

Brexit and the sectors of the Scottish economy

A report for GMB Scotland
November 2017



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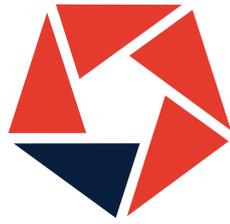
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Preface

The analysis in this report has been conducted by the Fraser of Allander Institute (FAI) at the University of Strathclyde. The FAI is a leading academic research centre focussed on the Scottish economy.

The report was commissioned by GMB Scotland. GMB Scotland asked the FAI to provide a summary of the current state of play in respect of possible post-Brexit trade outcomes for the UK and Scotland. They also asked us to provide an illustration of the key linkages between current Scottish economic activity and different export markets, with a particular focus on different sectors.

The technical analysis, methodology and writing of the results was undertaken independently by the FAI.

The FAI is committed to informing and encouraging public debate through the provision of the highest quality analytical advice and analysis. We are therefore happy to respond to requests for factual advice and analysis. Any technical errors or omissions are those of the FAI.

Acknowledgements

The Fraser of Allander gratefully acknowledges the support of GMB Scotland in helping to make this study possible.



Executive summary

- Brexit has the potential to have a major impact on the future structure of both the Scottish and UK economies.
- Most independent analysis has concluded that Brexit will weaken the UK's (and Scotland's) growth prospects in the long-run. But the implications could look quite different for particular sectors and companies and much will depend upon how policymakers respond.
- In 2015, Scotland exported £12.3 billion of goods and services to the EU – equivalent to over 40 per cent of Scottish international exports – more than exports to North America, Asia, South America and the Middle East combined. But the data shows that many other parts of the UK appear relatively more open to EU trade.
- Six of Scotland's top 10 destinations for exports are in the EU. A further two – Norway and Switzerland – are part of trade arrangements with the EU which may need to be negotiated post-Brexit.
- There are around 1,000 enterprises in Scotland where the parent company is from another EU country and they employ around 130,000 people. At the same time, there were around 180,000 EU nationals living in Scotland in 2015 – indeed it is estimated that half of the net increase in the Scottish population between 2000 and 2015 has come from people born in EU countries.
- Goods make up the bulk of Scottish trade with the EU. In 2015, just over 60 per cent of Scottish trade with the EU was from manufacturing.
- The most significant sectors are those associated with refined petroleum and chemicals activities, and food and drink (of which whisky and linked products like are key).
- It is possible to look at the jobs supported by the demand currently generated from exports to various markets. This includes not just the direct employment, but the onward spill-overs into the supply chain and onward consumer spending.

- It is estimated that around 134,000 jobs are currently supported by export demand from the EU, and slightly under 196,000 from the rest of the world. It is estimated that over 560,000 jobs in Scotland are supported by demand from the rest of the UK.
- In other words, nearly 6 per cent of total employment in Scotland (excluding public sector administration and defence) was supported by demand currently driven by exports to the EU.
- Of the 134,000 jobs estimated to be supported by demand from the EU, around 55,000 were in manufacturing and 73,000 in services. The higher number in services reflects the impact of spill-over effects from trade into the wider Scottish economy.
- In manufacturing, this includes around 13,000 job in food and drink, and 11,000 jobs in metal work and machinery. In services, nearly 30,000 jobs in finance and business services are estimated to be currently supported either directly or via wider spill-over impacts by demand from the EU. The equivalent figure for distribution, hotels and catering is 22,000.
- Just over 27 per cent of jobs in the refined petroleum, chemical and pharmaceutical sector in Scotland are estimated to be supported by demand generated directly from EU exports. For food and drink, the equivalent figure is 12 per cent, whilst for computing and electrical products it is 21 per cent.
- In terms of the relative importance of sectors, there are some important differences between Scotland and the rest of the UK. For example, the drinks sector is Scotland's second most important sector in terms of goods trade to the EU, but it ranks nineteenth for the UK as a whole. Similarly, fish exports are third for Scotland but do not even feature in the top twenty for the UK. At the same time, top sectors for the UK – like transport manufacturing – do not feature in Scotland's top of goods exports.
- Ultimately, the full impact on Scottish industries and individual companies will depend upon a number of factors – not just exposure to EU markets – but also the type of tariff and non-tariff barriers that may exist post-Brexit. The importance of EU migrants as a source of skilled labour may also be significant for some individual firms and sectors. Of course, much will depend upon the future policy responses of government and the opportunities to export to new markets.

1. Introduction

Leaving the European Union (EU) undoubtedly represents the greatest change for the UK economy in a generation.

It will impact the way we trade as well as the sources of investment and supply of workers. At the same time, by no longer being formally tied to EU rules, future UK economic, social, environmental and financial policy may look quite different.

There remains considerable uncertainty about the costs and benefits of Brexit. Many of the changes will be hard to measure, whilst others will be spread out over a number of years. At the same time, how policymakers react – both in the UK and outside – will have an important bearing on outcomes.

As with any change, there will be winners and losers. The risks and opportunities could look quite different for individual sectors and companies.

The potential impacts on Scotland are our focus in this report. Scotland voted differently from the UK as a whole in the referendum. The complexities of the devolution settlement, and the different structures of the two economies, mean that it is hard to argue that the implications of Brexit will be uniform between Scotland and the UK.

This report summarises the economic links between Scotland and the EU, and provides some background information on the links between Scotland and the EU by sector.

The outline of the report is as follows. In Section 2 we provide a brief recap of the different ‘types’ of Brexit that may emerge whilst in Section 3 we outline key economic issues that follow. In Section 4 we summarise the data on Scotland’s sectoral links with the EU.

2. What will Brexit look like?

2.1 Background

The 2016 EU referendum was based upon a yes-no question of whether or not the UK should remain a member of the EU. However, many of the details of what a *leave* vote might constitute were never specified prior to the vote. Indeed a number of key areas remain unresolved.

The UK Government now has around 16 months to reach an agreement with the EU.

In principle, this could be extended, but expectations are that any delay is unlikely¹. In practice, agreement will be needed by autumn 2018 to allow for both EU and UK parliamentary approval.

There are three important – and clearly linked – steps in this process.

1. Firstly, the terms of exit need to be worked out. The European Commission's position is that this needs resolved before all else. A deal on the UK's outstanding budget liabilities will be key² as well as the rights of EU27 citizens in the UK (and vice versa).
2. Secondly, the period of transition to any new arrangement needs to be agreed. Many businesses have highlighted the importance of avoiding a cliff-edge in economic relations.
3. Finally, the long-term relationship between the UK and the EU needs to be resolved. The focus will undoubtedly be on economic issues, however, there are also important political and social aspects to consider.

2.2 The emerging signs of a framework – the UK Government's preferred position

In January 2017, the Prime Minister confirmed that the UK would not seek to retain membership of the Single Market³. Instead, the UK would look for some form of trade deal with the EU – perhaps a free trade arrangement (like the one the EU now has with Canada). The UK wishes to be able to pursue its own migration policies and trade deals. It wants to

¹ European Parliamentary elections are in May 2019 and may act as a hard-deadline for the negotiations.

² Estimates vary over what a 'fair share' of the UK's budget liabilities could be. Some have argued that it could be as much as £60bn. Whatever the sum agreed it is likely to be paid up over a number of years meaning that taxpayers will continue to make some form of contribution to the EU for a number of years yet.

³ www.gov.uk/government/speeches/the-governments-negotiating-objectives-for-exiting-the-eu-pm-speech

take on responsibility for policy currently under the auspices of the European Commission and – in principle – no longer be subject to the European Court of Justice.

This proposal is different from the ‘softest forms of Brexit’ discussed during the referendum.

Table 2.1: Alternative models for the UK’s relationship with the EU

	EU	Norway	Switzerland	Free Trade (e.g. Canada)	Customs Union (e.g. Turkey)	WTO
Single market member	Full	Full	Partial	No	No	No
Tariffs	None	None	None	Reduced/no tariffs	None on industrial goods	Yes
Accept free movement	Yes	Yes	Yes	No	No	No
In the customs union	Yes	No	No	No	Yes	No
Makes EU budget contributions	Yes	Yes	Yes (smaller than Norway)	No	No	No

Source: Fraser of Allander

If agreed, a free trade deal could mean that UK exports to and from the EU would not be subject to tariffs (or at the least be subject to much reduced tariffs). But non-tariff barriers are likely to exist.

Box 2.1: Tariff and Non-Tariff Barriers

Tariff Barriers: A tax or duty paid on an import.

Non-tariff Barriers (NTB): Historically, these were quotas on the volume of trade that could take place. Nowadays they take on more opaque⁴ – but by no means insignificant – forms including:

- Differences in product standards
- Conformity assessments and supervisory arrangements
- Rules of origin and customs formalities

For example, outside the Single Market, an exporter selling to the EU has to prove they meet EU standards (which carries a cost). If the UK sets different standards, then in order to be sold in the EU, the exporter will have to alter their product (which carries a cost).

⁴ For example, a country may set for certain household appliances a regulation covering the maximum noise permitted. Any product sold in that country must meet that criteria. In the Single Market, these are consistent across the EU. Therefore, a product made in the UK can be sold in another EU without having to meet – or prove that it has met – local standards.

The Great Repeal Bill will, initially, mean that EU regulations and standards will be retained. An attempt to ensure mutual recognition of standards to limit non-tariff barriers could be agreed longer term. But if the decision to leave the EU was in part motivated by a desire to take a different political path, UK and EU economic and regulatory policies will diverge over time.

The UK Government has set out a desire to remain an associate member of the Customs Union. It is not exactly clear such an arrangement is workable. Indeed, it seems highly unlikely that should the UK wish to do trade deals with third countries, some form of 'rules of origin' checks will not be required⁵.

What about trade with other countries?

So far, the UK Government has stated that *"to minimise disruption to global trade as we leave the EU, over the coming period the Government will prepare the necessary draft schedules which replicate as far as possible our current obligations"*⁶.

But by no longer being part of the EU, the UK could lose existing EU preferential trading deals with other countries (unless new deals could be arranged quickly)⁷. This includes growing markets such as the Republic of Korea.

The UK Government has outlined an ambition for new trade deals. Formally they cannot negotiate with third countries until after the UK has left the EU.

History has shown that such deals can be complex to negotiate⁸. In the EU context, the UK arguably starts from a privileged position. But the challenge will be how this relationship evolves and the political appetite to 'do a deal'⁹.

⁵ For example, suppose the UK signs a free trade deal with the EU and a similar arrangement with the US. Further suppose that the EU does not have a deal with the US. Without a customs border, a US product could be exported to the UK – facing no tariff (because of the US-UK trade deal) – and then onward shipped to the EU – again facing no tariff (because of the UK-EU trade deal). To avoid this, a bureaucratic check will be required.

⁶ House of Commons Written Statement by Dr Liam Fox (Secretary of State for International Trade) - www.parliament.uk/business/publications/written-questions-answers-statements/written-statement/Commons/2016-12-05/HCWS316/

⁷ See <http://ec.europa.eu/trade/policy/countries-and-regions/negotiations-and-agreements/>

⁸ The recent EU-Canada trade deal took seven years to negotiate.

⁹ For example, the interplay between the economic aspects of regulations and supervision on the one hand and thorny political issues, such as the role of the European Court of Justice, on the other.

2.3 *The emerging signs of a framework – the no-deal position*

The other scenario is where no deal is reached. Should this happen, then there is the prospect of the UK entering the ‘hardest of Brexits’.

Without an agreement, imports into the UK from the EU would be subject to WTO tariffs. Tariffs would also apply to UK exports to the EU¹⁰.

While average EU tariffs are low, they are high for some products, especially in agriculture.

Introducing tariffs would be a major economic shock, not just for the UK but the EU27. Trade would be impacted as would the complex web of supply chains (with tariffs perhaps being levied at numerous stages of the production process).

Non-tariff barriers could become prohibitive if UK-based companies no longer automatically meet supervisory and regulatory standards.

Of course, the UK would have the ability to manage migration levels from the EU27. And over time, the government could put in place its own regulatory, tax and trade policies.

2.4 *Scottish Government’s proposals for Scotland’s membership of the Single Market*

In December, the Scottish Government published their response to the EU referendum¹¹.

The centre piece was a proposal that Scotland remains in the Single Market even if the rest of the UK leaves. There has been much debate over whether or not this is possible.

The EU has, in the past, shown some flexibility in accommodating solutions to unique circumstances¹². That being said, the case of Scotland would be different in scale and complexity.

1. Firstly, there are a number of legal hurdles. Remaining in the Single Market would require Scotland to comply with EU regulatory standards on goods, services and capital. The relevant legislative and fiscal powers would need to be devolved.
2. Secondly, there are a number of practical economic challenges. For example, if Scotland was to have a different trading relationship with the EU vis-à-vis the UK, then Scotland’s trading relationship with the rest of the UK could change. Even the Scottish Government’s preferred approach of ‘inside the EU Single Market and the

¹⁰ For the UK’s trade with non-EU countries, there would be no change to tariffs.

¹¹ See www.gov.scot/Publications/2016/12/9234

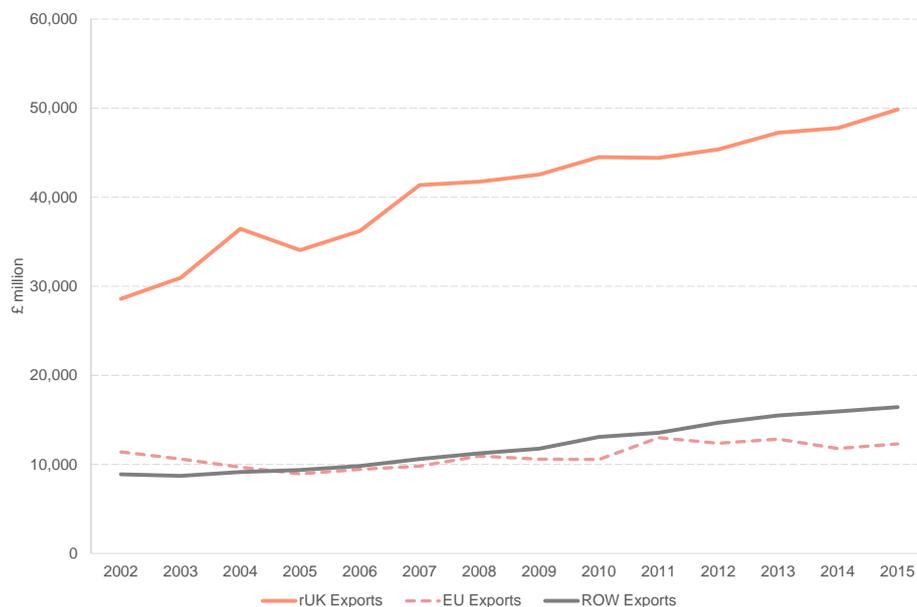
¹² For example, East Germany post German reunification and granting Greenland a more detached status following devolution from Denmark

UK Custom Union', could create frictions in terms of regulatory, product and employment standards.

- Thirdly, processes would need to be established to cope with different rules for free movement. In effect, EU27 citizens could live and work in Scotland but not elsewhere in the UK. In reality, a 'physical' border may not be needed but some form of checks – through employment contracts or tax records – might be required.

Trade with the UK – whatever the constitutional settlement – is important (see Chart 2.1), with around two thirds of Scottish exports bound for the rest of the UK.

Chart 2.1: Scottish exports by destination – 2002 to 2015



Source: Scottish Government Export Statistics

In summary, a differentiated arrangement is possible but would not be easy. Ultimately, it will depend upon political will, in Scotland, the UK and the EU27¹³. The prospects of a separate deal for Scotland seems to have slipped off the political agenda in recent months.

¹³ It should be noted that the estimates of rUK exports includes exports from Scotland to the UK Continental Shelf. Scottish mining and quarrying exports to rUK is around £3 billion – a significant amount of which will be activity supporting Scotland's oil and gas industry (arguably inflating the rUK figure to a level higher than it should be).

3. Brexit: through what channels could it impact?

3.1 Background

The majority of economists predict that leaving the EU will act as a headwind for the UK's long-term economic prospects.

Those in favour of Brexit have tended to argue that the impacts could be smaller than those predicted by the mainstream view and that new opportunities – from more localised policy making, a re-orientating of international trade agreements and reducing the (perceived) negative impact of EU migration – could outweigh the risks.

Information is scarce on how leaving the EU will actually impact different parts of the Scottish economy. The lack of data – and the limited clarity on what a 'deal' may look like – are the two key reasons for this.

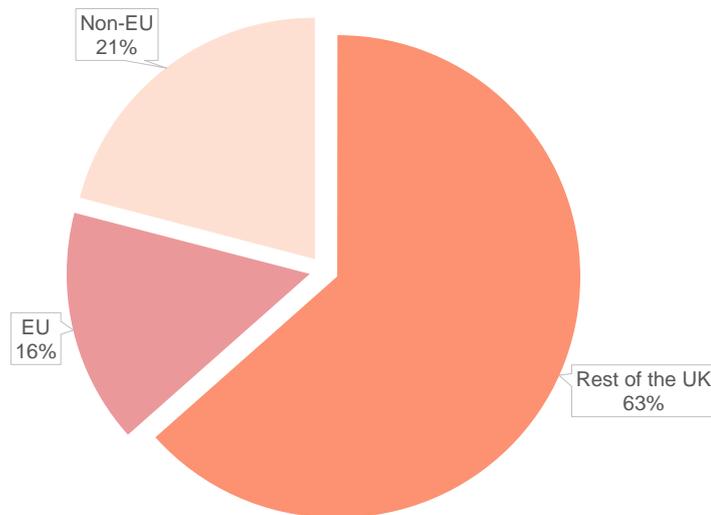
We identify five broad channels through which Brexit could have an impact on the Scottish economy –

- Trade;
- Inward investment;
- The labour market – including migration;
- Budget contributions; and,
- The policy and regulatory environment.

3.2 Future trading relationships

The EU is Scotland's principal international trading partner.

In 2015, Scotland exported £12.3 billion of goods and services to the EU – equivalent to over 40 per cent of Scottish international exports (16 per cent of total exports when rUK exports are included).

Chart 3.1: Scottish exports by destination - 2015

Source: Scottish Government Export Statistics

The EU is an important international market for Scottish firms, particularly given that successive Scottish administrations have had an ambition to compete more successfully internationally¹⁴.

How do we compare to other parts of the UK? HMRC publish data on goods for Scotland, Wales, Northern Ireland and the English regions¹⁵.

One technical issue with the HMRC approach is that it allocates to Scotland all oil directly exported from platforms in Scottish waters. This has a significant impact on the Scottish series, making it difficult to isolate trends in the on- and off-shore economies.

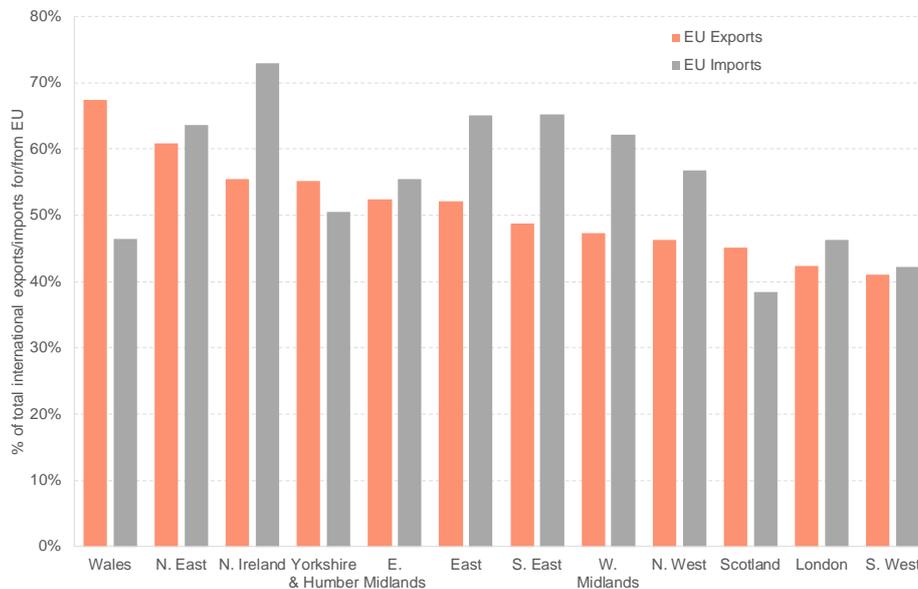
On balance, even with oil included, Scotland appears to rely relatively less on EU trade than other parts of the UK as a market for its total exports¹⁶. There are a number of possible explanations for this including geography and the fact that a major export – Scotch whisky – is a global product.

¹⁴ See Gregor Irwin's analysis here www.global-counsel.co.uk/blog/scotland%E2%80%99s-%C2%A312bn-export-gap

¹⁵ It should be noted that HMRC use a different methodology to the Scottish Government both in terms of the way in which the data is collected and presented. Direct comparisons should be undertaken with caution.

¹⁶ Note: the quarterly regional data can be subject to change so point estimates may change depending upon when the data is accessed. However, the key trends remain broadly consistent.

Chart 3.2: EU exports/imports by devolved nation and English region - % of total international exports/import to/from the EU Q2 2016 to Q1 2017



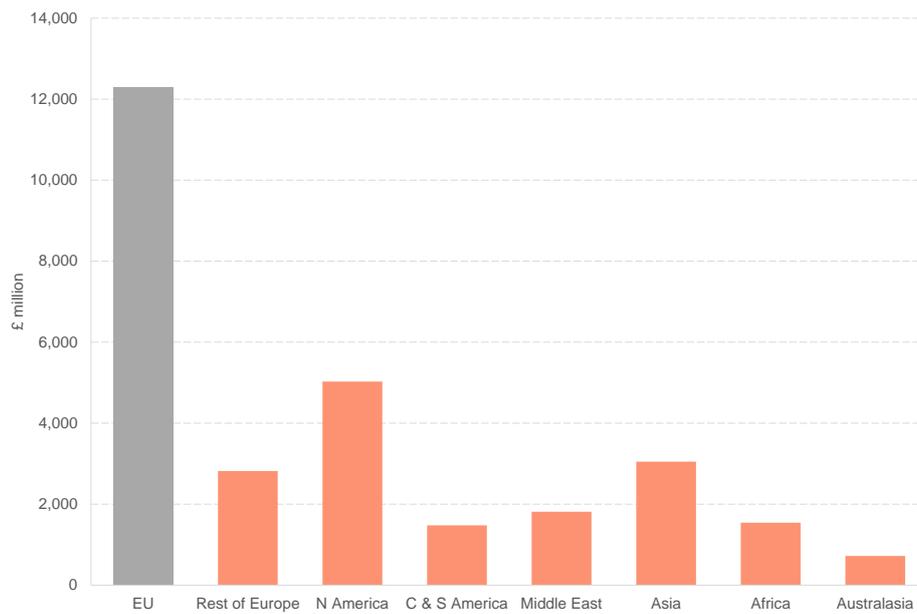
Source: HMRC Regional Trade Statistics

If we exclude mineral, fuels, lubricants and related materials – which includes refined petroleum activities and direct oil exports – the ratio of EU to total international exports is lower still¹⁷.

As already highlighted, the UK could in principle strike new trade deals with non-EU countries. But this needs to be put in context:

1. Agreeing new deals is not straightforward – as recent discussions on an EU-US trade deal have demonstrated.
2. Trade deals – unlike a Single Market – do not always guarantee similar rights, regulations or standards.
3. The EU is by far the largest source of international trade for Scotland – exports here are worth more than those to North America, Asia, South America and the Middle East combined.

¹⁷ This is not to say that such exports are not important, but instead to highlight how this one sector – which is more significant in Scotland than elsewhere in the UK – has an impact on the results.

Chart 3.3: Scottish Exports to key destinations

Source: Scottish Government Export Statistics

It is also worth noting that Norway and Switzerland – two countries in the top ten of market destinations for Scottish exports – are covered either by conditions of the European Economic Area or the EU-Switzerland FTA and associated bi-lateral agreements. Arrangements will be required to retain preferential terms once the UK leaves the EU.

Table 3.1: Top ten export destinations, 2015, (£ million)

Rank	Destination	Total Exports (£ m)	% of Total
1	USA	4,560	15.9
2	Netherlands	2,295	8.0
3	France	1,810	6.3
4	Germany	1,750	6.1
5	Norway	1,315	4.6
6	Denmark	1,085	3.8
7	Ireland	1,010	3.5
8	Spain	830	2.9
9	Switzerland	785	2.7
10	Brazil	750	2.6

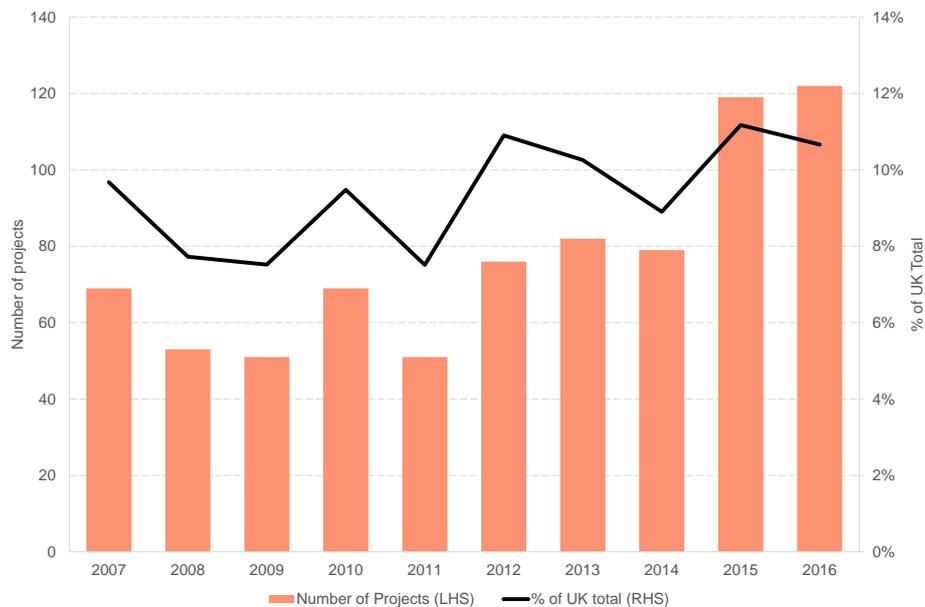
Source: Scottish Government Export Statistics

3.3 Inward investment

According to OECD and EY's Global Investment Monitor data, the UK has been the largest recipient of investment in the EU since the establishment of the EU Single Market.

In recent years, Scotland has been particularly successful at attracting such investment – ranking second in the UK in terms of projects secured during the last five years. But in terms of jobs supported, in 2016, Scotland was ranked sixth out of twelve.

Chart 3.4: Inward investment projects secured: Scotland 2007 to 2016



Source: EY Attractiveness Survey: Scotland 2017

Leading sectors for such investment typically are a diverse mix of services, construction and manufacturing.

How important is EU membership to such investment? Some of Scotland's advantages have little to do with the EU. That English is the language of commerce is clearly an advantage. And the UK's legal and regulatory system makes it relatively easy for investors. Scotland's skilled workforce, infrastructure and business networks are also seen as vital assets.

But the EU is believed to have been at least part of the story.

Some evidence can be drawn from surveys. EY's 2017 'UK attractiveness survey' suggests that in the 2016 survey, 78 per cent of investors in the UK considered access to the European markets as important to the UK's attractiveness. That figure fell to 50 per cent in the most recent survey. There has also been a rise in the number of respondents believing that the UK's attractiveness will decline over the next three years.

There are around 1,000 enterprises in Scotland where the parent company is from another EU country – employing around 130,000 people.

Table 3.2: Scottish employment by EU-owned enterprises 2016

Enterprise Ownership	Scottish Employment	Number of Enterprises
Scotland	1,261,960	168,895
RUK	340,400	2,790
ROW	189,760	1,305
EU	127,110	1,000

Source: Scottish Government, *Businesses in Scotland*

3.4 The labour market

There were around 180,000 EU nationals living in Scotland in 2015^{18 19}.

This was equivalent to around 3.4 per cent of the total population, which is slightly lower than for the UK as a whole (where non-UK EU nationals represented 5.4 per cent of the population).

Half of the net increase in the Scottish population between 2000 and 2015 has come from people born in EU countries²⁰.

Scotland faces a more challenging demographic situation compared to the UK as a whole.

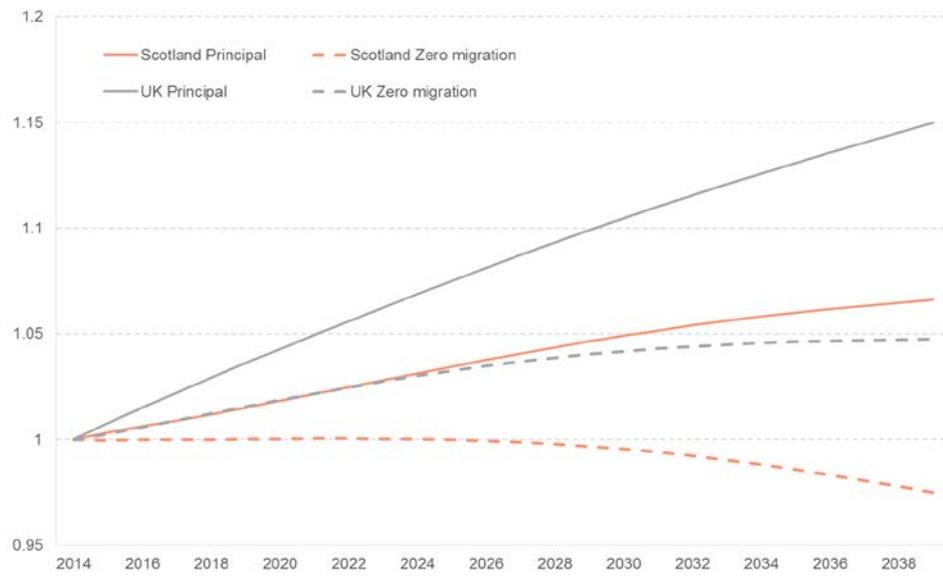
Since 1978, Scotland has experienced lower fertility rates than the UK and has had improving but lower longevity than the UK. This means that it is relatively more dependent upon the inflow of people for population growth.

The 2014-based population projections forecast a 7 per cent rise in Scotland's population as a whole over the coming decades. These numbers are premised on sustaining current levels of net migration. For Scotland this implies continued international net migration of around 9,500 per year. With zero net migration, Scotland's population is projected to decline by 2.5 per cent, while the UK population would still grow, albeit at a much slower rate of 5 per cent.

¹⁸ See www.gov.scot/Topics/Statistics/Browse/Labour-Market/Publications/EUnationalsEXCEL. Since this report was finalised, the Scottish Government has published an updated analysis for 2016 – available here: www.gov.scot/Resource/0052/00527186.pdf

¹⁹ The statistics presented here are based upon nationality. Statistics are also available according to 'country of birth'. Estimates of EU nationals based upon on reported nationality are lower than those based on country of birth – 181,000 vs. 190,000 in 2015.

²⁰ Source: www.parliament.scot/ResearchBriefingsAndFactsheets/S5/SB_16-86_EU_nationals_living_in_Scotland.pdf

Chart 3.5: Scottish and UK population change under different scenarios

Source: 2014-based ONS population projections

The Scottish population is also ageing. Estimates for the year to the end of June 2016 show that the proportion of the population aged under sixteen is now smaller (17 per cent) than that aged sixty five or over (18 per cent).

EU migration has helped, in part, to mitigate the process of population ageing – EU migrants coming to Scotland tend to have a younger age profile compared with the Scottish population²¹.

3.5 Budget contributions

Alongside migration, a key issue – particularly for leave voters – was the argument that Brexit could save the UK money from no longer making EU budget payments.

There are two important aspects to this.

Firstly, it is far from clear that any savings will be as great as many have hoped. Once account is made of the money received from the EU – e.g. University research grants – the UK's *net* contribution is smaller than many believe. Moreover, if the economy grows more slowly post-Brexit, this may worsen the deficit through lower tax receipts and higher social security spending.

²¹ 80% of EU nationals in Scotland are of working age, compared to 65% for the Scottish population as a whole.

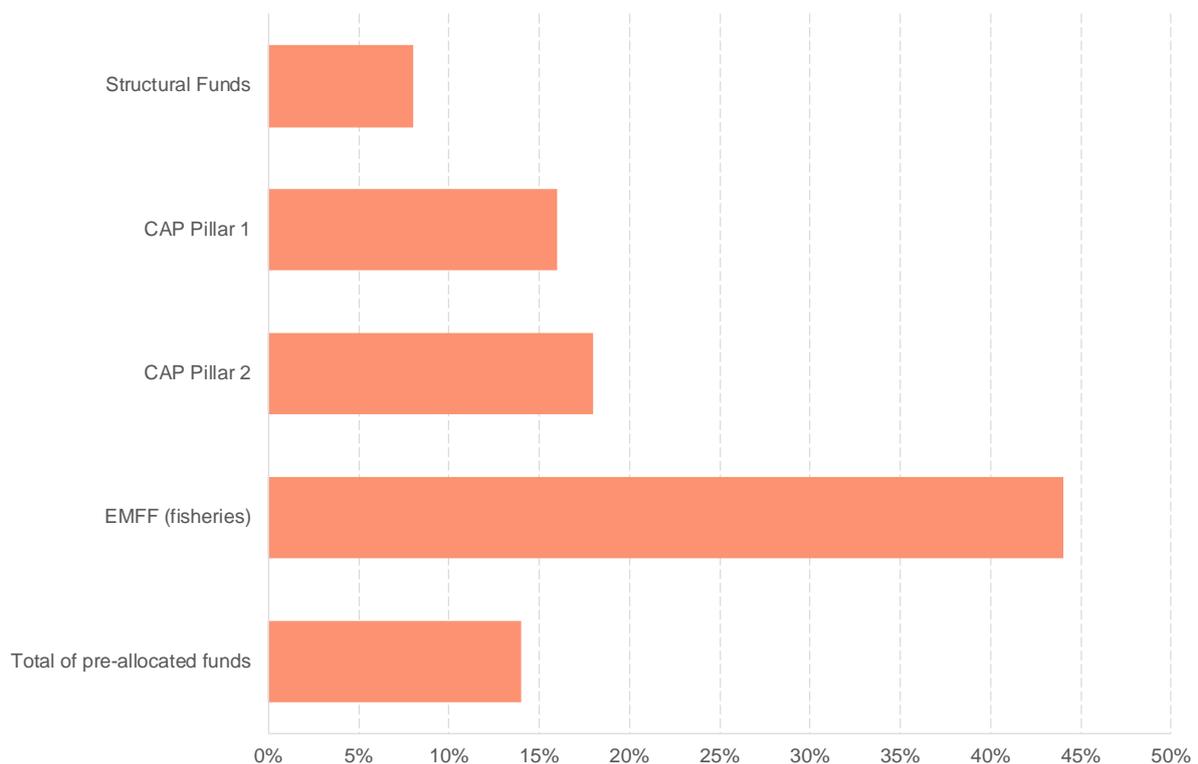
Secondly, some fiscal competences currently exercised at EU level might be repatriated to the Scottish Parliament post-Brexit²². These include:

- Agriculture including support for farmers and rural policy;
- Fisheries within the Scottish zone and Scottish boats outside it;
- Environmental regulation; and
- Regional policy including industry support and economic development;

From a Scottish budget perspective, a key as yet unresolved issue relates to the funding of any of these powers if they are transferred to Holyrood. In the first instance, EU funding would revert to Westminster.

The monies involved are not insignificant – for example Scotland's share of EU Structural Funds (for 2014-20) amount to around €1 billion²³.

Chart 3.6: Scotland's share of UK 2014-20 EU funding



Source: Scottish Parliament Research Centre

²² A complication is that the international dimensions of 'non-reserved' policy are always reserved (e.g. whilst agricultural policy is not reserved, issues relating to agricultural trade are).

²³ See <https://beta.gov.scot/policies/european-structural-funds/>

3.6 *The policy and regulatory environment.*

The Single Market is underpinned by a suite of rules and regulations covering diverse areas such as employee rights, environmental standards, procurement and state aid.

The 'Great Repeal Bill' will convert all existing EU-derived law into domestic law. What happens next will be crucial. A number of issues are worthy of note.

1. As highlighted above, non-tariff barriers can be a significant impediment to trade in many sectors. If the UK takes a different path to the EU – e.g. in product safety standards – this would come at the expense of access to EU markets.
2. Brexit might remove constraints imposed by State Aid rules, enabling government to support industries in ways in which they currently cannot. Any trade deal with the EU is, however, likely to require some agreement to coordinate – at least in part – State Aid rules²⁴.
3. Finally, the scope for the UK to take a radically different path is open to question. The UK is already estimated to have the second lowest level of product regulation in the OECD and be only behind New Zealand, the US and Canada in terms of how flexible (or lax depending upon your viewpoint) employment protection rights are^{25,26}.

²⁴ EEA members effectively agree to EU State Aid rules, and WTO rules include anti-subsidy measures.

²⁵ <https://stats.oecd.org/index.aspx?DataSetCode=PMR>

²⁶ www.oecd.org/els/emp/oecdindicatorsofemploymentprotection.htm

4. EU links by sector

In this section of the report, we outline current links between different sectors of the Scottish economy and trade with the EU.

It should be noted that the data availability of Scottish trade to the EU and wider economic links is largely under-developed. What we do in this section, is make the best use of the information and sources are available. The data and modelling contained here should in our view be interpreted as providing an illustrative overview of trends.

4.1 Scottish EU trade by sector

Table 4.1 shows the value of EU exports based upon the Export Statistics Scotland data – see Box 4.1 for an overview of available statistics on Scottish exports.

Manufacturing makes up the majority of Scottish trade with the EU. In 2015, just over 60 per cent of Scottish trade with the EU was from manufacturing²⁷.

Table 4.1: Scottish EU exports by sector

	EU	Rank
Total	12,305	
Agriculture, Forestry and Fishing	105	21
Mining and Quarrying	615	7
Manufacturing		
Food & beverages	1,830	2
<i>Of Which Distilling, rectifying and blending of spirits</i>	<i>1,190</i>	
Textiles, leather and related products	210	16=
Wood and paper products; and printing	325	12=
Coke, refined petroleum and chemical products	2,320	1
Basic metals and fabricated metal	325	12=
Computer, electronic and optical products	595	8
Machinery and equipment	625	6
Transport equipment	185	19
Furniture, other manufacturing; repair and installation	200	18
Other	870	5
Total Manufacturing	7,480	
Utilities	175	20
Construction	50	22
Services		
Wholesale, retail trade; repair of vehicles	1,070	3
Transportation and storage	430	9
Information and communication	345	10
Financial and insurance activities	210	16=
Professional, scientific and technical activities	980	4
Administrative and support service activities	335	11
Education	285	14
Other Services	225	15
Total Services	3,880	

Source: Scottish Government Export Statistics Scotland

²⁷ For the purposes of this paper we use the classifications provided in official government publications. In practice, there is cross-over between what is manufacturing and what is classified as a service.

In terms of the value of exports, the most significant sectors are those associated with refined petroleum and chemical activities and food and drink (of which whisky and linked products like white spirit) are the largest.

Although goods make up the majority of trade, there are some important sectors in services including wholesale and retail and professional service activities.

Box 4.1: Estimating Scottish exports

There are two main sources of export statistics data for Scotland.

1. Export Statistics Scotland – published by the Scottish Government;
2. UK Regional Trade Statistics – published by HMRC (for goods) and the ONS (for services).

Export Statistics Scotland (ESS) is based upon a survey – the Global Connections Survey²⁸.

The UK regional statistics produced by HMRC and ONS are based upon different methodologies. They take UK-wide data and apportion it according to business address. Where a firm has multiple locations, an employment share is used.

The ESS is currently the preferred source as it covers both services and goods and is based upon a direct assessment of activity.

The HMRC and ONS data have the advantage of consistency across the UK. The HMRC allocates oil exports from North Sea platforms to the ‘region’ where it is located – significantly influencing the Scottish figures. But overall, it is much improved.

The ONS data is experimental.

All three datasets use the final destination market. Therefore, even if a Scottish product leaves from a port elsewhere in the UK they will still be counted as a ‘Scottish export’.

However, they do not monitor cross border flows of complex supply chains.

In looking at the relative importance of the EU market, some interesting features are evident.

As Table 4.2 highlights, around 63 per cent of total Scottish exports are destined for markets elsewhere in the UK. However, in manufacturing, international exports (non-EU and EU combined) are more important. Unsurprisingly, in services there is less international trade. For utilities and construction the percentages are lower still.

²⁸ www.parliament.scot/ResearchBriefingsAndFactsheets/S5/SB_17-14_Scotlands_Exports.pdf

Table 4.2: Share of Scottish exports by destination

	RUK	Non-EU	EU
Total	63%	21%	16%
Agriculture, Forestry and Fishing	72%	16%	12%
Mining and Quarrying	60%	29%	12%
Manufacturing			
Food products, beverages and tobacco products	46%	34%	21%
<i>Of Which Distilling, rectifying and blending of spirits</i>	13%	60%	27%
Textiles, leather and related products	43%	24%	33%
Coke, refined petroleum and chemical products	31%	11%	58%
Pharmaceutical products	24%	37%	39%
Rubber, plastic and other non-metallic mineral products	41%	19%	40%
Basic metals and fabricated metal products, except machinery	53%	25%	22%
Computer, electronic and optical products	27%	37%	36%
Machinery and equipment n.e.c	29%	39%	32%
Total Manufacturing	43%	29%	28%
Utilities	95%	2%	3%
Construction	93%	3%	3%
Services			
Wholesale, retail trade; repair of vehicles	80%	7%	13%
Transportation and storage	76%	11%	13%
Accommodation and food service activities	64%	19%	17%
Information and communication	65%	25%	10%
Financial and insurance activities	86%	12%	2%
Real estate activities	75%	15%	10%
Professional, scientific and technical activities	56%	32%	12%
Administrative and support service activities	70%	22%	8%
Education	40%	38%	22%
Total Services	72%	18%	10%

Source: Scottish Government Export Statistics Scotland

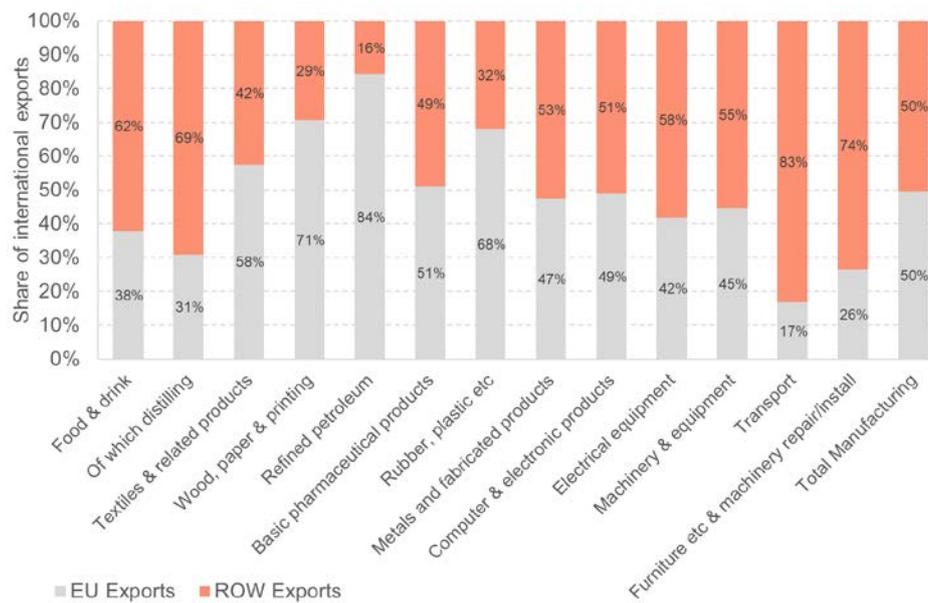
EU exports equate to only 10 per cent of exports from the service sector. But this figure rises to nearly 30 per cent for manufacturing.

Sectors where the EU share of exports appears to be particularly important include refined petroleum and associated sectors, pharmaceutical and computer and electronic products. These latter exports are likely to be driven – in part – by pan-EU supply chains.

Next by focussing in solely on international exports we can explore this a little further – see Chart 4.1 for manufacturing.

This will determine, in part, the scope for sectors to take advantage of new markets.

The average share of international exports bound for the EU in 2015 was around 50 per cent.

Chart 4.1: Share of total sector international exports by EU or ROW: Scotland 2015

Source: Scottish Government Export Statistics Scotland

Again, the relative importance of EU markets is not uniform. For example, in the coke, refined petroleum and chemical products sector over 80 per cent of international exports are currently to the EU. In contrast, for food and drink – particularly companies in the spirits industry – the ratio is lower at around 40 per cent.

In summary, access to EU markets makes up a substantial proportion of the overall export base, although there are differences by sector.

4.2 *Employment supported by export demand by sector*

There are no actual data on employment supported by EU exports for Scotland.

But using some of the information set out above, it is possible to provide an approximate estimate of the number of jobs in Scotland linked to the demand for exports from the EU (and other export markets).

This is important, as different parts of the economy will have deeper/shallower linkages into the local economy and/or more spill-overs than others.

For example on its own, the coke, refined petroleum and chemical products sector generates a significant amount of output and value added. But its activity is largely self-contained – particularly in comparison to other sectors like retail and wholesale.

There are different methodologies that can be employed to gain an understanding of the wider employment levels supported by export demand. We adopt one here.

To undertake this analysis, we use data published by the Scottish Government in their most recent input output tables – for 2014 – and the export information published in Export Statistics Scotland.

Box 4.2 sets out the methodology. Table 4.3 summarises the headline results²⁹.

Table 4.3: Scottish employment supported by external demand, 2014

	Non-resident households ³⁰	EU exports	Non-EU exports	rUK exports	Total
Direct Employment	51,500	80,300	115,500	337,300	584,600
Indirect Employment	8,200	33,000	49,700	144,200	235,200
Induced Employment	6,900	21,100	30,500	82,700	141,100
Total	66,500	134,400	195,700	564,200	960,900

Source: Fraser of Allander

According to the methodology set out in Box 4.2, it is estimated that around 560,000 jobs in Scotland are supported by demand for our goods and services from the rest of the UK.

Around 134,000 jobs are supported by export demand from the rest of the EU, and slightly under 196,000 jobs are supported by export demand from the rest of the world.

We can convert these numbers into shares of total employment in Scotland using comparable data – again from the Scottish Government input-output tables.

Putting this all together shows that in 2014, **24.6 per cent** of Scotland's employment (excluding public sector administration and defence) was supported by trade with the rest of the UK (RUK).

The equivalent number for trade with the rest of the EU (REU) was **5.9 per cent** and for the rest of the world (ROW) was **8.5 per cent**.

The table below gives the shares of Scottish employment supported by demand from each source, in 2014, by type of employment effect.

²⁹ All results rounded to the nearest 100. Totals may not sum because of rounding.

³⁰ Non-resident households refers effectively to tourist spending in Scotland (which is classified as an export).

Table 4.4: Total Scottish employment supported by each source of external demand, 2014

	Non-resident households	EU exports	Non-EU exports	rUK exports
Direct Employment	2.2%	3.5%	5.0%	14.7%
Indirect Employment	0.4%	1.4%	2.2%	6.3%
Induced Employment	0.3%	0.9%	1.3%	3.6%

Source: Fraser of Allander

Box 4.2: Methodology

We use the most recent (2014) input-output tables for Scotland³¹.

Economic input-output tables provide a complete picture of the flows of goods and services (products) in the economy. They detail the relationship between producers and consumers and track the interdependencies of industries. They are constructed from survey and other data sources and provide the most accurate and comprehensive picture of the national economy available.

Given the scale of resources that goes into their compilation, the data are typically published with a lag.

Using these data, we can attribute jobs to RUK export demand from the information in the tables themselves by sector and applying the appropriate employment effects.

For trade with the rest of the EU, we have to first disaggregate the information on export demand from the rest of the world. This is done using Export Statistics Scotland (ESS) data produced by the Scottish Government³². We use the sectoral shares of export demand based on 2014 in 2015 ESS, and then constrain the totals to the 2014 Scottish input-output data.

As with all such estimates and methodologies, different assumptions etc. will impact on the final estimates. In particular, it should be noted that the figures for ROW exports (and RUK exports) in the IO tables differ from those in ESS.

Having disaggregated ROW export demand from the input-output tables into demand from the rest of the EU and the rest of the world, we apply sectoral employment effects from the input-output tables as we did for RUK trade.

³¹ www.gov.scot/Topics/Statistics/Browse/Economy/Input-Output/Downloads/IO1998-2014Latest

³² www.gov.scot/Topics/Statistics/Browse/Economy/Exports/ESSPublication/ESSExcel

Table 4.5 looks in more detail at a sectoral level, and we can see the sectors where Scotland's export demands supports employment.

Table 4.5: Sectoral breakdown of jobs supported by export demand³³

	Non-resident households	EU	Non-EU	rUK
Agriculture & Mining	1,100	6,400	10,400	57,600
Manufacturing, Utilities and Construction	1,500	55,100	63,500	151,400
Services	64,000	72,900	121,800	355,300

Source: Fraser of Allander

Table 4.6 breaks this down further. Again, we stress the importance of focusing on relative scale and patterns rather than point estimates. The grouping is slightly different to the above to help with aggregation (and consistent with those in the Scottish GDP publication).

Table 4.6: Sectoral breakdown of jobs supported by export demand

	Non-resident households	EU	Non-EU	rUK
Agriculture, Forestry and Fishing	900	4,400	5,400	20,900
Mining and Quarrying	200	2,000	5,000	36,700
Manufacturing				
Food, Beverages & Tobacco	400	12,800	17,200	42,300
Textiles, Clothing & Leather Products	200	2,200	1,700	3,400
Refined Petroleum, Chemical & Pharmaceutical Products	100	6,800	2,300	7,200
Metals, Metal Products & Machinery n.e.c.	200	11,300	12,200	14,400
Computer, Electrical & Optical Products	0	6,000	7,100	7,700
Transport Equipment	0	1,400	7,800	10,300
Other Manufacturing Industries; Repair & Installation	400	9,300	10,800	27,200
Total Manufacturing	1,300	49,800	59,000	112,600
Utilities	100	2,500	1,300	15,000
Construction	200	2,800	3,200	23,700
Services				
Distribution, Hotels and Catering	53,900	22,100	14,700	34,900
Transport, Storage and Communication	5,100	10,100	16,800	62,600
Business Services and Finance	1,500	28,700	72,600	226,200
Government, and Other Services	3,500	12,100	17,700	31,500
Total Services	64,000	72,900	121,800	355,300

Source: Fraser of Allander

³³ Note- the totals in this table do not exactly match those in Table 4.6 due to rounding.

Not only does this table capture differences in terms of export shares, but it also captures differences in multipliers and linkages to the local economy.

For example, whilst in terms of value the refined petroleum, chemical and pharmaceutical products sector had the greatest EU market in terms of estimated jobs supported, other sectors such as machinery and food and drink are estimated – under this methodology – to ultimately support a higher number of jobs.

Other big sectors include many key manufacturing sectors. Like metals and electrical manufacturing.

In services, the onward jobs supported tend to be higher than for manufacturing, reflecting the different values of multipliers in these sectors – e.g. in distribution and hotels and catering. Two qualifications are worth noting.

Firstly, a large number of the jobs supported in wholesale and retail will actually be tied to other sectors.

Secondly, the figure for non-residents households for distribution, hotels and catering reflects the fact that there is only limited data on EU and overseas visitors and they are captured by the term non-resident households. This is, therefore, likely to underestimate EU and international figures – see Box 4.3 for more.

Box 4.3: Non-residents households

In the above analysis, we do not attempt to disentangle spending by non-resident households by country of origin.

For the most part, this is a reasonable assumption as the magnitudes from the classification are quite low. Arguably, the one exception to that is in tourist activities where a significant proportion of such ‘export’ demand will be apportioned to this ‘non-resident households’ category rather than to RUK, REU or ROW.

For completeness, the following table summarises the key data on tourist activity in Scotland.

Table 4.7: Tourist numbers and spend Scotland 2015 and 2016

		Visits (000s)		Spend (£m)	
		2015	2016	2015	2016
EU28	Holiday	805	714	528	429
	Business	275	278	105	91
	Visiting friends or relatives	285	399	84	124
	Miscellaneous	46	34	68	48

	<i>All visits</i>	1,411	1,425	785	692
	Holiday	1,454	1,471	1,081	1,178
	Business	427	413	204	204
World	Visiting friends or relatives	606	782	288	349
	Miscellaneous	106	81	124	119
	<i>All visits</i>	2,592	2,747	1,695	1,850
	Holiday	55.4%	48.5%	48.8%	36.4%
	Business	64.5%	67.4%	51.6%	44.9%
EU Share	Visiting friends or relatives	47.0%	51.0%	29.3%	35.6%
	Miscellaneous	43.3%	42.1%	54.7%	40.2%
	<i>All visits</i>	54.5%	51.9%	46.3%	37.4%

Source: Scottish Government

One final piece of analysis is to compare the direct jobs in the sector approximately supported by EU demand with total employment – Table 4.8.

Table 4.8: Share of total employment accounted for by direct EU export employment

	Direct EU Export Employment	Total Sector Employment	%
Agriculture, Forestry and Fishing	3,000	55,500	5.4%
Mining and Quarrying	1,000	28,900	3.6%
Manufacturing			
Food, Beverages & Tobacco	5,800	47,900	12.1%
Textiles, Clothing & Leather Products	1,400	7,800	18.4%
Refined Petroleum, Chemical & Pharmaceutical Products	3,100	11,100	27.5%
Metals, Metal Products & Machinery n.e.c.	6,600	41,300	16.0%
Computer, Electrical & Optical Products	3,500	16,200	21.3%
Transport Equipment	500	12,300	4.4%
Other Manufacturing Industries; Repair & Installation	5,300	56,500	9.3%
Total Manufacturing	26,100	193,200	13.5%
Utilities	1,100	32,700	3.5%
Construction	1,500	159,900	0.9%
Services			
Distribution, Hotels and Catering	13,900	448,600	3.1%
Transport, Storage and Communication	6,200	170,000	3.6%
Business Services and Finance	18,000	433,900	4.1%
Government, and Other Services	9,500	655,800	1.4%
Total Services	47,500	1,708,300	2.8%

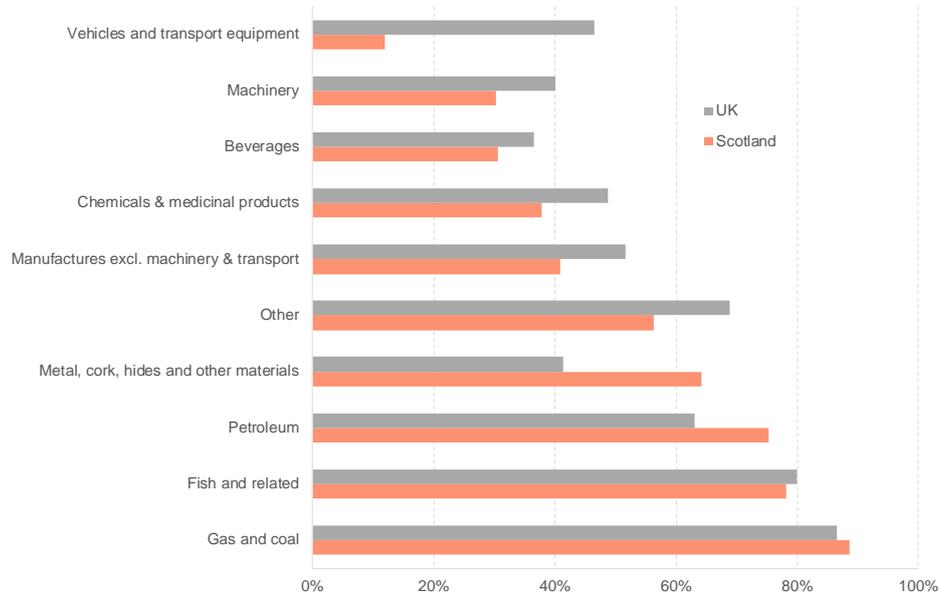
Source: Fraser of Allander

Here we see that in certain manufacturing sectors, a relatively high proportion of jobs in the sector are estimated to be supported by EU demand.

4.3 How different is Scotland to the UK?

Chart 4.2 examines the relative share of EU exports in total exports of goods between Scotland and the UK according to the latest HMRC data (note this excludes services).

Chart 4.2: Exports Destined for the EU as a % of Total Exports – Scotland and the UK



Source: HMRC Regional Trade Statistics

Overall, there are not many significant differences between Scotland and the rest of the UK. But there are some variations, for example machinery and transport equipment – including the production of cars – are more important at the UK level.

It is possible to go a level below this and to look at some of the sub-sectors. Table 4.9 lists the top ten Scottish exports to the EU and then compares where the sector ranks for the UK. It also shows the proportion of total exports in the sector that are accounted for by EU sales. Finally, the table shows the proportion of *total* Scottish exports that are accounted for by EU trade by this sector.

Some care should be taken when interpreting these results as they will – in part – be influenced by the categorisation of the sixty six sectors. But they still provide useful comparisons.

Table 4.9: Top ten Scottish exports to EU – by value and UK rank – Q2 2016 to Q1 2017

	EU Export Rank	Scotland			UK
		EU Exports	% of Total Sector Exports	% of Total Scottish Exports	EU Export Rank
Petroleum & related materials	1	4,473,779	75.3%	16.6%	2
Beverages	2	1,001,401	30.6%	3.7%	19
Fish & crustaceans	3	633,046	78.1%	2.4%	31
General industrial machinery	4	509,904	37.8%	1.9%	6
Office machines & adp machines	5	499,714	75.7%	1.9%	11
Electronic machinery & appliances	6	405,963	48.4%	1.5%	7
Miscellaneous manufactured articles	7	384,593	65.0%	1.4%	4
Medicinal & pharmaceutical products	8	363,117	24.4%	1.3%	5
Power generating machinery & equipment	9	300,387	10.2%	1.1%	8
Gas, natural & manufactured	10	277,252	88.5%	1.0%	22

Source: HMRC Regional Trade Statistics

The table highlights some differences in terms of ranking by sector in terms of value over the year Q2 2016 to Q1 2017. For example, the relative importance of Scotland's beverages and fishing sectors are clearly evident.

There are however, a lot of similarities particularly in manufacturing.

Table 4.10 shows that the difference in relative importance is reciprocal. Here we rank top UK exports to the EU and compare where these same sectors rank for Scotland.

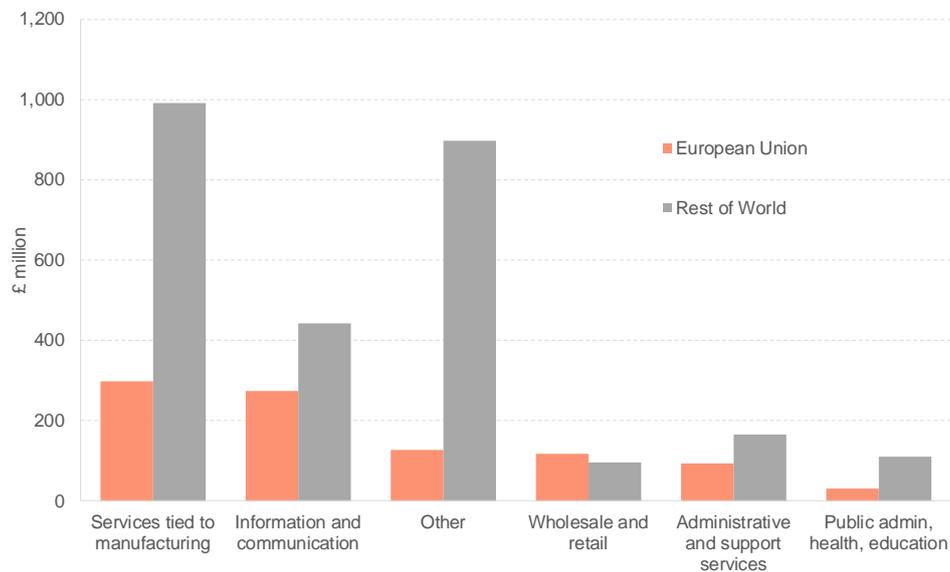
Chart 4.10: Top ten UK exports to EU – by value and Scottish rank

	EU Export Rank	UK			Scotland
		EU Exports	% of Total Sector Exports	% of Total UK Exports	EU Export Rank
Road vehicles	1	17,877,413	46.5%	6.4%	26
Petroleum & related materials	2	11,387,480	63.0%	4.1%	1
Other transport equipment	3	8,247,595	46.5%	2.9%	24
Miscellaneous manufactured articles	4	7,822,835	42.6%	2.8%	7
Medicinal & pharmaceutical products	5	6,744,326	35.3%	2.4%	8
General industrial machinery	6	5,887,032	47.4%	2.1%	4
Electronic machinery & appliances	7	5,787,197	49.1%	2.1%	6
Power generating machinery & equipment	8	4,763,585	20.9%	1.7%	9
Fashion, clothing & accessories	9	4,584,727	77.7%	1.6%	13
Telecomms	10	3,540,460	52.6%	1.3%	19

Source: HMRC Regional Trade Statistics

Next we look at the ONS experimental data on services exports for Scotland – summarised in Chart 4.3³⁴. The biggest service sectors are ones tied to manufacturing and information and communication.

Chart 4.3: EU and ROW Service Exports from Scotland 2015



Source: ONS Regional Services Export Statistics

Box 4.4: HMRC Treatment of Mineral Fuels, lubricants and related materials

The HMRC Regional Trade Statistics are based upon an apportionment of total UK trade to the twelve Government Office Regions of the UK.

The UK exports a lot of oil-related activities, primarily to Europe. This includes output directly from oil platforms in the North Sea.

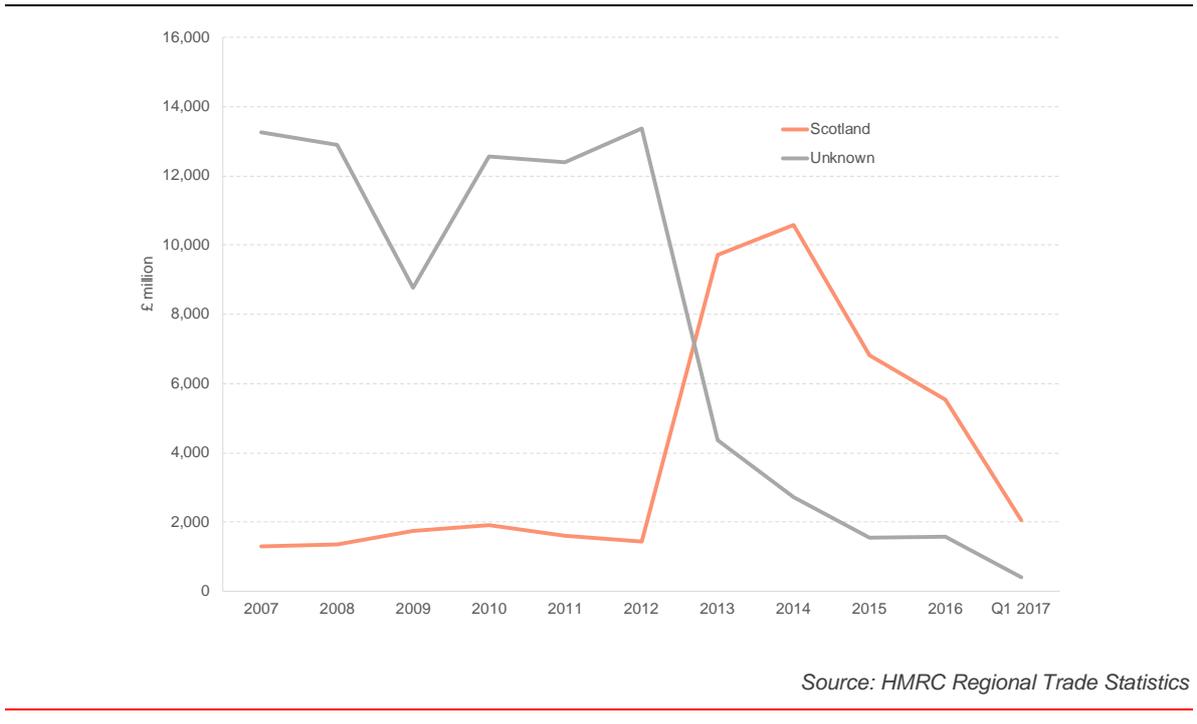
In the past, these exports were allocated to an ‘unknown region’. Now they are allocated the exports to the location of oil installation. This means that all oil exports from rigs in Scottish waters enter into the Scottish series.

This significantly alters the results. Most countries – including Norway – with substantial oil and gas sectors separate their accounts into onshore and offshore.

The chart below shows the impact on the Scottish data.

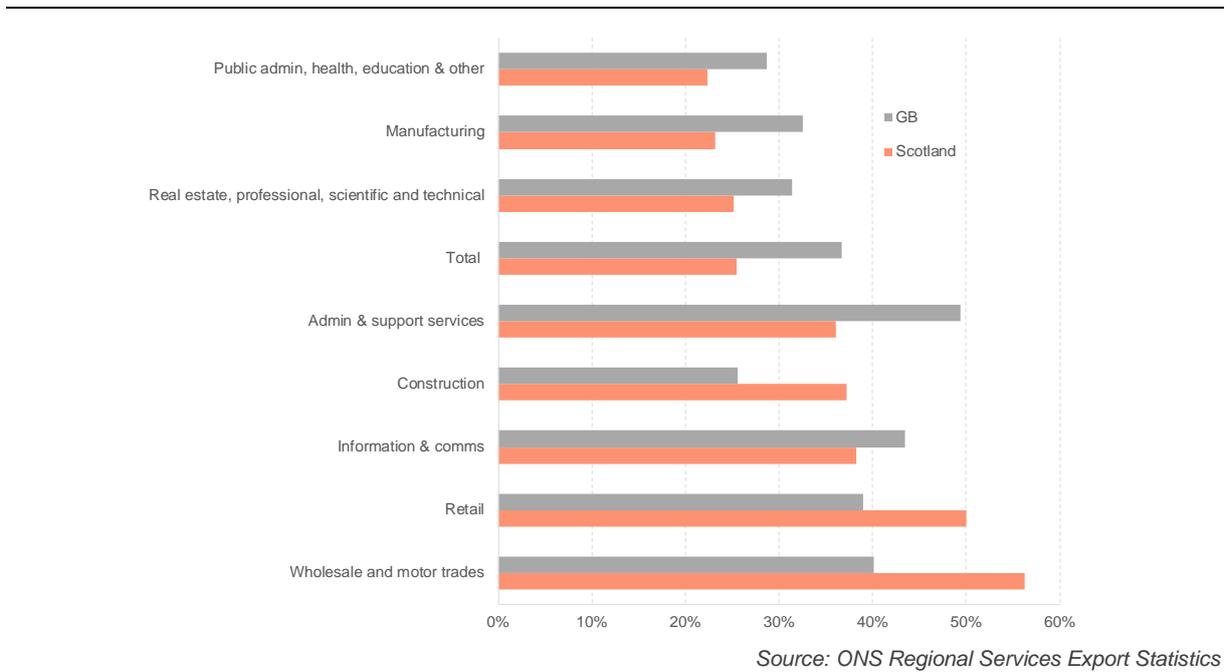
³⁴ It should be noted estimates much higher Scottish services exports than the equivalent Scottish Government series

Chart 4.4: Mineral fuels lubricants and related materials – Scotland and unknown region



The chart below provides a slightly more detailed breakdown of total exports going to the EU.

Chart 4.5: % of Service Exports from Scotland & GB to EU, by industry - 2015



In the main, the relative importance of EU services exports by sector is similar to that for the UK as a whole. There are differences, in particular the importance of the EU market in the professional, scientific and technical category.

4.4 What about imports?

The final thing to look at is imports.

There is a common misconception that imports are bad for the economy, whereas exports are good. But imports also generate economic activity. Indeed, imports are often essential to the production of goods, which are ultimately exported.

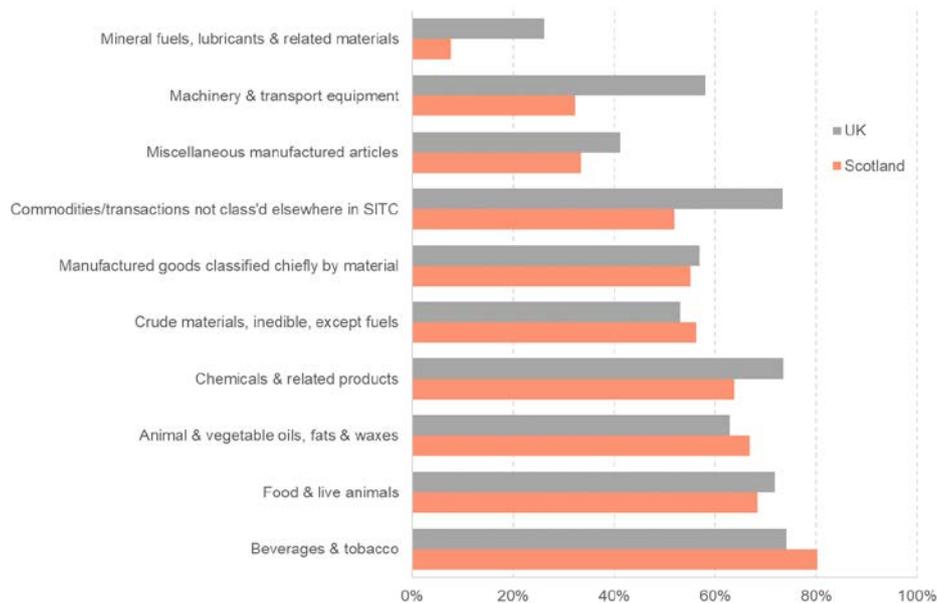
Unfortunately, the data on Scottish imports from the EU is sparse.

HMRC do provide an estimate of goods imports based upon the location of the firm importing.

Chart 4.6 shows the proportion of total international imports from the EU.

Overall, there is little variation between Scotland and the UK. The key import activity is in machinery and transport equipment.

Chart 4.6: Goods Imports by industry – Scotland and the UK, 2016Q2 to 2017Q1 – share of total imports accounted for by EU imports



Source: HMRC Regional Trade Statistics

4.5 What else might have an impact?

If the UK and EU trade relationship reverts to a WTO-type framework, then what will matter for a sector is the likelihood that it will face barriers to trade.

A sector in Scotland may be relatively relaxed provided that they face low – or even zero – tariffs. Of course, that would still not remove non-tariff barriers or challenges from being outside the Customs Union.

Table 4.11 summarises some select tariffs imposed by the EU by product.

Table 4.11: EU Tariffs by product type (%)

Good	Average Tariff (%)
Animal Products	15.0
Dairy Products	33.5
Fruit, vegetable and plants	10.3
Pharmaceuticals	0.0
Coffee and tea	6.0
Cereals and preparations	12.4
Sugars and confectionary	20.2
Beverages and tobacco	19.4
Other agricultural products	3.2
Fish and fish products	12.0
Minerals and metals	2.0
Petroleum	2.5
Chemicals	4.5
Wood, paper etc	0.9
Textiles	6.5
Clothing	11.4
Leather, footwear etc.	4.1
Non-electrical machinery	1.9
Electrical machinery	2.8
Transport equipment	4.3

Source: WTO World Tariff Profiles 2016

The above table is an aggregate. Within individual product groups, the exact tariff could vary significantly. For example, the upper bound can be as high as 22% on some transport equipment. In agriculture, they can be as high as 87 per cent for frozen beef to as low as 3.8 per cent on whole, fresh, sweet potatoes.

Information on non-tariff barriers is harder to ascertain. For example, a key one in the Scottish context will undoubtedly be passporting rights for financial services.

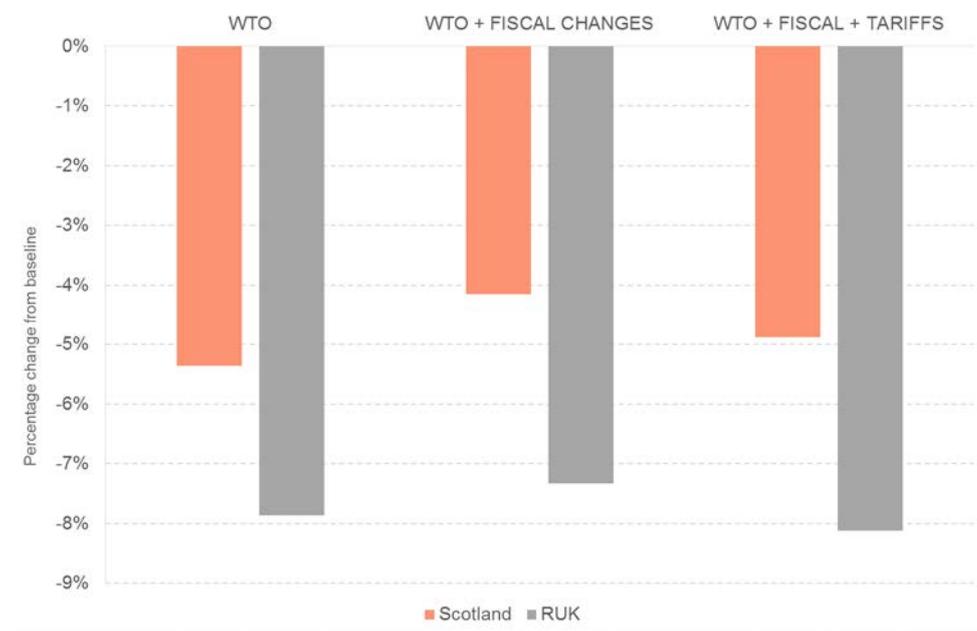
Mutual recognition of standards will also be vital for many producers. Similarly, some sectors – particularly those plugged into a supply chain – will be more susceptible to costs associated with rules of origin.

The final point is that trade with the EU is only one channel through which Brexit may have an impact on Scotland.

Our analysis published in October 2016, highlighted how it was important to consider Scotland's trade relationships with the UK. Any Brexit shock to the rUK economy will spill-over into the Scottish economy³⁵.

To assess these long-term implications, we used our macroeconomic model of Scotland economy to capture all such channels – Chart 4.7.

Chart 4.7: Percentage change in long-run GDP in Scotland and RUK in the WTO Scenario



Source: FAI analysis

4.6 EU nationals by sector³⁶

In 2015, there were 115,000 non-UK EU nationals aged 16 and over in employment in Scotland – around 4.5 per cent of total employment.

Table 4.12 summarises some key statistics on EU nationals in Scotland.

³⁵ <https://www.sbs.strath.ac.uk/feeds/news.aspx?id=1057>

³⁶ All the data in this section of the report are from the APS for 2015.

Table 4.12: Non-UK EU Nationals and other non-EU nationals in Scotland, 2015

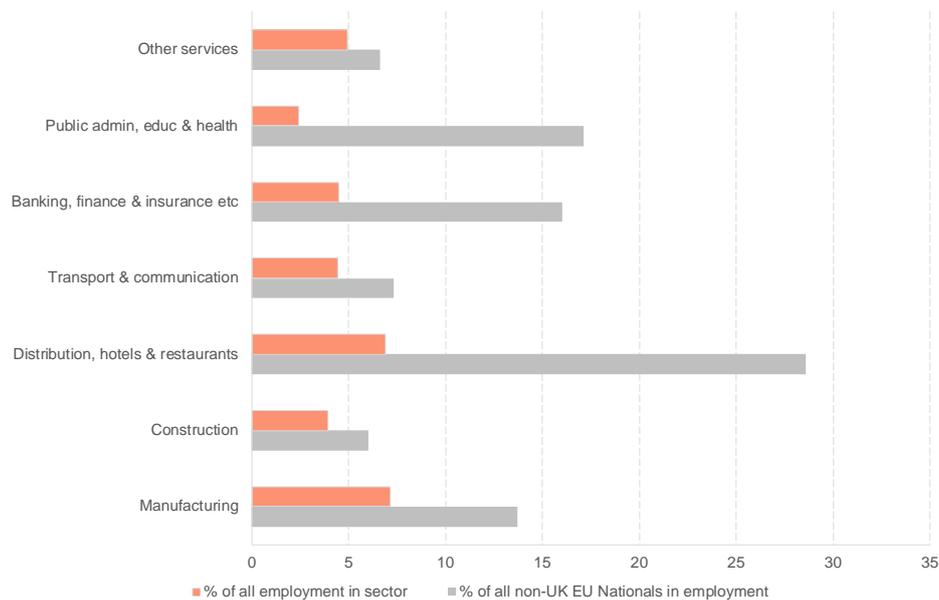
	Non-UK EU Nationals	All Scotland
Total population (000's)	181	5,282
% of total population	3.4	100
Number of working age adults	145	3,417
% of all working age adults in Scotland	4.2	100.0
By age band (%)		
<16	16.4	17.0
16-24	14.0	11.5
25-34	33.5	13.2
35-49	24.5	19.8
50-64	7.8	20.2
65+	3.8	18.3
Economic Activity		
Employment (16-64) rate	78.9%	73.1%
Unemployment (16+) rate	6.0%	5.8%
Inactivity (16-64) rate	16.2%	22.3%
% of all		
In employment	4.5	100.0

Source: Annual Population Survey

The employment rate for non-UK EU nationals (78.9 per cent in 2015) is higher than for Scotland as a whole (73.1 per cent in 2015).

The chart below shows two things –

- The percentage of non-UK EU nationals workforce employed in each industry;
- The percentage of all non-UK EU nationals in employment by industry.

Chart 4.8: Non-UK EU Nationals % of employment by sector, 2015

Source: Annual Population Survey

In total, non-UK EU nationals account for 4.5 per cent of all employment in Scotland in 2015.

For non-UK EU nationals (aged 16 and over), the main industries of employment are in distribution, hotels and restaurants where 28.6 per cent of all non-EU UK nationals were employed – equivalent to 6.9 per cent of Scotland's overall employment in that sector.

There are a number of non-UK EU nationals in public administration – around 19,600 – but this only equates to around 2.4 per cent of employment in that sector.

The Scottish Government has also identified six growth sectors.

Table 4.13, shows the number of people employed and the share of total employment in four of these (data on energy and life sciences is not available).

Table 4.13: Employment by growth sector 2015

Growth sector	EU Nationals (000s)	% of all in employment by sector
Food and Drink	8	11.3
Finance & Business Services	7	3.3
Tourism	20	10.8
Creative Industries	9	7.3
All Sectors	115	

Source: Annual Population Survey

Within this, we know that some sub-sectors are more dependent than others. For example, in the manufacture of food products, the same statistics reveal that a quarter of all people in employment are non-UK EU nationals.

Finally, Table 4.14 shows that over a third of EU nationals (16-64) in Scotland have a degree level qualification or higher.

Table 4.14 Highest qualification of population (16-64) by nationality: Scotland, 2015

	UK nationals	EU nationals	Non-EU nationals
Degree level & above	26.7%	35.0%	53.7%
Higher & Further Education below degree level	15.5%	14.5%	11.8%
Below Higher or Further education including no qualifications	54.7%	25.4%	21.5%
Other qualifications	3.2%	25.1%	13.0%

Source: Annual Population Survey

Concerns around implications for skills, particularly in some highly specialised activities, has also been expressed. See for example the recent Scottish Government report on the Contribution of EEA Citizens Scotland³⁷.

4.7 Issues in particular sectors

In addition to these macroeconomic factors, we also know that there are a number of specific issues relevant to particular sectors in Scotland. We briefly discuss some of these in turn here.

Universities

Scotland's University sector faces a number of unique issues, particularly related to its teaching and research activities.

Firstly, there are over 13,000 undergraduate students from the EU studying in Scotland, who enjoy the same tuition fee free education as Scottish students³⁸. The status of these students for fees and funding has been guaranteed for the duration of their studies.

³⁷ www.gov.scot/Resource/0052/00527186.pdf

³⁸ www.parliament.scot/ResearchBriefingsAndFactsheets/S5/SB_16-79_Brexit_Higher_Education_in_Scotland.pdf

However, their future immigration status should they choose to stay beyond their studies is not yet clear.

Secondly, 17 per cent of Scotland's academic staff and 25 per cent of research staff are from the EU³⁹. Their status – and their perception of life in the UK – will be important for attracting global talent in the future.

Finally, Scottish Universities have benefited from EU funding. Organisations in Scotland have secured €217 million in Horizon 2020 research and innovation funding since 2014⁴⁰. Such funds – but just as crucially the opportunity to work collaboratively across networks – boosts Scotland's scientific and business reputation.

Farming

In 2016, there were around 63,500 people employed in agriculture⁴¹.

Firstly, there is the issue of what might happen to CAP payments post-Brexit. For the 2014-20 period, Scotland's share of the UK's EU CAP funding is around 17 per cent⁴², greater than a population share.

The Scottish Government are likely to oppose any notion that such funding should be allocated on a per capita basis.

Secondly, application of tariffs under a WTO model would have significant implications. The EU's average tariff on agricultural products is one of its highest. This would obviously apply – initially – to imports coming in to the UK from Europe (e.g. Ireland). The result is likely to be some disruption to existing business models. Setting the right tariff regime will be important. High tariffs would raise the cost to UK consumers, whereas lower tariffs could undermine the agricultural sector's competitiveness.

Thirdly in recent years, many seasonal workers – particularly in the fruit and vegetable market – have been EU migrants⁴³.

Finally, there is the issue of which tier of government takes responsibility for farming. Agriculture is currently a non-reserved policy. However, this is not yet clear cut. There is the

³⁹ Higher Education Statistics Agency (2016)

⁴⁰ www.gov.scot/Topics/International/Europe/Benefits-EU-Membership/Funding

⁴¹ www.gov.scot/Topics/Statistics/Browse/Agriculture-Fisheries/agritopics/farmlabour

⁴² www.parliament.scot/ResearchBriefingsAndFactsheets/S5/SB_17-12_Agriculture_and_Brexit_in_10_Charts.pdf

⁴³ www.nfus.org.uk/news/news/scottish-agricultures-seasonal-workers-needs-pressed-to-uk-government-ministers

budget issue as set out above but also other complications such as responsibility over economic issues (e.g. although agricultural policy might be devolved, issues relating to trade could be reserved).

Fishing

In 2015, Peterhead, Lerwick and Fraserburgh accounted for 48 per cent by quantity and 32 per cent by value of all landings by UK vessels⁴⁴. According to the Scottish Seafood Association, almost half of the 12,000 jobs supported by the UK processing sector are based in Scotland⁴⁵.

But at an aggregate level, the fishing industry makes a relatively small contribution to the overall economy.

Around 5,000 people are employed on fishing vessels in Scotland either through regular employment or temporary work⁴⁶. This is equivalent to around 0.2 per cent of total Scottish employment.

However, in certain parts of the country – for example, the North East – fishing plays a significant role in local communities.

The Common Fisheries Policy has been one of the most controversial elements of the EU. It has led to a system of shared access and management of stocks.

Post-Brexit, the UK would gain responsibility for managing the fish stocks in its Exclusive Economic Zone.

There are a number of issues to be mindful of.

Firstly, fish products face high tariffs if entering EU markets.

Secondly, the UK is a net importer of fish. In 2015, the UK imported 681 thousand tonnes of fish (excluding fish products) whilst it exported 443 thousand tonnes. The EU is the largest single source of UK fish imports.

⁴⁴

www.gov.uk/government/uploads/system/uploads/attachment_data/file/598208/UK_Sea_Fisheries_Statistics_2015_full_report.pdf

⁴⁵ See <http://scottishseafoodassociation.com/about/>

⁴⁶ A fisherman is defined as a person working at sea on a commercial fishing vessel. It excludes persons not working at sea, such as administrators and land-based processing staff.

Thirdly, fisheries debates will remain highly charged. There is likely to be a trade-off between access to waters and access to markets. Securing greater quotas with no impact on trade access seems an ambitious goal to aim for.

Finally, as highlighted above, the fishing industry is relatively small in terms of its overall impact in the economy. It is by no means certain how different sectors will be prioritised when it comes to 'doing a deal', particularly at the UK level.

Oil and Gas

Scotland's oil and gas industry is global, both in terms of the markets it operates in and the supply of workers. It is arguably less directly impacted by Brexit.

The average MFN tariff in the oil and petroleum sector is 2.5 per cent, one of the lowest.

One way it could be impacted upon would be through cost of imported components, particularly in specialised metal and engineering products.

Non-tariff barriers – particularly in terms environmental and energy market standards – could play a role. Whilst a decision will have to be taken on technical standards as determined by the European Committee for Standardisation (CEN).

Rules of origin could have practical implications where particular engineering elements, spares or mechanical parts, might be needed quickly and to be sourced from across Europe.

More generally on energy, the UK will be outside the Internal Energy Market.

Financial and Business Services

Scotland's financial and business services industry employs around 220,000 people in Scotland⁴⁷.

For many, the EU is an important source of demand – either directly or through ties with the City of London.

The key issue for financial services will be the issue of passporting services.

The EU passporting system enables firms that are authorised in an EU (or EEA) country to trade freely with minimal additional authorisation. They are based on the single EU rulebook for financial services. Non-EU firms face significant regulatory barriers to providing cross-border banking and investment services.

⁴⁷ www.gov.scot/Topics/Statistics/Browse/Business/Publications/GrowthSectors/Database

Certain EU legislation provides for ‘third country’ regimes which allow non-EU based firms to offer a limited number of services if their home country is accepted as being ‘equivalent’. However, they apply to a handful of services, are much more limited in scope and can be withdrawn unilaterally.

It seems unlikely that there is significant scope for new markets – outside of Europe – to be developed quickly. Trade agreements that cover services are very difficult, with even the EU Single Market imperfect despite decades of work to improve access.

Pharmaceuticals

The pharmaceutical industry in Scotland is a major employer. It exports a significant amount of its outputs to the EU and is part of a pan-EU supply chain.

Most OECD countries have imposed zero tariffs. As this is part of existing WTO schedules for the EU (and therefore for the UK), this should continue.

Perhaps of greater interest to the industry will be the rules and standards that the UK will have in place post-Brexit and the importance of being recognised as equivalent by the EU (including issues like product labelling etc.) Rules of origin could also be administratively costly where supply chains and research and development tend to be shared across countries.

Scotch whisky

Ninety per cent of Scotch whisky is sold outside the UK⁴⁸. Europe is a significant market. The Scotch Whisky Association estimates that it sold around £1.2 billion into the EU in 2015. The legal implications for Scotch whisky post-Brexit are complex.

On the one hand, Scotch whisky should benefit from zero tariffs to the EU under WTO rules. However, given the global nature of Scotch, what is just as important will be the EU’s network of bi-lateral trade deals with other countries. Here lies an opportunity as well as a risk.

A further complication concerns the legal protection of Scotch. The EU’s Geographical Indication scheme protects it from imitation products. Some equivalent scheme will be needed.

⁴⁸ See www.scotch-whisky.org.uk/news-publications/news/brexit-what-now-for-scotch-whisky/#.WZxt5z6GNhE

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