

# **No Deal Brexit – Economic Implications for Scotland**

**Office of the Chief Economic Adviser,  
Scottish Government**

**February 2019**

## Executive Summary

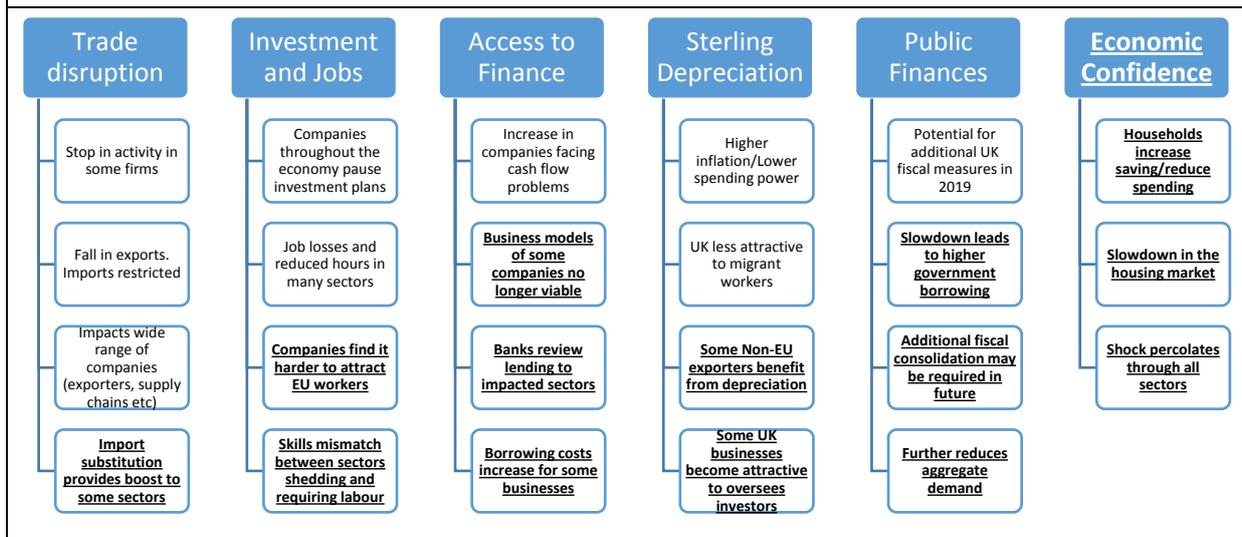
This paper provides an illustration of the potential impact that a No Deal Brexit – leaving the EU on the 29 March 2019 without a transition period or agreement on any future trade deal and wider economic relationship - could have on the Scottish economy over the next 12 - 24 months.

A very wide range of outcomes fall under the heading of No Deal Brexit. The following analysis provides an indicative range of impacts based on two illustrative scenarios. Other scenarios are possible.

- **Scenario 1** is a short, sharp, supply disruption lasting a number of months - it is assumed that a No Deal Brexit with no transition agreement leads to an immediate economic shock from the second quarter of 2019. This shock is assumed to be primarily on the supply side, causing major disruption to the movement of goods and services.
- **Scenario 2** assumes that the initial supply shock lasts longer, leading to a further fall in demand as a result of a sustained deterioration in consumer and business confidence. This in turn reduces activity right across the economy and magnifies the size of the shock.

There are a range of channels through which each scenario could impact on the wider economy. These are summarised in the diagram below. The headings in bold represent the additional channels assumed to occur under the second scenario.

**Figure 1 – Transmission Channels for a No Deal Brexit**



There is broad consensus that a No Deal Brexit would have a negative impact on the Scottish and UK economies. However, there is huge uncertainty about the duration, composition and scale of the shock. This is compounded by the fact that the response that such a shock would elicit from the UK government and EU is also unknown.

As such, the following analysis should not be considered a forecast. Instead it illustrates a number of potential outcomes, and in particular their relative economic impact in both aggregate terms and across different industries and geographies.

Drawing on the impact that previous economic shocks have had on the Scottish and UK economies, modelling by the Scottish Government and studies by other organisations suggest that a No Deal Brexit under the above Scenarios could result in the following impacts:

- Trade Disruption:** In the event of a disorderly No Deal Brexit, Scotland’s trade with the EU would be significantly impaired. Trade with countries that the EU has negotiated Free Trade Deals with would also be impacted. Given the potential changes to market access and free movement of goods, it is possible that Scottish exports could fall by 10% - 20%. Imports from the EU would fall too, which may provide some opportunity for Scottish companies to refocus on domestic markets.

- **Investment:** Heightened economic uncertainty as a result of Brexit could reduce business investment in Scotland by £1 billion in 2019<sup>1</sup>. Analysis by the Bank of England suggests that Foreign Direct Investment (FDI) into the UK would fall by around 20% over the coming years under a No Deal scenario.<sup>2</sup>
- **Exchange Rate:** A fall in exports and overseas investment, coupled with a broader reappraisal of the UK's economic prospects, would reduce the demand for Sterling. Exchange rate movements in response to previous economic shocks suggests that a 10% - 30% depreciation could occur in the event of a No Deal Brexit.
- **Inflation and Interest Rates:** The Bank of England forecast that CPI would rise steadily in the event of a No Deal Brexit, peaking at 4.25% - 6.5% in 2020. They forecast that this would require interest rates to average 1.5% - 4% over the next three years.<sup>3</sup> However, the Bank's immediate response may be to reduce Bank Rate to support demand in the economy.
- **Migration:** International net migration into Scotland, currently +13,000 a year<sup>4</sup>, will fall and could even turn negative as a result of a depreciation in Sterling and wider economic slowdown.
- **Labour Market:** An economic slowdown would be expected to result in the rate of unemployment increasing to between 5.5% - 8%, from its current rate of around 4%. If the unemployment rate were to increase in line with the top end of this range, the increase would be equivalent to the number of people unemployed rising by around 100,000.
- **Overall Economic Implications:** Collectively, the above pressures have the potential to push the Scottish economy into recession during 2019. Based on the

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<sup>1</sup> State of the Economy, Scottish Government, January 2018.

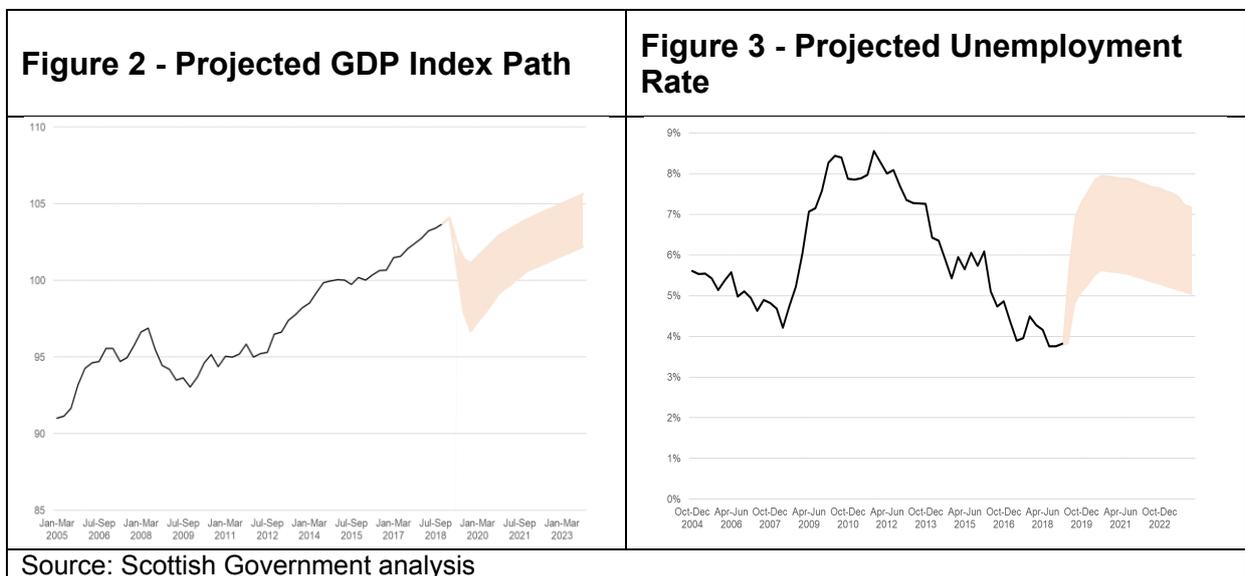
<sup>2</sup> <https://www.bankofengland.co.uk/-/media/boe/files/report/2018/eu-withdrawal-scenarios-and-monetary-and-financial-stability.pdf?la=en&hash=B5F6EDCDF90DCC10286FC0BC599D94CAB8735DFB>

<sup>3</sup> <https://www.bankofengland.co.uk/-/media/boe/files/report/2018/eu-withdrawal-scenarios-and-monetary-and-financial-stability.pdf?la=en&hash=B5F6EDCDF90DCC10286FC0BC599D94CAB8735DFB>

<sup>4</sup> <https://www.nrsotland.gov.uk/files/statistics/migration/2018-july/tab-1-migration-to-from-scotland.xlsx>

response to the Scottish and UK economies to previous economic shocks, there is the potential for GDP to contract by between 2.5% - 7% by the end of 2019 depending on the way in which a No Deal Brexit outcome evolves.

Over time, the Scottish economy would be expected to return to growth, albeit at a lower level than would occur were the UK to remain in the EU. The speed with which the economy returns to growth would depend on the time taken to mitigate the disruption caused under a No Deal Brexit. The longer that the initial shock persists, the greater the risk that it develops into a wider economic slowdown from which it would take longer to recover.



### Sectoral and Regional Implications

The impact of a No Deal Brexit economic shock will not be uniform across Scotland.

Agriculture and Fishing, Transport Equipment, Chemicals, Pharmaceuticals, Food and Construction are anticipated to see the greatest impact, however, all sectors would be negatively affected.

The local authorities with the highest concentration of workers in the above sectors is summarised in Figure 4. For agriculture and fishing, this is typically in more rural areas, reflecting the higher levels of employment in those sectors.

**Figure 4 - Local Authorities: Proportion of Workforce in Sectors Most Exposed to a No Deal Brexit**

<10%	10% - 14%	15% - 19%	20% - 24%	25%+
Dundee Edinburgh	Stirling West Dunbartonshire Aberdeen City East Dunbartonshire Inverclyde Glasgow City	Highland South Lanarkshire Argyll and Bute West Lothian Perth and Kinross Midlothian North Ayrshire Fife South Ayrshire East Lothian East Renfrewshire Clackmannanshire East Ayrshire	North Lanarkshire Na h-Eileanan Siar Dumfries & Galloway Renfrewshire Scottish Borders	Shetland Moray Orkney Angus Aberdeenshire Falkirk

There are a range of other metrics which can be used to assess the areas of Scotland which could be most exposed to a No Deal Brexit. For example, the proportion of EU workers in a given locality. As a share of the workforce residing in an area, the areas with the highest levels of EU employment are Edinburgh (14% of all in employment in the area), Aberdeen (12%) and Aberdeenshire (7%). Additionally, in rural agricultural areas, there will be high level of exposure and reliance on short-term seasonal employment of EU nationals.

#### Longer Term Economic Implications of Brexit

It should be noted that the current Withdrawal Agreement only covers the terms of the UK's departure from the EU.

The Political Declaration accompanying the Withdrawal Agreement does not set out in any detail the future economic relationship between the UK and EU. Further negotiations are still required to ensure a trade deal is in place at the end of the proposed transition period. It is therefore possible that even if the current Withdrawal

Agreement and Political Declaration are approved by both the UK and European Parliaments before March 29, the risk of a disorderly No Deal outcome could re-emerge at a future date.

Previous analysis by the Scottish Government has considered the long term implications of Membership of the European Economic Area (EEA), a Free Trade Agreement: outside the Single Market and Customs Union, and a World Trade Organisation style relationship<sup>5</sup>.

All three are estimated to result in a permanent decrease in GDP relative to continued full EU membership. The magnitude increases the looser the relationship with the EU becomes. The key results from the modelling are summarised in the table below.

<b>Figure 5 - Headline Macroeconomic Indicators by 2030 relative to a baseline of Full EU Membership</b>				
	<b>GDP (%)</b>	<b>GDP Per Capita in 2016 Cash Prices (£)</b>	<b>Real Disposable Income (%)</b>	<b>Business Investment (%)</b>
EEA	-2.7%	-£688	-1.4%	-2.9%
FTA	-6.1%	-£1,610	-7.4%	-7.7%
WTO	-8.5%	-£2,263	-9.6%	-10.2%
Source: Scottish Government Global Econometric Model (SGGEM)				

<sup>5</sup> <https://www.gov.scot/publications/scotlands-place-europe-people-jobs-investment/>

## Section 1 - Overview

The terms of trade between countries within the EU have eased considerably over the last 40 years or more. The removal of tariffs on the trade of goods within the EU was abolished in 1977 and the completion of the single market in 1992 enabled the free movement of goods, services, people and capital. Alongside the common external tariff and the expansion of the EU, this has been a key driver of investment in Scotland and the UK.

A No Deal Brexit essentially brings these arrangements to an immediate end and the UK becomes a third country with regard to EU market access. This represents an immediate terms-of-trade shock for the Scottish (and UK) economy. Previous economic analysis by the Scottish Government has set out the long term implications that leaving the EU and single market could have on Scotland's economy.<sup>6</sup>

This analysis, summarised in Box 1, assumed that post Brexit, there would be a new negotiated relationship between the EU and the UK. However, there is an increasing risk that the UK will leave the EU at the end of March 2019 with no deal and no period of transition.

Such an event would represent a serious economic risk to the Scottish economy. There is no uniform definition for what would happen under a No Deal Brexit. However, it is broadly accepted that such an outcome could lead to:

- The introduction of customs and border checks, and compliance with rules of origin procedures, impairing companies' ability to quickly and efficiently export to the EU.
- The adoption of World Trade Organisation (WTO) trading arrangements, resulting in the UK market being subject to EU common external tariffs which will impact the export of goods (agriculture).
- New licencing requirements, resulting in some companies having to pause EU trade until appropriate accreditation is received.

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<sup>6</sup> <https://www.gov.scot/publications/scotlands-place-europe-people-jobs-investment/>

- Workers' ability to seamlessly move between the UK and the EU, and vice-versa, being impaired.
- Companies' supply chains being disrupted as a result of increased costs and potential delays to the delivery of inputs.

The remainder of this paper illustrates the potential channels through which a No Deal Brexit could impact the Scottish economy over the next 12 - 24 months and sets out the potential scale of such impacts.

Section 2 outlines two scenarios for how a No Deal Brexit could occur, and the transmission channels through which such an outcome could impact on the economy.

Section 3 summarises recent economic developments in Scotland, and outlines the impact that previous economic shocks have had on the Scottish and UK economies.

Section 4 provides an illustration of the potential impact that a No Deal Brexit could have on key Scottish macroeconomic variables.

Section 5 extends this analysis to consider the potential sectoral and regional implications of such an outcome.

#### **BOX 1 – LONG TERM IMPLICATIONS OF BREXIT ON SCOTLAND'S ECONOMY**

The Scottish Government published analysis of the long term implications that different trading relationships with the EU could have on Scotland's economy in the report: *Scotland's place in Europe: people, jobs and investment*<sup>7</sup>.

The three alternative scenarios to EU membership examined were:

- World Trade Organisation style relationship;
- Free Trade Agreement: outside the Single Market and Customs Union;
- Membership of the European Economic Area (EEA).

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<sup>7</sup> <https://www.gov.scot/publications/scotlands-place-europe-people-jobs-investment/>

The analysis focussed on six economic areas that are impacted by the type of relationship the UK has with the EU: (i) volume of trade in goods and services, (ii) levels of trade tariffs with the EU, (iii) Foreign Direct Investment (FDI) flows, (iv) productivity growth, (v) net migration; and (vi) the UK/Scotland's net contributions to the EU budget.

The modelling found that each scenario resulted in a permanent decrease in GDP relative to continued full EU membership. The magnitude increases the looser the relationship with the EU becomes. The key results from the modelling are summarised in the table below.

**Figure 6 - Headline Macroeconomic Indicators by 2030 relative to a baseline of Full EU Membership**

	<b>GDP (%)</b>	<b>GDP Per Capita in 2016 Cash Prices (£)</b>	<b>Real Disposable Income (%)</b>	<b>Business Investment (%)</b>
EEA	-2.7%	-£688	-1.4%	-2.9%
FTA	-6.1%	-£1,610	-7.4%	-7.7%
WTO	-8.5%	-£2,263	-9.6%	-10.2%

Source: Scottish Government Global Econometric Model (SGGEM)

## **Section 2 - Scenario Analysis and Transmission Mechanisms**

There are a range of potential outcomes which fall under the heading 'No Deal Brexit'. The following analysis provides an indicative range of impacts based on two illustrative scenarios, as described below. These have been chosen to demonstrate the channels through which a No Deal Brexit could impact the Scottish economy. No probability is prescribed to the likelihood of either scenario occurring and a range of alternative scenarios are possible.

### Scenario 1 (Supply Shock)

In the first scenario - a short, sharp, supply disruption - it is assumed that a No Deal Brexit with no transition agreement leads to an immediate economic shock from the second quarter of 2019. This shock is assumed to be primarily on the supply side, causing major disruption to the movement of goods and services. This shock leads to a loss of output in some sectors combined with higher prices. It is assumed to be triggered through various channels including:

- Disruption to supply chains leading to lower production, restricted supplies, and shortages of perishable commodities.
- Scottish exports to and imports from the EU being significantly restricted.
- Scotland's trade with countries with which the EU currently has Free Trade Deals being restricted.
- Reduction in turnover leaving some companies cash-constrained.
- Companies delaying investment and recruitment plans, reducing hours for those on flexible contracts and reducing overall staff numbers.
- Depreciation of Sterling resulting in higher inflation and subsequently reducing households and businesses spending power.

It is assumed that these impacts last for a number of months at which point some form of agreement is reached between the UK Government and the EU which enables the supply constraints to be resolved. The shock is then anticipated to

gradually unwind before the economy stabilises at a new, lower 'normal' level of activity.

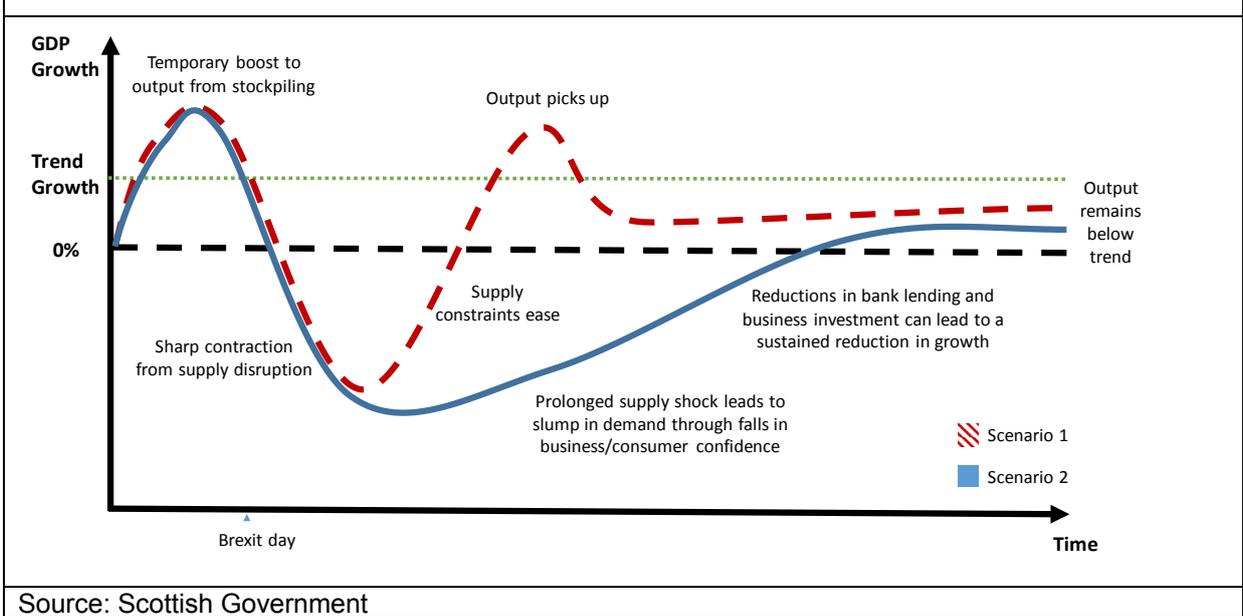
### Scenario 2 (Supply and Demand Shock)

In the second scenario – a significant supply and demand shock lasting for an extended period – it is assumed that the supply shock lasts for longer which in turn leads to a collapse in demand, through a sustained fall in consumer and business confidence. This shock not only leads to a loss in output but leads to lower demand. In addition to the above channels, such an outcome is assumed to result in:

- Further falls in consumer spending, and slowdown in the housing market, as households deleverage - increasing savings or reducing debt levels.
- Companies in the wider economy, including those not directly exposed to Brexit, delaying or cancelling investment.
- Companies reducing the number of people they employ and the number of hours available to staff.
- Some companies being unable to access finance, and the cost of finance increasing, as banks re-evaluate their risk appetite.
- Reduced freedom of movement with the EU restricting companies' ability to attract workers and deploy workers across international borders.

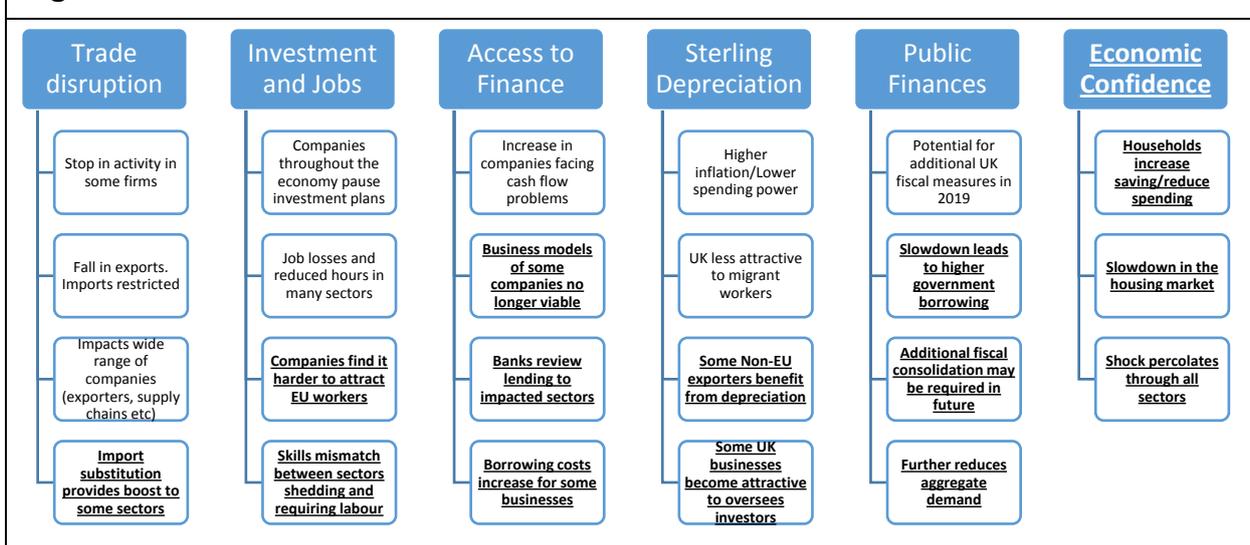
The potential, illustrative, path of Scottish GDP under these scenarios is summarised in the chart below.

**Figure 7 – Illustrated Impact of No Deal Brexit on Scottish GDP**



There are a range of channels through which each scenario could impact on the wider economy. These are summarised in the diagram below. The headings in bold represent the additional transmission channels under the second scenario.

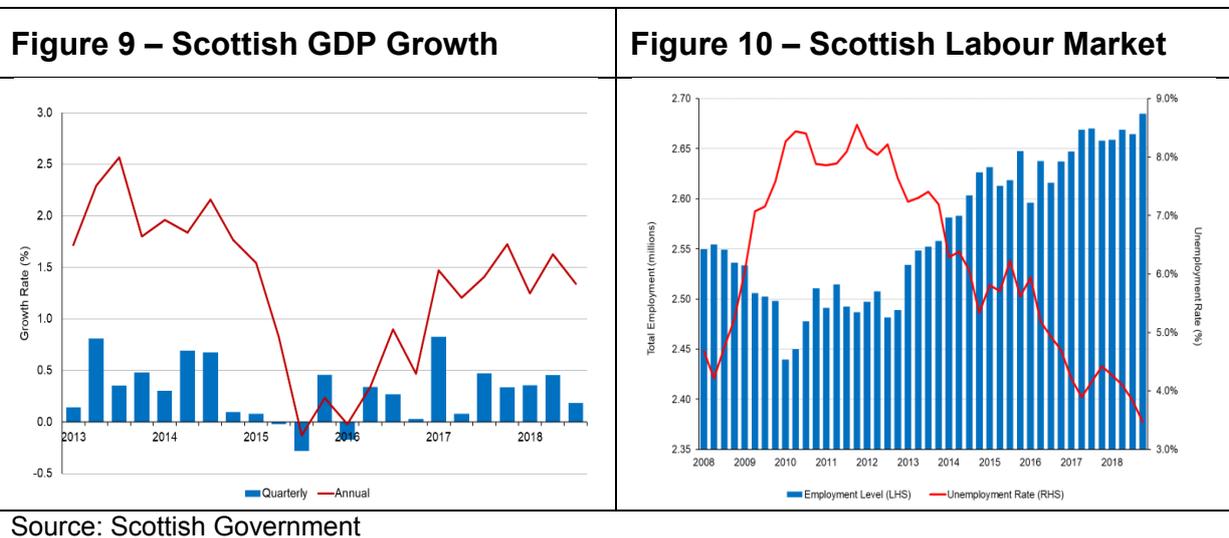
**Figure 8 – Transmission Channels for a No Deal Brexit**



## Section 3 – Scotland’s Recent Economic Performance and Previous Economic Shocks

Scotland’s economy has continued to grow in 2018, continuing a pattern of stronger growth over the past 18 months.

Over the year to 2018Q3, Scotland’s economy has grown by 1.3%, broadly in line with the UK and with growth broad based across the Services, Production and Construction sectors. More recent retail sales data show that sales have grown 1.4% in the year to 2018Q4.



The stronger output performance has been reflected in the labour market, with figures for October to December 2018 showing unemployment at its lowest rate on record (3.5%) and high employment (75.5%).

Alongside this, the most recent data on productivity, business research and development trends and inward investment underline the expansion of Scotland’s economy.

There are a number of drivers underpinning this output growth.

Firstly, stronger global economic growth, combined with the depreciation of sterling have provided a boost to Scottish exports. Scottish exports of goods have increased

6% over the past year in cash terms, meaning that Scotland has seen the fastest rate of export growth of any nation in the UK<sup>8</sup>.

Secondly, the rise in the oil price from 2016, coupled with restructuring in the North Sea oil and gas industry, has provided a boost to confidence and activity in the sector. The latest Fraser of Allander Oil and Gas survey<sup>9</sup> shows that the net confidence of oil and gas contractors is at the highest level since spring 2013. This increase in activity directly boosts output in the production and manufacturing sectors in Scotland and feeds through to the wider economy.

Thirdly, Scotland has been successful at attracting Foreign Direct Investment. In 2017, there were 116 new foreign direct investment projects in Scotland – a 7% increase from 2016<sup>10</sup>. Scotland has been the top UK region for FDI, outside London, for five of the past six years. Such investment provides an important source of, often highly skilled, employment.

While Scotland's recent economic performance has been resilient, the shock that a No Deal Brexit could trigger is significant, and there is the potential for economic conditions to change very quickly.

Economic uncertainty is therefore likely to heighten over the coming weeks, leading, in the event of a No Deal Brexit, to a major dislocation to the Scottish economy.

The lack of clarity for Brexit beyond March 2019 is already starting to have an impact on key economic indicators for Scotland.

In the final quarter of 2018, the Scottish Government's Consumer Sentiment Survey fell to its lowest level since the series began in 2013, largely driven by households reporting a negative outlook for the wider economy. Such negative sentiment can feed through to household spending. For example, households may wish to defer large purchases until they feel more secure about the future economic climate.

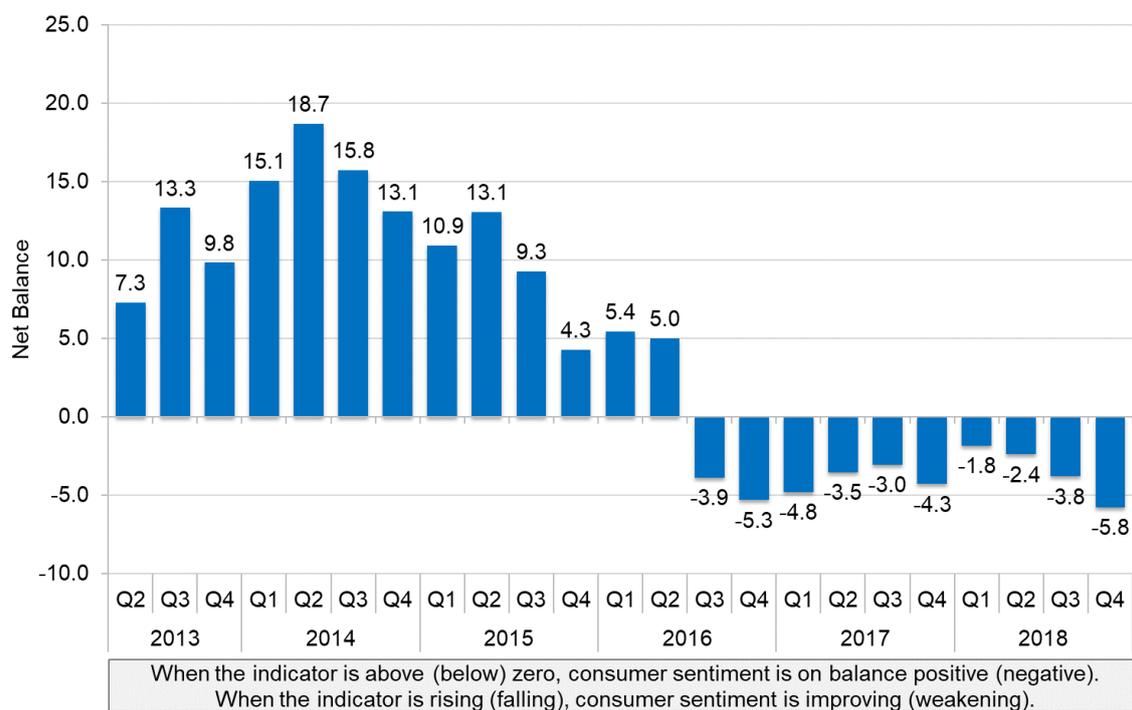
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<sup>8</sup> <https://www.uktradeinfo.com/Statistics/RTS/Pages/default.aspx>

<sup>9</sup> Aberdeen and Grampian Chamber of Commerce, 29<sup>th</sup> Oil and Gas Survey.

<sup>10</sup> <https://www.ey.com/uk/en/issues/business-environment/ey-scotland-attractiveness-survey-2018>

**Figure 11 – Scottish Consumer Sentiment Indicator**



Source: Scottish Government

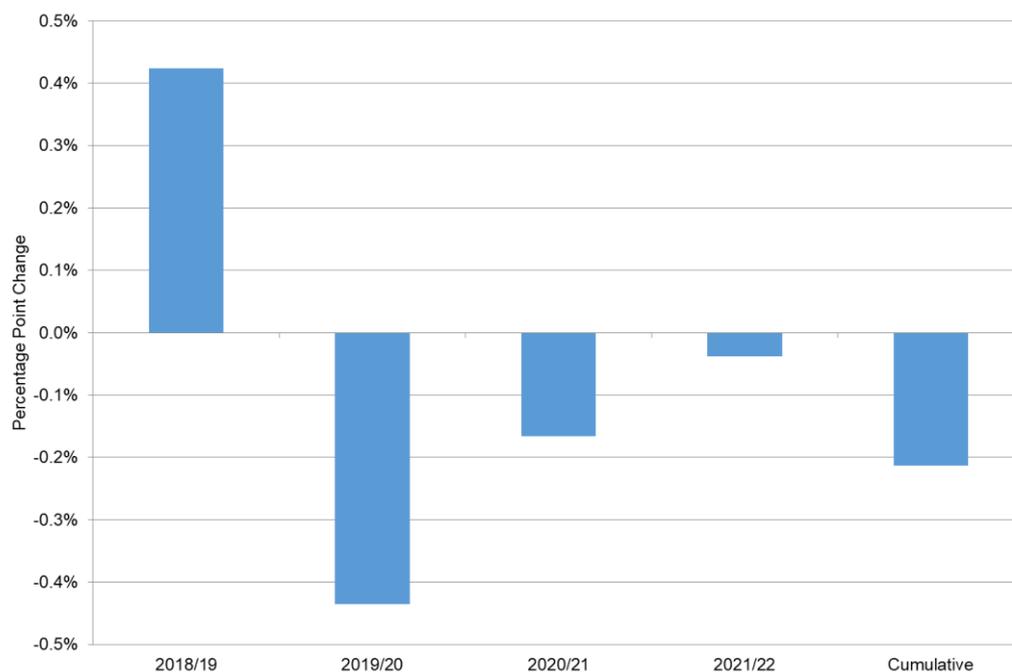
There are also increasing reports of companies stockpiling key supplies, boosting their cash reserves and reviewing their distribution networks and supply chains in anticipation for future disruption. The IHS Markit/CIPS UK Manufacturing PMI for January reported that business inventory holdings increased at the fastest pace in the 27-year survey history as stockpiling becomes more widespread<sup>11</sup>.

As outlined in previous Scottish Government analysis, such stockpiling activity could potentially boost Scottish GDP growth in 2018-19 by up to 0.4 percentage points. However, this would be more than offset by a slowing of output in subsequent quarters. The overall effect of stockpiling on the economy is negative in the medium term<sup>12</sup>.

<sup>11</sup> <https://www.markiteconomics.com/Survey/PressRelease.mvc/0a24cd497b1845359ae26143d7094345>

<sup>12</sup> <https://www.gov.scot/binaries/content/documents/govscot/publications/report/2018/10/state-economy/documents/00542252-pdf/00542252-pdf/govscot%3Adocument>

**Figure 12 – Illustrative Change in the Growth Rate of Scottish GDP as a result of Stockpiling**



Source: Scottish Government Global Econometric Model. For underpinning analysis please refer to Scottish Government – State of the Economy Report (October 2018)

### Previous Economic Shocks

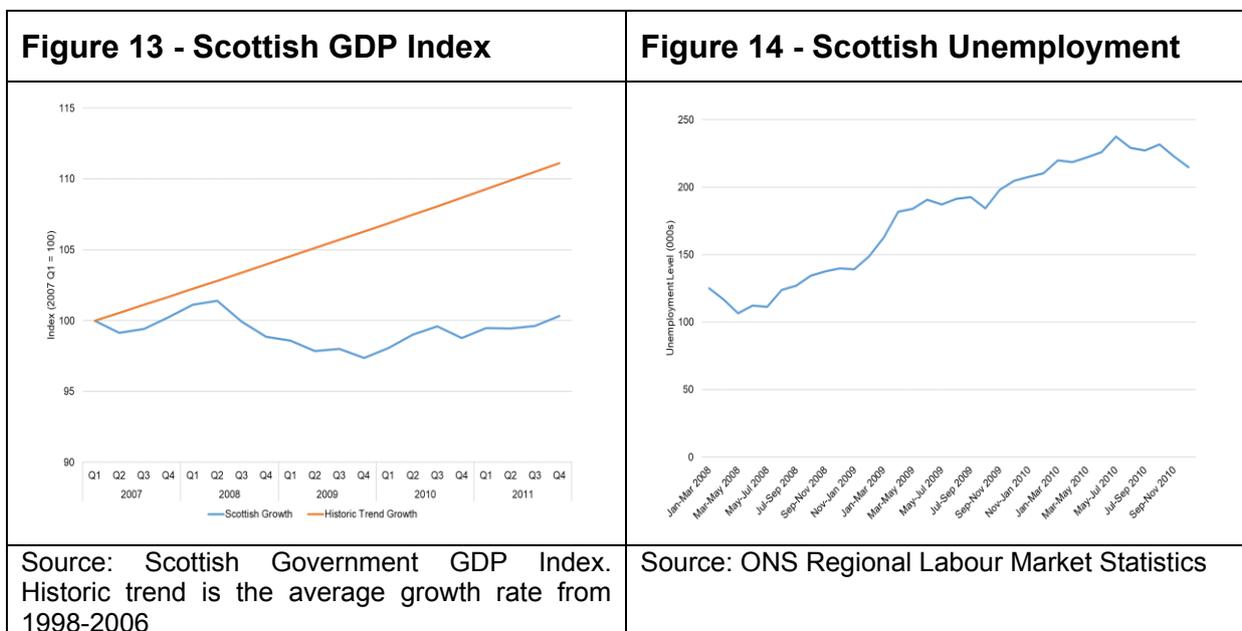
In the event of a No Deal Brexit, Scotland would experience a significant terms-of-trade shock triggered by an immediate change to the legal and regulatory basis of its trade with the EU. This would be expected to manifest into a negative economic shock (collapse in confidence) and present significant logistical challenges for key goods and traded goods.

Whilst there is uncertainty about the potential scale of the shock which Scotland would face, the 2008 Financial Crisis and the 1970s Oil Shock and Three Day Week give an indication of the impact on output and employment when key elements of the economy are significantly impaired. However, in the event of No Deal, the transmission mechanisms for the shock may be different.

In the case of the Financial Crisis, the Scottish economy contracted for a number of quarters and then grew at below its historical trend rate of growth for an extended period. The shock was driven by a collapse in key elements of the financial system

which led to banks incurring unprecedented losses, feeding through to a slowdown in bank lending and wider investment. The global nature of the crises compounded the shock and led to a wider slowdown in economic activity.

By the end of 2011, it is estimated that Scottish GDP was approximately 10% below the level that it would have been in the absence of the shock. As a result of this economic slowdown, the number of people unemployed increased by approximately 130,000, there was a large increase in the number of business failures and the UK public finances deteriorated significantly. The impact of the financial crisis is still reflected in the economic data. For example, average Scottish earnings, in real terms, are still below their level in 2008.



In the mid-1970s the UK economy faced a series of global economic developments, with the ending of the Bretton Woods system of monetary management and a quadrupling in the oil price following coordinated action by the world's oil producers. These events were compounded by a period of industrial action across many parts of the UK economy, and the temporary introduction of the three-day week.

These pressures led to a significant supply side shock which reduced output across a range of industries. This in turn contributed to a loss of investor confidence in the UK which led to pressure on the Sterling exchange rate and ultimately required the

UK Government to seek a loan from the IMF and implement significant reductions in public spending.

These pressures led to a large rise in the cost of living, with inflation peaking at over 26% in 1974 and interest rates rising to 15% in 1976. As a result, UK GDP fell by 5% between 1973 and 1975. In the first quarter of 1974 alone, GDP contracted by 3%.

<b>Figure 15 - RPI Inflation</b>	<b>Figure 16 - Interest Rates: Minimum Lending Rate</b>
<p>Source: ONS RPI All Items: Percentage change over 12 months</p>	<p>Source: Bank of England Historic Interest Rate Series</p>

## Section 4 – Macroeconomic Impacts of No Deal Brexit

The following section provides an illustration of the potential scale of the shock that Scotland could face in the event of a No Deal Brexit based on the scenarios outlined in Section 2. The analysis draws on the impact that previous economic shocks have had on the Scottish and UK economies, analysis by the Scottish Government, and studies by other organisations of the implications of a No Deal Brexit.

There is broad consensus that a No Deal Brexit would have a negative impact on the Scottish and UK economies. However, there is huge uncertainty about the duration, composition and potential scale of the shock. This is compounded by the fact that the response that such a shock would elicit from the UK government and EU is also unknown.

As such, the following analysis should not be considered a forecast. Nor should it be viewed as an upper or lower bound on the range of possible No Deal outcomes. Instead it illustrates a number of potential outcomes and in particular their relative economic impact in both aggregate terms and across different industries and geographies.

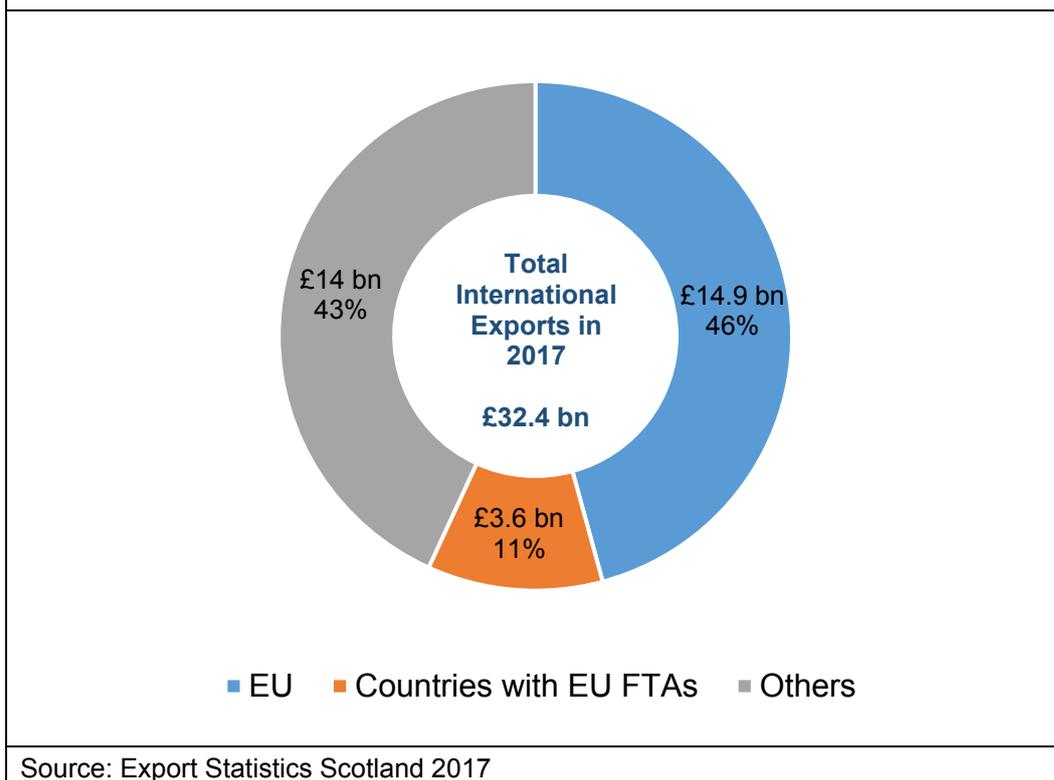
**Trade Disruption:** In the event of a disorderly No Deal Brexit, Scotland's trade with the EU would be significantly impaired. The introduction of tariffs, and non-tariff barriers such as new licensing requirements, would increase the cost, and reduce the competitiveness, of Scottish goods in the EU. Companies' ability to trade with other countries under free trade agreements negotiated by the EU would be reduced.

There is also the potential for disruption and delays at UK ports if the infrastructure required to undertake new custom checks are not in place. For example, the Financial Times reports that analysis by University College London for the Department for Transport estimates that if new customs checks delayed each vehicle boarding ferries at Dover by 60 seconds it would result in queues of six to eight hours, whilst if checks per lorry took 70 seconds, delays could extend to six

days<sup>13</sup>. This would reduce the viability of exporting some products, such as fresh produce or those which are feeding into complex, just in time supply chains, where goods need to arrive at their destination in very tight timeframes.

There is considerable uncertainty over the impact that such an outcome could have on overall exports. Given that Scottish exports to the EU, and countries with which the EU has negotiated free trade agreements, account for 57%<sup>14</sup> of Scotland's international exports the scale of the impact could be significant, and may be in the range of 10% - 20% given the potential changes to market access and free movement of goods. Imports from the EU would fall too, which may provide some opportunity for Scottish companies to refocus on domestic markets.

**Figure 17 - Scotland's International Exports to EU and Countries with EU Free Trade Agreements**



**Investment:** The economic uncertainty which a No Deal Brexit would bring is anticipated to result in companies choosing to either pause investment decisions until the UK's future economic relationship with the EU becomes clearer, or devote

<sup>13</sup> Financial Times (7 January 2019) - Six-day queues into Dover feared under no-deal Brexit scenario

<sup>14</sup> Export Statistics Scotland 2017

investment to mitigating the impact of No Deal Brexit, as opposed to supporting growth enhancing projects.

Previous analysis by the Scottish Government has quantified the potential impact that economic uncertainty can have on business investment<sup>15</sup>. This suggested that heightened economic uncertainty as a result of Brexit could reduce business investment in Scotland by £1 billion in 2019. No Deal Brexit would also make the UK a less attractive destination for Foreign Direct Investment (FDI). Analysis by the Bank of England suggests that FDI into the UK could fall around 20% under a No Deal scenario<sup>16</sup>.

**Sterling Exchange Rate:** A fall in exports and overseas investment would reduce the demand for Sterling. A broader downward reappraisal of the UK's near term economic prospects would also reduce financial flows into the country.

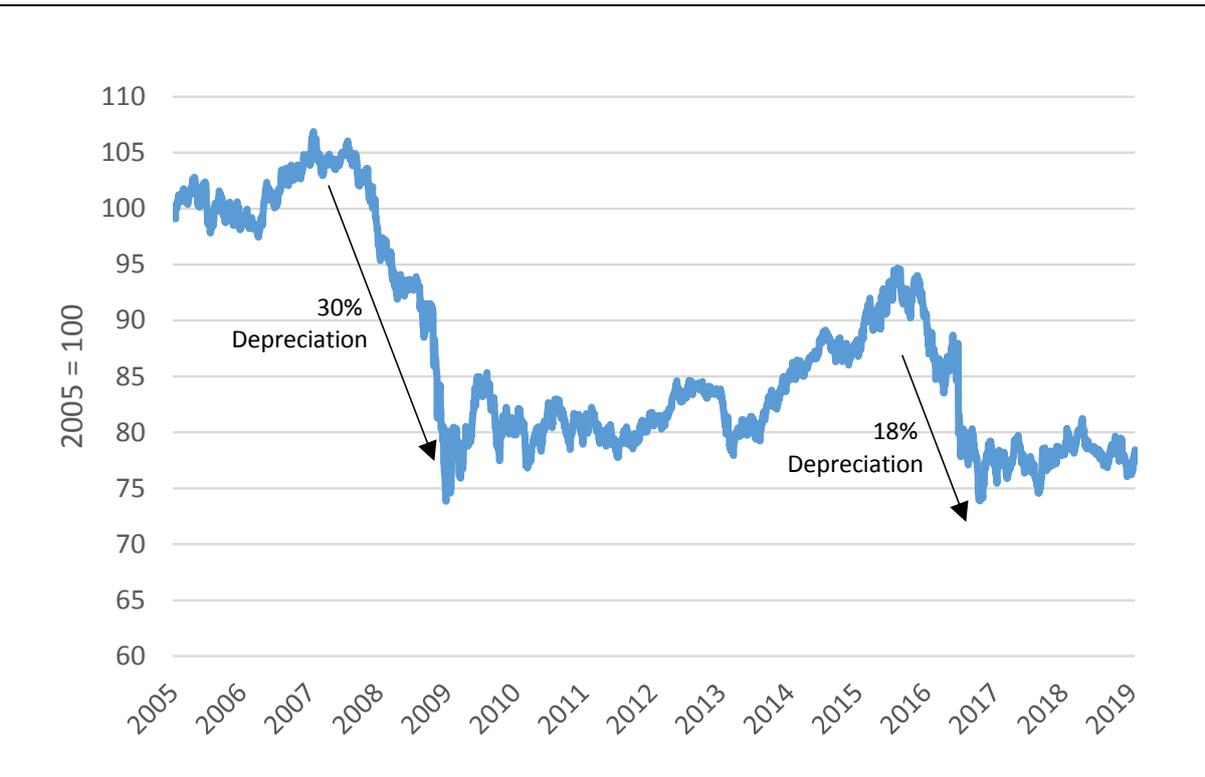
During the Global Financial Crisis, Sterling declined by approximately 30%, whilst in the first 9 months of 2016 Sterling fell by approximately 18%. Whilst the economic shock which the UK would face in a No Deal Brexit would differ from these events, it implies that a 10% - 30% depreciation in Sterling could occur.

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<sup>15</sup> <https://www.gov.scot/binaries/content/documents/govscot/publications/factsheet/2018/01/state-of-the-economy-january-2018/documents/cd4f5dde-e898-45c4-b1ca-42f4c360d4e6/cd4f5dde-e898-45c4-b1ca-42f4c360d4e6/govscot%3Adocument>

<sup>16</sup> <https://www.bankofengland.co.uk/-/media/boe/files/report/2018/eu-withdrawal-scenarios-and-monetary-and-financial-stability.pdf?la=en&hash=B5F6EDCDF90DCC10286FC0BC599D94CAB8735DFB>

**Figure 18 - Sterling Effective Exchange Rate**



Source: Bank of England Database (Series XUDLBK67)

**Inflation and Interest Rates:** A depreciation of Sterling, and the wider economic disruption that a No Deal Brexit may generate, would increase inflation. This may result in a rise in interest rates. Such an outcome could put pressure on households and businesses ability to service existing debt and discourage new borrowing and investment.

The Bank of England forecast that CPI could peak at 4.25% - 6.5% in 2020 in the event of No Deal<sup>17</sup>. They forecast that this would require interest rates to average 1.5% - 4% over the next three years. The upper end of this band would still mean that interest rates were lower than they had been prior to the financial crisis in 2008. However, it would represent a material increase from the Bank of England's policy rate over the past decade. However, the Bank's immediate response may be to reduce the Bank Rate to support demand in the economy.

<sup>17</sup> <https://www.bankofengland.co.uk/-/media/boe/files/report/2018/eu-withdrawal-scenarios-and-monetary-and-financial-stability.pdf?la=en&hash=B5F6EDCDF90DCC10286FC0BC599D94CAB8735DFB>

**Business Failures:** The rate of business deaths is expected to increase under a No Deal Brexit, whilst the number of new businesses starting may also decline. This is likely to be driven by a number of factors such as rising input costs as a result of depreciation, the ability to attract and retain EU workers and uncertainty around potential cash flow deteriorating access to finance conditions for businesses.

During the Global Financial Crisis, business deaths increased by 16% - an increase of 2,100 – whilst the number of business births fell by of 9% (1,500)<sup>18</sup>. The latest data show that business births, business deaths and corporate insolvencies are potentially already being affected by Brexit. The latest Office for National Statistics Business Demography data, comparing 2017 with 2016, show a fall in business births against a rise in business deaths in Scotland and UK-wide.<sup>19</sup>

**Migration:** International net migration into Scotland has been positive for a number of years, and stood at 13,400 in 2016-17.<sup>20</sup> A decline in the Sterling exchange rate, coupled with a wider slowdown in economic activity in the UK is expected to lead to a fall in international net migration into Scotland. This could occur because people choose either not to move to Scotland, or because people currently living in Scotland consider relocating overseas.

Between 2015-16 and 2016-17, net migration into Scotland fell by 9,500 on the back of improving economic conditions elsewhere in the EU and the decline in Sterling<sup>21</sup>. Were such trends to continue, an economic shock on the scale outlined above could result in international net migration into Scotland falling further and potentially turning negative. This would return international net migration into Scotland to the levels seen prior to the enlargement of the EU in 2004.

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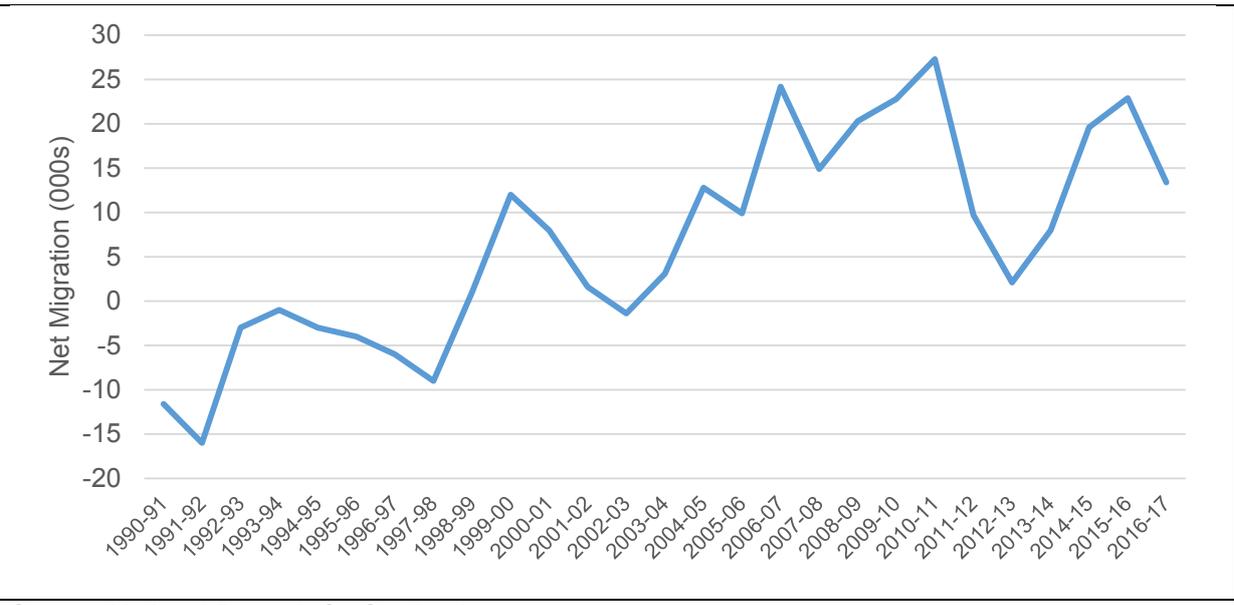
<sup>18</sup> Office for National Statistics - Business demography

<sup>19</sup> <https://www.ons.gov.uk/businessindustryandtrade/business/activitysizeandlocation/bulletins/businessdemography/2017>

<sup>20</sup> <https://www.nrscotland.gov.uk/files//statistics/migration/2018-july/tab-1-migration-to-from-scotland.xlsx>

<sup>21</sup> <https://www.nrscotland.gov.uk/statistics-and-data/statistics/statistics-by-theme/migration/migration-statistics/migration-between-scotland-and-overseas>

**Figure 19 - International Net Migration to Scotland**

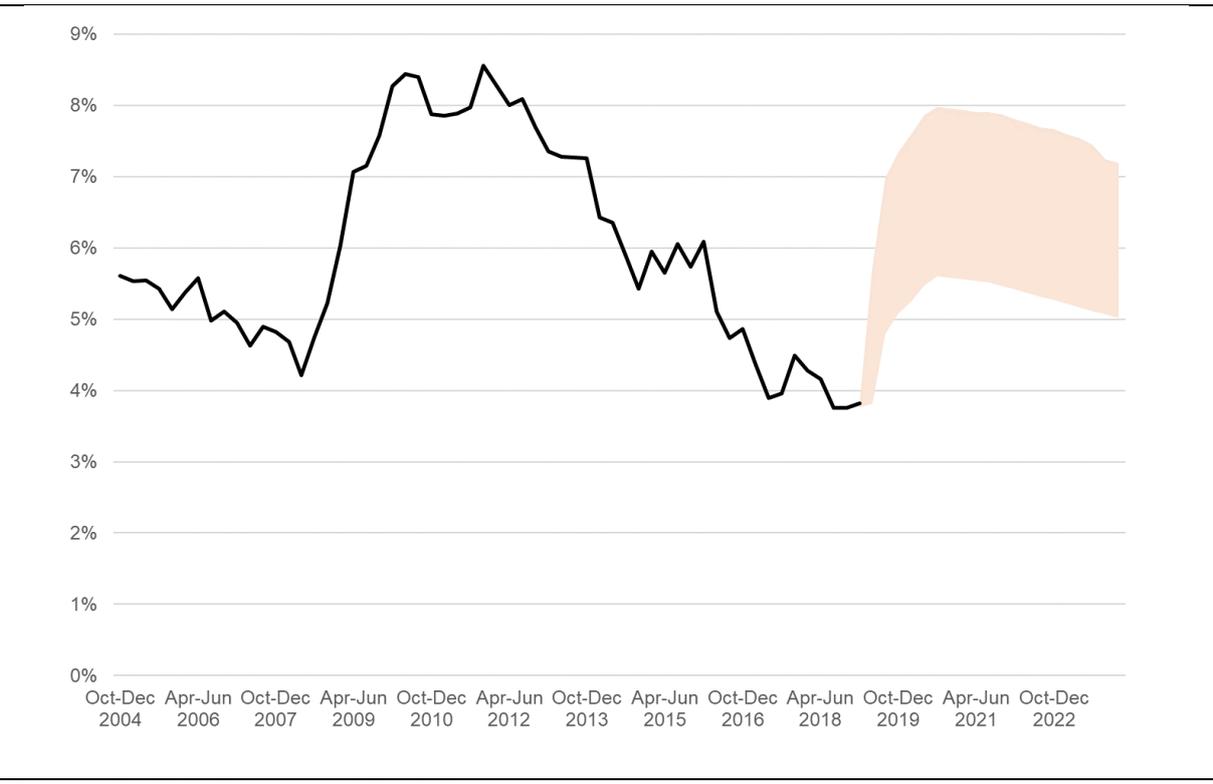


Source: National Records for Scotland

**Labour Market:** An economic slowdown would reduce demand for workers. This could manifest itself in a number of ways. For example, companies may choose to reduce the hours offered to staff, reduce overtime or put workers on more flexible contracts. Companies may also choose to reduce overall employment, or pause plans to hire additional workers. Collectively, such actions would reduce household incomes and increase economic insecurity.

During the global financial crisis, the unemployment rate in Scotland more than doubled from a low of 4% in the spring of 2008 to 8.5% in 2010. This provides an indication of the impact that a major economic shock could have on the labour market. However, if a No Deal Brexit also results in a reduction in net migration into Scotland this may mitigate any rise in unemployment, although it could also create skill shortages in specific industries and regions. Based on the response of the labour market to previous economic shocks, unemployment in Scotland could increase to between 5.5% and 8% under a No Deal Brexit. The top end of this rate would be equivalent to an additional 100,000 people being out of work compared to current levels.

**Figure 20 - Unemployment Rate Projected Path**



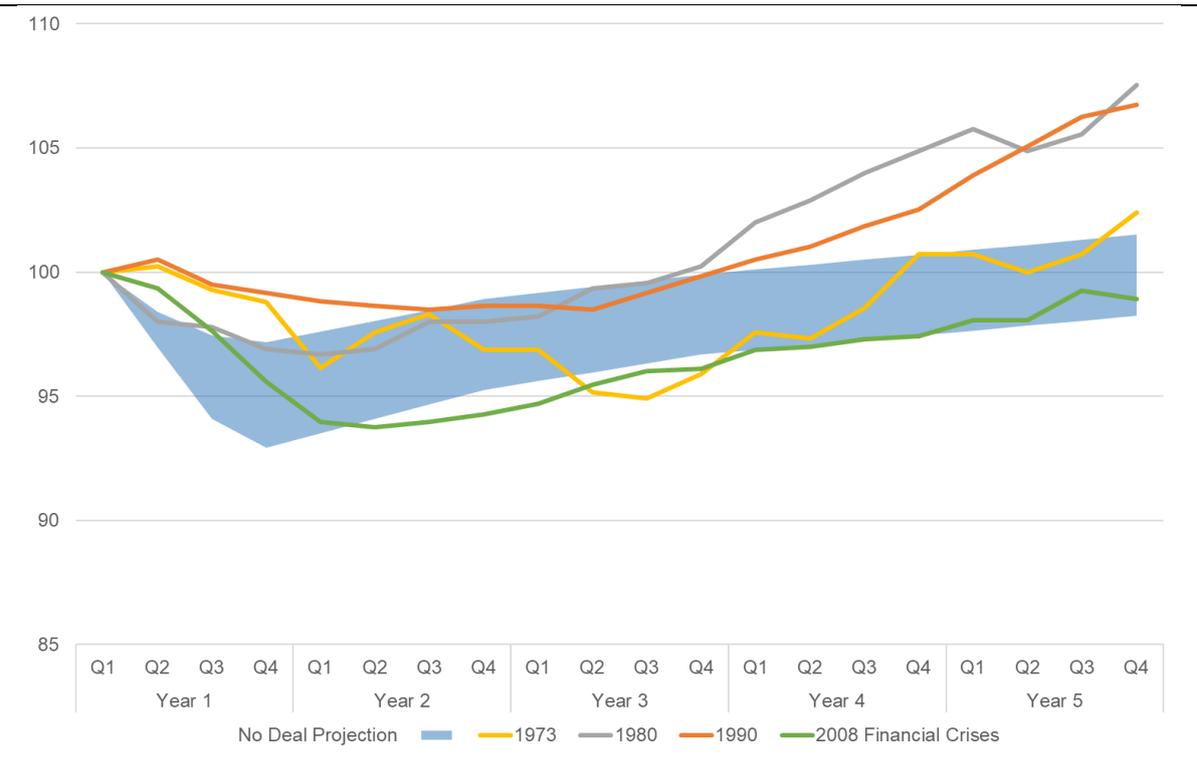
Source: Scottish Government Analysis

**Overall Economic Implications:** Collectively, the above pressures would be expected to push the Scottish economy into recession during 2019.

Based on the response to the Scottish and UK economies to previous economic shocks, there is the potential for GDP to contract by between 2.5% - 7% by the end of 2019 depending on the way in which a No Deal outcome evolves.

The chart below illustrates how a shock on this scale would compare to previous recessions experienced by the UK economy. The top end of this range is broadly equivalent to the contraction observed in the UK during the global financial crisis, whilst a 2.5% contraction would be in line with other major economic shocks faced by the UK over the past 40 years. The key difference is that because a No Deal Brexit would result in an overnight change to Scotland's ability to trade with the EU, the impact could be more immediate than previous shocks which have tended to increase in intensity more gradually.

**Figure 21 - GDP Index: Previous UK Recessions and No Deal Scenarios**



Source: Scottish Government Analysis and ONS UK GDP Index

Over time, the economy would be expected to return to growth, albeit at a lower level than would occur if the UK remained in the EU. The speed with which the economy returns to growth would depend on the time taken for the UK Government and the EU to reach agreement to mitigate the disruption caused under No Deal. The longer that the initial shock persists, the greater the risk that it develops into a wider economic slowdown from which it would take longer to recover.

## Section 5 – Sector and Regional Impacts of No Deal Brexit

The impact of a No Deal economic shock will not be uniform across Scotland. Sectors which are likely to see the greatest impact will typically be those which:

- Trade the most with the EU;
- Are most reliant on EU workers and free movement of labour;
- Are dependent on, or feed in to, integrated EU supply chains;
- Are subject to EU regulatory and licencing requirements.

A prolonged slowdown would not be confined to sectors with direct exposure to the EU. It would impact other sectors through supply chain, employment and income effects. For example, if a No Deal Brexit leads to a fall in business investment this would have a significant impact on the construction sector.

The Scottish Government previously commissioned EY to undertake an analysis of the impact that an orderly Brexit could have on different sectors in the Scottish economy<sup>22</sup>. The results are summarised below.

**Figure 22 – Sector Analysis**

Table 1: Sector RAG ratings

	Tariff and non-tariff barriers	Sourcing & supply resilience	Legal & regulatory compliance	Workforce	EU funding & finance	Foreign Direct Investment	Overall RAG rating and rationale based on contextual sector information & sector impact RAG ratings
Life sciences	Red	Red	Red	Red	Yellow	Yellow	Key export sector dependent on EU intermediary goods, and on EU legislation governing product standards. Regulatory divergence and workforce issues are risks.
High value manufacturing	Yellow	Red	Red	Yellow	Red	Red	Key export sector dependent on EU intermediary goods, and on EU legislation governing product standards. Regulatory divergence and investment issues are risks.
Chemicals	Red	Yellow	Red	Yellow	Red	Yellow	Key export sector dependent on EU intermediary goods, and on EU legislation governing product standards. Regulatory divergence and investment issues are risks.
Logistics	Red	Green	Red	Red	Red	Green	Important in terms of size and impact on other sectors in Scotland. Scotland has unique geographical challenges. Customs and border controls and workforce are risks.
Food and drink, incl. agri- and aquaculture	Red	Yellow	Red	Red	Yellow	Green	Key export sector and employer. Regulatory divergence and workforce issues post-Brexit are risks. Scotland a net exporter of seafood, the UK is a net importer.
Creative industries, including Digital	Yellow	Green	Yellow	Red	Yellow	Yellow	A vital and growing sector in Scotland, contributing to urban regeneration and employment. Digital a key sub-sector but with post-Brexit risks more similar to UK.
Financial & business services, incl. fintech	Green	Green	Red	Red	Yellow	Green	Significant sector in terms of size and its impact on the rest of the Scottish economy. Market access, regulatory divergence and workforce issues post-Brexit are risks.
Energy	Yellow	Yellow	Yellow	Green	Red	Green	Implications of Brexit for energy not unique to Scotland as a result of the importance of the GB regulated market. However, generation market more based on renewables.
Construction	Yellow	Yellow	Green	Yellow	Green	Yellow	Risks facing construction in Scotland relate to macro-environment, workforce and supply chain similar to rest of UK industry, although some reliance on EU imports of timber.

<sup>22</sup> <https://www.gov.scot/news/businesses-concerned-about-brexit/>

The Scottish Government has also undertaken its own modelling of the long term impact that Brexit could have on different sectors of the Scottish economy<sup>23</sup>.

This modelling used a detailed two region model of the UK and Scottish economies to look at how sectors will be impacted as a direct result of Brexit, and also indirectly via the associated impact that Brexit will have in the rest of the UK. The modelling indicates that the Sectors that are likely to be most affected by Brexit are Chemicals; Mining and Quarrying; and Metals, Rubber & Plastic. This is reflective of these sectors having high trade exposure with EU markets. Although these sectors face the biggest proportionate impact, the impact on other sectors will be larger in absolute terms. The sectors that would see the largest overall impacts are in the service sector - Wholesale & Retail Trade, Professional Services, Financial Services and the Construction sectors.

Finally, the Bank of England has specifically considered the sectors which would be most at risk under a No Deal Brexit<sup>24</sup>. Their analysis suggests that Food and Agriculture, Chemicals and Pharmaceuticals, Transport and Construction could be most exposed under a No Deal Brexit.

Drawing on the above analysis, the chart below summarises the sectors which are likely to see the greatest exposure to a No Deal Brexit in 2019 under the scenarios considered in this paper. This suggests that Agriculture and Fishing, Transport Equipment, Chemicals, Pharmaceuticals, Food and Construction would see the greatest impact. However, all sectors would be negatively affected.

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<sup>23</sup> <https://www.gov.scot/publications/state-economy-february-2019/>

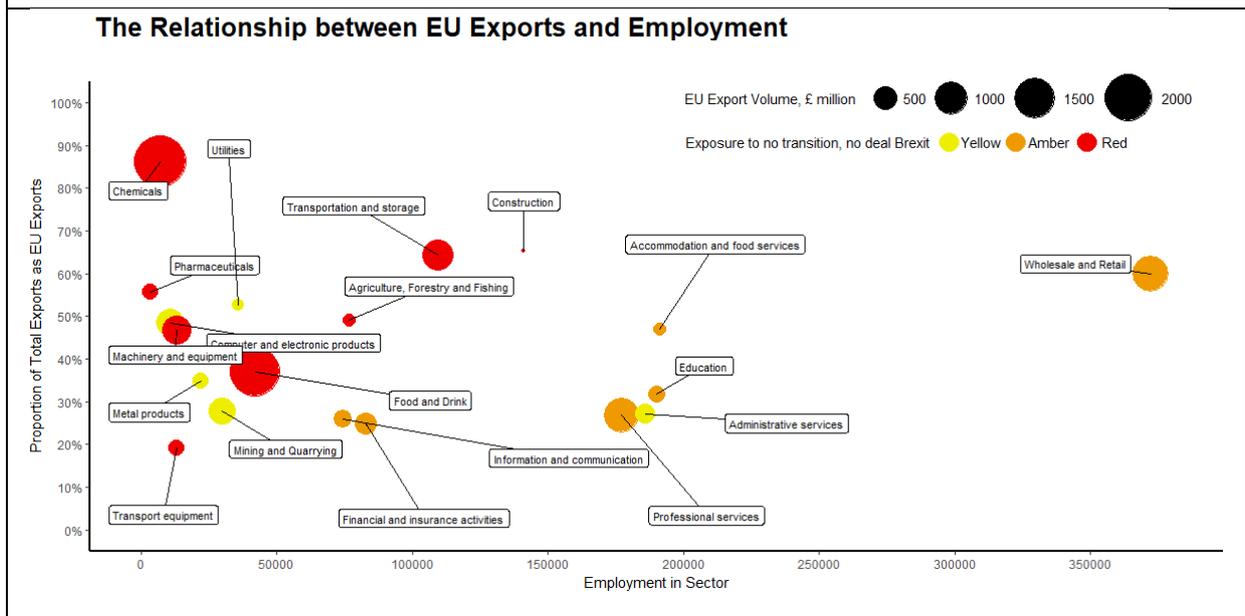
<sup>24</sup> <https://www.bankofengland.co.uk/-/media/boe/files/report/2018/eu-withdrawal-scenarios-and-monetary-and-financial-stability.pdf?la=en&hash=B5F6EDCDF90DCC10286FC0BC599D94CAB8735DFB>

**Figure 23 - Potential Impact of No Deal Brexit by Industry relative to overall decline in GDP**

Highest	Higher	In Line	Below
Agriculture, Forestry and Fishing; Chemicals; Food and Drink; Construction.	Transport Equipment; Info & Communication; Other Manufacturing; Computer & Electronics; Metals and Machinery; Textiles & Clothing.	Retail & Wholesale; Mining & Quarrying; Other Services; Professional Services; Real Estate; Financial & insurance; Transport & Storage; Health.	Public Admin; Accommodation & Food Services; Water & Waste; Electricity & Gas.

The above analysis indicates which sectors could be most exposed to Brexit in relative terms. However, some of the sectors which appear to have less exposure to a No Deal Brexit are large in absolute terms (e.g. wholesale and retail). For such sectors even a small change in employment levels or economic activity can have a large impact in terms of Scotland’s aggregate economic performance. This is highlighted in the chart below<sup>25</sup> which plots different sectors in terms of their overall employment, and the proportion of their exports going to the EU. The size of the bubbles represents the overall size of their exports to the EU, whilst the colour denotes a qualitative assessment of their exposure to a No Deal Brexit.

**Figure 24 – Relationship between EU Exports and Employment**



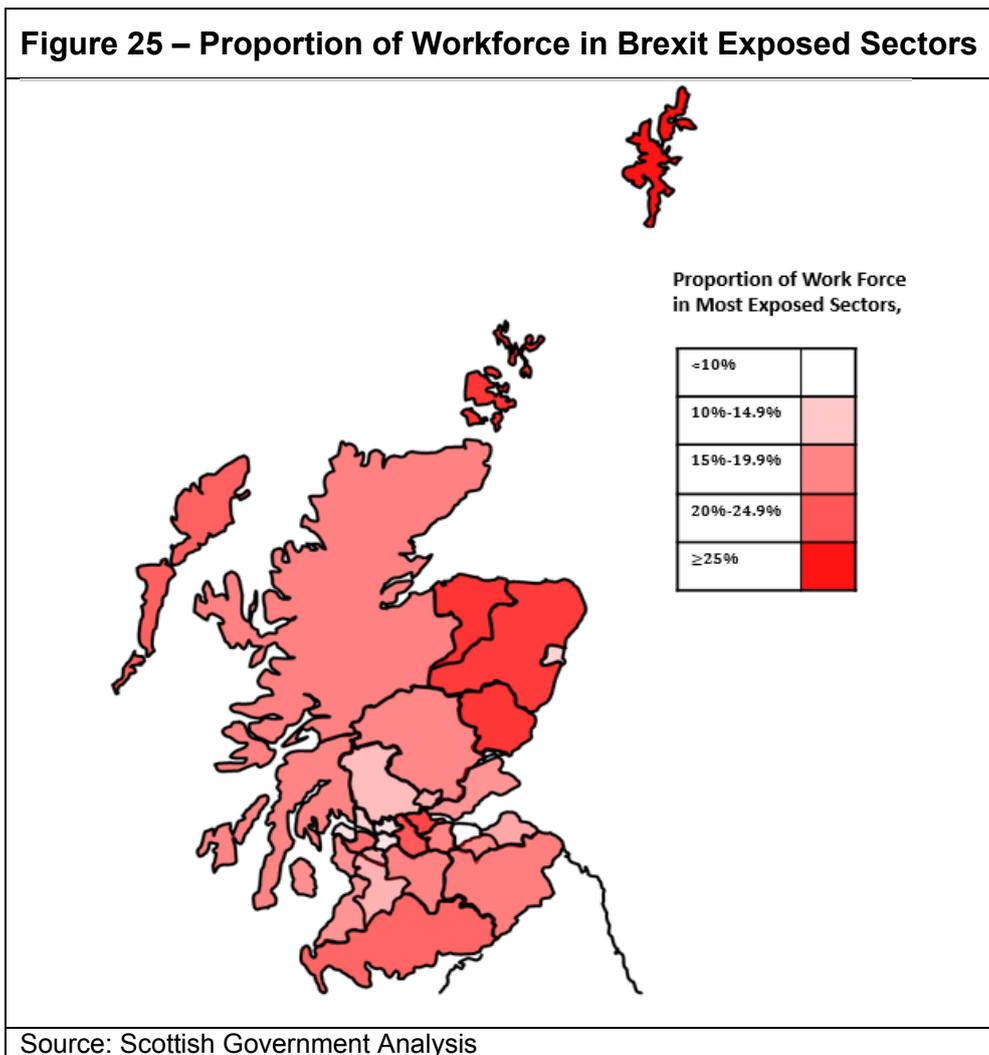
<sup>25</sup> State of the Economy, Scottish Government, February 2019.

## Regional Impacts of No Deal Brexit

A No Deal Brexit would have different impacts on different locations of Scotland, both in terms of the composition of the shock and its overall size.

In considering the overall impact that No Deal could have on different areas, a region's economic structure is a useful guide. The table and diagram below group local authorities in terms of their share of employment in sectors which are identified as being at high risk under a No Deal Brexit, as summarised above.

The local authorities with the highest concentration of workers in exposed sectors are typically those in more rural areas, reflecting higher levels of employment in agriculture and fishing in these areas.



**Figure 26 - Local Authorities: Proportion of Workforce in Sectors Most Exposed to a No Deal Brexit**

<10%	10% - 14%	15% - 19%	20% - 24%	25%+
Dundee Edinburgh	Stirling West Dunbartonshire Aberdeen City East Dunbartonshire Inverclyde Glasgow City	Highland South Lanarkshire Argyll and Bute West Lothian Perth and Kinross Midlothian North Ayrshire Fife South Ayrshire East Lothian East Renfrewshire Clackmannanshire East Ayrshire	North Lanarkshire Na h-Eileanan Siar Dumfries & Galloway Renfrewshire Scottish Borders	Shetland Moray Orkney Angus Aberdeenshire Falkirk

There are a range of other metrics which can be used to assess the areas of Scotland which could be most exposed to a No Deal Brexit. For example, the proportion of EU workers in a given locality. On this basis, 38,600 (28.2% of all EU nationals) reside in Edinburgh, 14,700 (10.7% of all) reside in Aberdeenshire, 14,300 (10.4% of all) reside in Glasgow, with these three cities accounting for around half of all EU nationals in employment in Scotland.

As a share of the workforce residing in an area, the areas with the highest levels of EU employment are Edinburgh (14.2% of all in employment in the area), Aberdeen (11.8%), Aberdeenshire (6.7%) Additionally, in rural agricultural areas, there will be high level of exposure and reliance on short-term seasonal employment of EU nationals.

**Figure 27 - Employment by Local Authority by nationality**

<b>Local Authority</b>	<b>EU 27 nationals</b>	<b>Employment</b>	<b>EU nationals share of LA employment</b>	<b>% of all EU nationals in employment</b>
Edinburgh, City of	38,600	272,000	14.2	28.2
Aberdeen City	14,700	123,800	11.8	10.7
Glasgow City	14,300	280,700	5.1	10.4
Aberdeenshire	9,400	138,900	6.7	6.8
Highland	6,800	122,300	5.5	5.0
West Lothian	5,700	88,500	6.4	4.2

Source: Annual Population Survey, July 2017 to June 2018

## **Conclusion**

A No Deal Brexit - leaving the EU on the 29 March 2019 without a transition period or agreement on any future trade deal and wider economic relationship – represents a major economic risk to Scotland.

There is considerable uncertainty about the duration, composition and scale of the shock that a No Deal outcome would trigger. However, it has the potential to generate a major dislocation to the Scottish economy. This would occur through a number of channels - disruptions to logistics, supply, trade, investment, migration and market confidence.

Whilst the scale of the shock is uncertain, it has the potential to push the Scottish economy into recession, with a corresponding increase in unemployment. If prolonged, the shock could lead to significant structural change in the economy.

Any shock is likely to have disproportionate sectoral, as well as, regional impacts. Sectors with high levels of exports to the EU, who are reliant on EU workers and free movement of labour, are part of integrated EU supply chains and/or are subject to EU regulatory and licencing requirements are likely to see the greatest impact. Other sectors would be exposed in the event of a wider economic slowdown.

The agriculture, food and fishing sectors are among those who have a particularly high level of exposure under a No Deal Brexit. As employment in these sectors tends to be highest in more rural areas, such regions may be particularly exposed to Brexit.



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