



University of
Strathclyde
Business
School

Fraser of Allander Institute

**Scotland in 2050: Realising our
global potential**

September 2018

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The Fraser of Allander Institute

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Disclaimer

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 focused on the Scottish economy.

The report was commissioned in June 2018 by Shepherd and Wedderburn.

The analysis and writing-up 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.

Executive summary

Scotland in 2050: Realising our global potential

- Scotland is a rich and prosperous nation.
- We rank highly on indicators of economic prosperity and compare well to other advanced economies and different parts of the UK.
- We have substantial natural resources, a skilled workforce and key strengths in sectors such as food and drink, tourism, energy and financial and professional services.
- But the last 10 years have not been without major challenges. Growth remains below trend and household earnings have been squeezed.
- Scotland has always been an open and global trading nation, and this will continue to be a key source of growth in the years ahead.
- But recent political and economic instability has helped to create a more uncertain outlook for the global economy.
- In an uncertain world, what are the risks and opportunities for Scotland? And what lessons can we learn from past experiences and the success of others to deliver a more prosperous future?
- This study summarises the key data on Scotland's current economic performance – both domestically and internationally – and outlines a series of major global trends that we believe will shape Scotland's future.
- Our aim is to start a conversation with businesses across Scotland to find out what works (and what doesn't) and to offer an impartial assessment of the opportunities and risks that we face.

Introduction

A world evolving

We live in eventful times both politically and economically.

In Europe, the global financial crisis has fuelled the rise of ‘populist’ parties many of whom reject the model of economic integration that has underpinned global growth for the last 70+ years.

The election of President Trump in the United States has raised tensions amongst leading trading nations, whilst the growing influence of China is changing the nature of economic relations in the Pacific and across Asia.

Closer to home, Brexit presents further economic uncertainty.

In a more unsettled world, what are the risks and opportunities for Scotland in an international context and how can we take advantage of them? How will our economy adapt to major new trends in the global economy, and how can businesses seize the opportunities available and plan for new and emerging risks?

In June 2018, The Fraser of Allander Institute (FAI) was commissioned by Shepherd and Wedderburn as part of its 250th Anniversary to produce this report.

Its purpose is to initiate a conversation with business leaders and industry bodies on how Scotland could best position itself for the future.

To help facilitate such engagement, this short report aims to set the scene and to pose some initial questions for discussion. A final report will be published in early 2019.

It is structured as follows:

- In Section 1, we discuss Scotland’s current economic performance and highlight the importance of internationalisation for Scotland’s long-term economic success.
- Section 2 looks at major global economic trends and how they might impact Scotland.
- Finally, in Section 3 we discuss how Scotland might take advantage of these global opportunities and help deliver greater prosperity.

// In our 250th year, as well as celebrating the many milestones we have achieved with our clients, Shepherd and Wedderburn has its eyes set firmly on the future.

We have commissioned the University of Strathclyde’s Fraser of Allander Institute to undertake a major research project to help Scottish businesses, organisations and entrepreneurs best position themselves for the years ahead.

We will use fresh insights drawn from economic data and long-term global growth forecasts to inform a conversation with our clients and key industry contacts, which will help identify how they – and Scotland – can mitigate the challenges and seize the opportunities against the backdrop of a rapidly-evolving global economy.

Paul Hally, Chairman, Shepherd and Wedderburn

Why internationalisation is important

Section 1

Internationalisation is crucial to Scotland's long-term economic prosperity.

Overseas markets provide a key source of demand for Scottish businesses. At its most basic level, businesses gain significantly from accessing a much larger customer base than is supported by a small open economy like Scotland's.

Of course, it is not just exporters who benefit. Trade and investment creates spill-over effects which ripple across supply chains and through the spending of their employees.

For every 100 jobs directly supported due to exporting, an additional 66 jobs are supported from spill-over effects in the Scottish economy.

Source: FAI new analysis

At the same time, firms that export – and/or are part of an international supply chain – tend to become more productive, innovative and competitive over time.

Businesses that export account for 60% of UK annual productivity growth and are, on average, 70% more productive than businesses that do not export.

Source: ONS & Department for Business, Innovation & Skills

At a national level, countries with a strong export base can often be more resilient and have more balanced growth trajectories.

New sources of growth are all the more vital at the current time.

Scotland is without question a rich and successful nation.

We are in the top 20 of OECD countries in terms of income per head – Table 1.

Table 1: GDP per head (\$PPP) in 2017, selection of countries

Country	2017 GDP per head (\$PPP)
Norway	61,475
United States	59,535
Germany	50,649
Denmark	51,495
UK	43,250
France	42,859
Scotland (including a geo. share of oil)	42,735
New Zealand	40,886
Scotland (including pop. share of oil)	40,261
Italy	39,433
Spain	38,017

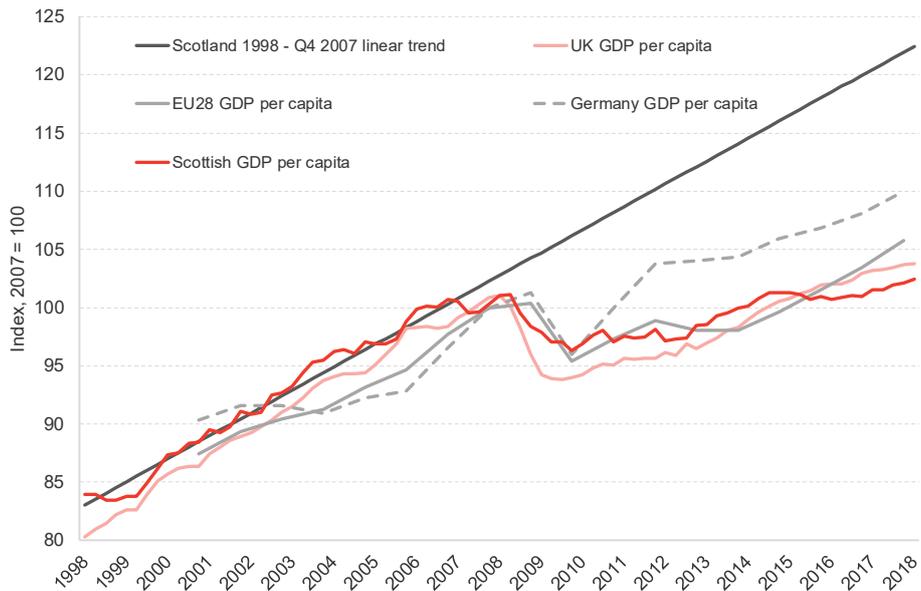
Source: OECD, FAI

Scotland benefits from substantial natural resources, a skilled workforce and key strengths in sectors such as food and drink, energy, precision manufacturing and financial services.

Scotland was 2nd top amongst regions and nations of the UK in securing foreign direct investment projects in 2017.
 Source: EY Attractiveness Survey

But Scotland - like many other advanced economies - has been experiencing a period of weak growth – Chart 1.

Chart 1: Real Scottish GDP per capita and 1998 - Q4 2007 trend



Source: Fraser of Allander Institute

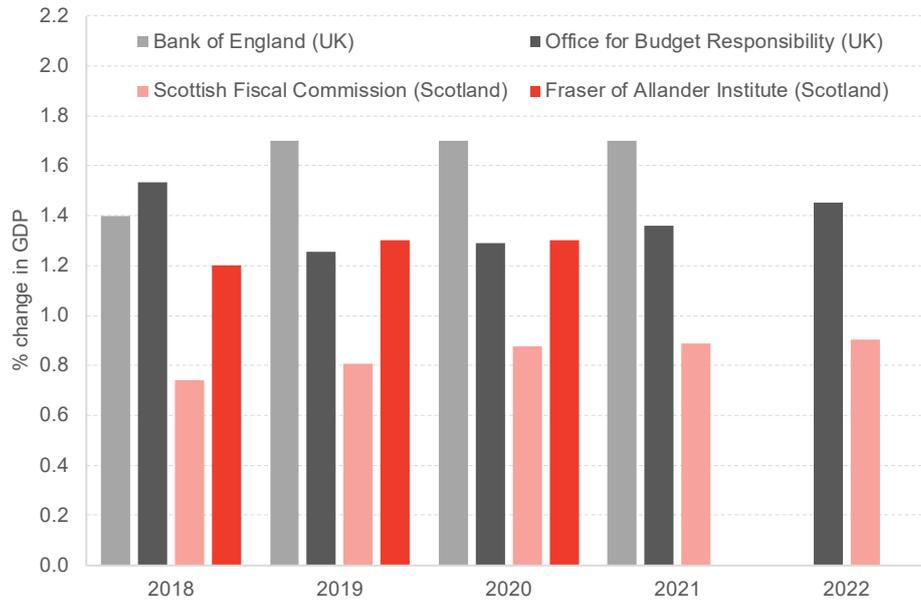
Despite having average annual growth of 2.0% per person over the period 1998 - 2007, Scotland has realised average growth of only 0.2% per person between 2008 and 2017.
 Source: FAI new analysis

Overall, Scottish GDP per head stands only 1.8% higher now than it was in 2007.

Had Scotland continued to grow at its pre-crisis trend, GDP per head would now be 20% higher. This equates to over £6,000 per person.

Indications are that this relatively weak growth trend will continue for some time yet – Chart 2.

Chart 2: Forecasts for UK and Scottish growth, 2018 to 2022



Source: FAI, OBR, Bank of England, SFC

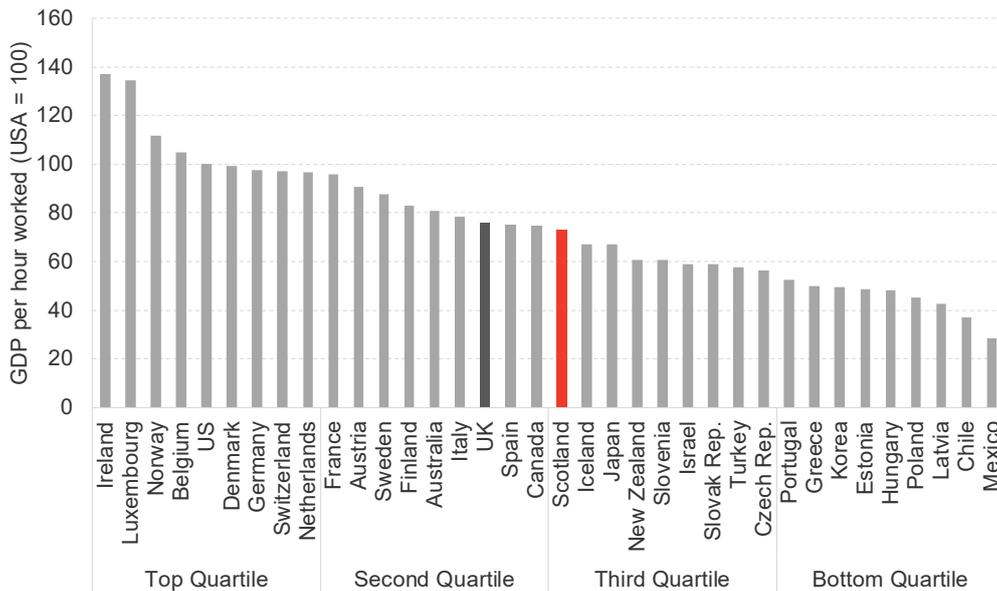
If the forecasts of the Scottish Government’s independent forecaster, the Scottish Fiscal Commission, are correct – this will be the weakest run of growth in 60 years.

Source: FAI analysis

Like many countries, weak productivity is at the heart of Scotland’s growth performance in recent years.

The Scottish Government has a target to be in the top quartile of OECD countries for productivity. Despite nearly ten years having passed since the target was set, Scotland still ranks at the top of the third quartile.

Chart 3: Productivity quartiles, GDP per hour worked (USA = 100), 2016



Source: Scottish Government

Scottish productivity is currently 20% lower than the top performing countries in the OECD. The Netherlands can produce in four days what it takes Scotland five days to produce.

Source: FAI analysis

All of this has consequences far beyond traditional economic measures of prosperity. For example, weak economic growth has acted as a brake on efforts to tackle poverty and inequality.

In 2016/17, 17% of people in Scotland (around 900,000 people) were living in households classified as relative poverty before housing costs. After housing costs, this was 19% (around 1 million people).

Source: Scottish Government

It also has crucial implications for public services. The new ‘Smith Commission Powers’ have changed the funding process for Holyrood’s Budget, with a much greater reliance upon revenues generated in Scotland.

Around 40% of ‘devolved expenditures’ are now funded by revenues raised in Scotland. When around half of VAT revenues are assigned to Scotland in a few years time, this will rise to 50%.

Source: Scottish Government

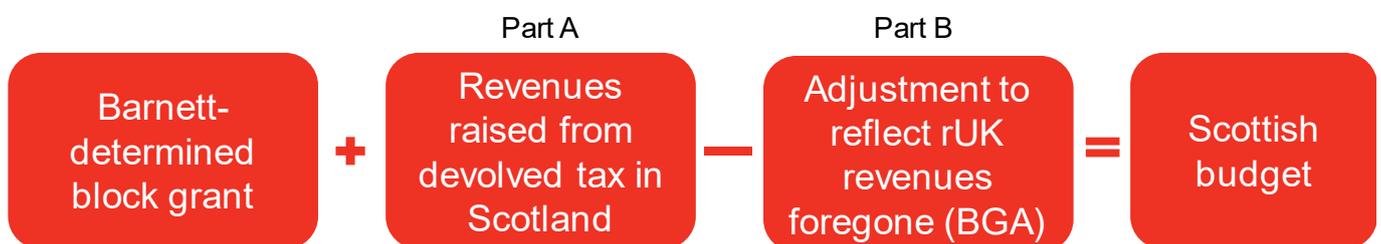
Scotland’s budget now depends upon three elements –

- the remaining Westminster block grant as determined by the ‘Barnett Formula’;
- tax policy choices of the Scottish Government; and
- the relative performance of Scottish devolved tax revenues as determined by the growth in Scottish tax revenues relative to the Block Grant Adjustment (BGA).

The BGA is an estimate of the revenues the UK Government is now no longer receiving because the power has been transferred to Holyrood. In year 1 it was equal to the revenues transferred to Scotland. From Year 2 onwards, it grows in line with taxes per head in the rest of the UK (rUK).

Under the new funding arrangements, if devolved Scottish taxes per head (Part A in diagram below) grow faster than the rUK taxes per head (Part B below), then the Scottish Budget will benefit from additional revenue. But if Scottish revenues per head lag behind the rUK, the budget will be worse off.

Diagram 1: The Scottish Budget



Source: Fraser of Allander Institute

Therefore, Scotland’s relative economic performance vis-a-vis the rest of the UK is now crucial.

An annual 0.2% gap between Scottish and rUK devolved tax revenues per person would amount to a 4% budget gap over 20 years.

Source: Fraser of Allander

Scotland will have to meet this performance target whilst facing a number of challenges. For example, our 16-64 working-age population is forecast to decline over the next decade. In contrast, the comparable age group within the UK as a whole is projected to rise.

Sourcing external demand is therefore a crucial avenue to boosting Scotland’s long-term growth potential.

We estimate that Scotland’s exports (and tourism to Scotland) in 2015 supported around 952,600 jobs within Scotland.



952,600

jobs supported by external demand in 2015

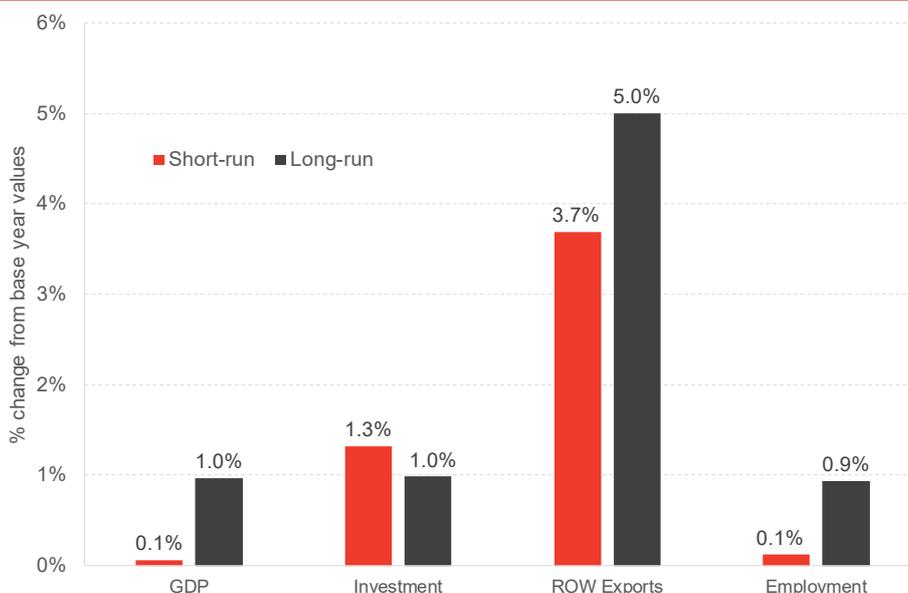
Exports to the rest of the UK account for the majority of this (533,100 jobs supported), while exports to the EU supported 130,300 jobs and exports to the rest of the world (non-EU) supported 212,400 jobs. The remaining 75,500 jobs are supported by ‘non-resident’ spending (e.g. tourism to Scotland).

Clearly, exports are vital to the Scottish economy and the effects of exporting on the economy are far reaching.

In recent analysis, the Scottish Policy Foundation used the FAI’s model to examine the potential impact of a 5% increase in the export demand from the rest of the world (this excludes exports from the rest of the UK).

In the long run, this resulted in a 1% increase in Scotland’s GDP. Additionally, there were positive long and short-run effects on investment, employment and tax revenues. Here, the short-run applies to a period of a year and the long-run is typically complete within 7-12 years.

Chart 4: Short and long-run effects of a 5% increase in rest of world (ROW) export demands



Source: Scottish Policy Foundation

The world tomorrow - key global trends

Section 2

Recent political and economic instability – both localised and global – has created a more uncertain outlook for the global economy.

But this makes focusing upon where we can be confident of major future trends all the more important.

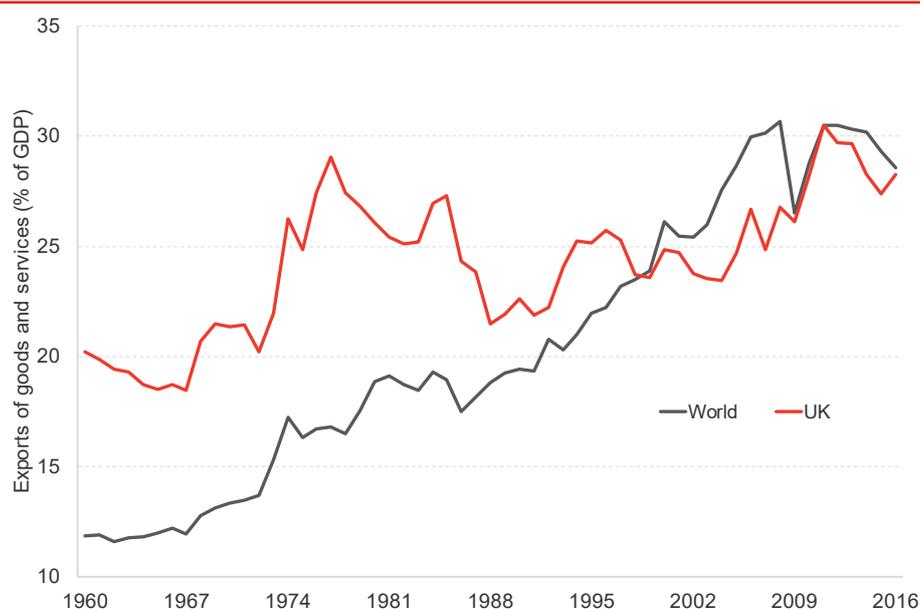
Recognising and understanding them will be crucial to Scotland fulfilling its economic potential.

So in a more unsettled world, what are the opportunities and what can we do to take advantage of them?

Firstly, it is important not to overstate either the risks to the global economy or their impacts.

Despite the recent rise in US protectionism and 20 years having passed since the last major multilateral trade agreement, trade as a share of the global economy has continued to rise.

Chart 5: Exports as a percentage of GDP for the world and UK, 1960 to 2016



Source: World Bank

At the same time, despite challenges close to home, the long-term fundamentals of the global economy are stronger than they have been for many years.

At 3.8 percent, global growth in 2017 was half a percentage point faster than in 2016 and the strongest since 2011.

Source: IMF

Most projections are for growth to continue at around 4% for the next few years – with the outlook positive for both advanced and emerging market economies.

Table 2: OECD forecasts for G7 GDP growth: 2017 (outturn) to 2019

	2017	2018	2019
UK	1.8	1.4	1.3
US	2.3	2.9	2.8
Japan	1.7	1.2	1.2
Canada	3.0	2.1	2.2
Euro Area	2.6	2.2	2.1
Germany	2.5	2.1	2.1
France	2.3	1.9	1.9
Italy	1.6	1.4	1.1

Source: OECD Economic Outlook

And despite the far reaching effects of the financial crisis in 2008, the global economy is positioned to see continued progress in the medium and long-term.

The global economy is on track to be over two-thirds bigger in 2020 than in 2005¹.

So while we should be wary of the uncertain outlook there is certainly no need to be pessimistic.

In light of this, what are the likely long-term trends that we know will shape the global economy in the future?

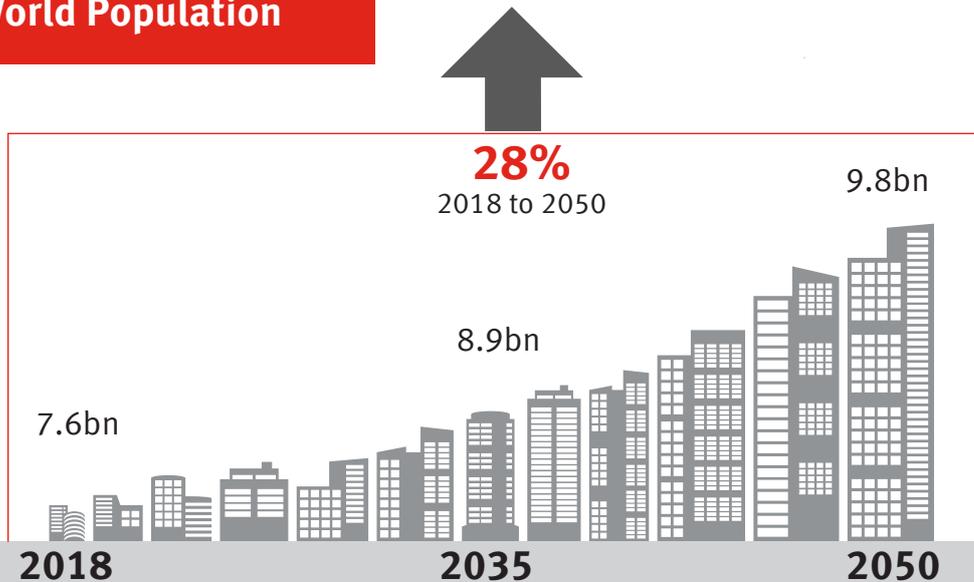
Here we identify four key trends that we believe will be of most significance –

- a growing world population;
- the emergence of new economic leaders;
- the economic impacts of climate change; and
- the dissemination of new technologies.

These changes are already happening and there is no doubt that they will play a major role in our lives and our economy over the next few decades.

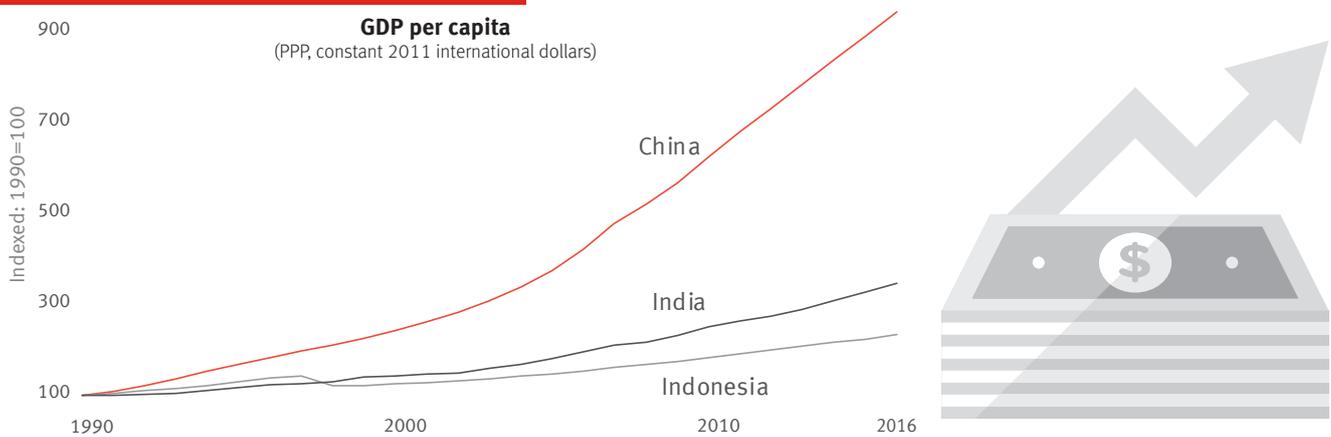
¹ Source: IMF World Economic Outlook.

1 World Population



- By 2050, the world population is predicted to grow by 28%.
- Much of this growth is expected to be in emerging economies. By 2050, the population of less developed regions is forecast to increase from 6.3 billion to 8.5 billion.
- This will create significant new opportunities for growth but will also pose challenges in managing global resources such as food, water and fuel.

2 New economic leaders



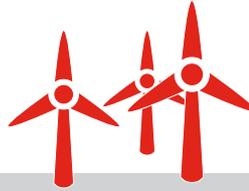
Sources: World Bank

- GDP per capita in emerging economies has grown significantly over the past couple of decades. China has seen real GDP per capita grow by 943% since 1990.
- Many emerging economies have seen an expanding professional class. The combination of growth in incomes and population present clear opportunities for future export markets.
- The BRICS countries – Brazil, Russia, India, China and South Africa – have attracted much attention but new leaders, such as Indonesia and Asian, South American and African nations have the potential to be key drivers of global growth.

3 Climate change

World 2018 → 2050

Carbon dioxide emissions	+22.7%
Renewable energy consumption	+88.2%
Energy use	+36.1%



2015 Paris Agreement **<2°C** by 2050

To achieve this, the world must stay within a limit on its emissions - a 'carbon budget'.

Even if the current carbon reduction targets are met by all countries

80%
of the carbon budget will have been spent by
2030

Sources: EIA.gov, UNEmissions Gap Report 2017

- Global emissions are on track to rise significantly, with major targets like those set out in the 2015 Paris Agreement likely to be missed.
- Climate change will have serious economic consequences for many countries, with the poorest likely to lose out the most.
- But it also provides an opportunity in new sectors – such as renewable energy – and for countries that can gain ‘first-mover’ advantage in transitioning to a low carbon world.

4 Automation



3 in every **10**
Scottish jobs
are at **high risk of**
automation



Source: SCDI, FAI

- If the last 20 years have been dominated by globalisation, the next 20 years will be dominated by rapid technological change.
- Even in the last decade, we have seen major changes in sectors from retail to banking. International trade is becoming easier with more automated distribution and tracking systems.
- Many current jobs will be replaced but at the same time, many new jobs will be created, in part, supported by higher incomes. Despite fears of a large number of job losses, the net impact of automation - once new jobs are accounted for - might not be negative.

Seizing global opportunities

Section 3

In the light of these trends, how might Scotland best position itself in the years ahead to seize these global opportunities?

Expanding our export base

Successive Scottish administrations have set ambitious targets for Scotland’s exports.

In 2016, 61% of Scotland’s exports were destined for the rest of the UK. The remaining 39% was international exports, with 17% to the EU and 23% exported to the rest of the world.

Source: Scottish Government

Table 3: Scotland’s onshore exports in 2016 (excluding continental shelf oil and gas)

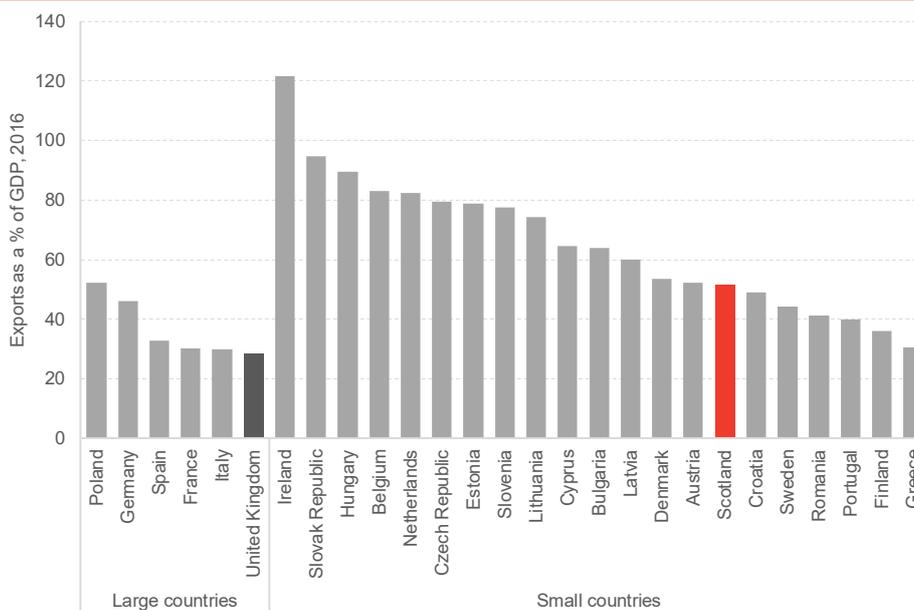
Destination	2016 exports (£ million)	2002 – 2016 growth
Rest of the UK	45,785	60%
International	29,795	45%
Of which		
EU	12,675	11%
Non-EU	17,120	90%
Total	75,580	54%

Source: Scottish Government

Typically, small countries trade more as a percentage of their GDP than large countries.

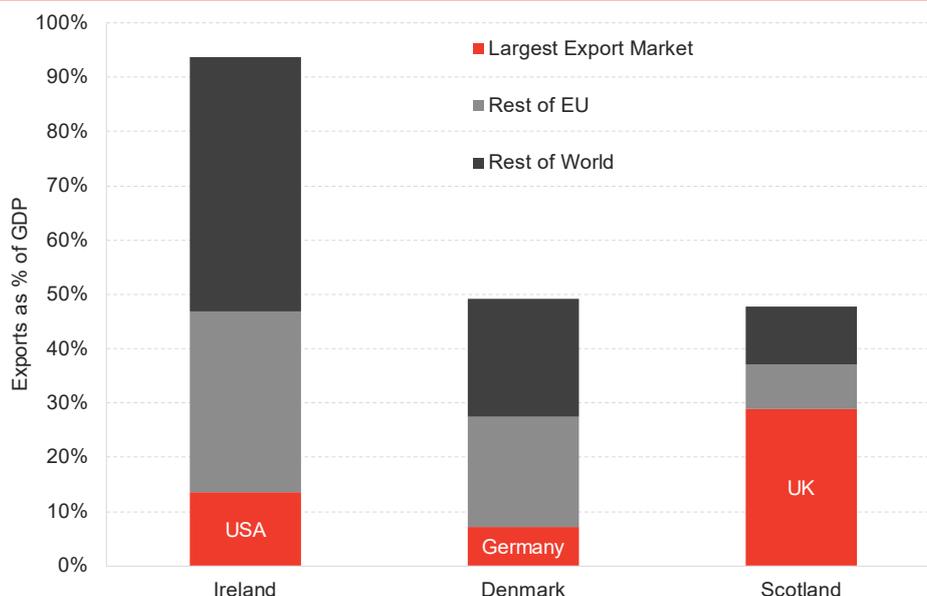
Chart 6 shows that, as a percentage of GDP, Scotland exports less than the majority of small countries within the EU, even when including exports to the rest of the UK.

Chart 6: EU28 exports as a percentage of GDP, 2016



Source: World Bank & Scottish Government

Chart 7: Proportion of total exports by market, 2016



Source: Scottish Export Statistics, CSO, Statistics Denmark

Including UK exports, Scotland has a ratio of exports to GDP of 50%.

But this falls to 20% when looking only at international exports, compared to EU and OECD averages of 44% and 28% respectively.

The consequence of this is that, compared with similar sized nation states such as Ireland and Denmark, Scotland depends much more upon one market (i.e. the rest of the UK).

Moreover, just five sectors account for over half of all Scottish international exports, with whisky accounting for a significant amount of that (Table 4). In addition, the Scottish Government estimates that more than half of Scotland's exports are accounted for by just 70 companies.

Table 4: Scotland's five largest exports, 2016

Sector	International exports (£ million)	Percentage of all exports
Food and drink	5,455	18.3
Professional, scientific and technical activities	3,715	12.5
Refined petroleum and chemical products	2,570	8.6
Mining and quarrying	2,005	6.7
Retail and wholesale	1,710	5.7
Total	15,455	51.9

Source: Scottish Government

A challenge appears to be encouraging small businesses to seize the opportunities overseas.

Just 16% of SMEs in Scotland reported that they had sold goods or services outside the UK in the last 12 months. And here, international exports from small companies are down nearly 7% since 2012.

Question

What can we learn from other countries and/or industries in boosting levels of export ambition amongst firms?

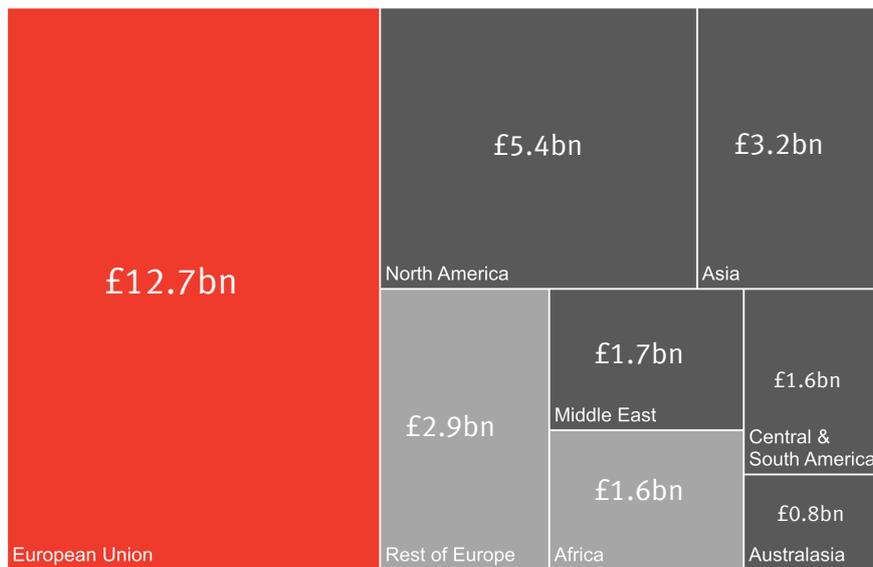
Preparing for Brexit

The clearest change to future trading relationships is Brexit. No matter the settlement reached, it is vital that we do the best with whatever trading relationship presents itself.

The EU is our largest international export market. In 2016, Scotland exported around £12.7 billion worth of goods and services to the EU, or over 42% of Scotland's total international exports.

This is more than the combined exports to North, Central and South America, the Middle East, Asia and Australasia.

Chart 8: Scotland's export destinations, 2016



Source: Scottish Government

One key aspect of the Brexit process will be understanding where differences between Scotland and the UK exist in terms of priority.

According to HMRC, five of Scotland's largest exporting sectors to the EU do not enter the top 10 EU export sectors for the UK as a whole.

Source: FAI analysis & HMRC

For better or for worse, no firm in the UK will be left untouched. It is essential for companies to prepare. Yet a recent survey by the Fraser of Allander Institute has shown that many Scottish companies have undertaken no preparation at all. 62% of surveyed businesses said that they have done no contingency or scenario planning to help prepare for Brexit.

Question

How has your company prepared for different Brexit scenarios? What opportunities and risks did you identify?

Accessing new markets

If Brexit forces us to do anything, it might encourage companies to consider trade on a much more international scale and over a longer time frame.

Exports to India were £235 million in 2016, less than the £370 million of exports to Luxembourg.

Source: Scottish Government

We trade very little with the major emerging economies. But these have the potential to be lucrative markets. Only three of the top 10 countries in the world by size of population appear in the top 20 for Scotland's exports. These are the USA, Brazil and China.

We trade over 80% more with Ireland than we do with China.

Source: Scottish Government

For this report we have undertaken new projections – based upon forecast growth rates for a country's economy and population – to illustrate the potential changing nature of the global economy.

We predict that many of the largest economies by 2050 will be emerging countries such as China, India, Indonesia, Brazil and Russia.

The Future 8



2050

	Largest economies in the world by 2050	% of Scotland's international exports in 2016
1	China	1.9%
2	United States	16%
3	India	0.8%
4	Indonesia	0.2%
5	Brazil	2.6%
6	Russia	0.7%
7	Japan	1.5%
8	Germany	6.4%



Yet, as it stands, we export little to these countries. So, securing even small market shares in these growing economies – particularly as households become wealthier, demand more services and quality products – presents significant opportunities.

Accessing such markets is not easy. Businesses need to adopt flexible, dynamic and patient strategies to navigate these complex markets, as well as constantly seeking out new opportunities elsewhere.

Companies often need to be prepared to adjust their brand and market position to local preferences. They will also have to be prepared for more volatile short-term economic fluctuations, as well as major political changes.

To achieve this, investment and time will need to be allocated to help understand the different commercial regulatory and legal practices, languages, culture and structure of the economy.

Question

To what extent do you export to the Future 8? Have you developed a plan to expand your exports into these markets?

Question

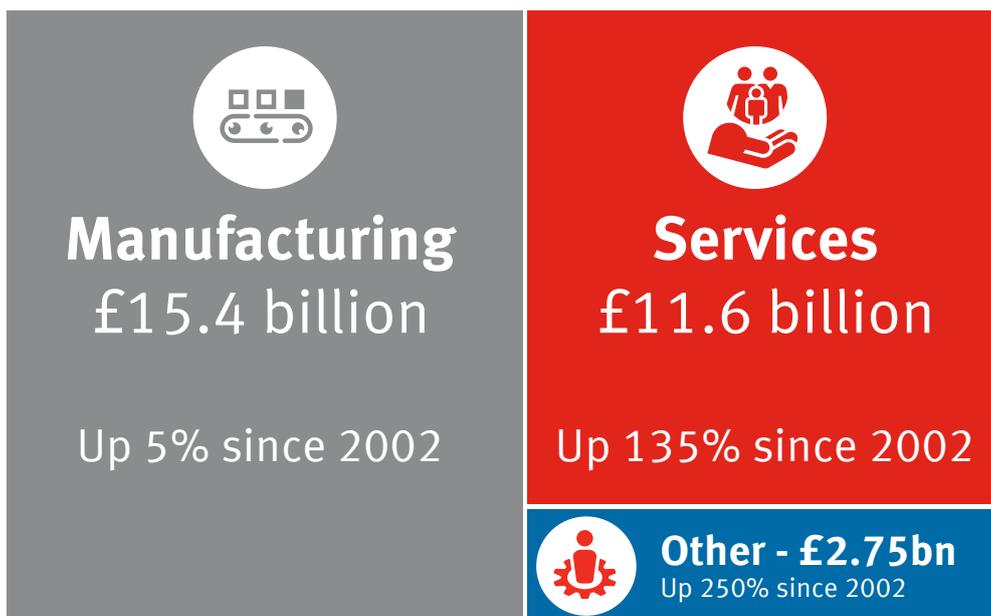
Scotland has notable successes in exporting both at an industry level (e.g. whisky) and amongst individual firms. From your experience, what has worked for you? And what lessons can be offered for other sectors? What can we learn from them? What has worked and what has not?

Which exports should Scotland focus on?

Despite manufacturing accounting for just 11% of the Scottish economy, it makes up over half of our international exports.

However, the majority of export growth has been in services. Major services exports include professional, scientific & technical activities, financial services, and retail.

Chart 9: Scotland's international exports in 2016



Source: Scottish Government

The prospects of a 4th industrial revolution present significant opportunities for Scotland.

In looking at the opportunities, there are two key elements:

- Firstly, there is an opportunity to position the country to take advantage of the new developments as they emerge. That means a focus on digital infrastructure, cyber-security, transferable skills and an openness to adopting new technologies.
- Secondly, there is the prospect of leading the development of these new technologies ourselves.

This could mean a focus upon utilising the research potential of our universities to a greater extent for example, by encouraging greater entrepreneurial thinking in academia and interaction with business.

It also could mean identifying niches where we can develop the scale and comparative advantage to succeed. For example, Scotland has key strengths in sectors likely to be significant growth sectors in the future such as renewable energy, re-manufacturing and water intensive industries.

Question

Where do you think Scotland's focus should lie? (i.e. what should Scotland be known for?)

Question

How could new technology change your sector? How can Scotland further embrace technology?

The role of policy

Much has been written about the potential contribution that policy can make to support exports and internationalisation.

In both Scotland and the UK, numerous initiatives have been launched. A number of reports – including a number of recent influential reviews – have sought to see what Scotland's policy makers can learn from other countries.

What is clear is that countries that have been successful in turning around their international ambitions have developed a clear plan and stuck to it. This has meant that they have had to make difficult choices and cannot be 'all things to all people'.

Ireland has, for example, developed a model based around low taxes, an amendable regulatory regime targeted at multinationals and access to the EU. In contrast, Sweden has focussed upon a high-tax, high-wage, innovation and domestic-based economic model, with emphasis on fiscal discipline and investment in social policies, education and infrastructure.

Question

Do we know what works? How we can assess whether initiatives like UK industrial strategy or Scottish Government Economic Strategy are working and help policy makers develop informed decisions?

Conclusion

Section 5

Scotland is a rich and prosperous nation.

It has an economy which makes up a small part of the much larger global economy. This creates opportunities, as well as risks.

This report has set out some of the global trends that we will face in the coming decades. Some of these, like climate change and the emergence of new economic powers, can be set out relatively clearly; while others – such as the impact of technological change – are more difficult to predict. But all of them require action now to prepare the Scottish economy to take maximum advantage of the opportunities that such trends could create.

It is easy to say that we must take the opportunity to position the Scottish economy well for these emerging trends. Delivering the change required to actually position the Scottish economy in this way is far harder.

This is not about slogans or marketing.

This is about the practical and tough decisions that need to be made to ensure that Scotland's workforce is prepared with the skills required by the jobs of tomorrow. It is also about creating an entrepreneurial culture to compete in a globalised world.

This will involve both political and business leadership.

It will also need tough decisions as it will undoubtedly require re-prioritisation from 'business as usual' to new areas of potential.

Whilst we spend a lot of money in certain areas in Scotland, we have yet to fully understand what works and what doesn't.

The purpose of the forthcoming conversation with business leaders and industry bodies is to best position ourselves and the Scottish economy for the future.

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