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POTENTIAL IMPLICATIONS OF BREXIT: UPDATE REPORT

Financial Stability Division

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POTENTIAL IMPLICATIONS OF BREXIT: UPDATE REPORT¹

Executive summary

Introduction

This paper provides an update on the recent work undertaken in the Bank in relation to the risks associated with a potential withdrawal of the UK from the EU. It follows on from the report on “Potential Implications of Brexit: A Supervisory and Financial Stability Perspective” which was presented to the Financial Stability Committee in October 2015 and the Commission in November 2015 (Paper No. 195 of 2015).

Latest Developments and Financial Market Effects

At the 18-19 February 2016 EU Council meeting, agreement was reached on a new settlement between the UK and the EU, covering a range of issues including in relation to social benefits for citizens from other EU Member States residing in the UK, processes for halting legislation that could be harmful to individual member states, recognition of the status of non-euro area countries in the EU and recognition that the UK is not committed to further political integration into the EU. The settlement would come into effect if the UK decides to remain a member of the EU in a referendum that will take place on 23 June 2016. The latest opinion polls suggest that the referendum could be a very close affair, even when prediction markets, often based on odds produced by bookmakers, still point towards a 65-70 per cent probability of the UK remaining in the EU.

A number of recent documents published by the UK government provide new insight into the possible timeline of a UK withdrawal from the EU in the event of a vote to leave. In particular, they rule out the possibility of the UK government delaying the beginning of the withdrawal process and also the possibility of a second referendum. The documents also highlight the considerable likelihood of the two year negotiation period ending without a full agreement being reached given the complexity and untested nature of the withdrawal process. Moreover, the UK will need to finalise negotiations regarding its withdrawal from the EU, followed by negotiations regarding future relations with the EU, before beginning new trade

¹ This paper was prepared by Financial Stability Division with the input of the following divisions: Risk; Financial Markets; Irish Economic Analysis; Prudential Policy and Governance; Banking Supervision – Supervision; Banking Supervision – Analysis; Resolution; Insurance – Advisory; Securities and Markets Supervision; Investment Firms and Funds Services; Payment and Securities Settlement.

negotiations with other trading partners. As such, a decade or more of significant uncertainty can be expected to follow a vote to leave the EU, regardless of the final arrangement reached.

It is likely that a vote to leave the EU (a pro-Brexit vote) would for the UK in the near term translate into heightened levels of financial volatility affecting exchange rates, interest rates and financial markets. This would, in turn, affect the economic growth outlook for the UK, including through the impact on the current account and budget deficit, with knock-on effects on sectors such as UK banking and real estate. Spillovers to other countries, including Ireland, could be expected. The value of sterling has already declined against both the dollar and the euro during 2016. The volatility of sterling has also increased more than that of other currencies and market analysts expect this to remain high with the exchange rate sensitive to newsflow in the run up to the referendum.

A further weakening of sterling in the event of a pro-Brexit vote would impact the competitiveness of Irish exporters to the UK. Financial market developments including increased market volatility, potential rating agency actions, an impact on funding costs and losses incurred on available for sale assets would impact on the profitability and the value of investment portfolios of firms across the Irish financial sector.

Macroeconomic Impact

Over the longer term, the nature and scale of the eventual macroeconomic impact of Brexit would be influenced by the extent of any change to the free movement of goods, services, capital and labour, currently facilitated through the operation of the EU single market. A wide range of estimates exist of the possible impact on the UK economy of a vote to leave the EU. Over a ten year horizon these range from a decline of 1-3 per cent of the level of GDP relative to the status quo in the case of a benign outcome involving a bilateral treaty between the UK and EU, to a decline of 2.5 to 14 per cent in worst-case scenarios without a bilateral free trade treaty. Analysis published by the UK Treasury on 18 April 2016 points to potentially severe effects on growth over a 15 year period ranging from -3.8 per cent (EEA scenario) to -6.2 per cent (negotiated bilateral agreement) to -7.5 per cent (WTO outcome).

EU and euro area growth would also be affected, depending on the extent of trade and investment links between individual member states. Overall net effects are generally estimated to be negative, even if some gains could be realised through the transfer of activities from the UK to the euro area after a Brexit, particularly in the financial and

pharmaceutical sectors. [REDACTED]

[REDACTED] Other assessments are more pessimistic. Societe Generale, for example, estimates loss of between 0.125-0.25 percentage points of GDP per annum over a decade for the euro area, equivalent to 10-20 per cent of estimated potential growth. In terms of the more short-term impact, JP Morgan estimates that an exit would hit euro area growth by -0.2 per cent to -0.3 per cent over the first 18 months and reduce inflation by around 0.1 percentage points. Apart from Ireland, the other countries most affected would include Belgium, the Netherlands and Luxembourg – partly due to exposures to the financial, automotive and chemical sectors.

In the previous report, the macroeconomic implications of a Brexit for Ireland were considered under various scenarios by the Bank's Irish Economic Analysis Division using a Bayesian Vector Autoregression (BVAR) model. Under certain assumptions relating to potential FDI flows, estimates for the impact on the level of real GDP (deviation from baseline) ranged from -0.3 per cent to -1.5 per cent after five years and -0.5 per cent to -2.8 per cent after ten years. In order to provide additional insight into worst-case scenarios, particularly in the context of the general issue of uncertainty around the estimates from that model, two additional features have been incorporated into the model for the current update, namely the potential for wider implications for foreign demand given the impact Brexit would have on the global economy and the possibility of a more adverse impact on the Irish labour market. These were added to the worst-case scenario under the original exercise and a most extreme outcome pointed to a negative effect on GDP of up to 1.7 per cent after five years and 3.2 per cent after ten years. Whereas the previous exercise noted only a relatively small impact on the unemployment rate, the current exercise highlights the significant impact on employment levels, ranging between -1.6 to -1.8 per cent below baseline after ten years in the more severe scenarios. [REDACTED]

[REDACTED] While an analysis of such potential developments is beyond the scope of this note, this would imply additional downside risks to the Irish economy.

Banking Sector and Resolution

[REDACTED]

[REDACTED] Banking Supervision continues to engage with all banks with material exposures to the UK in relation to Brexit risks.

For the purposes of this Report, Banking Supervision has utilised the results of the stress tests undertaken for the IMF FSAP to estimate potential effects [REDACTED]

[REDACTED]

The note also provides updated information from a resolution perspective, including the general impact on the resolution framework and implications for Irish institutions operating in the UK and UK parented institutions in Ireland. Following a UK exit from the EU, while

at the outset the frameworks may remain equivalent, they may drift apart over time. Moreover, in addition to potential policy misalignment, the status of the UK vis-à-vis Ireland changes from a fellow EU Member State to a Third Country. This could have significant implications for UK, Irish and European resolution authorities. In relation to Irish banks operating in the UK through subsidiaries, it is credible that the Bank of England (BoE) may require a higher level of comfort than it currently demands, [REDACTED]

[REDACTED] UK banks in Ireland would be designated as Third Country banks which would result in an increased obligation on the Bank in relation to resolution planning for these entities on a standalone basis, which would also increase costs for UK banks operating here.

Insurance Sector

The additional work undertaken in relation to the insurance sector includes (i) more supervisory engagement to assess the impact on, and preparedness of, entities for a Brexit, (ii) further details on the types of Irish entities with significant exposures to UK markets and (iii) analysis on the potential impact on Irish consumers of UK companies exiting the Irish market. A survey was issued to four cross border life companies with the highest sales into the UK. Other companies have been asked for their analysis as part of regular supervisory engagements. The data show that the majority of business sold by Irish authorised companies into the UK is sold by cross-border entities with little or no business in Ireland.

[REDACTED] There is a mixture of business models among firms active in the UK with some companies selling via a UK branch (i.e. on an Freedom of Establishment (FOE) basis) and others direct on an Freedom of Services (FOS) basis (these being mainly life companies). The business models of those companies selling on an FOS basis are most likely to be impacted by a Brexit. Whilst these entities could continue selling from Ireland on a FOE basis, some entities may cease business altogether. [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

■ The choice of the Irish insurance consumer is unlikely to be impacted much by Brexit as the majority of premiums sold by UK authorised companies is done via an Irish branch and this method is likely to be less impacted than that of UK authorised firms selling directly into Ireland on a FOS basis. Only about 10% of the Irish market is supplied using the latter approach.

Investment Funds, Financial Market Infrastructures and Market Intelligence

A cross-section of entities supervised by the Markets Directorate as well as industry representative bodies were contacted to canvass opinions on (i) preparedness of firms for a Brexit and (ii) likelihood and implications, including in relation to the potential for firms to relocate to Ireland from the UK. Although a small number of firms have already begun formulating Brexit plans, the recurrent theme from the Investment Firm, Fund Service Providers and UCITS/AIFM Investment Fund industries is that a lengthy negotiation period will present firms with ample time to assess the impact and plan accordingly. Until the format of a Brexit is determined, limited preparations can be made. Notwithstanding this, supervised entities have commented that Brexit is under active consideration, with a variety of approaches being used – [REDACTED]

[REDACTED] The general viewpoint is that the likelihood of a Brexit has increased, with firms indicating that there would be a generally negative impact on the Irish economy as a whole. The industry specific impact has a more varied outlook however, with both positive and negative consequences mooted.

Further to the authorisation of additional 'existing' entity types, the Markets Directorate faces the prospect of authorising a number of entity types which do not presently operate in Ireland; including Central Securities Depositories, Central Counterparty Clearing Houses, Trade Repositories, [REDACTED] Prime Brokers and Systematic Internalisers. Forthcoming legislative developments will also introduce the prospect of further entity types; for example Organised Trading Facilities, Consolidated Tape Providers and Approved Reporting Mechanisms. Due to the migratory implications of a Brexit, there is an increased likelihood of the Bank authorising and supervising a larger and more diverse set of firms and firm types.

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

Next Steps

Actions that will be taken by the Bank in the near term to mitigate potential risks associated with a Brexit include [REDACTED]

[REDACTED] A high level Task Force chaired by the Director of Financial Operations has been established to ensure operational preparedness of the Bank for any contingencies. The existing ECB monetary policy framework has and will continue to provide ample liquidity, including if needs were to arise in the context of a Brexit vote. The existing framework includes standing swap arrangements with other major central banks, including the BoE.

The Bank will continue to engage with the Department of Finance and individual financial institutions regarding potential risks. [REDACTED]

[REDACTED] In the event of a pro-Brexit vote, updated assessments of systemic risks will be prepared for the Financial Stability Committee and Commission and communicated publically through channels such as the Macro Financial Review and speeches by Senior Management. Supervisory issues including the capacity of the Bank to assess increased numbers and types of applications for authorisation have been considered by the relevant business areas and can be considered in more detail after the outcome of the referendum is known.

The Commission is requested to note the updated analysis provided on potential economic and financial sector impacts of a UK exit from the EU as laid out in this report, including:

- **Updated developments in relation to the possibility of a Brexit, including latest opinion polls and financial market effects.**
- **Revised estimates of potential macroeconomic effects, including under more adverse scenarios.**

- **Additional information regarding the potential impact on the Irish financial sector of a UK exit from the EU, including quantification of potential losses for domestic banks and more granular information relating to the insurance sector.**
- **An update on the preparedness of firms across all parts of the financial sector for risks relating to Brexit, including the supervisory engagement that has taken place since the last report.**
- **Actions that will be taken by the Bank in the near term to mitigate potential financial stability risks associated with a Brexit.**

1. Introduction

During the second half of 2015, an internal report was prepared in the Bank on “Potential Implications of Brexit: A Supervisory and Financial Stability Perspective” The report was discussed by both the Financial Stability Committee (FSC) in October 2015 and Commission in November 2015 (Paper No. 195 of 2016); it was shared with the Department of Finance and key messages were published in the Macro Financial Review (December 2015). The report and the feedback from the FSC, Commission and Department of Finance identified a number of areas where further work was required to assess better the risks for the Irish financial system associated with a potential UK withdrawal from the EU, and it was agreed that an update would be prepared within six months of the initial report.

The key new material and issues covered in this update include:

- Updated developments in relation to the possibility of a Brexit, including latest opinion polls and financial market effects.
- Revised estimates of potential macroeconomic effects, including under more adverse scenarios.
- A quantification of potential losses for domestic banks in the event of a Brexit, using analysis prepared in the context of the IMF FSAP stress-testing exercise.
- Additional information regarding the potential impact of a UK exit from the EU from a resolution perspective, both for Irish banks operating in the UK and UK banks operating in Ireland.
- More granular information regarding the exposures of the Irish insurance sector to UK markets, distinguishing in particular between those selling via a UK branch (FOE basis) and those selling directly (on a FOS basis).
- An update on the preparedness of firms across all parts of the financial sector for risks relating to Brexit, including the supervisory engagement that has taken place over the past six months.
- Some assessment, including market intelligence, on the likelihood of relocation of foreign financial firms from the UK to Ireland as well as implications for the supervisory and regulatory policy functions of the Bank.

The layout of this update report is as follows. **Section 2** provides a brief reminder of the main issues contained in the original report on the potential implications of a Brexit. **Section**

3 discusses background developments since the last report including the latest opinion polls and potential financial market effects relevant for Ireland in the event of a decision by the UK to withdraw. Revised macroeconomic estimates over both five and ten-year horizons under potential Brexit scenarios are outlined in **Section 4**. **Section 5** discusses the additional work undertaken in the Bank in relation to possible financial sector effects, including banking, insurance and other financial firms including funds. Section 6 concludes and describes next steps for the Bank.

2. Summary of Previous Findings

In the analysis undertaken during H2 2015, three potential exit scenarios were considered, namely a Norwegian-type scenario whereby the UK becomes a member of both the EEA and EFTA (the best case); a scenario involving bilateral trade accords (the base case); and a scenario whereby no agreement is reached and the UK trades with the EU under WTO rules on a most-favoured-nation (MFN) basis (the adverse case).

The best case would have relatively minor spillover effects, as EEA membership offers full access to EU financial markets. [REDACTED], as it would leave the UK in a position where it would still have to adopt EU standards and regulations but would not have formal influence over EU policy design and implementation. Under the base case scenario, the UK and EU agree a bilateral trade treaty or treaties loosely modelled on EU/Swiss trade agreements. Access to EU financial services markets would vary across sectors and directives depending inter alia on the equivalence of regulations. [REDACTED]

[REDACTED] and would have economic and financial market spillover effects. Finally, the worst-case scenario is where the UK and EU do not conclude a trade agreement and instead the UK exercises its rights under the MFN clause of the WTO. Under this scenario the EU can restrict access to regulated financial services markets in the EU and a considerable impact on trade and investment could be expected. [REDACTED]

[REDACTED] it is not in the interests of either the UK or the EU, but could arise by default if no deal can be reached.

The first impact of uncertainty in the run up to the referendum, and indeed in the event of a vote to leave, will come largely through financial markets. Potential effects include market volatility, likely depreciation of sterling vis-à-vis the euro and other currencies and possible

effects on sovereign bond yields and banks' equity prices. This would impact on the competitiveness of Irish exports, banks' share prices and the balance sheets of Irish financial firms, including balance sheet size of Irish banks with significant exposures in GBP and values of investment portfolios.

The key economic channels considered through which a Brexit would impact Ireland included trade, FDI and the labour market. Potential macroeconomic effects under the base case and adverse case were modelled using a BVAR model. Under certain assumptions relating to potential FDI flows and labour market restrictions, estimates for the impact on the level of real GDP (deviation from baseline) ranged from -0.3 per cent to -1.5 per cent after five years and -0.5 per cent to -2.7 per cent after ten years. The corresponding ranges for an increase in the unemployment rate were +0.03 per cent to +0.17 per cent after five years and +0.03 per cent to +0.21 per cent after ten years. While not insignificant, these effects do not point to major macroeconomic adjustment. This largely reflects the degree to which the economy has diversified away from reliance on the UK economy in recent years.

Overall, the effects of a UK withdrawal from the EU on Irish-based financial institutions could be material. Some impact on activity and profitability would be experienced and the extent of this would vary across firms and sectors and depending on the nature of the new relationship agreed between the UK and EU. [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED] In the insurance sector, significant premium volumes are being written on both an "inward" [REDACTED] and "outward" (€8.6bn) basis between Ireland and the UK. Some rationalisation of the Irish cross-border life and non-life sectors could be expected in the event that sales on a Freedom of Services basis would no longer be permissible. A requirement on Irish insurers to establish branches in the UK would result in smaller participants exiting the market, accelerating a trend towards market consolidation that is already underway. For investment funds and other entities supervised by the Markets Directorate, it was anticipated that the overall business impact of a UK withdrawal on existing 'Markets Directorate firms' should be relatively limited. Depending on the format of a Brexit, the loss of access to a UK client base may result in closures of certain firms although the removal of UK competitors may benefit other firms.

Given the challenging environment facing domestic retail banks and non-life insurance companies, in particular, even relatively minor effects need to be factored into future planning. [REDACTED]

[REDACTED]

[REDACTED]

A second channel through which Brexit would impact on the Irish financial system is foreign direct investment. New applications for financial services firms to locate here would pose challenges to the Bank from a supervisory perspective. Important issues for consideration in this regard include whether increased resources would be required to accommodate additional authorisation requests, whether the appropriate skills base exists for supervision of any new types of activity and whether any strategic consideration is necessary regarding the type of firms or activities that might seek to locate here.

Additionally, applications from financial market infrastructures including central counterparties (CCPs), securities settlement systems (SSSs), central securities depositories (CSDs) and payments systems are a possibility, although these could materialise even with no Brexit. As noted in the report [REDACTED]

[REDACTED] further work will be undertaken by the Financial Operations Directive in order to prepare for any eventualities. No major effects on the deposit guarantee scheme or collateral framework are anticipated.

The potential direct impact on the Bank's balance sheet from financial market effects was assessed, notably the effect of an increase in credit spreads on Irish sovereign debt. Some impact would be expected on the scale of realised gains from disposals of the remaining floating rate notes as well as its carrying value. The potential impact is not thought to be significant or out of line with normal market risks. It was agreed on preparation of this report that additional work was required and that this would be presented to the FSC and Commission within six months.

3. Latest Developments and Financial Market Impact

3.1 Latest Developments

At the 18-19 February 2016 EU Council meeting agreement was reached on “A new settlement for the United Kingdom within the European Union”. The deal covers a range of issues including in relation to social benefits for citizens from other EU Member States; processes for halting legislation that could be harmful to individual member states; recognition of the status of non-euro area countries; and recognition that the UK is not committed to further political integration into the European Union. The arrangements will become effective on the date that the UK government informs the EU Council that the UK has decided to remain a member of the EU. This would come after the referendum on whether the UK will “remain a member of the EU or leave the EU”, which will take place on 23 June 2016.

Since the official announcement of the referendum date, a number of documents have been issued by the UK government detailing the official process for leaving the EU and potential alternatives to EU membership.² These documents provide new insight into the possible timeline of a UK withdrawal from the EU. In particular, they rule out the possibility of the UK government delaying the beginning of the withdrawal process and also the possibility of a second referendum. The documents also highlight the considerable likelihood of the two year negotiation period ending without a full agreement being reached given the complexity and untested nature of the withdrawal process.³ Moreover, the UK will need to finalise negotiations regarding its withdrawal from the EU, followed by negotiations regarding future relations with the EU, before beginning new trade negotiations with other trading partners. As such, a decade or more of significant uncertainty can be expected to follow a vote to leave the EU, regardless of the final arrangement reached.⁴

² For more information see HM Government “The process for withdrawing from the European Union”. Available here:

https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/504216/The_process_for_withdrawing_from_the_EU_print_ready.pdf

³ If this occurs, the extension of the negotiating period could be vetoed by a single Member State. This would lead to the UK leaving the EU with no immediate replacement agreed, without any protection under EU law for the rights of UK business to trade on a preferential basis with Europe or the EU’s free trade agreement partners, UK citizens to live and work in Europe, or UK travellers to move about freely in Europe.

⁴ For more information see HM Government “The process for withdrawing from the European Union”. Available here:

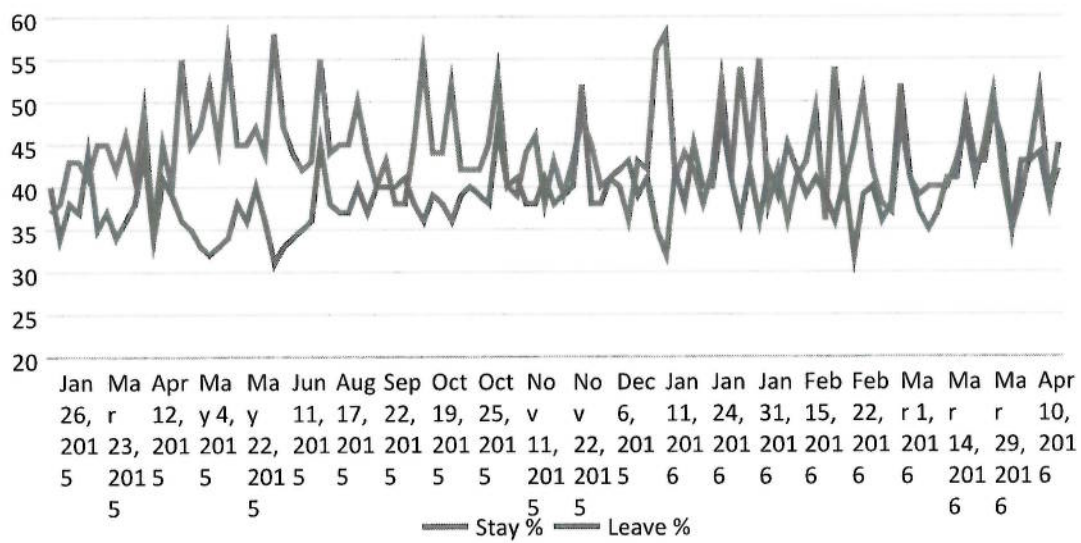
https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/504216/The_process_for_withdrawing_from_the_EU_print_ready.pdf

The BoE and the IMF have also made a number of announcements regarding the economic impact of a vote to leave the EU. The BoE's May 2016 Inflation Report highlights the increase in economic uncertainty associated with the referendum, its impact on asset prices, vulnerability arising from the UK's large current account deficit and the potential knock-on effects for both bank and corporate funding. In the accompanying press conference Governor Carney stated that while there were a number of potential Brexit scenarios they "could possibly include a technical recession". This sentiment was echoed by the IMF during the release of the Fund's annual health check on the UK economy, with Managing Director Lagarde stating that "we haven't found anything positive to say about a Brexit vote".

Public opinion has been impacted by a range of developments since the beginning of the year. Two key issues have been the evolving European refugee crisis and the knock-on effects of internal Conservative Party politics on the Leave campaign.⁵ Current polling suggests that the referendum will be a very close run affair. However, in both the UK General Election and the Scottish Referendum campaign, polling was not an accurate guide to the ultimate result. Chart 3.1.1 and Table 3.1.1 provide an overview of the most recent polling information. As shown in Chart 3.1.2, predictive markets currently place the probability of a vote to remain in the EU at 65-70 per cent.

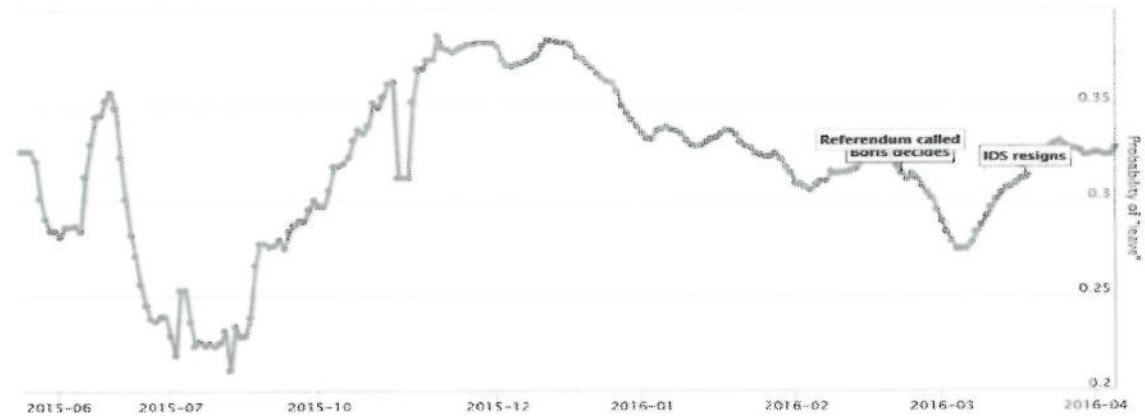
⁵ Research by Barclays uses Google searches as a proxy for voter focus and finds that searches for "migration crisis" were not only accompanied by a rise in searches for "EU referendum" but also increasing support for Brexit across a number of polls. For more information see "EU Referendum – The clue is in the name" Barclays (2016).

Chart 3.1.1 - Brexit Polling



Source: FT Poll of polls. Time series show the results of individual polls carried out by a variety of polling companies.

Chart 3.1.2: Brexit Predictive Markets



Source: Calculations by University of Sterling Management School and Centre of Constitutional Change. Data from oddschecker.com. Final data point represents April 6 2016.

Table 3.1.1: Polling – descriptive statistics

	<i>Stay %</i>	<i>Leave %</i>	<i>Undecided %</i>
<i>Average</i>	41.7	40.2	18.3
<i>Median</i>	41.0	39.0	19.0
<i>Last 5 poll average</i>	43.0	42.6	13.2
<i>Last 20 polls average</i>	42.1	41.8	15.8
<i>2016 polls Only</i>	43.2	40.9	16.1
<i>Small poll average (≤ 1250; 42 Polls)</i>	45.5	39.8	14.7
<i>Larger poll average (>2000; 64 Polls)</i>	41.7	41.1	18.5

Source: FT Poll of polls as of April 14 2016. Average poll sample size = 2007. Total number of polls included = 197.

3.2 Financial market impact

Financial markets have been affected by deteriorating market sentiment since around the start of 2016, reflecting a number of factors. These include weakening global economic activity, concerns regarding the future path of monetary policy and, in Europe specifically, concerns over the health of the banking system. The prospect of a Brexit is also having an impact, and previous political events, such as the UK general election and the Scottish referendum, show that markets begin to price in expected outcomes from several months out, with expectations of sterling weakness, for example, increasing as the day of voting nears.

From a monetary policy/liquidity perspective, the BoE has announced three additional long-term repo operations in the weeks around the EU referendum on 14, 21 and 28 June 2016. It is expected that further measures and announcements would be made if the situation warranted additional action. In the euro area, the existing ECB monetary policy framework has, and will continue to provide, ample liquidity which should be sufficient should additional liquidity needs arise in the context of a Brexit vote. The existing framework includes standing swap arrangements with other major central banks, including the BoE.

The following section provides an update on the extent to which financial markets in the UK and Ireland have reacted to recent announcements regarding the June 2016 Brexit referendum. The section also takes a forward looking perspective and focuses on potential impact of a decision by the UK to withdraw from the EU. Discussion is presented in relation to three markets - the currency market, the respective sovereign bond markets, and the

corporate sector, with particular focus on the banking sector. **A summary of relevant third party research on the economic and financial market impact of Brexit can also be found in Appendix 1.**

3.2.1 Foreign Exchange Markets

As the most liquid UK financial asset, sterling is likely to be the most vulnerable in the event of a Brexit. This vulnerability is further exacerbated by the UK's budget and current account deficits and its negative net international investment position. Chart 3.2.1 presents the value of sterling against the dollar, the euro and on a trade weighted basis. Two key Brexit dates are marked – the December 2015 EU leader's summit meeting, where it became apparent that the vote on Brexit would likely be held in 2016, and the same group's February 2016 meeting, at which the British draft agreement on EU membership was agreed but was followed by a number of high profile UK politicians aligning themselves with the 'Leave' campaign. A period of significant currency depreciation followed both of these announcements and by end March sterling had fallen from its November 2015 highs by 8 and 12 per cent against the dollar and euro respectively. More recently sterling temporarily arrested its continual declining trend with some appreciation occurring against the majority of its trading partners, in line with an increase in the poll support for 'Remain', before again ticking lower. However, it is important to emphasise that foreign exchange movements were driven by a number of factors during this period, including recent monetary policy events both in the UK and abroad. Further, it is possible that sterling would depreciate less in value on Brexit risks versus the euro than other currencies given that other European economies will also be negatively affected on a net basis by a UK withdrawal from the EU. This is demonstrated by the correlation analysis⁶ depicted in Chart 3.2.1, in particular relating to the period immediately following the February 2016 EU Leader's meeting. Here, sterling weakened against both the euro and the dollar after this event, as indicated by the relationship between the GBP/USD and GBP/EUR in the lower correlation chart. However, over this period sterling weakened to a lesser extent against the euro relative to the dollar, with sterling weakening against the dollar in line with the trade weighted weakening (correlation unchanged in middle correlation chart), whereas it declined against the euro less than the extent of the weakening of the trade weighted (dip in upper correlation chart). These patterns may be indicative of the euro weakening somewhat as a result of the negative impact of

⁶ Rolling 10 day correlations of daily differences of the time series.

Brexit. However, it should be noted that this does not appear to be a persistent trend, with other factors superseding any such Brexit pricing and correlations reversing quickly.

A further weakening of sterling would impact the competitiveness of Irish exporters to the UK. Irish banks would also be affected. Given that the domestic banks report their consolidated balance sheets in euro, this would result in the reported balance sheet size shrinking as both assets and funding in GBP decline in value. Capital ratios should in general see limited impact as there will be a fall in both the value of UK subsidiary capital and GBP risk weighted assets.

Chart 3.2.1: Sterling spot rates

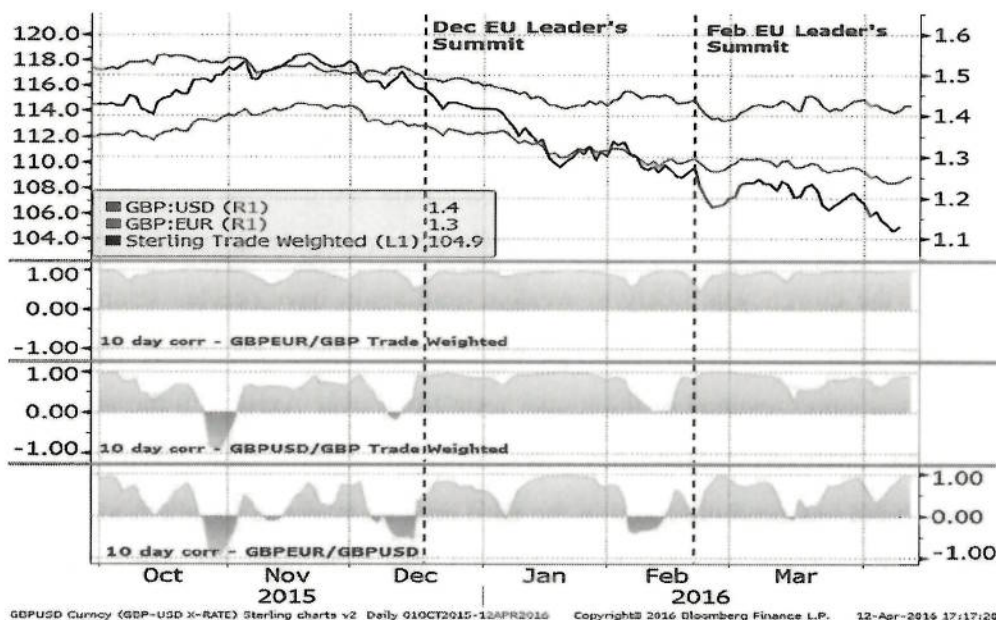
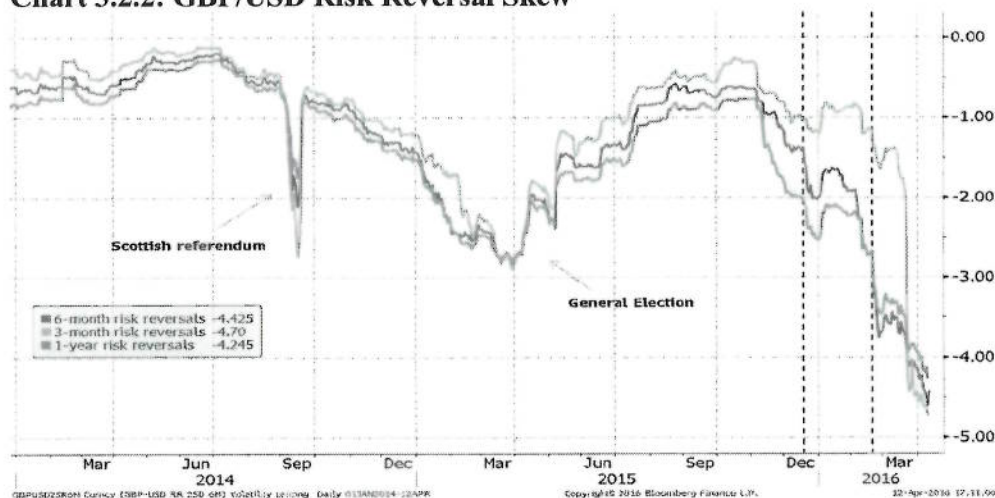


Chart 3.2.2: GBP/USD Risk Reversal Skew

The recent increase in sterling volatility has exceeded that of other currencies and market analysts expect this to continue with the exchange rate sensitive to newsflow in the run up to the referendum. This trend is particularly evident in the options market, which indicates the cost of hedging against projected sterling volatility. Chart 3.2.2 depicts sterling risk reversal indicators calculated using the difference in skew between puts and calls on the most liquid out-of-the-money GBP USD options.⁷ These risk reversals are currently negative, implying that investors believe the currency is likely to weaken, and again have reacted strongly to major announcements relating to Brexit (marked with dashed lines). Similar to the spot market above, there was some reversal of the longer term trend over April with the price of puts cheapening. Again, however, this tendency was short-lived, with the skew moving to the downside. A similar trend has been observed in the euro options market also, albeit at a less substantial rate. This move in shorter dated risk reversals has been mirrored in the 1-year maturity, indicating that investor concerns are more long term than the immediate fallout of a 'Leave' vote. Furthermore, during previous periods of political uncertainty, such as the run up to the Scottish referendum and last year's elections, markets continue to estimate further and further weakening in the lead up to the day of voting. This would suggest that, despite pricing already outstripping these previous events, the current trend is likely to persist and even amplify in the run up to 23 June 2016.

Considering market expectations, the consensus among commentators is for sterling to weaken even further in the event of a 'Leave' vote. The majority of commentators, including

⁷ The 25 delta risk reversals are the difference between the volatility (delta) between similar call and put options at given maturities. Out-of-the-money options are options where the strike price is above that of the current spot price in terms of calls, and below that in terms of put options.

Goldman Sachs, HSBC and Citi, estimate that in the aftermath of a 'Leave' vote sterling could fall to circa \$1.15 and €1.10, respectively (Appendix 1 provides further information in this regard). To provide some context, a drop of this magnitude would result in sterling being significantly lower than its average levels over the past five (\$1.58 and €1.24) and ten (\$1.67 and €1.26) years. However, these estimates are subject to a range of different assumptions in relation to 'exit' and the future state of the EU in the absence of the UK. Going beyond these point estimates, the following table depicts the range of scenarios envisaged by Roubini economics and their impact on the currency market and possible monetary and fiscal policy response.

Table 3.2.1: Roubini Sterling/euro estimate under differing economic scenarios

Scenario	€	Mon. pol. response	Fiscal pol. response
Resilient Europe	1.10	BoE rate cut in Q1 2017 to - 0.5%	Fiscal expansion by 0.75% of GDP starting in 2017
Crisis in Europe	1.00 but subsequently rising to 1.25 in 2018	Rate hike to 1% in Q4 2016 (cut to 0.5% by end-2018)	Fiscal expansion by 0.75% of GDP starting in 2017

Furthermore, with markets demonstrating significant re-pricing in their expectations of monetary policy action to be taken by the BoE, RBS prepared a range of economic forecasts under 'Remain' and 'Leave' scenarios and predicts that the BoE policy rate will decline (Table 3.2.1). This would imply a weaker exchange rate over time also.

3.2.2 Sovereign Bond Market

The sovereign bond market is also likely to be significantly impacted in the run up to the Brexit referendum. Sovereign bond yields reflect investors' beliefs regarding the ability of a state to repay its debt and as such concerns relating to Brexit are likely to increase yields on UK bonds and also those other affected countries including Ireland. As with other markets, there are a number of other interlinking factors which impact sovereign yields and it is therefore difficult to explicitly identify Brexit-related pricing. Notably, the turn of the year marked a period of extreme financial market volatility which resulted in large flows into 'safe haven' assets, such as G4 sovereign bonds, which pushed UK yields lower.

Therefore, regarding the UK sovereign, in order to disentangle the impact of the recent 'safe haven' investing Chart 3.2.3 depicts the movement in the spread (difference in yields) for the UK over the US and Germany. While there currently appears to be an inter-linkage between MPC decision making and the outcome of the referendum, there is little evidence of a

significant Brexit-premium being priced into the UK Gilt market. UK bond spreads to the US have narrowed only slightly over the period (depicted by the red line); it is worth noting that the spread tightening was mainly driven by movements in the US curve owing to market speculation around the pace of Fed tightening. Further, relative to Germany the spread between these two sovereigns has increased only marginally over the period. And while there has been some upward movement in this trend in recent weeks, this is largely due to the fall in yield on the German sovereign as a result of recent ECB monetary policy action.

Chart 3.2.3: UK 10 Year Spread to US and DE



Chart 3.2.4: Irish Spread to Belgium Sovereign



In order to identify any contagion to the Irish sovereign bond market, Chart 3.2.4 illustrates the trend in the spread of the Irish sovereign against its euro area counterpart Belgium. There does appear to have been some widening in this spread in the period immediately following the February EU Leader's Summit, which also coincided with the lead-up to the Irish election. Immediately following the elections this spread widening receded; however, in recent weeks there appears to be some premium being priced into the Irish sovereign which may be as a result of fears over Brexit and/or the on-going domestic political instability.

Looking forward, a number of factors are likely to impact the UK and Irish sovereign markets in the event of a 'Leave' vote. First, a number of rating agencies have outlined the negative credit impact of a 'Leave' vote on the UK credit rating. Moody's has indicated that a 'Leave' vote would likely result in the assigning of a negative outlook on the UK's rating and S&P has stated that if this were to materialise the sovereign would be subject to a cut of at least one notch in its rating. Such action would have the impact of increasing yields on UK sovereign bonds, *ceteris paribus*. Inversely, some market commentators have predicted that

yields on UK sovereign bonds may fall as a result of a 'Leave' vote, as the likely negative economic impact could result in the BoE easing monetary policy. However, while a weaker growth outlook might point this way, a weaker currency and a downward revision in potential output could also lead towards a tightening.

No explicit statement has been made in relation to the rating on the Irish sovereign in the eventuality of a Brexit, although Moody's has highlighted the recent resilience of the Irish economy as likely to limit the immediate effect of the uncertainty caused by a 'Leave' vote. The easing policies enacted by the ECB have also been highlighted as potential buffers against any re-pricing of Irish sovereign yields.

3.2.3 Corporate market

In relation to the impact on Irish and UK businesses, Chart 3.2.5 depicts the performance of the UK's FTSE index and the Irish ISEQ index as compared to other global indices. It is apparent that the recent performance of these indices has been primarily driven by global risk sentiment, as it mirrors moves in their international counterparts with little reaction to the announcements relating to Brexit.

Looking more closely at the banking sector, which is likely to be strongly impacted by the Brexit referendum, Chart 3.2.6 depicts the 5-year CDS price for a number of UK and Irish banks and, for the purpose of comparison, an index of euro banking CDSs (marked with a dashed line). The most striking feature of this chart is the significant increase in perceived bank credit risk since the start of the year on the back of a number of issues including

among other factors. The heightened market stress seen over this period is observable in the large increases in the euro banking CDS index. However, immediately following the February EU leader's summit meeting, credit risk associated with UK banks increased and this time decoupled from their European counterparts, suggesting that these concerns were linked to Brexit. Similarly, recent weeks have seen a further uptick in UK banks' CDS spreads that is not as apparent in the euro banks CDS index – again perhaps reflecting some UK specific effects of the risk of Brexit.

Notably, there does not appear to be a decoupling of AIB and euro bank CDS prices following the February summit.⁸ However, the BOI CDS appeared to decouple from both

⁸ It should be noted that Irish banks CDS trading is less liquid than in their English counterparts, which may

AIB and the euro area index over this period and ticked higher in the weeks following the meeting. This may indicate a degree of Brexit premium being priced in

Chart 3.2.5: Equity Performance

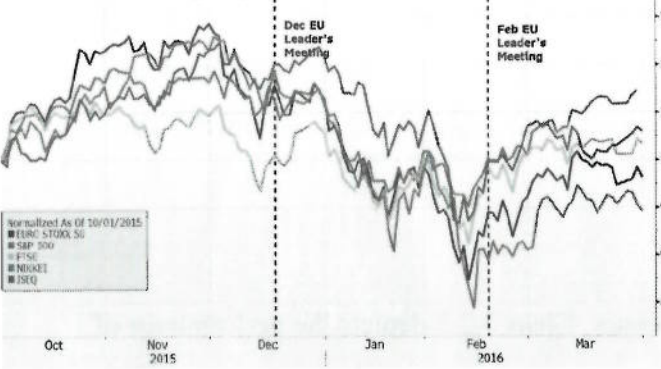
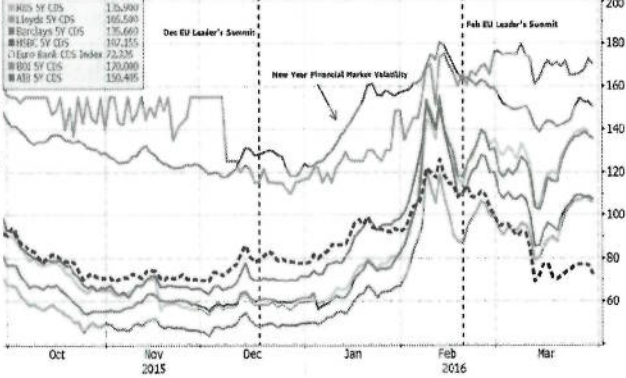


Chart 3.2.6: Bank Credit Risk



impact upon their pricing.

4. Macroeconomic Impact

4.1 UK and European Economic Effects

The nature and scale of the eventual macroeconomic impact of Brexit will be influenced by the extent of the uncertainty that prevails in the short to medium term as well as the extent to which the exit arrangements bring about any change to the free movement of goods, services, capital and labour, currently facilitated through the operation of the EU single market. The key economic channels through which the macroeconomic effects of Brexit will be felt will be through the effects on uncertainty, trade, FDI and the labour market. A wide range of estimates exist of the possible impact on the UK economy. Over a ten year horizon these range from a decline of 1-3 per cent of GDP relative to the status quo in the case of a benign outcome involving a bilateral treaty between the UK and EU, to a decline of 2.5 to 14 per cent in worst-case scenarios without a bilateral free trade treaty. Goldman Sachs estimate that a vote for Brexit would weaken the GDP growth outlook in the UK in the first year after a vote to leave by around 0.5 to 2.0 per cent depending on the scale of the uncertainty shock, based on an assumption that a typical uncertainty shock has a sizeable and front-loaded effect on GDP. Most recently, analysis published by the UK Treasury on 18 April 2016 points to potentially severe effects on growth over a 15 year period ranging from -3.8 per cent (EEA scenario) to -6.2 per cent (negotiated bilateral agreement) to -7.5 per cent (WTO outcome) (Table 4.1.1).

EU and euro area growth would also be affected, depending on the extent of trade and investment links between individual member states. [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED] Other assessments are more pessimistic and Societe Generale for example estimates loss of between 0.125-0.25 percentage points of GDP per annum over a decade for the euro area, equivalent to 10-20 per cent of estimated potential growth. In terms of the more short-term impact, JP Morgan estimate that an exit would hit euro area growth by -0.2 per cent to -0.3 per cent over the first 18 months, reducing inflation by around 0.1 percentage points. Apart from Ireland the other countries most affected would include Belgium, the Netherlands and Luxembourg – partly due to exposures to the financial, automotive and chemical sectors. In the medium-term some gains could be realised through the transfer of activities from the UK to the euro area after a Brexit, particularly in the

financial and pharmaceutical sectors, although as noted overall net effects are generally estimated to be negative.

Table 4.1.1 Annual impact of leaving the EU on the UK after 15 years vs. remaining in EU

	EEA	Negotiated bilateral agreement	WTO
GDP level (%) – central	-3.8	-6.2	-7.5
GDP level (%)	-3.4 to -4.3	-4.6 to -7.8	-5.4 to -9.5
GDP per capita – central ^a	-£1,100	-£1,800	-£2,100
GDP per capita ^a	-£1,000 to -£1,200	-£1,300 to -£2,200	-£1,500 to -£2,700
GDP per household – central ^a	-£2,600	-£4,300	-£5,200
GDP per household ^a	-£2,400 to -£2,900	-£3,200 to -£5,400	-£3,700 to -£6,600
Net impact on receipts	-£20 billion	-£36 billion	-£45 billion

^a Expressed in terms of 2015 GDP in 2015 prices, rounded to the nearest £100.

4.2 Macroeconomic Impact for Ireland – Alternative modelling strategies

In the previous Brexit report (October 2015), the macroeconomic implications of Brexit under various scenarios were considered using a Bayesian Vector Autoregression (BVAR) model including a measure of foreign demand, real exports, real GDP, the real effective exchange rate, employee compensation and the unemployment rate. Given the general issue of uncertainty around the estimates from that model, two specific features merited further examination:

- The scope for wider implications for foreign demand given the impact Brexit would have on the global economy;
- The labour market impacts.

In this update of the modelling approach we address these issues in the context of the worst-case Brexit scenario considered in October 2015. In this scenario there was no post-Brexit free trade agreement and no diversification for Irish exporters such that the UK share in Irish foreign demand remained fixed at current levels.

In order to calibrate the shock to foreign demand consistent with this scenario in October 2015, we derived a path for the foreign demand indicator taking the expected path for import growth in Ireland's major trading partners and reduced the UK element of that consistent with the reduction in UK GDP that has been put forward as likely in a worst-case Brexit.⁹

⁹ The level of UK GDP in this scenario would be 7.5 per cent below a no-Brexit baseline after 10 years.

This approach may not fully capture the dynamic impact of a Brexit on Irish foreign demand as the demand from other major trading partners in the euro area and US was not assumed to be affected. In an attempt to capture these second-round impacts on foreign demand generally, we now scale the foreign demand shock by an additional factor in an attempt to capture these second-round impacts on Irish foreign demand. To calibrate this add-on factor, we take the share of UK demand in the exports of our other major trading partners (the euro area and the US), and scale these by the Irish share of imported intermediate goods and services to the euro area and the US.¹⁰ This allows us to calculate an additional impact on total Irish foreign demand given the third-country effects of Brexit, and leads us to scale our original shock by a factor of 1.15.

Concerning the labour market, it was noted in the previous report that the impact of a foreign demand shock on the unemployment rate in Ireland is typically low given the relative flexibility of the labour market and in particular the role of migration. One of the key uncertainties in a post-Brexit environment is what it would mean for migration flows. In this regard it might be useful to consider instead the impact on employment levels as opposed to the unemployment rate, which may be more reflective of the potential difficulties in job creation and maintenance in the context of a worst-case Brexit. To do this we use employment levels instead of the unemployment rate in the BVAR model for the current exercise. For comparison we also re-run the October 2015 exercise with employment instead of the unemployment rate.

The results of the scenario analysis over a five and ten year horizon are shown in Table 4.2.1.¹¹ These can be interpreted as deviations from the baseline no-Brexit levels in per cent, with scenarios 1-3a being consistent with what was presented in the October report and scenario 4 having the additional factor to account for potential third-country effects of Brexit in the worst case of no free-trade agreement and no export diversification. We also show the implied elasticities of the key variables to the assumed UK GDP shock and the total foreign demand shock.

¹⁰ These data are available from the OECD Trade in Value Added database.

¹¹ The March 2016 model is estimated in annual growth rates from 1981q1-2015q4 with lag length as suggested by the Akaike Information Criterion and shrinkage achieved with a variant of the Minnesota prior where the tightness of the “other-variable” priors are selected based on the specification with the best performing in-sample forecasts.

In terms of the main differences between the October 2015 report and the findings below, the impact on employment is worth noting. Whereas the previous exercise noted only a relatively small impact on the unemployment rate, the current exercise highlights the impact on employment levels would be significant, ranging between -1.6 to -1.8 per cent below baseline after ten years in the more severe scenarios. Taking into account potential third-county effects in scenario 4 also shows the extent to which the worst case Brexit scenario could plausibly be expected to impact exports and real GDP, with both being -5.5 per cent and -3.2 per cent below baseline after ten years.

Table 4.2.1 Impact of Brexit – March 2016 and October 2015 Exercises

	<i>Scenario</i>	<i>Deviation after years</i>	<i>5 Deviation after 10 years</i>	<i>Implied Elasticity w.r.t World Demand Shock</i>	<i>Implied Elasticity w.r.t UK GDP Shock</i>
<i>Real Exports</i>	1	-2.35	-2.46	1.93	0.36
	1a	-0.64	-0.85		
	2	-0.75	-0.98		
	3	-3.06	-4.73		
	3a	-1.50	-2.94		
	4	-3.52	-5.45		0.64
<i>Real GDP</i>	1	-1.15	-1.45	0.97	0.18
	1a	-0.31	-0.50		
	2	-0.33	-0.58		
	3	-1.50	-2.80		
	3a	-0.74	-1.74		
	4	-1.73	-3.22		0.33
<i>Compensation of Employees</i>	1	-1.26	-1.98	1.09	0.21
	1a	-0.34	-0.68		
	2	-0.34	-0.73		
	3	-1.64	-3.81		
	3a	-0.80	-2.37		
	4	-1.89	-4.39		0.38
<i>Employment</i>	1	-0.51	-0.83	0.47	0.09
	1a	-0.14	-0.29		
	2	-0.14	-0.33		
	3	-0.67	-1.60		
	3a	-0.33	-0.99		
	4	-0.77	-1.84		0.16

Note: Scenarios 1-3a based on World demand shock as calibrated for October 2015 report, accounting for varying levels of exporter diversification and post-Brexit free-trade agreements. Scenario 4 augments the most severe world demand shock from the October exercise by a factor of 1.15 to account for potential second-round impacts on non-UK foreign demand following Brexit.

4.3 Real estate demand

An increase in authorisations will likely be accompanied by an increase in demand for commercial real estate and a related increase in demand for certain residential property sectors. This is an area of media focus at present, and an exacerbation of existing supply shortages may have implications for Dublin's perceived attractiveness as an investment location.

In the event of the UK leaving the EU – and depending on the nature of the future relationship between the UK and the EU – it is likely that a number of Investment Firms, Fund Service Providers and UCITS/AIFM Investment Funds may look to re-establish a presence within the EU so that they may participate in the single European market for financial services. Of the 34 MiFID Investment Firm branches operating in Ireland on a Freedom of Establishment basis, 31 (91%) are UK firms and of the 18 branches operated in other EEA countries on a Freedom of Establishment basis by Irish firms, 12 (67%) are UK based; this suggests that Ireland is presently a desirable jurisdiction for 'UK firms'. This appeal may increase further due to a number of reasons such as; proximity, language, well-educated workforce and low rates of corporation tax.

Due to the strong demand for office space there has been a recent increase in rental prices. Headline rents in the Dublin office sector rose by 22% last year and closed the year at €55 per sq. ft., according to an analysis by commercial property agent HWBC¹². HWBC predicts that costs could rise by as much as 18% to €65 per sq. ft. by the end of the year, levels not seen since the height of the boom in 2007 when peak rates reached between €60 and €65. In 2012 rental costs sank to €30 following the collapse of the property market. Rents have now risen by 84% in the past three years albeit from a low base¹³.

Despite a marked increase in demand, rates of construction have been low; resulting in a significantly decreased vacancy rate since 2010. In terms of actual space, availability has fallen from 8.3 million sq. ft. to 3.3 million sq. ft. This equates to a fall in the overall vacancy rate from 23.7% to 8.6%. Only 31% of the vacant stock is located in the city centre where the vacancy rate is at 5.3%, while in Dublin 2 it is just 3.6 per cent¹⁴. There are a number of schemes where building activity has started, with 1.4 million sq. ft. currently under

¹² <http://www.irishtimes.com/business/commercial-property/dublin-office-rents-close-to-peak-levels-1.2548528>

¹³ CBRE 2016 Real Estate Market Outlook

¹⁴ <http://www.esri.ie/pubs/RN20150302.pdf>

construction in the city centre. A number of office schemes are also in either the pre-construction phase with planning in place, or in the pre-planning phase. This should help to bring additional supply to the market. In the city centre, in addition to the space currently under construction there is potentially 1.6 million sq. ft. of space that could be delivered in 2017 and 2018¹⁵.

It is important to note that *“in the last five years FDI has accounted for an average of 60 per cent of office take-up per annum. This is a combination of existing FDI companies expanding or new FDI entering the market during this period, tech companies have performed particularly strongly , with global names such as Google, Facebook, Amazon, Salesforce, LinkedIn, Yahoo, Twitter, Microsoft and Mastercard all actively relocating to or expanding in Dublin”*¹⁶. A recurring theme amongst firms such as these is that once they have re-located to Dublin they tend to expand. Since Google moved to Dublin in 2013, they have grown from a staff of five to employing more than 2,500 people. Since 2011, Google has spent approximately €280 million purchasing almost 500,000 sq. ft. of office space in Dublin and also leases a further 150,000 sq. ft. of space in the city. The low vacancy rate at present suggests that there is now a constraint on companies looking to expand, with companies being limited in terms of options and choice when looking for prime space in the city centre. As it currently stands, if there was a repeat of any company wanting to set up or relocate to a facility in Dublin for more than 500 people they would now have to wait until approximately Q1, 2017 to occupy a suitable building. In contrast, in 2013 there would have been seven suitable buildings to choose from.¹⁷

For Ireland to remain to be seen as an attractive location it is important that future growth is not constrained by the availability of commercial property¹⁸. Presently, Ireland is experiencing a housing shortage; with an insufficient stock of available housing coupled with increasing rental prices. At end 2015 Dublin rents were up as much as 46 per cent on 2010 levels, with growth rates of up to 10 per cent over the year.¹⁹ The main reason for the increase in prices is due to demand significantly exceeding supply. The number of completed dwellings has been averaging over 3,100 units per quarter in 2015²⁰. However this is still

¹⁵ *Ibid.*

¹⁶ *Ibid.*

¹⁷ *Ibid.*

¹⁸ *Ibid.*

¹⁹ Daft 2015 Q4 Rental Report

²⁰ Department of the Environment statistics

roughly half of what is required. So for firms considering Dublin as an investment location, consideration would be given to the availability of residential property for staff to rent or buy. Peter Stafford, the Director of Property Industry Ireland stated that: *"Businesses are now finding that they can find spaces for workers to work in but they can't find space for the workers to live in."*²¹

5. Financial Sector Effects

5.1 Impact on regulatory policy and framework

Due to the size of its financial sector and the broad range of activities it engages in, the UK is a prominent voice and major contributor (both in terms of expertise and resources) on a range of key policy issues addressed by European policymakers at, inter alia, the European Council, European Commission, European Parliament and the European Supervisory Authorities²² (ESAs). The UK's pre-eminence and expertise as a leading force in international finance has significantly contributed to the framing of the EU's Single Market in financial services. This experience has meant that the UK has had a sizable influence on the EU's regulatory approach, as well as a leading role in global regulatory discussions and developments. This impact and participation at EU level will cease²³ within a Brexit scenario.

The similarity of the UK and Irish legal systems and financial regulatory infrastructure means that our interests are often, though not always, closely aligned. To this end, Brexit would see Ireland lose a considerable ally at the EU policy making table. As such, it would be critical that Ireland further enhances relationships with other Member States with similar policy perspectives to ensure continued impact on policy development at EU level, while continuing to foster its positive relationship with the UK post Brexit. As a non-member of the Single Supervisory Mechanism (SSM), the UK currently brings a useful independent perspective to ESA discussions.

[REDACTED]

[REDACTED]

²¹ <http://www.irishexaminer.com/ireland/housing-shortage-will-cost-ireland-key-jobs-warn-business-leaders-388357.html>

²² European Banking Authority (EBA), European Securities and Markets Authority (ESMA), European Insurance and Occupational Pensions Authority (EIOPA).

²³ The UK will however continue to contribute to the work of the Basel Committee on Banking Supervision (BCBS), the International Organisation of Securities Commissions (IOSCO) and the International Association of Insurance Supervisors (IAIS) which are key factors in the development of the EU banking, securities markets and insurance frameworks.

The regulatory framework which will govern the UK post Brexit will depend on whether it opts to remain within the EEA. If not, the UK framework would need to be assessed under the third country equivalence regime. Any scope for potential regulatory arbitrage would need to be considered by the ESAs. Even if the UK votes to remain in the EU and in light of the need to preserve financial stability and a level playing field, the ESAs will need to have due regard to any potential flexibility for the UK regarding prudential supervision provided for under the Settlement Agreement²⁴.

Overall, whilst the absence of UK involvement in EU financial services policy formulation would be a major loss in terms of experience, resources and a like-minded ally for Ireland, it is unlikely that the impact would be unduly negative in terms of Ireland's participation in the development of regulatory policy at EU level. Further, it is considered unlikely that the policy and regulatory agenda for the ESAs would change significantly post Brexit, particularly in light of the political momentum behind the European's Commission's drive towards Banking Union. Ireland is already fully engaged in this trajectory towards harmonisation of regulation at an EU level through its membership of SSM.

It should also be noted that if the UK votes to remain a member of the European Union, the settlement agreement reached by EU leaders at the European Council Meeting in February 2016 will come into effect. Separate work has been carried out by the Prudential Policy Group (PPG) regarding the potential financial regulation implications for Ireland of this agreement and a number of key findings have been reached.

It is considered that the legal nature and consequences of the settlement agreement are ambiguous at this stage. The agreement is not deemed to represent EU law but rather, it is thought to take the form of an international agreement and has been registered with the United Nations as such. The agreement contains a reference to future Treaty change, which is deemed controversial, for a myriad of reasons, and it is likely to take some time before the true legal implications of the agreement are understood. A further complication is that much of the language in the agreement is intentionally vague; creating a wide array of uncertainties as to exactly how much weight it will be given in future negotiations.

The agreement is divided into four main sections: economic governance; competitiveness; sovereignty; and immigration. It reflects UK concerns of Eurozone dominance; particularly

²⁴ Decision of the Heads of State or government, meeting within the European Council, concerning a new settlement for the United Kingdom within the European Union.

given that Eurozone states now command a qualified majority and will therefore be able to impose Eurozone-centric legislation on non-Euro members.

Section A of the agreement, on Economic Governance, stops short of a formal recognition of multi-currency Union, but does however contain a prohibition of discrimination between Eurozone and Non-Eurozone members. This section also provides a basis for a more flexible implementation of prudential and financial stability provisions for non-Eurozone members, as compared to Eurozone (i.e. Banking Union) members; albeit within the parameters of the overall EU prudential single rulebook which applies to both Eurozone and non-Eurozone members. It seems to imply that base rules will apply to all (UK included) but that there may be additional rules likely in “other relevant instruments” applicable to Eurozone entities.

Questions of flexibility in UK application of an asset management single rulebook could have implications for the Irish asset management and investment funds industry given its highly mobile nature. Decisions on domicile of funds and listing of debt instrument have, in the past, shown significant signs of sensitivity to minor differences in rulebooks or supervisory policy.

Section B of the agreement commits to taking concrete steps towards better regulation — lowering administrative burdens and compliance costs and repealing unnecessary legislation. Observing UK negotiating positions until now, it is considered that the UK may use the Commission’s work on proportionality as a platform to advocate for greater flexibility to address the existing UK differences on issues such as bonuses and short-selling. The Bank advocates resisting suggestions of roll-back of EU financial services regulatory reforms — especially where consensus has been achieved for their implementation. The reforms agreed and delivered in Europe and internationally have provided a comprehensive and robust framework. Assessing the effectiveness of these reforms requires a long term view.

Section C covers the area of sovereignty which is of lesser relevance to the content of this report.

5.2 Banking

The Brexit paper presented to the Financial Stability Committee in October 2015 highlighted [REDACTED]. Since then, Banking

Supervision has continued to assess and engage with the banks operating in Ireland on the potential impact of Brexit. [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

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[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

Banking Supervision is leveraging the IMF FSAP work to augment its quantitative analysis of the potential impact of a Brexit at a macro level, particularly with regards credit risk. [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

5.2.1 Updated Position

Since the previous report:

- [REDACTED]
 - [REDACTED]
[REDACTED]
 - [REDACTED]
- [REDACTED]

[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
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[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]

[illegible]

[REDACTED]

5.2.2 Central Bank Stress Testing Outcomes

The Financial Sector Assessment Program (FSAP) conducted by the IMF assessed the stability of the banking sector to both internal and external risks. As part of this programme a bank stress test exercise was undertaken based on a severe but plausible macro-economic scenario. [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[illegible]

5.2.6 Resolution

This section of the update considers the potential impacts from a resolution perspective, of a UK exit from the EU. The section (i) considers the general impact on resolution, (ii) provides a high level overview of the implications for Irish institutions operating in the UK; (iii) considers the issues on UK parented institutions in Ireland; and (iv) considers the impact an exit would have on branches.

i) General impact

Currently the EU BRRD framework provides for strong harmonisation, effective cooperation and mutual recognition with respect to resolution planning and execution. The UK has fully transposed the BRRD into national legislation and in implementing it has adjusted its existing resolution framework. Following a UK exit from the EU, whilst at the outset they may remain relatively equivalent, the respective frameworks may drift apart as both the EU and the UK develop separate rules in this space. These divergences could grow over time and would not necessarily be confined to resolution.

In addition to potential policy misalignment, the status of the UK vis-à-vis Ireland changes, from a fellow EU Member State to a third country. This would have significant implications for both UK and Irish/European resolution authorities.

A key element of the EU resolution framework is the enhanced cooperation between national resolution and supervisory authorities and a defined binding joint decision making process to enable effective cross border resolution action should it be required. Following a UK exit the nature of cooperation and the decision making process will change. The UK will no longer be a member of EU resolution colleges; bilateral non-binding memoranda of understanding and cooperation agreements will need to be negotiated between the relevant authorities to cover cooperation and information sharing.

ii) Irish institutions operating in the UK through subsidiaries

It is credible that the BoE may require a higher level of comfort than it currently demands in respect of subsidiaries of Irish institutions operating in the UK. [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

iii) UK institutions operating in Ireland through subsidiaries

UK institutions in Ireland would be designated as third country, which would result in an increased obligation on the Bank in relation to resolution planning for these entities on a standalone basis. [REDACTED]

[REDACTED]

iv) Branches

The twelve UK institutions currently operating in Ireland on a branch or cross-border basis would be required to apply for Union branch or subsidiary status to continue operations in the EU. [REDACTED]

5.3 Insurance

5.3.1 Engagements between supervisors and companies

Following on from the initial analysis presented to the October 2015 FSC, supervisors of companies most likely to be impacted by any Brexit have had a variety of discussions with those companies. A survey was issued to four cross border life companies with the highest sales into the UK. Other companies have been asked for their analysis as part of regular supervisory engagements.

5.3.2 Impact on and preparedness of entities

At the time of the first report it was noted [REDACTED]

[REDACTED] This can be explained by a number of different factors:

- The majority of Irish entities have little or no direct business with the UK;
- Expectation that the referendum would not be held until 2017;
- Initial expectation that the referendum would result in a vote to remain in the EU;
- Uncertainty of what the final relationship would look like in the event of a vote to leave; and
- The elapsed time from the result of the referendum being available, a negotiated exit settlement being concluded and a minimum two year period from the time the UK formally applies to leave the EU and it being effective.

The initial report considered three scenarios for the relationship between the UK and the EU should the referendum result in a leave vote. The impact of each scenario on companies largely depends on how they sell business into the UK. This can be done on a Freedom of Establishment basis (FOE which means that the company sells via a UK branch) or a Freedom of Services basis (FOS where no physical presence exists in the UK). The report concluded that

- In the base case scenario, [REDACTED], FOS business would no longer be possible but business could continue on an FOE basis. Moving from an FOS to an FOE basis would likely incur additional running costs. There is also the possibility of increased regulation of branches in the UK which might also challenge the viability of business models.
- Under the best case scenario there would be little impact as both FOE and FOS sales could continue.
- Under the worst case scenario business models would be severely impacted as sales could only continue via a subsidiary which would be fully regulated in the UK and probably lose the tax advantages that currently exist for offshore sales.

The analysis below follows on from the assumed likelihood of the different outcomes described above. The base and worst case scenarios conclude that selling on an FOS basis will not be available following a Brexit and [REDACTED]. However for FOE business it is only in the worst case scenario that this business is likely to be severely disrupted and [REDACTED]. However even under the base case scenario where FOE selling is allowed it is possible that there could be increased UK regulation of branches following a Brexit.

For those companies not selling directly into the UK the impact of a Brexit will be limited to the impact on financial markets in general and any economic slowdown in the markets to which they sell. Under Solvency II all companies are required to do their own stress and scenario tests as part of their ORSA process. In general these include tests on adverse movements in financial markets and new business levels greater than those expected from Brexit. Comprehensive analysis of these stress tests would not produce meaningful results as the stresses are not centrally defined and vary from company to company. [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

Some companies are currently preparing more detailed analysis and others have done high level analysis or are waiting for the results of the referendum before doing anything further.

[REDACTED]

5.3.3 Types of Irish entities impacted

In 2014 Irish based entities wrote €8.6bn of gross premiums in the UK. These can be split into a number of groups:

- Hub and Spoke entities with branches throughout the EU, including the UK [REDACTED]
[REDACTED]
[REDACTED]
- Cross border life entities established specifically to sell into the UK, many are subsidiaries of UK groups, [REDACTED] Some of these also sell into other EU countries. Business is sold by some companies on an FOS basis and others on an FOE basis. These entities sold about [REDACTED] premium into the UK;
- Domestic Non-Life entities selling on an all-Ireland basis or with a branch in the UK.
[REDACTED]
[REDACTED]
- Numerous (approximately 90) other life and non-life insurance and reinsurance entities selling small amounts into the UK totalling [REDACTED] The proportion of each companies business written in the UK varies from very low up to 100%.

Further details on the larger entities impacted are given in Appendix 3.

For all these entities there seems little immediate solvency impact. Further it is possible that those selling on an FOE basis will not be severely impacted by Brexit at all as they will probably be able to continue selling into the UK via their existing UK branch, possibly with some changes to their regulation. Only in the worst case scenario where no trade agreement is agreed between the UK and the EU would companies selling on an FOE basis suffer severe disruption to their business model. However those selling on an FOS basis are more likely to have to change their business model, either setting up a UK branch at additional cost, transferring their business to a subsidiary or sister group entity, or ceasing business altogether.

5.3.4 Impact on Irish consumers of UK companies exiting the Irish market

UK entities wrote €3.8bn of premium into Ireland during 2014, some of which is reinsurance business (i.e. sold to insurance companies rather than directly to consumers). The companies selling directly to consumers can again be split into a number of different groups.

- A small number of UK life companies selling via an Irish branch [REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
- Approximately [REDACTED] life companies selling on an FOS basis totalling [REDACTED] mainly selling protection business which is more price sensitive than pensions business. These companies would likely have to set up an Irish branch to continue in Ireland (potentially increasing costs) or cease trading and transfer their business. Both cases are likely to lead to less competition in the Irish market but as the market share of these entities is low the impact is likely to be small.
- A large number of non-life companies many with very small amounts and not actively pursuing sales. The largest companies are selling on a FOE basis [REDACTED]
[REDACTED] and the exclusion of these from the Irish market would have a significant impact on competition, although this is unlikely. However it is possible that these companies could set up an Irish subsidiary [REDACTED]
[REDACTED] or alternatively use an existing subsidiary in another EU state. The

amount of business sold by UK companies into Ireland on an FOS basis was about 10% of the total premium sold here in 2014.

Hence it seems that the Irish insurance consumer will only suffer minor impact from Brexit as the majority of business from the UK is being sold on an FOE basis and is likely to be able to continue if the UK leaves the EEA. There may be a small reduction in competition in some markets if companies currently selling in Ireland on an FOS basis cease doing so.

5.3.5 Impact on Supervision

The initial report considered the potential impact on Bank Insurance supervision resources in the event that a Brexit leads to large numbers of new authorisations and/or changes to the structures of existing entities. No new data exists or analysis performed that would lead to any change in the current view of the likelihood of this occurring or the scale of it.

Similar to many companies, Insurance supervision is currently waiting for the results of the referendum before committing further resources to Brexit impacts. Should the referendum result in a vote for the UK to leave the EU, insurance supervisory teams will make contact with those entities most likely to be impacted and request plans from them on how they are going to re-assess the business model.

5.3.6 Summary

In the original report the following table was provided to show the amounts of business being sold in the UK by Irish entities and that being sold in Ireland by UK entities.

Table 5.3.1 – cross border insurance market between Ireland and UK

	Total - Outwards ²⁵		Total - Inwards ²⁶	
	No. Insurers	UK GWP (€bn)	No. Insurers	Irish GWP (€bn)
Life	■	■	■	■
Non-life	■	■	■	■
Total	■	€8.6	■	■

This data can be further analysed below:

Table 5.3.2 – analysis of UK GWP written by Irish authorised entities

		FOE		FOS	
		No. Insurers	GWP (€bn)	No. Insurers	GWP (€bn)
Life	■	■	■	■	■
	■	■	■	■	■
	■	■	■	■	■
Non-life	■	■	■	■	■
	■	■	■	■	■
	■	■	■	■	■
Total		■	■	■	■

Table 5.3.3 – analysis of Irish GWP written by UK authorised entities

		FOE		FOS	
		No. Insurers	GWP (€bn)	No. Insurers	GWP (€bn)
Life		■	■	■	■
Non-life		■	■	■	■
Total		■	■	■	■

²⁵ “Outwards” denotes UK risks written by Irish authorised insurers.

²⁶ “Inwards” denotes Irish risks written by UK authorised insurers.

²⁷ Irish authorised insurance companies predominantly selling business in Ireland.

The data shows that the majority of business sold by Irish authorised companies into the UK is sold by cross border entities that sell little or no business in Ireland. The exception to this is in the non-life market [REDACTED]

[REDACTED] domestic insurers selling into the UK (predominantly Northern Ireland). Although there are a large number of companies involved in this cross border business the premium sold in the UK is dominated by a few companies. There is a mixture of business models with some companies selling via a UK branch (i.e. on an FOE basis) and others direct on an FOS basis (these being mainly life companies). The business models of those companies selling on an FOS basis are most likely to be impacted by a Brexit. Whilst these entities could continue selling from Ireland on a FOE basis, some entities may cease business altogether. This could have a small impact on overall sales from Ireland but the impact on overall exports and employment will be very limited with no obvious financial stability effect.

The choice of the Irish insurance consumer is unlikely to be impacted much by Brexit as the majority of premium sold by UK authorised companies is done via an Irish branch and this method is likely to be least impacted. Only about 10% of the Irish market is supplied by UK authorised companies selling on an FOS basis.

It remains unclear how the Bank's Insurance supervision resources will be impacted by any Brexit as there is no additional data or analysis available that would indicate the numbers of new authorisations and/or changes to the structures of existing entities.

5.4 Markets Directorate firms

5.4.1 Actions since previous report

An initial assessment of the implications of Brexit for the Markets Directorate was undertaken during Q3 2015 by a working group comprising representatives from across the various functions of the Markets Directorate. In the intervening six months the working group has continued to monitor developments as they arise; including issuing guidance to prudential supervisors about how to address the topic of Brexit when engaging with their firms. A cross-section of supervised entities²⁸ and industry representative bodies were contacted in order to canvass industry opinion on the subject. Responses received from these

²⁸ Including MiFID Investment Firms, Fund Service Providers and UCITS / AIFM Funds.

firms and organisations have been used to guide this updated analysis and reconsideration of the related risks. The main findings and themes of this updated analysis are detailed below.

5.4.2 Firm preparedness

The Investment Firm, Fund Service Provider and UCITS/AIFM Investment Fund sectors have shown a greater degree of preparedness; although it is widely anticipated that in the event of a vote for Brexit, the minimum negotiation period of two years will involve protracted and complicated negotiations, the outcome of which is the subject of considerable speculation. Although a small number of firms have already begun formulating Brexit plans, the recurrent theme from the Investment Firm, Fund Service Providers and UCITS/AIFM Investment Fund industries is that a lengthy negotiation period will present firms with ample time to assess the impact and plan accordingly. Until the format of a Brexit is determined, limited preparations can be made.

Supervised entities have commented that Brexit is under active consideration, with a variety of approaches being used – [REDACTED]

[REDACTED] The general viewpoint is that the likelihood of a Brexit has increased; with firms indicating that there would be a generally negative impact on the Irish economy as a whole. The industry specific impact has a more varied outlook however; with both positive and negative consequences mooted. The political uncertainty surrounding the vote has already had the effect of increasing market volatility, is attributed to the recent depreciation of STG£ vs. EUR€ and is regarded as having increased the cost of hedging certain instruments and indices. Firms believe that a Brexit would have a broadly negative impact to the economic outlook for the UK; and consequently for its trading partners.

Some firms have commented that “*uncertainty leads to instability*”; raising concerns that if the UK leaves the EU then other countries may follow. Although uncertainty and volatility are in general perceived as negatives for industry, it should be noted however that such risks are actively managed and monitored under existing business models and indeed certain firms / business models actually benefit from increased volatility.

5.4.3 Regulatory impact

A Brexit may have major repercussions in terms of regulatory policy and resourcing for the Bank. We have previously explored the expectation that a significant number of firms would seek to 're-authorise' within the EU/EEA so as to retain access to the European market. Ireland is recognised as a potential destination should firms seek to relocate from the UK; given the geographic, linguistic, cultural and legal proximities between the two nations, as well as the level and maturity of the existing financial services architecture in Ireland (and in particular in Dublin).

In addition to the authorisation of additional 'existing' entity types, the Markets Directorate faces the prospect of authorising a number of entity types which do not presently operate in Ireland; including Central Securities Depositories, Central Counterparty Clearing Houses, Trade Repositories, [REDACTED] Prime Brokers and Systematic Internalisers. Forthcoming legislative developments will also introduce the prospect of further entity types; for example, Organised Trading Facilities, Consolidated Tape Providers and Approved Reporting Mechanisms. Due to the migratory implications of a Brexit; there is an increased likelihood of the Bank authorising and supervising a larger and more diverse set of firms and firm types.

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

The present influence of the UK on financial services legislation is generally viewed as beneficial to industry. If a Brexit were to occur there may be a divergence in the regulatory landscape; notwithstanding the likelihood that the UK may seek equivalency status in order to re-negotiate access to European financial markets. The increased potential for regulatory arbitrage may present additional prudential risks and would also foreseeably increase compliance and legal costs for firms. The capital strength and profitability of the majority of firms supervised by the Markets Directorate has increased in recent years as markets and trading conditions have improved; which may leave these firms in a better position to bear increased prudential risks and compliance costs.

5.5 Financial market infrastructure

The October 2015 Brexit discussion paper examined the possible impact of a Brexit from a financial market infrastructure (FMI), deposit guarantee scheme (DGS) and collateral framework perspective. The analysis pointed to the impact of a Brexit on the DGS and the collateral framework appearing to be manageable. For the DGS, the potential risk relates to a limited flow of deposits from Irish banks to UK bank branches. In the context of the permanent Eurosystem collateral framework, the potential impact of a Brexit appears to be limited due to the current requirement that all marketable and non-marketable assets be denominated in euro.

However, the October 2015 Brexit discussion paper concluded that applications from financial market infrastructures including central counterparties (CCPs), securities settlement systems (SSSs), central securities depositories (CSDs) and payments systems are a possibility. [REDACTED]

[REDACTED] Further work will be undertaken by the Financial Operations Directive, in collaboration with IFFS and other stakeholders, to put in place authorisation and supervisory processes and procedures should a CCP or CSD decide to re-locate to Ireland from the UK. The discussion paper also concluded that as UK payment systems handle transactions denominated in GBP rather than in euro [REDACTED]

[REDACTED] A number of UK banks are TARGET2²⁹ (T2), the Real-Time-Gross-Settlement system, participants and their continued participation in the system could be problematic in the context of a UK exit from the EU, as participation in T2 is restricted to 'supervised credit institutions established in the EEA'. It is impossible at this stage to predict with any certainty what the final outcome might be vis-à-vis T2.

[REDACTED]

²⁹ TARGET2 is the real-time gross settlement (RTGS) system owned and operated by the Eurosystem. TARGET stands for Trans-European Automated Real-time Gross settlement Express Transfer system.

[REDACTED]

³⁰ 'Ancillary System (AS)' means a system managed by an entity established in the European Economic Area (EEA) that is subject to supervision and/or oversight by a component authority and complies with the oversight requirements for the location of infrastructures offering services in euro.

6. Conclusions/Next Steps

There is considerable uncertainty surrounding the outcome of the referendum on the UK's membership of the EU on 23 June 2016 and potential post-Brexit arrangements in the event of a vote for the UK to leave the EU. An internal working group in the Bank has been considering potential implications of a Brexit over the past year, taking the view that we need to be prepared for any eventuality. Comprehensive analysis has been undertaken regarding economic and financial markets effects, impact on profitability and business models of financial-sector firms, implications of potential re-location of financial services activities to and from Ireland, effects on the Bank's balance sheet and implications for the work of the Bank including in relation to supervision, regulatory policy, resolution, payments and the deposit guarantee scheme. There has been ongoing engagement with both the Department of Finance and the ESRI and a sharing of information and analysis between the institutions.

The analysis shows that the effects of uncertainty surrounding a potential Brexit are already being felt in financial markets. The impact of these could weigh on economic growth in Ireland and financial sector investment portfolios and balance sheets in the short term, continuing into the medium term in the event of a vote to leave. In the immediate aftermath of a pro-Brexit vote, the existing ECB monetary policy framework has and will continue to provide ample liquidity to banks while the BoE has announced three additional long-term repo operations in the weeks around the referendum

[REDACTED]

[REDACTED]

[REDACTED]

- [REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
- [REDACTED]
[REDACTED]
[REDACTED]
- [REDACTED]
[REDACTED]

- [REDACTED]
[REDACTED]
[REDACTED]
- [REDACTED]
[REDACTED]

In this regard a high level Task Force, chaired by the Director of Financial Operations, has been set up to address the Brexit issue from an operational and contingency planning perspective.

Over the more medium term, and depending on the timeframe before new arrangements are agreed and also the nature of these new arrangements, additional effects on trade, employment, FDI and economic growth can be expected in the case of a pro-Brexit vote. These will impact on the business models and profitability of financial sector firms as well as the structure of the financial sector here due to potential investment flows. Lower economic growth and weaker profitability for banks would increase the risks to financial stability over the short and medium term, particularly in the context of existing vulnerabilities in the macro-financial environment including high public and private sector indebtedness, weak bank profitability and still elevated levels of non-performing loans. Under the base-case scenario whereby, in the event of a Brexit, the UK and EU would agree bilateral trade deals, the scale of macroeconomic adjustment would not be too severe and banks are judged to be sufficiently capitalised to withstand the expected losses that would occur. More adverse scenarios cannot be ruled out and developments would need to be monitored carefully from a financial stability perspective as part of the Bank's regular systemic risk assessment process. In particular:

- Updated reports on these risks including scenario analysis can be prepared for the FSC and Commission in the event of a pro-Brexit vote.
- The Bank will continue to engage with the Department of Finance and will share the results of this analysis given the relevance from an overall crisis management/financial stability perspective.
- Assessment of the risks can also be communicated publically through the usual channels including the Macro Financial Review, Quarterly Bulletin and speeches by Senior Management.

- The Bank will continue to engage with individual institutions regarding the potential risks, [REDACTED]

[REDACTED]

It is clear that a Brexit could lead to major re-adjustment of the overall financial sector in Ireland, including for insurance and investment funds, due to a relocation of firms and potential firm closures. The uncertainty that exists makes it difficult to predict what scale of relocation of financial sector firms either into or out of Ireland might be expected. An additional uncertainty relates to the type of activity that might seek to re-locate here, including financial market infrastructures or entity types which do not presently operate in Ireland. Supervisory issues including the capacity of the Bank to assess new numbers and types of applications for authorisation have been considered by the relevant business areas and can be considered in more detail after the outcome of the referendum is known.

The Commission is requested to note the updated analysis provided on potential economic and financial sector impacts of a UK exit from the EU as laid out in this report, including:

- **Updated developments in relation to the possibility of a Brexit, including latest opinion polls and financial market effects.**
- **Revised estimates of potential macroeconomic effects, including under more adverse scenarios.**
- **Additional information regarding the potential impact on the Irish financial sector of a UK exit from the EU, including quantification of potential losses for domestic banks and more granular information relating to the insurance sector.**
- **An update on the preparedness of firms across all parts of the financial sector for risks relating to Brexit, including the supervisory engagement that has taken place since the last report.**
- **Actions that will be taken by the Bank in the near term to mitigate potential financial stability risks associated with a Brexit.**

Appendices

Appendix 1 - Synopsis of third party Brexit research

Brexit Impact Assessments									
Institution	UK GDP	Base Rates	Currency	Inflation	Bond Yields	Banking Sector	Property	Insurance Sector	Equity Market
HSBC Feb 2016	-1% to -15% off 2017 -15% plus (outright recession)	Hold or cut Tightening to defend currency	15% to 20% fall 15% to 20% fall	2017 inflation -5% 2017 inflation -5%, but weaker demand could moderate that	Uncertain to positive Uncertain to positive	Credit losses to remain muted. Weaker sterling could be a +ve. Regulation is potentially a more challenging factor.	Brexit to put LDM office market in the spotlight. Expect lower rental growth.		Depends on whether domestic or international exposure of the underlying company. Sterling weakness could be +ve.
Credit Suisse 25 Jan 2016	Decline in GDP of 1% to 2%	Ambiguous: BOE faced with lower growth & higher inflation.	Strong initial depreciation of £ to 0.83 & £ to 1.20	Rise in inflation due to FX depreciation	Aggressive bond rally focused on front end yield compression. 2-10's steeper curve.		House prices slightly down.		Negative for domestically oriented stocks
	Weaker medium term growth outlook.	Uncertain	Longer term weakening v \$ - trend toward parity.	Uncertain	Lower terminal rate		Decline in demand for housing - as immigration falls and London loses financial hub status		Extended sterling weakness could be long term positive for FTSE 100
Deutsche Bank 12 Feb 2016	Expect UK growth of close to 0% from expectation of 1.5% currently	Path to 'normalisation' of rates slowed considerably. Unlikely to raise rates during 2 year negotiation window. 7 markets would begin pricing rate cuts.	Brexit is structurally bearish for GBP. £/115 & USD/82 - frontloaded.			Increasing risk aversion to manifest in widening credit spreads. Assume that BOE's Sterling Financials spreads to revert toward crisis level spreads. A re-headquartering of UK banks to other EU jurisdictions may have costly tax implications?			Expect a deepening of UK equity market. Market falls of 15%, but up to 25% for domestic sector (banks).
Merrill Lynch 09 Feb 2016	Vulnerable current a/c deficit. Expect reversal of FDI inflows.	Volatile and weak.				Bank of Ireland & Santander to be negatively impacted as well as main UK domestic banks. Impact (i) lower GDP growth, (ii) risks to UK property, (iii) financial market turmoil, (iv) potential for increase in cost of wholesale funding.	Elevated property market risks, particularly when considering the proportion of market financed through FDI.		

Brexit Impact Assessments									
Institution	UK GDP	Base Rates	Currency	Inflation	Bond Yields	Banking Sector	Property	Insurance Sector	Equity Market
Societe Generale 22 Feb 2016	-0.5% to -1% off of GDP per annum for a decade. Real estate and financial services to suffer most due to high dependence on FDI (which is likely to decline to end of 1994).	Do not expect rates to rise. In the post ERM exit, the expected increase in inflation failed to materialise. Policy rate continued to decline up to end of 1994.	Expect GBP to suffer and see direct parallels with UK exit from ERM (1992).						
Fitch 22 Feb 2016		Inflationary pressure lead to faster pace of rate hikes in medium term, with negative implications for property prices.	Sterling depreciation		Brexit to put pressure on UK A+/Stable credit rating. A leave vote leads to a formal credit review, operating environment of credit rating.	No immediate impact on bank credit rating as creditworthiness is not constrained by sovereign operating environment of BTL sector.	Brexit only to have a minor impact on rated RMBS transactions. Lower migration would lead to weakening in the BTL sector.		
RBS 19 Feb 2016					Spread widening - but particularly peripheral spreads.				Brexit is a sizable 'risk-off' event.
Roubini 19 Feb 2016		Out - potential for rate cuts. But if capital outflows gain pace then BOE could be forced into defensive rate rises.	£ to 0.83.		Gilt sell off - increase in bond yields. Yield curve steepens in reaction to rate cut.				Brexit is a sizable 'risk-off' event.
CBRE Feb 2016	Likely to be negative					Rapid change in regulatory environment seems unlikely	Case for "long goodbye" likely to delay investment and leasing decisions. An overall reduction in investment is also expected, particularly from foreign investors. Negative GDP shock likely to decrease demand for office space and as such rents. This is likely to be exacerbated in London and the South East.		
BlackRock 1 Mar 2016	Large and negative impact Vicious cycle of currency weakness, an abrupt stop to capital inflows and a sharp deterioration in market confidence would have severe impact on GDP	Rate cut deemed unlikely but QE possible BoE may be forced to raise rates to avoid FX overshoot	Sharp sterling depreciation	Temporary increase due to sterling depreciation - BoE likely to look through this	A rise in 10-year gilt yields and widening corp spreads for companies with large UK and EU exposures. More than two notch downgrade very unlikely.	Increased funding costs	Overall negative although London market likely to be supported by long run investors such as Asian pension funds. First of cuts expected to mirror developments in the wider economy		Risk assets could struggle across the world particularly in Europe

Brexit Impact Assessments								
Institution	UK GDP	Base Rates	Currency	Inflation	Bond Yields	Banking Sector	Property	Insurance Sector
JPMorgan 19 Feb 2016	Near term 1%		-10%			Significant FDI re-allocation to Ireland		
Autonomous 13 Jan 2016	-113%				Sovereign downgrade - 2 notches to AA+12bps increase in sovereign CDS	Increased funding cost from sov downgrade and negative knock on from macroeconomy. Total valuation impact -4 to -7%.		Would not need to subsidise Average impact of -4% of valuation for UK insurers via impact on gilt holdings and increased funding costs.
	-3.09%				Sovereign downgrade - 3 notches to A+32bps increase in sovereign CDS	Costs of setting up subsidiaries, increase in funding cost from sov downgrade and negative knock-on from macroeconomy. Total valuation impact -18 to -23%.		Break is a sizable 'risk-off' event.
Barclays 28 Jan 2016		Tightening unlikely and rate cuts a possibility			Impact on gilts nuanced - exit vote may lead to flight to safety and gilt tightening while remain may lead to risk on and gilt sell-off.	Immediate impact of exit vote would be negative investor sentiment towards banks - likely to improve as investors become more certain of form Brexit will take.		
Bloomberg Feb 8 2016	Max output gap of -1.5%	BoE looks through inflation shock and eases policy gradually via rate cuts	10% depreciation	Rises due to GBP depreciation	Immediate widening of credit spreads	Rising funding costs		
Danske 22 Feb 2016	UK -0.63% Ireland -0.82% UK -2.86% Ireland -2.86%		Depreciation - exacerbated by external imbalances			Very high probability of reduced access to common market		Post-Brexit access to common market would be better than for banks due to more equivalent regulation

[illegible][illegible]

[illegible][illegible]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]	[REDACTED]	[REDACTED]			[REDACTED]		
	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]							
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]							
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]						
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]

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[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

Appendix 3

Main Irish Entities Selling into the UK

Large Cross-Border Life Companies

Company Name	Basis (FOS/FOE)	Life/ Non- life	UK GWP	% Total GWP
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]

* Legal & General has since been bought by Canada Life and its business merged with that previous in Canada Life International Insurance

Domestic Non-Life Companies

Company Name	Basis (FOS/FOE)	Life/ Non-Life	UK GWP	% Total GWP
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]

Smaller Companies

Company Name	Basis (FOS/FOE)	Life/ Non-life	UK GWP	% Total GWP
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]

*Business since transferred to UK company and licence surrendered

Main UK Entities Selling into Ireland

Life

Company Name	Basis (FOS/FOE)	Life/ Non-life	Irish GWP
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]

Non-Life

Company Name	Basis (FOS/FOE)	Life/ Non-life	Irish GWP
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]

