NEW SKILLS AT WORK
JPMorgan Chase & Co.

IPPR SCOTLAND

REPORT

SCOTLAND SKILLS 2030

THE FUTURE OF WORK AND THE SKILLS SYSTEM IN SCOTLAND

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May 2017

Institute for Public Policy Research

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ACKNOWLEDGMENTS

The authors would like to thank representatives from across the skills sector in Scotland for their input and feedback on the report, and for their support throughout this process. Many thanks also to IPPR colleagues Joe Dromey, Izzy Hatfield, Clare McNeil, Carys Roberts and Alfie Stirling for their very helpful comments and research support.

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Citation
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Thomas R and Gunson R (2017) *Scotland skills 2030: The future of work and the skills system in Scotland*, IPPR Scotland. http://www.ippr.org/publications/scotland-skills-2030

SUMMARY

60-SECOND SUMMARY

The world of work in 2030 will be very different to that in 2017. People are more likely to be working longer, and will often have multiple jobs, with multiple employers and in multiple careers. Over 2.5 million adults of working age in Scotland today (nearly 80 per cent) will still be of working age by 2030. At the same time, over 46 per cent of jobs (1.2 million) in Scotland are at high risk of automation. We will therefore need a skills system ready to work with people throughout their careers.

There have been improvements in the Scottish labour market in recent years in terms of pay and productivity, while qualification levels have been steadily improving and are higher than levels in the UK as a whole. However, Scotland continues to have lower rates of in-work progression and lower rates of productivity than the UK as a whole, and pay rates, although increasing, have reduced in real terms and are still behind rates in the UK overall.

Within the skills system, there are gaps and overlaps in provisions, with a clear gap in mid-career provision, which employers are not addressing. While we have the best record within the UK nations for employers investing in training, there is still much to be improved on, with too many employers adopting a low-skill business model.

We make a number of recommendations in this report, which include a proposal for a new Open Institute of Technology (OIT) for Scotland, to provide a flexible and transferable mid-career learning route, as well as a focus on in-work progression, productivity and pay outcomes and tests of demand from classroom to boardroom.

By making changes now, we can ensure the skills system is at the centre of supporting Scotland's economy through the short- and long-term challenges it faces, and delivering the inclusive economic growth we wish to see.

KEY FINDINGS

Scotland faces multiple opportunities and challenges around demographic change, technological change and decarbonisation. Changes brought about by Brexit and potential changes to Scotland's constitutional future and place in the world add to this moving picture. This report outlines how the skills system could be at the centre of navigating a path through to 2030 in a way that delivers the inclusive economic growth we need to see.

We go into these next few years with pre-existing weaknesses around career progression, pay and productivity – including a productivity gap in our low wage sectors compared to European competitors. Equally, we see a skills system that has overlaps and gaps, and in particular a gap in terms

of mid-career provision with much of the skills system is focussed on early or pre-career learning.

In a future world of work – with longer working lives potentially in multiple jobs, for multiple employers and in multiple careers – we will need to do more in terms of mid-career learning. Over 2.5 million adults of working age in Scotland today, or 78 per cent, will still be of working age by 2030. Equally, over 46 per cent of jobs – some 1.2 million – in Scotland are at high risk of potential automation over the next few decades.

While there are gaps in the publicly funded skills system, these do not seem to be being plugged by employers themselves. Investment in training by employers has dropped in recent years across the UK, and too many employers are pursuing a low-skilled business model. This investment also has a social dimension, with high-skilled workers twice as likely to receive investment in their skills as low-skilled workers.

In this report, we outline a number of recommendations for reform.

1. An Open Institute of Technology: Plugging the mid-career provision gap

A new mid-career learning route, with a mix of online and face-to-face provision delivered through existing providers, in a fully flexible, transferable and modular approach. This route would be focussed on delivering improved rates of career progression, pay and productivity, starting in low-skill sectors.

2. A focus on progression, pay and productivity: Delivering clear outcomes at the national level

The skills system as a whole should be focussed on improving Scotland's rates of career progression, pay and productivity – moving to an outcome-based approach around these 'three Ps'.

3. Progression agreements: Delivering outcomes at the classroom level

New tripartite agreements between learners, employers and skills providers should be introduced. Employers would agree to a form of career progression if learners meet certain learning outcomes, and in return the skills provider would fund provision (through public funding). This would bring a focus on progression and a test of learner and employer demand at the micro-level.

4. Career pathways: Learner and employer co-design

Career pathways should be developed in Scotland that outline the education, qualifications and skills required to progress through a range of careers, co-designed by learners and employers.

5. Qualifications review: Improving flexibility and transferability

Skills qualifications should be reviewed to ensure they remain fit for their purpose – particularly in relation to further education – to explore the ability to modularise and move more of the system online, and to open up the transferability of qualifications across the full range of learning routes.

6. Innovation academies: Driving improved innovation and productivity through the skills system

New sector-based innovation academies should be established, tasked with driving productivity levels up, including through harnessing the potential of the work undertaken by colleges and skills providers every day to bring innovation to business practices in Scotland.

7. Business investment, the apprenticeship levy and business taxes: The specific role of employers

Business investment has been declining across the UK. With the introduction of the UK-wide apprenticeship levy, we need to see an increase in investment, and further work needs to be done to encourage and enable employers to adopt high-skill business models. To champion this, the Scottish government should consider how business tax allowances could be used to encourage investment in skills by employers.

8. A new progression unit: Tackling the 'progression gap'

This report identifies a 'progression gap' – low levels of career progression for low-skilled workers in Scotland – which we suspect is related to the attainment gap at school, and the fair access gap in post-16 education. Improving progression rates will also work to tackle rates of in-work poverty and drive social mobility in Scotland. A new progression unit would be tasked with researching, monitoring and evaluating activity designed to close this progression gap.

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In addition to these recommendations, in this report we outline the need for the Scottish government's current enterprise and skills agency review to bring greater regional alignment to the skills system as well as the need for the Scottish government's ongoing learner journey review to reduce duplication across and within learning routes.

1. INTRODUCTION

The world of work in Scotland in 2030 will be very different to 2017. Short- and long-term challenges in Scotland will change the labour market as we know it, and we will need to create a skills system that is responsive and prepared for the future. This will require decisions to be taken now. A well-functioning skills system should be at the heart of inclusive and sustainable economic growth in Scotland, but it will need to reform to meet the needs of the workforce as a whole.

There are a number of fundamental changes that Scotland is now facing, and will face for some time to come.

- **Technological changes**, such as automation, will change the employment landscape and the jobs that we are required to do. Some traditional jobs will become deskilled, and may disappear completely, while new currently unimagined jobs emerge. This will likely lead to an increasing number of people having multiple careers with multiple employers.
- **Demographic change**, including increased longevity, will see an increase in the number of older people in the population, while the working age population is set to shrink proportionally. This will create new opportunities, and is a huge success of social policy over many generations. However, an ageing population will also bring serious challenges, including demand for public services and how to pay for them.
- **Decarbonisation** is also likely to affect Scotland's economy across the board, and, of course, Scotland's oil and gas industry in particular. If the world is to meet its climate change obligations, it is likely that the oil and gas sector in Scotland will need to adapt and transition, while also protecting the workers, communities and the economy. The age of Scotland's oil and gas sector will also contribute to this need to transition.
- The most recent of these changes, **the EU referendum of 2016**, sets the UK on a course to leave the EU. In doing so, the vote has clearly reopened the question around Scotland's constitutional future. However, whether Scotland remains a part of the UK or not, and indeed a member of the EU or not, a more restricted immigration policy in the UK will likely have an impact in Scotland too. This will lead to further pressures around skills gaps, supply, and utilisation, that the skills system in Scotland will need to be ready to respond to.

All of these changes will consequently require Scotland to develop a skills system and business models across employers that continually invest in people's skills, in order to ensure that Scotland has a more productive workforce and an economic model that delivers the inclusive growth necessary to compete in this global context.

There are many unknowable factors between now and 2030. Change will be a constant, but the type of change may not be, meaning that the skills system will need to have responsiveness built into it.

In this report, we set out the substantial challenges in the labour market and Scotland's economy. As outlined in IPPR Scotland's previous work, it is clear that while there has been a jobs recovery in Scotland following the 2008 global financial crisis and recession, Scotland continues to have lower rates of progression and productivity than rest of the UK, and pay rates, although increasing, have not recovered to the levels of 2008 in real terms. We have found evidence of disparities between the skills demanded by employers now, and the skills being produced by the skills system. Given projections of changes to demand over time, these disparities may widen.

We then set out the current challenges in the skills system. In recent years, the skills system has focussed on young people, earlier career learning and on full-time learning. In part, this has been an attempt to tackle increasing levels of youth unemployment and cut down on unrecognised qualifications. As a result, we are seeing a clear gap in mid-career learning provision.

We have found that young people with the lowest levels of qualifications, often from the most deprived areas, are the least likely to initially go into the skills system after leaving school. At the same time, workers with the lowest levels of skills are less likely to see investment from employers than more highly skilled workers.

There is insufficient investment and partnerships between employer, employee/learner and provider, and where partnerships do exist they are not always at the right level of the system. This is one of the major factors in the demand mismatch within the skills system in Scotland.

There is also insufficient flexibility and transferability of learning, which is a key weakness as we enter a world of work with multiple careers and employers, and as the types of jobs that we do change. Furthermore, there are clear overlaps, duplications and inefficiencies in the skills system in Scotland. It is not clear what the purpose of certain routes are and who they are for, from both employer and employee/learner viewpoints.

At the moment, success for the skills system is ill-defined, and there is too broad a definition of what constitutes a 'positive destination' for learners on exiting the skills system. For example, entering employment is seen as a successful outcome at present, regardless of whether the job is low- or high-skilled, has progression opportunities, or comes with wrap-around learning or not. Equally, further learning is seen as a positive destination, regardless of whether that learning represents educational progression or not.

All of this is at a time of restricted budgets and political uncertainty in light of the vote to leave the European Union.

In this report, we have concluded that the skills system needs both short- and long-term reform, which must include better support for mid-career learning. We set out our policy recommendations, which include setting a clear overall purpose for the Scottish skills system to deliver improved progression, pay and productivity, increasing inefficiencies and reducing

repetition, and creating more flexibility in training and learning to meet both learner and employer needs.

Our primary recommendation is the creation of a new mid-career learning route – which we have called the Open Institute of Technology – to sit alongside further education (FE), higher education (HE), Modern Apprenticeships and other existing learning routes. Based in part on the Open University model, and borrowing from international best practice, this would provide a flexible, transferable and modular route, with a mix of online and face-to-face provision, and would build an online menu of courses that could be configured into career pathways by employers and learners, with face-to-face provision delivered through existing providers.

We also make a number of wider recommendations for the skills system, including new sector-based innovation academies to bring increased levels of innovation and productivity across the economy, and new progression agreements to bring employers, learners and skills providers together in a tripartite agreement, focussing learning on the outcomes we wish to see from the classroom to the boardroom.

It is important that we look forward to the year 2030 now, in order to create a responsive skills system that is at the centre of delivering inclusive and sustainable growth. This report makes the clear case that there will need to be a greater focus on those at risk of being left behind by the current system, and on improving career progression and productivity levels, tackling low pay, and matching the needs of employers.

The vast majority of the 2030 workforce has already left full-time education and is currently in employment. Over 2.5 million adults in Scotland, 78 per cent of the current working age population, will still be of working age by 2030. Therefore, we need a skills system that is flexible, transferable and able to support people to continually update their skills throughout their careers to meet changing economic needs. This must be recognised as just as important as providing early or pre-career learning that we will continue to need.

By anticipating the future world of work, and by making the decisions now and seeing them through over the long-term, we can place Scotland's skills system at the centre of delivering a Scotland that can thrive through the short-term and long-term challenges it faces, to deliver the inclusive economic growth we wish to see, and to ensure Scotland is able to compete with the rest of the world in years to come.

In this report, chapters two and three outline the current policy context and shape of the skills system, identifying the changes that have taken place in recent years, and setting out the various routes and actors. Chapters four to seven establish the case for change, analysing the strengths and weaknesses in Scotland's economy and labour market, the publicly-funded skills system and employer investment in learning and training. Chapter eight then concludes by outlining our recommendations for reform and reflections.

2. POLICY CHANGES IN RECENT YEARS

Since 2007, the Scottish government has made a number of reforms to the skills system and related areas. This has included structural change in parts of the system, pledges around funding, attempts to increase financial efficiency within the system, and attempts to address inequalities within the system in terms of access.

A focus on young people

Following the 2008 financial crisis and the recession that followed, the Scottish government refocussed the skills system to tackle increasing levels of youth unemployment. As a consequence, the Scottish government introduced a range of initiatives to increase youth participation in education, training and employment.

In the 2010 *Skills for Scotland* document, the Scottish government gave a clear commitment to prioritise skills provisions for young people within the college and training routes. The strategy sets out that the 'Scottish Government requires the SFC [Scottish Funding Council] to give priority to young people aged 16–24 wishing to study at college', and that 'where possible, employers will be encouraged to consider young people who might otherwise struggle to obtain an apprenticeship place' (Scottish Government 2010). The Scottish government reinforced their focus on young people in April 2012, when they introduced the 'Opportunities for All' guarantee to provide a training or learning place for all 16–19 year-olds not already in employment, education or training (ibid 2012).

In January 2013, the Scottish government set up the independent Commission for Developing Scotland's Young Workforce, chaired by Sir Ian Wood, to investigate how Scotland could produce better-qualified, work-ready and motivated young people with skills relevant to modern employment opportunities. The commission's *Education Working for All!* report, which was published in June 2014, included recommendations on encouraging and supporting employers to recruit more young people (Scottish Government 2014a). The Scottish government responded with a funding package to implement the commission's recommendations. The commission's findings also influenced the youth employment strategy, which set a target of reducing 2014 levels of youth unemployment by 40 per cent by 2021 and increasing the number of Modern Apprenticeships (Scottish Government 2014b).

Regionalisation

In recent years, the Scottish skills system has undergone a number of structural changes; the most profound policy development being the regionalisation of Scotland's colleges. The college regionalisation

agenda has seen a series of college mergers, reducing the number of colleges from 42 to 26, organised into 13 regions. This was enacted through the Post-16 Education (Scotland) Act 2013, and was intended to create more coherent college provision within regions, to place students at the centre of governance and shaping provision, and to better link provision to regional need. In addition, the aim of college regions was to increase efficiency and deliver savings, at a time of significant cuts to college budgets.

Outside of Scotland's college sector there have been fewer structural changes, however multiple regional approaches have developed. These have included skills investment plans and regional skills assessments, which have been introduced to bring a greater regional focus to investments through Skills Development Scotland (SDS) in apprenticeships, learning and training, and regional youth employment groups, stemming from the Wood Commission. The Scottish government is currently considering introducing regional education bodies within school provision.

While the focus has been on bringing coherence within specific parts of the skills or education system, there has been less focus on bringing coherence across different types of provision.

An outcomes approach

There has been a concerted move, in parts of the skills system, towards a greater focus on outcome funding. In the 2012/13 academic year, the Scottish government introduced outcome agreements for both colleges and universities. These are negotiated priorities and targets that institutions must deliver in order to receive public funding from the SFC. Agreements cover an extensive range of activities with a particular emphasis on improving widening access, with these fair access elements given a statutory footing through the Post-16 Education (Scotland) Act 2013.

However, the Scottish government maintains a number of input targets across the Scottish skills system, including targets to maintain the full-time equivalent number of college students, the number of university places, and targets for new starts within Modern Apprenticeships. Equally, while outcome agreements exist for college regions and universities, these do not extend to Modern Apprenticeship and other training provisions.

CURRENT POLICY AGENDA

Skills policy is currently high on the Scottish government's agenda. This has been influenced by the 2015 Scottish government economic strategy. Central to the strategy is the fair work agenda, which aims to tackle income inequality and address wider issues within the economy by creating a labour market that is fair and inclusive, and that provides sustainable and well-paid jobs (Scottish Government 2015).

In 2016, the Scottish government published their labour market strategy, which centred around the idea that to create a successful and fair Scotland, there needs to be a strong economy, and that an inclusive and sustainable labour market is a key component of this. The government set out the need for high levels of employment and a skilled population capable of meeting the needs of employers (ibid 2016a). Amendments to policy have been influenced and driven by these priorities.

The Scottish government's economic strategy

Scotland's economic strategy, published in March 2015, sets out the Scottish government's approach to creating a more successful country through the delivery sustainable economic growth. The strategy's overarching goals are to increase competitiveness and tackle inequality, and it sets out to achieve these through boosting investment and innovation, supporting inclusive growth and focusing on increasing internationalisation. A key aspect of the strategy is ensuring that everyone in Scotland has the opportunity to fulfil their potential and, as part of this, increasing people's ability to participate in the labour market (Scottish Government 2015).

Fair Work Agenda

Central to Scotland's economic strategy is the Fair Work Agenda, which aims to tackle income inequality and address wider issues within the economy by creating a labour market that is fair and inclusive, and that provides sustainable and well-paid jobs (ibid). To deliver this, the Scottish government set up the Fair Work Convention. This focuses on five key dimensions: providing employees with an effective voice; ensuring opportunity to access and progress in work; guaranteeing security of employment, work and income; recognising the importance of workplace fulfilment; and ensuring that people are respected and treated respectfully, whatever their role and status (Fair Work Convention 2016).

Scottish Business Pledge

In 2015, the Scottish government launched a 'Scottish Business Pledge' to encourage collaboration between business and government around key values and commitments. The voluntary commitment aims to encourage businesses to adopt fair and progressive practices, in order to ultimately boost competitiveness and productivity. The Scottish Business Pledge has nine elements and, to make the pledge, a company must be paying the living wage, delivering at least two other elements, and commit to achieving the rest over time.

The nine elements are as follows.

1. Paying the living wage.
2. Committing to an innovation programme.
3. Pursuing international business opportunities.
4. Not using exploitative zero hours' contracts.
5. Supporting progressive workplace policies.
6. Investing in opportunities for young people.
7. Making progress on gender balance and diversity in the workforce and boardroom.
8. Playing an active role in the community.
9. Paying suppliers promptly.

As of publication, 349 companies have made the Scottish Business Pledge.

Labour market strategy

The Scottish government's labour market strategy has clear implications for the skills system in Scotland. The strategy centres around the ambition to create a labour market that 'drives inclusive, sustainable growth, characterised by growing, competitive businesses, high employment, a

skilled population capable of meeting the needs of employers, and where fair work is central to improving the lives of individuals and their families' (Scottish Government 2016b). The strategy includes policies to better align employability support in a bid to reduce inequality, to promote fair work and responsible business, to help women to return to work and to create greater productivity. It also commits to continuing to support people gaining the skills needed to participate in the labour market.

Enterprise and skills review

In July 2016, the Scottish government announced a review into how its enterprise and skills agencies – including Scottish Enterprise, Highlands and Islands Enterprise, SDS and the SFC – could better support individuals, businesses and learning and training providers to increase economic growth.

In October, phase one of the review was published. This set out the framework for the shape of enterprise and skills services and contained ten conclusions around creating stronger governance in the system, recognising both national and local needs, creating an open economy, driving innovation, and increasing skills provisions and economic success. These conclusions included the introduction of a new Scotland-wide statutory board to coordinate the activities of enterprise and skills support services, a review of the learner journey with a focus on sustained employment, and a further review into the effectiveness of investment in learning and skills (Scottish Government 2016b).

Economy secretary Keith Brown updated the Scottish parliament in March 2017 on the progress of the review, following a report by professor Lorne Crerar into options for structures and governance of the skills and enterprise agencies (ibid 2017a). This included a commitment to create a strategic board to deliver greater collaboration, innovation and common purpose across the enterprise and skills agencies. The separate boards of agencies will remain. Phase two of the review will, provisionally, contain nine projects: governance, data and evaluation, regional partnerships, south of Scotland enterprise and skills, international, enterprise and business support, innovation support, skills alignment, and learner journey (see below).

Learner journey review

The Scottish government is undertaking a review of the learner journey for 15–24-year-olds in Scotland, across schools, colleges, universities and other learning provision. The two main aims of the review are to increase learner choice and to improve system efficiency.

The review will take place in two phases; the first between September 2016 and September 2017, and the second, around implementation, which will take place from the end of 2017 onwards. The review will be split into five projects: learner choice and application, learner choice and application (colleges and universities), access and application, provision transition and progression, and funding.

City region deals

City deals were first introduced by the UK government in 2011 to deliver economic growth and devolution of some economic decision-making below

the Westminster level. Most city deals include a wider region around cities, usually bringing a number of local authorities together. The first wave of eight city deals were announced in 2012, with another 18 announced over the course of 2013 and 2014.

In Scotland, city deals are a joint initiative between UK and Scottish governments, in addition to local authorities and wider stakeholder organisations. There are three city region deals agreed and active in Scotland: the Glasgow City Region Deal, the Aberdeen City Region Deal, and the Inverness and Highland City Region Deal. There are a further four deals in negotiation around Scotland's remaining cities: Edinburgh and the south east, Tayside cities, Stirling and an Ayrshire growth deal. This will see 23 of Scotland's 32 local authorities included in city region deals. So far, city deals in Scotland have seen less political devolution or delegation to the local level around economic decision-making than in England.

Apprenticeship levy

In August 2015, the UK government announced its plans to introduce an apprenticeship levy in an attempt to boost employer investment in skills. The levy, which came into force on the 6 April 2017, is set at 0.5 per cent of any payroll above £3 million per year. This will mean that only the companies with the largest payrolls will pay the levy. While this is a UK-wide levy, and it will be collected across the whole of the UK by HM Revenue and Customs through the PAYE system, how it is implemented and how the funds are spent will be decided by the devolved governments across the UK.

In Scotland, following consultation on how the levy should be implemented, the Scottish government announced that the levy will be focussed on its pre-existing commitment to increase Modern Apprenticeships, with 30,000 new starts per year planned by 2020. It also announced a new £10 million Workforce Development Fund, to be introduced in autumn 2017. This new workforce fund is intended to provide employers with workforce development training, to up-skill and re-skill their existing workforce, and will bring the college sector and industry together to better support in-work training (Scottish Government 2016c). It will be developed with the input of employers through the industry-led Scottish Apprenticeship Advisory Board, Colleges Scotland and the SFC.

The levy in Scotland is expected to provide £221 million of revenue to the Scottish government in its first year.

Apprenticeship levy implementation across the UK

Scotland

In Scotland, the levy will be used to help deliver 30,000 new Modern Apprenticeship starts per year by 2020, and the Scottish government will create a new £10 million Workforce Development Fund to support employers to up-skill and re-skill their existing workforce.

England

In England, money deducted from employers will be placed in an electronic account, with a top-up from the government equivalent to 10 per cent, and they will be able to redeem this money – in the form

of vouchers – against the cost of training for apprentices. Unspent levy funds will be used to subsidise apprenticeship training costs at non-levy paying small and medium-size enterprises (SMEs).

Wales

The Welsh government will use the levy to help to deliver 100,000 new all-age apprenticeships over this parliamentary term (2016–2021). They are committed to delivering their apprenticeship programme through the Welsh apprenticeship provider network, and do not plan to operate a voucher-style system as in England.

Northern Ireland

As there is currently no sitting government in Northern Ireland, as of publication, no decision has been made on how the money from the apprenticeship levy will be spent.

Individual learning accounts

While 'individual learning accounts' (ILAs) no longer exist in the rest of the UK, the Scottish government continued the scheme which began across the UK in 1999. ILAs in Scotland are administered by SDS, and are aimed at people with lower levels of skills (below degree level qualification) and people with low incomes (£22,000 or less, or for people in receipt of certain social welfare benefits). ILAs provide up to £200 towards the costs of learning or training. SDS have announced that there will be changes to the ILA in 2017, with a new scheme coming into effect in October. The replacement 'individual training accounts' will be focussed on helping learners to develop their skills in order to find employment, or to build on their skills to support career progress or a career change (My World of Work 2017).

3. OUTLINING THE CURRENT SKILLS SYSTEM

FUNDING

In 2016/17, the Scottish government invested over £2.8 billion in the SFC, in higher education student support, and in skills and training (Scottish Government 2016d). The SFC funds research and teaching in colleges and universities, higher education student support funding provides financial help for both Scottish domiciled and EU students undertaking higher education courses in Scotland, and includes grants to institutions to ensure free tuition for Scottish domiciled and EU students. The skills and training budget includes funding for SDS – which in turn funds Modern Apprenticeships and the Employability Fund, as well as wider employment and training provision.

Scottish Funding Council

The SFC is a government agency that invests around £1.7 billion of public money into Scotland's colleges and universities for teaching, research and associated activities (ibid). The SFC funds both further and higher education in Scotland's colleges and universities. In the 2012/13 academic year, the SFC introduced outcome agreements for further and higher education provision, to set ambitions and targets to be delivered in return for public funding. Outcome agreements are negotiated between the SFC and colleges and universities, and commits institutions to deliver agreed priorities. The Scottish government sets out national priorities through ministerial letters of guidance.

Skills Development Scotland

SDS is the national skills body, and supports people to develop and apply their skills. SDS has a budget of around £180 million, which is also, as a government agency, guided by ministerial letters of guidance (ibid). SDS is responsible for Modern Apprenticeships, pre-employment training programmes – including the administration and management of the Employability Fund – and delivers careers information advice and guidance. SDS delivers its services through schools, career centres and partner locations including training providers and colleges.

Student Awards Agency for Scotland (SAAS)

The Scottish government also funds the skills system through HESS, which had a budget of £854 million in 2016/17 (ibid), and is administered by SAAS. SAAS provides financial support to Scottish domiciled and EU students undertaking higher education courses in Scotland, in both college and university settings. SAAS also provides funding to cover the costs of the Scottish government policy of free tuition for many learners.

THE DIFFERENT LEARNING ROUTES

There are a number of different learning routes within Scotland's post-16 education and skills systems. All learning routes in Scotland are placed on the Scottish Credit and Qualifications Framework (SCQF), which aims to provide comparability across learning, and aides educational progression. There are 12 SCQF levels, which indicate the level of study for a particular qualification (SCQF 2017).

Employability Fund

The Employability Fund aims to support people into work by developing a range of their skills through vocational training, and securing employment opportunities linked to local labour markets. The fund supports individuals requiring increased levels of employability support, including young people who are not in education, employment or training, and people under threat of redundancy. The fund also offers special interventions for individuals who live in the most deprived areas, for ex-offenders, for lone parents and for refugees.

There are three stages within the Employability Fund – which form a skills and employability pipeline – depending on how far removed an individual is from the labour market. These range from laying the foundations for employment, such as building essential employability and personal skills, through to developing industry-specific skills to enable access to sustainable employment.

SDS administers, manages and funds the Employability Fund, and works with a range of training providers to respond to the needs of local labour markets, as well as the needs of each individual learner. Learners within Employability Fund programmes must be referred by a designated referring organisation, which includes the Department for Work and Pensions and local authorities.

The number of Employability Fund starts remained constant between its introduction in 2013/14, at around 17,300 learners per year. Nearly half of new starts fall within the middle stage of the pipeline where provisions should prepare individuals for employment, including entry to Modern Apprenticeships. For the 2016/17 academic year, the annual target for new starts has been reduced to 11,650, from 17,150 in 2015/16.

Modern Apprenticeships

Modern Apprenticeships allow individuals to work whilst gaining an industry-recognised qualification, and allow employers to develop their workforce through training new staff and upskilling existing employees. All Modern Apprentices must be paid employees and all apprentices who complete their course will receive a recognised qualification.

There are over 80 Modern Apprenticeship frameworks in Scotland – from accounting to youth work – which are developed by sector skills councils in consultation with industry. The Modern Apprenticeship Scheme is managed by SDS, and they fund training providers to deliver courses to develop individual employees' craft, technician and management skills. There are around 250 training providers delivering Modern Apprenticeships in Scotland, with colleges and local authorities providing a wide range of Modern Apprenticeships over a number of occupational groupings.

The number of Modern Apprentices have been increasing in recent years. Following the 2011 Scottish parliamentary election, the Scottish government introduced a target to increase the number of Modern Apprenticeship starts per year to 25,000, in order to help the economic recovery in Scotland; they now plan to increase this target to 30,000 by 2020. The Scottish government has also introduced foundation and graduate apprenticeships for learners within the school system and at a more advanced degree-level respectively.

Colleges

The college system delivers both higher and further education on both a part-time and full-time basis through 26 colleges organised into 13 college regions.

Further education

FE makes up the majority of learning in Scotland's colleges, accounting for 82 per cent of enrolments in the 2015/6 academic year (SFC 2017a). FE includes non-advanced and non-school based qualifications at SCQF level 6 and below, and is often associated with more vocational forms of training to prepare students for employment.

Higher education in colleges

Colleges also deliver a significant proportion (17 per cent in the 2015/6 academic year) of the HE provision in Scotland (SFC 2017b). HE includes qualifications at SCQF level 7 and above and incorporates higher national certificate (HNC) and higher national diploma (HND) qualifications within the college sector.

The college sector is funded by the SFC. In 2012, the SFC introduced outcome agreements for both further and higher education provision in Scotland's colleges. This gives the SFC – under Scottish government guidance – influence over the shape and priorities of the sector, by creating a link between funding and college performance in a number of key indicators.

Universities and Higher Education Institutions (HEIs)

Universities and HEIs support leaners undertaking higher education qualifications of SCQF level 7 and above, including degrees and doctorate degrees. There are 15 universities and three HEIs in Scotland, and the Open University operates in Scotland alongside the rest of the UK. The traditional degree in Scotland is four years long with a general first year. Tuition fees are not charged to most full-time undergraduate Scottish and EU-domiciled students, with the Scottish government, through SAAS, paying tuition fees to institutions instead. HEIs in Scotland can charge fees to students from the rest of the UK, at a level capped in line with fee levels in England.

The SFC provides the university sector with funding for teaching, research and associated activities, and – as with colleges – the SFC agree certain outcomes in return for funding.

4.
SCOTLAND'S LABOUR MARKET AND ECONOMIC PERFORMANCE

POOR PROGRESSION, PAY AND PRODUCTIVITY

Since the global financial crisis of 2008, there has been recovery and progress in the Scottish labour market. However, significant weaknesses still persist – some longstanding – with comparatively lower rates of pay, progression and productivity in Scotland relative to countries across the rest of the UK and internationally. There also remains a clear disparity between the supply of skills and current labour market demand. Over the coming decades, if not addressed now, these weaknesses may be exacerbated by changes in our economy and labour market, as well as changes in the workforce.

This chapter explores the state of the current labour market in Scotland. In doing so, we summarise IPPR Scotland's most recent reports on skills in Scotland, and add updates and additional analysis. We argue that it is essential that we develop a skills system that is focussed on improving levels of pay, progression and productivity to ensure sustainable inclusive economic growth.

Economic growth in Scotland

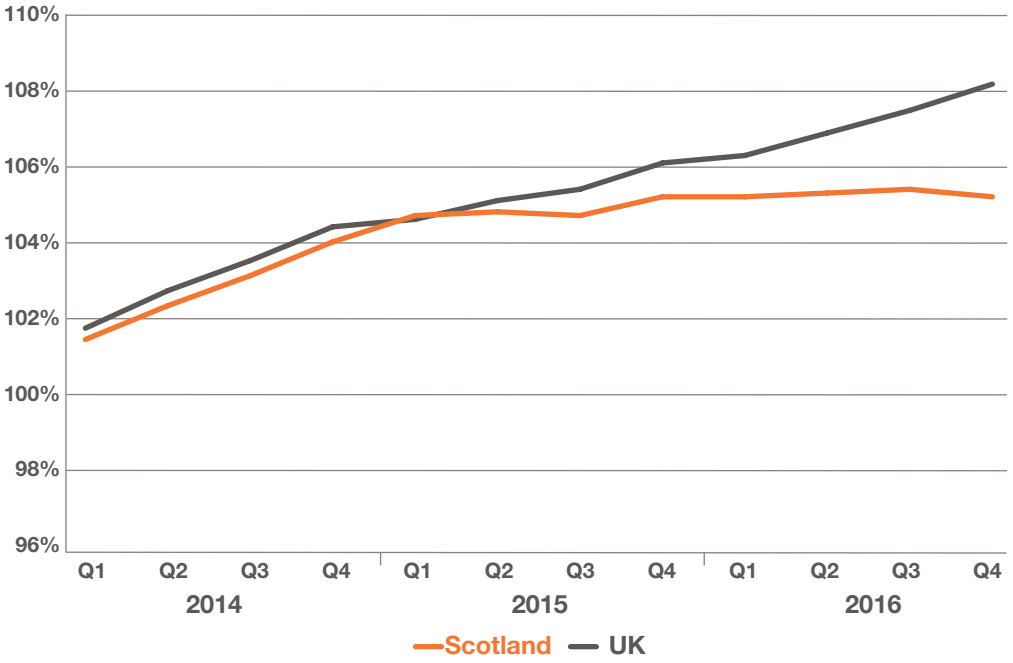
While Scotland's economy has grown in recent years, the pace of growth has slowed since 2015, and, in the last year, Scottish GDP saw no change – with a contraction in the last quarter. At the same time, the overall UK economy saw a 1.9 per cent increase in the last year.

Figure 4.1 shows that in 2014, UK and Scottish GDP grew at similar rates. However, in 2015 and 2016, Scotland's economy grew at a slower pace than the overall UK economy, and contracted by 0.2 per cent in the fourth quarter of 2016 compared to the third quarter (Scottish Government 2017b). Scottish GDP per person has also decreased recently in Scotland, with a 0.3 per cent decrease in the last quarter of 2016. This represents a 0.2 per cent decrease over the year between Q4 2016 and Q4 2015 (ibid).

FIGURE 4.1

Scotland's economy has grown at a slower pace than the whole of the UK economy in recent years

UK comparison, quarterly growth in GDP (2013 = 100)



Source: Scottish Government 2017b

Employment rates

Prior to the 2008 global financial crisis, Scotland enjoyed a higher employment rate than across the UK as a whole. Between January and December 2008, Scotland had an employment rate of 73.6 per cent compared to 72.1 per cent in the UK.

Figure 4.2 shows that following 2008, both the Scottish and UK employment rates fell significantly, but since 2012 both rates have started to increase. However, the UK rate has increased more quickly, meaning that Scotland has lost its employment rate advantage. Figures for January to December 2016 show that the Scottish rate was 1 percentage point behind the UK rate – at 72.9 per cent and 73.9 respectively. The 2016 Scottish rate was still lower than in 2008, while the UK rate has overtaken the pre-recession UK rate.

The unemployment rate in Scotland has also been decreasing since 2011, and in 2016 the Scottish rate was nearly back to pre-recession rates at 5.0 per cent, compared to 4.9 per cent in 2008. The UK rate was also 5.0 per cent for 2016 (ONS, NOMIS 2017). It is worth noting that Scotland has a higher economic inactivity rate than the whole of the UK in people aged between 16 and 64. In Q4 2016 the Scottish rate was 22.4 per cent compared to 21.6 per in the UK (ONS 2017a and 2017b).

Youth employment

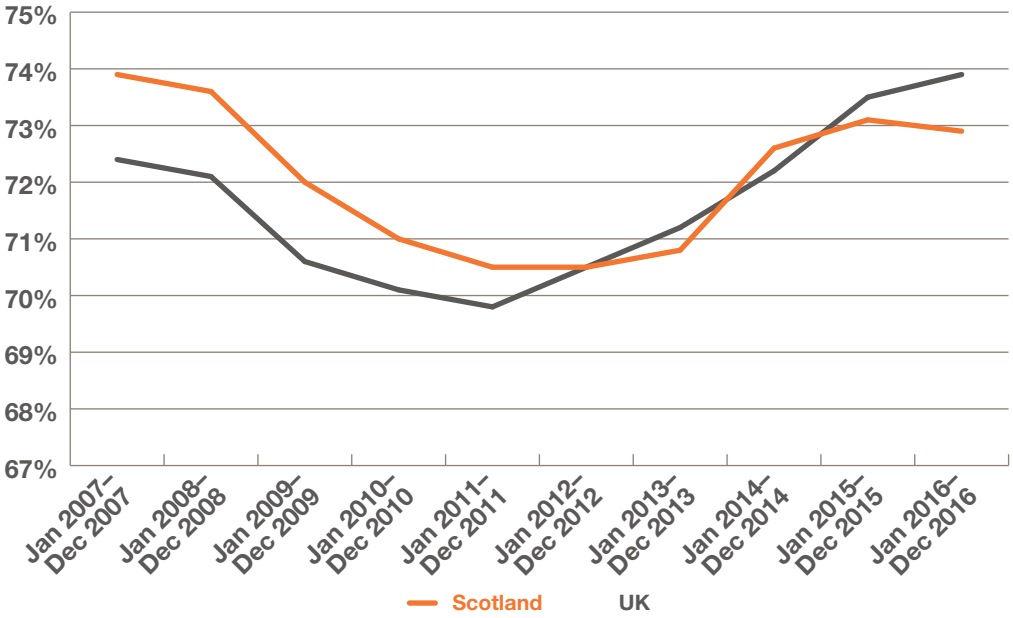
Figure 4.3 below shows that, since 2007, Scotland has consistently had a higher proportion of its 16–24-year-olds in employment than the UK as a whole. However, the youth employment rate in Scotland dropped slightly

last year, from 56.4 per cent in 2015 to 55.7 per cent in 2016. However, even after this decrease, the Scottish rate was still 2.2 percentage points higher than the UK rate for 2016.

FIGURE 4.2

The employment rate in Scotland has fallen behind the UK as a whole

Employment rate (for the population aged 16–64): Scotland and UK, 2007–2016

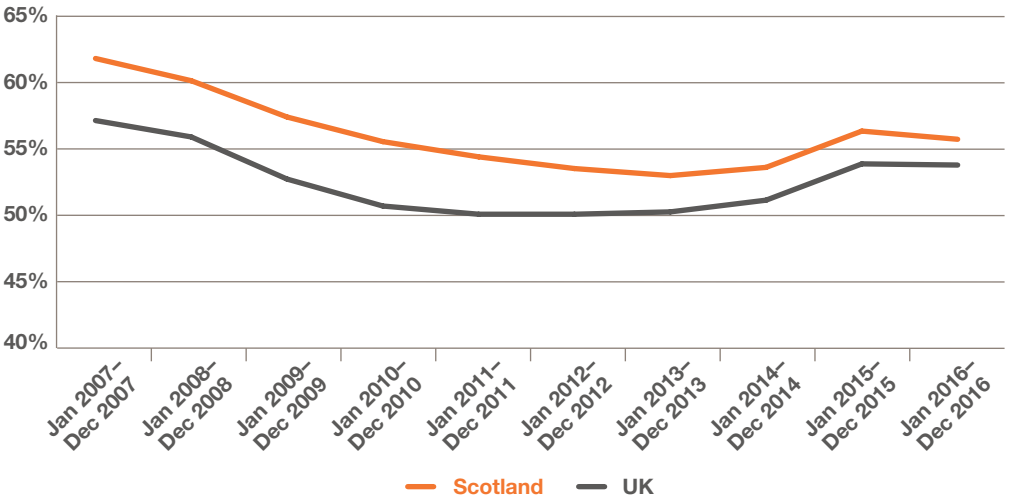


Source: ONS, NOMIS figures accessed by IPPR Scotland, April 2017

FIGURE 4.3

The youth employment rate in Scotland is still higher than the rate across the UK as a whole

Youth employment rate (for the population aged 16–24): Scotland and UK, 2007–2016



Source: ONS, NOMIS figures accessed by IPPR Scotland, April 2017

Pay rates

As outlined in IPPR Scotland's *Jobs and Skills in Scotland* report (Gunson et al 2016), in recent years, pay rates in Scotland have been catching up with rates in the rest of UK, closing Scotland's historical pay gap with the rest of the UK. However, this has happened at a time when pay in the UK has fallen in real terms, and in the last year the median income across the rest of the UK has increased at a faster than the Scottish rate.

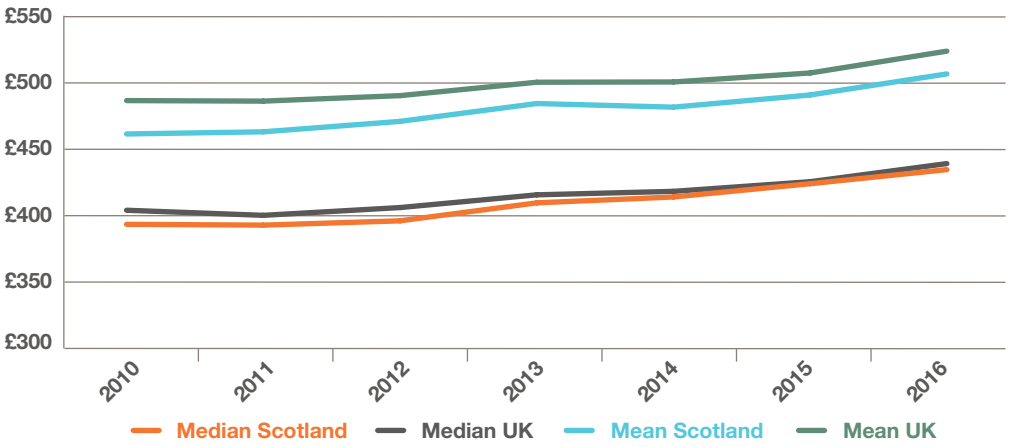
Between 2010 and 2016, median weekly pay in Scotland has grown from £393.30 to £434.10, while in the UK overall it has grown from £403.80 to £438.60 in nominal terms (figure 4.5). This represents a Scottish median pay growth of 10.4 per cent compared to UK growth of 8.6 per cent over the last six years. However, in the last year alone, the UK median has increased by 3.2 per cent, compared to a Scottish increase of 2.5 per cent.

In terms of mean weekly pay growth, Scotland has seen growth of 9.7 per cent from £462.70 to £507.50, while in the UK it has grown 7.6 per cent from £487.60 to £524.50 (ONS 2016a).

FIGURE 4.4

Pay rates in Scotland have been catching up with rates in the rest of UK

Scottish and UK nominal weekly pay, mean and median, 2010–2016



Source: ONS 2016a

Lower rate of progression

The proportion of workers progressing from low-skilled jobs to mid- or high-skilled jobs in Scotland is lower than in the UK (excluding Northern Ireland) as a whole (Gunson et al 2016).

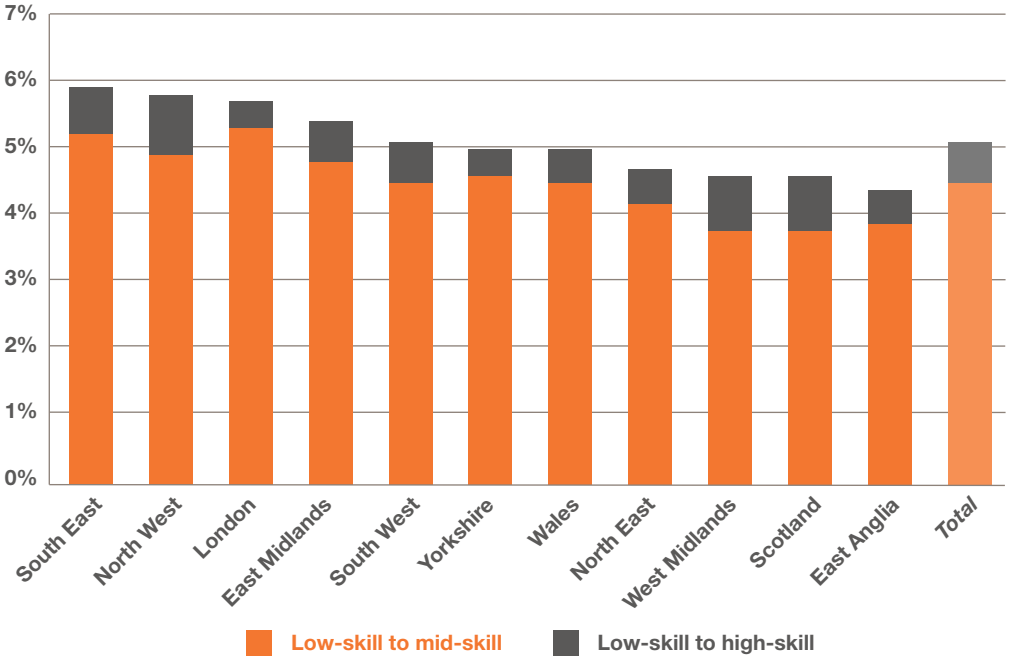
Figure 4.5 below shows that the average proportion of low-skill workers who moved into mid- or high-skill work per quarter between 2011 and 2015 in the UK (excluding Northern Ireland) was 5.04 per cent, with 4.43 per cent moving into mid-skill work and 0.61 per cent moving into high-skill work on average per quarter over that period.

In comparison, 4.43 per cent of Scotland's low-skill workers progressed out of low-skill work per quarter, on average, with 3.65 per cent moving into mid-skill work and 0.78 per cent moving into high-skill work on average per quarter over that period (ibid).

FIGURE 4.5

Scotland performs poorly compared to the rest of the UK in the proportion of workers progressing from low-skill work

Average proportion (%) of workers progressing from low-skill work per quarter by region and skill level, 2011–2015



Source: Gunson et al 2016

Glasgow City Region Deal Progression Project

A pilot is taking place as part of the Glasgow City Region Deal to develop an in-work progression project focussed on the care sector.

The In-Work Progression in the Care Sector Pilot was developed as part of the labour market element of the Glasgow and Clyde Valley City Deal. The labour market element is composed of three projects: the Working Matters programme, which supports those on employment support to access work; the Glasgow Guarantee programme, which offers a commitment that all sectors in the city will work together to ensure that young people are assisted into employment and training; and the In-Work Progression in the Care Sector Pilot. The core aim of the pilot is to devise, deliver and refine a sustainable model of employee progression that improves the skills and increases the earning potential of people working in the care sector, particularly those affected by in-work poverty. The pilot is targeted at SMEs in the care sector with fewer than 250 employees.

This pilot is designed to support companies in the sector to identify how they could operate more effectively as a business and, through this, better support the progression of their staff. The pilot is situated within the economic development division of Glasgow city council's development and regeneration services. It is designed as a business account management model to sit within existing delivery arrangement, and be applied to the care sector with a focus on improving operations

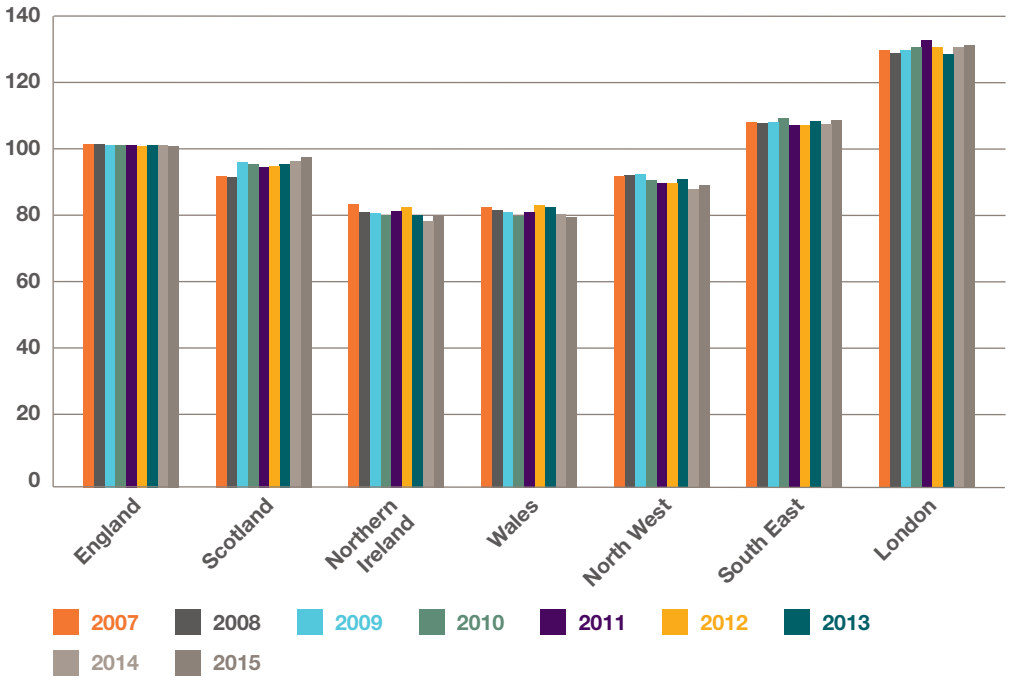
and efficiencies, while also improving the terms and conditions of staff and channelling more investment into their development.

The pilot employs two business advisors to engage directly with employers; to recruit them to take part in the pilot, meet with representatives, and run a business diagnostic that includes an assessment of the employer's financial model and profitability, business plan, leadership, innovative practices and sustainability. In response to the results of the business diagnostic, the business advisors will work with these employers to develop an action plan in response to their business needs. This may include accessing interventions from a procured framework, which might take the form of expert consultancy advice on a range of subjects, including finance, governance, resilience and succession planning. The action plan will also be used to identify additional staff training needs, which could contribute to staff's capacity to progress within the organisation and to increase their earning potential. The In-Work Progression in the Care Sector Pilot will not provide compulsory staff training, and interventions will only be offered where it is clear there is a gap or issue within the company that cannot be fully resourced by the company themselves.

FIGURE 4.6

Despite significant improvements, Scottish productivity is still lower than the overall UK rate and lags behind the rate in London

Productivity by region, nominal GVA per hour worked, 2007-2015 (UK=100)

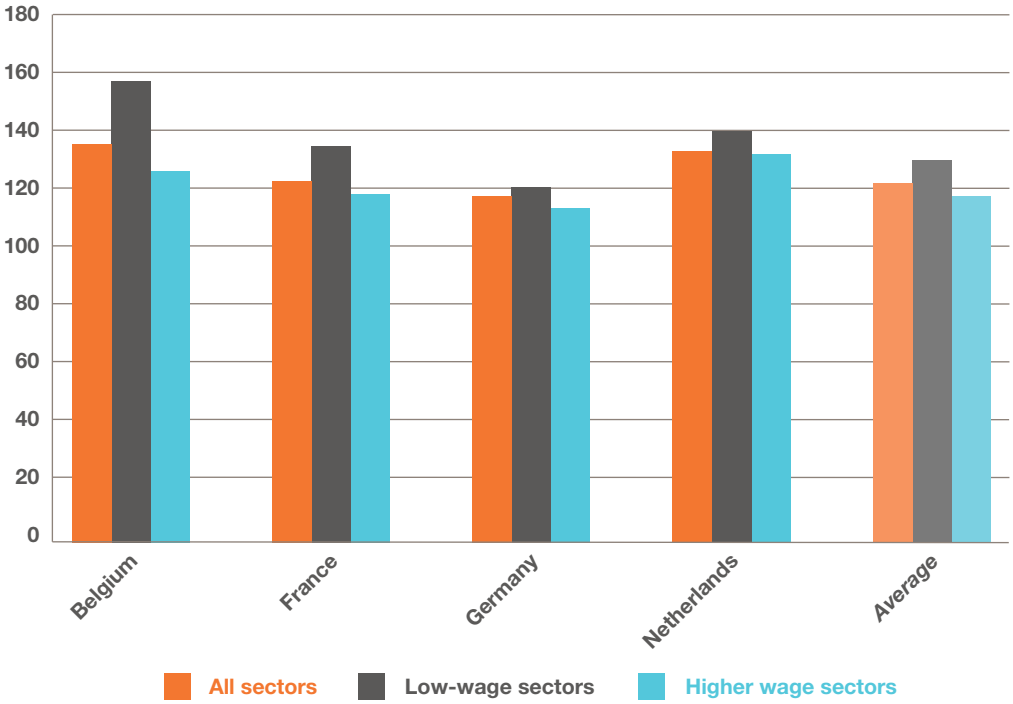


Source: ONS 2017c

FIGURE 4.7

The productivity gap between the UK and other countries is greatest in the low-wage sectors

Productivity in selected OECD countries, 2014, index: 100 = UK



Source: Thompson et al 2016

Lower rate of productivity

Despite significant and steady improvements in recent years, with Scotland the most improved area within the UK, Scotland has continuously seen lower productivity rates when compared to the rest of UK. As figure 4.6 shows, between 2007 and 2015, Scottish gross value added (GVA) per hour worked increased from 92.5 per cent to 98.3 per cent of the UK level (ONS 2017c). In comparison, London's GVA per hour worked was 31.6 per cent above the UK average in 2015.

This is also in the context of a comparatively poorly performing UK in terms of productivity. As shown in IPPR's 2015 report, *The missing pieces: Solving the UK's productivity puzzle*, the UK ranks 18th out of 34 Organisation for Economic Cooperation and Development (OECD) countries in terms of GDP per hour worked, and, when compared with other western European countries, UK GDP per hour worked ranks 15th out of 17 countries (Dolphin and Hatfield 2015). Figures from the ONS show that output per hour in the UK was 18 percentage points below the average for the rest of the major G7 advanced economies in 2014 (ONS 2016b).

The UK's poor performance on productivity is in part related to low productivity within low-wage sectors. Workers in low-wage sectors in the UK make up a third of all workers, and produce 23 per cent of the UK's gross value added, but on average they are 29 per cent less productive than the economy as a whole (Thompson et al 2016). Workers in our low-

wage sectors in the UK tend to be less qualified than their peers in Europe, and employers in these sectors in the UK invest less than comparable employers in Europe. If productivity in low-wage firms was raised to the EU average for those sectors, the UK could close a third of the productivity gap with Belgium, France, Germany and the Netherlands (ibid).

Skills mismatch

The current skills system in Scotland is not well matched to labour market demands. In our 2016 report, *Jobs and Skills in Scotland*, IPPR Scotland showed that in 2014 there was a large gap between demand for entry-level mid-skill vacancies and supply of mid-skill, sub-degree qualifiers.

IPPR Scotland, in conjunction with Burning Glass Technologies, also estimated that there is an aggregate gap in Scotland between skills demand and supply, of 29,000 people annually (Gunson et al 2016). The greatest gaps occur in caring personal services, where supply equates to only just over half of the 16,000 entry-level workers currently required and in administrative occupations – including elementary administration – and service occupations, where there are 21,000 vacancies being advertised to fewer than 10,000 potential applicants.

In 2015, 19 per cent of employers in Scotland reported having at least one vacancy; with 8 per cent (over 11,000 employers) reporting at least one hard-to-fill vacancy and 6 per cent (over 8,000 employers) reporting a skills shortage vacancy. These proportions were in line with the UK averages. When asked for the main causes behind having hard-to-fill vacancies, 38 per cent of employers with such vacancies in Scotland listed 'low number of applicants with the required skills'. The UK Employer Skills Survey also asked employers with skills gaps if this impacted on the performance of their business, with 70 per cent reporting that it had an impact, and 29 per cent indicating that it has led to higher operating costs (UKCES 2016b).

Looking ahead, the majority of businesses in Scotland are concerned about future skills shortages. A survey by the Confederation of British Industry (CBI) in 2016 found that over two-thirds of businesses in Scotland (69 per cent) were not confident about filling their high-skilled jobs in future (CBI 2016).

Conclusion

While the Scottish labour market has made progress over the last decade, our economy still faces significant weaknesses, with a prevalence of low pay, lower levels of career progression, and lower levels of productivity relative to the rest of the UK and beyond. GDP figures have begun to drop in the most recent statistics, and over the last few years GDP growth in Scotland has not matched that seen across the UK as a whole. There are clearly specific factors, such as a slowdown in the oil and gas industry, that are affecting Scotland's economy, but underlying weaknesses could also be contributing to this. At the same time, there is evidence that Scotland is facing a gap between demand and supply of skills, and pattern of demand and supply, which may worsen as demand changes for skills in the near and medium term.

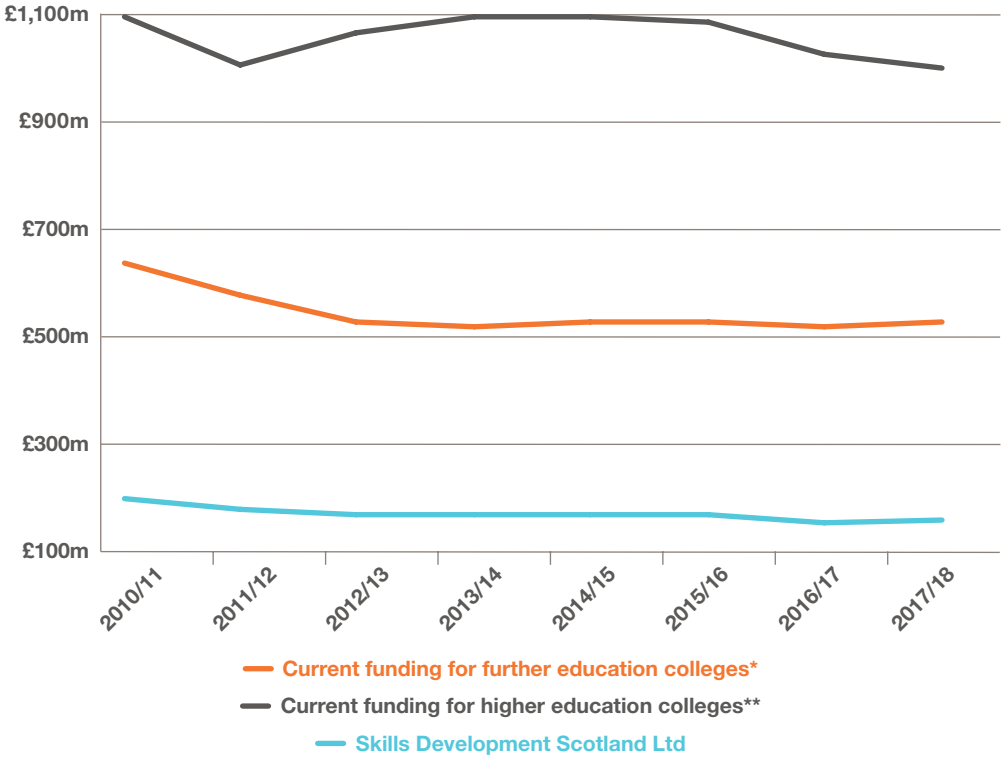
5.
SHAPE AND TRENDS IN THE SKILLS SYSTEM
GAPS AND OVERLAPS

Having considered Scotland's economic and labour market record in relation to skills, we wanted to consider the skills system itself, in order to understand its strengths and weaknesses, and its ability to address some of the weaknesses in the wider economy in Scotland.

FIGURE 5.1

Since 2010, public spending on further education, higher education and skills has dropped in real terms

Public funding for skills, further education and higher education in Scotland over time: Scottish government draft budget figures, 2016/17 prices (£ million)



Source: IPPR Scotland analysis of Scottish government draft budget documents
* From 2014, the ONS reclassified colleges in Scotland as public bodies, and this had implications on how colleges reported and managed their finances. This has led to a number of accounting changes. The line used in this figure uses 'net college resource' to compare like with like as best as possible.
** Since 2012/13, Scotland's universities have been able to charge up to £9,000 fees per year to students domiciled in the rest of the UK on top of public funding. This graphic does not include the income from UK fees.

FUNDING OF POST-16 EDUCATION, LEARNING AND SKILLS ACTIVITY OVER TIME

Since the financial crash of 2007/08, public spending has been under pressure across the UK. Figure 5.1 below shows spending for further education, skills and higher education in Scotland. It shows that spending on skills and further education has dropped in real terms since 2010, coinciding with college mergers and regionalisation. Spending cuts were focussed on in the last parliament (2011–2016), with a more stable funding environment over the last few years. Funding for universities increased over the same period and has dropped more recently. However, it should be noted that, with the increases in tuition fees charged to students domiciled in the rest of the UK, universities have accessed additional resources beyond the public funding outlined in figure 5.1.

Student numbers and volume of activity in the skills sector

The number of students in Scotland's colleges reduced by 40 per cent between 2007/08 and 2015/16, from 379,233 to 227,258 students. Over the same time period, the volume of activity has remained relatively constant, though the methodologies for measurement have also changed, making direct comparisons more difficult. In 2007/08, there were 122,641 full-time equivalent students, and by 2014/15 there were 121,962 full-time equivalent students (SFC 2017a).

Between 2009/10 and 2015/16, the number of Modern Apprenticeship new starts has increased by 28 per cent, from 20,216 to 25,818. This in line with the Scottish government's target of 25,000 per year, which was introduced in 2011/12. Over the same time period, the overall number of modern apprentices in training has increased by 8 per cent, from 33,733 to 36,371 (SDS 2015 and SDS 2016b).

Since the Employability Fund was introduced in April 2013, the numbers of starts each year has remained stable, at around 17,300 against a target of 17,150 (SDS 2016a).

Increasing levels of qualification

Over recent years there has been a significant increase in the qualification level of the working age population. This is due to two factors. First, the increase in participation in post-16 education among young people in the 1990s and 2000s has meant that those entering the labour market have higher skills than older workers retiring from the labour market. Second, many adults in the workplace have also succeeded in increasing their qualification.

Since 2007, the proportion of the working age population in Scotland with qualifications at SCQF level 4 and above has increase by 15.4 per cent to include 75.5 per cent of the population in 2016. Over the same period, qualification at SCQF level 7 increased by 38.7 per cent, with 43.7 per cent of the population qualified to this level (NOMIS 2017). A higher proportion of the Scottish population have qualifications above these two levels compared to the UK as a whole; with 74.2 per cent and 38.0 per cent of the UK population qualified to these levels respectively. The increase in the qualification level of the working age population has been a significant public policy achievement.

Mid-career learning gap

In Scotland, the public provision of skills is focussed on younger learners and early/pre-career learning. When examining Scottish domiciled, full-time equivalent (FTE), students in 2015/16, 69 per cent of college FE students, 71 per cent of college HE students, and 79 per cent of undergraduate students in HE institutions were aged 24 years old and below. For postgraduate study, the figure was 33 per cent (figures obtained by IPPR Scotland directly from SFC).

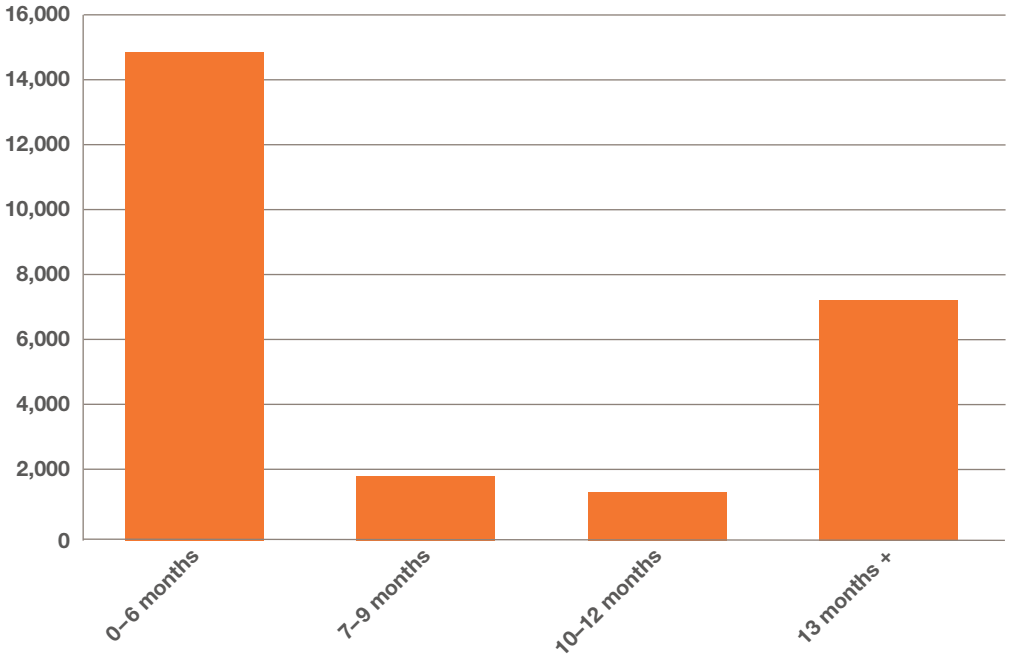
In the same academic year, 2015/16, 77 per cent of all Employability Fund starts were aged 24 and under (SDS 2016a). For Modern Apprenticeships, 79 per cent of new starts were aged 24 or younger (SDS 2016b); an increase from 57 per cent in 2009/10 (SDS 2015).

Similarly, the skills system is focussed on those at the start of their employment with their current employer. In 2015/16, 14,969 out 25,818 (58 per cent) of modern apprentices had been in work for 6 months or less before beginning their course, and were therefore likely to be at the beginning of their careers (SDS 2016b).

FIGURE 5.2

The majority of Modern Apprentices have been in their employment for less than six months prior to starting

Modern Apprenticeship entrants, time in employment by level, 2015/16



Source: SDS 2016b

Further education role has shifted

Majority of FE qualifiers are entering further study on qualification

In the past, FE has been predominantly seen as a vocational route, providing qualifications and training for learners to then enter the workplace. However, the FE route is now, overwhelmingly, a route to

further study rather than directly to work. In 2014/15, of those with a confirmed destination, 68.6 per cent of students qualifying from Scottish colleges undertook additional study or training, and only 14.0 per cent went into employment (SFC 2016a). For FE, the proportion entering additional study was higher at 74.5 per cent with 10.3 per cent progressing into employment. In contrast, in 2013/14, 68.9 per cent of FE qualifiers entered into additional study, with 14.0 per cent entering into the workforce (SFC 2015).

This is not necessarily unwelcome, as qualifiers may enter the workplace at a higher-skilled level later in their learner journey. However, there are clearly potential gaps left behind for those in work, or seeking to enter work in the short-term, by this transition of FE into a primarily educational route. Equally, whether FE qualifications are constituted optimally for educational progression rather than career progression is something that may need to be considered, and something we return to later in the report.

TABLE 5.1

A fifth of college credits involve some form of employer engagement
Employer funding in the college sector 2015/16

	Credits	Tuition fees for the course have been paid by an employer	Courses listed as 'assessment of work based activity'	Student who are employed and enrolled on a day release course	Students enrolled on courses that include a work placement
Scotland's Colleges (total)	1,752,536	96,376 (5.5%)	22,443 (1.3%)	26,529 (1.5%)	229,041 (13.1%)

Source: obtained by IPPR Scotland directly from the SFC

Employer involvement in college courses

There are a number of ways for employers to engage in the college sector, through both informal and more formal means. Here, we consider the courses in the college sector where employers have funded teaching costs, provided a placement, or where courses were on day release or related to work-based activity.

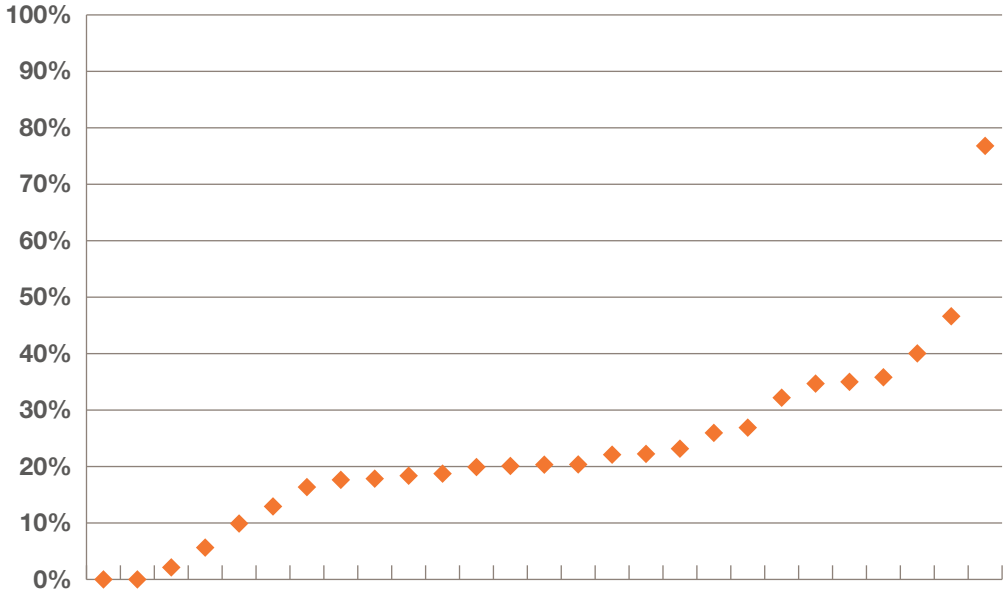
In 2015/16, around 21 per cent of college provision had some form of employer funding or formal involvement. Table 5.1 shows for 2015/16 the proportion of college credits where tuition fees that were paid for an employer, the number of credits that contained an assessment of work-based activity or where the student was employed and enrolled on a day release course, as well as the credits where students were enrolled on courses that include a work placement.

When these figures are broken down by individual college, it is clear that employer engagement – across these specific measurement – varies widely. In one college, nearly 80 per cent of all credits contained one of these measurements, compared to five colleges where less than 10 per cent of all credits have one of these measures attached.

FIGURE 5.3

Proportion of college credits involving some form of employer engagement by individual college

Percentage of credits with employability activity element (as set out in table 5.1 above) by individual college



Source: data obtained by IPPR Scotland directly from the SFC.

There was a reduction in working-age college enrolments linked to commerce, business and industry between 2005/06 and 2012/13. The number of enrolments where tuition fees were paid for by the employer reduced by 50 per cent in absolute terms between 2006/07 and 2012/13, from 87,699 to 44,110. However, this was at a time when the overall volume of enrolments reduced across the college sector in Scotland, and so the overall proportion of enrolments linked to industry and commerce reduced by just 2 per cent – from 41 per cent to 39 per cent – over the same time period (SFC 2014). It is clear that as enrolments have dropped across the college sector, we have seen similar falls, if not slightly steeper falls, in employer funding for the college sector.

A survey conducted by the Scottish Council for Development & Industry (SCDI) and SDS in 2014 asked employers about level of engagement with educational establishments over the last 12 months. They found that only '8 per cent of employers felt that they were doing enough to engage with the education and training system to help prepare the future workforce', with 25 per cent of employers surveyed revealing that they had no engagement whatsoever with primary schools, secondary schools, colleges and universities (SCDI 2014). The report suggested that more employers would perhaps engage with the skills system if there was more support and guidance around the opportunities to do so.

The Workforce Skills Qualification (WSQ) in Singapore

The WSQ is Singapore's national continuing education system, designed specifically for adult learners.

It is designed to be open to all and to support progression, so it does not have any formal academic entry requirements, and it provides training from entry level to graduate diploma.

Modular provision is available in order to allow learners to address identified skills gaps. The system allows for accreditation of existing skills.

The content of the WSQ is shaped by employers, but the Singapore Workforce Development Agency provides oversight and quality assurance.

There are 30 WSQ frameworks based on different industries. Each includes both foundation skills and industry/occupational specific skills.

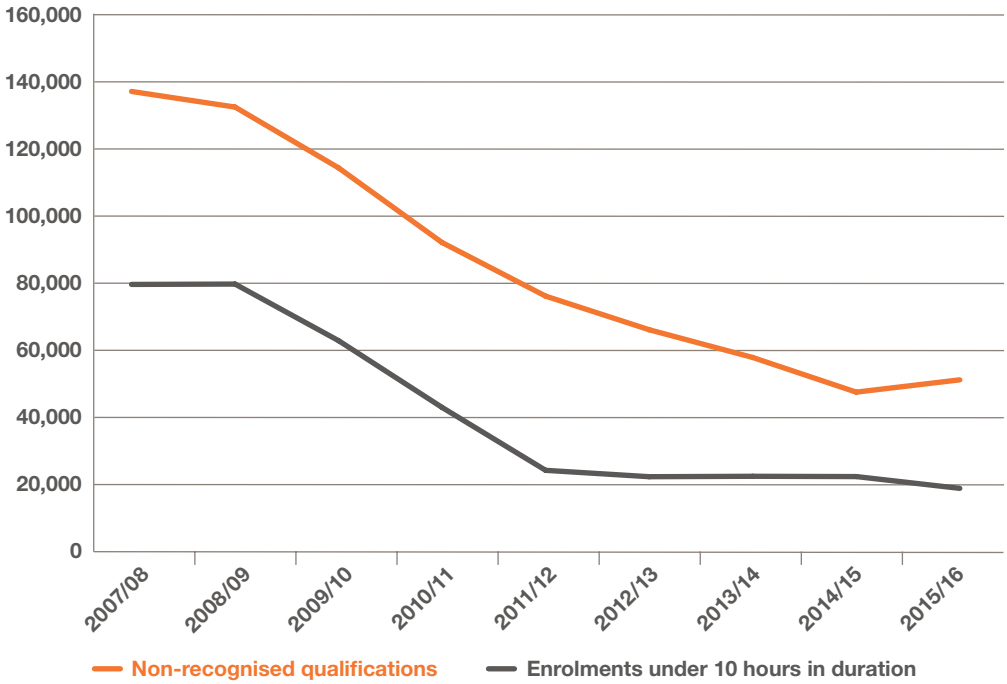
Source: Skills Future Singapore.

Lack of flexibility

FIGURE 5.4

Since 2007/08, the number of short courses and courses without recognised qualifications have fallen

Number of enrolments lasting for under 10 hours and non-recognised qualifications, 2005/06 to 2015/16



Source: SFC 2017a

In recent years, the skills system has become more focussed on full-time study, with the college system seeing large decreases in the number of students in part-time study. In 2007/08, there were 421,320 part-time students enrolled in Scotland's colleges. In 2015/16, this had reduced by 52 per cent to 202,293 part-time students. The biggest decrease was seen in the further education enrolments, which fell from 398,606 to 185,129; a 54 per cent reduction in eight years. At the same time, full-time enrolments have increased by 15 per cent, from 68,290 to 78,749 (SFC 2017a).

Figure 5.4 below shows that much of these reductions in enrolments have been through reductions in short courses, as well as a reduction in courses with non-recognised qualifications. Between 2007/08 and 2015/16, there was a 77 per cent reduction in the numbers of courses lasting under 10 hours (in total) and a 63 per reduction in enrolments on courses with non-recognised qualifications.

Case study: CodeClan

CodeClan is a digital skills academy which delivers short, intensive training coding courses to graduates and career changers, with a focus on meeting the digital skills shortage and engaging with employers. Since it was launched in October 2015, nine cohorts of students have started the programme – a total of 166 students.

CodeClan was created in response to a shortage in technical coding skills and an ever-growing demand for people to do technical jobs, not just inside technical and software companies, but in many sectors and businesses which are becoming increasingly reliant on digital technology. Set up as part of the Skills Investment Plan in collaboration with the Scottish government, SDS and Scotland IS, the trade body for technology, CodeClan delivers an intensive 16-week period of practical training. While digital skills academies are more common in London and the US, these are often run for profit by private companies, with all of the cost shouldered by students. It was recognised that this model was unlikely to be sustainable in Scotland, and CodeClan was set up as a not-for-profit organisation, operating a blended model of funding where the cost for the course is shared between students – who pay around £4,500 – and employers who hire CodeClan graduates. There are several funding options available to students including payment schedules, help with crowdfunding, professional career development loans and the Oil and Gas Transition Training Fund.

The course is based around an intensive, full-time 16-week period of training, with an additional three weeks of preparatory work and supported by evening and weekend project work. The course offers in-depth training in the fundamental craft of programming, teaching students to code in a variety of different programming languages. All of the equipment required is supplied by CodeClan for the duration of the course. Students are also given the option of completing an SQA accredited professional development award in software development.

The course is taught by instructors recruited from software development positions in industry. This professional experience

is highly valued, as instructors bring with them their up-to-date expertise in software development, an awareness of new and innovative developments, and a passion for training new developers.

CodeClan is targeted at 'career changers'. The application process is designed to assess not only technical aptitude, but also the commitment and perseverance to work intensively on a demanding course for 16 weeks, and employability. In recognition of the fact that software development is a male-dominated industry, CodeClan actively encourages women to apply through holding open sessions and publishing success stories of coders who are women, and is working towards a target of 40 per cent of their graduates being women.

CodeClan operates a highly adaptable and flexible curriculum that is constantly being redesigned, redeveloped and influenced by instructors, employers and a curriculum advisory board. While bigger changes to the curriculum must be approved, course tutors have the freedom to organically evolve the course content and teaching examples. This process allows the curriculum to be informed by current industry practice and remain up-to-date with the latest developments. As a new cohort begins the course every 6 weeks, this gives the course instructors a regular opportunity to review the content and materials. Employers also play a significant role in influencing the curriculum through their informal interactions with CodeClan, communicating their need for specific skills and changes within their organisation.

CodeClan develops and maintains relationships with employers who are looking to hire junior developers, with a network of around 80 employers signed up to be part of CodeClan. Graduates are supported in finding employment through preparation of CVs and for interviews and technical tests. CodeClan is focussed on the employability of its students, with 90 per cent of students who have completed the course finding employment after 6 months, and around 50 per cent of each cohort finding employment.

Overlaps in the system

In this chapter we have outlined gaps in the system in terms of a reduction in part-time provision, support for mid-career learning, and the shifting role of further education – away from a work-focussed route and towards an educational route. However, as well as gaps, the skills system in Scotland also displays a number of overlaps.

The system as it stands has a significant degree of repetition that can exist within and between school, college, university and other parts of the skill system. While a proportion of this overlap may be positive, as learners move into new fields or undertake second-chance learning, there is evidence that this is also creating needless inefficiencies.

The SFC publish figures setting out the number of 16–24-year-old students going onto further study following the successful completion of a college course by SCQF level study. These show the number of students with

confirmed learning destinations that moved to lower, unchanged or higher levels of learning.

In 2015/16, 16.7 per cent of 16–24-year-olds in this category had continued in either a lower or an unchanged level of learning. This was particularly pronounced for SCQF levels 1 to 6 (where FE sits), where 19.7 per cent continued in a lower or unchanged level of learning. In contrast, for SCQF levels 7 to 10 (where HE sits) 10.2 per cent of college learners did not move onto a higher level of study. SCQF levels 7 and 8 show the highest proportions of SCQF progression – 92 per cent and 88 per cent respectively (SFC 2016a). This is where HNC and HND qualifications sit and can be explained by learners continuing on from an HNC to an HND, or moving from HND qualifications to university.

Duplication of learning is also present when learners move from HE in college to university. The process of articulation is intended to ensure that students gaining HNC/D qualifications from the college sector have this learning recognised if they choose to go onto degree level study. Given that HNCs and HNDs are set at SCQF level 7 and 8 respectively, and that the first and second years at most universities are also set at these SCQF levels, students with a HNC qualification should be able to gain access into the second year of a degree, or into third year with a HND, assuming the qualifications are in the same or relevant subject area. This is known as 'advanced standing'.

However, it seems there is still often a lack of recognition of a student's prior learning from the college sector. In 2014/15, 3,515 entrants from college HNC/Ds into degree level qualifications within Scottish HEIs received no academic credit for their prior study. This represents 42 per cent of all students with HNC/Ds (8,402 entrants in total) entering into degree level study (figures obtained by IPPR Scotland directly from SFC). It is important to note that we do not have figures for how many of these qualifications were in unrelated subjects, so repeated levels of study may be necessary in a number of cases. However, such high proportions of students going on from HNC/D qualification into unrelated degree level study would be an issue in and of itself.

Clarifying the roles of the skills system

Given the overlaps and gaps in the skills system in Scotland, as well as the lack of flexibility, there is a real risk that learning routes are blocked for some learners and that the benefits of further learning are unclear for learners and employers. The use of a 'career pathway' approach across the whole of the skills system and workplace learning could be useful to improve some of these aspects of the skills system. In doing so, it could also provide a clear route to education and career progression.

Career pathways in the US

In the US, federal and state-level government has increasingly adopted a 'career pathway' approach to adult skills and workforce development. Career pathways set out the sequence of education, training and qualifications needed to become fully proficient in a given occupation, providing greater clarity to learners of the link between training and employment (Van Horn et al 2015).

This is supported by employers, who are heavily involved in the development and delivery of pathways. Pathways also differ between states, allowing provision to be tailored towards those sectors and occupations that are in demand and under-supplied.

Pathways are designed such that all adults can access them, irrespective of prior work experience and qualifications. This is achieved through provision that is appropriate to the needs of diverse learners, such as courses that integrate occupational and basic skills for disadvantaged adults, through to courses aimed at those changing careers later in life. Pathways are also set up so that each step in gives learners the capabilities to progress to the next rung on the career ladder, allowing adults to alternate spells of progressively higher-skilled employment with further training. Adults are also supported to enter and progress through pathways by a range of integrated services, including careers advice, employment support and social security.

CONCLUSION

The skills system has successfully brought qualification levels in Scotland up to unprecedented levels, and Scotland is the highest qualified nation within the UK. This is a clear success of the system.

However, across the skills and education system we can see a number of gaps and overlaps. Public funding levels have dropped across the system with cuts to FE and skills, particularly in the years following the financial crash of 2007/08.

There is also a clear gap in relation to mid-career provision. The publicly funded skills system in Scotland has a clear focus on younger learners, and moreover, learners at the early or pre-career stage. We will consider whether this mid-career gap is replicated as far as employer skills and training investment in the next section.

Furthermore, there is clear evidence of a reduction in employer funding within the skills system, with fewer FE enrolments with funding or placements from employers. At the same time, the role of FE has shifted, with a focus now on continuing post -qualification education, rather than an education route to work.

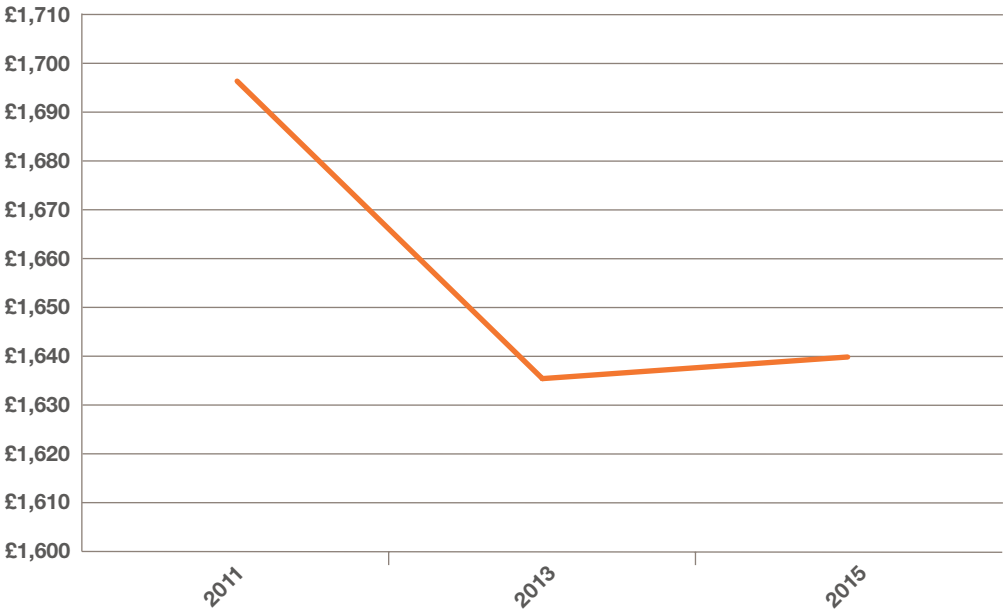
As well as gaps, the system is showing a series of overlaps too, which may be signs of inefficiencies within the system within and across the school, college and university system.

6.
LEARNING AND SKILLS IN THE WORKPLACE
ARE EMPLOYERS PLUGGING THE GAPS?

As set out in chapter 5, the skills system in Scotland contains gaps and overlaps and its role has shifted in recent years. We now want to look at whether the learning and training in the workplace has responded to these changes, and whether it is working to fill these gaps in provision from public funding.

FIGURE 6.1

Employer investment in skills declined in the UK between 2011 and 2015
Spending by employers on training and learning per employee over time (2015/16 price) in the UK



Source: UKCES 2016a (IPPR Scotland calculations for 2015/16 prices)

Spending by employers on skills over time

As public spending on adult skills has dropped across the UK, we have not seen increases in employer investment at UK level. IPPR analysis of the UKCES Employer Skills Survey shows that employer investment in training has declined in recent years. Across the UK as a whole, employer spending on training dropped by £1.1 billion in real terms between 2011 and 2015 and, as figure 6.1 shows, spending per employee also fell by 3.4 per cent in real terms, from £1,697 to £1,640, between 2011 and 2015.

School leavers and the labour market

It is important, in looking at skills provision within the workplace, particularly in terms of provision for low-skilled workers, to understand more about the low-skilled routes to work. We have already outlined above that only around 10 per cent – or just over 3,000 FE qualifiers – go directly onto work post-qualification.

In terms of school leavers, it is those with the lowest levels of qualifications that are most likely to go directly to work without further study post-school. The most recent figures available show that 18.2 per cent of young people leaving school with no passes at SCQF level 3 or above go straight into employment, compared to 9.5 per cent of young people with passes at SCQF level 7 (Scottish Government 2016e). Some school leavers may be entering high-skilled work, or lower-skilled work with wrap-around training and development, such as Modern Apprenticeships. However, there is a risk that a significant proportion of school leavers with low-level qualifications are continuing into low-skilled work without training and development of this kind.

Low-skilled and most deprived

Due to the attainment gap, we know that school leavers with lower levels of qualifications are also likely to be those from the most deprived backgrounds. Almost twice the proportion of students from the least deprived backgrounds in Scotland gain one or more qualifications at SCQF level 6 or better (80.3 per cent), compared to the most deprived school leavers (41.2 per cent) (ibid).

Low-skilled workers receive less in-work training

Analysis conducted by the Joseph Rowntree Foundation in 2015 (JRF 2015) shows that employees with higher levels of qualifications (SCQF 6 and above) are nearly twice as likely to receive in-work training than employees with lower-level qualifications. This would suggest that workplace training and learning is not plugging the mid-career provision gap, at least for lower-skilled workers.

There is, therefore, a real risk that we are failing those from the most deprived backgrounds throughout their experience in the education system and the workplace; through the attainment gap at school, a lack of fair access at the post-16 level, and then in the workplace through a lack of investment and career progression. It is reversing these three gaps – the attainment gap, the fair access gap, and the progression gap – that in our view will contribute to improving social mobility rates in Scotland.

Low skills business model

We considered data on skills investment by employers to outline the shape of workplace learning.

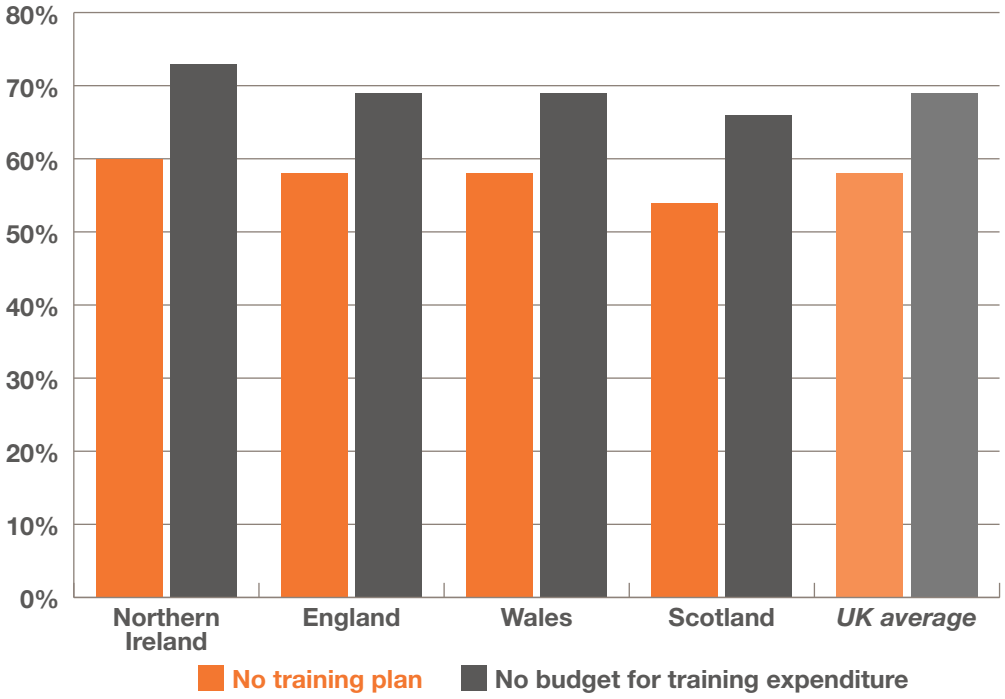
In Scotland, greater numbers of employers offer training opportunities than seen elsewhere in the UK. In Scotland, 71 per cent of employers funded or arranged training for their staff in the past year. This compared to a UK average of 66 per cent, with only 62 per cent of employers in Northern Ireland training their staff in the last 12 months (UKCES 2016b).

However, it seems clear that many employers across the UK are pursuing a low-skilled business model. Figure 6.2 shows that, again, a greater proportion of employers in Scotland had either a training plan or a budget for training then employers across the UK as a whole, and compared to each other nation. However, over half of Scottish employers surveyed (54 per cent) did not have a training plan, and two-thirds (66 per cent) did not have a budget for training. This compared to 58 per cent with no training plans and 69 per cent with no training budgets across the UK (ibid).

FIGURE 6.2

A greater proportion of employers in Scotland had a training plan or a budget for training than employers across the UK

Percentage of employers without a training plan or budget for training, UK nations



Source: UKCES 2016b

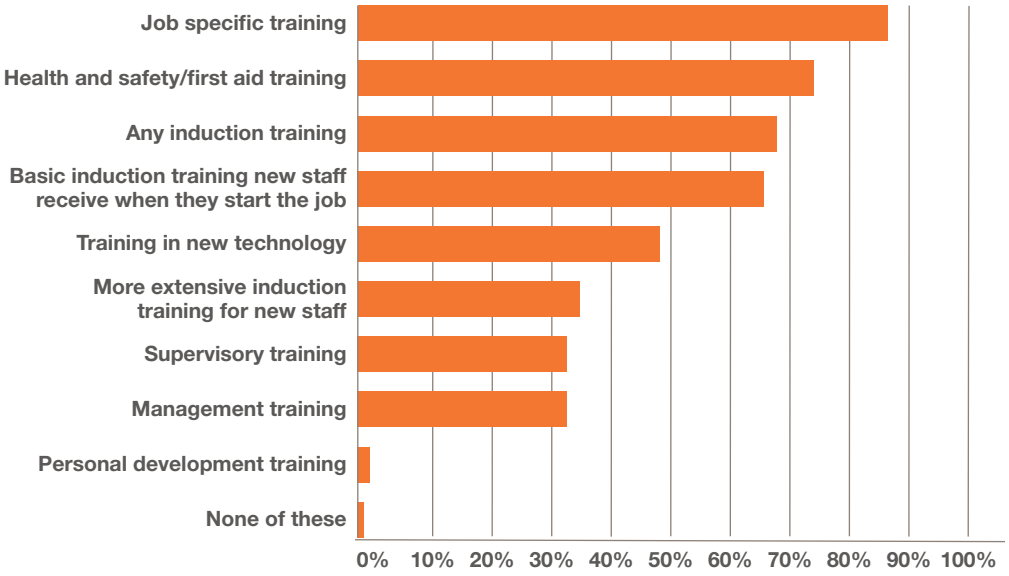
What types of training are employers providing?

Employers that do fund and arrange training for their employees provide different types of training, over different skills levels and for different stages of employees' careers. Figure 6.3 shows that, in Scotland in the last 12 months, 86 per cent of these employers organised some form of job-specific training, with 68 per cent providing some form of induction training. Nearly three-quarters of employers (74 per cent) organised health and safety training for members of staff. A third of employers offered training to supervisors and managers, with 34 per cent organising supervisor training, and the same proportion offering management training for employees (UKCES 2016b). These figures indicate that much of the training being done is providing employees with the skills to do their current roles effectively and safely, rather than necessarily providing training to develop beyond their role.

FIGURE 6.3

Training is often job-specific or induction training

Types of training funded or arranged for employees in Scotland



Source: UKCES 2016b

Small and medium size enterprises

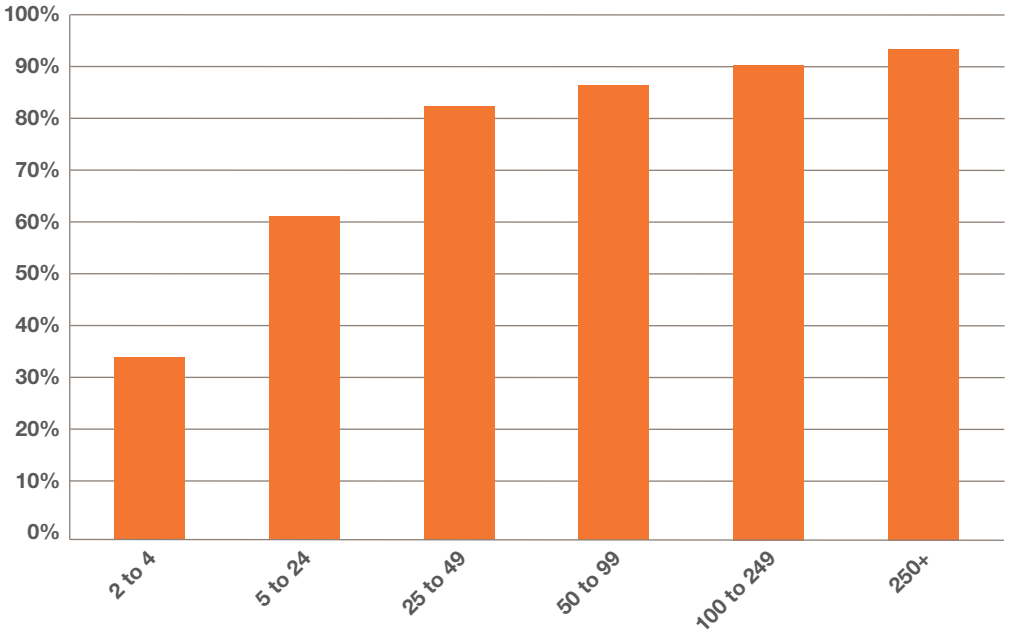
Low levels of training are particularly pronounced in very small enterprises across the UK, which make up a large proportion of the UK economy. Just over a third (35 per cent) of business with fewer than four employees, and nearly two-thirds (62 per cent) of business with between five and 24, had a training plan or budget. This compared to over 94 per cent for employers with over 250 employees. This is significant, as employers with fewer than four employees make up 51 per cent of employers in the UK, with large employers with over 250 employees making up only 1 per cent (ibid).

In Scotland, 95 per cent of employers are small enterprises (with under 50 employees), while only 1 per cent are large (with 250 or more) (UK Employer Skills Survey 2015). This high proportion of employees employed by SMEs in Scotland shows the need to make sure that the skills system and work-placed learning is able to extend to smaller employers.

FIGURE 6.4

Low levels of training are particularly prevalent in smaller organisations

Percentage of employers with a training plan or budget by employer size, across the UK



Source: UKCES 2016b

Reasons given for not investing in employees

In Scotland, the biggest reason employers give to explain why they do not train is that their staff are fully proficient in their roles, cited by 67 per cent of employers. This suggests that many employers do not consider the continuous development of their workforce to be an important component of their business strategy. Employers do cite some other barriers to providing more training – including cost and time constraints and the availability of local provision – but these problems typically affect a very small proportion of employers.

To encourage employers to adopt a higher-skill business model, it is likely to be important to persuade businesses that investing in employees' skills beyond the needs of their current role can yield dividends in productivity, and success.

Skills utilisation

A significant proportion of employee skills in Scotland are underutilised by employers. Nearly a third (32 per cent) of staff in Scotland have both qualifications and skills that are more advanced than required for their current job role. This is slightly higher than the overall UK level, which is at 30 per cent. Given that levels of qualifications are approaching levels seen in London, but productivity rates in Scotland are comparatively much lower, it seems clear that poor skills utilisation is a key issue for the Scottish economy.

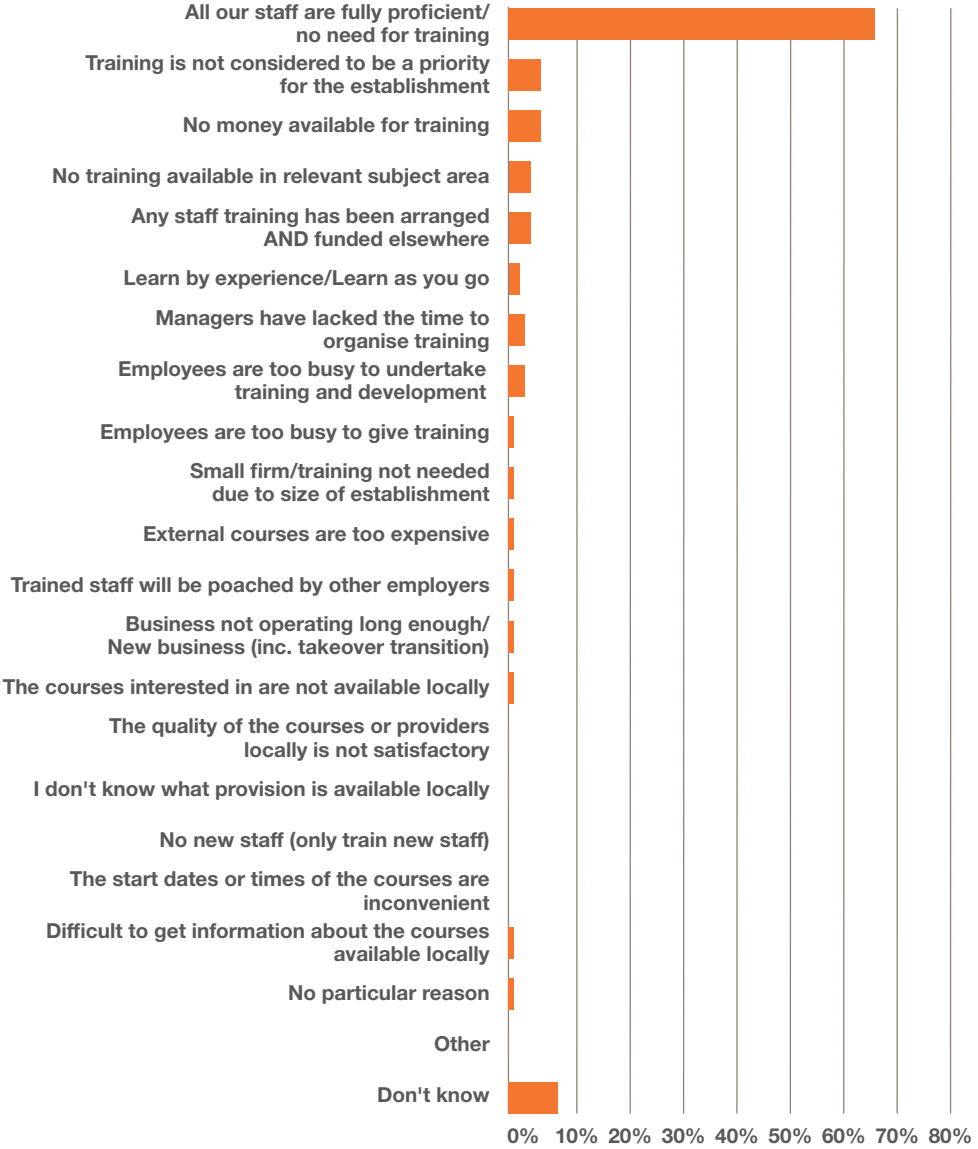
Scotland has a highly skilled workforce, but their skills are clearly not being utilised effectively. Encouraging and enabling employers to fully utililise employees' skills and allowing roles to grow with employees' skill levels are crucial to better connecting increasing skills levels to increasing career progression, pay and productivity.

The under-utilisation of employees' skills represents a missed opportunity for businesses, as well as for the wider Scottish society. Skills utilisation can provide immediate benefits through decreasing skills shortages and gaps, as well as longer-term benefits for employers, such as gains in productivity and the possibility of incremental process and product innovations (Findlay and Warhurst 2012).

FIGURE 6.5

The majority of employers that do not provide training believe their workforce do not need additional training

Reasons given by employers for not providing training, Scotland, 2015

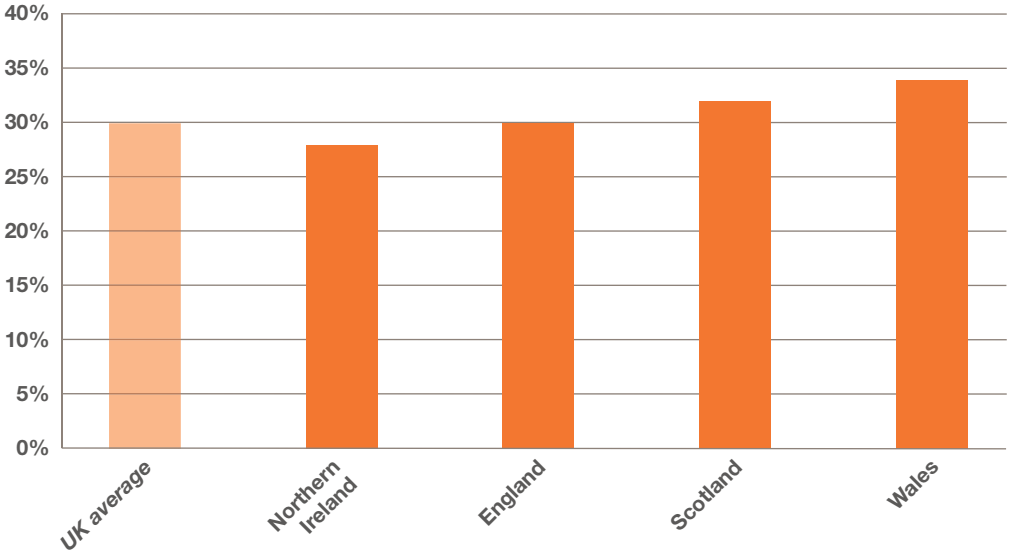


Source: UKCES 2016b

FIGURE 6.6

Nearly a third of the Scottish workforce are underutilised

Proportion of staff that are underutilised, UK nations



Source: UKCES 2016b

CONCLUSION

If we are to deliver inclusive growth in Scotland, as is the Scottish government's stated aim, we will need to find ways to deliver improved career progression, pay and productivity, particularly among lower-skilled sectors and roles, and particularly for those from poorer backgrounds. We have considered the role of the skills system in this and identified clear gaps, particularly for mid-career provision, and clear overlaps within and between schools, colleges and universities.

In this section, we have also considered employer investment in skills in Scotland and across the UK. We have found that there are similar gaps in mid-career provision too. Higher-skilled workers are twice as likely to receive in-work training as low-skilled workers. Just under a third of employers in Scotland did not train employees last year, over half of employers in Scotland did not have a training plan for employees, and two-thirds had no training budget.

While Scotland's record on many of these measures is better than nations in the rest of the UK, it is questionable as to whether this is sufficiently ambitious. It seems clear that too much of Scotland's economy is based on a low-skill business model that is impacting upon the lowest skilled workers the most. Encouraging and enabling employers to train workers beyond their current role and to fully utilise workers' skills, allowing roles to grow with employees' skills levels, will be crucial to delivering increased productivity in Scotland, improved pay and career progression, and ultimately stronger and more inclusive economic growth.

7.
FUTURE CHALLENGES

In the previous sections, we have considered the current outlook for the skills system and employer investment in skills. We have also considered some of the recent history within the skills system in Scotland. Looking towards the future, Scotland will have a number of long-term opportunities and challenges to meet. The skills system can be at the centre of navigating a path through these long-term trends in a way that delivers inclusive growth for Scotland.

THE LABOUR MARKET OF 2030

It is important to note that over 2.5 million adults of working age in 2017 (78 per cent) will still be of working age by 2030 (ONS 2015). Clearly, a focus on pre and early career, from both employers and the skills system itself, will not succeed to prepare Scotland for the future. It is important that the skills system can support people already into their careers to develop their skills and to prepare them for future changes in the jobs market in Scotland.

Future demand

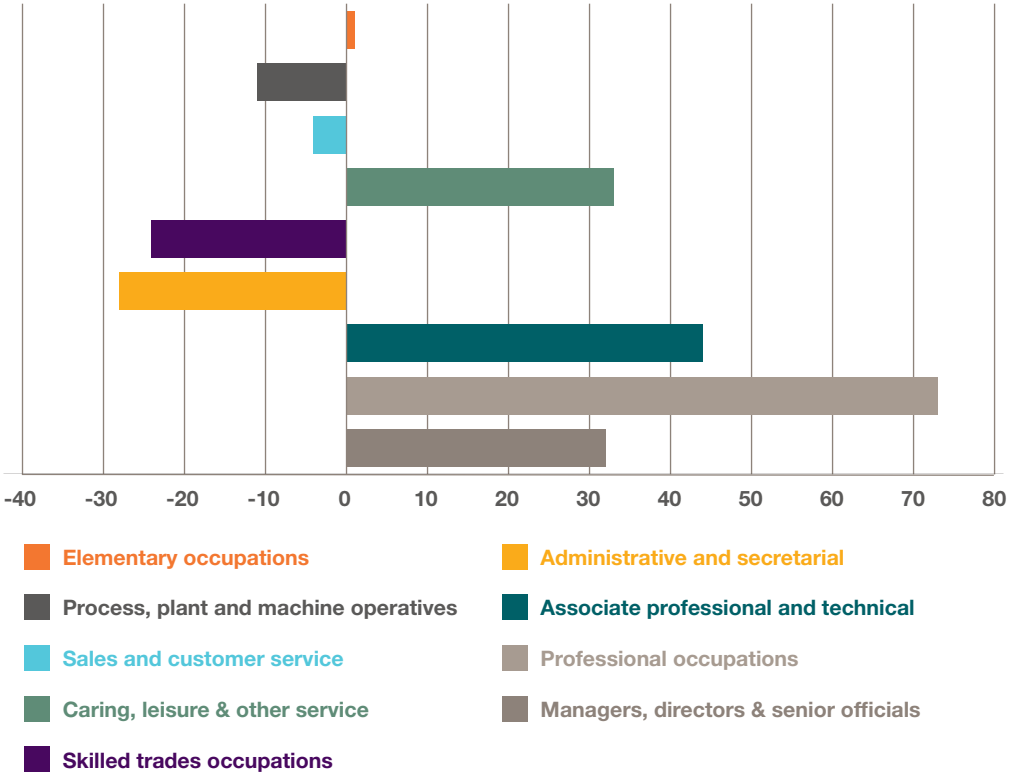
It is inherently difficult to predict future changes in the jobs market, but the most detailed attempt to make projections comes from the UKCES 'Working Futures' forecasts. This projects that, by 2024, there will be an increase in higher-skilled and lower-skilled jobs in Scotland at the expense of middle-skilled jobs. By this point, we will see a decrease in the number of jobs in manufacturing, as well as administrative and secretarial jobs, and an increase in the number of care leisure and other service sector jobs. At the same time, there will be an increase in managerial, professional and technical professions.

While these projections suggest that the overall balance of jobs will shift to more professional and high-skilled occupations, in absolute terms there will still be a large number of middle and low-skilled jobs becoming vacant as a result of people retiring from the workforce. It is projected that 40 per cent of high-skilled, 37 per cent of medium-skilled, and 39 per cent of low-skilled jobs that will be created over the next decade will be a result of 'replacement demand' as people leave the workforce, as discussed in the last section. In terms of the absolute number of jobs created, there will be a particularly large increase in administrative occupations and caring and personal service occupations, each of which will require more than one million workers between 2012 and 2022 (Clifton et al 2014). Therefore, while sectors may contract in terms of numbers employed, this does not mean that new roles for new entrants will be unavailable.

FIGURE 7.1

Manufacturing and sales jobs as well as middle-skilled jobs are in decline

Changing composition of employment in Scotland (+/- thousands) by occupation, net change 2014–2024



Source: UKCES 2016c

DEMOGRAPHIC CHANGE

Scotland's population will age markedly over the coming years, altering the composition of the Scottish population and workforce in many ways. This is very much a success and a product of years of social policy, and will bring many opportunities for the economy and society. However, an ageing population will also likely bring significant financial challenges.

In the coming years, Scotland will see a large increase in the non-working-age population. Between 2017 and 2030, the population aged 65 and over in Scotland is projected to increase by 30 per cent, from 1.017 million to 1.327 million, representing a rise from 19 per cent to 24 per cent of the total Scottish population. The over 75-year-old population is projected to increase by 42 per cent, from 451,000 to 640,000, by 2030. At the same time there is also projected to be large increases in the over 85s population in Scotland – a rise of 51 per cent between 2017 and 2030 – from 124,000 to 187,000, representing a rise from 2 to 3 per cent of the total Scottish population (ONS 2015).

As the Scottish population ages, the working-age population will gradually shrink. Between 2017 and 2030, the 15–64 population will decrease from 3.518 million to 3.414 million – a 3 per cent decrease.

This will represent a decrease from 65 per cent to 61 per cent of the total Scottish population (ibid).

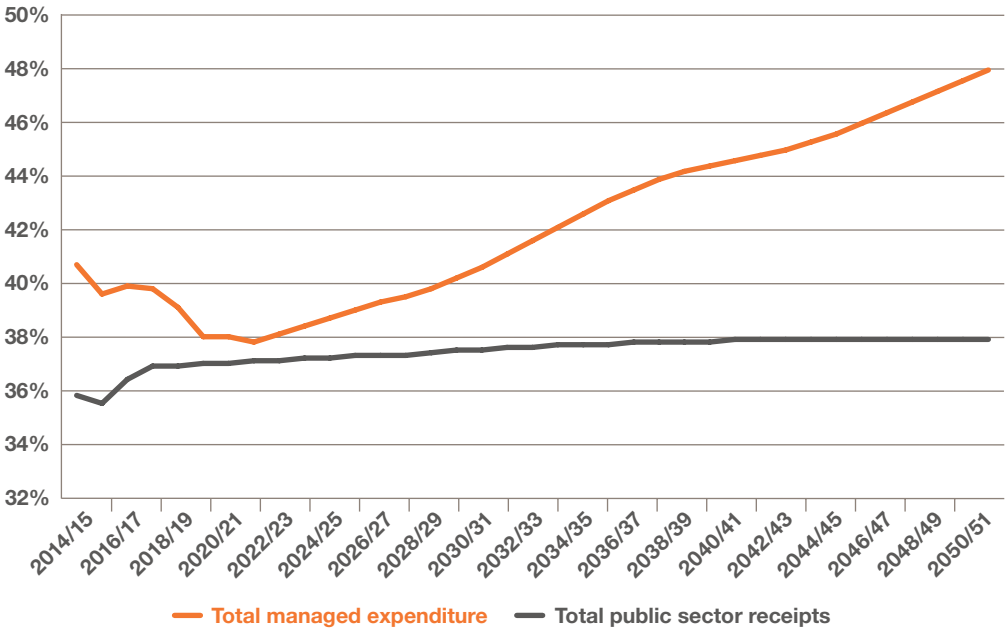
The combination of a decreasing working-age population, and significant increases in the older population, will bring financial challenges through decreasing tax revenue and increasing spending on entitlements (assuming they stay as now) and increasing demand for public services. This will likely bring substantial financial pressures across the public sector, including within the skills system. This will require increases in productivity and tax revenue per head, in order to grow the economy and tax revenue to a sufficient level to overcome the demographic headwinds facing Scotland.

The scale of this challenge is very large. Without a significant change in fiscal policy, across the UK, public finances will be unsustainable over the long term, as social responsibilities grow faster than tax receipts (Jacobs et al 2016).

FIGURE 7.2

UK spending liabilities are projected to exceed tax revenues by an increasing margin

Projected total government managed expenditure and total public sector receipts (percentage of GDP), 2014/15–2050/51



Source: OBR 2017

* Note: These projections don't take economic cycles into account

In addition, demographic change will likely change the shape of the economy, and change demand for skills in Scotland. As outlined above, demographic change is likely to see increases in demand for care and health professions, as well as services associated with older people. Making sure we better match skills supply to skills demand will be crucial to ensuring we can best respond to these changes in the economy. Furthermore, developing in-work progression routes within these sectors to higher-skilled work will be crucial to ensuring these new roles lead to inclusive growth.

TECHNOLOGICAL CHANGE

It is likely that technological change will also continue to bring both challenges and opportunities to Scotland's economy over the coming decades. Technological change is not new, and in many ways computer-based automation and the impacts of digital technologies, have already brought many changes to our economy and society. It is clear that the implications of technological change in the next wave could be enormous. However, it is equally clear that the consequences of this change are not pre-determined, and are very much based on the decisions we make now to shape the pace, type and impact of technological change in Scotland.

In the 'first wave' of automation, the jobs most affected were those involving largely routine tasks, including machine operatives in manufacturing and clerical administrators in services. However, the latest developments – including advanced robots with senses, intelligence and dexterity; artificial intelligence; autonomous vehicles; 3D printing and big data – are likely to affect a far wider range of jobs, and could even include those that involve complex interactions and require knowledge, experience and judgement. As a result, the impact of technological change is likely to spread to jobs further up the skills ladder, including many of the professions (Susskind and Susskind 2015). Over the coming decades, we may therefore see an acceleration of change, and disruption to roles, sectors and skill levels that have not experienced the effects of new technology to date. Our past experience of technological change would suggest that new technologies both destroy and create job roles.

Estimates of the scale of potential for automation vary. Recent analysis by PWC has estimated that up to 30 per cent of roles within the UK could be at risk of automation by the 2030s (PWC 2017). Other studies have shown similar projections, with 35 per cent of jobs in the UK seen as having a high potential to be automated (Frey and Osborne 2014).

While it is likely that, in many cases, roles will change rather than be lost, it is clear that there is a great opportunity and threat from technological change. Automation is most likely to affect transport, manufacturing and wholesale and retail sectors, and have less of an impact on more people-dependent sectors, such as care and education.

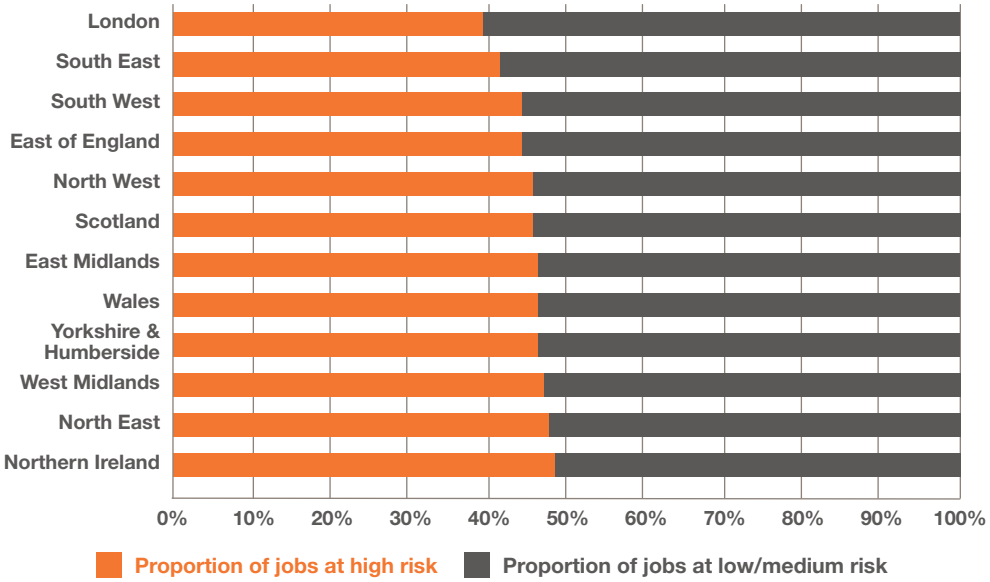
We can also see regional variation in likely automation. Looking at potential for automation by region, we can see that London and the South East have the lowest, and Northern Ireland has the highest proportion of jobs most susceptible to automation. In Scotland, we can see that just under half of all jobs (46.1 per cent) fit into the 'high potential' category of seeing automation over the coming decades. Based on current employment levels, this would represent just under 1.2 million jobs in Scotland.

New technologies will likely mean longer working lives, across multiple careers and multiple sectors. Reform to the skills system in order to best manage disruption and build a career of learning, throughout peoples' working lives, will be crucial to ensure Scotland can maximise the opportunities and minimise threats from automation.

FIGURE 7.3

Scotland faces a significant proportion of jobs under threat of high potential for automation

Proportion of jobs with high and medium/low potential for automation by region



Source: IPPR analysis of Frey and Osborne (2013) and Labour Force Survey

As well as changing the demand for the skills system from an economy facing high levels of disruption, new technologies may bring new efficiencies to learning and teaching. They may also bring the need for new pedagogues for those that are more digitally literate, and indeed those that need to be. Running a thread of digital literacy through learning throughout disciplines across the skills system could be important to ensure Scotland is an early adopter of new approaches to, and uses for, digital technologies.

CLIMATE CHANGE

The Paris Agreement set out a new world agreement on climate change, binding in international law, to limit global temperature rise to well below 2°C and pursue efforts to limit it to 1.5°C, with rapid reductions in emissions to net zero in the second half of this century. The treaty has been signed by almost 200 countries – including the US, China, the EU and the UK – and came into force on 4 November 2016 (United Nations 2017).

Scotland has set some of the strongest carbon reduction targets in the world. The Scottish government is committed to reducing Scotland's greenhouse gas emissions by at least 80 per cent by 2050 (against the 1990 baseline), with an interim target of reducing emissions by 42 per cent by 2020. This interim target was achieved early, with adjusted emissions (taking into account participation in the EU carbon trading regime) being cut by 45.8 per cent by 2014.

In January 2017, the Scottish government published a new draft Climate Change Action Plan, which outlines plans for carbon reduction through to 2032 (Scottish Government 2017c). A new Climate Change (Scotland) Bill will be considered by the Scottish parliament throughout 2017 to set new targets, including a new 2020 target. The Scottish government has achieved a great deal in reducing carbon emissions, in particular through decarbonising electricity generation. The new plan sees reductions in residential and transport sectors make more of a contribution to achieve the government's new targets.

Meeting the Paris Agreement globally, and meeting the Scottish government's climate change plans in Scotland, will require significant action and huge change across the economy. This will bring further disruption, alongside technological change.

In particular, this will see huge challenges for carbon-heavy industries and the oil and gas sector, and related industries. Ensuring a just transition from the economy of today to the economy we will need for tomorrow, in order to meet our climate change obligations and responsibilities, will require a skills system that is able to prepare employees for longer working lives, in multiple careers and multiple sectors and throughout careers, not simply at the early or pre-career stage.

BREXIT AND SCOTLAND'S PLACE IN THE WORLD

With the result of the UK's EU referendum in June 2016, and the election of president Trump in America in November 2016, the last year has brought a great deal of uncertainty in relation to globalisation, the UK's place in the world, and in terms of Scotland's constitutional future.

There is a new uncertainty in relation to how open or closed trading relationships will be, the degree of protectionism employed by major global economies and in the UK, the degree to which the country will face tariff or non-tariff barriers in its economic relationship with the EU, and in turn, how close Scotland's relationship will continue to be with the EU. Equally, there is uncertainty as to whether Scotland will continue within the UK or not. Looking ahead over the next few years will be difficult, but attempting to consider the future of Scotland's relationship with the world through to 2030 looks very difficult indeed.

However, it does seem clear that there is the possibility of reduced immigration to the UK, whether due to additional controls placed on EU migration following the UK leaving the EU, or through slower economic performance through the economic effects of Brexit over time (Lawrence 2016). In Scotland, whatever the constitutional future holds, these trends in the UK are likely to have impacts too.

Lower economic growth and potentially lower net migration has particular implications for Scotland. Given Scotland's demographic pressures, as outlined above, decreased immigration may well exacerbate the challenges of demographic change. In addition, a reduction in immigration will require a skills system, and employers' business models, to reach areas of the population not yet served well by learning routes in Scotland. This may well lead to greater reliance on a skills system that can deliver the skills, and employers that can better deliver and utilise skills, than is currently the case.

Managing disruption, adaptation and transition

The years from now up to 2030 are therefore likely to see great disruption across Scotland's economy and society. It will be in how able the country is to anticipate these changes, to cushion their negative impacts and gear-up to take full advantage of its opportunities, that will determine the shape of Scotland in the long-term future. In doing so, we will need to learn the lessons of past economic and social transitions. Most clearly, the 1980s and 1990s' transition from heavy industry and manufacturing to the open, services-based economy we now see across the UK, saw many benefits, but also many negatives too. In many ways, the communities that lost out through this transition are the same communities that continue to face multiple disadvantages today.

The areas that experienced the greatest job losses in heavy industries in the early 1980s are also the areas with the highest level of incapacity-related benefit claimants today (Beatty and Fothergill 2016). It is clear that there is a scarring effect that economic disruption can bring to geographical areas, and to the communities and families that live there. Without greater care in planning for the disruptions facing Scotland over the coming years, the same mistakes could be repeated, leading to whole parts of the country being left behind.

8. CONCLUSIONS AND RECOMMENDATIONS

SCOTLAND IN 2030: THE FUTURE WORLD OF WORK

The world of work in Scotland will have changed significantly by 2030. Demographic change will see longer working lives and the working-age population gradually shrink proportionately. When combined with technological change, including the automation of lower and mid-skilled roles and the introduction of as yet unimagined new jobs and sectors, we will see many more people working in multiple jobs, with multiple employers across multiple sectors. We will also see climate change, and attempts to decarbonise the economy, bring transition to the whole economy, and most particularly to Scotland's oil and gas sector.

Alongside demographic change, technological change and climate change, it is likely that Scotland's place in the world will have changed by 2030. Whether as part of the UK or not, or as part of the EU or not, Scotland's position in the world, and our ability to compete with international competitors, will have challenged Scotland's economic strategy and model over this time. While some things, such as demographic change, are relatively possible to project into the future, the effects of changes internationally and constitutionally are much harder to predict with any certainty over any time frame.

However, it is clear that the Scottish government has set a course for inclusive growth over this period, with the aim of reforming the economy in Scotland to deliver growth that increases prosperity and competitiveness – growth that narrows rather than widens inequalities. To achieve this, as far as the skills system is concerned, a number of things need to happen.

This list will include increasing productivity and pay within low skill, low pay and low productivity employers and sectors. This will require a shift in employers' business models, towards a high-skill and high-productivity investment model. It will also require a rebalancing in skills investment by employers. We need to increase investment in employees' skills across the skills range, rather than continue with an economy that sees employers invest the most in those already the most highly skilled, as is the case now. As outlined in earlier sections, much of the gap in rates of productivity between the UK and international competitors can be explained by our sectors having much lower rates of productivity than those outside of the UK. Bringing productivity in our low-skill sectors up to match those seen outside of the UK will bring great economic benefits, and in a way that is consistent with delivering inclusive growth.

Moreover, we will need to see the adoption of high-skill and high-investment business models across the economy to make sure that employers do their bit to drive inclusive growth in Scotland.

At the same time, we must improve the outcomes from government investment in skills, ensuring that we improve the outcomes for all learning routes, particularly those that are currently dominated by students from more deprived backgrounds. We must also better enable educational progression across learning routes. For example, a qualifier from an FE course from the college sector should have the full array of options open to them as much as a school leaver does. This will likely need to see a genuinely flexible learner journey, in which, at every point of qualification – whether from school, FE, Modern Apprenticeship, HE in college or elsewhere – every learning route for further learning is genuinely open to learners.

Currently we see educational inequalities at every step: the 'attainment gap' at school level, the 'fair access gap' in the post-16 skills system, and in this report we have also outlined a 'progression gap' within the workplace. These three inequalities hit the same cohorts of people: lower-skilled and more deprived. To deliver inclusive growth, therefore, we will need to overcome these gaps.

Furthermore, we will need to encourage and enable learners and employees to continually improve and update their skills, both through formal and informal learning, building a system that can recognise this prior learning and build on it at each step. One part of this challenge will be to provide the information, advice and guidance to employees and learners so that their decisions can be fully informed. A second part of this will be to create clear benefits to learners and employees from learning, so that the positive results of increasing skills are tangible and realised in the short-term. As outlined in the previous section, the vast majority of workers who will experience the changes we have set out in this paper, and the effects of changes to Scotland's economy, have already started their careers, and are already within Scotland's labour market. Over 2.5 million adults in Scotland today – or 78 per cent of the current working age population – will still be of working age by 2030. Therefore, a focus as much on those that are at the mid-career stage as those that are early or pre-career will be crucial.

Throughout the next few years, it seems certain that change will be constant. Therefore, while the type and flavour of change may not be predictable in every way, building the responsiveness and flexibility of the skills system to respond to whatever change to the world of work we see in the future, must be the priority over the coming years.

Much of this is likely to take place in a time of fiscal constraint. In many ways, we are still grappling with the financial implications of the 2007/8 global financial crash. Changes to Scotland's place in the world, through Brexit or otherwise, are likely to be head-winds against Scotland's economy in the short-term at least. And over this next decade, as outlined in the previous section, the potential costs of demographic change will begin to escalate, with proportionally less of the population of working-age and more of non-working-age, and the resultant increased demand on public services. How we get more, or at least as much, from less public investment will likely be a consistent theme looking ahead.

Scotland's world of work in 2030

Long term challenges:

- longer working lives
- multiple careers
- technological interaction within many more roles and sectors, including mid-skill levels
- economic disruption across the economy
- just transition for carbon-heavy or focussed industries to decarbonisation
- Brexit will likely mean restrained immigration across the UK
- Scotland's future place in the world is uncertain.

In Scotland, if we are to achieve inclusive growth, we need:

- increased productivity, pay and progression, within low skill, low pay and low productivity sectors
- a shift away from a low skill business model, encouraging high skill and high productivity business models
- a shift in the skills system – improving outcomes for those learning routes dominated by people from more deprived backgrounds, and opening up the learner journey so that students can move through the skills system – building upon their skills – with their prior learning recognised
- a focus on mid-career as much as pre or early-career learning.

Overall:

- change will be constant – building a responsive and flexible system will be crucial
- funding will be constrained.

RECOMMENDATIONS FOR CHANGE

To prepare Scotland's skills system to be ready to deliver the inclusive growth we wish to see, and to be at the centre of readying our economy to meet head-on the opportunities and challenges Scotland faces, we believe there are a number of specific actions that should be taken.

1. An Open Institute of Technology: Plugging the mid-career provision gap

Scotland should develop a new work-focussed learning route, aimed at those beyond early and pre-career provision, delivered through a mix of online provision and face-to-face provision through existing providers.

The OIT would be a new learning route sitting alongside FE, HE and Modern Apprenticeships, providing a modular approach to learning, flexible provision (from intense bursts of full-time to very part-time provision), and transferable provision through recognised qualifications placed on the SCQF framework. The OIT route would be specifically aimed at improving career progression rates, and rates of productivity and pay and would begin with a focus on our low-skill and low-productivity sectors.

The OIT would share some similarities with the Open University, with an open approach to admissions and access, and with the Singapore Workforce Qualification, by offering, for example, the ability to accredit prior and informal learning, whether in the classroom or the workplace.

We believe the OIT route could act as a conduit for apprenticeship levy funding in Scotland in the future; providing a route to encourage engagement and brokerage between employers (including SMEs) and the skills system itself. Equally, given the low levels of administration required from employers to engage with the OIT route, it would be a learning route more accessible to the full range of employers.

A progression agreement (an agreement between employer, employee/learning and skills provider – see recommendation 3) would be a pre-requisite for accessing the OIT route, ensuring that OIT provision has a test of demand built in to its core and a focus on career progression as an outcome.

2. A focus on progression, pay and productivity: Delivering clear outcomes at the national level of the skills system

The skills system in Scotland should be better focussed on the clear objectives of promoting progression, pay and productivity. National outcomes and ambitions in these areas should be better translated from the national, through the regional and to the local level.

Through Scotland's economic strategy, the Scottish government already has targets in place to reach the top quartile of our international competitor countries' rates of productivity by this year. This is unlikely to be met. The Scottish government should set new national objectives around increased productivity and progression, and should work with the skills system to set national outcomes around pay, progression and productivity for the skills system as a whole.

The Skills and Enterprise Agency Review will bring opportunities to align the ambitions of the skills and enterprise bodies in Scotland. In our view, these 'three Ps' should be at the core of this work. Furthermore, the skills alignment project within the review has the opportunity to bring a greater regional coherence across the skills system, and again to align desired outcomes on these three Ps.

3. Progression agreements: Delivering outcomes at the classroom level

The skills system should work with employers to develop progression agreements and promote their use across FE and our proposed OIT provision.

A progression agreement would be a tripartite agreement between government/provider, employer and learner. In return for public funding, the learner would agree to meet certain learning outcomes, and if met, the employer would agree to a form of progression (this could include increased pay, a promotion, or other career progression). This would have the effect of building progress against the desired outcomes of the system as a whole into the heart of admission decisions, while also representing a test of employer and employee/learner demand at this

micro level. Equally, it may improve skills utilisation within the workplace as workers improve their skill levels.

A progression agreement would make sure that learning is better linked to delivering improved career progression, pay or productivity. Having a progression agreement in place would be a pre-requisite for accessing OIT learning, and could give learners priority within other routes across the skills system.

4. Career pathways: Learner and employer co-design

Career Pathways are in use in other countries around the world, providing clear information for learners and employers, and clear frameworks for educational and career progression.

As part of the Scottish government's learner journey review, consideration should be given to developing a Scottish career pathway model to outline the qualifications required, and the possible learning routes, to develop and progress through a range of careers in Scotland. Pathways would be sector-based, developed with learners and employers, and would allow both to understand the competencies, skills, knowledge and qualifications required to enter and progress through career routes. Utilising the SCQF, careers pathways would include qualifications across FE, HE, Modern Apprenticeships and OIT learning routes.

5. Qualifications review: improving flexibility and transferability

Given shifts in the purpose of provision in recent years, most notably within FE, and our recommendation to create a new OIT learning route (recommendation 1), the Scottish government, through the learner journey review, should undertake a qualifications review to ensure provision is meeting the needs of learners and employers.

This should include consideration of how skills qualifications can:

- clarify roles of learning routes – creating career pathways and clearly outlining the roles of different learning routes in delivering career and educational progression
- encourage and enable learners and employers to co-design a responsive skills system – to build a modular system, and an online spine of learning, to make sure learning content is shaped by learners and employers, and that learners and employers are able to choose modules to tailor learning individually
- improve flexibility of learning – qualifications should be able to be studied at a frequency that works for learner and employer, from intense bursts of learning to very part-time
- increase transferability of learning – qualifications on the same level of the SCQF framework should have equal amounts of transferability. A qualification type should not close the door to any learning route. As well as a modular approach to learning within the skills system and the creation of an online spine of learning, we should learn from the Singapore workforce qualification to allow for prior and informal learning to be accredited and transferred from one work or learning setting to another.

A key outcome of the review should be to increase recognition and admission rates to university from non-school routes, and, in particular, direct entry to university from the FE route. With 75 per cent of FE qualifiers entering further study, it is imperative that we ensure qualifications are fit for this purpose, and, more generally, that qualifications across the skills system are fit for the future we face.

6. Innovation academies: Driving improved innovation and productivity through the skills system

Sector innovation academies should be developed with employers and learners, starting with our low-skill and low-productivity sectors. These academies would be new joint bodies, with the aim of delivering greater productivity within sectors across Scotland. They would lead on the development of career pathways and the promotion of career progression, as well as on sector engagement with curricula, and governance, together with engagement at the local, regional and national level.

Innovation academies would harness and improve the potential for innovation to be developed within the skills system, and to transfer or exchange this innovation with employers to bring change to Scotland's economy as a whole. They would also offer brokerage support between the skills system and employers, and work with employers to develop and spread good practice within and across sectors.

Overall, innovation academies would provide a route for knowledge transfer, knowledge exchange and innovation in the college setting, allowing the day to day activity of the skills system to have the greatest impact on Scotland's economy.

7. Business investment, apprenticeship levy and business taxes: The specific role of employers

Employers should increase investment in skills. We need to see increased investment to develop high-skilled business models across Scotland, and investment in low-skilled workers and within certain low-skilled sectors in particular. In addition, more can be done to encourage SMEs to invest in skills, including some of the reforms outlined above (such as a new OIT route). Furthermore, innovation academies could encourage and enable greater engagement between employers and the system. This would encourage the skills system to further respond to the needs of employers.

However, employers must also act. Rates of investment in skills have dropped across the UK. With the creation of the UK apprenticeships levy we must see this increase.

If business investment in skills does not begin to increase to the levels and pattern we need to see, then the Scottish government should consider how business rates allowances and other incentives and disincentives can be used to encourage the behaviour we need to see from employers in Scotland. Equally, at the UK level, consideration should be given to expanding the apprenticeships levy to become a skills levy, and setting the threshold and level of levy to create the revenue we need to see in investment in skills.

8. Progression unit: Tackling the 'progression gap', alongside the attainment and fair access gap

The attainment gap and the fair access gap have seen welcome attention in Scotland over recent years. However, this report has outlined evidence that there is a third element to educational inequalities – a 'progression gap' – once a learner has left school and post-16 education, and has entered the workplace. As much attention should be placed on researching, tackling and evaluating activity to tackle this progression gap as it is elsewhere.

To do this, we believe the Scottish government, working with employers, should develop a progression unit to outline the scale of the challenge and provide solutions to tackling it and improving progression rates in Scotland, evaluating impact of activity, and highlighting best practice to spread across sectors in Scotland. This would start with employers better identifying workers at risk of in-work poverty or who would benefit most from increased career progression.

WIDER CONCLUSIONS AND REFLECTIONS

In Equipping Scotland for the Future, IPPR Scotland outlined six priorities for action to ready the skills system for the future. If we are to shift to a skills system that supports inclusive growth in Scotland and that is responsive and prepared for the world of work in 2030, we believe that six areas should form the underlying principles that the system is based on.

- **An outcome approach around a clear national purpose** of getting people into fulfilling, sustainable and well paid employment.
- **Regional integration of the skills system** to reduce inefficiencies between different parts of the system and to reduce administrative barriers to learner choice.
- **Clarifying the roles of learning routes** within the skills system to ensure that learners understand the opportunities available to them, and that employers can engage in the route most applicable to their needs. This can help to encourage employers to pursue a high skill business model.
- **Learners and employers co-designing a responsive skills system** to ensure that learners are engaged in their learning, to close the supply and demand gap current seen in Scotland, and to provide learners with the skills required by employers.
- **Improving flexibility of learning** that allows learners to choose from a full range of learning intensities and modes of delivery to maximise their ability to develop and build on their skills.
- **Increasing transferability of learning** with greater recognition of prior learning, allowing learners to build on their skills without unnecessary duplication.

We believe that the recommendations above would make significant steps towards delivering a skills system that meet the six priority areas above. However, there is more that can be done, and in particular, phase two of the Scottish government's skills and enterprise agency review and the learner journey review have key roles to play in meeting the aspirations, and addressing the opportunities and challenges outlined in this report. Specifically, there is more that can be done in relation to regional integration

of the skills system, and in reducing incoherence across learning routes across the skills system.

Regional integration

The enterprise and skills agency review is due to release its phase two report over the coming months. Alongside many important aspects, it will consider how to align the SFC and SDS in a more coherent way, and also consider regional aspects across the skills and enterprise agencies.

It is our view that consideration should be given to how the skills system can better pool funding and provision decisions at the regional level, particularly in relation to college and SDS funding decisions. This would leave the agencies as they are now at the national level, but would attempt to encourage and enable integration at the regional level. One way this could be driven would be through the adoption of regional skills outcome agreements, bringing an outcomes-based approach, regional coherence, and allowing employer and learner engagement to take place through fewer regional bodies.

Regardless, the key test of the skills and enterprise agency review, in relation to regional skills alignment, will be to avoid adding to regional clutter (if not reducing regional entities), and to reduce administrative barriers within the skills system in relation to funding and provision, which in and of themselves could be barriers to learners reaching their potential and achieving their aspirations.

Learning route incoherence

The Scottish government's learner journey review is due to complete stage one in September 2017. A key aim of the review will be to increase efficiency in the skills system and to improve learner choice and personalisation. This report has outlined areas of inefficiencies within the skills system, and we hope the learner journey review will address these fully.

In particular, we would like to see consideration of a tuition fee waiver put in place by institutions that forces learners to undertake needless duplication of learning. For example, universities that do not fully recognise prior learning of HNC and HND qualifiers through their admissions systems should face some of the financial cost of this needless duplication. This would free up funds within SAAS that could be reinvested in skills provision.

As part of this, it is crucial that we properly link learning routes across the system. For example, ensuring that FE or Modern Apprenticeship qualifications keep the university learning route open is crucial. In practice, this would mean that FE qualifications at the same SCQF level as school Higher qualifications would be treated in the same way through admission systems. This would see direct entry from FE to university increase, and likewise from Modern Apprenticeship frameworks, and in doing so reduce duplication of learning and increase fair access.

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APPENDIX: METHODOLOGY

Educational qualifications across National Qualifications Framework and Scottish Credit and Qualifications Framework

Qualification	National Qualifications Framework Level	National Vocational Qualifications equivalent	Scottish Credit and Qualification Framework
Doctorate degree	Level 8	Level 5	Level 12
Master's degree	Level 7	Level 5	Level 11
Bachelor's degree	Level 6	Level 5	Level 9/10
HND	Level 5	Level 4	Level 8
HNC	Level 4	Level 4	Level 7
Higher	Level 3	Level 3	Level 6
National 5	Level 2	Level 2	Level 5
National 4	Level 2	Level 2	Level 4
National 3	Level 1	Level 1	Level 3