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The impact of Brexit on Scotland's growth sectors

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This briefing brings together the latest research on the economic consequences of Brexit, assessing the impact on six key sectors (referred to as 'Growth Sectors') of the Scottish economy. They are: Food & Drink; Sustainable Tourism; Life Sciences; Creative Industries; Energy; and Financial & Business Services. The methodology adopted is a mix of desk research and interviews, analysing the latest data and including the views of industry experts.

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Contents

Executive Summary

This briefing brings together the latest research on the economic consequences of Brexit, endeavouring to assess the impact on six key sectors (referred to as ‘Growth Sectors’ [1] [2]) of the Scottish economy. They are:

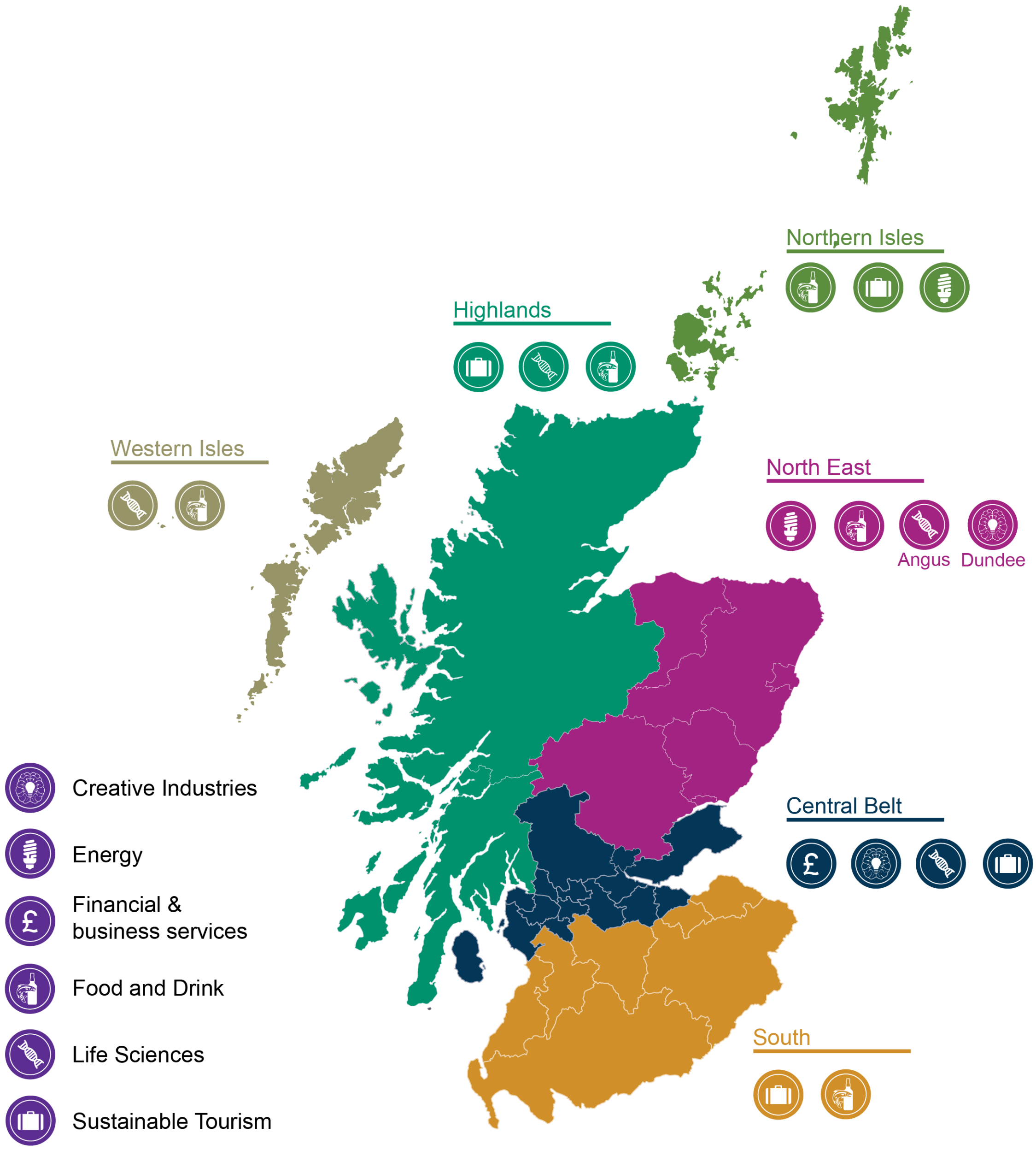
- Food & Drink (including agriculture & fisheries);
- Sustainable Tourism;
- Life Sciences;
- Creative Industries (including digital);
- Energy (including renewables);
- and Financial & Business Services.

Each of the sectors is examined through three dimensions – trade, workers and investment. The methodology adopted is a mix of desk research, analysing secondary sources, and interviews, collecting the views of industry experts. The quantitative analysis makes use of Scotland's Growth Sectors statistics, published by the Scottish Government in February 2018 [3] . Unless otherwise stated, data are drawn from this source. After the introduction, the briefing is structured in two main parts: an overview for each of the three dimensions, followed by an analysis of each of the key sectors. The final section contains a summary of the issues that were identified throughout the briefing, showing the shared challenges and the differences in the impact across sectors.

The report shows that significant worries and objective challenges characterise each of the six industries examined. Most obstacles are shared across the board, though in different measures. The sectors with the highest reliance on EU workers - Tourism and Food & Drinks in particular - are already starting to experience issues caused by the lower influx of workers from EU countries. Should a 'no deal' scenario materialise and WTO tariffs be introduced, most exported products could be significantly hit. Non-tariff barriers to trade entail a long list of potential repercussions, such as the loss of Protected Geographic Indication (PGI) status for flagship Scottish products, supply chain issues, and an array of complications stemming from the need to revise the regulatory environment. The curtailing of EU funding, as well as the possible negative impact on FDI attractiveness, are critical concerns for the Creative Industries, Life Sciences and Renewables. The loss of passporting rights for financial services, however, might be less damaging than initially feared, given that the Scottish financial sector is primarily oriented towards the UK market.

Unanimously, industry leaders have expressed high concerns about uncertainty surrounding Brexit negotiations at the moment. While most Growth Sectors are hopeful that they may be able to cope with the serious obstacles posed by Brexit, they warn that their ability to mitigate risks is becoming more difficult by the day, and that for some business decisions it is already too late. Many of the identified issues have a disproportionate impact on small and medium enterprises, which are unable to invest resources in contingency planning for scenarios that might not materialise.

Growth Sectors: where are they?



Source: Scottish Government (2018), Growth Sector Statistics. The relative weight of a sector for a specific region is calculated on the basis of location quotients (the proportion of jobs in a local authority that are in a specific sector, against the proportion of all jobs in Scotland in said sector).

Introduction: Brexit and the Scottish Economy

The consensus among most economists is that the consequences of Brexit will be bad for the UK's economy across all regions and across most sectors [1] . The Scottish Government's assessment, "Scotland's Place in Europe: People, Jobs and Investment" and published in mid January 2018 [4] , gave a very bleak forecast, which incurred some criticism for being over-pessimistic [5] . But according to the January 2018 UK Government impact assessment titled "EU Exit Analysis – Cross Whitehall Briefing", published in March 2018, [6] the UK Government's own forecast is that the UK will be worse off outside the European Union under every scenario modelled.

The Scottish Government's analysis [4] , considering a scenario by 2030, foresees an economic impact for Scotland that would range from a loss of 2.7% of GDP with continued European Single Market membership, to a reduction of 8.5% of GDP with non-preferential access to the European Single Market under the terms of the World Trade Organization (WTO). A middle scenario, with a preferential UK-EU trade agreement, would see Scotland's GDP suffering from a 6.1% damage to its GDP by the end of the next decade, according to this analysis.

The UK Government's report [6] suggests that, over the next 15 years, the soft Brexit option of continued single-market access through membership of the European Economic Area would lower GDP by 2%, and that the "no deal" WTO scenario could result in GDP being 8% lower than would otherwise be the case. Under a comprehensive free trade agreement with the EU, UK GDP could be 5% lower compared to current forecasts. The analysis forecasts that every UK region and almost all economic sectors stand to lose from Brexit, though its calculations do not take into account any short-term hits to the economy, such as the cost of adjusting the economy to new customs arrangements.

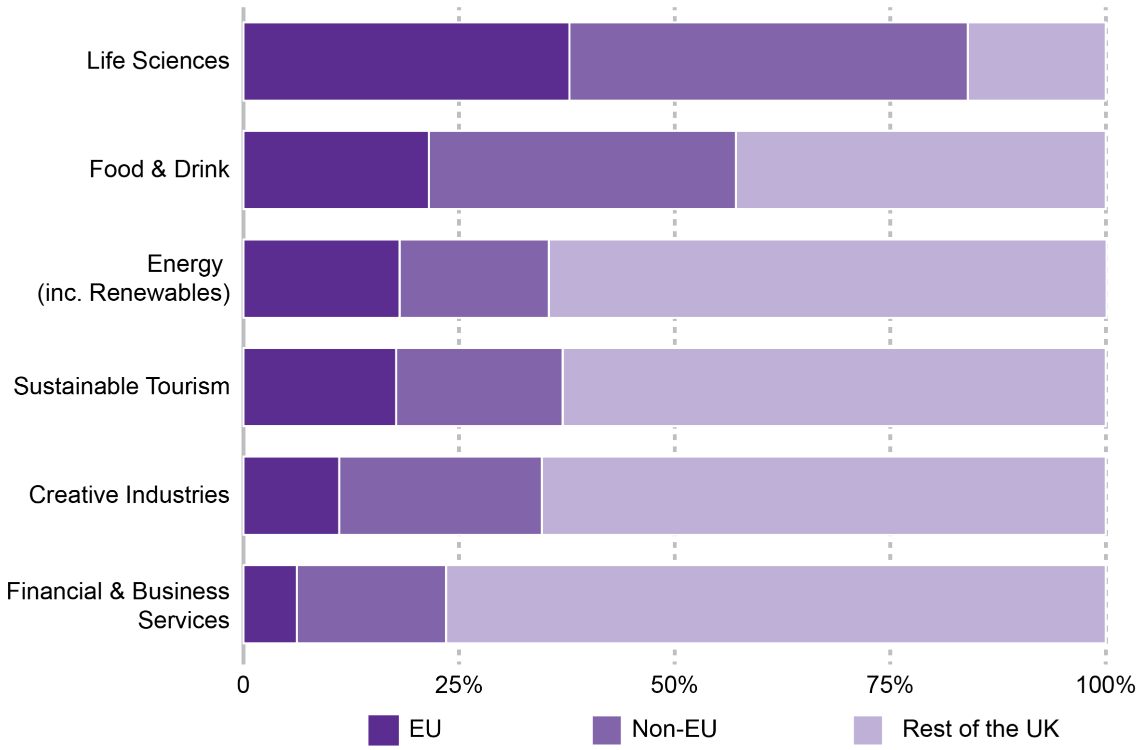
Some cautiously positive forecasts, contained in the Cross Whitehall Briefing [6] , concern Brexit's impact on economic activities linked to agriculture and fisheries and the possibility to strike trade deals with third countries. According to this assessment, trade deal with the US would benefit the UK's GDP by 0.2% in the long term and trade deals with other non-EU countries and blocs have the potential to add a further 0.1-0.4%. These gains are however only seen as marginal, able to mitigate but not to offset the wider negative economic impact.

But what will be the concrete consequences for Scottish businesses, and how will the impact play out on the sectors driving the Scottish economy? In 2007, the Scottish Government identified six 'Growth Sectors' as the driving force behind Scotland's economy and devised a strategy to foster them [1] . What follows is a discussion of three important dimensions, likely affected by Brexit, that we have decided to consider - trade, workforce and investment - followed by a detailed consideration of the specific challenges facing each Growth Sector.

Overall dimensions of analysis

Trade

Figure 1. Growth Sectors: Exports by destination, 2016



Source: Scottish Government (2018), Growth Sectors Statistics Database.

Assuming that the UK leaves the Single Market and the Customs Union, this will mean that, after Brexit, Scotland will no longer be able to ship its goods as easily, with goods that cross into the EU likely to incur tariffs. Furthermore, all shipments will have to be recorded and checked, and there will be the need to prove compliance with EU standards. The foreseen impact of this scenario is a significant increase in the cost of the trade with the EU and a slowdown of the movement of goods [7] . As shown in Figure 1, the share of exports going to EU countries differs across Growth Sectors, with Life Sciences and Food & Drink particularly exposed to complications created by possible barriers to trade with the EU.

A particular issue is represented by supply chain considerations. The Institute for Fiscal Studies (IFS) has highlighted [8] that the majority of UK exports and imports are today made up of goods or services that are themselves inputs into production, such as machinery and raw materials. This means that a successful exporting country will also need to be open to imports; and that the importance of international trading networks means that bilateral trade deals will tend to be of less value than multilateral deals.

From a monetary perspective, the aftermath of the Brexit vote potentially carries some good news for exports, as the fall in sterling should increase the competitiveness of the goods and services sold. As will be discussed later, some industries (e.g. Food and Drink) have quoted the fall in sterling as a help to boost exports for the time being. However, this optimism is not yet backed by the data, as the value of overall exports from Scotland to the EU has not improved, instead recording a slight downturn since the Brexit vote.

While Scottish exports to the rest of the UK recorded a considerable slump in 2016, the latest recorded year (a decrease of £4.4bn or 8.8 percent) [9] , Scotland’s international exports increased by £460m (1.6 percent). This increase was driven by exports to non-EU countries, which went up by £565m (3.4 percent), while exports to EU countries decreased by £105m (0.8 percent). Taken as a whole, the EU is Scotland’s biggest international trading partner with 17 percent of total exports, followed by the US at 16 percent. However, exports to the rest of the UK take the lion’s share, with 61 percent of the total. Within the EU, the Netherlands (£2.1bn) is Scotland’s largest market, followed by France (£2bn) and Germany (£1.9bn).

The sub-sectors that saw a fall in exports from Scotland to the EU between 2015 and 2016 were professional, scientific and technical activities; electronic products (which had been falling since 2002); financial and insurance activities; and information and communication. Conversely, the wholesale of food and especially beverages (whisky), transportation and storage, construction, machinery and equipment have increased. These changes are not drastic and they fit in the wider trend, which is for the UK’s exports to the EU to be tailing off slightly [10] as a share of overall exports since 2004.

In the future, services may be impacted less than manufactured goods, as their export from Scotland is mostly directed at UK and non-EU markets. The UK-wide regional analysis by Borchert and Tamberi [11] , University of Sussex, indicates that the North East of England and the West Midlands are the two most exposed regions in this sense, as they send nearly half of their service exports to the EU, but they also note that while Scotland’s dependence on the EU market is not as high, it has been growing recently. The imposition of market access conditions to the EU single market therefore represents a problem for the export of services as well as manufacturing products.

Workers

Scotland’s demographic challenges make it more exposed to migration shortages that could occur as a result of Brexit and of stricter immigration controls being introduced than the UK as a whole.

The Royal Society of Edinburgh discusses some specific challenges [12] . The first risk is represented by *population decline*: the projected 7% increase in the Scottish population by 2039 is calculated on the premise that the current levels of immigration will be sustained; if instead zero migration is assumed, then the population is projected to decline by 2%.

Population decline needs to be looked at in conjunction with Scotland’s *ageing population*, which has been partially offset by migration since 2004. EU nationals have a lower age profile than the Scottish population as a whole: 80% of EU nationals in Scotland are of working age, compared to 65% of the Scottish population as a whole [13] . If the current trend continues, Scotland’s pensionable age population per 1,000 people of working age is expected to increase from 311 in 2015 to 397 in 2039 [14] , but this could be accelerated by a decrease in EU migration.

Two further factors explain why migrant labour has a relatively higher importance for Scotland than it has for the UK as a whole: Tindal et al. [15] highlight the the greater role of *student migration*, and Bell et al. [16] show that there are comparatively *higher skill differentials* between migrant and local workers in Scotland than in the rest of the UK.

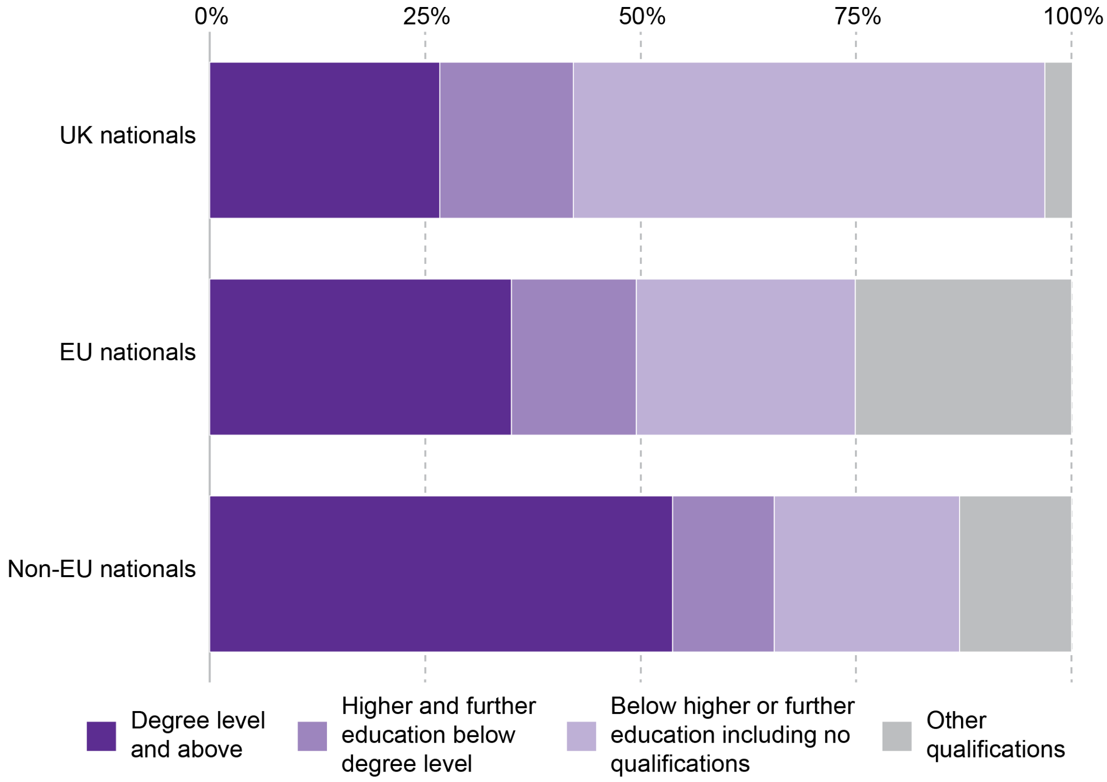
EU workers in Scotland

Using 2015 data [17] , non-UK EU nationals account for 4.5% of all employment in Scotland, although these numbers are often disputed for being too low because they do not include the high influx of seasonal workers. The most represented non-UK EU nationals in Scotland are Polish citizens (86,000), followed by the Irish (16,000), Spanish (9,000), Italians (7,000), Romanians, Lithuanians, Latvians and Hungarians (6,000 each) and Portuguese, German and French (5,000 each).

In total, there are 186,000 EU migrants in Scotland and 80% of EU nationals in Scotland are of working age, compared to 65% of the Scottish population as a whole. EU nationals are, on average, earning less than Scottish employees - £8.60 per hour against an overall average of £11.10 per hour for all workers in Scotland. A SPICe report [13] showed that EU nationals are more likely to hold higher level qualifications than the Scottish working age population as a whole. Of EU nationals resident in Scotland, just over a third (35%) hold a degree level qualification or higher, while only around a quarter (26%) of UK nationals in Scotland are qualified to this level (see Figure 2).

In terms of geographic coverage, the Oxford Migration Observatory estimated that Edinburgh, Glasgow and Aberdeen received around 95% of the overall inflow of overseas workers over the period 2006-2011 [18] , though the contribution of EU workers in rural areas has been extremely important, in particular for sectors such as hospitality and food and drink and especially after the 2004 'Big Bang' EU enlargement.

Figure 2. Qualification of workers in Scotland: UK, EU and non-EU nationals



Source: Annual Population Survey (APS), 2015

A report by Professor Christina Boswell et al. [19] (University of Edinburgh) concludes that, should EU migrants be subject to the same regulations currently in use for non-EU migrant workers, this could cause serious skilled labour shortages. Boswell et al. further suggest that the historically low rates of unemployment experienced by the Scottish economy at the moment suggest that vacancies will be difficult to fill using domestic labour supply due to a preference mismatch – i.e., a reluctance among local people to take jobs with low salary, low status and poor conditions. While retraining and raising wages and working standards are seen as difficult and costly measures, immigration is often viewed as an efficient way of addressing this and other shortages (such as regional mismatch and skills mismatch).

How real is the risk of EU migrants leaving Scotland?

Research done at the UK level [20] shows that 45% of EU citizens surveyed said they were planning to stay, while 8% were already making plans to leave and a large contingent, 35%, were considering leaving. Younger and better qualified people are more likely to be considering an exit: half of respondents with PhDs and 39% with postgraduate degrees are thinking about leaving, thus increasing the risk of a “brain drain”. The likelihood of leaving increases with people’s income: over half of those earning £50-100,000/year said they would leave or were thinking about it. Half of all respondents said that they felt less welcomed and valued in the UK since the Brexit vote. The same considerations were quoted by EU nationals surveyed across Europe, for whom a fear that Britons weren’t welcoming was the most cited reason for not moving to the UK. Other available research reports echo these findings [21] [22] .

Considering the peculiarities inherent to the Scottish situation, it is possible that there may be some differences relative to the rest of the UK. Survey evidence suggests that the level of anti-immigrant sentiment in Scotland is lower than in the rest of the UK, even though the majority of Scottish residents still favour a reduction in immigration: the 2013 British Social Attitudes Survey found that 69% of Scottish respondents believed that immigration should be reduced, compared to 78% in England and 86% in Wales. Several of our own interviewees quoted the fall in sterling as a major reason for the reduction in seasonal workers in particular. Brexit-related considerations thus affect the presence of both high-skilled and low-skilled workers.

Investment

There is evidence that the growth of foreign direct investment (FDI) inflows is associated with the benefits of EU membership [23] . This is not surprising, considering that the classic drivers for investments feature access to markets, access to supply chains and access to consumers. The current political and economic uncertainty and a changed future relationship with the EU create the risk that potential new investors will re-evaluate their investment projects [4] .

2016 - the latest period for which data are available - was another good year for Scotland's FDI, with 122 FDI projects secured [24] . This was Scotland's best yearly performance to date, allowing it to retain its title as the second most attractive UK region after London for the fifth year running (in terms of the number of projects).

EY's Scotland Attractiveness Survey [24] highlights that the priorities for global investors are as follows:

- infrastructure, cited by 31 per cent of investors;
- negotiating trade deals with new countries – with US, China and India identified as most important (32 per cent);
- skills (28 per cent);
- retaining existing EU trading arrangements (28 per cent);
- the approach to migration (22 per cent);
- and creating incentives for foreign investors (21 per cent).

Many of these considerations (in fact, all except for potential new trade deals with third countries) may be impacted by Brexit. As will be discussed more in detail in the next section, industry leaders expect that there will be a clear effect on EU trading arrangements and, most likely, on the UK's approach to migration; but the impact is also likely to be felt on the availability of skilled workers, and quite possibly also on the trade deals with new countries deciding to privilege multilateral deals to bilateral deals. Both these issues have the potential to impact on Scotland's attractiveness to foreign investors.

Commenting on the results of the survey, Paul Lewis, Managing Director of Scottish Development International, highlighted the clear connection between FDI and Scotland's growth sectors [24] :

> “ The survey indicates that the number of jobs created by FDI projects in Scotland was down 47% in 2016, but while the initial scale of projects is important, the number of new investors and how they help strengthen our growth sectors and improve their international competitiveness is arguably a better indicator of long-term growth and sustainability. (…) Scotland is now first in the UK for R&D investment, a particularly significant outcome given these high value investments. Much of this success is built from Scotland’s position in sectors that can support sustainable economic growth, such as technology, energy and business services; sectors where Scotland is internationally competitive and where there is global demand.”

In terms of EU countries investing in Scotland, French FDI has been a sustained success story: in 2016, investments from France account for 11.5% of all FDI, second only to US investments (35%). Irish investments have also increased markedly in recent times. The top performing EU investors in the UK in 2016 were based in France, Germany, Ireland, Denmark and the Netherlands.

The impact concerning the potential loss of funding provided by European Union agencies and programmes requires separate consideration. In the discussion that follows, its critical influence will be discussed in relation to a number of relevant (sub)sectors, including agriculture, life sciences research, creative and artistic projects, and renewable energy.

It should be noted that the possible impact of Brexit on investment (and divestment) is difficult to measure at this stage, with little data available.

Growth Sectors

The underpinning rationale of the Growth Sectors

The plan to support specific ‘Growth Sectors’ was set out in 2007, when the Scottish National Party Government's first economic strategy was published [1] . The stated intention was to “create a more successful country, with opportunities for all of Scotland to flourish” within the wider aim of sustainable economic growth, which is defined as “the one central purpose to which all else in Government is directed and contributes.” This document identified six sectors on which to prioritise public sector support:

- Food & Drink (including agriculture & fisheries);
- Sustainable Tourism;
- Life Sciences;
- Creative Industries (including digital);
- Energy (including renewables);
- and Financial & Business Services.

The sectors were chosen on the basis of three main considerations: Scotland's distinctive strength in areas of global demand, the sectors' importance to the Scottish economy, and on whether the government was able to make a real difference to their development [25] . Education and Health were mentioned alongside the six private sector-dominated industries in the 2007 and 2011 economic strategies, though they were not included in the Growth Sectors Statistics Databases.

Reaching the top quartile of OECD economies in terms of productivity was set out as an objective since 2007. Stephen Boyle, Head of Economics at the Royal Bank of Scotland writes that, while the SNP government’s 2007 strategy was more ambitious than the previous ones, the underpinning rationale remained in line with that of the previous administrations since the early 2000s [26] . Scotland’s Economic Strategy of 2015 reiterated that productivity growth is seen as the route to income growth, and, contrary to previous strategies, stated that reducing inequality would result in faster economic growth.

However, there has not been a thorough review of whether the various economic strategies, and the focus on growth sectors in particular, have yielded the desired results. In its 2016 report on Supporting Scotland’s Economic Growth, Audit Scotland [27] wrote:

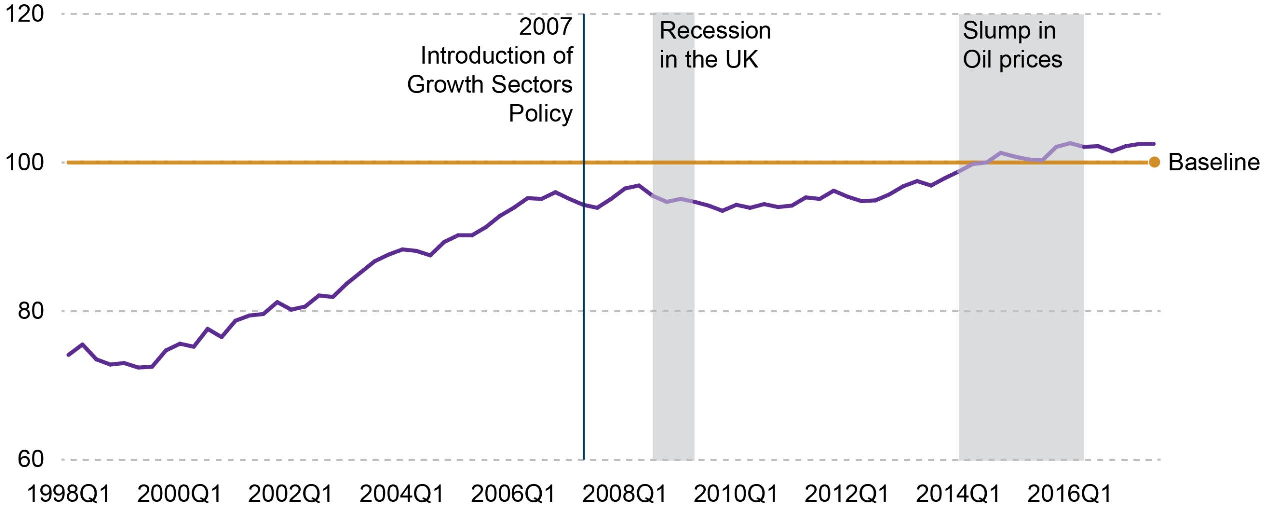
> “ The growth sectors have been prioritised for over nine years and the Scottish Government has not carried out an overall assessment of what has been achieved as a result of this support. Doing so will help the Scottish Government to assess whether they are still the most relevant sectors on which to focus public sector support.”

More recently, Nora Senior, Chair of the Enterprise and Skills Strategic Board told the Scottish Parliament’s Economic Committee [28] :

> " In the past, we have focused on certain sectors. However, some of the evidence on our investment in those sectors over the past 10 years shows that the economic impact has been marginal. "

Figure 3. Growth Sectors: Are they growing?

Quarterly Scottish GDP Index - Gross Value Added at constant prices, 1998Q1-2017Q3

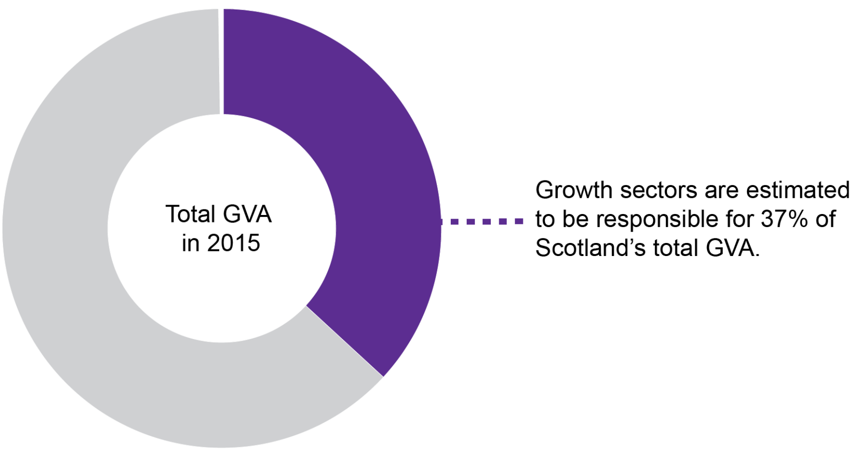


Source: Scottish Government (2018), Growth Sectors Statistics Database. Data for Financial and Business services n/a (SPICe estimate).

While it is true that, on the whole, the six Growth Sectors have experienced less growth since the policy was introduced (2007-2017) than over the course of the earlier decade, two highly adverse circumstances have hampered their growth (and that of the wider Scottish economy) in this latter period: the financial crisis and the oil price slump (Figure 3).

At 37% of the total Gross Value Added (GVA), The Growth Sectors constitute a considerable part of the Scottish economy as a whole (Figure 4).

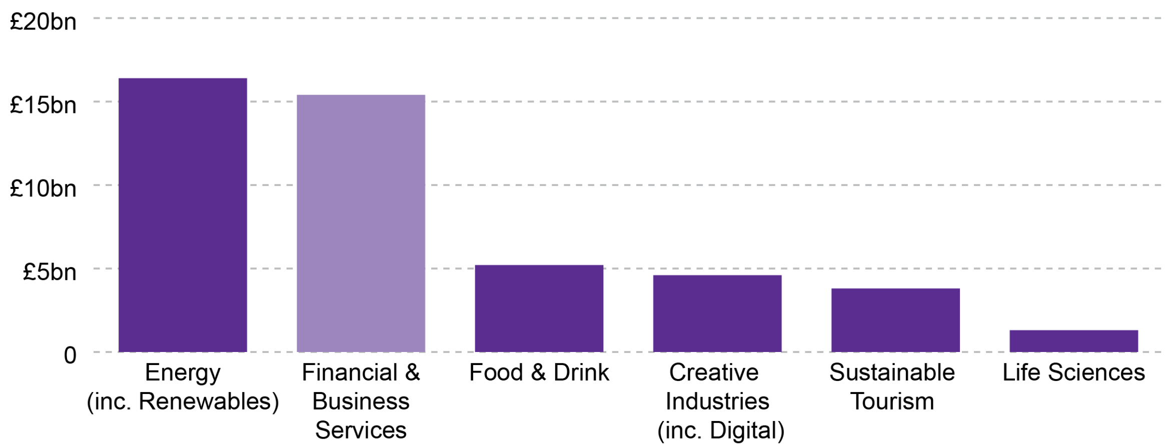
Figure 4. Growth Sectors as a proportion of the Scottish Economy (2015)



Sources: Scottish Government (2018), Growth Sectors Statistics Database; and ONS dataO'Connor, 2018[29]

In spite of the recent downturn, Energy remains the highest contributor to Scotland's GVA at £16.4 billion, followed by Financial and Business Services at £15.4 billion, Food & Drink at £5.2 billion, Creative Industries at £4.6 billion, Sustainable Tourism £3.7 billion and Life Sciences at £1.3 billion (Figure 5).

Figure 5. Growth Sectors: Approximate Gross Value Added (GVA) at Basic Prices (£million), 2015



Source: Scottish Government (2018), Growth Sectors Statistics Database. Data for Financial and Business services n/a (SPICe estimate).

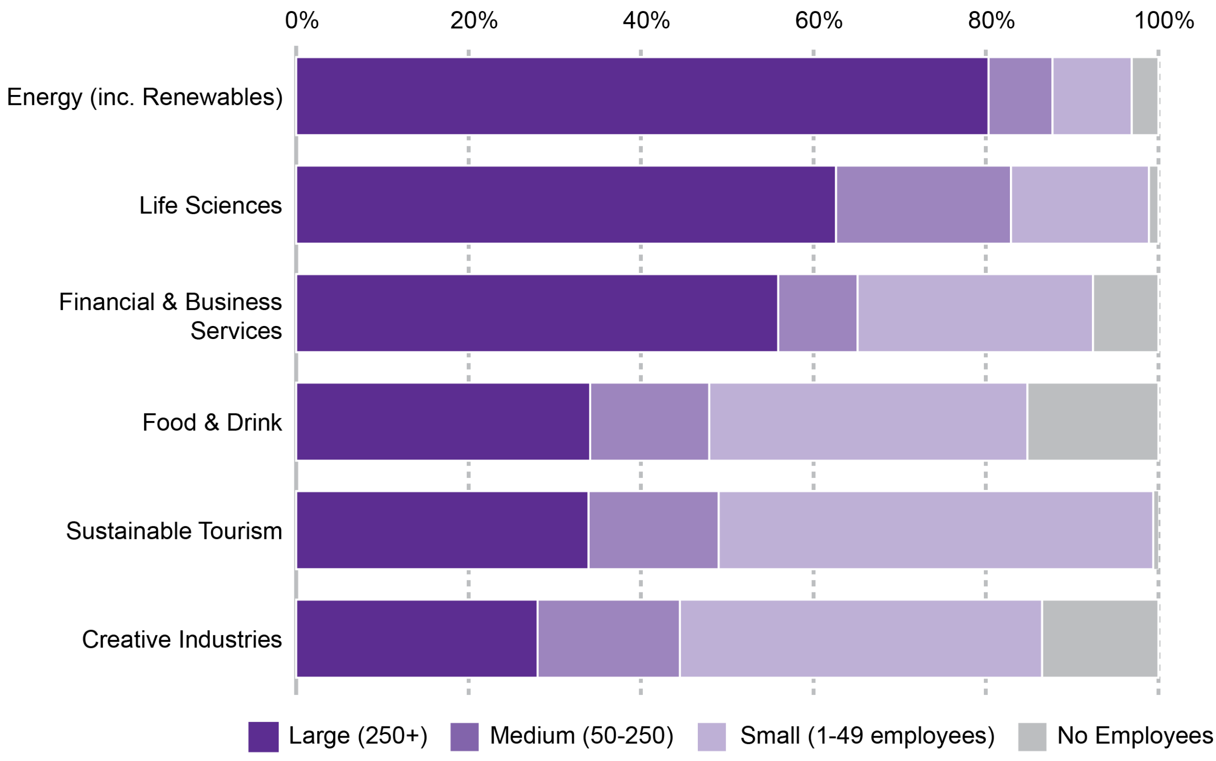
Most of the registered companies are small and medium enterprises (SMEs), which is especially true of Food & Drink, Sustainable Tourism, and Financial & Business Services (Figure 6).

However, if we consider the share of employment by size of enterprise (Figure 7) it emerges that the majority of workers in Energy and Life Sciences are employed by large enterprises. On the other end, Creative Industries, Sustainable Tourism and Food & Drink are particularly reliant on small and medium enterprises, which employ over 70% of workers active in each sector.

Figure 6. Growth Sectors: Number of registered enterprises by type, 2017

Sources: Scottish Government (2018), Growth Sectors Statistics Database

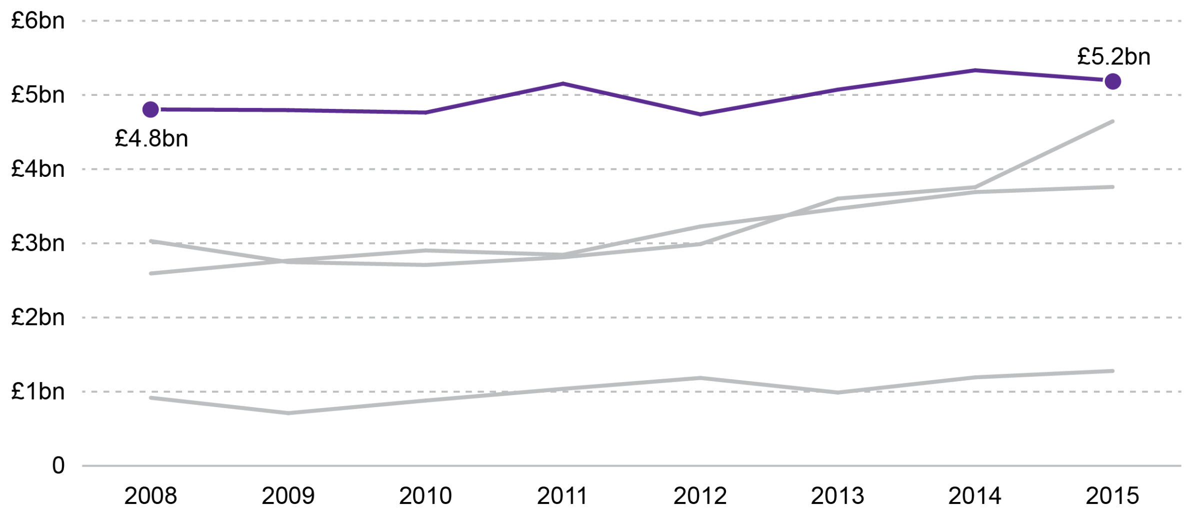
Figure 7. Growth Sectors: Employment by size of enterprise, 2017



Sources: Scottish Government (2018), Growth Sectors Statistics Database

Food and Drink

Figure 8. Food and Drink: Approximate GVA at Basic Prices (£million), 2008-2015



Source: Scottish Government (2018), Growth Sectors Statistics Database.

During the past ten years, the food and drink sector has been a resilient one, having held up better than other sectors during the recession period, and showing little sign of weakness at present [30] . In terms of GVA, the food and beverage manufacturing sector was the only manufacturing sub-sector to show a positive upward trend for the most part of the 1998-2016 period. Its GVA peaked in 2011, and the current levels are only 2 percentage points below this peak. [29] This performance is driven by the manufacture of beverages, especially whisky.

Challenges however exist. According to the latest Scottish Enterprise reports, ‘political uncertainty’ is the number one reason for the industry’s overall ‘neutral’ (rather than ‘positive’) level of confidence for the future of their business, [31] while prominent obstacles for innovation are represented by anticipated post-Brexit impact on supply chains and research and development [32] . This sector enjoys a particularly high level of international exports: tariffs and supply chain considerations are naturally a top concern.

Agriculture and Fisheries

Both Agriculture and Fisheries require specific considerations. According to the UK Government’s assessment, agriculture is the only sector that may stand to gain positive economic effects from Brexit in the long run [33] . Some experts, however, warn of a race to the bottom: according to Policy Network [34] , in the absence of economic subsidies these positive economic effects would only be possible if the standards of production and of animal welfare are lowered considerably. This is in direct contradiction to UK Environment Secretary Michael Gove’s statements, promising a ‘competition at the top’ that would maintain high standards [35] .

Research by Professor Michael Keating (University of Aberdeen) underlines [36] how agriculture is becoming a heated battleground between Westminster and the devolved nations in the context of Brexit. He explains [37] :

> “ Agriculture is one of those areas currently both devolved to Scotland, Wales and Northern Ireland, and subject to European policy-making. If nothing else were done, these competences would revert to the devolved territories, with little by way of overall UK policies. The EU Withdrawal Bill proposes that these, like other ‘retained EU competences’, should come back to Westminster, with some of them ‘released’ back to the nations. Currently, there is a stand-off on the matter, with the Scottish and Welsh Governments refusing to recommend legislative consent for the Withdrawal Bill and proposing their own Continuity bills to keep the powers to themselves. [...] It is likely, in any case, that funding will be cut and the UK Government has made it clear that it wishes to move away from the present pattern of subsidies in England. In that case, it might not wish to allow devolved governments to continue to support agriculture, as that would upset fair competition.”

The fishing industry represents a small percentage of Scotland’s total GDP, but its impact is significant in certain coastal areas [38] . Similarly to agriculture, positive effects were initially hoped for the fishing sector, but experts have expressed caution to not overstate them. So while the Scottish Fishermen’s Federation (SFF) [39] referred to Brexit as a ‘sea of opportunity’, hoping for a more reactive fishing management system and a more appropriate distribution of the shares of catching, the New Economic Foundation (NEF) [40] has warned that Brexit might create more losers than winners in the industry. According to NEF, those that currently hold significant fishing quotas (usually large boats, unlikely to employ UK staff or land their catches in UK coastal communities) might benefit from a post-Brexit settlement, but small vessels (that fish predominantly in inshore waters and don’t have access to quotas at present) will lose from most Brexit scenarios. Furthermore, a recent House of Lords report [41] has accepted that post-Brexit the UK will most likely have to share its fishing quotas with neighbouring countries, notably Norway, the Faroe Islands and Iceland. Finally, seafood processors rely very heavily on EU workforce, with 58% of workers coming from EEA countries [2] .

Trade

Food and beverages are Scotland’s number one international export (18.3% of total Scottish exports). International exports are on the rise, whereas there has been a slight downturn in the exports to the rest of the UK. In 2016, non-EU international exports accounted for £5.8bn (or 47% of the total sector exports), those to EU countries £2.2bn (or 17.7% of total) and exports to the UK £4.4bn (or 35.3% of total). A significant share of exports is thus directed at EU countries, making the European Union an important market for this industry and raising concerns about the reintroduction of trade tariffs.

Analysis by the Fraser of Allander Institute [17] shows that the manufacturing of ‘food, beverages and tobacco’ is the subsector whose jobs are most supported by export demand (over 72,000 jobs of this industry depend on exports, of which 12,800 directly linked with EU exports’ demand). Possible drawbacks suffered by the sector could thus have a direct impact on a large number of employees and households.

The Protected Geographical Indicator (PGI) scheme currently certifies some very important Scottish products, such as salmon, beef, lamb and - crucially - whisky, Scotland’s premier export. This legislation certifies the authenticity of these products and protects their trademark against counterfeiting. David Thomson of FDF Scotland [42] explained that once the UK leaves the EU, it will probably have to come up with its own geographical indication scheme and negotiate an equivalent with Europe and with the rest of the world as well. Dr Gracia Marin-Duran, Senior Lecturer in International Economic Law at the University College London, stated [43] that she does not expect this to be an issue in the bilateral negotiations between the UK and the EU, as the EU is very keen to protect their own products and will therefore likely accept the same from the UK. However, that this challenge may arise when negotiating agreements with third countries.

Rules of origin are another potentially disruptive issue for the industry. A report [44] by the Food and Drink Federation and the National Association of British and Irish Flour Millers warns of a 'hidden hard Brexit', claiming that that the international nature of food and drink manufacturing could hit British producers who have built supply chains within the European Union. Rules of origin are a series of complex requirements that determine the economic provenance of a product. The UK has expressed the intention of negotiating an ambitious trade deal with the EU which may reduce or remove tariffs, but to benefit from any preferential access, businesses from both sides need to comply with the rules of origin. This could be a problem, for instance, for Scotch whisky, which is currently bottled in some EU countries outside of the UK. The production of whisky might therefore require some potentially costly changes in order to maintain brand identity.

Workers

The sector relies quite heavily on migrant workers. The 2015 Annual Population Survey (APS) shows that, of the 115,000 workers employed in the sectors, 11% are EU nationals. However, this figure is likely to be even higher because the APS does not fully capture the level of seasonal workers. The National Farmers' Union (NFU) Scotland [45] estimates that there are between 5,000 and 15,000 seasonal workers employed within Scottish agriculture at any one time, with a significant number employed for more than six months at a time (and an ongoing project by Scotland’s Rural College (SRUC) [46] is expected to provide a more precise estimate soon).

EU nationals make up 9.4% of those employed in Food and Beverage service activities and 25% of the workers in the Manufacture of Food products, with a particularly heavy presence in sub-sectors such as fruit picking and fish processing, according to APS data (2015). Boswell et al. [19] argue that, if migration from the EU becomes subject to the same regulations currently applied to non-EU nationals, this will create severe shortages in lower skilled and lower paid jobs in this sector.

Within the farming industry, prospects and opinions are not clear cut. The National Farmers’ Union Scotland [47] is positive about the overall challenges and opportunities presented by Brexit:

> “ The negotiations to leave the European Union will undo over 40 years of agricultural policy – presenting significant challenges for everybody living in rural Scotland and working in Scottish agriculture. But the opportunities are also immense. Taking new market opportunities along with a new domestic agricultural policy can move us to a situation where market returns exceed the costs of production and Scottish farmers and crofters are less reliant on direct support. Our target is ambitious, but firmly within our capabilities.”

However, labour shortages are starting to bite. A survey [48] by the National Farmers' Union (NFU) has found that there has been a drop of 17% in the number of seasonal migrant workers over the period January-May 2017. Only 14 of the 13,400 workers who have been recruited over the same period were British, while three quarters came from Romania and Bulgaria and almost all the rest from other Eastern European countries. Media reports have documented the issues that the lack of seasonal workers is starting to cause, including the reduction of planned production for the year ahead and crops left to rot in the fields [49] . John Hardman, director at agricultural recruitment company Hops Labour Solutions, said [50] that “The grim reality is that the perception from overseas is we are xenophobic, we’re racist, and the pound has plummeted too”. Hardman estimates that the shortage of workers has reached 20% this year. A discussed option to mitigate these effects – backed by the NFU [51] – is the reintroduction of the Seasonal Agricultural Workers’ Scheme (SAWS), that was closed in 2013 and that granted permits for workers from outside the EU to come to the UK to assist with harvests.

The fish processing sector is also expected to experience considerable problems because of its reliance on EU workforce. A report from the Marine Analytical Unit of the Scottish Government [52] highlights that the seafood processing sector is very reliant on non-UK workers, with around 58% of overall employees coming from the European Economic Area. Further breakdown shows that EEA nationals make up 81% of temporary agency staff. A particularly high dependency was found in the mixed/whitefish processing, the majority of which is located in the Grampian region, with 64% of permanent and 100% of agency staff coming from EEA countries. This was followed by salmon processing, with 50% of permanent and 63% of agency staff coming from EEA countries. As for the countries of origin, 83% of interviewed businesses said that they are employing Polish nationals, followed by Latvian (61%) and Lithuanian (56%). Surveyed businesses have highlighted that recruiting UK nationals has become more challenging over the years, perhaps due to the historically low levels of unemployment, which has increased the dependency on a non-UK workforce. Businesses have voiced concerns about finding suitable and reliable labour and Brexit was cited as a significant threat to some business’ operational viability.

Investment

The Food & Drink Federation Scotland stated [42] that they are not aware of any considerable disinvestment since the Brexit vote, but that, at the same time, there were also no significant new inward investment flows. They report that individual businesses, and especially SMEs, are feeling the negative effects of the depreciation in sterling in this respect, as the weaker pound made it much more expensive to acquire equipment. Uncertainty is another reason clouding pro-active investment into business operations. But some specific sub-sectors, such as the production of gluten-free food and drinks, are going strong, and whisky and the beer industry seem to be proceeding virtually untouched.

Box: FDF Scotland

David Thomson, CEO, Food and Drink Federation Scotland

The sector has been growing significantly over the past ten years: we managed to hit all targets we have set for ourselves for 2007-2017 in spite of the economic recession. The target has now been renewed to double the industry value, from the currently £14bn turnover to a £30bn turnover by 2030. It’s a stretching target, but we are confident in the resilience of the industry. This overall positive outlook has been spurred by a growth in exports: whisky is certainly a towering product and seafood and salmon are extremely strong, but there has been general growth across the board – especially in terms of food.

However, Brexit has blown a lot of people’s expectations. There are so many uncertainties at the moment. Some companies are making plans, some are changing their business model, but the vast majority of the companies are just trying to do their daily work. If you are a big company, you may have the luxury to have some of your workers look at the impacts of Brexit, but most enterprises don’t. So far, I think I've seen about 10% of companies thinking seriously about Brexit. And the rest - they all know that they will need to do something, but it all depends on what rules will apply going forward.

We know that 34% of the people working in the sector are non-UK EU citizens across the UK. In Scotland, it depends on the sub-sector and on the geographic location, but it is probably at similar levels. The North East will surely have great challenges – with their seafood processors, their soft fruit industry – but it is not just that region. One of our members, based in the south of Glasgow, said that about 80-90% of their staff members are EU workers. And that's not untypical: some businesses are almost wholly reliant on EU staff and what they do. Up in Moray, for example, there are two large food companies employing hundreds of people in an area that is very scarcely populated. And it’s not only about low-level jobs: EU workers, with their specific skill-sets, are important for the jobs of the whole supply chain, and are incredibly valued here. While the industry would want continued access to labour, I think that everyone understands that there is a need for more people from the UK to work in this sector. But every industry is saying that, so we are all competing for the same pool of talent.

The food industry at the moment is optimised towards EU membership in every respect. All the structures are there to take advantage of EU membership. The burning issue is clarity. It’s almost too late: businesses have already made investments for the next financial year, based on… no knowledge. We haven’t seen the effect of Brexit by a long way in – we haven’t seen anything. On the other hand, most of our members put their tin hat on and do what they're good at, which is - making food.

Box: The red meat industry

Iain Macdonald, Quality Meat Scotland

Scotland’s red meat industry benefits from strong brands. Scotch Beef and Scotch Lamb are PGI protected products (Protected Geographical Indication) and, along with Specially Selected Pork, must be sourced from animals which have been born, reared and slaughtered in Scotland and achieve certain quality specifications. It is expected that our PGI status for Scotch Beef and Scotch Lamb will be maintained post-Brexit, assuming that the protected food name scheme, or something similar, is transposed into domestic law.

Only a quarter of the red meat produced in Scottish abattoirs is sold within Scotland. Over half is sold to the rest of the UK and, in terms of international exports, around 95% goes to the EU. According to our calculations, tariffs on exports to the EU would make our red meat very expensive – in some cases it could even double the price faced by EU-based importers compared to now. While it may still be possible to compete at the high end, trade in the more price sensitive lower value meat products would be extremely difficult. Indeed, to stay competitive, pre-tariff export prices would have to drop considerably. Additionally, non-tariff barriers such as food safety checks at the EU border would result in compliance costs and lengthen delivery times.

Changing import conditions could also pose a threat to the sector. A unilateral lowering or elimination of import tariffs could lead to a considerable increase in the volume of lower priced beef and pigmeat arriving from overseas. Most of the UK’s sheepmeat imports already come from outside the EU at zero tariff, but within a quota. WTO rules effectively maintain these conditions while future bilateral trade deals could increase access.

Red meat processors are particularly concerned about the continuing availability of a workforce with the appropriate skillset. International workers (predominantly from EU countries) constitute over half of the ‘unskilled’ workforce, but also 43% of the ‘skilled’ workforce and 16% of management. Furthermore, almost all of the vets employed in the red meat processing sector (98%) come from outside Scotland.

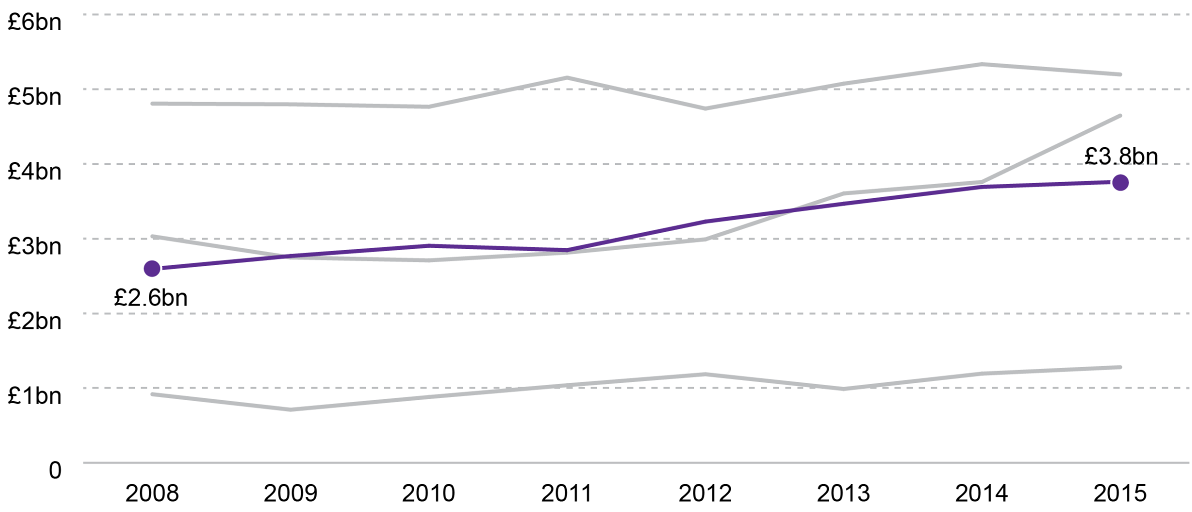
In terms of investments, weighted by the volume of meat, about 30% of red meat processing is owned or part-owned by foreign firms with links to Ireland and Denmark. They seem to have a long-term commitment to Scotland; no divestment is currently happening. However, inward investments could be affected by labour supply constraints and trade complications, given that the sector operates on very thin margins.

Without subsidies, average farm business income in Scotland would be negative. The UK Government has provided guarantees that agricultural support will be maintained up until at least the next UK General Election. However, it has signalled an intention to change the structure of agricultural support, leading to some uncertainty, particularly in Scotland's hill farming areas. If changes in support were to lead to reduced Scottish livestock production, this would be of great concern to the processing sector and act as a constraint to Scotland's Ambition 2030 vision for food and drink production growth.

Currently there is some positivity in the farming community, as farm gate prices have been supported by the exchange rate devaluation. However, there are concerns about the future.

Sustainable Tourism

Figure 9. Tourism: Approximate GVA at Basic Prices (£million), 2008-2015



Source: Scottish Government (2018), Growth Sectors Statistics Database.

The tourism sector is a very diverse industry, with a range of sub-sectors such as accommodation providers (hotels, camping sites and other), restaurants, bars, travel agents, museums and other recreational and cultural activities. Hospitality and cultural activities are the main cornerstones of the industry, but a range of sub-sectors such as retail and transport also benefit greatly from tourism. To capture this diverse range of activities, the Scottish Government has included a number of tourism-related sub-sectors in its definition of "sustainable tourism".

Overall, the tourism sector has handled the recent economic downturn with flexibility [30] , but a number of challenges remain for the future. Similar to the food and drink sector, 'political uncertainty' has been quoted as the main reason for the tourism industry's overall 'neutral' (rather than 'positive') level of confidence for the future, according to Scottish Enterprise [31] . Summarising the overriding theme that emerged from a research effort by Scottish Tourism Alliance (STA), its CEO Marc Crothall stated [53] that:

> " Despite confidence which many businesses have attributed to the buoyant season we've had and the favourable exchange rates for tourists, sectors within Scotland's tourism industry have concerns about a broad range of issues. There is not one particular cause for concern within tourism businesses, rather it is the 'perfect storm' of factors, […] which is leading to rising business costs and falling profitability. The research also shows significant variation in responses due to the diversity of the tourism industry and the business types. This highlights the important fact that the tourism industry is not an homogeneous sector and solutions to support growth may need to vary according to business type."

The STA report surveyed 311 businesses, including accommodation providers, pubs and restaurants, tourist attractions, tour operators and retailers. It found that 63% of respondents expressed confidence in future performance (until 2020). Hoteliers and restaurateurs were markedly less confident than the average figure, at 44% and 41% respectively. Uncertainties surrounding Brexit were among the most quoted concerns, specifically issues about staffing, regulations, and exchange rates. The research highlighted the diversity that exists within the sector: while self-catering facilities and B&Bs are less concerned about possible Brexit-related changes, hotels, restaurants and attractions express much higher concerns. Visit Scotland explained [54] that self-catering and B&Bs are generally more reliant on domestic tourism and rarely need to employ foreign staff, unlike the larger hospitality enterprises.

While all Scottish regions benefit from tourism, the local authorities that are most dependent on this sector are Argyll and Bute, Perth and Kinross, Highland, South Ayrshire and East Lothian – where it represents a significant part of the economy. The overall employment in the sector is concentrated in the City of Edinburgh (15.9%), in the City of Glasgow (14%), in Highland (7.7%) and in Aberdeen City (4.8%).

Trade

For tourism, the export figures indicate the total spend by international visitors. The 2016 export statistics show a slight downturn in the EU exports – from £165m in 2015 to £160m a year later. This is in line with the downturn in international exports on a whole (from £360m to £330m) and to the rest of the UK (£620m to £570m). It should be noted that there is disagreement in terms of whether these figures reflect the sector accurately: Visit Scotland argues that these estimates downplay the real revenue tourists bring into Scotland, which should instead be modelled on the International Passenger's Survey (IPS) [54] . The difference is stark: for 2016, the IPS figure for international spend in Scotland stood at £1850 million [55] , against the £330 million of the Scottish Government's Growth Sectors database.

The barriers to trade, in this sense, coincide with any adverse effects for potential visitors. At the moment, there are no foreseen visa changes for tourists, though the need to renegotiate the Open Skies Agreement could present complications for airline traffic. Finally, the way visitors perceive Britain is important for the industry, which needs to be seen as welcoming. Research by Visit Britain after the Brexit Vote showed that the sentiment towards Britain as a place to visit was down among EU nationals, but that this did not apply for Scotland. Visit Scotland stated [54] that they have seen an impact on visitors from the more long-term members of the EU ('EU15') in the months that followed the referendum (though this might have also been impacted by considerations other than Brexit), but that this has now bounced back, helped by the favourable exchange rates for visitors coming from the European Union.

Workers

Tourism is a sector that could be very heavily hit by a migration shortage occurring after Brexit. According to Labour Force Survey data, 13.8% of Scotland's hospitality workforce are non-UK EU nationals, though this number could be as high as 25% according to a KPMG survey [56] [i]. This is, in any case, a much bigger reliance than average, if set against 5.3% of EU workers employed in the Scottish economy in total. The Recruitment and Employment Confederation (REC) [58] found that the hospitality sector across the UK is the

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i The UK House of Commons [57] has also noted that analysis for the tourism sector was made difficult by an uncertainty in numbers: figures given to them for the number of employees in tourism at UK level ranged from 3m to 4.5m.

second most likely to experience a shortage of candidates for temporary jobs (after the construction sector), and the third likeliest to report a shortage for permanent roles after engineering and the health care sector after Brexit. Furthermore, skills such as the ability to speak foreign languages are likely to be in high demand in this sector, and therefore a gap that will have to be filled.

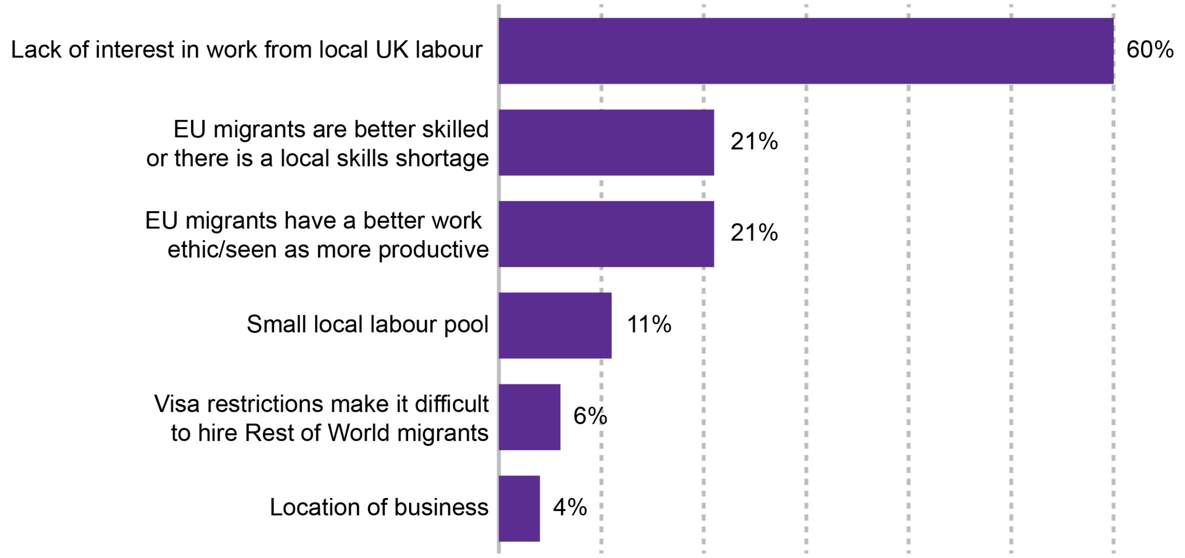
Scotland's hospitality sector will have to address some specific challenges. Especially outside the large urban centres, the hospitality industry in Scotland relies very heavily on seasonal workers. Before the ‘Big Bang’ EU Enlargement of 2004, this sector relied heavily on backpackers (especially those coming from Canada, Australia, South Africa and such). The opening of the new labour market, to which the UK – unlike other EU countries – lifted all immigration restrictions immediately, gave way to new opportunities. Since then, the presence of EU workers has steadily increased, with as many as 86,000 Poles [13] in Scotland recorded in the 2015 APS. 66% of EU nationals living in Scotland today hail from countries that have joined the EU in 2004 or later. Anecdotal evidence suggests [59] that since the EU referendum, the influx of workers from EU countries has been in steep decline: recruiters in the hospitality industry quote a fall in applications from prospective EU workers of ‘easily 75 percent’ [59] in comparison to pre-EU referendum levels.

According to Paul Brown [53] , an employment and immigration lawyer at Anderson Strathern, reasons for such a drop are to be found primarily in the lack of a strong economic motive due to the fall in sterling, which “had an adverse effect of the number of foreign workers, particularly Eastern Europeans, who are willing to come to this country to work. We have come to rely on these workers, who have helped to fuel the growth in the sector. The drop in the value of the pound because of the Brexit vote, even before we have actually left the EU, has resulted in many of those workers choosing not to come to the UK as it is no longer as lucrative for them to do so”.

Businesses say [59] that the retraining of local workforce, as well as the attempts to work with schools to engage with locals, have not delivered very successful results so far – which is corroborated by Warwick University findings, that indicated that UK-born workers are more likely to have higher expectations in terms of wages and working conditions than foreign nationals working in the UK, despite the fact that the former group also tends to have lower skills levels [60] .

There is thus little doubt that the hospitality sector will have distinct recruitment hurdles to overcome. According to the British Hospitality Association report compiled by KPMG [56] there is a large disparity in employment of EU nationals across the hospitality industry, with 43% of lower level occupations filled by EU nationals. As a result of labour turnover and of the overall growth of employment, the hospitality sector is in constant need of new recruits, and the BHA argues that restricted access to EU migrant workers will have a cumulative impact on the UK hospitality sector, generating a recruitment gap which is forecast to grow over time. The BHA estimates that the recruitment gap in the sector could reach 500,000 across the UK within five years (by 2024), and one million over ten years (by 2029), corresponding to 14% and 27% of total projected hospitality employment in the respective years. The report also highlights reasons why it may be so difficult to recruit UK workers for these posts (Figure 10), a major one being the lack of interest in work from local UK labour, which may be related to the current low levels of unemployment. Furthermore, a high proportion of the unemployed in Britain (44%) are long-term unemployed people, who may require more extensive and costly retraining.

Figure 10. Reasons for hiring non-UK EU workers – Hospitality industry



Source: KPMG / British Hospitality Association (2017). Data reproduced with permission [ii] .

Investment

The Scottish Tourism Alliance noted that businesses in the tourism sector are currently only ‘investing to maintain standards’, rather than doing so for business growth: “this [current] investment is about replacing worn fixtures and fittings and refreshing décor rather than improving quality or developing new products through capital investment”. [53]

ii Note: KPMG states that the content should not be relied upon by any person other than the BHA, for any purpose. KPMG does not provide any assurance as to the appropriateness or accuracy of sources of information relied upon and does not accept any responsibility for the underlying data used in the report.

Box: Tourism

Visit Scotland

The Scottish tourism industry is a sector that is used to responding to challenges, and it has come through difficult times over the years.

For the industry Brexit brings a number of concerns, chief among them is the future of the free movement of people – as visitors, but particularly as workers.

At the moment, it is anticipated that there won't be excessive barriers for visitors travelling from the EU to the UK. However, restrictions on EU nationals coming to work in the sector, and the labour shortage this would create, is a very real concern for businesses and industry groups.

When the economy and Sterling were strong, EU nationals were keen to come and work in Scotland, and the tourism industry has benefited from access to this pool of talent over the years. Now, with Sterling weaker and Brexit edging closer, there is anecdotal evidence that some businesses are beginning to experience problems in filling vacancies, particularly in hospitality.

Businesses in rural areas are likely to be most greatly effected, but employers in Scotland's cities may also be experiencing problems in finding the skilled workers they need.

Given the UK's current migration policy it is not clear how the industry will be able to fill this loss of vital labour post-Brexit.

EU nationals also bring with them essential skills which are of high value to tourism businesses, such as languages. This is particularly important for an industry welcoming visitors from across Europe and the world.

Whilst US visitors have comprised Scotland's biggest international market in recent years - with 16% of market share trips - visitors from Europe are major contributors to Scotland's visitor economy. For example 13% of visitors come from Germany, 6% from France and 4% from Poland.

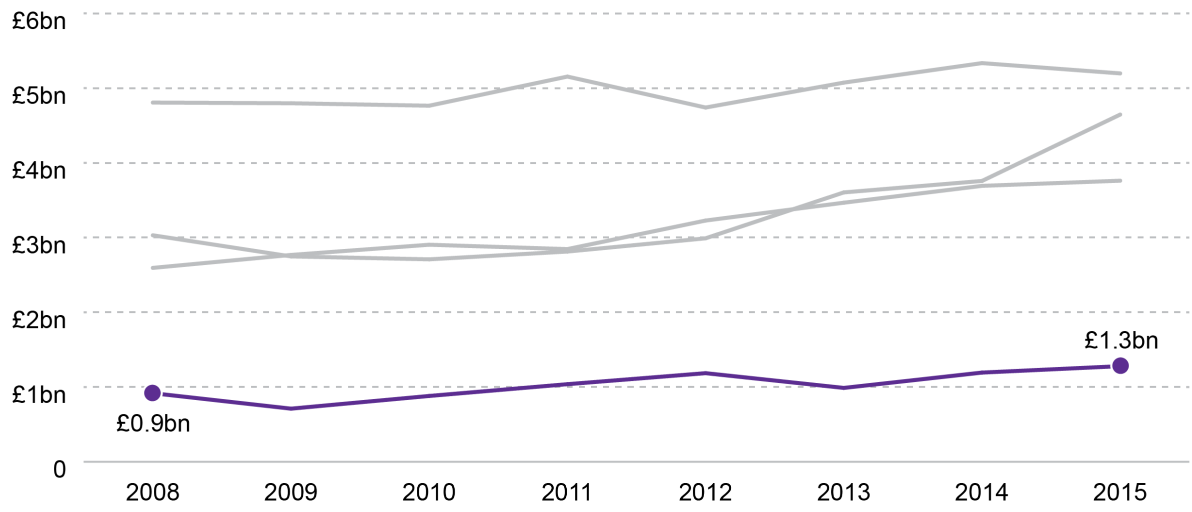
The Polish market is interesting as a significant share of this consists of VFR trips –visiting friends and relatives. In the future, if there are reduced numbers of Polish people working in Scotland, it is likely this visitor market will experience an associated decline.

Other areas of concern include the US-EU Open Skies agreement and how the UK will be covered by this after Brexit.

Tourism in Scotland is continuing to perform well, but with the continuing lack of clarity around Brexit businesses are becoming increasingly concerned.

Life Sciences

Figure 10. Life Sciences: Approximate GVA at Basic Prices (£million), 2008-2015



Source: Scottish Government (2018), Growth Sectors Statistics Database.

The Department for Exiting the European Union (DExEU) report [61] states that the UK has one of the strongest and most productive Life Sciences industries in the world, generating approximately £20.7bn turnover (2015) per annum. There are different interpretations about what the sector includes, which lead to different estimates about the size of the sector. The report mentions that at UK level, employment estimates range from 90,000 jobs (ONS Production and Services Turnover Survey, 2016) to 233,400 (UK Office for Life Sciences estimate on the basis of ONS data, 2016).

In Scotland, according to the latest Scottish Government data, the Life Sciences sector employs 16,000 people across 540 organisations. The proportion of workers employed in abroad-owned enterprises is particularly high, constituting over 57% of employees in the sector. In 2016, turnover for the industry was £2.15bn with £1.28bn GVA.

Industry associations, however, put the contribution of the sector at higher levels. Life Sciences Scotland [62] states that the sector employs 37,000 people across some 700 organisations, while companies in the sector are said to contribute more than £4.2bn turnover and about £2bn gross value added to the Scottish economy. The discrepancy is due to the different ways the sector is defined, which in the latter case includes medical technology, animal health, aquaculture and aspects of industrial biotech, on top of pharmaceuticals and related services.

According to the Scottish Enterprise economic trends survey [63] , companies in the sector are among the least optimistic about Scotland's economic outlook (only 33% expressed a positive view), however very few (3%) have expressed an outright negative view. Political uncertainty is the top reason clouding the economic outlook, quoted by 56% of respondents.

Trade

Most of Scottish life sciences exports are directed to destinations outside of the UK: in 2016, exports to the EU accounted for £495m and non-EU international exports stood at over £600m, in contrast to only £210m to the rest of the UK.

Barriers to trade and more complex supply chain operations, that could cause delays and other complications, are thus naturally some of the biggest concerns for the industry. Life Sciences Scotland's [62] position is that the preferred outcome would be a continued tariff-free regime, with minimal customs procedures to allow for a quick and efficient distribution of products. Failing that, the minimum requirement is a continued mutual recognition for testing and release between UK and EU firms, to ensure security of supply. The possibility of a UK-US trade deal agreement is viewed favourably.

Glaxo Smith Kline (GSK), which has operations in Irvine (Ayrshire) and Montrose (Angus), have expressed serious concern [64] about the impact of new regulatory processes after Brexit. They have estimated that about 1,700 of its products are going to be affected by Brexit, and that they will have to invest between £60 million and £70 million to ensure a smooth transition – re-diverting funds which were supposed to be used for cancer research. Phil Thompson, President of Global Affairs at GSK, told the UK Commons Health Committee: “Even if we have a smooth and orderly Brexit process, and we work through with a new [free trade agreement] or a new arrangement, there are going to be costs of that magnitude anyway, but they will probably be more phased”.

In terms of non-tariff barriers, the sector is heavily concerned about issues arising due to a possible change in its regulatory framework. The widespread agreement in the industry is that EU rules – as set by the EU's medical evaluating body, the European Medicines Agency (EMA) – should keep applying and that continued cooperation with the EMA is necessary. Life Sciences Scotland Chair Dave Tudor stated: “We would strongly resist creating a new and untried Scottish life sciences regulator when there is a long established global regulatory system” [62] .

Workers

Life Sciences companies in Scotland voiced their desire to have experts and life sciences managers from the EU and overseas “able to enter the UK at least as easily as at present”, expressing concerns over any restrictions on highly-skilled talent entering the country [62] .

Data from the recruiter DHR International [65] show that the proportion of applicants from outside the UK for senior roles at pharmaceutical firms has already fallen sharply, with a decrease from around 40% to 15% over the year and a half since the referendum. Large British drug firms echoed these findings: AstraZeneca stated that “continuing uncertainty around Brexit is impacting recruitment for skilled roles”, and Glaxo Smith Kline said that it was “critical” that any new immigration system would enable drug firms to “attract the best, diverse talent in both the UK and EU” [65] . Theo de Roij, partner at DHR International, said that the recruitment problems were intensified because it was difficult for UK pharmaceutical firms to move their complex operations abroad. One area from which recruiters for UK roles are looking to ‘poach’ senior staff, according to DHR [66] , is the

European Medicines Agency (EMA) itself, which is due to relocate to Amsterdam from London – but it is unclear whether a share of this talent will be able to reach Scotland.

Investment

The issue of access to European funding being possibly cut is paramount to the industry. In the absence of it, Life Sciences Scotland expressed concerns [62] regarding securing adequate funding levels and warned of possible knock-on effects on Research and Development relationships and collaborations.

Box: Scottish Life and Chemical Sciences

Scottish Life and Chemical Sciences recognised that Brexit is a 'major issue' for the sector. They stressed that the industry is formed of several sub-sectors - including medtech, Pharma services, agritech, and animal - with different specific challenges, but identified four key areas of concern:

* **Scientific research**: access to European funding is critically important to maintain Scotland's position as a centre for world class life sciences research. Without this research capability, it will be harder to attract research collaborations with industry and for much of the pre-competitive research which forms the basis of the life sciences sector

* **Access to talent**: Life Sciences is a global and multi-disciplinary sector. Key to growing the sector is the ability to attract and retain talented individuals. Any barriers to residency or entering the country will reduce this ability and constrain growth.

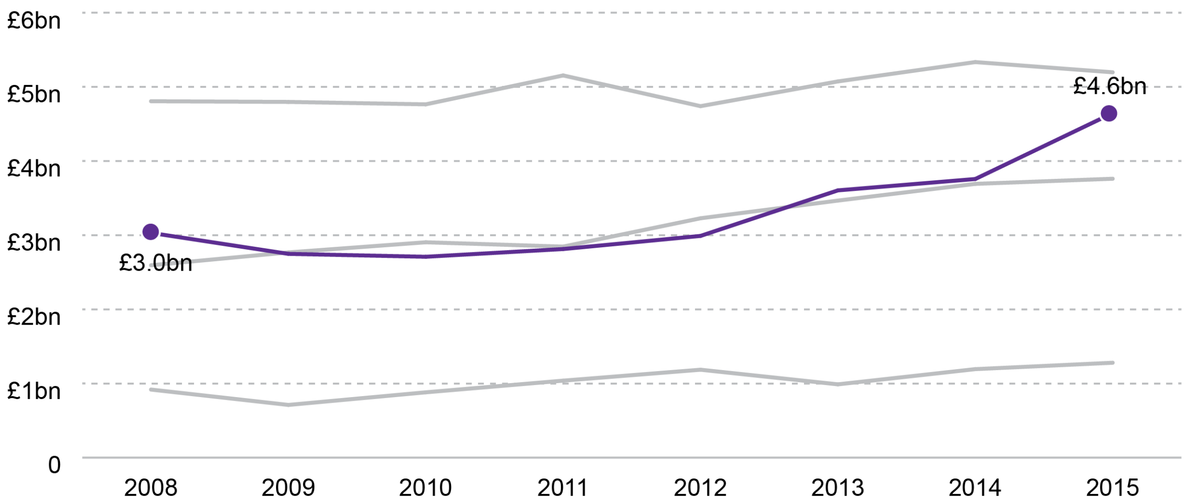
* **Regulatory framework**: any life sciences business selling products or services into Europe must be regulated by the European Medicines Agency. Scottish companies offer a location for accessing the EU market to US and Far East countries. By leaving Europe, Scotland loses this key competitive advantage.

* **Trade**: any barriers to trade, the introduction of tariffs and the inevitable time delays will have a massive impact on the production and distribution and therefore costs of life sciences products and services.

Avril Gold, Scottish Life and Chemical Sciences Industry Leadership Groups

Creative Industries

Figure 11. Creative Industries: Approximate GVA at Basic Prices (£million), 2008-2015



Source: Scottish Government (2018), Growth Sectors Statistics Database.

The Scottish creative industry is a lively, high-growth sector with international recognition. It includes film, theatre, music, dance, television, a very dynamic video games sector, and the world-famous Edinburgh Festivals, which collectively attract over 4m visitors every year [67] . The turnover for Scottish creative industries has been consistently growing since 2010, and stands at just over £7bn for the latest recorded period (2015), with a GVA at £4.6bn.

Creative and digital businesses are thus part of a highly internationalised industry. This sector relies on cooperation with other countries, is propped up by the influx of tourists, and benefits enormously from EU funding. Potential barriers in terms of tariffs, differing regulations post-exit, and the loss of the possibility to take part in collaborative EU-funded projects represent big concerns. Industry voices have furthermore highlighted that the perception of a more ‘parochial mindset’ as a result of Brexit is also seen as a significant worry. On the other hand, international collaborations and opportunities do not stop within Europe’s EU border, going well beyond the EU – so, according to some assessments, the opening and strengthening of potential new markets might give rise to some opportunities.

Trade

According to the latest figures from the Scottish Government (2016), Creative Industries export £325m worth of products to the EU, £685m to non-EU international markets, and £1.9bn to the rest of the UK. The recently released statistics by Eurostat [68] confirm that the EU is a strong market for the UK’s cultural goods, although in recent times there has been a higher growth among non-EU international partners. Creative Scotland has commented that Europe remains the UK’s overall largest trade opportunity, as “while the UK’s total exports of creative goods to China were $233 million dollars in 2012, this is just 3% of what we [the UK] export to the rest of Europe” [69] .

The regulatory impact is another issue of high concern: Creative Scotland highlights [69] that the EU has a strong protection for Intellectual Property, a shared business culture, and it is cheaper and easier to get to than other destinations. The creative sector is seen to benefit from regulations relating to copyright, intellectual property, artist re-sale rights, VAT exemption and employment legislation. However, their report points out that strong international relationships also exist outside of the EU, and that the sector is therefore potentially well placed to take advantage of changes in the UK's trading agreements across music, performing and visual arts.

Workers

Barriers related to restrictions of the ease of movement represent significant worries: availability of talent is a problem both in terms of seasonal and of permanent workers.

Festivals Edinburgh [70] expressed the concern that many businesses in the creative industries would not have the capacity to manage a burdensome bureaucratic system (making it more difficult to obtain visas would thus be detrimental to festival volunteers and temporary employees) and stated that a more restrictive system of allowing EU performers into the UK could diminish the diversity of Edinburgh's festivals. Creative Industries Federation found [71] that 75% of their members employ non-UK EU nationals and that most of them say that these jobs cannot be filled by British workers.

A report from the Digital Culture, Media and Sport Committee of the UK House of Commons also stressed the importance of sufficient access to talent for the UK's creative industry to continue as a world leader, expressing fears of the emergence of a skills gap. While it is hoped that Brexit will place a greater urgency on developing the skills of the domestic workforce, the report highlights that “this alone will not address the challenges that businesses face today, particularly in an increasingly globalised and international sector”.

An industry-specific concern relates to the ability of organisations to tour internationally. A survey conducted by the Arts Council England [72] has found that 71% of respondents from the industry think that Brexit would have a negative impact on their future touring work within the EU. The key issues highlighted were: funding, ease of movement, legal and regulatory framework, and trade with the EU and other countries. A follow-up survey conducted by ICM [73]] of 992 arts and culture organisations across the UK found that 64% of organisations currently work inside the European Union, with ‘touring exhibitions’ and ‘sending UK artists abroad’ being the most popular types of activity, with 40% of respondents needing to regularly move equipment between the UK and the EU. Nearly half believe it is important to their organisation that both EU and UK citizens can work at short notice in either jurisdiction for short periods. In terms of working across borders, the vast majority (89%) of respondents said that the most important reason was one of artistic development.

Employment issues are further complicated by monetary considerations. The Edinburgh Festival is among those that have reported an immediate impact of the fall in the value of the pound: “Given lead times, the Edinburgh International Festival traditionally negotiates contracts with acts in pounds sterling in order to protect against fluctuation in international markets. Since the referendum, this has become largely impracticable, as artists are insisting on payment in their own currency. This leaves both budgets and profits for (the festival) more vulnerable to the changing performance of currencies.” [74]

Investment

The creative industry in Scotland has benefited significantly from EU funding, as highlighted by recent research carried out by Euclid for Creative Scotland. The study identified at least £23m of EU funding invested across 380 arts, media and creative industries projects in Scotland over the last ten years. In the last seven-year cycle (2007-2013), over £16.7m were invested in Scottish projects, and £6.3m had been injected during the current funding cycle by September 2017. Projects including UK organisations enjoy a very high success rate: 28% of applications in the Media strand and 18% in the Culture strand are awarded (compared to a 11% EU-wide average for Horizon2020 funding applications [75]). UK-based companies participate in over half of the overall funded projects at EU level, with the UK being the most partnered country in cooperation projects.

Creative Scotland states that the funded projects are spread widely across Scotland, from the Central Belt to the Shetland Islands and the Outer Hebrides, and they span across a wide variety of art disciplines (screen, theatre, dance, visual arts, heritage, literature, music, festivals, inter-disciplinary and youth arts). Funded initiatives include the PUSH artist development project (theatre and dance for young audiences), the Edinburgh International Television festival, the Scottish Documentary Institute, UZ Arts (aiming to increase opportunities for artists working in non-conventional spaces), and the Creative Edinburgh and Creative Dundee associations. The importance of EU funding for the industry across the UK is echoed by Arts Council England: they estimate that 6 percent of organisations in the sector receive more than three quarters of their income from international activity and note that a significant number of smaller organisations are particularly reliant on EU funding.

The Creative Industries attract millions of visitors every year and are said to contribute significantly to wider inward investment [74] . In terms of FDI, the latest EY's Scotland Attractiveness Survey [24] shows that the number of software inward investment projects recorded fell by 32% to 13 projects, narrowly behind construction, whose projects leapt from three in 2015 to 14 in 2016, However, the decline in software projects in Scotland was slightly less than the 35% fall in the regions outside London and hence Scotland is now second behind London in securing investments from the software industry, followed by the South East of England with 12.

While it is premature to talk about a downturn in investments caused by a loss of attractiveness, several voices within the sector have highlighted how the ‘closure’ in terms of outlook, that some have felt as a consequence of the Brexit vote, could negatively impact the general atmosphere present within the sector. Creative Industries Federation have stated: “The creative industries give the UK its competitive edge. That edge is a consequence of being open and international” [74] .

Box: Festivals

Festivals Edinburgh [2]

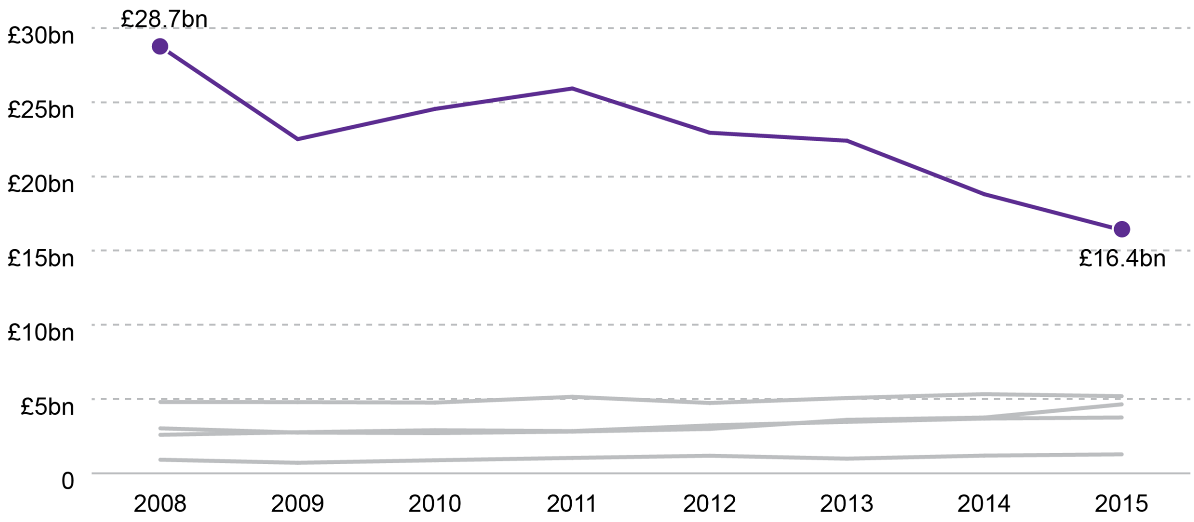
Given the international reputation, networks and ethos of the Edinburgh Festivals, we have a high proportion of international staff including EU nationals. The language and cultural skills and international networks of [our EU] colleagues are critical for sustaining high quality intercultural exchange. We would like to see the position of EU nationals living and working in Scotland safeguarded and bilateral agreements entered into where necessary to ensure the continued right to live and work in Scotland. Any erosion in the rights of EU nationals to work in Scotland for Edinburgh's Festivals will affect our ability to maintain world class programmes.

The Edinburgh Festivals collectively feature over 25,000 performers each year, from 70 countries. If the current visa system for non EU nationals were extended to EU citizens there is potentially a very high impact of increased cost and administration around visas and work permits. The current system is complex and time consuming, and can result in artists not being able get visas in time due to other touring commitments. This effect that would be magnified greatly if EU national were included and could damage the range and quality of the Festivals' programmes. [...] A waiving of visa requirements for EU based artists would be required to avoid negative effects on our cultural and creative economy.

The Edinburgh Festival Fringe Society, Edinburgh International Festival, Edinburgh Jazz & Blues Festival and Royal Edinburgh Military Tattoo have permit-free status for visiting performers which avoids those festivals having to issue a certificate of sponsorship for each individual to obtain a work permit. We would also want to see the potential wider use of this model explored for EU nationals, for other types of workers, and for other Festivals and cultural organisations.

Energy

Figure 12. Energy: Approximate GVA at Basic Prices (£million), 2008-2015



Source: Scottish Government (2018), Growth Sectors Statistics Database.

The Energy sector has faced major challenges recently due to the fall in oil prices. Economists Jo Armstrong and John McLaren have argued that the outlook appears 'bleak', given that the oil and gas sector is now "ageing and very much in its mature phase" [76] . It however remains by far the largest Growth Sector in terms of turnover. According to the Scottish Government's growth sector database, the energy sector as a whole had a turnover of £45.7 billion in 2015, down from £51.6 billion the previous year. GVA in 2016 stood at £16.4 billion (Figure 12), down from £18.8 billion the previous year.

The Oil and Gas industry has long been a key Scottish sector [30] . After the economic collapse, the Brent crude oil price rose to relatively high levels, reaching $115 a barrel, fuelled also by emerging market growth. But just as the rest of the economy was starting to grow, the price of oil plunged to below $30 in early 2016.

In recent times, there has been a partial recovery. The price of crude oil is currently (March 2018) hovering at above $60 per barrel [77] – an upturn that has prompted an all-round upsurge in the sector. Industry insiders tell that challenges represented by Brexit are thus the more worrying, because they risk overturning the more positive trend experienced in recent times [3] .

The Oil and Gas industry

Giving a big picture view of the state of affairs, Gareth Wynn and David Hoy of Oil & Gas UK [78] have highlighted the crucial contribution in terms of GDP and employment the sector provides to the overall economy. They said that the industry is traditionally characterised by three, sometimes conflicting, priorities: ensuring the security of energy supply; guaranteeing a competitive price of energy to industry and consumers; and moving towards a lower carbon energy future (a policy strongly pursued by both the UK and the Scottish governments). Companies that supply oil and gas, as they state, increasingly also supply renewable energy.

In terms of the Brexit negotiations, they highlight that the oil and gas industry needs to have continued access to energy markets and labour markets; protect energy trading and energy markets; maintain a strong voice in Europe; and safeguard their licence to operate. The concerns also extend to maintaining the appropriate level of alignment on regulations affecting the industry (including e.g. on offshore safety and environmental protection) as well as to the extent to which it will be possible to maintain channels through which to influence the European regulatory debate on energy after exiting the EU, including during any transition period. Most of all, however, the problem that is vexing the industry is clarity, with supply chain considerations being particularly pressing. “As we have heard from the Confederation of British Industry (CBI), by May this year, companies will have made irreversible decisions. It’s important that the UK Government and the EU give clarity as soon as possible, especially on the transition period, as time is running out”, they say.

Renewables

After initial enthusiasm for renewable energy, the excitement for renewables has somewhat waned in recent times, according to some commentators [30] . The areas that were expected to be developed are wind, tidal, wave and CCS (carbon capture and storage). There are a number of factors constraining this development, not least the first-mover advantage of countries such as Germany, Denmark and Spain. However, even those critics concede that bright spots are present, highlighting the European Marine Energy Centre, housed in the Orkney Islands.

The low carbon sector is a very important sub-sector, producing £10.7 billion turnover per year and supporting over 43,000 jobs, according to Scottish Government estimates. Their report notes that renewable electricity output has more than trebled since 2006, that renewable heat output is nearly five times the levels of 2008/9, and that there has been unprecedented investment in the Scottish transmission network which has allowed for substantial flows of power to the rest of the UK.

Trade

Exports to the UK stood at just below £9 billion in 2016. The share of exports to EU countries, £2.5 billion in 2016, is higher than the amount of international exports sent to non-EU countries, at £2.4 billion.

Currently, with the UK as a member of the EU, the UK oil and gas industry faces a cost of worldwide trade of around £600 million per annum. If the UK were to leave the EU without an agreed deal and reverted to WTO terms, the total cost of trade for the industry could almost double, to around £1.1 billion, according to Oil & Gas UK's analysis [79] . The association states that this would introduce a significant and unwelcome extra cost for an industry that has worked hard since the oil price fall of 2014 to improve efficiency and maintain its competitiveness. They however highlight that EU countries are net importers of oil and gas, leading the association to hope that there will be little appetite to put up trade hurdles in terms of tariffs or regulatory barriers on natural gas or crude oil [78] . UK and EU gas markets are well integrated physically, with three interconnectors (with Ireland, Belgium and the Netherlands) [80] .

Non-tariff barriers

Big issues lie on the regulatory side. Potential non-tariff barriers include access to the EU grid; gas quality standards; customs barriers; and cooperation with European partners.

Supply chain considerations are a serious concern, creating worries in terms of availability and timeliness of equipment and technical repair. Challenges related to the likely exit from the customs union could work to the detriment of the smooth operation of businesses in the sector, unless smooth and efficient customs processes are put in place. Oil & Gas UK illustrates the issue with an example: “If a specific pump that is produced in Italy breaks down, today it is possible to substitute it quickly. But outside of the EU without good customs processes in place, this could be much longer and more cumbersome, and this could have a detrimental effect, potentially adding delay or cost to replacing the equipment, either through having to hold spares or risk longer downtime for the platform affected. Added costs and delays in operations may weigh heavily on businesses and the decisions they make”.

Positive developments might take place in the case of a scenario of improved trading relations with the rest of the world and a substantially unchanged trade relationship with the EU, in which we could see the trading cost go down, according to Oil & Gas UK’s analysis. In recent times the EU has changed its Union Customs Code (UCC), and in the future when the UK is outside the EU there might be scope to adopt less burdensome regulations in this area for the offshore industry, according to the organisation.

Workers

When compared to other sectors, the oil and gas industry does not employ a high percentage of non-UK EU nationals: according to APS 2015 data, about 2% of workers employed in Scotland’s energy sector are non-UK EU nationals (and this figure stands at 5% at UK level). However, the access to talent still represents a prominent issue, as most of the EU workers are highly skilled. Barriers exist within the companies themselves. Oil & Gas UK have stated that “many oil and gas companies have different parts of their businesses spread in different EU countries and regularly move some key people among their operations”, highlighting their desire for an immigration regime that is as simple to administer as possible.

Growth sector data indicate that employment in the industry stood at 73,000 in 2015. However, the Scottish Government estimates that, on a whole, about 124,500 jobs are either directly or indirectly supported by the Oil and Gas sector in Scotland, with 56.4% of employment located in the North East – i.e. Aberdeen City and Aberdeenshire. They estimate that 43,500 people were employed directly in the “low carbon and renewable energy economy” in Scotland in 2015.

Investment

In 2016, there has been a dramatic surge in construction projects in Scotland. According to the EY Attractiveness Survey [24] , this rise is also partially related to the construction of off-shore wind farms and the technical services these require, as well as to some pipeline construction projects that have been undertaken for the oil and gas sector. In 2016, 4% of the businesses were foreign-owned, however they accounted for 48% employment in the sector.

The oil and gas industry remains a crucial contributor to the Scottish and UK economy in spite of the recent downturn. A report by consulting firm PwC that looked at 100 key companies in the UK, including Energy, has found that about 25% of the economic impact in terms of direct and indirect taxation comes from the oil and gas sector, though 2017 showed the smallest contribution of taxes borne from the sector since the survey began (down from almost 35% in 2006) – and towards a greater reliance on financial services. [81]

As for renewables, the possible impact of Brexit on FDI attractiveness and crucial EU funding is one of the most critical issues for the industry [82] . Claire Mack, Chief Executive of Scottish Renewables, said that "Any loss of FDI attractiveness would be a huge loss to an industry that is at a critical point in its commercial development", while highlighting that "the EU brings a very high level of ambition in terms of the EU-wide renewables target, which in turn secures strong levels of investor confidence". (see more in the box below).

Box: Renewable Energy

Claire Mack, Chief Executive, Scottish Renewables

Our industry develops and maintains large-scale, ambitious projects, requiring a skilled workforce. Seasonal workers are uncommon but there is a more obvious use of mid- and high- skill level project workers who come in and out of the UK to service particular aspects of projects. This reflects the fact that a number of large parent companies in the renewable energy market and its supply chain are operating with offices based in Europe but also globally. For example, developers of large scale offshore wind farms in the UK benefit from the use of a highly skilled, international engineering and project management workforce that has significant on-the-job experience gained from working on different projects around the world. Drawing on this resource has been helpful in the process of successfully driving down the costs of offshore wind projects in the UK and developing world-leading projects in difficult conditions.

In terms of barriers to trade, both tariff and non-tariff issues are of high concern. Tariffs could impact the import of plant and machinery to support the development of a variety of renewable energy technologies. Legislation influenced by the EU impacts the renewables industry in many ways: climate change, emissions trading, the Internal Energy Market, environmental issues, planning issues, network operation, and retail markets could all be affected and could all have a bearing on costs and profitability for the renewables industry. Wider regulatory issues such as State Aid rules are largely built into investment decisions and operating models.

Brexit's potential impact on investment and funding is the single most critical issue facing the renewables industry. The European Investment Bank has invested handsomely in the industry, and plugging this gap will be essential. Renewable technology is still relatively new, and different technologies are at very different points in their development cycle. Some earlier stage technologies benefit significantly from investment and funding support helping to kick-start a journey towards commercialisation – such as Horizon 2020 and the NER 300 programme for low-carbon energy projects. The inter-state nature of these funding calls fosters collaboration, which is turn has driven development.

The more established technologies such as Onshore Wind and Solar are moving towards full commercialisation and investor confidence is absolutely critical. Any loss of FDI attractiveness would be a huge loss to an industry that is at a critical point in its commercial development. This seems to be holding up at the moment but getting data at a Scottish level has proven difficult, and investment attractiveness has fluctuated. Finally, the EU brings a very high level of ambition in terms of the EU-wide renewables target and that in turn secures strong levels of investor confidence.

The renewables industry relies very heavily on international skills, finance and physical materials to deliver projects with a continual focus on cost reduction. Co-production and collaboration is essential to drive the strongest knowledge transfer, to spread risk and to physically deliver the multiple large-scale projects than run throughout the industry. Any perception or real barriers to this would have a high impact on the future development and commercialisation of projects. However, the possible perceived loss of an international mindset is less concerning, as the underlying motivation of Climate Change as a driver for further renewables rollout sits beyond EU agreements, and these will remain in place regardless of the outcome of

Brexit. The EU does however offer Scotland and the UK the ability to be part of a grouping that has scale and impact at a global level.

The natural resources utilised by the renewables industry tend to be concentrated in rural areas, as are the sites where energy is harnessed. The economic impacts of construction, operations and maintenance are distributed in these areas and therefore. Cities will have a in-built resilience due to the scale and diversity of their economies that will not be present in rural areas. Investment through renewables projects leaves infrastructure such as new roads or other infrastructure upgrades which we know is useful more widely to other actors within rural economies.

The renewables industry to date has relied on UK Government revenue mechanisms that are long term (15 years or more) which has protected the industry in some ways from the volatility of the business cycle. Distinct mechanisms such as the Renewables Obligation and Contracts for Difference have meant that development to meet these has continued. These mechanisms have either been altered or withdrawn which means that any uncertainty which impacts the investment market will impact renewables as its technologies move into a highly commercial space. Any available data on wider economic impacts suggest a downturn which would have a high impact on the renewables industry.

Financial and Business Services

Scotland is internationally recognised as the biggest UK financial centre outside of London and the South of England. The breadth of financial services offered includes global custody, asset servicing, banking, investment management, corporate finance, general and life assurance, and pensions. The Scottish Government's definition of financial and business services also includes areas such as legal activities, accounting auditing, call centre activities and HR support businesses. The sector has grown in recent years and now comprises a diverse range of professional services. [83]

Today, the industry provides approximately £15.4bn GVA[4] to the Scottish economy, which makes up more than 10% of Scotland’s overall GVA. Its output has increased by 7.8% since 2007 and by 12.2% since 2011, when it touched its lowest point in the last ten years as a result of the economic crisis [83] . There are over 13,000 enterprises active in the sector, most of them SMEs. Large companies account for about 2% of all enterprises, but employ about 56% of those working in the sector.

A University of Strathclyde report [84] authored by Professor Jeremy Peat (former chief economist with the Royal Bank of Scotland) and Owen Kelly (former chief executive of Scottish Financial Enterprise) identified the issue of ‘passporting’ – the right to trade financial services all over the EU – and the access to high-skilled non-UK EU staff as the two key factors that pose a great risk to the sector after Brexit.

Trade

In 2016, total exports from the Scottish Financial and Business Services accounted for over £13bn, the bulk of which (£10bn) was destined for the rest of the UK. EU exports stood at £825m and other international exports at over £2bn.

A specific issue for trade in financial services is passporting. The term denotes the rights currently enjoyed by UK banks, insurance companies and other companies to trade their services across European borders. The EU chief negotiator, Michel Barnier, has ruled out a special deal for the UK financial sector if it leaves the single market, stating that “There is no place [for financial services]. There is not a single trade agreement that is open to financial services. It doesn’t exist.” [85]

The likely loss of passporting rights is thus expected to have major implications for this sector. A report by Oliver Wyman consultancy [86] estimated that Brexit could cost up to 75,000 jobs to the UK’s financial sector as a whole. Some regional analyses – such as the LSE CEP report on the local effects of Brexit [87] – expect cities like Aberdeen and Edinburgh to be hit by Brexit precisely because of their reliance on this sector.

However, the impact may be less damaging for Scotland than for other British regions due to the relatively little reliance on EU markets for their exports. Graeme Jones, chief executive of Scottish Financial Enterprise, stated [88] :

> “ If you break down the Scottish market, a lot of our financial services business primarily operates in the UK. We don’t have market operations [such as derivatives trading] up here, so from that standpoint, we are fundamentally less vulnerable than the City of London.”

The above-mentioned report by Peat and Kelly [84] corroborates this statement, finding that “nearly every provider of financial services in Scotland, to a greater or a lesser extent, serves the UK market”.

Workers

In 2016, workers from EU countries made up 6% of employment in Banking, Finance and Insurance according to Annual Population Survey figures. The sector employed 24,800 citizens from EU countries, accounting for 19.5% of all EU citizens in employment in Scotland (this is third only to the levels of employment in tourism and the health care sectors, which each employ just over 20% of all EU workers in Scotland).

EU workers, therefore, make a significant contribution to the sector. The industry requires access to a highly skilled labour force, raising worries about the availability of talent post-Brexit. This problem is potentially exacerbated by a knock-on effect arising from expected implications for the education sector, which range from student mobility to the availability of research funding and entail a likely decrease in EU students post Brexit [89] . With fewer students and researchers coming from EU countries, the pool of talent is likely to shrink further.

Another issue is that talented staff may be tempted to move to another European financial centre. Louise Smith, head of design and implementation at RBS, said [88] : “Be it from

London or Edinburgh, shifting business out of the UK may gradually erode the cluster effect that underpins our financial ecosystem, with many sectors likely to feel the pinch”.

Investment

Considering the very real risks posed by passporting, many companies are putting contingency plans in place. Examples include the Royal Bank of Scotland [90], which is considering using Amsterdam as its post-Brexit EU hub, and the Swiss bank UBS [91], that has already decided to move hundreds of employees out of the UK in early 2018.

Scottish Financial Enterprise (SFE) wrote [92] that all large-scale financial services companies have plans in place to mitigate against a wide variety of risks and threats to the business, which in this case includes Brexit. This is seen as a ‘very significant risk’ that requires to be managed and planned for in scenario plans. But SFE's Chief Executive, Graeme Jones, warned: “As time progresses, the value of any transition period decreases. This is because the lead times required to make the necessary changes to companies’ underlying operating models, will force them to act sooner than later.” As for other sectors, uncertainty is seen as a highly damaging occurrence.

The scale of a touted bank “Brexodus” from the UK post-Brexit is debated. Research by the Financial Times [93] found that only 6% (less than 4,600) of City of London jobs may move away from the UK, despite initial calculations of tens of thousands. But a report by Ernst & Young produced a more worrying estimate, stating that 10,500 workers “would leave on day one". [94]

Conclusions

This briefing has provided a discussion about the possible effects of Brexit on the six Growth Sectors of the Scottish economy, which has been informed by both quantitative and qualitative sources. Three broad dimensions – trade, the workforce and investment – were considered when analysing each sector. By way of summary, in conclusion to this discussion we reverse the lens of the analysis – away from a sector-by-sector approach, and onto the specific issues affecting them, which have been identified during the research process.

Table 1. Heatmap - Brexit and the Scottish economy: issues across the Growth Sectors

*Concerns: High (**H**), Medium (**M**), and Low (**L**). Not a concern: **n/a***

	Food & Drinks	Sustainable Tourism	Life Sciences	Creative Industries	Renewable Energy	Financial Services
Freedom of movement						
Seasonal workers	H	H	n/a	H	L	n/a
Permanent workers	H	H	H	M	M	H
Ease of visiting	L	M	H	H	H	H
Freedom of trade						
Tariffs	H	H	H	M-H	H	H
Legal and regulatory frameworks	H	M	H	H	H	H
Investment & funding						
EU funding	M (H for agriculture)	L	H	H	H	L
Loss of FDI attractiveness	H	M	H	M	H	H
External perceptions						
Co-productions & collaborations	M	M	H	H	H	M
Perceived loss of international reputation	M	M	H	H	L	H
Geographical impact						
Rural areas	H	H	H	H	H	L
Cities	H	M	H	H	M	H
Uncertainty						
Uncertainty about post-Brexit arrangements	H	H	H	H	H	H

Compiled with the help of: Food & Drink Federation Scotland; VisitScotland; Life Sciences Scotland; Creative Industries Scotland; Scottish Renewables; and Scottish Financial Enterprise.

The heatmap above (Table 1) summarises the main problems that were highlighted and how big an impact they are expected to have on each sector. It has been compiled with the help of industry leaders [5], though it should be noted that oil and gas is not included in this summary table. Both the definition of each topic and sub-topic, as well as the degree of incidence expected for each sector (Low, Medium and High) are purposefully simplistic. They necessarily lack in nuance and cannot substitute the more detailed discussion carried out in section 3 (‘Growth Sectors’) of this report, but nevertheless provide a useful starting point to take stock of the main themes that have emerged from this briefing.

Freedom of movement of people

Free movement of people is one of the four freedoms underpinning the EU Single Market, as set out in the 1957 Treaty of Rome [95] , and it includes the free movement of workers and of citizens. The loss of the freedom of movement of people that would come from the UK’s exit from the Single Market entails three separate considerations: the impact on seasonal workers, on permanent workers, and on the ease of visiting.

Seasonal workers – While three sectors (Life Sciences, Financial Services and Renewable Energy) have assessed this issue as being of either low concern or non-applicable for their industry, three other sectors rely heavily on a seasonal influx of workers from EU countries. Agriculture in particular (within Food and Drinks) is already starting to experience problems, as is the hospitality industry (Tourism), especially in remote areas. Scotland’s thriving summer festivals (Creative Industries) employ seasonal workers and volunteers from the continent.

Permanent workers – The availability of talent is an issue across the board, and it hasn’t been unusual for workers who came on a less permanent basis to grow their experience and skills while in Scotland and progressively take on more highly-skilled roles. Sectors that have reported a particularly high concern in this sense are Life Sciences, Financial Services, Sustainable Tourism and Food & Drinks.

Ease of visiting – in case barriers to visiting the UK should be reintroduced, the tourism industry would obviously bear the brunt of it. However, the sector has reported a fairly high confidence that visa restrictions will not be added post-Brexit and the concerns are therefore not too high in this sense. But should it become more difficult to visit Scotland, this would have heavy knock-on effects to most industries – as reflected by the responses of most other sectors.

Freedom of trade

Freedom of trade is composed of the remaining three EU Single Market freedoms: free movement of goods, free movement of capital, and the freedom to establish and provide services.

Tariffs – the introduction of WTO tariffs in the case of a no-deal scenario would hurt all sectors, though it is less of a concern for Creative Industries. Tariffs' impact on items such as food products could be extremely detrimental.

Legal and regulatory frameworks – Several industries have benefited from the harmonisation of rules with the EU and would face significant challenges in having to reassess the way they do business. One such problem is the loss of Protected Geographic Indication (PGI) status for certain key drink and food items. Life Sciences, Energy and Creative Industries have all expressed high concerns on this front. While the loss of financial passporting rights could be very serious for the UK’s financial and business services exported to the EU, Scotland’s relatively low reliance on EU exports in this sector may shield the industry from the much heavier impact expected in the City of London.

Investment and Funding

EU funding – the reliance on EU funding varies greatly across industries, and so do the sector-specific concerns. The Renewables industry has highlighted the loss of funding and investment as their number one Brexit-related issue. This also constitutes a very considerable problem for the Life Sciences and the Creative Industries, both hugely benefiting from EU grants.

FDI attractiveness – a number of Brexit-related effects could lead to a reduced attractiveness for potential investors. This relates, first and foremost, to the likely exit from the Single Market and the Customs Union with its impact in terms of profitability, but also to the possible scarcity of (both seasonal and permanent) workers, and to the overall loss of openness. There are currently no strong indications that less FDI is coming to Scotland, but this represents a significant worry for all the industries looking forward.

External Perceptions

Co-productions and collaborations – Most of the Growth Sectors have a strong international component, and some of them place collaborations at the centre of what they do: such is the case of the Creative Industries, Life Sciences and Renewables. On top of the widespread co-participation in projects and research efforts with colleagues from EU countries, the element of knowledge transfer has been highlighted as a key issue.

Loss of international spirit – The worry of an external perception of a ‘parochial mindset’ concerns in particular the Creative Industries, Life Sciences and the Financial and Business Services sectors. For Renewable Energy, the perceived loss of an international mindset is less concerning because the discussions concerning climate change, which sit at the basis of the rationale for the development of renewable projects, transcend EU borders.

Geographical impact

Rural – rural communities could be hard hit due to the reduced influx of workers as well as by the possible downturn in agriculture funding (currently provided via the Common Agricultural Policy) after the UK leaves the EU. Smaller enterprises in rural areas may be particularly hit. The financial sector is the only one not concerned by this development, as their operations are more focused in urban areas.

Cities – Larger urban centres are expected to be more resilient due to a number of factors (the possibility to source talent more easily being a prominent one), but that does not mean that Brexit does not present challenges for Scotland’s cities, as all the issues mentioned above apply to them as well. The industries whose activities gravitate in these areas, such as the creative sector and financial and business services, are particularly concerned.

Uncertainty

The uncertainty regarding the final Brexit arrangements has been unanimously quoted as a high concern by all industries. The six sectors examined here are all conspicuously healthy and resilient sectors, and almost all are confident in their ability to bounce back and overcome any challenges presented by Brexit. However, the inability to make any long-term plans – which is particularly harmful for smaller enterprises, unable to make costly contingency plans – is already causing considerable damage. There are always exceptions, but the emerging trend is that businesses are making investment decisions that are either non-committal, using a wait-and-see approach, or in some cases restructuring their enterprises to disengage, rather than to invest in furthering growth.

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1 See e.g. the papers and research reports by: the National Institute of Economics and Social Research (https://www.niesr.ac.uk/research-theme/exiting-eu), the LSE’s Centre for Economic Performance (http://cep.lse.ac.uk/BREXIT/), CEPII (http://www.cepii.fr/CEPII/en/publications/reports.asp), and the Birmingham Business School’s findings, part of the ESRC-funded “UK in a Changing Europe” project (https://www.birmingham.ac.uk/schools/business/research/research-projects/economic-impacts-of-brexit-on-the-uk.aspx).

2 Festivals Edinburgh have not undertaken recent research on Brexit, but have indicated that this statement - given in September 2016 to the Scottish Parliament's European and External Relation's Comittee - is still valid today.

3 This refers, roughly, to the period since mid-2016, and it is therefore not reflected in the graphs as the currently available data mostly do not cover this period.

4 SPICe estimate. Finance and insurance services accounted for £8.1bn in 2016 (ONS data) and Business services amounted to £7.4bn in 2015 (Scottish Government data).

5 With thanks to: Food & Drink Federation Scotland; VisitScotland; Life Sciences Scotland; Creative Industries Scotland; Scottish Renewables; and Scottish Financial Enterprise.

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