland's economy is to a degree reliant on multinational corporations concentrated in a limited number of enterprise sectors. The top 10 goods export products from Ireland account for 45% of all goods exports, drawn principally from the chemical and pharma-industries, and the IT industry dominates services exports. The top ten tax-paying groups

[30] NCC (2016) *Why Competitiveness Matters for Ireland*, Competitiveness Bulletin 16-3, March.

[31] Ireland's overall ranking for 2016, in the IMD World Competitiveness Yearbook, showed a significant improvement from 16th in 2015 to 7th in 2016 (out of 61 economies assessed). This is Ireland's best performance since 2001.

[32] The NCC's Ireland's Competitiveness Scorecard 2016 notes the dangers of wages spiralling upwards with rising house prices and/or rents which would represent 'one of the greatest threats to the recovery' (p.5).

[33] ESRI (2015), op. cit., Chp. 5.

[34] NCC (2016), op. cit, p.35. The Report of the Expert Group on Future Funding for Higher Education (2016) makes the point that the adequate funding of 3rd level institutions to ensure that they are open to students from a range of social backgrounds is a key component of the competitiveness agenda.

account for 40% of Corporation Tax receipts, making this revenue stream vulnerable to weaker global growth.

There is a risk that a sector which is heavily concentrated in Ireland, such as IT or pharma, could suffer a particular shock which could in turn limit its growth potential and curtail further investment. There is also a risk that the multinational companies which drive Ireland's export growth (and therefore a significant part of Ireland's economy) could re-locate their business elsewhere due to issues over price competitiveness, skills shortages or changes to the tax environment.[35]

Regarding potential taxation changes, there continues to be significant discussion and developments at EU, US and OECD levels in relation to corporation tax, including ongoing cases such as Apple, and public\political pressure in many countries.

Ireland has committed to the Base Erosion and Profit Shifting (BEPS) project, which aims to provide countries with domestic and international instruments that will better align rights to tax with economic activity, and Ireland has taken a first step by introducing country by country reporting in particular circumstances.[36] As a small country with an open economy, it must keep pace with this international movement for change.

The Irish Government has decided to appeal the European Commission's decision in the Apple State Aid case as it is necessary to defend the integrity of our tax system, to provide tax certainty to business, and to challenge the encroachment of EU state aid rules into the sovereign Member State competence of taxation.

2.5 Vulnerabilities in the Banking System

There have been positive developments in the domestic banking sector and the recovery in banks' profits is slowly improving, reflecting both improved underlying profitability and write-backs of impairment provisions. New lending, while increasing, remains at levels which are being offset by redemptions of existing loans.

[35] See Purdue, D. and Huang, H. (2015) *The facts, the fictions and the risks*. Dublin: NTMA Economics
[36] http://www.finance.gov.ie/news-centre/press-releases/minister-finance-publishes-finance-bill-2015

The high level of impaired loans remains a major challenge for the banking system, as well as carrying a wider social and economic cost. Headwinds facing the sector include the low interest rate environment, increased regulatory costs and the possible consequences of Brexit. The two main Irish banks have material exposure to the UK market and profits and asset quality may be affected by any downturn there. Irish banks have been subject to a number of recent reviews by international institutions including the International Monetary Fund Financial Stability Assessment Programme and the European Banking Authority 2016 Stress Tests. These tests indicate that Irish banks are 'adequately capitalised but remain vulnerable to a downturn, especially in relation to the continued workout of problem loans and the sustainability under stress of current profitability levels'.[37]

Notwithstanding recent rating upgrades for the two main banks, market funding remains susceptible to changes in investors' risk appetite and sentiment towards banks and the Irish sovereign. These factors, alongside the greater concentration in the banking sector, also pose a risk to the level and cost of credit available to both consumers and enterprises, with potential for negative economic and social impacts.

2.6 Turbulence in the Euro Area Debt Markets

Concerns over a re-emergence of the Euro-area sovereign debt crisis diminished in the latter half of 2015 and in the first half of 2016. However, Government debt ratios remain high or continue to increase in many euro-area Member States. Low levels of growth continue to pose a medium-term threat which has been exacerbated by the uncertainties brought about by Brexit.

Other events which could result in turbulence in the euro area debt markets include risks of bank losses in this negative interest environment, changes in market sentiment, capital flows, and the effectiveness of the ECB monetary policy. Downside risks include political and economic uncertainty in some EU Member States which may be exacerbated by the prospect of Brexit.

[37] Governor of the Central Bank of Ireland (2016), 'Macro-Financial Perspectives on the Irish Economy', Speech to the IIEA, 2nd August 2016.

Any re-emergence of debt sustainability issues in the euro area could have an impact on Ireland's sovereign financing costs, the ability of the Irish Government to raise funds, and the wider stability and sustainability of the Eurozone itself. Ireland's sovereign bond yields remain at historically low levels, however a reversal of bond yields remains possible. The sensitivity of Government debt to a rise in interest rates is estimated to be low in the short to medium term, given relatively low projected refinancing needs.

2.7 Monetary Policy Uncertainties

Inflation in the euro area has been below levels consistent with price stability[38] for some time. As a result, and with interest rates effectively at 0%, the ECB, in March 2015, launched an expanded asset purchase programme, also known as quantitative easing (QE), to include bonds issued by euro area central governments, agencies and European institutions. Under this programme, the combined monthly purchases of public and private sector debt securities amount to €60 billion. In December 2015, the ECB expanded the scope of the assets eligible for purchase (to include municipal and State debt) and extended the programme by 6 months (to March 2017).[39]

QE is intended to stimulate the economy through a number of channels, principally through improved financing conditions for households and firms. It is hoped that, by exchanging assets for cash, financial institutions will have a greater incentive to lend to the private sector, households and companies. However, concerns have been expressed in relation to a number of factors, namely:

(i) the possibility that QE may lead to an increased risk of asset price bubbles and potential under-pricing of risk as investors are having to search for yield;

(ii) the risk that at interest-rates of close to zero, the ECB's QE programme may not achieve its goal to increase inflation to close to but below 2% and stimulate additional economic growth in the euro area, especially given the global growth concerns (including China's slowdown); and

(iii) the uncertainties around the effectiveness of QE and its duration.

[38] This is defined as below but close to 2% on an ongoing basis.

[39] In March 2016 bond purchases were increased to €80billion a month from €60billion and corporate bonds were added.

In January 2016, the Bank of Japan adopted a negative interest-rate strategy, signalling that it stands ready to counter the slowdown in emerging markets and slumping oil prices. Negative interest rate and low yield environments can have consequences on the balance sheets of banks and financial companies, which in turn can impact liquidity in the markets and financial market volatility.

In the wake of Brexit, the Bank of England announced the purchase of up to £10 billion of UK corporate bonds and an expansion of the asset purchase scheme for UK government bonds of £60 billion, taking the total stock of these asset purchases to £435 billion. The ECB has noted that it will continue with its objective of the purchase of €80 billion a month until March 2017 and beyond if needed.

3. Environmental Risks

Climate Change and Extreme Weather Events

Ensuring an affordable, sustainable and diverse energy supply

Food Safety

Under-Supply of Housing

Infrastructural Development

3.1 Climate Change and Extreme Weather Events

Warming of the climate system is unequivocal.[40] Mitigation actions are being taken to limit warming, with clear expectations arising from the new global commitment to take action following the Paris Climate Agreement in December 2015. However, many impacts of climate change are 'locked-in' for decades to come and adaptation actions are aimed at managing these climate change risks.

The scale and rate of climate change in Ireland is consistent with regional and global trends and these changes are projected to increase over the coming decades. Nationally, climate change will have wide ranging impacts on the environment, society, and the economy and associated sectors, including water resources, agriculture and food security, human health, terrestrial environments, critical infrastructure, biodiversity, and coastal zones. Ireland's food industry is dependent on the quality of its natural environment and if degraded would present an economic as well as environmental cost.

[40] Intergovernmental Panel on Climate Change (2013) *Climate Change 2013: The Physical Science Basis.* Available at http://www.climatechange2013.org/report/

Recent years have illustrated clearly the risks posed to Irish society by extreme weather events, with instances of prolonged cold in 2010, damaging windstorms in the winter of 2013/14, and widespread flooding in late 2015/early 2016.[41]

Notwithstanding the new climate legislation and structures to prepare and implement 5-yearly National Climate Mitigation Plans and National Climate Adaptation Frameworks, there is a risk of failure to invest effectively or sufficiently in both mitigation and adaptation measures required to help minimise or address the impacts of this climate change. Ireland also has emissions and energy related targets in respect of 2020. There is the risk of the Exchequer incurring costs (e.g. to purchase carbon units and/or statistical transfers from other EU Member States) if these 2020 targets are not achieved.[42]

If the United Kingdom leaves the EU, then this could cause significant uncertainty about the existing agreement at European Council level on headline climate change targets for the period 2021 to 2030.[43] It is not clear whether they would remain in place and be reallocated to the other Member States or be revised downwards to take account of the UK's departure. Other risks include the issue of whether the UK would adopt to less rigorous environmental standards than the EU leading to competitiveness issues for Irish firms and raising the prospect of dual regulation for firms wishing to trade with the UK.

3.2 Ensuring an affordable, sustainable and diverse energy supply

Ireland is completely dependent, economically and socially, on secure energy supplies – particularly on oil for transport and natural gas for electricity generation and heating. Ireland imports nearly all of its energy needs, as indigenous energy production amounts to only about 15% of the total primary energy supply,[44] although this indigenous share will increase over the next few years due to the commencement of the production of natural gas from the Corrib project. Ireland's situation as an island on the periphery of Europe renders it particularly vulnerable to disruptions to the supply of oil, gas or electricity. Such

[41] It is the case that extreme weather events could arise but be unrelated to climate change. The Icelandic volcanic eruption of 2010 is one such example and could re-occur.
[42] The EU has an overall headline target of - 40% for the period 2021-2030. The European Commission has proposed (July 2016) a 2030 target of - 30% for Ireland.
[43] See http://www.consilium.europa.eu/uedocs/cms_data/docs/pressdata/en/ec/145397.pdf.
[44] SEAI (2015) *Energy in Ireland: Key Statistics.*

disruption could arise from natural disaster or geo-political change. Ireland is also vulnerable to sudden price movements in energy prices which could be precipitated by disruptive geo-political shocks or economic trends and would have significant economic, social and competitive impacts.

In 2015, all fossil fuels fell in price, especially oil, which had some positive economic impacts on Ireland. Oil prices are not expected to return to previous high levels in the near future which would provide some economic benefits for Ireland. However, continued low prices may undercut the urgency of stimulating the transition from a fossil fuel-based energy sector to a clean, low carbon system which the Energy White Paper, published in late 2015, sets out.[45] If this transition is delayed, it may make a 'hard landing' more likely given that the price of carbon-based energy sources may have to rise abruptly. Energy-intensive sectors such as transport could experience disruptions as the cost of their energy inputs rise and households might have to bear some of this cost.[46]

Brexit poses questions in relation to Ireland’s heavy reliance on the UK for supply of natural gas. Although the Corrib project has reduced this reliance, supplies from the UK remain vital. Under current EU regulations, there are obligations on Member States to ensure the supply of gas to protected customers in specified extreme situations. The future of such arrangements will need to be examined in the context of the future EU-UK relationship.

The recently signed memorandum of understanding between Eirgrid and a French transmission operator to prepare an initial design and pre-consultation for an electricity inter-connector between Ireland and France may mitigate these risks.

3.3 Food Safety

Threats to food safety could arise from contamination of food or a significant outbreak of food-borne human illness. A food scare associated with a food product, the outbreak of a major disease in farmed animals or evidence of environmental degradation associated with

[45] Department of Communications, Energy and Natural Resources (2015) *Ireland's Transition to a Low-Carbon Energy Future* 2015-2030.
[46] European Systemic Risk Board (2016) *Too late, too sudden; transition to a low-carbon economy and systemic risk.* No. 6: February 2016.

agriculture would have implications for the health of citizens, and where such incidents are of Irish origin would have the potential to jeopardise international trade in Irish food.

The agri-food sector is of vital importance to the Irish rural economy and is highly export dependent. In 2015, agri-food exports increased to €10.7 billion and the sector accounted for approximately 9% of total employment. Consumer confidence in Irish food and drink products at home and abroad is predicated on Ireland's excellent food safety standards, its favourable animal health and welfare standards and its sustainable grass-based farming systems. There would be an immediate impact occasioned by exclusion from certain markets and it could take a considerable period of time to recover consumer confidence and market share.

3.4 Under-Supply of Housing

Ireland's housing market was particularly affected by the economic downturn with prices falling on average by almost a half, albeit from a relatively high base. Supply was, until recently, dramatically reduced with housing completions falling from a high of 93,000 in 2006 to just over 8,000 in 2013. In 2015, there were 12,666 house completions which are not sufficient to meet either the predicted average annual demand of 25,000 new homes each year or the pent-up demand from years of under-supply.

The mismatch between housing supply and demand has resulted in price increases. Nationally the average price of property increased annually by 6.4% in 2013, 16.3% in 2014 but began to show some moderation in 2015 with a 6.6% increase nationally (Dublin showed greater price moderation with a 2.6% increase in the year to December 2015).[47]

The moderated increases in 2015 have been ascribed to the introduction in February 2015, of the Central Bank of Ireland macro-prudential measures involving proportionate limits for loan to value and loan to income measurements for both primary dwelling houses and buy-to-let mortgages, in order to (i) enhance the resilience of households and banks to economic

[47] Central Statistics Office (2015) *Residential Property Price Index December 2015.* The CSO's most recent house price index shows that house prices, for the 12 months up to June 2016, increased by 6.6%.

shocks and (ii) reduce the risk of bank credit and house price spirals from developing in the future.

House price increases have encouraged the movement of stock previously rented in to the sales market, particularly for those who became reluctant landlords. This and the chronic under-supply of housing in key urban areas, has led to shortage of rental accommodation and consequential increases in rents. In Dublin the rental price for houses increased by 9 per cent per annum while outside Dublin the rate of increase was 9.8 per cent.[48] The lack of supply of affordable rental accommodation has been linked to rising levels of homelessness. An important side effect is that a lack of housing and associated high prices and rental costs could affect Ireland's competitiveness, its attractiveness for inward investment and for skilled immigrants.

A number of initiatives have been implemented to address this issue and encourage supply, the most important of which is *Rebuilding Ireland*. This is the Government's Action Plan to accelerate the supply of housing and, in particular, to double the current number of house completions - about 12,500 per annum - and indeed exceed this target in the coming years to address pent-up demand. The Action Plan also provides for an additional 47,000 social housing units by 2021 and in the process increasing the State's social housing stock by over 30%.

3.5 Infrastructural Development

Balanced economic growth is partly dependent on the timely provision of infrastructure in the right locations. Levels of investment in public infrastructure declined significantly during the recession. Following a peak of 5.2 % of GDP in 2008, public investment fell to a low of 1.8 % of GDP in 2013 before slightly recovering in 2014.

A growing economy and population will place increasing demands on infrastructure including housing, transport and water services. The International Monetary Fund has noted that much of Ireland's infrastructure ranks at EU median levels but generally falls short of

[48] Private Residential Tenancies Board, *Rent Index* Quarter 4 2015

the quality in European peer countries with open economies and cites deficiencies in such areas as the power grid, water, ports and IT. Failure to address infrastructure bottlenecks will impact on competitiveness.[49] In September 2015, Government published its multi-annual infrastructure and capital investment plan, committing to spend €27 billion over a six year period. Capital spending would represent about 2% of GDP which would be below the EU average of 2.9%. The National Competitiveness Council considers that 'present levels of investment are insufficient to close the knowledge and economic infrastructure gap between Ireland and our key competitors which still persist'.[50]

The Programme for a Partnership Government committed to increasing the level of Exchequer capital investment by €4 billion over the period of the Capital Plan, to be allocated for infrastructural priorities in areas such as housing, transport, broadband, health, education and flood defences, on the basis of the outcome of the mid-term review of the Capital Plan to be undertaken in 2017. In the Summer Economic Statement 2016, the Government increased this commitment to additional Exchequer capital investment to €5.1 billion over the period 2017-2021. This increased level of Exchequer capital funding, when combined with the investment planned by the State-owned commercial sector and investment in PPPs, will bring total State-backed capital investment to €47 billion over the period of the Plan, representing a projected 3.8% of GNP by 2019.

Another risk pertains to the public acceptance of such infrastructural development. Potential projects can undergo rigorous planning and compliance processes yet still fail to gain the support of the communities in which they might be located. It is also important to be cognisant of the prospect of imbalanced development, which does not fully harness the potential for economic renewal across the entire country. This could lead to regional disparities and increased economic/social (and political) tensions.

[49] The European Commission (2016) has identified upgrading infrastructure as necessary to underpin economic growth and designates it as one of the two main economic challenges facing Ireland. See Post-Programme Surveillance Report: Ireland, Autumn 2015 and Council Recommendation on the 2016 national reform programme of Ireland.
[50] National Competitiveness Council (2016) *Ireland's Competitiveness Scorecard 2016*, p.28.

4. Geo-Political Risks

Brexit/Uncertainty over UK's relationship with EU

Northern Ireland and Devolution in the UK

Risks to the Stability of the EU

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

Terrorist Incidents and Armed Conflicts

4.1 Brexit/Uncertainty over UK's relationship with EU

The draft NRA for 2016 identified the possibility of a Brexit as being a major risk for Ireland. It did so on the basis that that it would (i) hinder the pursuit of Ireland's objectives as a Member State, as the UK is an important ally within the EU on negotiations on issues of mutual concern such as trade and the deepening of the single market; (ii) affect bilateral relations with the UK, including the significant economic and trading relationship; and (iii) have a damaging impact on Northern Ireland and North/South relations. Although the electorate has since voted to leave and the political system is moving to give effect to that vote, significant uncertainty remains around the shape of the UK's future relationship with the EU.

In relation to (i), the UK has been an important influential voice at the table in Brussels. Ireland and the UK have been allies on many of the key issues facing the EU. For example, both have sought to ensure that the EU is competitive, with a fully functioning digital single market and with a greater focus on trade agreements with global partners. The withdrawal of the UK would weaken the Union in substance and reputationally at a time of serious challenges.

Regarding (ii) the decision by the UK to leave the EU could have significantly adverse economic and financial impacts on Ireland. About €1.2 billion in goods and services are traded every week between the UK and Ireland and bilateral trade flows between the two countries could be reduced, in a worst case scenario, by 20% or more.[51] As this is an average figure, some sectors such as agriculture could suffer a much greater reduction as the UK accounted for approximately 40% of its total production of agri-food exports in 2015. A UK exit could be expected to create obstacles in the way of seamless flows of goods, services, capital and people. The extent of the impact hinges on the nature of the UK trading relationship with the EU, post-departure.

In relation to the impact of a Brexit on the Irish financial sector, the Central Bank has noted that this could be significant if it occurred in a disorderly manner and/or had a large negative impact on the UK economy. Currently, the five retail banks have a total loan exposure of approximately €64 billion, or 21% of their total assets, in the UK. Any shock to the UK economy could cause issues for future growth, profitability and loan performance.[52]

In relation to point (iii) on Northern Ireland, the EU has long been an important factor in sustaining peace and prosperity in Northern Ireland,[53] and also provides a broader facilitating context for North-South and East-West relations. Overall, many aspects of North-South cooperation, including the formal work programmes in the mandated areas of co-operation of the North South Ministerial Council (NSMC), are very much influenced by the fact that both jurisdictions are members of the EU. It is for this reason that at the July 2016 Plenary meeting of the NSMC in Dublin Castle the Government and the Northern Ireland Executive agreed to work together to ensure that Northern Ireland's interests are protected and advanced and the benefits of North/South co-operation are fully recognised in any new arrangements which emerge as regards the United Kingdom's future relationship with the European Union.

[51] ESRI (2015) *Scoping the Possible Economic Implications of Brexit on Ireland.* Research Series No. 48. Dublin.
[52] Central Bank of Ireland (2015) *Macro-Financial Review*. Dublin.
[53] Important EU funding, including through programmes like PEACE and INTERREG but also the CAP and Horizon 2020 programmes, will provide almost €3 billion up to 2020. Though funding to 2020 has been guaranteed by the UK Government, there is uncertainty about the medium to long term.

The nature of a future EU-UK relationship after withdrawal will have a major impact on specifically Irish interests. However, in advance of the complex and lengthy negotiations between the EU and the UK it is impossible to know exactly what the specific impacts on particular sectors would be. It is important to understand that the UK will not just be engaging with the EU on the terms of its departure; it will also be concerned with establishing a new relationship with the EU based around a free trade agreement (FTA) which may take many more years to accomplish than the negotiations around Article 50.[54] In addition, the UK will be negotiating with the World Trade Organisation as well as attempting to conclude bilateral trade deals with countries outside of the EU. All of these issues will add to the complexity, length and the uncertainty of negotiations since success in one aspect of negotiations will be dependent on progress in other parts.[55] Another factor to consider is that the UK Government has indicated its desire to involve the devolved administrations of the UK in the Art. 50 negotiations (see below).

4.2 Northern Ireland and Devolution in the UK

The draft NRA 2016 noted that a vote to leave the European Union in the Brexit referendum would have major ramifications for the constitutional make-up of the United Kingdom in the event that some nations voted to remain.

The results of the referendum on the UK's membership of the European Union in June showed that a majority of voters in England and in Wales voted to leave whilst a majority in Northern Ireland and Scotland voted to remain within the EU. The UK Government has stated that the Scottish, Welsh and Northern Ireland governments will be engaged and involved in the preparations for negotiating on withdrawal arrangements with the EU.

Brexit throws up considerable issues for the devolved administrations to consider. Finance ministers from all three administrations have pledged to work together on important financial issues of common interest, in particular against further cuts that might be pursued post referendum by the UK Government and to seek firm commitments on continued EU related funding streams.

[54] For example the EU-Canada FTA took 7 years to negotiate.
[55] C. Grant (2016), 'Theresa May and her six-pack of difficult deals', Centre for European Reform.

The draft NRA 2016 underlined the need to protect the peace process and the progress made in Northern Ireland, which is underpinned by the Good Friday Agreement. There are a number of critical issues for Northern Ireland raised by Brexit that are of concern for the Government. The first relates to risks to trade and wider economic exchange between the two jurisdictions, including potential adverse impacts on the border region. The second relates to the open border on the island of Ireland, and the Common Travel Area between Ireland and Britain, which predates the establishment of the European Economic Community. Both the Irish and UK Governments have stated that they wish to see these arrangements maintained, however, their operation is connected to the UK's future relationship with the EU. The third issue relates to sustaining the peace process and the EU, as noted in the previous section, has played a crucial role in this regard. Both Governments have affirmed that the principles, procedures and institutions of the Good Friday Agreement will 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 a priority for the Government in the negotiations.

In Scotland, in the run-up to the elections to the Scottish Parliament in May 2016, the Scottish National Party stated that they would not seek to hold another referendum unless there was a significant and material change in the circumstances that prevailed in 2014, such as Scotland being 'taken out of the EU against our will'.[56] The Scottish Government has stated that protecting Scotland's place in and relationship with the EU is in the country's vital interests which must be protected within the UK. Otherwise the SNP would consider again the option of independence.[57]

4.3 Risks to the Stability of the EU

The draft NRA identified a risk to the stability of the EU through mass migration flows after annual asylum applications in 2015 doubled to 1.2 million. A number of member-states have invoked the Schengen Borders code which allows member-states to reintroduce internal border controls for unforeseen circumstances that pose a "serious threat to public policy or internal security". The number of persons seeking asylum from non-EU countries in the EU

[56] Scottish National Party Manifesto 2016, p. 23.
[57] Sturgeon, N. (2016) 'Scotland's future in the EU: speech to IPPR Scotland'. 25th July 2016.

28 during the first quarter of 2016 reached 287,100. This was 97,500 more than in the same quarter of 2015[58] and is an indication that this risk has not dissipated.

However, the manifestation of Brexit may pose a more fundamental threat to the stability of the EU since it appears to give licence to politicians from some other member-states who question the *raison d'etre* of the EU and advocate withdrawal. There are other risks to the stability of the EU through Brexit. The United Kingdom provides significant sums to the EU budget and in 2015 its net contribution amounted to €8.5 billion. The question and level of any UK contribution is dependent on the nature of the future links with the EU which have yet to be negotiated. But the prospect of a reduction in net contributions into the EU budget would have to raise questions about higher contributions from some member-states and/or expenditure cuts.

A British withdrawal would also change the political complexion of the EU as the UK is often associated with a northern economically liberal bloc of countries (as is Ireland). Without the UK, the relative voting weight of this bloc would decline raising the possibility that the EU would become less economically liberal and open.

Without the UK's membership and considerable political weight and diplomatic infrastructure, the influence of the EU on international foreign and security policy will be diminished.

4.4 Changing distribution of global influence and move away from a rules-based system

As a result of globalisation, there is likely to be an ongoing significant shift of political and economic power to countries in the East and South. These trends are challenging the existing international order in which liberal democracies have played the dominant role. They will necessitate deepening engagement with Asian, African and Latin American countries, if Ireland is to protect its interests in promoting trade, tourism and investment.

[58] Eurostat (2016) *Asylum Quarterly Report* (June 2016).

Slowing world economic growth and in particular lower energy and commodity prices will increase the economic pressures on emerging market economies. The rule of law in many of these countries could be weakened further as has been seen in Russia. Pressures in the Caucasus and Central Asia are likely to be particularly heavy, contributing to internal instability and possibly interstate tensions.

Ireland has benefited from the opportunities offered by rules-based multilateralism, as exemplified by our membership of the UN, and any move away from this system would be counter to Ireland's interests.[59] If it is the case that the EU might become less orientated around a rules-based system and more on inter-state interests (recognising that this has always been a delicate balance), as the previous section suggested, then this too would be adverse to Ireland's interests.

4.5 Terrorist Incidents and Armed Conflicts

There have been a number of high profile terrorist attacks in 2015 and 2016 which have underlined the possibility of terrorist threats materialising. Three Irish citizens were among the victims killed in an attack on a Tunisian holiday resort in June 2015; a branch of Islamic State (IS) claimed responsibility for the bombing of a Russian airliner flying out of Egypt in October 2015 which killed all 224 people on board; and 130 people were killed in a series of co-ordinated terrorist attacks in Paris in November 2015. In addition, there were numerous terrorist attacks throughout 2015 in other countries such as Turkey, Yemen and Kuwait which caused multiple fatalities. In March 2016, a series of co-ordinated bombings in Brussels left 32 victims dead, in June 41 people were killed by bombs at Istanbul airport and in July a truck was driven into crowds in Nice leaving 85 dead. There were also other terrorist incidents in France and Germany this year which resulted in fatalities.

The ongoing upheaval in the Middle East and the rise of IS drives many of these attacks. Europol has judged that the overall threat to the security of the European Union from jihadist terrorism remains on an upward trajectory and that it faces a shifting and

[59] The possible rise of protectionism referenced in section 2.1 is one instance of a move away from multilateralism which may prompt a 'beggar-thy-neighbour' activity.

increasing range of threats emanating from jihadist groups and individuals.[60] IS continues to use their media activities to encourage aspiring terrorists to conduct lone-actor attacks. There are obvious operational difficulties in detecting and disrupting these kinds of 'lone-wolf' attacks especially when they directed against soft targets rather than critical infrastructure.[61]

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. And it is also the case that terrorist incidents in geographically distant locations may have an effect if they deter tourists travelling to Ireland.

There is also the possibility that a state like Ireland would be used as a location from which attacks could be launched. Such incidents would be likely to cause extreme disruption in the short-term and possibly longer-term reputational damage to Ireland as a safe and secure destination. 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 disruptions to energy supplies, transport routes or the environment.

On the island of Ireland itself, the Good Friday Agreement has delivered a stable peace process that commands overwhelming cross community support. Nonetheless, certain groups in both communities, with very limited levels of support, remain intent on disrupting the progress which has been achieved. Accordingly, vigilance needs to be maintained and legacy issues arising from conflict in Northern Ireland and current social and economic challenges 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 which might emerge regarding the United Kingdom's future relationship with the EU.

[60] Europol (2016) *European Union Terrorism and Situation Trend Report 2016*.
[61] Europol (2016) *Lone Actor Attacks - Recent Developments.*

5. Social Risks

Long-term Exclusion from Employment

Human capital and the Resourcing of Higher Education

Expenditure pressures

Demographic Changes and the Dependency Ratio

Increases in Chronic Diseases

Social Cohesion and Political Stability

Migration and Integration

5.1 Long-term Exclusion from Employment

Unemployment is one of the most significant symptoms of the depth of Ireland's economic recession. Thanks to a growing economy, Ireland has experienced significant reductions in unemployment since 2012. The seasonally adjusted unemployment rate for September 2016 was 7.9%, down from 9.1% in September 2015.[62]

The long-term unemployment rate decreased from 5.5% to 4.4% over the year to Q2 2016, down from a high of over 9% in 2012. Long-term unemployment accounted for 51.1% of total unemployment in Q2 2016 compared to 56.1% a year earlier.[63] From a comparative perspective, this rate is still high as it exceeds the EU average of 48.2%.[64] Brexit constitutes a risk to lowering the unemployment rate as it could (a) diminish economic growth and (b) expand the pool of labour supply through the diversion of more migrant workers to Ireland.
Long-term unemployment remains a serious concern, with the risk that cyclical unemployment could become structural in the absence of appropriate targeted labour

[62] Central Statistics Office (2016),*Monthly Unemployment, September 2016*.
[63] Central Statistics Office (2016) *Quarterly National Household Survey, Quarter 2 2016.*
[64] European Commission (2016) *Country Report Ireland 2016.*

activation interventions. There is a risk that this group may not share in the employment recovery, and that high levels of long-term unemployment will persist for some time. Related to this, is a risk of exclusion of people on other forms of working age social welfare (for example disability and lone parent schemes) from employment as the economy recovers, in the absence of effective labour market interventions. The participation rate of females in the labour market still lags behind the European average[65] and there have been calls to improve the quality and availability of child-care to address this.[66] This could have significant consequences for the individuals concerned, their families and their communities, and for increased levels of social spending. It is therefore important to seek higher participation rates among those in receipt of other working age social welfare payments and to address the number of jobless households, which stands at a relatively high level.[67]

While the unemployment figures have improved, skills mismatches have emerged. As the recovery has been strongest in skill-intensive sectors, job opportunities have become available for high-skilled workers who have achieved a tertiary education. For those who have achieved such a level, unemployment was 5% in Q4 2015 but for those who have left school with a lower secondary education, it stood at 15%. For younger workers (under 25s) from the latter cohort, the difference is even more pronounced with 32% experiencing unemployment.[68]

5.2 Human Capital and the Resourcing of Higher Education

Future economic performance will critically depend on the quality of human capital. Ireland's competitive advantage in international markets, as well as the competitiveness of our regions, will increasingly be driven by the availability of world class skills at all levels. The OECD has called skills the new global currency of 21st century economies. As risks emerge to

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[65] In 2015, the EU 28 average participation rate of females aged 20-64 was 64.4% and the Irish rate was 62.6%. See http://ec.europa.eu/eurostat.

[66] International Monetary Fund (2016) *Ireland, IMF Country Report No. 16/256*, p.28; Council of the European Union, *Recommendation for a COUNCIL RECOMMENDATION on the 2016 national reform programme of Ireland and delivering a Council opinion on the 2016 stability programme of Ireland*. Brussels 9198/16, 13th June 2016.

[67] European Commission (2014) *Macro-Economic Imbalances Ireland 2014*. European Economy Occasional Papers 181. Brussels, p. 59.

[68] Expert Group on Future Skills Needs (2015) *National Skills Bulletin 2016*, p. 46.

other areas of competitive advantage such as the corporate tax regime, it is important that Ireland's strong position in terms of the availability of talent is protected.

There are some short term risks associated with the skills gaps which are emerging between labour market requirements and the nature and level of available skills. For example, while there is still a substantial overall level of unemployment, there are issues regarding skills shortages and mismatches in certain labour market areas. If employers are not able to source appropriate skills domestically, this will have a detrimental impact on the cost base and productive capacity of the economy.

Reform of the education and training system is underway through a variety of measures, including the National Strategy to Higher Education to 2030, the Further Education and Training Strategy 2014-2019, the National Skills Strategy 2025 and the Action Plan for Education 2016-2109. However, there may be a longer term risk that, without continued implementation of the reform through these strategies, the education and training system may not (in light of demographic pressures) meet the skills requirements of a fast-changing labour market with strong global competition for investment and talent, negatively affecting economic performance and employment growth.

The higher education system has experienced a fall in core funding and a rise in the staff to student ratio since 2008. This reduction has led some to consider that there is a need for urgent reform of the current funding system as it fails to recognise the current pressures facing higher education institutions or the scale of the coming demographic changes. [69]

5.3 Expenditure Pressures

The recession and subsequent troika programme necessitated a consolidation of the public finances. As the economy recovers, there may be a public expectation that restraints on social and other government expenditures can be released and efficiency measures reversed in the short-term (including in relation to public service pay), notwithstanding the need to maintain budget discipline, reduce the high level of public debt, and ensure

[69] Report of the Expert Group on Future Funding for Higher Education (2016) *Investing in National Ambition: A Strategy for Funding Higher Education*.

medium-term fiscal sustainability in the context of demographic trends.[70] In addition, there may be insufficient understanding of the binding implications of the European Union's fiscal rules which require that the Government conform to an expenditure benchmark and move towards a balanced budget in structural terms.

It has been noted that there may be a tension between these kinds of constraints and expenditure pressures arising from demographic growth, investment needs, climate action and public demands both for increased services and cuts in taxation levels beyond what may be sustainable over the economic cycle. [71]

The challenge is to manage public expenditure so that core priorities are addressed and that spending is based on sustainable income streams. Budget reforms introduced since the fiscal crisis aim to address shortcomings with the previous year on year approach to setting expenditure allocations.[72] Furthermore, work is underway to develop a common framework for modelling government spending that extends beyond an analysis of demographic drivers. This work will help inform the policy options available to Government to address the competing demands for resources.

5.4 Demographics and the Dependency Ratio

The preliminary results from Census 2016 showed that Ireland's population has increased from 4.589 million in 2011 to 4.758 million in 2016. The natural population increase was 198,000 with net outward migration standing at 28,558.[73] Planning for demographic changes in the population is dependent on accurate forecasting so that resources and

[70] The IMF in its Country Report for 2016 noted that 'reform fatigue combined with strong growth are fuelling expectations of a recovery dividend among the Irish public, which together with political fragmentation could lead to some policy reversals', (p.12-13).

[71] Irish Fiscal Advisory Council (2014) *Fiscal Assessment Report: November 2014.*

[72] There is now a whole year Budgetary process in place underpinned by Periodic Comprehensive Reviews of Expenditure; Greater focus on appraisal and evaluation as set out in the Public Spending Code and supported by the Irish Government Economic and Evaluation Service which established Evaluations Units in every Department; 3 Year Multi-annual Ceilings which provides a framework for better planning to address spending requirements including demographics, climate change etc. The Mid Year Expenditure Report (MYER) published by the Department of Public Expenditure & Reform (DPER) in July 2016 sets out details in relation to assessments being carried out of future spending requirements, including for demographics. Based on analysis carried out by DPER, the Ministerial Ceilings agreed by Government at Budget 2016 specifically included extra resources to help address demographic needs in the Departments of Education and Skills, Social Protection and Health.

[73] Central Statistics Office (2016) *Census of 2016 - Preliminary Results*

services can be directed where needed. With an open economy like Ireland's, this is difficult and the uncertainties associated with Brexit will only accentuate this problem.

The Central Statistics Office has provided projections of possible changes in the dependency ratio up to 2026 based on a number of different scenarios.[74] About 85% of the difference between high and low assumptions for changes in the population and dependency ratio is explained by potential migration flows. It is worth noting that the CSO's most positive scenario for migration was dependent on net outward migration of 19,000 per annum yet the preliminary Census results for 2016 indicate that the actual figure may have been a little over 5,000 per annum.

Whatever 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 with the CSO estimating that it will almost treble between 2011-2046 to 1.45 million; and the second issue is that the dependency ratio, i.e. the ratio of the old and young population to the population of working age, will increase into the future (in the absence of improbably large immigration of people of working age) The future age dependency ratio is important because it points to impacts in areas such as education, child income supports, healthcare, long-term care, housing and pension provision.

Each of these will be an area of acute concern but pensions may be the most serious. There are concerns about the adequacy and sustainability of the current system. In 2015, 36% of people expected the State pension to be their main source of income in retirement[75] yet expenditure on pensions is expected to nearly double from 5.4% of GDP in 2011 to 9.2% of GDP in 2060.[76] By this time, the shortfall in the Social Insurance Fund, from which pension payments are drawn, is expected to be about €324 billion.[77]

[74] Central Statistics Office (2014) *Population and Labour Force Projections*. Stationery Office: Dublin.
[75] Central Statistics Office (2016) *ONHS Module on Pensions Q4 2015.*
[76] OECD (2014) *OECD Reviews of Pension Systems:* Ireland.
[77] Department of Social Protection (2012) *Actuarial Review of the Social Insurance Fund 2010.*

5.5 Increases in Chronic Diseases

Chronic diseases, such as heart disease and cancer, are the leading cause of death and morbidity in developed countries. The rise in childhood obesity and other trends can be seen as an indicator of future rises in chronic diseases e.g. diabetes, cardiovascular disease, chronic obstructive pulmonary disease (COPD), arthritis etc. It is estimated that within the next decade, the number of adults with chronic diseases will increase by around 40%, with relatively more of the conditions affecting those in the older age groups. For example, the obesity levels for both men and women in Ireland are higher than those for most of Western Europe.[78]

It is estimated that 80% of healthcare expenditure relates to chronic diseases. The economic burden 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.

5.6 Social Cohesion and Political Stability

The recent recession and the consequent need to stabilise the public finances has raised concerns, aired in other countries as well, about income distribution and inequality. The OECD makes the point that this discussion often focuses on a cadre possessing apparently extreme wealth but more attention should be focussed on the relative decline of low-income households that might make up as much as 40% of the population. According to the OECD, growing income inequality can have a negative effect on social cohesion and impede economic growth.[79] The current Government has observed that the gap between rich and poor has remained too large and it has committed itself to a more 'inclusive prosperity'.[80]

Another consequence of the recent recession in Ireland has been a damaging effect on public trust. For the last few years, Ireland has scored quite lowly in measures of average

[78] http://www.who.int/gho/ncd/risk_factors/overweight/en/. It is also worth noting that prevalence of chronic diseases in Ireland is skewed via a class gradient so that there is a three-fold difference between the highest and lowest occupational classes. The lifestyle factors that lead to these conditions are also distributed unevenly across society, in particular smoking, alcohol consumption, diet and physical activity (Dept of Health [2008], *Tackling Chronic Disease)*.

[79] OECD (2015) *In it Together: Why Less Inequality Benefits All.* Paris. OECD.

[80] *A Programme for Partnership Government* (2016).

trust in institutions although its ranking is slightly up since last year.[81] Despite this deficit of public trust, Ireland appears to be just above average in terms of its levels of social cohesion.[82] However, this level of cohesion cannot be taken for granted and the political diversity apparent in some European countries has increased in Ireland following the general election in early 2016. The formation of a new minority Government in May 2016 requires the development of new processes for the resolution of differences between the Government and parliament to ensure co-operation and stability.

5.7 Migration and Integration

Migration is becoming one of the most contentious and contested issues in politics across many countries. It played a significant role in the UK's referendum on Brexit, has fuelled the rise of nationalist political parties and caused many countries to re-establish some form of border controls within Europe. Even though Ireland's location in Europe means that it does not bear the direct brunt of many of these pressures, this should not induce complacency about the issues that migration and integration can generate.

Over a generation, Ireland has changed from an ethnically homogeneous society to a much more multi-ethnic one, a transformation reflected in rural as well as urban communities. Census 2011 disclosed that 12% of the population were born outside the State. As noted in section 5.4, the level of net outward migration may have been overestimated so there may be many more immigrants living and working in Ireland than previously believed which makes policies and actions relating to integration all the more important.

This increase in the immigrant population has happened in a very short time-scale and without any of the upheaval which 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.

[81] The Edelman Trust Barometer 2016 shows a slight increase in average levels of trust in institutions from 37 per cent to 39 per cent over the last year.

[82] The Bertelsmann Foundation's study *Social Justice in the EU – A Cross National Comparison* (2015) shows that Ireland's rating for social cohesion and non-discrimination is 5.95 (out of a possible 10), just above the EU average of 5.91. Ireland's score has declined by 0.14 since the previous year.

6. Technological Risks

Cyber security

Major pandemics

Nuclear contamination

Technological trends

Anti-microbial resistance

6.1 Cyber Security

At a national level, there is clear recognition that the internet is a key enabling infrastructure for economic growth and prosperity. However, unlike traditional economic and social infrastructure, our geographical position does not provide any protection from cyber-attacks. The threat landscape continues to evolve, and a wide range of significant risks arise for key national infrastructure such as energy, transport and telecoms systems. It is important to consider the possibility of terrorist groups resorting to cyber-measures to advance their aims by, for example, launching an attack on and disrupting critical infrastructure.[83] This is an issue of growing concern at EU and international levels.

A specific risk for the public service is theft or compromising of data collected by the public service which would reduce confidence in public service administration and the use of technology for public services. There are also pressing risks for businesses and individuals, including the loss or theft of personal or business information, or even the destruction of property.

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[83] Europol (2016) *European Union Terrorism and Situation Trend Report 2016*. Europol judge this risk currently to be one of high potential but low probability.

6.2 Major Pandemics

Pandemics are unpredictable but recurring events that can cause severe social, economic, and political stress. History shows us that pandemics can cause death and illness on a significant scale and disrupt normal social and economic activity. International exercises and experience indicate that a pandemic has the potential to significantly disrupt economic and social life with the possibility of energy and food supply shortages. The outbreak of Ebola and the transmission of the virus outside of Africa is a reminder that as the world becomes more connected, facilitating the spread of viruses, the risks of a pandemic becomes greater. Many emerging human diseases with pandemic potential have originated in animals prompting the "One Health" concept which recognises the links between public, animal and environmental health.

6.3 Nuclear Contamination

The potential contamination of Ireland as a result of fallout from a nuclear accident is a risk, albeit one of low probability. Apart from the obvious risks to public health and well-being, the potential for impact on Ireland's agricultural production, particularly reputational risk, is significant. This could arise in the event 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.

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

6.4 Technological Trends

Many analysts are now predicting that we are at a crucial point in the development of ground-breaking technologies and their incorporation into everyday life. Developments such as artificial intelligence, robotics, the internet of things, autonomous vehicles, 3D printing, nanotechnology, biotechnology, materials science, energy storage and quantum computing and many more may transform all the lives of everyone.

These transformations wrought by these and other technological developments may mean that some businesses and products could become obsolete relatively quickly. Successor businesses will obviously arise but the risk is that these will be less dependent on human labour than before. For example, Kodak was forced into bankruptcy as a result of being unable to compete with Instagram. At its height, Kodak employed 145,000 workers whereas Instagram employs less than 5,000.[84]

The risk arising from current technological trends is that people may be displaced from their current employment positions and may not be able to access adequate alternatives. One recent study[85] examined over 700 different occupations in the United States and estimated that 47% of total US employment was susceptible to computerisation and automation. Jobs in transportation, logistic, as well as office and administrative support, were deemed at 'high risk' of automation but even some occupations within services and sales industry were also highly susceptible. Research by the Bank of England indicates that 15 million jobs in the UK may be at risk from automation.[86]

Others caution against believing that entire occupations will be replaced by technological advances as even those occupations at high risk of automation require the performance of non-routine activities. It is the extent of routine tasks within occupations that render them vulnerable to automation. On this basis, research for the OECD, across 21 countries including Ireland, has calculated that the share of jobs at high risk from automation is 9 per cent. The research concludes on the 'need to focus more on the potential inequalities and requirements for (re-)training arising from technological change rather than the general threat of unemployment that technological progress might or might not cause'.[87]

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[84] For a discussion of this issue, see Brynjolfsson, E. And McAfee, A. (2014) *The Second Machine Age: Work, Progress and Prosperity at a time of Brilliant Technologies.* New York: W Norton & Company.

[85] Frey, C. and Osborne, M. (2013) *The Future of Employment*. Available at http://www.oxfordmartin.ox.ac.uk/downloads/academic/The_Future_of_Employment.pdf

[86] Haldane, A. (2015) Labour's Share. Speech to Trades Union Congress, 12th November. Available at http://www.bankofengland.co.uk/publications/Documents/speeches/2015/speech864.pdf

[87] Arntz, M., T. Gregory and U. Zierahn (2016), "The Risk of Automation for Jobs in OECD Countries: A Comparative Analysis", OECD Social, Employment and Migration Working Papers, No. 189, OECD Publishing, Paris. http://dx.doi.org/10.1787/5jlz9h56dvq7-en, p. 25. This study estimates that 8% of jobs in Ireland have a high risk of automatibility.

The OECD has remarked[88] on the slow pace of technological substitution due to societal, economic and legal hurdles which may give labour forces the opportunity to adapt and re-skill so they will be in a position to respond to the new challenges.

6.5 Anti-microbial resistance

The rise in antimicrobial resistance (AMR) is recognised at global and European levels as one of the greatest potential threats to human and animal health, with possible serious consequences for public health, animal welfare and the agriculture and food sectors. The advances achieved as a result of antimicrobial drugs are now seriously jeopardised because of the emergence and spread of resistant strains of microbes against which an increasing number of such drugs are ineffective. AMR already represents a significant human health threat and contributes to increased morbidity, mortality and healthcare costs. If AMR continues to rise, it will become increasingly difficult and expensive to control and treat infections in medical care and more difficult to maintain animal health and welfare.

[88] OECD: *Automation and Independent Work in a Digital Economy – Policy Brief on the Future of Work*, May 2016

Appendix 1: Groups/Individuals that made a submission

1. UCD
2. EPA
3. Enterprise Ireland
4. Chambers Ireland
5. IFA
6. Gas Networks Ireland
7. An Taisce
8. St Vincent de Paul
9. Private Individual
10. Private Individual
11. Private Individual
12. Private Individual

Appendix 2: NRA Public Consultation Process - Risks Identified

Category	Individual risks	How reflected in the NRA 2016 – Overview of Strategic Risks
Economic	Loss of Competitiveness through skills deficit and low productivity growth	Addressed in section on loss of competitiveness and human capital.
	Trading risks to Farm Enterprises and SMEs through currency fluctuations	Trading risks covered in new section on trading relations with UK
	Importance of MNCs & Risk of unfavourable tax changes	Addressed in relevant section
	Debt Sustainability vulnerable to rise in interest rates	Covered in section on debt
	Vulnerabilities in the banking system highlighted by Brexit and cost of credit	Irish Banks' exposure to UK market noted
	Danger of economy overheating	Risk lessened in light of Brexit
Environmental	Quality of our natural environment and biodiversity loss	Text added in section on climate change
	Climate change as a superordinate threat	Difficult to establish what is the primary risk
	More detail on costs of not meeting climate change targets	Issue noted in section on climate change
	Delay in action to address CO2 emissions	Addressed under 'Energy supply'
	Security of energy supply may diminish through Brexit and risks to low-income households if prices increase	Text added under 'Energy Supply'
	Food Safety & risks to trade	Addressed under 'Food Safety
	Infrastructural development hindered through lack of a National Planning Framework	Risks to infrastructure development noted
	Housing supply and barriers to home ownership	Action plan to address Housing Supply noted
	Risk of another volcanic eruption in Iceland	Noted in text under extreme weather events
Geo-Political	Brexit - Risks of tariffs and barriers to freedom of movement	Noted in Brexit Section
Social	Poverty and Inequality	Text added in section on 'social cohesion and political stability'
	Long-term exclusion from unemployment and provision for caring duties	Text added in section on 'long-term unemployment'.
	Funding of 3rd level institutions and progress of lower socio-economic groups to them	Risk title amended to reflect issue and text added

	Changes in Dependency Ratio and impact on pension funding	New text on pensions added
	Management of migration/refugee flows	Issues around migration noted in sections 'Stability of the EU' and 'Migration & Integration'
	Low level of public investment	Issue discussed in sections 'Infrastructural development' & 'Expenditure Pressures
	Impact of chronic diseases on lower socio-economic groups	Text added to section on Chronic Diseases
Technological	Anti-microbial resistance	Addressed in text
General	Political and administrative systems may not be equipped to handle risks	NRA designed to give overview of risks to ensure they are not being neglected.
	Document how risks have changed	This was done in the Draft NRA 2016 to document changes from the previous year and the current document provides a further update.
	Note similarities and differences with World Economic Forum's use of risk	Text has been added to address this issue
	Not enough emphasis on destabilising expectations	Text has been added to emphasise that one of the functions of the NRA is to contribute to greater understanding of policy choices and constraints therein