

CBI



The CBI/KPMG Scottish Productivity Index

Turning Data into Delivery

September 2019

Industrial Strategy and Regional Growth

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Foreword KPMG

There are few economic challenges requiring a solution more urgently than poor productivity. I am therefore delighted to have been involved in this important piece of work. Both KPMG and CBI are committed to improving the position and the Scottish Productivity Index is a new and important contribution to the debate.

Why is productivity important?

Productivity may seem an abstract, economic term - but it affects each and every one of us. It is fundamental to how much we earn; how fast wages grow and how much we pay in taxes to support good quality public services. Weak productivity in Scotland – compared to UK and international standards – constrains our competitiveness and impacts on businesses' ability to grow and deliver the profits they need to survive and thrive.

It has an impact on household budgets and their ability to spend. Private sector workers would now on average be earning £5,000 more a year, if productivity growth had not stagnated and continued to grow in line with the long-term trend.¹

Increasing the productivity of each sector of the economy and having a higher proportion of the workforce employed in high productivity sectors would mean more high value jobs.

Why develop this Scottish Productivity Index?

At KPMG, one of our core values is “we seek the facts”. There is now a broad consensus that action needs to be taken on productivity. It is important that action is based on solid, reliable evidence – and progress needs to be tracked over time.

The Scottish Productivity Index will be produced annually – providing insight and analysis so we can see what is happening on the ground over time. It pulls out the key underlying factors that drive productivity and is based on a wealth of economic data produced by the Fraser of Allander Institute (FAI).

It is supplemented by key case studies demonstrating good practice; and the insights of the Business Advisory Group, which I had the privilege of chairing. I am extremely grateful to the members of the Business Advisory Group for giving their time so generously. The final product of the Index and recommendations was led and concluded by the CBI and KPMG.

What can we do to improve productivity?

Our work on the Index sets out a series of recommendations both for individual businesses and for UK and Scottish policy makers. We have looked at what is working already; where good practice needs to be spread more widely; and where the barriers to progress lie and how to address them.

Scotland has some key strengths when compared internationally, including the high number of those with a Higher Education Certificate or above and businesses who feel involved in innovation. In other areas, we lag behind: business investment; exports; R&D spend; in-work training; digital connectivity and in the health of our workforce.

This is not a counsel of despair. We recognise that there are many businesses and sectors doing extremely well and from whom others can learn. We also recognise that the Scottish and UK Governments are taking measures to address some of the issues. There is an argument that we are on the cusp of a considerable uptick in productivity given new technology available.

Our recommendations aim to sharpen the focus of current activities; increase the pace of change and drive benefits across many more businesses and sectors.

There are recommendations in our report on business investment, tax policy, digital connectivity, introducing a culture of lifelong learning, and the important issue of mental health. There are also some other “quick wins” which individual businesses can work on immediately:

- Increasing management and leadership training;
- Improving digital skills across the workforce;
- Maximising the business benefit from technology investment already made;
- Accessing quality benchmarking data that exists for their sector;
- Promoting good mental health across their workforce.

I trust you will find the inaugural CBI/KPMG Scottish Productivity Index useful – whether you are a large or small business or involved in developing policy at Scottish or UK level.



Jenny Stewart, Partner

Head of Infrastructure, Government and
Healthcare - KPMG Scotland



Executive Summary

Brexit will have an impact on how businesses across different sectors operate, how people move around and the policy areas our national and devolved governments will control. But we don't yet know by how much or whether the impact will be different in Scotland compared to the rest of the UK.

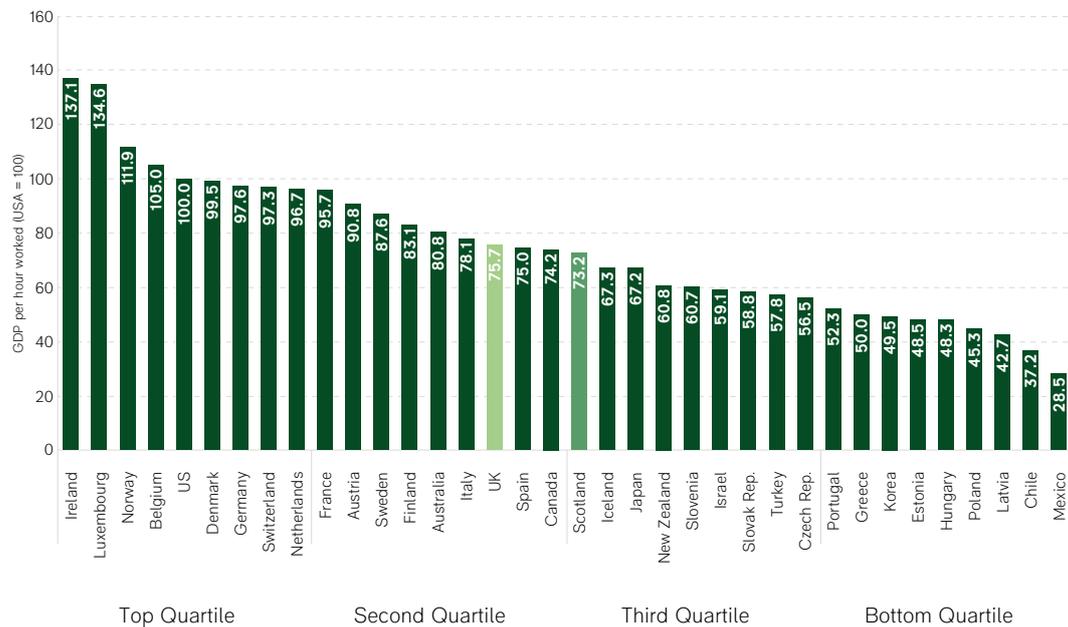
Regardless of the shape of Brexit, a fundamental characteristic of the Scottish economy that needs to be transformed is productivity. Improving productivity will not only help grow the Scottish economy, which is vital, it can also lead to broader societal benefits that come with investing in a better skilled and healthier workforce with more effective leadership.

Weak productivity impacts household earnings, and with a rising number of working age people living in poverty within working households in Scotland, this is a problem that needs urgently to be addressed.

Productivity has received increasing attention from many quarters over the years. The productivity puzzle has been highlighted by the Bank of England;² it's a key theme in the UK Industrial Strategy³ and Scotland's Enterprise and Skills Board;⁴ and has featured in the Scottish Programme for Government in 2018.⁵ It is one of the economic indicators in Scotland's National Performance Framework,⁶ and Scottish productivity has recently been examined by think tanks like the David Hume Institute⁷ and IPPR Scotland.⁸

Discussions about productivity can often slide into the realms of the abstract, far removed from the day-to-day language and reality of people and business. It will be difficult to change Scotland's place in the international league table on productivity **(Exhibit 1)** – which has remained largely static for over 15 years – unless we convince the individual workers, managers and leaders whose jobs, livelihoods and investments are the driving force behind these figures that it will benefit them, their families and their businesses.

For business, the challenge remains to **break down productivity into meaningful measurements and actions**. CBI Scotland started work in 2017 by analysing the drivers of regional differences in productivity,⁹ while KPMG was looking at regional productivity at the time.¹⁰ It is now time to take that work one step further with the development of the CBI/KPMG Scottish Productivity Index.

Exhibit 1 Scotland's international productivity ranking (2017)

Source: OECD/Scottish Government/FAI

Size of the prize

- Even a modest 1% improvement in productivity could lead to a £2.3bn boost to Scotland's GDP.¹¹ If all of Scotland's regions could improve at the same rate as the top performer over the next decade, the size of the economy could increase by £25bn.¹²

Benefits to people

- Research suggests that investment in better people-management,¹³ effective training, flexible working and a focus on workplace health and wellbeing, all have a positive impact on people's productivity.

Changing views of business

- More people in the UK now put their trust in business leaders to solve issues of retraining, equal pay and the economy (79%).¹⁴ Meanwhile people's expectations of work are evolving. Many entering the workforce today value autonomy and purpose of work just as much as financial reward.¹⁵

Improving productivity is an economy-wide issue and cannot be addressed by business alone. This report focuses on the private sector's angle to productivity, which employs 78.5% of people in Scotland, but it will be valuable to also consider how the indicators and recommendations presented here can help the public sector as well.

People and business need to be convinced that through a joint effort it is possible to improve productivity resulting in shared benefits, both economic and social, for everyone involved in the Scottish economy. It is important not to lose sight of that goal. If we want to see this positive change, it will be vital everyone maintains a long-term focus, commitment and cooperation across Scotland.

There already are a number of practical solutions out there, but they depend on collaboration and dedication, and results are likely to happen through incremental change, rather than overnight success.

That is why the CBI/KPMG Scottish Productivity Index will be a recurrent, annual tracker that breaks down Scottish productivity performance into 15 indicators that are easy to grasp.

By measuring progress on quantifiable benchmarks, we hope it will focus minds as well as unpack what to most people is a far-removed concept.

A key component of this work was the insights from the Business Advisory Group **(see page 46)** and case studies of real-life examples. We recognise that using data indicators as proxies for what are clearly complicated and multi-layered business and policy challenges will have its limitations.

The Index themes are grouped into four familiar areas, which are recognised as holding many of the answers to improving productivity through changes made by businesses and people.

- **Business practices**
- **Skills and training**
- **Health and wellbeing**
- **Infrastructure and connectivity**

An overhead, top-down view of a group of people sitting around a round table in a meeting. The scene is bathed in a green light. On the table are several laptops, open books, papers, and smartphones. One person is pointing at a document, another is writing, and others are looking at the materials. The overall atmosphere is one of collaborative work and discussion.

"For business, the challenge remains to break down productivity into meaningful measurements and actions. By measuring progress on quantifiable benchmarks, we hope it will focus minds as well as unpack what to most people is a far-removed concept."

The Scottish Productivity Index Dashboard

CBI Scotland and KPMG developed the Scottish Productivity Index Dashboard to help track progress across familiar indicators linked to productivity, together with the Business Advisory Group and with expert insight and analysis from the Fraser of Allander Institute.

The Dashboard draws on publicly available statistics and published work by FAI (**see page 50 for details**). These indicators will be regularly updated as part of the annual publication of the CBI/KPMG Scottish Productivity Index starting from its launch in September 2019.

A note on the RAG ratings

The three RAG ratings shown for each of the indicators on the Dashboard are designed to capture:

- the comparison with other parts of the UK and international comparators, where available (*How does Scotland compare?*)
- change relative to the last data point (*Are we improving in the short term?*)
- change over time (*Are we improving in the long term?*)



“While the eyes of the business world can often be on ‘the next big thing’ in cutting-edge technology, too many firms are missing out on what’s right under their nose. Failing to adopt the nuts and bolts technologies of today is leaving a yawning gap in productivity and pay between businesses.”

Dame Carolyn Fairbairn, Director-General, CBI

Productivity Dashboard		Latest Performance	How does Scotland compare? Benchmark	Are we improving? Short term trend	Are we improving? Long term trend
Business practices					
1. Business Investment as a % of GDP	7.0%	●	●	●	
2. Exports as a % of GDP	21%	●	●	●	
3. Business R&D spend as a % of GDP	0.8%	●	●	●	
4. % of innovation-active businesses	45%	●	●	●	
5. Total early-stage entrepreneurship activity	6.7%	●	●	●	
Skills and training					
6. % of working age population with Higher Education Certificate or above	44%	●	●	●	
7. % of workforce in job-related training in past 3 months	23%	●	●	●	
8. % of employers with skill shortage vacancies ¹⁶	6.5%	●	●	●	
9. % of employers with underutilised staff ¹⁷	35%	●	●	●	
Health and wellbeing					
10. % of hours lost due to sickness absence	2.4%	●	●	●	
11. % of economic inactivity due to long-term ill health	27%	●	●	●	
Infrastructure and connectivity					
12. Average internet speeds in Scotland	31.9 Mbps (MD) 6.5 Mbps (MU)	●	●	●	
13. % of premises with access to full fibre broadband	4%	●	●	●	
14. 4G Mobile coverage	41%	●	●	●	
15. Travel to work time	27 mins	●	●	●	

1. Scotland lags the UK significantly in terms of business investment; however the UK also has a poor level of investment when compared internationally.
2. Scotland lags both the UK and international comparators in terms of exporting. The gap between Scotland and the UK has widened over the last 20 years.
3. Scotland is 8th out of the UK regions on this measure, although there has been some improvement over recent years.
4. The Scottish rate lags the UK but has risen since the first survey. Yet, in international comparison Scotland performs well on this measure.
5. Scotland lags behind the UK average but is slightly ahead of Wales and Northern Ireland. Scotland compares well on female entrepreneurs.

6. Scotland has the highest rate of all the countries of the UK. Also compares well internationally and has improved over time.
7. There has been a deterioration over the last 15 years, now slipping to third compared to other countries of the UK.
8. Comparing this to the UK share of 6% doesn't show a great difference, however, Scotland performs worse than all UK nations here.
9. Although this is slightly greater than the share in the UK as a whole, it is lower than the share in Northern Ireland (37%) and Wales (36%).

10. Scotland has the 3rd highest rate of sickness absence in the UK (out of the 12 regions and countries). It has, however, been improving over time.
11. The rate for Scotland is much higher than the UK average. However, Wales and Northern Ireland lag further behind Scotland.

12. Mean download (MD) and upload (MU) speeds in Scotland have risen by over 900% and 1,500% respectively over the last decade. Scotland's internet speeds have seen slower growth than the UK but have experienced fairly consistent growth since the start of 2016.
13. This figure is an improvement on last year but significantly lags other areas of the UK.
14. The latest Ofcom data for the start of 2019 shows the geographic area covered by all operators up from 36% in spring last year. This is much lower than the UK coverage of 67%. Unsurprisingly, all of the other UK nations have much higher coverage with Scotland dragging down the UK average.
15. Scotland has a quicker travel to work time compared to the UK average, which is significantly skewed by London.

Recommendations

Success in making the Scottish economy more productive will only be achieved if government and the business community implement a range of measures, both individually as well as in partnership together.

The recommendations reflect on the indicators tracked in the Dashboard, insights from the Business Advisory Group and the wider CBI membership.

Recommendations for Scottish and UK policy makers

1. Track productivity growth across Scotland's National Performance Framework
 2. Set realistic targets and ambitions to improve productivity
 3. Establish a Productivity Data Bank
 4. Examine tax incentives to stimulate productivity investment
 5. Track Export Strategy and adjust action accordingly
 6. Lifelong learning at core of responsive, flexible skills system
 7. Target of 100% workforce with basic digital skills by 2025
 8. Collect data centrally on business/school engagement
 9. Encourage sales and marketing training – provided business demand
 10. Prioritise investment in mental health services
 11. Join-up infrastructure strategies across transport, housing and digital with productivity lens
 12. UKG increase in Gigabit Broadband Voucher Scheme
-



Recommendations for businesses

1. Use performance management data and benchmarking to improve own performance
2. Make use of or offer business mentoring, especially on existing tech adoption and business processes
3. Prioritise investment in management and leadership
4. Forge better links with other UK exporters and universities to improve own export prospects
5. Map out current workforce skills, training and tools and what's needed in the future
6. Start or expand own business engagement with primary and secondary schools
7. Seek out existing technology to aid business productivity using sector league tables to identify top performers
8. Consider own sales and marketing capabilities and identify potential skills gaps
9. Default to positive approach to flexible working
10. Put mental health on equal footing with physical health and build support structures accordingly
11. Give people autonomy through more use of mobile technology
12. Make maximum use of available broadband infrastructure

Recommendations for Scottish and UK policy makers

On productivity overall

1. Make clear the broad benefits of improved productivity by tracking it across relevant National Outcomes in the National Performance Framework, for example Economy, Education, Health and International. Include business investment as a national indicator within the framework.
2. Set realistic targets and ambitions for improving productivity in the Scottish economy and identify tangible and measurable action.
3. Establish a 'Productivity Data Bank' for Scotland to provide access to and improve productivity tracking data from across both the UK and Scottish Governments, the public sector and the economy for experts to analyse in-house and externally. It could also work as a gateway for SMEs seeking information to help with their own benchmarking:
 - i. Purchase commercial performance management and benchmarking data and make it available to smaller firms, for example Smith Travel Research or CGA for the hospitality sector
 - ii. Track, examine and highlight sector-specific initiatives and collaborations that are having an impact on productivity (positively and negatively) to help firms make the right decisions and investments
 - iii. Integrate productivity data into the evaluation and prioritisation of infrastructure strategies and projects to ensure a long-term focus on productivity improvement.

On investment and innovation

4. Examine how tax policy and incentives can stimulate productivity-enhancing investment, such as:
 - i. Explore ways work-based training can be incentivised through the tax system and work with the UK Government to broaden out the tax incentive regime to support investment in intangible assets like training and business process
 - ii. For the UK Government to deliver the world's most competitive R&D tax credit by ensuring it recognises the growing importance of data-driven R&D
 - iii. Build on the investment-focus of the Barclay Review of business rates and boost the Business Growth Accelerator that encourages existing and new commercial property improvements, by switching to automatic eligibility across Scotland, rather than a postcode lottery of individual local council discretion.

5. Track and examine exporting trends and adjust the Trading Nation export strategy accordingly, as markets grow and change, to ensure evidence is built up of what's working and not.
 - i. Work with the UK trade agencies to leverage opportunities and simplify the exporting support landscape for businesses.

On skills and training

6. Ensure lifelong learning is at the core of a responsive and flexible skills system that supports employers and workers to meet the challenges of demographic and technological change. This should include consideration of how greater investment in upskilling and retraining by employers can be incentivised.
7. Set a target for 100% of the workforce to have basic digital skills by 2025 and work with business to achieve it, so everyone can benefit from the digital economy.
8. Collect data centrally on the number of business/school interactions per pupil in each local authority area to evaluate impact, establish where more support is needed and encourage learning from best practice.
9. Consider how to support sales and marketing to become a more widely available area of training, including for trade here and abroad, provided businesses show demand to prioritise training in this area.

On health and wellbeing

10. Ensure that public investment for mental health services within the NHS and GP practices are prioritised and made readily available, as workforce wellbeing is a long-term, shared endeavour.

On infrastructure and connectivity

11. Join-up infrastructure strategies across transport, housing and digital as all will have an impact on productivity, including clear coordination across local authorities so projects that cut across local boundaries can deliver wide-spread benefits.
12. For the UK Government to increase of the funding pot for the Gigabit Broadband Voucher Scheme and support campaigns for more voucher uptake among businesses in Scotland.

Recommendations for businesses

On investment and innovation

1. Use performance management data to measure productivity, including developing clear benchmarking for the business vis-à-vis the sector as a whole to set a clear path to improve performance.
2. Make use of or offer assistance through mentoring or advice to other businesses looking to improve their productivity, especially through adoption of existing technologies or business processes.
3. Prioritise investment in management and leadership rooted in great people practices and build capabilities across the business, integrating good management practices into clear objectives as part of the review process.¹⁸
4. Improve exporting prospects by forging better links with other UK exporters and the Higher Education sector, as many universities have a strong overseas presence in key markets, and at the same time strong business collaboration can help students become more 'business ready' ahead of entering the workforce.

On skills and training

5. Map out current workforce skills, training and tools and what is needed in the future. Working with employees, consider how to enhance on-the-job coaching and support as part of making the workforce ready for the future, with a particular focus on digital skills.
6. Start or expand your business' engagement with primary and secondary schools to help young people bridge the gap between the classroom and the workplace and at the same time help build your business' future talent pipeline.¹⁹
7. Seek out existing technology that can aid business productivity through digitisation and use sector league tables to identify who to learn from.
8. Consider whether the business has strong enough sales capabilities and skills to be able to tell a compelling story in national and international markets and if not, make use of current offerings to address any skills gaps.

On health and wellbeing

9. Default to a positive approach to flexible working. As the world of work is changing, technology is aiding that shift, and the race to attract and retain talent will speed up.
10. Put mental health on equal footing with physical health and support staff through leading by example and make a range of support functions available.

On infrastructure and connectivity

11. Facilitate greater use of mobile technology by giving people the autonomy to adapt their working pattern to fit their commute as digital infrastructure continues to open up new ways of working.
12. Make maximum use of available broadband or ultrafast services to adopt existing technology that will improve the company's productivity and take advantage of existing schemes like the Gigabit Broadband Voucher Scheme.

Our commitment to maintain focus on improving productivity in Scotland

For our part, CBI Scotland, KPMG and partners commit to reviewing, updating and reporting on the Dashboard and the views of the Business Advisory Group on an annual basis.

Given the importance of the challenges of productivity, and the opportunities available if that challenge can be addressed, we think it is vital to regularly update this crucial data and encourage open debate and discussion to find solutions.



Case Study 1:

Coming together through practical tools to strengthen oil and gas sector for the future

Emerging from one of its toughest downturns, in 2015 the **oil and gas sector** responded by forming the Efficiency Task Force (ETF) with an aim to “seek out, promote and provide access to efficient practice across the oil and gas industry whilst maintaining safe operations.” The long-term goal of the ETF is to make sure the sector can compete on the world stage, whatever the oil price.

The work is led by a group of industry leaders who are committed to driving sustainable change in a collaborative way, with particular aim to:

- Identify and improve the efficiency of key business processes by reducing waste, non-value-add activities, and unnecessary duplication
- Remove over-specification through the introduction of standardisation and simplification standards and associated certification
- Increase industry-wide engagement with efficiency practices

With cooperation and collaboration at its core, the ETF set out to develop tools that bring efficiency to life for the businesses operating in the oil and gas sector, as well as its vast supply chain. Lessons from the improvements delivered together are shared via the Efficiency Hub, which is the industry's one-stop shop for all things efficiency. It provides access to over 100 case studies with examples of good practice and new ideas to drive efficiency. It also gives firms access to a network of over 200 'Efficiency Champions' to support businesses to pursue change within their organisations.

The work has seen production efficiency increase to 75% from a low of 60% in 2012, reversing a 10-year declining trend. Also operating expenditure has reduced by c.30% and average unit operating costs are down 50%.

Phil Simons, chair of the ETF, said:

“Transforming the way we work as an industry, to be more efficient and responsive in a cyclical market, takes a collaborative effort. What we’ve achieved since the ETF was formed, are real examples of success, and a growing recognition that our collaborative efforts are making a difference. There’s always more that can be done. It’s important now as the market steadily improves, to stay true to our founding aims, so that we can carry on as we started by achieving more together.”



"We need to back our workers up with action and turn the vision of inclusive capitalism into reality. And if every employee is a shareholder in the business, they have a powerful incentive to play their part in increasing the share price. It's not rocket science."

Jon Stanton, Chief Executive, Weir Group

Key themes and case studies

This section sets out the four themes from the Productivity Index Dashboard and suggests ways particularly businesses can change to have a positive impact on the 15 indicators, accompanied by case studies that bring to life what such change could look like.

The themes emerging from the Productivity Index Dashboard were closely guided by discussions with the Business Advisory Group, which also helped to set out some overarching reflections on how productivity should be tackled in Scotland, emphasising the broader role business has in shaping the Scottish economy:

- The ambition of improving productivity is a **shared enterprise** between government, the public sector, the business community and trade unions and all should have responsibility for making it happen. Government has levers it can pull, but it is also up to the business community (at firm and sector level), the public sector and unions to work together to make changes and drive improvements. This would indicate that new models of partnership could be particularly pertinent when it comes to productivity.
- We must consider the **right level of ambition** for improving the productivity of the Scottish economy. In light of the previous Scottish Government target of moving Scotland into the top quartile of most productive countries by 2017 despite largely static Scottish productivity performance, it is necessary to assess what more realistic, yet ambitious targets might look like.
 - o There are significant structural issues that require long term strategies such as the sectoral mix within the economy and low levels of capital stock formation by international standards. Short-term targets should be focused, and realistic with actions aligned to what is needed to achieve them.
- The potential for **positive societal impacts** from improving productivity is important, alongside the economic and financial benefits. In particular, short-term aims should also focus on enhancing wellbeing and inclusive growth, in order to clearly make the case for why improving productivity is for the benefit of everyone.
- Efforts to increase productivity in the economy should be focused on improving output and on increasing the number of high value jobs – and should **not come at the cost of unemployment**. Recommendations and actions from this work are designed to focus on how productivity enhancements can be achieved through improving performance in the key areas that make up the Dashboard indicators and so lead to an overall increase in output and increased employment.

Scottish headquartered engineering firm **Weir Group** made significant steps to make clear how important it was that everyone saw the benefits of the company's successes by setting up an all-staff share scheme this year (**see Case Study 2**).

Case Study 2:

Giving all staff a genuine stake in the business

The Glasgow-headquartered, international engineering firm **Weir Group** announced in May 2019 that they have developed an all-employee share scheme, giving over 15,000 staff across the 53 countries they operate in free shares in the company.

The share scheme was developed to reflect the company's values and acknowledge the important role people working for them had in Weir Group's future success. An initial award of £300 of free shares was awarded in 2019, with the same amount to follow in 2020 for all staff except executive directors. After that, all staff will have access to buying further shares, which would be matched by the company.

While setting up the share scheme was complex due to the numerous different regulations and tax structures within the countries Weir Group operates in, the company would encourage others to follow and would share their lessons with those wanting to do something similar.

Chief executive Jon Stanton said:

"I am sure I am not the first chief executive to say our colleagues are our business. It is unquestionably true that without our people, we are nothing. But these days the outside world expects more than warm words from business, and rightly so. We need to back our workers up with action and turn the vision of inclusive capitalism into reality. And if every employee is a shareholder in the business, they have a powerful incentive to play their part in increasing the share price. It's not rocket science."

Business practices

1. Business Investment as a % of GDP	●	●	●
2. Exports as a % of GDP	●	●	●
3. Business R&D spend as a % of GDP	●	●	●
4. % of innovation-active businesses	●	●	●
5. Total early-stage entrepreneurship activity	●	●	●

The most recent performance data suggest that Scotland lags behind the rest of the UK on most of the indicators linked to business practices, except entrepreneurial activity. This report will consider investment and innovation in particular as these areas sparked the most discussion in the Business Advisory Group.

Investment

The long-term trend of business investment is lower in Scotland, at 7% of GDP, than the rest of the UK, which sits at around 9%. At the same time, the UK as a whole underperforms on business investment relative to international peers, where across the G7, investments sit at 13% of GDP.²⁰

Getting the incentives right so more businesses increase investment, especially in R&D and leadership, will have a knock-on effect on productivity and open up opportunities that feed through the other themes. It should be noted that the UK business investment indicator currently only tracks tangible asset types like ICT equipment, livestock, R&D and software and structures.²¹

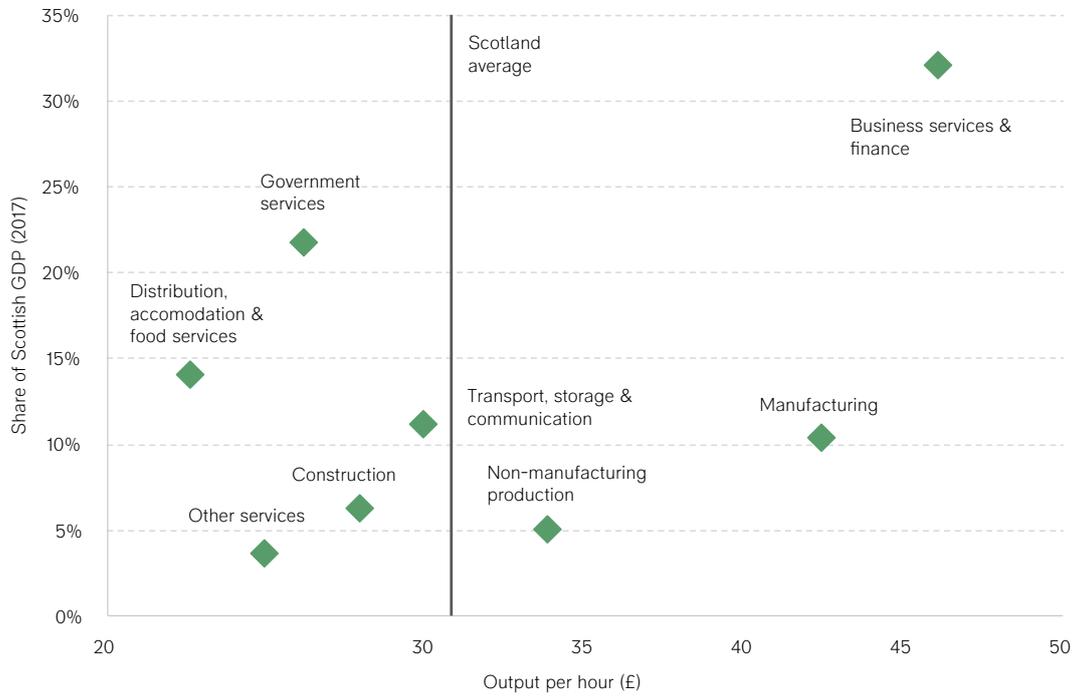
In this report the focus is on the broader investments that will unlock a number of productivity-enhancing measures also covered in the Dashboard, from adopting readily available technology and management practices, to taking the leap into exports or R&D.

Key priorities identified by Business Advisory Group:

- A number of key factors heavily influence investment decisions such as rising economic and political uncertainty. Another area was the overall business environment, where divergence, particularly in tax, business rates and planning between Scotland and the rest of the UK, was highlighted.
- Both Scottish and UK governments impact business investment decisions through the tax and incentive structures, which led to a focus on the need for government to consider whether productivity-enhancing investment was being sufficiently encouraged across the spectrum of intangible and tangible assets.
- While recognising that increasing business investment in Scotland was key, it was also recognised that in large companies operating across the UK – or indeed globally – investments and R&D made elsewhere in the business still bring productivity benefits to operations in Scotland.
- Sectoral differences need to be taken into account in securing improvements in productivity. For example, the viability of exporting or sectoral norms on innovation, will be seen in a very different light if you are in the hospitality sector, advanced manufacturing or housebuilding.
- One important investment aspect for all businesses was the need for investment in leadership and management as tools to improve productivity. These areas were seen both as key issues for the Business Advisory Group and areas where firms have been reluctant to invest in up until now. The Strathclyde Business School's Growth Advantage Programme provides a practical example of what such an investment could look like **(see Case Study 3)**.

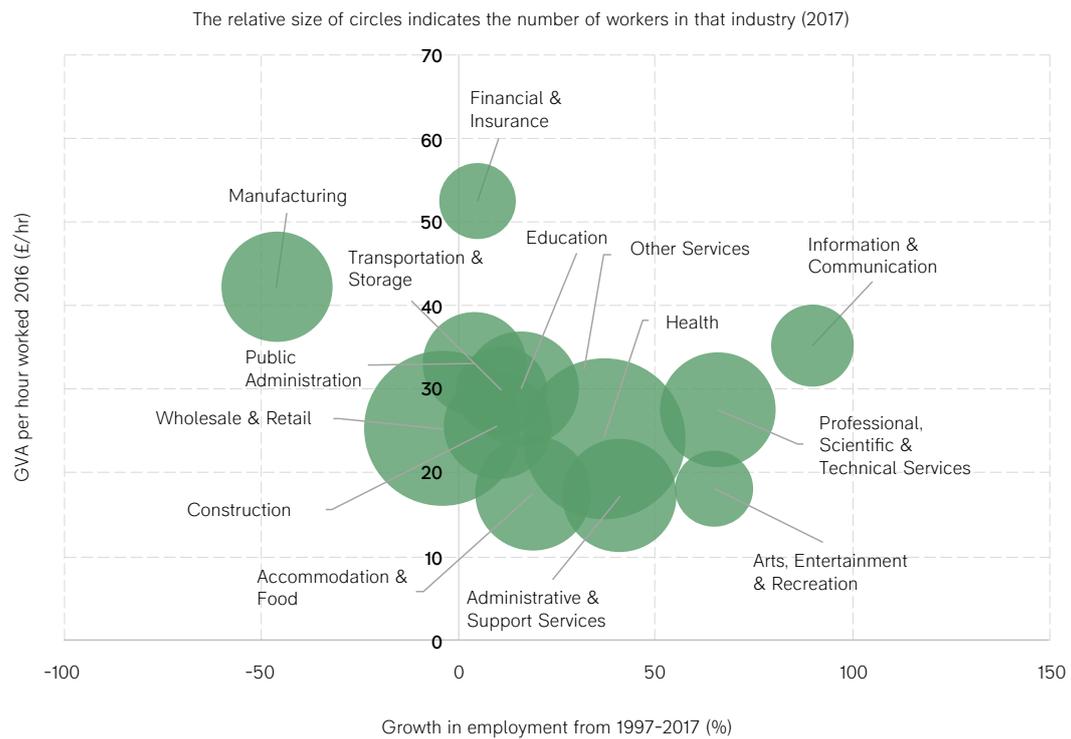


Exhibit 2 Sectoral composition of GDP and associated productivity (output per hour)



Source: Scottish Government/FAI

Exhibit 3 Employment growth and productivity levels by sector



Source: ONS/FAI



The sectoral composition of GDP and productivity by sector are highlighted in **Exhibit 2** for each of the main economic sectors in Scotland. **Exhibit 3** shows how the sectoral distribution of jobs has changed across the economy, alongside their relative productivity. While there will be limits to how extensive it can be, it shows the potential for where at least some jobs could move from low-productivity to high-productivity sectors.

It is clear that ongoing uncertainties, especially the UK's future relationship with the EU, are holding back business investment, with CBI members pointing to Brexit uncertainties holding back big capital spending projects. Provided that Brexit is resolved in an orderly fashion, a small bounce in investment is expected as businesses are given more confidence to spend.²²

As a practical example of productivity-enhancing investment in intangible assets, investment in management practice has in recent years been shown to have a strong link to productivity and growth. Firms in the lowest quartile of management that raise their performance to the UK median see a 19% increase in productivity.²³ Strong management practice is rooted in great people practices where the firms with the highest level of employee engagement see 22% higher profits and those that invest in their staff reduce turnover by up to 72%.²⁴

The CBI has developed a comprehensive guide, *Great Job*, outlining seven habits for people-driven businesses that set out how businesses can start making positive changes. The work points to research showing that both benchmarking and case studies are important tools in changing business practice. In Scotland, the establishment of the Fair Work Convention in 2015 has led to more focus on building up evidence for how 'fair work' can be a significant driver of productivity – defined as work that offers "effective voice, opportunity, security, fulfilment and respect".²⁵

Case Study 3:

Investing in leadership and tracking performance by pinpointing your business growth advantage

In 2015, **Strathclyde Business School** launched its Growth Advantage Programme (GAP) which is aimed at existing businesses with a minimum turnover of £1 million with real growth ambitions and encourages owners and leaders to take time out of their businesses to develop the discipline of growth. The programme starts with benchmarking sales and employment figures and then tracks performance through its 10-month duration and the growth projections once the annual cohort completes.

The programme places heavy emphasis on peer learning and takes a systematic approach through its workshops to establish where the firm has and can develop advantages in operations, markets, leadership and resources. Feedback from participants highlighted the key changes they saw within their business after acting on the lessons learnt from the course: a clear plan for growth for the business, staff more engaged, empowered and aligned, greater productivity, and company more robust and not as dependent on the CEO.

The 64 companies that have completed GAP since 2015 had an average turnover of £2.1m when they started the course and at the end of their 10-month programme projected average sales of over £5.3m within three years – two and a half times greater on average. Collectively, annual revenues are projected to grow from c£135m to c£340m. They had average employment at the start of the programme of 25 and projected to double to 50 on average within three years. Total employment is projected to grow from over 1,500 to over 3,200.

Following the success of GAP, the business school has expanded its executive leadership training offering with 'Productivity through People', which is again aimed at established businesses with growth ambitions – this time for the senior management team rather than visionary leader. The second cohort is currently under way.

Innovation

While unlocking business investment overall will have a positive impact on economic growth, the focus here is on the investments that can shift the remaining productivity indicators in the Dashboard. To illustrate, 94% of businesses see digital technologies as a crucial driver of productivity and an increasing productivity gap is opening up between companies willing to invest in the latest technology versus those that are not.²⁶

Key priorities identified by Business Advisory Group:

- A lack of innovation is an issue that holds back productivity in Scotland; interestingly, survey data collected among businesses suggest that this is not recognised as an issue by businesses themselves, with self-identified innovation activity scoring highly, with Scotland in the top quartile and just behind the UK as a whole.²⁷ As further illustration, 90% of companies told the CBI innovation survey they thought they had a culture of innovation, but only 45% said their people had the time to innovate.²⁸
- The use of performance management data and benchmarking are productivity-enhancing tools often used by larger companies who are accountable to their shareholders. Yet there is also value in such business practice for smaller companies to set goals and compare own performance within the sector, and ways should be found to make that more readily available as such data may come at a significant cost. For example, benchmarking is an integral part of the Strathclyde Growth Advantage Programme (**Case study 3**) and Be the Business offer a range of support through their platform (**Box 1**).
- For many businesses, venturing into international markets requires both investment and innovation. On the issue of exports there was broad agreement that productivity in Scotland suffers from low exports, both in terms of percentage of GDP and number of exporting businesses, and a vital route to improved productivity lies in large part through growing Scottish exports.



Box 1:**Be the Business online benchmarking and assessment**

At the heart of Be the Business, a new organisation set up to improve firm-level productivity, is a view that businesses can – and should – learn from one another, and that sharing the expertise of highly competitive businesses can catalyse growth in others.

Be the Business offers firms the opportunity to take an online benchmark and assessment. Thanks to integration with Companies House information and the Office for National Statistics data, business leaders can use the platform to see how they compare with other firms in their industry. The assessment helps firms identify opportunities to improve their leadership, employee engagement, future planning and use digital technology. Users are then shown of how other SMEs have successfully implemented performance improvements in these areas.

With regards to exports, there has been an increasing focus by both the UK and Scottish Governments – most recently in the Scottish Government’s new export plan Scotland: A Trading Nation – with agreement about the huge potential that lies in increased exports. The use of data to drive an evidence-based approach that highlights opportunities and trade-offs in the strategy is welcomed by businesses and should be used to underpin the future tracking of Scottish export performance.

When considering the theme of innovation, it’s worth unpacking what that might look like and the UK Innovation Survey is a useful source for understanding what businesses take innovation to mean. For the purposes of particularly productivity-enhancing innovation, it is worth noting it will take different forms dependent on the sector and the size of the firm.

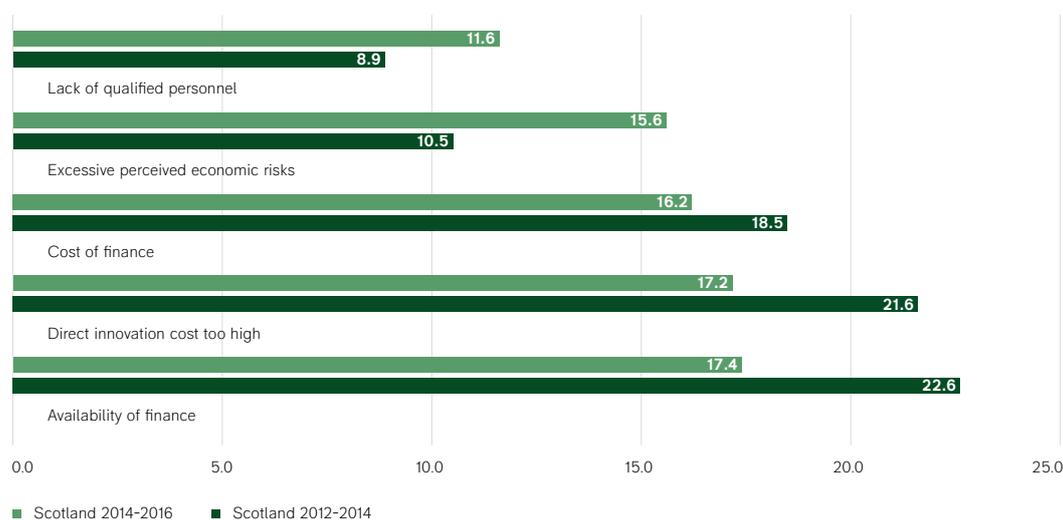
Nonetheless, what unifies any business when it comes to innovation and productivity is the need for greater digitisation and better management practices. If a company is going to have success in changing processes, they need focus on ‘trust and communication’ that empowers employees to be advocates and innovators.²⁹ It should also be noted that with ambitious carbon emission reduction targets in Scotland and the UK further opportunities for business innovation open up, provided government set out long-term, stable and credible policy strategies to match.

When it comes to business investment in R&D particularly, better funding schemes at the development phase can help crowd-in business investment – such as by making funding accessible during later stage developments at capital-intensive pilot scale facilities or breakthrough tech.³⁰ Competency-building packages have also been suggested for business that are ‘data novices’, which makes the University of Edinburgh’s new MicroMasters in data analytics for business particularly relevant (**see Case Study 4**).

Close collaboration between business and higher education was held up as vital by the Business Advisory Group, and less straightforward to track in the data. Universities have an important role in driving business innovation and productivity, such as by encouraging the use of complex data-driven technologies that go beyond internal business capabilities through supplying specialist digital skills and expertise.³¹

More broadly, it is important to remember that people will be the drivers behind successful R&D and as we look to a future of ever-faster pace of technological change, a long-term focus on digital skills will undoubtedly be central to improved productivity performance as highlighted in **Exhibit 4** and explored further in the next section.

Exhibit 4 Barriers to innovation



Source: UK Innovation Survey



Case Study 4:

First UK online MicroMasters in data analytics aimed at working professionals

The University of Edinburgh has become the first university in the UK to offer free masters-level education without the commitment of a full degree – aimed particularly at working professionals. The University has partnered with one of the world's leading online education platforms, edX, to offer a new MicroMasters programme.

The graduate-level courses, aimed at people in work looking to refresh or upskill, provide the opportunity to complete a course without the time commitments or cost implications of a full masters degree.

MicroMasters programmes comprise a collection of fully online courses where learners can choose to study some or all of the modules within the programme. Each module runs over 6-8 weeks, with a time commitment of 8-10 hours per week. A full MicroMasters programme takes 40 weeks to finish, however learners have the option to take up to two years to complete, allowing flexibility to schedule course dates around other business commitments. Learners can access content for free or unlock additional content and assessments.

The first course to be offered is in 'Predictive Analytics for Business Applications', by the University's Business School. The five-step course focuses on Big Data and meets growing business demand for advanced skills in the discipline of analytics, Python and machine learning. Successful completion of the Predictive Analytics MicroMasters programme is one possible route for entry to the University's on-campus MSc Business Analytics.

Career opportunities for people who successfully complete the MicroMasters in Predictive Analytics, include business analyst, data scientist and management consultant.

Professor Wendy Loretto, Dean of the Business School, said:

"Our new MicroMasters course enables us to provide learners with key skills that are in high demand in the age of Big Data, and to reach out to learners who might not otherwise be able to study with the Business School."



"The impact of Brexit uncertainty rightly gets a lot of airtime. However, we must not lose sight of the other challenges facing the economy: particularly the persistent weakness in productivity, which remains the main threat to living standards and potential growth. Fixing this should remain a focus for both government and business – for example, by enabling more effective adoption of new technologies."

Alpesh Paleja, Lead Economist, CBI

Skills and training

6. % of working age population with Higher Education Certificate or above	●	●	●
7. % of workforce in job-related training in past 3 months	●	●	●
8. % of employers with skill shortage vacancies ¹⁶	●	●	●
9. % of employers with underutilised staff ¹⁷	●	●	●

Decisions business and government make now about skills for the future will directly impact how Scotland's businesses and people contribute to boosting productivity.

The most recent performance data related to workforce skills highlights how Scotland leads the UK on level of education qualifications but suggests skills shortages and a decline in job-related training. Firms' training and development budgets have come under increased pressure since the introduction of the Apprenticeship Levy in 2017. However, businesses recognise that they play an important role in the skills landscape, with 80% of UK firms acknowledging that they have a role and responsibility to train the UK workforce.³²

It is important to note that these are national survey data and will not reflect a complete picture of the Scottish skills landscape. But they highlight an important conversation that needs to be had, about how business and government should address the issue of upskilling and retraining, in light of big changes advancing fast in technology and automation.

Key priorities identified by Business Advisory Group:

- In the modern job market, the link between Higher Education qualifications and productivity may not always hold across all sectors. Higher Education qualifications are often used as a proxy measure for skills but with the pace of change, the need for lifelong learning should now be prioritised more than before.
- Lifelong learning and upskilling were seen as key. There are a number of examples of good practice from which to draw inspiration to improve lifelong learning, some of which are highlighted in this report. In Scotland, these include the energy sector (**see Case Study 1**), and, further afield, the Norwegian Government has long been adapting how to ensure continued upskilling (**see Box 2**).

- The overall skills shortages data outlined in the Dashboard is likely to mask significant sectoral differences: for example, the skills shortages in the hospitality sector are likely to be significantly higher than the national average.³³ This is a new survey and it will be interesting to see how the data changes.
- One potential area of skills shortage that is likely to run across many sectors is in sales. It was broadly agreed during discussions that this was a skill that is not as readily available as others and not sufficiently prioritised, despite the impact it could have on business operations and productivity indicators (see **Case Study 5** about **Superglass** for a practical example of the potential impact of a greater sales focus).

While Scotland performs well on workforce skills, data shows that the proportion of employees undertaking job-related training has fallen sharply in recent years such that Scotland now sits third out of the four UK nations.

The Business Advisory Group considered this fall to represent a constrained ability, rather than a reduced desire, of employers to invest in training, particularly during years when financial budgets have often been under significant pressure.

Lifelong learning will rely on people having the ability and willingness to learn new things, which can be linked to business surveys regularly showing that when recruiting young people, firms place more emphasis on their attitude and aptitude over and above formal qualifications. In CBI's most recent survey, 68% of Scottish businesses listed broader skills, such as listening, teamwork and problem solving, among their three most important considerations when recruiting school and college leavers.³⁴

Box 2:

The ongoing work to build a culture of lifelong learning

In 2009, **Norway** first enshrined in law the commitment to lifelong learning to ensure there was additional education support made available alongside the formal education system to meet the needs of the individual, the labour market and society as a whole with funding for several forms of adult education. But like many countries around the world, the rising need for digital skills and continuous learning across the workforce is posing a challenge. This has initiated wide-ranging and ongoing cross-sector consultation as Norwegian education officials have found the people taking advantage of adult education are predominantly younger people and those already highly educated, which points to the need for work to be done to convince the majority of the working age population that lifelong learning is a necessity.

Nesta analysis has shown that data-driven skills shortages are already costing the UK £2bn a year,³⁵ while Scottish employers report skills shortages in both basic computer literacy (23%) and/or more advanced specialist IT skills (21%).³⁶

Technological skills are predicted to represent almost one fifth of workers' time in 2030, regardless of their occupation,³⁷ meaning these skills are now a necessity for businesses of all sizes and in all sectors. Significantly expanding the percentage of the population with sufficient digital skills is therefore critical to keeping pace with technological change and ensuring that everyone is equipped to take advantage of the opportunities it brings.

Business and government should work together on a target of ensuring that 100% of the workforce has basic digital skills by 2025.³⁸ Part of ensuring a successful digital skills pipeline will also be to support schools, colleges and universities to embed digital skills across every subject based around a clear map of the digital proficiency needed at each educational level.

As individuals and businesses' needs for training and lifelong learning are considered part of enhancing productivity, so must the health and wellbeing of the workforce as is considered in the next section.



Case Study 5:

Breaking down sales strategy in order to build up the brand

In 2016, Stirling-based manufacturer **Superglass** committed to forensically examining its stagnant sales to find a way forward to build the brand and move the business from a cycle of short-term contracts and perpetual pressure on pricing to more reliable, guaranteed volume contracts. Core to its strategy was using tools within sales and marketing to turn the firm around.

The questions they asked themselves focused on how to use brand differentiation to build a competitive advantage, how to equip the organisation to drive growth and how to ensure they had the sales capabilities necessary for future growth.

A strategy was agreed with the executive leadership team that involved incremental spend on brand building, demand generation and sales team development to the equivalent of c. 1% of sales. The key deliverables formed a clear path: from building the brand in order to increase the pool of customers, via converting the pool into sales prospects by using existing digital tools in marketing automation and CRM, to converting those prospects into actual sales through a highly trained and motivated sales team.

Each of the three steps along the way were set out in detail with clear timelines and resources to ensure the effective delivery and success of the main aim to grow the business through more stable, volume contracts. For example, the sales training for staff was developed around a bespoke, level-appropriate training and accreditation programme with a clear path to progression, moving away from just linking career progress to sales performance.

From 2016 to 2018, Superglass enjoyed revenue growth of over 60% after an extended period of stagnant or declining sales and has decided to double the capacity of its production facility.

Bob Dalrymple, Superglass Head of Marketing said:

"Focusing on brand building and demand generation has been a key factor in driving transformed business results. All areas of the business have contributed, but since putting the end user at the heart of our strategy, we have seen the business move to a substantially more secure footing."

Health and wellbeing

10. % of hours lost due to sickness absence



11. % of economic inactivity due to long-term ill health



People who are happy and healthy – both mentally and physically - contribute more to workplace productivity.

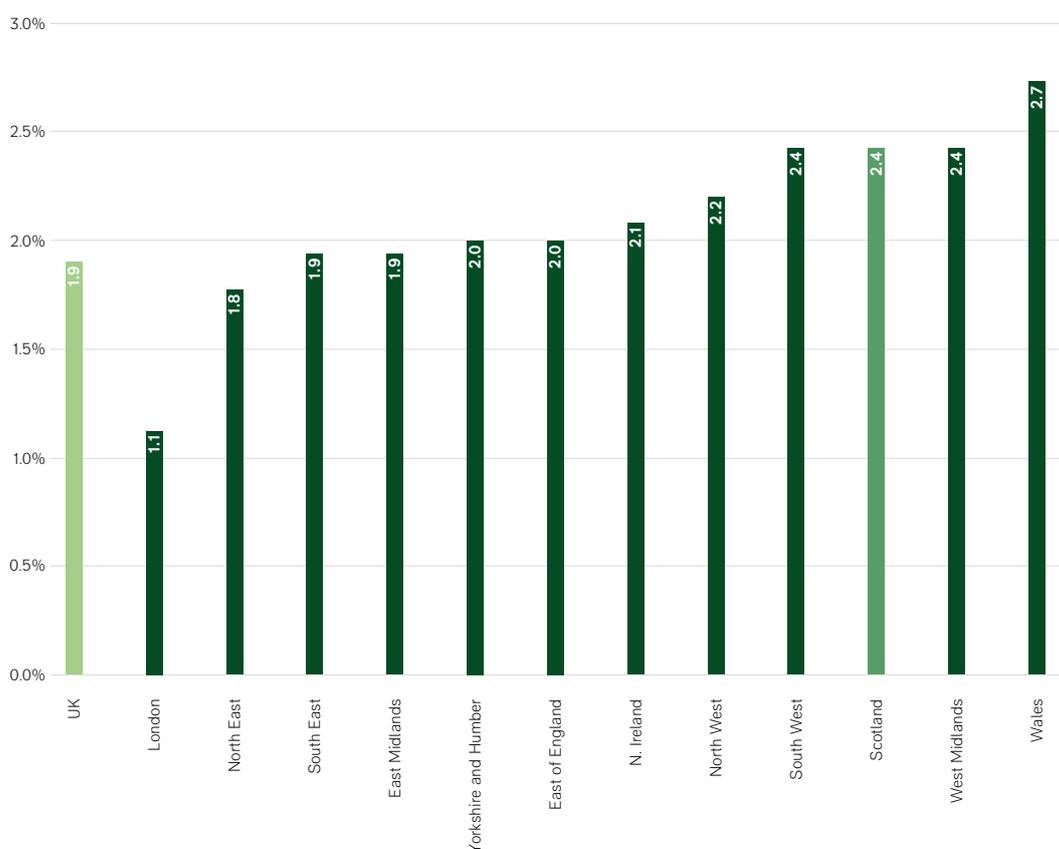
The indicators tracked in the Dashboard highlight aspects of health and wellbeing that we see as being linked to productivity, but they should only be seen as illustrations of a more complex set of issues. Presenteeism is equally a dampener on productivity because of its detrimental impact on people's wellbeing and the way in which it can extend the period of recovery.³⁹

Key priorities identified by Business Advisory Group:

- Improving workforce health, both physical and mental, does not take a short-term fix but requires long-term thinking and strategies that have not been at the forefront of most business thinking until recently – although there are a good number of companies who demonstrate good practice.
- Business-led action will be important in improving health and wellbeing, as surveys show that 61% of employees have experienced mental health issues due to work or where work was a contributing factor.⁴⁰ At the same time, See Me Scotland estimates that mental ill health currently costs employers £2bn a year.⁴¹
- The issue of mental health must be a priority for action by government and businesses together as the underlying reasons for ill health will be complex and requires support beyond work. International examples where employers invest directly in their staff's health were discussed, as were incentive structures for businesses to invest more in employee health and wellbeing.

The notable aspect of the two health-related indicators in a Scottish context is how Scotland performs relative to the rest of the UK, which may indicate that this is a particularly important issue to address here. The urgent need to tackle health issues is highlighted by the data which shows that Scotland loses almost 2.5% of workforce hours due to sickness – among the highest levels in the UK (**Exhibit 5**). The background data also show that almost a third of those classed as economically inactive are suffering from ill health.

Exhibit 5 Proportion of hours lost to sickness



Source: ONS 2017

Businesses can play a vital role in improving workforce wellbeing. People spend on average 90,000 hours at work over a lifetime, so employers can and should be proactive in supporting their staff by prioritising and promoting a positive health and wellbeing culture. With significant presence on the Clyde, **BAE Systems** provides an example of support structures through their network of colleagues volunteering as Mental Health First Aiders (**see Case Study 6**).



The reasons to invest in workplace health and wellbeing for a business range across reducing absences, boosting productivity and attracting a future workforce. It is also the right thing to do, as the broader benefits of improved productivity comes from people seeing value in their work and feeling valued themselves.

Yet many businesses report that they do not know what works in terms of changing workplace practices to improve health and wellbeing, which is why CBI Scotland produced a short pamphlet setting out four steps firms can take:⁴²

- 1 Make health and wellbeing a leadership priority
- 2 Take a proactive approach to early intervention
- 3 Build an organisation culture that encourages health and wellbeing
- 4 Recognise the impacts of financial health on employee health and wellbeing

Other practical examples can be found at advanced manufacturer **Peak Scientific** where the firm invested in a monthly doctor visit so staff could take advantage of flu jabs or regular health checks if they wished, alongside ensuring health food was on supply in the canteen. Based near Glasgow, the company also introduced flexible start and stop times so people could adapt their travel to work.

Case Study 6:

BAE Systems Naval Ships aims to #breakthestigma

BAE Systems Naval Ships designs and builds complex naval ships, employing over 4,000 people at sites across the UK. As part of its health and wellbeing strategy, the company regularly promotes mental wellbeing and last year launched a plan to tackle the stigma around mental health.

The #breakthestigma plan outlines their ambition to have one in four employees trained in or informed about mental health by 2020. Claire Walsh, Head of Occupational Health and Wellbeing is spearheading a programme designed to raise awareness of the issue and promote mental wellbeing. There is a variety of ways employees can get involved, including volunteering to become a Mental Health First Aider – the company already has 80 Mental Health First Aiders trained to spot the signs of stress and depression, provide basic care and help colleagues find the right information and support.

Employees can also take part in local activities and assessments and are encouraged to challenge negative attitudes towards mental health.

Claire Walsh, Head of Occupational Health and Wellbeing said:

“Health and Safety Executive statistics show that the rate of stress, depression and anxiety among workers in Great Britain is at its highest for 17 years and is now the most common category of work-related illness. We’re absolutely committed to creating a culture where people feel comfortable talking about their mental wellbeing. Our aim is to increase awareness and understanding, promote positive behaviours and provide support and training where relevant.”



Infrastructure and connectivity

12. Average internet speeds in Scotland	●	●	●
13. % of premises with access to full fibre broadband	●	●	●
14. 4G Mobile coverage	●	●	●
15. Travel to work time	●	●	●

Current and future-proofed digital infrastructure will lay the foundations for greater business adoption of existing technology, which will drive further productivity gains. That is why the Dashboard has focused on indicators related to digital infrastructure, as well as commuting time.

Key priorities identified by Business Advisory Group:

- The role of the Infrastructure Commission for Scotland was seen as vital in gaining a sense of long-term infrastructure priorities. Prioritisation should be seen through the prism of how infrastructure can make a positive difference to productivity.
- Concerns were also discussed around physical infrastructure in Scotland. This relates to connectivity between key urban centres, within City Regions and the infrastructure required to accommodate the growing emergence of electric vehicles.
- Housing was seen as closely linked to increasing productivity because ensuring the availability of housing in the right places will enable people to more easily move to where the jobs are.
- The lack of in-house digital skills at many businesses is holding back technology adoption – even where the digital infrastructure exists. This was seen as a core issue needing to be addressed through future skills plans.

Scottish geography means that digital infrastructure roll-out is not as straightforward as in other parts of the UK. Yet at the same time, if we are to make inroads into greater technology adoption across Scotland's 340,000 SMEs, we cannot afford to stop striving for better digital connectivity. While Scotland sits at a 27-minute commuting average (below the UK average), there is more that can be done to make sure all areas are better connected, which would broaden the talent pool employers could tap into and ensure time spent commuting can be used productively.

Digital connectivity is the number one infrastructure priority for businesses across Scotland.⁴³ As business models and workplaces change, so do connectivity needs. More people are working from home and jobs are becoming more mobile. Remote working on transport and in public places depends on reliable and fast digital connectivity that supports technologies like cloud computing and video conferencing. To illustrate the opportunities, global distillery firm **Diageo** are working to digitally connect their many remote locations (**see Case Study 7**).

Firms welcome the Scottish Government's commitment to ensuring every residential and business premise in Scotland has access to superfast broadband by 2021 and meeting that target should continue to be a priority.

However, we cannot lose focus on how we future proof our digital infrastructure. A quick rollout of gigabit connectivity through full fibre is required to support the ambitions of business and maintain our international competitiveness. Today, 4% of premises in Scotland and the UK have access to full fibre broadband compared to 71% in Spain, 95% in Sweden and 97% in Japan.⁴⁴ The UK Government runs the Gigabit Broadband Voucher Scheme, which gives SMEs up to £2500 towards the installation of gigabit connectivity. Funding for this should go further and more businesses in Scotland should be encouraged to take advantage of the scheme.⁴⁵

Exhibit 6 Digital infrastructure in Scotland

Service	Availability in 2017	Availability in 2018
Superfast Broadband ⁴⁶	87% of premises	92% of premises
Ultra-fast Broadband ⁴⁷	30% of premises	44% of premises
Full fibre ⁴⁸	1% of premises	4% of premises
4G Mobile Coverage	51% of landmass	78% of landmass

Source: Ofcom

Digital connectivity is what enables greater technology adoption, which is what will ultimately improve productivity. There is a domino effect where the firms that fail to take up existing technologies and better management practices often also struggle to invest in new skills, to export or to allocate finance towards innovation. This is not only a challenge in Scotland, but UK-wide, where the proportion of firms using existing digital tools such as websites, internet trading, CRM and ERP systems in 2017 matched that of Denmark in 2009.⁴⁹

The CBI has unpacked some of the barriers to tech adoption, both in small and large firms, with an accessible guide, called *Be more Magpie*, based around five questions to answer for businesses looking to make better use of existing technologies.⁵⁰

For larger firms in particular, barriers to tech adoption include skills scarcity, complex legacy systems and greater threat of cyber-attacks.⁵¹ It is clear that if large companies in Scotland are able to transform their productivity through digitisation and management, it can have a transformative impact considering that, while they make up 0.7% of the business landscape in Scotland, they represent 45.1% of private sector jobs and 58.5% of private sector turnover.⁵²

All in all, the opportunities are significant. Work by the McKinsey Global Institute in February 2018 estimated that productivity could grow by 2% per annum over the next 10 years – 60% of that growth due to digitization. In their view, “the benefits of digitization have not yet materialized at scale. This is due to adoption barriers and lag effects as well as transition costs.”⁵³

Businesses of all sizes can make big and also relatively small changes to how they operate and have a positive impact on Scottish productivity performance.

The important message from the first year of the CBI/KPMG Scottish Productivity Index is that Scotland will experience the most transformative change if improving productivity is done in collaboration and consistently over time, and crucially, with the buy-in of business leaders, the people they employ and across government.



Case Study 7:

Wide-spread productivity benefits from connecting all parts of Diageo's global business

Diageo operates 28 single malt distilleries in Scotland, located in some of the most remote and rural communities in the country. A major challenge is the quality of internet connectivity and how that impacts on the productivity of people based in these locations. As a global business, Diageo has moved to cloud-based systems and on-line video-conferencing for meetings, all of which are supportive tools especially for people in remote areas.

Glenkinchie Distillery near Pencaitland, just over 20 miles from the centre of Scotland's capital city Edinburgh, struggled with extremely low internet speeds. As a result, employees at the distillery could not download documents and could not use video-conferencing for meetings.

Once a week staff would drive from the distillery to Diageo's head office at Edinburgh Park – a 44-mile return journey averaging just under two hours travel time – to download documents and to update their computer systems. Over the course of a year this alone meant more than 100 hours of staff time used in travel and more than 2,200 miles of car travel at significant expense and environmental impact.

Additional time and expense were incurred with staff traveling to meetings rather than connecting via video conferencing, time wasted completing slow online tasks, and the distillery was unable to benefit from time-saving productivity enhancements offered by online tools available to other parts of the business.

Determined to find a solution to the challenges, Diageo worked closely with Openreach to tackle this issue and as a result Glenkinchie now has full fibre broadband, eliminating the need to travel for internet connectivity. Diageo continues to work with Openreach to extend fibre connectivity to remote distillery sites across Scotland in a bid to open up the same productivity benefits to all its distilleries.

Pamela Scott, Diageo Global Operational Excellence Director, said:

"Full fibre broadband has had a transformational impact on how our Glenkinchie colleagues now can connect directly with the wider Diageo business, to the extent that they are now leading wider business projects from the distillery, which they would previously have been excluded from doing because of the inability to connect digitally. It also means Diageo is able to tap into the wealth of experience and skills among our people, no matter where they are based, for the benefit of the global business as a whole."

A note on the research and the Business Advisory Group

The findings outlined earlier in this report come from both the quantitative data derived from the Productivity Dashboard, and qualitative data derived from the two meetings of the 'Business Advisory Group' (BAG), which helped to guide the project.

The BAG was made up of senior representatives of organisations and bodies from a range of sectors of the economy in Scotland. A full list of members of the BAG is given below.

The BAG met on two occasions, 27th May and 29th June 2019, facilitated by Mark Diffley from Mark Diffley Consultancy and Research Ltd. The focus of the first meeting was to present the Dashboard to the BAG, consider and discuss potential amendments to it, discuss productivity issues in general and the key themes under each of the draft headings of the Dashboard: workforce skills; workforce health; business ambition; business practice; and infrastructure.

The focus of the second meeting was to consider the changes that had been made to the Dashboard since the first meeting, and to put forward recommendations, aimed at government and business, to try and improve productivity in Scotland.

Membership of the Business Advisory Group:

- Jenny Stewart, KPMG (Chair)
- John Anderson, Strathclyde Business School
- Jo Armstrong, Wheatley Group
- Nicola Barclay, Homes for Scotland
- Karen Betts, Scotch Whisky Association
- Bonnie Dean, University of Glasgow
- Stuart Gallacher, BAE Systems
- Barry King, Oil & Gas UK
- Robin MacGeachy, Peak Scientific
- Willie Macleod, UK Hospitality
- Pamela Scott, Diageo
- Kenneth Shand, Dentons LLP
- Colin Walls, Bank of Scotland



"Full fibre broadband means Diageo is able to tap into the wealth of experience and skills among our people, no matter where they are based, for the benefit of the global business as a whole."

**Pamela Scott, Global Operational Excellence
Director, Diageo**

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Source data for Dashboard

1	Business Investment as a % of GDP	Scottish Government/FAI	2019 Q1
2	Exports as a % of GDP	Scottish Government/FAI	2019 Q1
3	Business R&D spend as a % of GDP	ONS	2017
4	% of innovation-active businesses	UK Innovation Survey	2017
5	Total early-stage entrepreneurship activity	NatWest Global Entrepreneurship Monitor	2017
6	% of working age population with Higher Education Certificate or above	ONS / Eurostat	2017
7	% of workforce in job-related training in past 3 months	ONS (NOMIS)	August 2019
8	% of employers with skill shortage vacancies ^[1]	Department for Education Employer Skills Survey	August 2018
9	% of employers with underutilised staff ^[2]	Department for Education Employer Skills Survey	August 2018
10	% of hours lost due to sickness absence	ONS	2017
11	% of economic inactivity due to long-term ill health	ONS	2017
12	Average internet speeds in Scotland	Ofcom	2018
13	% of premises with access to full fibre broadband	Ofcom	2018
14	4G Mobile coverage	Ofcom	Jan 2019
15	Travel to work time	Department for Transport	2017

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To share your views on this topic or ask us a question, contact:



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