

OECD Review of the Apprenticeship System in Scotland

STRENGTHENING SKILLS IN SCOTLAND



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APPRENTICESHIP SYSTEM IN
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Foreword

After a period of relative neglect in many countries, apprenticeships and other forms of work-based learning are experiencing a revival, in recognition of their effectiveness in easing school-to-work transition and serving the economy. In times of structural changes in the labour market, particular aspects of apprenticeships, and vocational education and training more broadly, might be challenged. It will therefore be of crucial importance to ensure that apprenticeship systems are resilient so that they continue to have a positive impact on education and labour market outcomes of students and support employers in finding workers with the right skills.

This report looks at the apprenticeship system in Scotland (United Kingdom) and provides recommendations on how to strengthen the resilience of the system in the face of structural changes in the labour market. The Scottish apprenticeship system has expanded progressively in recent years, and new apprenticeship types have been developed at different education levels. Apprenticeship outcomes are generally strong, and progress has been made on increasing the inclusiveness of the system. While the Scottish apprenticeship system has made remarkable progress, improvements could be made to increase its responsiveness, quality and flexibility.

The report draws out policy recommendations on how to design and implement high-quality resilient apprenticeships building on earlier work carried out by the OECD in the areas of apprenticeships and work-based learning, and on the wide range of country reviews on Vocational Education and Training published in recent years.

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Acronyms and abbreviations

FE	Further education
HNC	Higher National Certificate
HND	Higher National Diploma
ISCED	International Standard Classification of Education
ISCO	International Standard Classification of Occupations
PISA	Programme for International Student Assessment
RPL	Recognition of prior learning
SAAB	Scottish Apprenticeship Advisory Board
SCQF	Scottish Credit and Qualifications Framework
SDS	Skills Development Scotland
SFC	Scottish Funding Council
SQA	Scottish Qualifications Authority
STEM	Science, technology, engineering and mathematics

Executive summary

In Scotland (United Kingdom), as in other OECD countries, labour markets are changing fast. Automation is ‘hollowing out’ more routine mid-level tasks and jobs. An ageing workforce is increasing the importance of lifelong learning. There is increasing demand for higher level technical and vocational skills, and for social and emotional or ‘meta’ skills. Several factors, including growth in part-time work and the development of the platform or gig economy mean that fewer workers can count on an employer with a long-term interest in their skills development. The COVID-19 crisis is imposing a sudden and wholly unexpected new pressure on the system. This review is designed to establish how Scotland’s apprenticeship system can be made *resilient* in the face of these changing circumstances, giving the system the capacity to adapt and respond effectively to both anticipated and unanticipated changes in labour market requirements.

This report argues that the Scottish apprenticeship system needs to adopt three principles to ensure its resilience:

- **Securing the fundamentals.** The key principles of apprenticeship, that underpin its historic resilience, must be sustained and reinforced.
- **Building in the capacity to respond to change.** This implies action on two fronts:
 - *Effective lifelong learning in an adult-friendly system.* Alongside specific occupational skills, apprenticeship should ensure the foundation skills in young people that will prepare them for a learning career. Apprenticeship should also offer a means of upskilling and reskilling, adapted to the needs of adults.
 - *An agile system.* The elements of apprenticeship systems, including qualifications, programmes, the training workforce and the mix of provision, must respond rapidly to changing employer and student demand. The system also needs to meet specific growing skills requirements including those for higher level and meta-skills.
- **Ensuring that change does not leave people behind.** Rapid evolution in labour market demand means that some will be left with skills that are no longer needed, and not all will find it easy to retrain. Close attention needs to be paid to inclusion and equity issues in every aspect of the system – thus mainstreaming equity issues. But some specific equity initiatives will also be needed.

Over the last decade there has been impressive development of the Scottish apprenticeship system. Headline indicators for Modern Apprenticeship, including labour market outcomes and student and employer satisfaction, are positive. Apprenticeship numbers have increased; Foundation and Graduate Apprenticeships have been successfully launched, co-ordination in governance is being enhanced, and a review of apprenticeship qualifications – the ‘standards and frameworks’ exercise - initiated. Equity issues have been addressed systematically, and the role of meta-skills in apprenticeships pursued.

Building on this positive record, Scotland now needs to go further to realise the objective of a world class apprenticeship system. While a common skills planning framework has been embraced, the logic of this framework implies common funding principles bearing on both higher education and apprenticeship, and these have yet to be realised. Over the medium term, beyond the current COVID-19 crisis, more attention

will need to be given to adults. The need for a more employer-driven system has been widely recognised, but fully implementing such a system may require more radical reforms than have yet been envisaged. This review will pursue these issues among others. Some immediate priorities are examined and addressed through four recommendations in this review. These recommendations have been considered alongside the new demands imposed by the COVID-19 crisis, and remain valid, in some cases dovetailing with the need for an effective response to COVID-19. The key recommendations are:

- *Introduce demand-led funding for apprenticeship:* In comparison with other countries, Scotland has a skills funding system which is generous to higher education, but relatively unsupportive of apprenticeships, distorting skills provision. It also gives too large a role to training providers in driving the mix of provision. To address these two challenges, Scotland should develop a demand-led apprenticeship funding system, based on an entitlement of apprentices to receive appropriate off-the-job training fully funded by the Scottish government, bringing Scotland into line with other leading apprenticeship countries. The net impact on public expenditure would need to be carefully assessed through a pilot, but might be close to zero, given that it would imply a rebalancing of participation from higher education to apprenticeships, therefore displacing expensive higher education.
- *Establish minimum requirements for the length of apprenticeship programmes and for the proportion of off-the-job training:* A small (currently unquantified) proportion of Modern Apprenticeships are outside internationally accepted norms for quality apprenticeship, in that they are less than one year in length or have no, or very little, off-the-job training. To strengthen the brand of apprenticeship, and building on the valuable recommendations of the Scottish Apprenticeship Advisory Board, minima should be established for the length of programmes and the proportion of programme time to be spent on off-the-job learning, bringing Scotland into line with other leading apprenticeship countries. Linked to this reform, the whole apprenticeship family should be renamed ‘Scottish apprenticeships’.
- *Develop a non-apprenticeship route to the qualifications currently realised through apprenticeship:* For experienced adult workers, Scotland should establish direct access routes to the qualifications currently realised through apprenticeship. This would follow the model of other countries and fill a gap in provision. Such routes would not be apprenticeship programmes, but would require previous relevant work experience. An assessment procedure would be defined for such individuals, assessment bodies identified, and funding arrangements addressed. This approach would also lend itself to the immediate requirements of the COVID-19 crisis, in offering a route to certification for those individuals who have had their apprenticeship programmes interrupted.
- *Establish mastercraftsperson qualifications:* For apprenticeship to be attractive to able young people, it needs to open up future learning opportunities. This means options for transition to higher education, but it also requires pathways to higher level technical qualifications within a professional field. In the German-speaking countries in Europe, this is partly addressed through the ‘master craftsperson’ qualification. This allows qualified apprentices, often with work experience, to acquire higher level professional skills, learn how to run their own small business, and develop skills in training further apprentices. Typically such qualifications are acquired through a free-standing examination, following preparation courses which are optional and can be tailored to the existing skills of the candidate. Scotland should develop such qualifications.

The policy recommendations set out in this report have been reviewed in the light of the COVID-19 crisis. The recommendations remain valid, but two qualifications are important:

- In the medium and longer term, this review argues for increasing the attention given to the upskilling and reskilling of adults, given that it will be difficult to respond adequately to the anticipated extensive changes in skills demand through the training of a diminishing youth cohort. While this conclusion stands, if COVID-19 causes a sharp economic recession and a rapid increase in youth

unemployment, immediate priority will need to be given to the needs of young people, and consideration of how the apprenticeship system can be used to integrate young people into jobs and careers. Therefore, while increased attention to adults in the medium and longer term remains important, this should not come at the expense of youth, especially as first labour market data emerging following the COVID-19 crisis suggest that young workers have been heavily affected.

- Recommendation 3 proposes the establishment of a non-apprenticeship route to the qualifications normally realised through apprenticeship, as a means of recognising the prior learning of adults with substantial relevant work experience. This would be achieved through a free-standing final assessment, divorced from any expectation that an apprenticeship programme has been completed in the normal way. In fact, it may be necessary to establish such a framework as an immediate measure, to provide a way of qualifying individuals who have had their apprenticeship programmes disrupted by the COVID-19 crisis, and who may in some cases have lost their jobs. So immediate and longer-term needs coincide.

1 Introduction: Reform and development in the Scottish apprenticeship system

Over the last decade Scotland has done much to extend the reach of its apprenticeship system and strengthen its foundations. Apprenticeship numbers have increased; new forms of apprenticeship, including Graduate and Foundation Apprenticeships have been established, co-ordination in governance is being enhanced, and a review of apprenticeship qualifications launched. At the same time the Scottish economy is performing well. But, looking ahead, a fast-changing labour market will impose new and sometimes unpredictable demands. Further reform is needed to build an apprenticeship system resilient in the face of change. Alongside an immediate response to the COVID-19 crisis, this will give more focus to adults, enhance the responsiveness to employers, and establish consistent funding principles relative to higher education.

1.1. The challenge for Scotland

Globally and in Scotland, labour markets are changing

In Scotland (United Kingdom), as in other OECD countries, labour markets are changing fast. Diverse factors, including automation, globalisation, a greening economy, outsourcing and offshoring are eliminating some jobs, creating new ones, and changing the shape of many continuing occupations. Work arrangements are evolving, reflecting growth in part-time and temporary jobs, and through the emergence of new forms of work. At the same time, an ageing population is changing the demographic mix of the workforce. In Scotland, while some of these changes involve long-established trends, other factors are wholly new. The impact of Brexit on the Scottish labour market, including through migration, remains uncertain. The possibility of independence for Scotland, with its myriad implications, is under discussion. At the time of writing in mid-2020, the COVID-19 crisis has emerged as a major new shock to the Scottish economy and its skills system, although the full impact over the coming years remains highly uncertain. One of the immediate effects has been to highlight both the potential and the challenges of home and online working, with this increased flexibility contributing to already ongoing changes in work arrangements.

Scotland is therefore seeking to make its skills system resilient

Scotland's skills system needs to adapt and respond to this shifting environment. While specific labour market forecasts are perilous, one certainty is change. The Scottish skills system will therefore need to build *resilience* into its design, so that as labour markets evolve, the supply of skills adapts rapidly, and the most vulnerable are not left behind. In the field of apprenticeship, Scotland has already recognised many of these challenges and done much to address them.

Box 1.1. OECD reviews of vocational education and training: Methodology for this review.

In a sequence of more than 40 country studies, the OECD has been reviewing vocational education systems around the world since 2007. The country studies cover Australia, Austria, Belgium (Flanders), Canada, Chile, China, Costa Rica, the Czech Republic, Denmark, Egypt, Estonia, Germany, Hungary, Iceland, Ireland, Israel, Kazakhstan, Korea, Mexico, the Netherlands, Norway, Romania, Slovak Republic, Spain, Sweden, South Africa, Switzerland, the United Kingdom (England, Northern Ireland and Scotland) and the United States. Two major reports draw together the policy lessons from this experience – these are *Learning for Jobs*, published in 2010, and *Skills beyond School* published in 2014.

For this review of Scotland, Skills Development Scotland (SDS) first prepared a background report describing the Scottish apprenticeship system for the OECD review team. Equipped with that report, an OECD team visited Scotland on 24-28 November 2019 and met with a wide variety of stakeholders, including policy officials, students, employers and teachers working in the system. The review is therefore based on documentary evidence supplemented by the more qualitative evidence that emerged from the visit to Scotland. It also draws on the extensive range of comparative international evidence collected by the OECD on apprenticeship and technical skills education.

Source: (OECD, 2010^[1]) (OECD, 2014^[2]), www.oecd.org/education/vet.

The focus of the review is on apprenticeship

Skills Development Scotland (SDS), an agency of the Scottish Government, requested that the OECD undertake this review (see Box 1.1), focusing on four programmes which together constitute the 'apprenticeship family'. The review will describe how labour markets are changing globally and in Scotland,

assess how the apprenticeship system is responding, and identify the policy fields where more needs to be done. It will also set out some key immediate policy priorities. Chapter by chapter, this report will cover the following material:

- Chapter 1, here, will describe the background to the review, and outline the context in terms of the Scottish economy, labour market developments and the skills system. It will describe the apprenticeship system, and progress and developments over recent years.
- Chapter 2 will describe the labour market context, both in Scotland and globally, and identify some major labour market trends impacting on the Scottish apprenticeship system now and in the future.
- Chapter 3 will identify ways in which the apprenticeship system in Scotland needs to respond to the labour market developments, setting out what Scotland has already achieved, and the areas where more needs to be done.
- Chapter 4 will propose some key policy priorities designed to improve the resilience of the Scottish apprenticeship system. The chapter identifies the challenges, sets out recommendations to address them, and describes how they might be implemented.

1.2. Prior to the COVID-19 crisis, a growing economy with high levels of educational attainment

The Scottish economy had performed well

In many respects the Scottish economy, and its labour market, were performing well prior to the COVID-19 crisis. GDP was well above the levels achieved prior to the economic crisis. (Scottish Government, 2016^[3]). Unemployment was at historically low levels, with an overall rate of 3.5% in the final quarter of 2019 compared to 3.8% in the United Kingdom as a whole (Scottish Government, 2020^[4]). In Europe only Germany, the Czech Republic and the Netherlands had significantly lower youth unemployment rates. Scotland also had higher rates of youth employment than the UK as a whole (Scottish Government, 2019^[5]).

The unfolding COVID-19 crisis is now changing the picture

The COVID-19 crisis has inflicted a sudden and massive shock. Scottish monthly GDP fell by 18.9% in April. Nearly three quarters of a million jobs in Scotland, or 30% of the eligible workforce, had been furloughed, with government support, according to July 2020 figures. Some of those currently furloughed may ultimately lose their jobs, and the Scottish government is forecasting that unemployment will rise from 4% at the beginning of the pandemic to between 10 and 15%, taking one to three years to recover (SDS, 2020^[6]). Huge uncertainties remain, both over the development of the pandemic itself, and the medium and longer term impacts.

Many other longer-term labour market challenges remain

Independently of the COVID-19 crisis, long term challenges exist. In-work poverty has been increasing; some part-time workers would prefer full-time work; university graduate skills are quite often underutilised; zero hours contracts are a challenge (Scottish Government, 2019^[5]). A declining working age population, alongside challenges in attracting skilled migrants following Brexit, may make it hard to fill future potential skills gaps. In response, Scotland's labour market strategy (developed well before the COVID-19 crisis) identifies in-work poverty, job quality, inequality of access to labour market opportunities as challenges. The strategy notes the target of inclusive growth, and proposes to realise that goal through fair work and jobs, and investment in skills (Scottish Government, 2016^[3]).

High levels of postsecondary attainment coexist with challenges in school performance

By many measures, the Scottish population is highly qualified. In 2019, half (50.4%) of those aged 25-64 had tertiary qualifications at Scottish Credit and Qualifications Framework (SCQF) 7 or above

(see Table 1.1) (EUROSTAT, 2020^[7]). In 2018/19, 38% of school leavers were entering higher education (Scottish Government, 2020^[8]). Between 2009/10 and 2018/19 university student numbers (at full-time equivalents) increased to around 210,000, while college student numbers remained stable at around 130 000. The very high level of tertiary attainment relative to other countries sits on top of school performance, measured by PISA, which is no more than average relative to the OECD. In PISA 2018, Scotland's mean score for reading places it at a similar level to England (United Kingdom), behind five top performing countries. Scotland's mean score for mathematics places it behind England and 17 other countries. Its mean score for science was also below that of England and 12 other countries (Scottish Government, 2019^[9]).

Postsecondary education and training providers are diverse

Scotland has a well-regarded university system, with 15 universities and three other higher education institutions in Scotland, with tuition free to most full-time undergraduate Scottish students. A college system, dominated by 26 regionally based further education (FE) colleges, has a major role in delivering higher education qualifications, notably the Scottish Higher National Certificate (HNC) and Higher National Diploma (HND) qualifications in the SCQF 7 and 8 (see Table 1.1). For Modern Apprenticeship, SDS contracts with about 280 lead training providers, who may and often do subcontract some of the training to other providers. Of these 280, only about 14% are FE colleges (SDS, 2019^[10]).

Table 1.1. The Scottish Qualifications Framework (SCQF) and the International Standard Classification of Education (ISCED) compared

SCQF Levels	Apprenticeship family	National qualifications	Higher education	ISCED levels
12			Doctorate	Level 8
11	Graduate, Modern		Master's Degree	Level 7
10	Graduate, Modern		Honours Degree	Level 6
9	Modern		Ordinary Degree	
8	Modern		HND	Level 5
7	Modern		HNC	Level 5
ISCED 4 level (post-secondary non-tertiary) not used in Scotland				Level 4
7	Modern	New Advanced Higher, Advanced Higher, Scottish Baccalaureates		Level 3
6	Modern, Foundation	New Higher, Higher, Skills for Work Higher		
5	Modern (lowest possible SCQF level) Level 4 and 5 work-based			
		National 5 (Intermediate 2) Skills for Work National 5 (Credit Standard Grade)		Level 2
4	Level 4 and 5 work-based learning	National 4 (Intermediate 1) Skills for Work National 4 (General Standard Grade)		
1-3				

Source: (Scottish Government, 2015^[11]).

The COVID-19 crisis could have strong implications for the apprenticeship system

During Spring 2020, at a late stage in the preparation of this report, it became clear that the COVID-19 crisis would have a large and immediate impact on the Scottish economy, the labour market and

apprenticeship. Some initial reflections on the potential impact of COVID-19 on apprenticeship are set out in Box 1.2. However, as the effects of the COVID-19 crisis were still unfolding at the time of writing, this report does not aim to provide a comprehensive and up to date analysis of the ongoing and foreseen impacts of the crisis on apprenticeships and the labour market. Nonetheless, the whole of this report has been reviewed in the light of the COVID-19 crisis, so as to ensure that its conclusions and recommendations remain valid.

Box 1.2. The Impact of the COVID-19 crisis on apprenticeship, and potential responses

Apprenticeship systems, including that of Scotland, are extremely vulnerable to the COVID-19 crisis, partly because of the immediate disruption caused by the lockdown, and partly because employers tend to cut back on apprenticeship training during economic recessions, such as that which may flow from the COVID-19 crisis.

In the short term, in weeks and months, the main challenge is to support existing apprentices in the context of the lockdown and the associated sudden shock to the economy. These apprentices will in most cases have their apprenticeship programmes disrupted because the lockdown in force in Spring 2020 prevented them from attending workplaces and training locations. Solutions include agreed breaks in the apprenticeship programme and supplementary online learning of various types. For those apprentices who are made redundant, there is already an incentive system in place to encourage employers to take on such apprentices as new recruits, in the ‘Adopt an Apprentice’ system. Financial incentives on employers may have to be urgently re-examined, ideally to encourage the retention of apprentices with their current employers, as re-employment will be challenging in the current climate. Final assessment regimes may also need to be reconfigured to allow for certification, or perhaps partial certification, of apprentices who have been made redundant part way through their apprenticeship programmes (this point is addressed in Chapter 4 under recommendation 3).

In the medium term, in months and years, even given a relaxation of the lockdown in place in Spring 2020, a significant economic downturn is taking place, with particularly sharp impacts in sectors such as restaurants, international tourism and aviation. Much evidence has shown that employers become much less willing to offer apprenticeship during recessions (Brunello, 2009^[12]). To sustain apprenticeship during downturns, countries have several tools. One option is financial incentives for employers to take apprentices, adopted by many countries such as France and Austria, but probably with modest effect sizes (Kuczera, 2017^[13]). Some countries, such as the Netherlands, maintain a college-based route (supported by work placements) to the qualifications which can also be obtained through apprenticeship. This means that during recessions, there is an alternative option to apprenticeship

In the longer term, in the coming years, lasting effects could emerge from the current, shorter term experience of lockdown, social distancing and travel restrictions. This is because many different human and physical systems for working and learning will have adapted to the current constraints, primarily through the use of different online communication tools. In many fields, such as online retailing, the impact of the crisis is likely to accelerate a pre-existing trend. The long term effect is likely to be a step change in the use of online and virtual platforms for both learning and working. This means that apprenticeship may need to adapt quickly to a world of learning and work in which, increasingly both the workplace and the classroom are virtual rather than physical locations. Some apprenticeships could at least in part become *virtual apprenticeships*. While there is extensive experience of online education and training, there is less experience with ICT-based work-based learning (Schröder, 2017^[14]).

Source: (Brunello, 2009^[12]) (Kuczera, 2017^[15]) (Schröder, 2017^[14]).

1.3. A snapshot of apprenticeship in Scotland

Apprenticeship in Scotland has been growing

Modern Apprenticeships have been in place since 1994, and have grown in recent years; relative to 2014/15, Modern and Graduate Apprenticeship starts taken together increased by 15% to reach more than 29 000 in 2019/20 (SDS, 2020_[14]). The influential Wood report (Commission for Developing Scotland's Young Workforce, 2014_[16]) prepared in the aftermath of the financial crisis, was understandably much concerned with young people. It argued for much closer links between the senior school phase and employers, and an expansion of apprenticeship with a focus on young people, recommendations well-reflected in recent apprenticeship policy developments, particularly through the development of Foundation Apprenticeships and work-based learning at SCQF levels 4 and 5 (initiatives described below).

Table 1.2. Apprenticeship starts by field of study

Number of starts in most recent year

Modern Apprenticeships *		Foundation Apprenticeships **		Graduate Apprenticeships ***	
Occupational group	Number of starts	Apprenticeship Framework	Number of starts	Apprenticeship Framework	Number of starts
Construction & Related	6 417	Social Services Children and Youth	1 028	Business Management	294
Sport, Health & Social Care	5 446	Social Services & Healthcare	494	IT: Software Development	126
Hospitality & Tourism	2 388	Engineering	469	Civil Engineering Levels 8 and 10	125
IT & Other Services	2 352	Creative and Digital Media	353	Engineering: Design & Manufacture	123
Retail & Customer Service	1 708	Business Skills	318	Construction & the Built Environment	64
Engineering & Energy Related	1 604	IT: Software Development	189	Cyber Security Level 10 (pilot)	55
Administration & Related	1 558	Civil Engineering	184	IT: Management for Business	48
Transport & Logistics	1 452	Accountancy	132	Cyber Security Level 11	25
Food & Drink	1 217	Scientific Technologies	108	Engineering: Instrumentation, Measurement	24
Automotive	1 159	IT: Hardware/ system support	69	Business Management: Financial Services	20
Management	723	Food and Drink Technologies	60	Data Science (Pilot)	17
Financial Services	663	Financial Services	41		
Personal Services	606				
Animal Care, Land & Water based	238				
Creative & Cultural Skills	161				
Other Manufacture	152				
Chemicals & Biotechnology Related	31				
Total	27 875	Total	3 445	Total	921

Note: * Starts in 2019/20 financial year (to April 2020); ** starts at the beginning of the 2019-20 school year; * Starts in 2018/19 financial year (to April 2019).

Source: SDS (2020_[14]); SDS (2019_[16]); SDS (2020_[17]).

There are now four programmes in the apprenticeship family

These four programmes include three forms of apprenticeship and one closely related programme:

- **Modern Apprenticeships** are diverse in occupational sector, as in many other apprenticeship countries. Not quite one quarter of Modern Apprenticeships are in construction and related fields. 20% are in health, social care and sport, the next largest category (see Table 1.2). Modern apprenticeship extends across levels 5-11 in the SCQF, or ISCED 3-7, a much wider range than many international comparators, where apprenticeship is more often found primarily at ISCED 3 (see Table 1.3). Almost two thirds of modern apprenticeship starts are at levels 5-6, and another quarter at SCQF level 7. Most apprenticeship frameworks are anchored to the delivery of a regulated vocational qualification, largely those established by the Scottish Qualifications Authority (SQA); frameworks are also required to include a set of core cross-curricular skills. Off-the-job training and assessments are delivered by training providers contracted by SDS. Apprenticeships for those aged 16-19 are given priority, reflected in full funding support for off-the-job training. For older apprentices, training providers receive lower rates of subsidy, leaving employers to make up the shortfall – this is discussed further in Chapter 4, section 4.2. Despite the priority given to youth, the proportion of modern apprentices aged over 24 has increased from just 21% of starts in 2013/14 to 39% in 2019/20. In the same year 22% of starts were for those aged 20-24 and 39% for those aged 16-19 (SDS, 2020_[17]).
- **Foundation Apprenticeships**, introduced in 2014, are a work-based option for pupils entering the senior phase of school, primarily for 16-17-year olds, to be pursued over two years. Typically, this involves students going to a workplace one whole day or a couple of afternoons a week for a programme delivered through a three-way partnership between the ‘home’ school where the student is enrolled, employers, and a local college that delivers the off-the-job element of the programme. As the programme is relatively demanding, many of the students aim to continue to university, but other options would include Graduate and Modern Apprenticeships. Foundation Apprenticeships lead to a level 6 SCQF qualification, and are delivered alongside traditional school qualifications such as Highers and National 5s at level 6. Just over four out of ten foundation apprenticeships are in fields related to social services and healthcare (see Table 1.2).
- **Graduate Apprenticeship**, launched in 2017/18, is a new programme undertaken in cooperation with selected universities in partnership with employers leading to a university degree. The programmes are at SCQF 8-11, but the overwhelming majority of students are at levels 10 and 11. Students spend most of their four-year programmes with their employer, with different release schedules for education at the university. About half of the higher education institutions in Scotland are already involved in the programmes. The programme has grown rapidly, so that in the third year of delivery in 2019/20 there were 1 160 starts on the programme (SDS, 2020_[14]). Graduate apprenticeships are mostly provided in the fields of business management, engineering and IT (see Table 1.2). The programme has been informed by the experience of similar programmes in different countries.
- **Level 4 and 5 work-based learning**, newly launched as a pilot in 2018, is a school programme for 16-17-year olds involving practical work linked to an employer. It aims to embed accredited work-based learning within the senior phase of secondary school, allowing employers to make a structured contribution to school learning. It is intended to offer a pathway to other work-based qualifications, including apprenticeship. It is currently still in the pilot phase, and in the 2019/20 phase some hundreds of pupils will pursue programmes in construction, hospitality and automotive in selected schools across Scotland. The next step will be to develop a new qualification associated with the programme.

Table 1.3. Apprenticeship starts by SCQF level

Number of starts in most recent year

Level	SCQF 5	SCQF 6	VQ 3	SCQF 7	SCQF 8	SCQF 9-11	Total
Modern Apprenticeship*	6 999	10 793	12	7 751	811	1 509	27 875
Graduate Apprenticeship*						1 160	
Foundation Apprenticeships**		3445					
Total	6 999	14 238	12	7 751	811	2 669	31 320
As a % of total	22%	45%	0%	25%	3%	9%	100%

Note: * Starts in 2019/20 financial year (to April 2020); ** starts at the beginning of the 2019-20 school year.

Source: SDS (2020_[17]); SDS (2020_[14]).

1.4. Key strengths and challenges of apprenticeships in Scotland

Apprenticeship, in Scotland and across the OECD, has many benefits

It has been widely recognised in studies by the OECD and many other bodies (OECD, 2018_[18]), that apprenticeship, as a carefully structured blend of learning and working, is a particularly powerful way of preparing individuals for jobs, smoothing the path for young people into employment, and with potentially large economic benefits for employers — see Kuczera (2017_[13]). Apprenticeship depends heavily on work-based learning, which is a particularly effective means of developing both hard skills using the latest industry tools and techniques, and interpersonal skills such as teamwork and negotiation, all in a real-world environment, under the guidance of an experienced practitioner. These multiple benefits of apprenticeship are observed across many countries, and the Scottish apprenticeship system shares fully in them.

The outcome indicators for Modern Apprenticeships are positive

Most of the headline indicators for Modern Apprenticeship are positive. Around three quarters of apprentices complete their programme and of these 90% were in work six months after completion (SDS, 2016_[18]). Four out of five rate the quality of training they receive as 8 or more out of 10, and 96% would recommend their apprenticeship to others (SDS, 2019_[19]). In a 2015 survey of employers who had taken Modern Apprentices, more than 90% reported that the apprentices, following completion of their programmes, were better able to do their job; most employers also reported that they were better able to work with others (SDS, 2015_[20]).

First indications are that the new programmes are developing well

- In the first three years of the programme over 3000 students pursued Foundation Apprenticeships; 99% of those who started in the first year are now in education, training or employment (SDS, 2019_[21]).
- The development of Graduate Apprenticeships, while recent, demonstrates how the strong pedagogical principles of apprenticeship can be applied at tertiary level. They have expanded rapidly to offer programmes in 14 different fields, mostly in technical fields including engineering, cybersecurity and information technology, but also in accounting and business management (which appeared particularly attractive to older students). In 2018/19 346 employers were engaged in the programme. Of those starting in 2018/19 two thirds were male; half were over 24, and nearly 28% over 34. Just over 10% were allowed, through recognition of prior learning to enter the second or third year of the programme (SDS, 2019_[16]; SDS, 2019_[9]).
- Initial evaluation of the level 4 and 5 initiative shows that it has been successful in improving employability skills and work-readiness, as well as successfully developing the meta-skills of

self-awareness, social and innovation skills. The evaluation suggested a need to clarify the link to the SCQF, and ensure that staff have the skills and other resources to implement the scheme successfully (SDS, 2019^[22]).

Steps have been taken to address equity challenges.

The Apprenticeship Equality Action Plan sets out targets for 2021 in respect of gender, ethnicity and disability. While the disability target is being over-achieved, and progress is being made on ethnicity, progress on the gender target – that 60% or less of apprenticeship frameworks should have a gender balance of more than three males to each female – has been halting. Foundation and Graduate Apprenticeships are being closely monitored in respect of equality groups. (SDS, 2020^[17]; 2019^[19]).

Scotland is giving attention to meta-skills

Throughout a range of programmes, SDS is placing an emphasis on ‘meta-skills’ - a category which includes self-management, social intelligence and innovation. The rationale is first, that such skills are of increasing importance because the exercise of such skills cannot be easily replaced by the work of machines; and second, because such skills are more readily developed through work-based learning than in a classroom environment. The aim is to ensure their development across the range of apprenticeship programmes, alongside occupation-specific skills. A typology of meta-skills has been developed (Skills Development Scotland and Centre for Workbased Learning, 2018^[24]).

A review of apprenticeship qualifications has been launched

Through the ‘review of standards and frameworks’, SDS, in co-ordination with the Scottish Government and the SQA, has launched a review of apprenticeship qualifications. Currently each apprenticeship framework is anchored in a specific qualification or qualifications, primarily SQA qualifications, but also some from the other major awarding bodies including City and Guilds. The new review seeks to gradually replace existing frameworks with a new system of apprenticeship programmes and qualifications possibly linked to occupational standards. The standards will be developed by technical expert groups that will include employers, trade unions, apprentices and representatives of wider society. What remains to be decided is the extent to which the new standards will appear in the form of a qualification supported by the SQA or another awarding body, or alternatively a free-standing standard. One associated objective is to align different vocational qualifications, potentially allowing for the realisation of qualification outcomes through both apprenticeship and non-apprenticeship routes (SDS, 2019^[25]); (SDS, 2019^[9]).

The Enterprise and Skills Review seeks to improve co-ordination in the skills system

In Scotland, as in most countries, a range of government agencies have responsibility for skills policy. While there are commonly good reasons for such divided responsibilities, it can sometimes risk policy incoherence. Sometimes this is resolved through the establishment of lead bodies with co-ordinating responsibility, involving employers and trade unions as well as government and its agencies.

The two lead skills agencies are SDS and the Scottish Funding Council (SFC). SDS is not only responsible for apprenticeships, but also pre-employment training programmes, the Employability Fund, and a range of other smaller programmes. It also delivers careers information advice and guidance. The SFC funds colleges and universities for teaching, research, and as such has a budget several times larger than SDS. Among other agencies, Education Scotland is primarily responsible for school and early childhood education while the SQA has responsibility for the development and accreditation of qualifications in Scotland. All these bodies are closely involved, under the umbrella of the Scottish Government, in delivering skills. In a major initiative to improve co-ordination, the Enterprise and Skills Review seeks to align the roles of SDS and the SFC, in respect of planning, commissioning and evaluation, such that they

should have joint responsibility and accountability for skills delivery. A sequence of practical steps is envisaged to this end (Scottish Government, 2019^[26]).

A new initiative seeks a more precise definition of apprenticeship

Many countries establish some basic regulatory principles, sometimes set out in legislation, of what is required in any apprenticeship. The recently created Scottish Apprenticeship Advisory Board (SAAB) has articulated a set of 14 principles, recommended as characteristics of apprenticeship. These are set out and discussed in Chapter 4, section 4.3. These principles are welcome, and Chapter 4 argues that in certain respects they could usefully go further.

Evaluation and pilots are widely used

Strong apprenticeship systems are guided by evidence. In Scotland, many recent initiatives have involved pilot initiatives subject to evaluation. All three new programmes – Foundation, Graduate and level 4 and 5 – have been subject to one or other form of evaluation, as set out in the paragraph above describing the first indications of outcomes. Regular statistics are published on apprenticeships, and there are occasional surveys of employers and apprentices to explore their experience of the apprenticeship system and its outcomes, including labour market outcomes. While this is commendable, many of the evaluations appear to be directly undertaken in one way or another by SDS, which is also directly responsible for the initiatives. Building upon and complementing SDS's current quality assurance arrangements that require all non-college training providers to demonstrate they are meeting SDS quality standards, Education Scotland carries out external reviews of off-the-job training in modern apprenticeships (Education Scotland, 2020^[20]). In their reviews, Education Scotland assesses the performance of the off-the-job training components of modern apprenticeships by industry sector, focusing on the contribution made by training providers and the quality of the training they deliver. In education and training it is widely understood that fully independent evaluation is a key principle of good governance. Future evaluations might usefully be undertaken by fully independent bodies, following Education Scotland's example.

Despite impressive progress, some large challenges remain

Impressive progress has been made over the last decade in developing and improving apprenticeship in Scotland, and in launching a sequence of initiatives which, while still at an early stage of development, will, when they come to full fruition, will do much to ensure the resilience of the system. But in several respects, the Scottish apprenticeship system needs to go further to face the challenge of a fast-changing world of work. While a common skills planning framework between SDS and the SFC has been embraced through the Enterprise and Skills Review, the full logic of a common skills policy, implying common funding principles bearing on both higher education and apprenticeship, has yet to be realised. Recent reforms, following the Wood report and the aftermath of the financial crisis rightly emphasised the needs of young people. While the COVID-19 crisis may reinforce a short-term emphasis on young people, future reforms will have to give much more attention to adults. The need for a more employer-driven system has been widely recognised, not least in the Standards and Frameworks initiative, but fully implementing such an employer lead may require more radical reforms than have yet been envisaged. This review will pursue these issues among others.

1.5. Conclusion

This chapter has described the objective of this OECD review, as an exercise, commissioned by SDS, seeking to improve the resilience of the Scottish apprenticeship system, faced as it is by extensive change in the labour market environment. The context for the study is a Scottish economy which had, up to the time of the COVID-19 crisis, generally performed well, with a low level of youth unemployment. The

workforce has one of the highest levels of tertiary attainment in the world, although school performance as measured by PISA is not far from the OECD average. The review looks at the ‘apprenticeship family’, four programmes overseen by SDS. These include the long-established Modern Apprenticeship programme and three smaller and much more recent initiatives – Graduate Apprenticeships undertaken in co-ordination with higher education institutions, Foundation Apprenticeships, and level 4 and 5 work-based learning.

Many of the headline indicators for the performance of the system are good, and Scotland has made impressive progress in reforming and developing its apprenticeship system over recent years, partly through the new apprenticeship programmes, but also through new initiatives, to overhaul apprenticeship qualifications through the standards and frameworks exercise, to enhance equity through the equality action plan, to improve co-ordination with other elements of the skills system through the Enterprise and Skills Review, and to improve the definition of apprenticeship through the work of the Scottish Apprenticeship Advisory Board. Despite this progress, this review will argue that in some respects reform has not gone far enough; later chapters will argue that more should be done to enhance minimum expectations of apprenticeship, to respond to employer needs and deliver funding on the same basis as higher education, to develop more effective ways of recognising prior learning, and to build pathways to further learning for those who successfully complete apprenticeships. While the COVID-19 crisis will also impose many short-term pressures on the apprenticeship system, including a need to provide immediate support to young people and existing apprentices, these longer term strategic requirements for apprenticeship remain valid.

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2 The changing world of work

This chapter describes four established labour market trends, bearing closely on skills policy that can be identified in Scotland and other OECD countries. First, there is increasing flux in the demand for jobs and skills, with automation ‘hollowing out’ more routine midlevel tasks and jobs. Second, in Scotland, like many OECD countries, an aging workforce means that the relative importance of lifelong learning is increasing. Third, there are some specific shifts in skills demand, notably towards higher level technical and vocational skills, and growth in the relative importance of social and emotional skills. Fourth, growth in part-time and temporary work, platform work, and zero hours contracts mean that increasing numbers of workers lack an employer with a long-term interest in their skills development. Beyond these established trends, the COVID-19 crisis is now imposing sudden, unexpected and large impacts on the labour market, with longer term effects still difficult to assess.

2.1. How labour markets are changing

Four large labour market trends can be identified.

Independently of the recent shock imposed by the COVID-19 crisis, the world of work was changing fast, and forecasts imply much more change to come. This has large implications for the required shape of the Scottish apprenticeship system. This chapter looks at labour markets in Scotland (United Kingdom) and other OECD countries, and describes four large ‘megatrends’ (i.e. large scale social and economic trends that are shaping the environment in which skills systems seek to thrive and adapt (OECD, 2019^[1])). These are:

- *Changing demand for jobs and skills*, driven by automation, globalisation, outsourcing, and shifts towards a greener low carbon economy.
- *Demographic trends including migration*. Scotland, like many OECD countries, faces population and workforce aging, so the importance of adult upskilling and reskilling is rising.
- *Specific shifts in skills demand* – notably in favour of higher level technical and vocational skills, and growth in the relative importance of social and emotional skills.
- *Trends reducing the availability of employer support for training and skills development*. Factors such as growth in part-time work, platform work, and zero hours contracts mean that growing numbers of workers lack an employer with a long-term interest in their skills development.

Global labour market developments provide a context for looking at Scotland

Wider OECD labour market developments are reviewed here, alongside those of Scotland, for two reasons. First, these global developments provide an indication of the trends that are well-entrenched globally and are therefore more likely to continue in Scotland in the future. Second, they provide a comparative framework to highlight the distinctive features of Scotland.

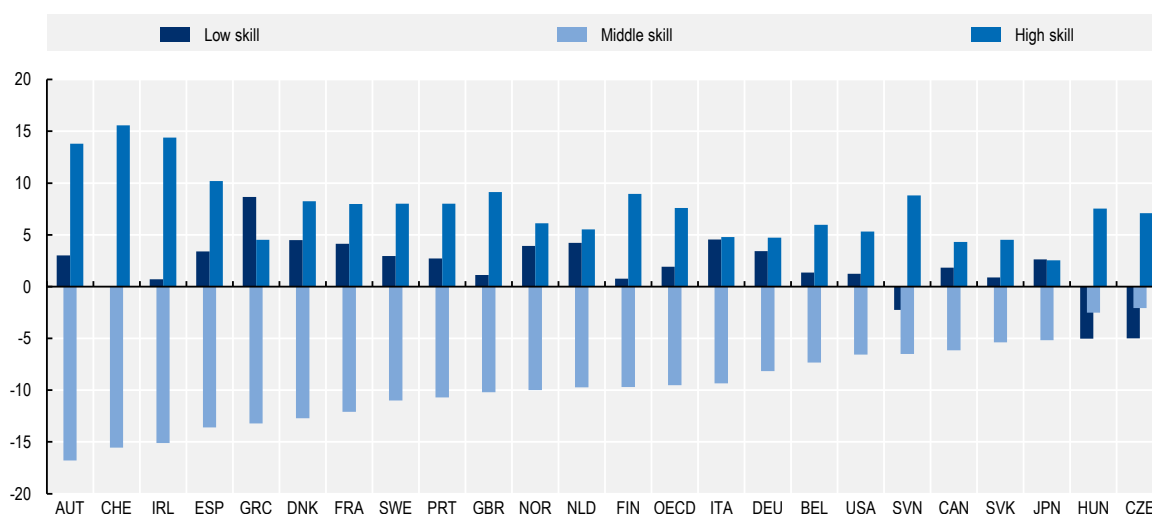
2.2. Increasing flux in the demand for jobs and skills

Automation and computerisation are changing labour markets

Throughout the 20th century, technological change favoured more skilled workers, a trend identified as ‘skill-biased technological change’. More recent decades have demonstrated ‘routine-biased technological change’ in which computers increasingly substitute for the more routine activities of workers. This has led to a ‘hollowing-out’ of labour markets as routine mid-skill jobs such as book-keepers have become relatively less important in the labour market, while some high skill jobs, particularly in health care and education, have increased in importance (and often now require higher level qualifications), as well as some low-skill jobs, such as those providing basic care services for the elderly. Certain jobs and job tasks resist computerisation for several reasons. Some require high level analytical skills, like a research scientist. Some involve subtle interpersonal skills, like a psychological counsellor. Others, although not usually regarded as particularly skilled, may involve the navigation of unstructured environments, such as a house cleaner. Such navigation, has, so far, largely resisted automation (OECD, 2019^[1]) (Berger, 2016^[2]). This hollowing-out has left a labour market more polarised between high and low skill jobs across nearly all OECD countries, including the United Kingdom (see Figure 2.1).

Figure 2.1. Hollowing out' in OECD labour markets

Percentage point change in share of total employment, 1995 to 2015



Note: High-skilled occupations include jobs classified under the ISCO-88 major groups 1, 2, and 3., that is, legislators, senior officials, and managers (group 1), professionals (group 2), and technicians and associate professionals (group 3). Middle-skilled occupations include jobs classified under the ISCO-88 major groups 4, 7, and 8, that is, clerks (group 4), craft and related trades workers (group 7), and plant and machine operators and assemblers (group 8). Low-skilled occupations include jobs classified under the ISCO-88 major groups 5 and 9, that is, service workers and shop and market sales workers (group 5), and elementary occupations (group 9).

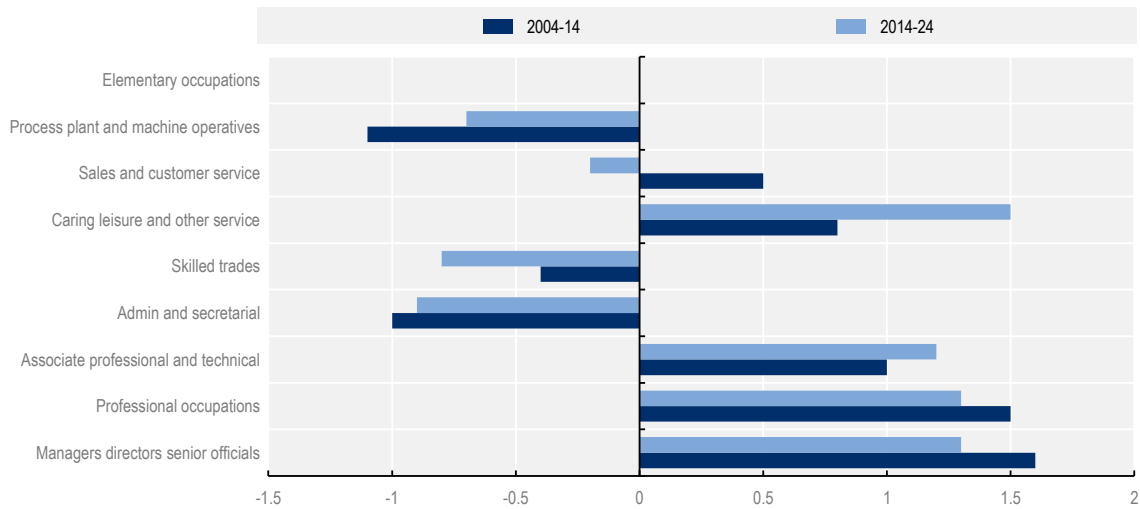
Source: (OECD, 2017_[1]).

In Scotland, some mid-level jobs, including skilled trades, are in decline

'Hollowing out' of mid-level jobs can also be observed in Scotland, see for example Rogers and Richmond (2015_[2]). SDS forecast that mid-level occupations, representing 31% of jobs in 2019, will decline to 24% of all jobs by 2029, with most of the relative growth occurring in lower level occupations (SDS, 2019_[2]). A separate review of UK skills demand between 2004 and (projected) to 2024, found that in Scotland, the skilled trades, and administrative and secretarial positions will show declines, with sales and customer service also projected to lose jobs (see Figure 2.2 and UKCES (2016_[3])). But the scale of these changes needs to be kept in perspective. Although, for example, the numbers of jobs in the skilled trades is forecast to fall by 1.6% annually between 2014 and 2024, many vacancies for young people in these trades will be available, as older workers retire.

Figure 2.2. Occupational trends in Scotland

Average annual percentage change in numbers employed in different occupational sectors (projected for 2014-24)



Note: For elementary occupations zero change was recorded in both periods so no bar is shown.

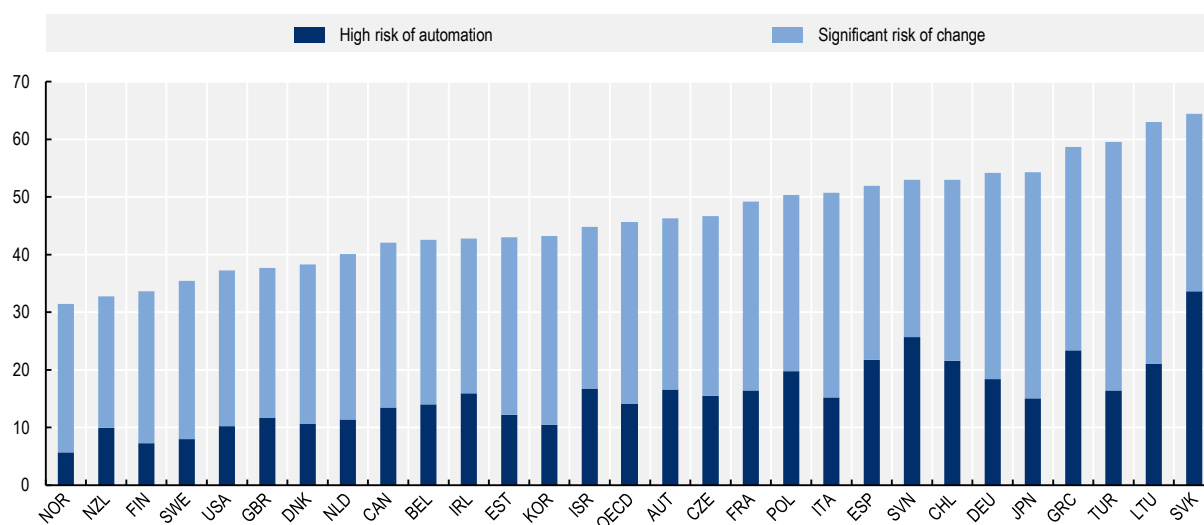
Source: (UKCES, 2016^[3]).

Automation will eliminate some jobs, create others

Sectors like education and health that so far have resisted extensive computerisation, and have shown substantial employment growth, may in the future be more radically affected by automation. Automated processes can now be used to diagnose disease, undertake translation and interpretation, and even news services can be partially automated (Berger, 2016^[4]). However it would be wrong to conclude that overall employment will contract substantially, as automation creates some jobs, while eliminating others. Recent OECD estimates find that across the OECD only 14% of existing jobs are at risk of *complete* automation (Nedelkoska, 2018^[4]). In the United Kingdom the figure is 12% (see Figure 2.3). An analysis of the risk to jobs of automation across the UK suggests that Scotland's labour market has a similar level of vulnerability as the United Kingdom as a whole (Thomas, 2016^[5]). Often, automation will redefine job roles, so that the more routine tasks are automated away, leaving the job role more focused on the interpersonal or high-level analytical elements that cannot be automated. In the United Kingdom, 26% of jobs are estimated to be at risk of such significant changes (see Figure 2.3).

Figure 2.3. Estimating the impact of automation

The proportion of jobs that may be affected by automation



Note: Jobs are at high risk of automation if the likelihood of their job being automated is at least 70%. Jobs at risk of significant change are those with the likelihood of their job being automated estimated at between 50 and 70%. Data for Belgium correspond to Flanders and data for the United Kingdom to England and Northern Ireland.

Source: OECD calculations based on the Survey of Adult Skills (PIAAC) (2012); presented in Nedelkoska and Quintini (2018^[5]).

Globalisation is a factor

In OECD countries, imports of goods manufactured in some emerging economies have increased, displacing some parts of manufacturing industry. Looking to the future, the impact on labour markets of such a continuing trend will be modest. Manufacturing employment in most OECD countries has already fallen dramatically, often because of automation. In Scotland, manufacturing employment is now just 7% of all employment, a small fraction of what it was a generation ago (NOMIS, 2019^[6]). This means that the numerical impact of losing a further proportion of manufacturing jobs would be limited. However, because of multiplier effects, the local impact of a loss of manufacturing jobs, for example through a factory closure, may be more substantial.

Outsourcing to low-wage countries is also at work.

Outsourcing of jobs and tasks to other lower-cost countries is also taking place. This involves either subcontracting some types of work, such as accounts, or directly establishing a subsidiary, where the work is carried out, in a low-cost country. In fact, most research suggests that the impact of this factor is modest, certainly much smaller than automation. Moreover, one effect of automation is that low skilled tasks can often be automated, rather than outsourced to a low wage country, so automation actively competes with outsourcing (OECD, 2019^[11]). So outsourcing, alongside automation, works to replace or restructure jobs which involve more routine tasks.

2.3. Demographic trends including migration

Scotland's population of working age is set to decline

In Scotland, the population of working age is set to fall from 3.545 million in 2020 to 3.475 million in 2040. Over the same period, the youth cohort aged 15-29 is forecast to decline from 998 to 933 thousand (Office for National Statistics 2019, n.d.^[7]). Demographic challenges of this type are widely shared across the OECD (OECD, 2017^[8]). For Scotland, an additional uncertainty is the scale of net migration following Brexit. According to the Annual Population Survey (Scottish Government, 2018^[8]), there were just under 200 000 non-UK nationals in the Scottish workforce in 2018, and although numbers had increased fast over the preceding decade, they remained broadly stable between 2017 and 2019, with a dip in numbers in 2018 (National Records of Scotland, 2020^[4]). EU non-UK nationals in 2018 represented more than 10% of employment both in the food and drink and in the tourism sectors. Given fewer young labour market entrants, and doubts over how far migration will fill skills gaps, Scotland will need to grant a greater role for upskilling and reskilling, relative to initial education and training, in developing the skills of its workforce.

2.4. Specific shifts in skills demand

The COVID-19 epidemic will have a large impact

At the time of writing in mid-2020, the full impact of the COVID-19 crisis on the Scottish economy and labour market demand is hard to predict, but will be significant. Some short-term effects of the lockdown in place in Spring 2020, particularly on travel, hospitality, entertainment and tourism are clear. The longer-term impact, once the epidemic is over, is harder to predict. One possibility is that, following an extensive forced exercise in working and learning from home, many working and learning systems will have adapted, and therefore not return to a reliance on travel, even when that becomes much easier, and continue to make greater use of telework and online learning arrangements. Wholesale closures of education and training institutions over extensive periods of time will force innovation in the use of distance learning technologies. The implications for apprenticeship in Scotland were considered in Chapter 1.

Addressing climate change will affect skills needs

Scotland has legislated to address climate change by committing to a carbon net-zero Scotland by 2045 (Scottish government, n.d.^[9]), although some have argued that the targets are not ambitious enough. Measures to reduce carbon emissions have major labour market implications. Some sectors like oil and gas, cattle farming and aviation could lose jobs. Others, concentrating on renewable energy, including insulation measures, wind and solar power will grow. Sectors involving responses to climate change, such as flood and water management, will also develop quickly. This will create a further need for reskilling and some upskilling. But the overall effect on jobs may be positive: Germany's transition to a greener economy appears to be associated with higher employment growth and a slight increase in wages (Janser, 2018^[10]). The COVID-19 crisis, with its immediate and dramatic impact on aviation and personal road travel, may entrench more environmentally-friendly habits.

Social and emotional skills are resistant to computerisation

One effect of computerisation is to increase the *relative* importance of human skills that are difficult to computerise – notably social and emotional skills – variously also called '21st century', or 'interpersonal' skills. Scotland's terminology of 'meta-skills' is closely akin to these categories, although not identical. Scotland is now addressing meta-skills systematically (Skills Development Scotland and Centre for Workbased Learning, 2018^[11]). While social and emotional skills have always been important, they are becoming one of the unique selling points of human workers, since the associated tasks cannot readily be

undertaken by machines. This is borne out by empirical evidence. A UK study looked at changes in the use of three types of skill – physical, analytical, and interpersonal – over the period 2006-2019. They show that in all nine occupational sectors the importance of ‘interpersonal’ skills, relative to physical and analytical skills, increased over the period – even in elementary occupations (Adecco, 2017^[12]). Meta-skills are challenging to identify and measure, but progress is being made on this front (see (Kankaras, 2019^[13]).

Cognitive and study skills underpin further learning

Dynamic modern economies, and ambitious young people now need and expect initial vocational training to provide pathways to further learning, and not merely the skills for a first job. Such pathways depend heavily on the acquisition of foundation competences that will allow individuals to thrive in new learning contexts, including more academic forms of study. Such foundation competences include numeracy, literacy and, increasingly, digital competences, as well as traits such as adaptability and willingness to learn new skills. In many OECD countries, but not in Scotland, the numeracy, literacy and digital skills of adults were measured in the 2012 Survey of Adult Skills (OECD, 2013^[14]). In Scotland the avenue from Modern Apprenticeship to higher education, including Graduate Apprenticeship, is a vital pathway.

Higher level vocational programmes are increasingly in demand

Multiple factors are driving the demand for higher level technical skills, at SCQF 7 and above (ISCED 4 and above) as opposed to traditional trades and crafts which are more often at upper secondary level (SCQF 5-6 or ISCED 3; see Table 1.1 in Chapter 1). In Scotland, there is evidence that nearly all sectors of industry have a serious shortage of skills at SCQF 6-8 (Thomas, 2016^[15]). Some expanding sectors, such as healthcare, make extensive demands for skills at this higher technical level. In some contexts higher-level vocational programmes are also the vehicle for qualified skilled workers to progress to higher levels of specialisation, or to acquire broader skills in management or running a small business. The response of the Scottish apprenticeship system to these new demands is discussed further in Chapters 3 and 4, particularly in Chapter 4, section 4.5.

2.5. Trends reducing the availability of employer support for training

Several labour market trends mean that many workers lack an employer that might support their training

Several different labour market developments mean that a growing proportion of workers lack an employer with a strong medium-term interest in their skills development. Workers in this category include those in temporary and part-time employment, the self-employed, and those on zero hours contracts or working in the ‘gig’ economy. In around half of OECD countries, there has been long term growth in temporary employment, while part-time work has also increased in most OECD countries. In Scotland the number of part-time jobs increased by 9% between 2008 and the end of 2019, three times faster than full-time jobs (Scottish Government, 2020^[5]). ‘Platform’ work, involving the use of online platforms to connect the demand and supply of services, such as the ‘Uber’ taxi service, has been growing. Evidence suggests that under 2% of the European labour force are in platform work, and around 1% of that in the United States (OECD, 2019^[16]). Workers undertaking platform work may be self-employed, although this status has been challenged. Around 2.6% of the Scottish labour force have zero hours contracts, which again imply few opportunities for training (Scottish Government, 2019^[17]). Self-employed persons also lack an employer to sponsor their training, but the trends here in Scotland give less cause for concern. In Scotland the level of self-employment has been relatively stable, although there was some growth following the financial crisis (Fraser of Allender Institute and Scottish Centre for Employment Research, 2019^[18]). If the COVID-19 crisis

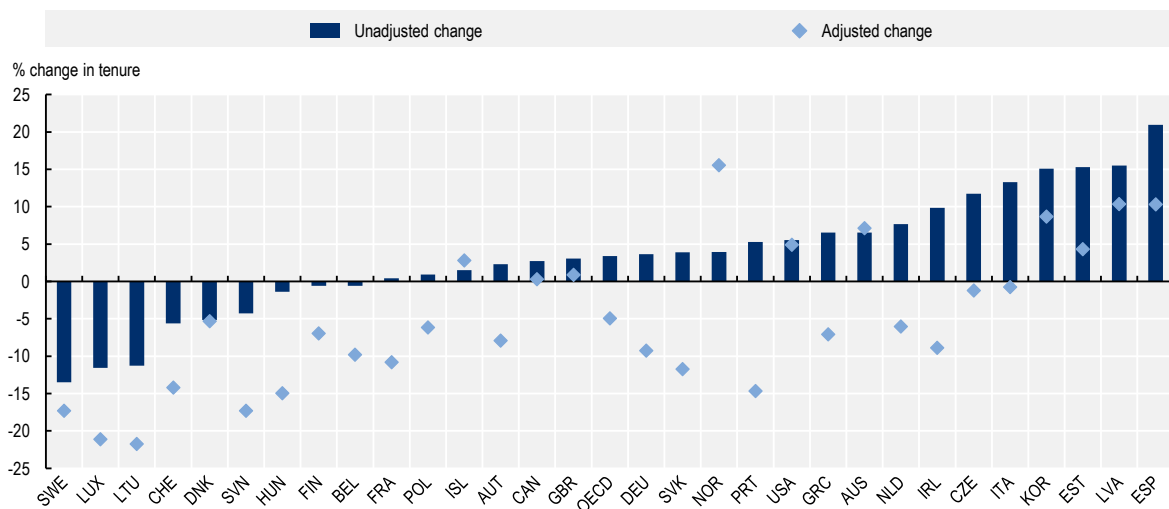
induces an economic recession in Scotland, workers in many of these categories will be particularly vulnerable.

Increasing job mobility decreases the incentives for employers to invest in training

The main reason for employers to train their workers is in the expectation of higher productivity. Realising this benefit depends on retaining trained workers. Higher job mobility therefore reduces the incentives on employers to train, particularly if it indicates that employers are ‘poaching’ workers trained by other employers. In OECD countries, taking account of demographic factors, there has been some general increase in job mobility but this is not shared by the UK (see Figure 2.4). In Scotland, for men, job mobility, at least in the early 2000s was significantly lower than in the UK as a whole (Heitmueller, 2003^[6]). So in this area there is little evidence of any trend affecting Scotland that might undermine employer willingness to train.

Figure 2.4. Little evidence of increasing job mobility in the United Kingdom

Percentage change in job tenure for workers not in education, unadjusted and adjusted, 2006-17



Note: The OECD average is the unweighted average of the displayed countries. The unadjusted change is the percentage change in average tenure between 2006 and 2017. The adjusted change shows the estimated changes once controlling for the composition of the labour force by age, gender and education. The methodology is similar to that used by Farber (2010^[6]).

1. Data for 2017 refer to 2016 for Australia, Germany, and the United States, and to 2014 for Korea.

Source: (OECD, 2019^[16]).

2.6. Conclusion

This chapter has examined four major trends in labour markets affecting Scotland and other OECD countries. These trends all bear on the required response of the Scottish apprenticeship system.

- First, labour market demand for skills is changing rapidly. One of the drivers of this is automation, which is replacing some routine midlevel jobs and tasks with the work of machines, a trend recognised worldwide as ‘hollowing out’. This trend is also noted in Scotland, where the proportion of mid-level jobs is set to fall from 31% of jobs in 2019 to 24% by 2029. Other factors are also at work, including outsourcing of some more routine tasks to lower wage countries. Often the effect of these trends is to change the task mix (and therefore the skill mix) in continuing job roles, rather than to destroy jobs completely, and automation can create as well as destroy jobs.

- Second, Scotland's working age population will decline over the coming years: the youth cohort aged 15-29 is forecast to decline from 998 thousand in 2020 to 933 thousand in 2040. Following Brexit, it seems less likely that migration will fill many skills gaps: while there were 200 thousand non-UK nationals in the Scottish workforce in 2018, this represented a 10% decline over the previous year. Overall therefore, much of the burden of responding to new skills demands will have to fall on the existing workforce, rather than new entrants.
- Third, there are some specific changes in the demand for skills. Social and emotional skills cannot easily be emulated by machines, and there are increasing demands for higher level technical skills. Restructuring the economy to become carbon neutral will change the required skills mix markedly.
- Fourth, a growing proportion of workers in Scotland lack an employer with a strong medium-term interest in their skills development. Workers in this category include those in temporary and part-time employment, the self-employed, and those on zero hours contracts or working in the 'gig' economy.

In addition to these established trends, the COVID-19 epidemic has suddenly emerged as a potentially major factor, although it is hard to be sure about its longer-term impact. In the short term it will disrupt labour markets, increase unemployment and have a significant impact on certain economic sectors such as aviation and tourism. It is particularly disruptive to apprenticeship, because lockdowns interrupt learning in both the workplace and the classroom. Moreover, if the COVID-19 crisis results in an economic recession, this might make employers less willing to provide work-based learning opportunities.

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3 How to respond to a changing world of work

Given extensive change in the labour market, described in Chapter 2, how should Scotland's apprenticeship system respond? This chapter argues for three necessary responses. First, the fundamentals of the apprenticeship system need to be reinforced, building on the historic strengths of the apprenticeship model. Second, the system needs to be able to respond quickly to further change. That implies a commitment to lifelong learning, with young apprentices acquiring learning skills that will make them adaptable, and the skills system offering more opportunities for adults to upskill and reskill. Third, the skills system needs to ensure that no-one is left behind by change. Scotland has achieved much on all these fronts, but gaps remain.

3.1. Introduction: The response of the skills system

Four large trends in the labour market imply more emphasis on the needs of adults

Chapter 2 identified four large ‘megatrends’ in the labour markets both of Scotland (United Kingdom) and many other OECD countries. These are an increasing flux in the demand for skills, demographic trends including migration, increasing demand for higher level technical skills and for meta-skills, and some labour market developments that reduce employer support for training. In response, the challenge for Scotland is to develop an apprenticeship system that will build on the historic strengths of apprenticeship, to establish and grow a resilient system. The ambition should be to build a system as robust as those of the strongest apprenticeship systems internationally, that will adapt, grow and thrive in an evolving and challenging labour market environment, including in response to the COVID-19 crisis.

Resilience in the Scottish apprenticeship system implies three key principles

The three principles set out below will be examined in turn:

- **Securing the fundamentals.** The key principles of apprenticeship, that underpin its historic resilience, must be sustained and reinforced.
- Building in the capacity to respond to change. This implies action on two fronts:
 - *Effective lifelong learning in an adult-friendly system.* Alongside specific occupational skills, apprenticeship should develop foundation skills in young people to prepare them for a learning career. Apprenticeship should also offer a means of upskilling and reskilling, adapted to the needs of adults.
 - *An agile system.* The elements of apprenticeship systems, including qualifications, programmes, the training workforce and the mix of provision, must respond rapidly to changing employer and student demand. The system also needs to meet specific growing skills requirements including those for higher level and meta-skills.
- **Ensuring that change does not leave people behind.** Rapid evolution in labour market demand means that some will be left with skills that are no longer needed, and not all will find it easy to retrain. Close attention needs to be paid to inclusion and equity issues in every aspect of the system – thus mainstreaming equity issues. But some specific equity initiatives will also be needed.

3.2. Securing the fundamentals

3.2.1. What is involved and why it is needed

Apprenticeship is a resilient institution, but not invulnerable

Across many countries, apprenticeship has survived an extraordinary diversity of historical events, rooted in the simple but powerful learning model of an apprentice learning through working with an experienced practitioner. In Scotland, apprenticeships have been an important part of the education and training system since the 15th century at least. This longevity suggests that, in principle at least, apprenticeship should be resilient. But it is not invulnerable: in Scotland, as in England (United Kingdom), apprenticeship experienced a sharp decline in the two decades prior to the launch of Modern Apprenticeships in the early 1990s (Canning, 2004^[1]). Sustaining and developing apprenticeship therefore requires active measures to reinforce and renew the fundamental strengths of the institution – some of the key elements are discussed in recent OECD work (OECD, 2018^[2]). In the immediate future, particular challenges emerge from the COVID-19 crisis, not least as research has shown that employers tend to offer fewer apprenticeship places during economic recessions (Brunello, 2009^[3]).

3.2.2. What Scotland has done already

Good progress has been made in reinforcing the fundamentals

As described in Chapter 1, Scotland has already done much to strengthen the fundamentals of its apprenticeship system. Apprenticeship numbers have increased significantly, and coverage enhanced through the development of Foundation and Graduate Apprenticeships. The qualifications and programmes embodied in apprenticeships will now be overhauled through the new initiative on apprenticeship standards and frameworks. Co-ordination with other parts of the education and skills system has been enhanced through the enterprise and skills review (Scottish Government, 2019^[4]). Initiatives are under way to improve the gender balance of apprenticeship, and increase participation by black and minority ethnic persons and those with disabilities through the equality action plan (SDS, 2019^[5]). A new centre for work-based learning has been established to focus on the core element of apprenticeship (Skills Development Scotland and Centre for Workbased Learning, 2018^[6]). Through a recent report by the Scottish Apprenticeship Advisory Board (SAAB), principles of quality apprenticeship have been proposed in an effort to build a solid definition of apprenticeship (Scottish Apprenticeship Advisory Board, 2019^[7]).

3.2.3. Potential fields of policy development

Three areas offer scope for useful further policy development

Building on the work already undertaken in Scotland, the experience of other leading apprenticeship countries suggests that further policy development might be useful in three areas as set out briefly in bullet points below. The rationale for these policy proposals is explained more fully in Chapter 4.

- While the work of SAAB has been very constructive, Scottish apprenticeship remains less well-defined, in terms of length and the mix of on and off-the-job learning, than most other apprenticeship countries. While the flexibility of the system has advantages, some limits are needed in these key areas to ensure clarity in the apprenticeship brand and what it signals to students and employers. This argument is developed in Chapter 4, section 4.3.
- The Centre for Workbased Learning is usefully developing the analysis of quality work-based learning – the heart of apprenticeship. Currently, unlike some other leading apprenticeship countries, Scotland imposes few structured expectations on employers in terms of their capacity to deliver work-based learning – for example through trained and qualified trainer-practitioners in the workplace. This point was alluded to by the SAAB group and is touched on in Chapter 4 section 4.2. Future work might seek to develop employer capacity in this domain, recognising that greater demands on employers need to be balanced by measures to ensure that apprenticeship remains attractive to employers.
- More might be done to offer opportunities for further learning within their own profession to those qualifying as apprentices (as well as through other forms of further and higher education). International experience suggests that such opportunities are a key to the attractiveness of initial apprenticeship, particularly in a context where the labour market is making increasing demands for higher level technical skills. Country experience also suggests several ways in which such pathways might be developed; one option, of master craftsperson qualifications, is proposed in Chapter 4, section 4.5.

3.3. Fostering effective lifelong learning in an adult-friendly system

3.3.1. What is involved and why it is needed

Demand for skills will change

In Scotland, demand for skilled labour was set to increase prior to the COVID-19 crisis. Total employment was forecast to rise by 3% between 2014 and 2024, with a 16% increase in employment in administration and support services, and 14% in professional, scientific and technical jobs (UKCES, 2016^[8]). While the immediate impact of the COVID-19 crisis is likely to involve a sharp drop in the demand for labour, some of the growing sectoral demands that were forecast may still emerge. Moreover, the differential impact of the COVID-19 crisis across sectors will further contribute to changes in skill demand in the short and medium-term. In principle migration might play a part in meeting new skills demands, but as noted in Chapter 1, Brexit may cause reductions in migrant worker numbers. Moreover, even if migrants have useful skills on arrival in the host country, they will often need some reskilling and adaptation to serve a new national context.

In the future, a declining youth cohort will be unable to adequately refresh the skills of the workforce.

In the face of these changing demands for skills, demographic factors are slowing the entry of young people into the Scottish labour market. This implies that the traditional reliance on the initial training system to play the lead role in refreshing workforce skills may have to be rethought. Instead, more of the burden will need to fall on enhancing and renewing skills in the existing adult workforce. Moreover, as the OECD Jobs Strategy points out, adult skills development serves to protect the interests of adult workers who would otherwise be at risk.

To reduce the risk of workers becoming trapped in low-quality jobs or joblessness, they should have continuous opportunities to develop, maintain and upgrade skills through learning and training at all ages. This would help them navigate to a labour market that will increasingly require frequent changes of jobs and activities throughout a career. (OECD, 2018^[9]).

All these factors underline the need for lifelong learning

What does more emphasis on lifelong learning mean for apprenticeship in Scotland? Two types of response are needed:

- *Apprenticeship for young people needs to build in the capacity for lifelong learning.* Initial apprenticeship programmes need to ensure the foundation skills, including literacy, numeracy and digital skills, that support further learning. These skills are not only of direct value in first jobs, but are also learning skills that facilitate higher level education and training. The inclusion of these skills in apprenticeship programmes makes the programmes more attractive, by offering young apprentices a line of sight to further qualifications. While a minimum of these skills should be assured through basic education, this cannot be taken for granted. In Scotland this aspect is currently addressed through the 'core skills' element of apprenticeship frameworks. The changing labour market will also increase the relative demand for meta-skills, (sometimes called interpersonal or social and emotional skills), as they correspond to functions that are impossible or very difficult to automate as well as being transferable across a wide range of jobs, now and in the future (see discussion below).
- *Apprenticeship needs to become more adult-friendly.* Historically, many OECD training systems, and including that of Scotland, were built around young people, typically taking them through a period of full-time training and education and delivering them to the labour market as trained

workers. In Scotland, this focus on young people was further reinforced by the financial crisis and implementation of the Wood report. While the COVID-19 crisis may increase youth unemployment and therefore sustain, in the short term, an emphasis on young people, adults will need to receive more attention in the medium term. Training and upskilling adults is more complicated in several respects than training young people. It needs to take account of the existing skills of adults, recognising and crediting prior learning. Modes of study need to be flexible – as many adults will want to study part time, scheduling further training around home and work responsibilities. Funding principles are challenged, for while governments often fully fund the education and training of young people, they usually fund less for adults.

3.3.2. What Scotland has done already

The need for more attention to adult skills is recognised

The need for more attention to adult learning is well-recognised in Scotland – most recently in Scotland's Future Skills Action Plan (Scottish Government, 2019). But in Scotland, as in many countries, it is often hard to translate the rhetoric of lifelong learning into practical measures. In two areas good progress is being made:

- *The growing importance of meta-skills is being pursued.* Meta-skills, it is argued, can most effectively be developed through work-based learning, with classroom learning playing a supporting role. But the development of meta-skills depends on multiple actors, especially employers, in developing workplaces that foster meta-skills. SDS now plans to address this issue through its apprenticeship and other training programmes (Skills Development Scotland and Centre for Workbased Learning, 2018^[6]), and has established a framework of 'skills for the future'. Under this framework, alongside three key 'universal' skills, including literacy, numeracy and digital intelligence, three types of meta-skill are identified:
 - Self-management, including focussing, integrity, adapting and initiative.
 - Social intelligence, including communicating, feeling, collaborating and leading.
 - Innovation, including curiosity, creativity, sense-making and critical thinking.
- *Scotland is addressing recognition of prior learning (RPL).* Many adults entering vocational programmes already possess valuable but uncertified knowledge and skills, often acquired informally through work experience. Greater skills transparency, realised through formal recognition of these skills, benefits both individual workers and other labour market actors. RPL is strongly encouraged within the SCQF; the SCQF handbook sets out a series of guiding RPL principles (SCQF, n.d.^[10]) linked to the acquisition of credit points in the SCQF framework. While this is only guidance it may influence at least some large employers. The National Health Service in Scotland, in collaboration with Education for Scotland offers guidance for its employees regarding RPL (NHS Education for Scotland, 2019^[11]). In apprenticeship, the principle is that an initial skills assessment should allow programmes to be accelerated in recognition of prior learning. RPL also allowed over 10% of new entrants to Graduate Apprenticeship to directly enter the second or third year of the programme (SDS, 2019^[12]).

3.3.3. Potential fields of policy development

Three fields appear ripe for policy development

- Across many OECD countries, as in the Scottish apprenticeship system, government funding for training is often more generous for young people than for adults. This reflects the principle of state-funded initial education for all, prioritisation of the young within limited budgets, and an

expectation that adult education and training should primarily be supported by individuals or their employers, since they are the main beneficiaries of such training. But in Scotland, this rationale may have to be rethought in the light of evidence of a decline in employer-supported training, just at the point, when as explained above, it may be needed most. The percentage of employees aged 16-64 reporting that they had received job-related training in the previous quarter fell from over 30% in 2004 to just over 20% in 2018 (Scottish Government, 2019^[13]). Some countries are now shifting direction. Switzerland, for example, has now extended state funding to 50% of the costs of the preparation courses used in support of professional examinations, a primary means of upskilling adult qualified apprentices (Swiss Confederation, 2019^[14]). Proposals for improved funding for adult apprentices in Scotland are advanced in Chapter 4, section 4.2.

- Many countries, like Scotland, have sought to develop procedures to recognise prior learning. But these procedures face obstacles, including the demands of the assessment procedures, resistance from education providers, and weak support from employers (CEDEFOP and European Commission, 2017^[15]). In Scotland, apprentices may, through RPL, have an accelerated programme. However, unlike other leading apprenticeship countries, there is no facility for those who have sufficient skills and experience to obtain the qualification directly, without an apprenticeship programme. This point is pursued in Chapter 4, section 4.4.
- Apprenticeship is not just for the young, and many countries have experience with adult apprentices. In Scotland the proportion of apprentices over 24 has been rising. Adult apprentices are often incumbent workers, where both employer and apprentice see an opportunity for upskilling through an apprenticeship programme. Unlike youth apprentices, adults may not be willing to accept the usually low wages of an apprentice, and may already have some of the skills delivered by the apprenticeship programme. Often this will involve both financial and non-financial incentives. To foster adult apprenticeships, special measures are sometimes seen as necessary (see Box 3.1).

Box 3.1. Incentives for adult apprenticeship in Denmark

Following a 2014-15 reform of the apprenticeship system in Denmark, a special programme (EUV) was introduced for those aged 25 and above. Adults enrol in apprenticeship programmes on special terms; most are able to shorten the total length of their learning through recognition of prior learning, reflecting prior practical experience and educational achievements. A special adult apprentice salary (*voksenlærlingeløn*) has been introduced. The rationale is to make it less of a financial burden for low-qualified adults to enrol in apprenticeship. The salaries differ according to the employment status of the apprentice at the time of enrolment. Some adult apprentices are also entitled to grants from the State Education Fund instead of salaries. Teachers working with adults are required to understand and acknowledge previous experience from employment as well as the prior education that the adult learners bring into the classroom.

Employed adults may enrol by signing an apprenticeship contract with their employer and the learning programme is tailored to their needs. In some cases, (when the learner has more than two years of relevant work experience) the learner needs training at the vocational school to gain a vocational certificate. Employed adults are paid an apprenticeship salary and the employer is reimbursed for the periods where the employee is at the vocational school.

Source: Cedefop (2019). Apprenticeship for adults: results of an explorative study, <http://data.europa.eu/doi/10.2801/24300>.

3.4. Building an agile system

3.4.1. What is involved and why it is needed

Fast-changing labour market requirements require an agile skills system

Alongside mechanisms to promote lifelong learning, the infrastructure that supplies training and skills needs to be responsive, so changes in labour market demand are quickly reflected in the supply of skills. Qualifications, programmes, the training workforce and the mix of provision therefore need to be highly responsive to changing demand. Countries with *agile skills systems* - meaning the ability to rapidly adapt their skills supply - will be one step ahead in the global economy. Specific emerging requirements – such as those for higher level skills, and for meta-skills, need to be addressed.

Provision needs to respond to employers and students rather than training providers

In the face of change, training systems often display inertia, because it is usually easier and cheaper to teach and train in the same way this year as last year. But such inertia risks leaving the skills system lagging the requirements of the most dynamic parts of the economy and/or delivering skills that are no longer needed. Countries therefore need to design skills systems in which the mix of training provision is driven primarily by employer requirements and student needs, rather than by training providers and other skills delivery institutions. One strength of apprenticeship is that in the form it takes in most countries, although less obviously in Scotland, the scale and mix of provision are driven primarily by employers and apprentices.

An agile skills system has several dimensions

A large range of OECD work, including many different country reviews of apprenticeship systems and other forms of vocational education and training has sought, based on this wide range of international experience, to identify the key characteristics of effective vocational systems. Several of them concern the agility of the system – in particular “qualifications developed with labour market actors”, a “vocational teaching workforce that offers a balance of teaching skills and up-to-date industry knowledge and experience” and “mechanisms to ensure that the mix of vocational provision meets the needs of the labour market” These are summarised in (OECD, 2014^[16]). This suggests at least three principles of an agile skills system:

- **Updating qualifications and programmes in response to changed requirements.** Modularisation can help to update programmes and qualifications, for example when specific technical skills become outdated, the module which includes those technical skills can be updated without affecting other modules. A degree of programme flexibility within a qualification can also be helpful, for example to allow apprenticeship training to include an element of local response to local needs.
- **The vocational teaching workforce needs to regularly update technical skills.** If some of the trainer workforce work part-time in industry, and part-time as teachers, that can help to bring the experience of new procedures to bear on training systems. Full-time vocational teachers should also regularly update their technical skills. The career and incentive structure for vocational teachers should reflect this requirement, addressing the challenge of recruiting teaching staff in new and fast-growing fields where practitioner skills command a high market price. One advantage of apprenticeship programmes is that students can learn the latest techniques on the job and in the workplace, even when these techniques are not yet familiar to vocational teachers and have not yet been embodied in curricula.
- **The mix of provision – meaning the balance of training provision between different occupational targets – needs to respond quickly to the changing needs of the labour market sectorally, regionally, and in terms of specific occupations.**

Some specific skills requirements can be identified

Changes in the labour market, as noted earlier, are increasing the demand for higher level technical and vocational skills in Scotland, at SCQF 6-8 and above (ISCED 4-6 and above). Some similar trends are observable in many OECD countries and they are responding in different ways – described in (OECD, 2014^[16]), for example:

- Through the development of a separate tier of higher education institutions focused on technical and professional programmes mostly at ISCED 6 (SCQF 9 and 10) and above. These include ‘universities of applied science’ in the German-speaking countries, the Netherlands, Finland, and some other countries. Over recent decades this sector has demonstrated rapid growth.
- Through special ‘professional bachelor’ programmes in higher education at ISCED 6 – in France, for example, professional bachelors programmes have expanded rapidly in recent years – by 2015, these represented about one third of all bachelor’s programmes (Lerminiaux, 2015^[17]). Through the development of two year full-time vocational programmes (usually equivalent to SCQF 8 or ISCED 5), that often articulate into bachelor’s degree programmes. These are found in many OECD countries – for example the *Diplôme Universitaire de Technologie* (DUT) qualification in France, and the associate degree in the United States. The Scottish version is the HND.
- By building substantial elements of work-based learning into higher level technical and professional programmes.
- Through higher level apprenticeships, including at ISCED level 6 (SCQF 9 and 10), typically developed in collaboration with universities – for example in the dual university programmes in Germany (see Box 3.2). These are the international comparators for Graduate Apprenticeship in Scotland.

Box 3.2. Dual university programmes in Germany

In Germany, dual university programmes combine a university course with employer-based practical training, employment or work experience. Students must also sign a contract with an employer, and the curriculum is closely connected to a target occupation. They take different forms:

- Programmes that combine a course of university study with training in a recognised occupation. In addition to the university degree, students obtain a vocational qualification. Participants must normally have a general university entrance qualification and a contract of employment.
- Programmes aimed at those who have already pursued vocational or professional training and/or have professional experience. They offer further professional development by combining a course of study with work experience relevant to the course. Students may enrol without a general university entrance qualification. The amount of time the student spends in the classroom and at the place of work is agreed in a contract between the institution, the student and the employer.
- Programmes with a work experience component combine a course of study with extended practical phases with an employer. Students obtain a university degree but not a recognised vocational qualification. As a rule, this programme normally requires students to have a general university entrance qualification.

Source: Higher Education Compass, German Rectors’ Conference (2017), “Dual programmes - Studying and work experience”, www.hochschulkompass.de/en/degree-programmes/all-about-studying-in-germany/forms-of-study/dual-work-study-programmes.html.

3.4.2. What Scotland has done already

Several initiatives address specific skills requirements

Scotland has already done much to meet the increasing need for certain skillsets. It has:

- Addressed the increasing need for higher level technical qualifications, through encouragement of higher-level apprenticeships and, most recently, through the launch of Graduate Apprenticeships.
- Through the standards and frameworks initiative it intends to overhaul apprenticeship frameworks, so as to give more weight to the employer voice (SDS, 2019^[18]).
- Developed a systematic approach to regional and national skills planning, with a website offering estimates of current and future skills needs (SDS, n.d.^[19]). This is designed to inform the delivery of apprenticeships and other skills programmes.
- Offered Individual Training Accounts to those without a sponsoring employer, providing up to GBP 200 a year to eligible students for vocational training (SDS, n.d.^[20]).

3.4.3. Potential fields of policy development

Funding reform and greater clarity in the qualifications architecture are needed

- Scotland has a strong skills planning framework, as noted above. However, even the most sophisticated labour market information systems find it hard to accurately identify, and respond rapidly to changing labour market requirements. Moreover, demand for occupational skills does not necessarily correspond to viable apprenticeship opportunities, as employers may prefer other means of skills acquisition, such as recruiting already skilled workers. Chapter 4, section 4.2 explores how reform of the apprenticeship funding system could improve responsiveness to employer demand.
- It has been argued that there is significant unmet demand for skills at SCQF 6-8 (Gunson, 2016^[21]). Currently, at SCQF 7 and 8, it is possible to take two unrelated forms of technical qualification – Modern Apprenticeship (mostly at level 7), and the Scottish HNC (level 7) and HND (level 8), mostly pursued in Scottish further education colleges. Currently the respective roles of apprenticeships and the higher nationals are unclear – whether they are alternative routes to the same occupation, or routes to different occupations, backed by some rationale (other than historical accident) for the division of labour. One of the functions of the Enterprise and Skills Review should, in principle, be to co-ordinate and link these different forms of provision.

3.5. Ensuring inclusion in the face of change

Changing labour markets, and changing skills demands create challenges for inclusion.

The pace and scale of change mean that during their careers workers will find some of their skills become redundant, and they will therefore need to upskill or reskill. The key inclusion challenge is therefore to ensure that these workers are equipped, from the outset, with the foundation competences that will help them to learn new skills, and that the skills system is organised in an adult-friendly way so as to support them in doing so. This will allow those who aspire to further learning, as well as displaced workers who urgently need retraining, to pursue their chosen programmes successfully. Possession of strong meta-skills will help, as these skills are transferable, and becoming increasingly important.

COVID-19 may encourage the development of distance learning technologies that can help some equity groups

Some equity groups, including those with certain types of disability, and those with caring responsibilities, find it difficult or impossible to travel to a workplace or training institution. The COVID-19 crisis has focussed immediate attention on the use of different technologies to work and communicate with others, and to pursue learning programmes without being physically present either in a workplace or in a training institution. Certainly in the short term, but also in the medium term, this will encourage innovation and development in distance learning. Such innovation may therefore have substantial benefits for these equity groups.

Current initiatives on equity have limitations

As noted in Chapter 1, Skills Development Scotland has a systematic equity strategy, and routinely collects data on apprenticeship participation in respect of equity groups, according to gender, ethnic minority status and disability. While this is very positive, there are also some broader equity questions that cross the boundaries of responsibility of different government agencies. The first such question is whether it is in the service of equity for apprentices to benefit from a government education and training subsidy several times smaller than that received by those students entering higher education, bearing in mind that the lifetime earnings of the latter group will be much larger than those of the former group. In many other leading apprenticeship countries, funding arrangements, by this test, are much more equitable. The second is whether it is fair to adults entering apprenticeship, and their employers, for government subsidies to be lower in their case. These issues are pursued in Chapter 4, section 4.2.

Inclusion and equity should be mainstreamed

All the arguments advanced in this chapter, regarding the required response to labour market change are also implicitly about inclusion. So lifelong learning and career development must not only be for the most able apprentices, but also for those who achieve only low-level apprenticeships. Equally, an agile skills system, adapting fast to technological innovation, should offer opportunities for the most vulnerable, as well as to the most technologically sophisticated. It follows that attention to equity and inclusion should, primarily if not entirely, be mainstreamed, so that all policies should be scrutinised from this perspective. This mainstreaming approach will be pursued in the policy proposals put forward in Chapter 4. So for example it will be argued that common funding principles as between higher education and apprenticeship would serve equity, while measures to address prior learning more fully should help those who have few formal qualifications, as well as migrants.

Attention is needed to the needs of workers who are unlikely to receive employer support for training

The mainstreaming approach, described above, works well when equity needs to be pursued alongside a range of other policy objectives. However when the primary objective of any given policy initiative is to address equity and inclusion, a different approach is needed. One such area is the increasing number of workers that are unlikely to receive employer support for their upskilling and reskilling. As described in Chapter 2, this may be because they are self-employed, short term or part-time workers, in the platform economy, or otherwise distanced from any potentially sponsoring employer. It may also be because, as noted earlier, employer support for work-related training in Scotland has been falling (Scottish Government, 2019^[22]). One potential solution is the development of individual learning schemes and accounts, in which individuals acquire the capacity to invest in their own training, through contributions from government, employers, and the individuals themselves. While these approach is promising, recent OECD work has suggested that it should be pursued with caution (see Box 3.3).

Box 3.3. Individual Learning Accounts: Panacea or Pandora's Box?

Recent work by the OECD looks at three different forms of individual learning schemes or accounts. They include:

- **Individual Learning Accounts.** These are virtual, individual accounts in which training rights are accumulated over time. They are virtual in the sense that resources are only mobilised if training is actually undertaken. The only real example of an Individual Learning Account is the French *Compte Personnel de Formation*.
- **Individual Savings Accounts.** These are real, physical accounts in which individuals accumulate resources over time for the purpose of training. Unused resources remain the property of the individual and may, depending on the scheme, be used for other purposes (e.g. retirement). These schemes are extremely rare.
- **Vouchers.** These provide individuals with direct subsidies to be used for training purposes, often with co-financing from the individual; they do not allow for any accumulation of rights or resources over time. This is the form of individual learning scheme most frequently implemented.

The study looked at a range of schemes across OECD countries. Findings included:

- Targeting individual learning schemes helps to reduce deadweight loss and the participation bias against the low-skilled. Individual learning schemes have a poor track record as far as participation of the low-skilled is concerned
- Funding should be substantial if the scheme is expected to make a significant difference to training outcomes. Most existing schemes provide relatively small amounts of support which means that, in practice, participants can only undertake short-duration training programmes which are unlikely to lead to significant up- or re-skilling.
- Individual learning schemes should be kept simple in order to maximise participation. Schemes that are complex to navigate will harm participation, particularly among the low-skilled and under-represented groups.
- Guaranteeing training quality becomes even more important in the case of individual learning schemes.

Source: (OECD, 2019^[23]).

3.6. Conclusion

This chapter has looked at how the Scottish apprenticeship system needs to respond to the labour market trends and developments described in chapter 2. It has set out three principles which Scotland needs to follow, the steps already taken to address these principles, and what more is necessary:

- The first principle is **securing the fundamentals**. Apprenticeship has a long history and has survived many changes in labour market environments. But it is not invulnerable and action is needed to maintain the perennial strengths of apprenticeship as a powerful model of learning, rooted in the way in which a novice learns a profession under the guidance of an experienced practitioner. Recent work in Scotland by the Scottish Apprenticeship Advisory Board has helped to clarify some of the basic principles of apprenticeship, but this could be taken further, notably in respect of minimum standards for apprenticeship, and by developing higher level technical qualifications for those who successfully complete their apprenticeship programmes.

- The second principle is **building in the capacity to respond to change**. This has two aspects. First of all the system needs to provide for lifelong learning, offering young apprentices the foundation competences that will support their learning throughout their lives, while also adapting apprenticeship as a vehicle for upskilling and reskilling adult workers. Second, the apprenticeship system needs to be agile – that means that qualifications, programmes and the scale and mix of provision all need to be able to adapt rapidly to fast-changing labour market requirements. Scotland has addressed these issues in a number of respects, but more needs to be done, notably to provide for those who could benefit from direct access to apprenticeship qualifications, and to reform the funding system so that the scale and mix of provision responds more directly to the needs to labour market actors.
- The third principle is to **ensure inclusion in the face of change**. Fast-changing labour market needs mean a risk that some workers will be left behind, with few or outdated skills, and without the learning capacity that allows individuals to adapt to new requirements. In the main, equity and inclusion should be addressed as a dimension of all policies, but some specific initiatives, such as the equality action plan currently pursued by SDS, are also needed.

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4

Key policy priorities to build resilience in the apprenticeship system in Scotland

Benchmarking Scottish apprenticeship against the strongest apprenticeship systems globally suggests four key areas for improvement. First, the funding of the apprenticeship system should be reformed to make it more directly responsive to labour market needs, and more consistent with higher education funding. Second, as a way of clarifying the defining principles of apprenticeship, and building on the work of the SAAB group, standards should be established for minimum programme lengths and off-the-job training requirements. Third, to make apprenticeship more adult-friendly, skilled adults should be offered direct access to assessments yielding qualifications equivalent to those obtained by apprentices. Fourth, master craftsperson qualifications – akin to those found in German-speaking countries – should be promoted as an effective route to upskill qualified apprentices.

4.1. Introduction: Key policy priorities

Chapter 3 set out how the Scottish skills system needs to become more resilient in the face of labour market developments. It described what Scotland (United Kingdom) is already doing in response, and identified areas where there is a need for additional policy development. This chapter pursues four areas identified as immediate priorities. First, it argues that apprenticeship funding should be reformed both to make it more consistent with higher education funding, and more directly responsive to changing employer needs. Second, as a way of improving the foundations of apprenticeship, and building on the work of the SAAB group, it proposes minimum requirements for the Scottish apprenticeship brand in respect of programme length and off-the-job training. Third, to offer more for adults, it recommends that experienced practitioners should be offered direct access to final assessments yielding qualifications equivalent to those obtained by apprentices. Fourth, it suggests the development of master craftsperson qualifications as a means of further upskilling those who have successfully passed through an apprenticeship programme. These are ambitious reforms, based on benchmarking the Scottish system against the strongest apprenticeship systems internationally, adapted to the specific needs and circumstances of Scotland. Collectively, they have the power to develop Scottish apprenticeship as an institution which is more resilient in the face of change, allowing apprenticeship to claim its rightful place as a central element in the Scottish skills system, on the model of other leading apprenticeship countries.

4.2. Fair and responsive funding for apprenticeship

An agile system should deliver the right scale and mix of apprenticeship

An agile skills system should allow employers to drive the quantity and mix of apprenticeship provision in response to their changing needs, subject to the willingness of individuals to pursue the apprenticeships on offer.

- At an aggregate level, this means that the overall scale of apprenticeship provision should match labour market requirements.
- At a granular level, it means that the mix of apprenticeship provision, as between sectors, regions and age groups of apprentices, should be determined by employer demand matched to the supply of willing apprentices.
- Both aggregate provision, and the mix should be modifiable according to strategic policy requirements, such as the desire to increase STEM provision, and to ensure equity in provision.

4.2.2. Current funding arrangements

Government funding is conceived as a partial subsidy, to be supplemented by employers

Some principles of apprenticeship funding were explained in a 2014 report:

The aim of public sector funding for apprenticeships is to encourage training that would otherwise not take place. SDS expects funding to contribute towards, but not fully meet, training providers' costs. SDS has a broad idea of the relative costs of apprenticeship training. For example, it knows that a construction framework costs more to deliver than a hospitality framework. But it does not know the exact costs of training delivery as this is often a commercial matter between training providers and employers. This means SDS does not know the extent to which contribution rates fully cover the costs of training, either for individual training providers or for individual apprenticeship frameworks. (Auditor General for Scotland, 2014^[11]).

Employers do not normally contribute to the funding for apprentices aged 16-19

Currently, Modern Apprenticeships for those aged 16-19 attract the highest rates of government funding, directed to the training providers that deliver off-the-job training and assessments. The contribution rates, which vary by apprenticeship framework and level of apprenticeship (as well as by age group) are set out in (SDS, 2019^[2]). The visiting OECD team were told that, prior to the introduction of the employer levy, there were discussions about whether to ask employers to financially contribute to the costs of apprenticeships for 16-19 year-olds (as they usually contribute for older apprentices). However following introduction of the levy, and in the light of employer resistance, it was felt impractical to request such contributions. Consequently, *de facto*, but not as a matter of policy or principle, training providers receive no funds other than from government for Modern Apprenticeships for this age group.

Current arrangements for funding apprenticeships involves a sequence of stages

The current funding system for Modern Apprenticeships in Scotland is distinctive, and very different from many other countries. It works as follows:

- In the first instance, SDS agrees a target number of apprenticeship places with the Scottish government, and receives a budget linked to the delivery of this number of places. So for example in 2019/20, SDS is expected to deliver 29,000 apprenticeship places, including 1 300 Graduate Apprenticeships. The Scottish government also provides guidance to SDS on strategic priorities for the apprenticeship system; these currently include young people, and increasing the proportion of apprenticeship starts at SCQF level 6 and above. All of this is set out in an annual letter from the Scottish government to Skills Development Scotland (Swinney, 2019^[2]).
- SDS then sets fixed financial contributions for apprenticeship in relation to each Modern Apprenticeship framework, and three age groups. For example, for automotive apprenticeships at level 6, government funding will be GBP 8 700 for 16-19 year-olds, GBP 7 100 for 20-24 year-olds and GBP 6 500 for older apprentices (over the entire apprenticeship programme) (SDS, n.d.^[4]). These contributions, which cover the entire apprenticeship programme, are in principle based on:
 - the estimated costs of the framework, in terms of administration, taught elements, assessment and core and career skills requirements;
 - policy priorities, including the prioritisation of younger participants, tackling occupational segregation, and supporting strategic growth sectors.
- However the precise linkage with these factors is not always transparent, as the actual costs of delivery are often unknown (Auditor General for Scotland, 2014^[11]).
- SDS then identifies a 'demand estimate' for the potential number of apprenticeship places in each occupational sector. These numbers are determined partly by looking at outturn in previous years, augmented by labour market information about changes in demand. It then invites tenders from training providers to deliver apprenticeships in these areas, and allocates contracts, constraining the numbers allocated not only through the demand estimate, but also by the budget available and the overall target numbers.
- The training providers, acting, as the OECD team were told, as a 'salesforce' for apprenticeship, then work with employers to recruit potential apprentices and deliver apprenticeship programmes. For apprentices over 19, employers may also be asked to contribute financially to the training provider, over and above the contribution provided by SDS. In some cases, the training providers carry out training verification visits.
- The contracted training providers often subcontract other training providers to deliver some of the apprenticeships.

- In a final stage, there are some in-year adjustments, as some training providers 'hand back' some parts of their numerical allocation which they do not believe they can deliver, and these are reallocated to other providers.

There are also some special incentives for employers

Two schemes offer incentives to employers offering apprenticeships to special target groups. 'Adopt an apprentice' payments go to employers taking on an apprentice who has been made redundant by another employer. This offers GBP 5 000 in the oil and gas industry and GBP 2 000 elsewhere. 'Access to work' payments support the additional costs of taking on an employee with a disability, and this covers apprentices as well as other employees (SDS, 2019^[5]). In the light of the COVID-19 crisis, such payments may become extremely important. They might be augmented by incentives to encourage employers to retain and take to completion their existing apprentices.

4.2.3. The challenge: Can the system respond quickly and effectively to change?

The system is complex

The current funding system is complex. The total number of apprenticeships is primarily a policy decision taken centrally by the Scottish government. The mix of provision, as between different occupational groups, SCQF levels, gender mix and age groups is determined by a sequence of decisions. The main players, in the initial phases of the decisions are SDS and the training providers, with employers and potential apprentices coming into the decision-making at a later stage in the process. This complexity means that it is very difficult to be sure that the scale and mix of provision is meeting the needs of the labour market or of individuals.

There is ambiguity regarding the basic funding principles

For 16-19 year old apprentices, there is tension between the principle that the government subsidy is only a 'contribution', and the reality that this provides all of the funding available to training providers for this age group. Moreover the discussions of the need for additional contributions prior to the introduction of the levy leave open the possibility that apprenticeships are being underfunded relative to the requirements of quality apprenticeships. Since there is no systematic procedure, as noted by the Auditor General for Scotland, for costing training requirements, this possibility cannot be reasonably assessed. Since the funding of 16-19 year-olds provides a baseline for funding other age groups, this risk of underfunding affects the entire Modern Apprenticeship system.

The secondary phases of the funding system lack transparency

The initial tendering operation, and award of contracts to a set of training providers, leads to subsequent negotiations by the contracted training providers with both employers (to provide apprentices) and subcontracted training providers (to provide some of the off-the-job training). Little is known about this phase in the process. The OECD team were told that training providers often cross-subsidise different elements of provision, and heard of one instance where a training provider, far from requiring payments from employers, was offering GBP 500 per apprentice to employers. Locally there is competition between different training providers in seeking to 'sell' apprenticeships to employers. We heard that the practice in one FE college is to price training provision according to its cost. But independent training providers facing commercial pressures may price provision so as to maximise their profits, and in markets that may not be fully competitive, this may yield very different pricing strategies. A consultation exercise found that many employers did not wish to pay more for apprenticeships, but conversely a minority were happy to do so (SDS, 2015^[6]). This patchwork of evidence suggests that different parts of the system may be responding

in different ways to the incentives set. How all these factors working together drive the mix of provision is very unclear.

The challenge is to determine how well this funding system meets current and changing demand

Overall, the question for this review is whether the current funding system supports the scale and mix of apprenticeship provision required by the Scottish economy, and if it will respond quickly and effectively to significant transformations expected over the coming years. This question will be looked at in two dimensions:

- Whether the funding system delivers *the scale* of provision, overall, that Scotland needs, both in respect of the Scottish economy and the individual apprentices concerned.
- Whether the funding system delivers *the right mix* of provision as between different industry sectors, different types of apprentice and different employers.

4.2.4. The scale of provision

Apprenticeship in Scotland competes with higher education

The scale of apprenticeship funding and provision cannot be looked at in isolation, but rather in the context of how the entire post-school system of education and training is funded and supported, and the place of apprenticeship within that wider system. The comparison made here is between Modern Apprenticeships broadly, and higher education. Graduate Apprenticeships raise different issues, as although more than half of the students are over 24, they are, unlike Modern Apprenticeships, fully funded by government for all age groups. However, even setting aside Graduate Apprenticeships, many Modern Apprenticeships compete directly with higher education. In the first half of 2019/20, 30% of Modern Apprenticeship starts were at level 7 and 8, at the same level as HNC and HND, and a further 40% were at level 6, just below the HNC/HND level (SDS, 2019^[7]).

In Scotland funding for apprenticeship is not generous by international standards

In comparison with other European countries, funding for apprenticeship in Scotland is less generous to employers. In most European countries the off-the-job element of apprenticeship is funded fully by government through direct provision in public vocational schools. These exist in parallel to public upper secondary general education schools, and are also funded and usually managed by government. In some cases, in addition, employers are also offered grants or tax breaks to take apprentices. Box 4.1 illustrates this point. These comparisons focus on European countries where, like Scotland, higher education is either free or heavily subsidised.

But in Scotland funding for higher education is more generous

At the same time, the government contribution to the cost of higher education in Scotland is generous by international standards, with full-time students domiciled in Scotland paying no fees. This contrasts Scotland with many other English-speaking countries internationally, including for example, countries such as the United States, Australia and England (United Kingdom). Scotland's approach to higher education funding is more closely aligned with several European countries, as in the countries exemplified in Box 4.1. Apprentices themselves in Scotland do not pay fees, but this comparison needs to be considered from the employer's point of view. If an employer in Scotland wishes to take one of their existing employees (aged more than 19) as an apprentice, they will usually have to pay for some of their off-the-job training. Conversely if they release that same employee to undertake a higher education programme (including an HNC or HND) neither they nor their employee will usually have to bear the cost of the fees, which will fall

to the government. In higher education, the principle is that programmes should be free of charge to the student, a completely different principle to that applied to apprenticeship, in which the government contribution is conceived as a partial subsidy. The likely effect is to bias employers' decisions towards the release of employees for higher education, rather than apprenticeship, simply because of the more generous funding principle at work, rather than because of the respective merits of the programmes. As a way of building workforce skills, employers may also prefer to recruit graduates of higher education, given that such graduates are relatively abundant, rather than offering apprenticeships, even in cases where apprenticeship might be a more effective training pathway for the occupation in question.

Box 4.1. Many European countries provide extensive funding support for apprenticeship alongside higher education that is free of large tuition fees

Government funding of apprenticeship in European countries usually involves first, some form of direct funding for the off-the-job training component of apprenticeship and sometimes, grants or tax subsidies for employers taking apprentices. Levies on employers sometimes play a role in the funding.

The countries selected are broadly comparable with Scotland in that higher education is largely funded by government for EU students. In the countries exemplified, annual tuition fees in higher education for EU full-time students are either zero or modest (less than EUR 1 000), except in the case of Ireland, where a student contribution of EUR 3 000 is required from students, (around 40% have this contribution paid by government on a means-tested basis).

- In **Belgium Flanders**, government fully funds all the off-the-job education and training of apprentices. Employers pay apprentice wages but these are subsidized by government; national insurance for apprentices is also subsidized by government. To encourage them to take apprentices, employers receive a grant of EUR 500 for the first and second year of apprenticeship and EUR 750 for the third year.
- In **Denmark**, government funds all the off-the-job education training of apprentices through a budget of around EUR 750 million in 2016, going to the training institutions. Employers do not contribute. An employer levy of around EUR 380 annually per employee provides a fund which pays the wages of apprentices during the time that they are undertaking off-the-job training. Employers who take on additional apprentices in key occupational sectors receive government bonuses.
- In **Finland**, government directly funds all off-the-job training of apprentices. In addition the government provides allowances for apprentices during the time when they are undertaking off-the-job training when they are not paid by employers. Employers may also receive 'training compensation' grants to support their provision of on-the-job training to employees.
- In **France**, government directly funds off-the-job training of apprentices through a budget of EUR 1.57 billion (in 2014). In addition, an apprenticeship tax on employer payroll yielded EUR 914 million in 2014, and some of this is used to fund off-the-job training. Employers do not contribute to off-the-job training costs. Employers are encouraged to take apprentices through a tax credit while the government bears the cost of an apprentice's social charges (equivalent to national insurance).
- In **Germany**, government directly funds all the off-the-job education and training of apprentices through expenditure of EUR 2.5 billion annually (2016 figures). Employers do not contribute. Apprentices may also receive some government financial support if they live away from their parents.
- In **Ireland**, off-the-job training of apprentices is funded by government directly as well as through the national training fund, supported through a levy on employers. Employers do not contribute.

Source: (CEDEFOP, 2020^[8]) (European Commission, 2018^[9]).

A resilient skills system needs to ensure that funding differences do not distort training provision

An effective, resilient and responsive skills system is one that delivers the changing skills mix needed by the Scottish economy. That means, among other things, that decisions taken about different types of training reflect the needs of employers and students, undistorted by funding arrangements. Some types of apprenticeship compete with higher education, and that competition is healthy, because it allows students and employers to opt for the most suitable forms of provision. But at present this competition lacks a level playing field. There are particular risks during the COVID-19 crisis, as many young people in Scotland will migrate from apprenticeship to fully-funded higher education, given that in an economic recession Scottish employers are likely to become much less keen to offer apprenticeship places (Brunello, 2009^[10]).

Scotland has a very high rate of participation in higher education

There are some independent grounds for thinking that some rebalancing, as between higher education participation and apprenticeship would be desirable. Scotland currently has some of the highest levels of participation in higher education in the world – with 47% of those aged 25-64 educated to tertiary level, more than any other EU country in 2018 (Scottish Government, 2019^[11]). Since Scotland only has relatively average PISA results by European standards, this raises questions about whether all those entering higher education in Scotland are adequately prepared in terms of foundation skills of numeracy and literacy. There is also some evidence that graduate skills are not being well utilized. A Higher Education Statistics Agency survey found that 28% of first-degree leavers were entering ‘non-professional’ roles (Scottish Government, 2019^[11]).

Equity considerations urge a common funding approach as between higher education and apprenticeship

There are also compelling equity considerations. Currently large government expenditures on higher education yield extensive benefits to the best-educated in terms of education and subsequent employment. A four-year degree at a Scottish university will cost the government around GBP 36 000 (basing this estimate on four years of the fees charged to EU and UK non-Scottish students). By contrast, *no* Modern Apprenticeship involves a government contribution of more than GBP 10 000, and the vast majority involve a contribution of less than GBP 5 000 (SDS, 2019^[2]). Few Modern Apprentices are in as favourable socio-economic circumstances as those who benefit from higher education, either in respect of parental social background, or in respect of future career prospects. Equity therefore requires the funding principle for Modern Apprentices to be at least as generous as that which governs higher education. While apprentices themselves do not pay for the off-the-job training, potential apprentices lose out, if the costs of off-the-job training deter their employer from offering them an apprenticeship in the first place, or if off-the-job training is underfunded because employers are reluctant to provide adequate funding.

The planned integrated approach to skills provision requires a coherent approach

The recent Enterprise and Skills review in Scotland admirably proposes an integrated approach to skills provision, coordinating the work of SDS and the Scottish Funding Council (SFC) (Scottish Government, n.d.^[13]). This commits SDS, the SFC and the Scottish government to an implementation plan that will align planning, commissioning and evaluation. Administrative machinery is being developed to deliver this commitment and to ensure that the needs of learners, employers and the economy are central. Part of that process should be to move towards common funding principles. This would allow employers and students to choose between higher education and apprenticeship on the basis of their needs and interests rather than because of different funding traditions. In practice, given the firm commitment of the Scottish government to higher education free to Scottish-domiciled students, this should mean adopting the same principle in relation to the off-the-job component of apprenticeship, including for older students.

4.2.5. The mix of apprenticeship provision

Training providers play a key role in driving provision in the Scottish apprenticeship system

Not only the scale but also the mix of apprenticeship provision, should reflect the requirements of the Scottish economy and apprentices. This mix relates to occupational and industry sectors, regional mix and the different characteristics of apprentices. At present, the training providers are in the driving seat; acting as a 'salesforce' they go out and recruit employers, who in turn recruit apprentices. While SDS allocates apprenticeship places in designated occupational sectors, this allocation is guided by the outturn in previous years, which is partly determined by the places which training providers manage to fill. Clearly all the apprenticeships delivered correspond to a participating employer and a participating apprentice, so training providers cannot allocate their apprenticeship places entirely as they wish. But training providers may still steer the mix of provision to reflect their own preferences. If demand from employers for apprenticeships exceeds supply – as is currently reported - then training providers will be in a strong position to choose how to allocate provision.

Training providers may influence the mix of provision

Training providers may prefer to deliver some types of apprenticeship, potentially with a conservative bias:

- A conservative bias:
 - *Inertia*. For training providers it is easier and less costly to continue to provide the same type of training as that previously delivered. This will reflect the existing skills of the teaching staff, the equipment available, and organisational familiarity with particular apprenticeship frameworks. Changing demand for skills may often therefore be resisted.
 - *Larger employers familiar with apprenticeship*. It will often be easier to build volume through existing partnerships with large employers than to seek out smaller employers with little or no experience of apprenticeship.
- Other factors
 - *Ease of training*. Some types of apprentices, notably those with some existing knowledge and skills, are easier, and therefore less costly to train than others. Training providers will tend to prefer to work with them.
 - *Employers more willing to pay*. Some employers have training budgets from which they can readily fund off-the-job training of apprentices. For others, this may be a significant barrier. Training providers, on commercial grounds, will prefer those willing to pay adequately.
 - *Location*. Often it will be easier to deliver training to apprentices working close to the site of a training provider.

The influence of training providers is not optimal

Training providers will take account of these factors when, acting as a salesforce, they seek to identify employers and apprentices through which they can deliver apprenticeships. From their point of view, attention to these factors allows them to minimize costs, and operate efficiently. The collective impact could be significant. It means that the mix of provision, at least in part, is guided by the interests of training providers, rather than by the labour market requirements of employers, and the interests of apprentices. To ensure agility in the Scottish economy, the skills system must be able to respond effectively to rapidly evolving requirements, which may involve new and small employers in innovative fields. Delivering off-the-job training in such fields is very often going to be difficult and costly, as it may often mean new equipment and new staff. From this perspective, the conservative bias is a particularly serious objection to the current funding arrangements.

4.2.6. Conclusion: Why reform is needed

The partial subsidy approach to the funding of Modern Apprenticeship is an anomaly

The ‘contribution’ or partial subsidy approach to the funding of Modern Apprenticeship is inconsistent with:

- The Scottish approach of full subsidy for higher education, an inconsistency which both distorts provision in favour of higher education, and is inequitable.
- The approach of most other leading apprenticeship countries, in which off-the-job education and training is provided and funded by government, and often augmented by additional financial incentives for employers.
- The need, on all the grounds described in this report, for an adult-friendly system, giving stronger support to adult apprentices – often incumbent workers.
- With the approach to Foundation or Graduate Apprenticeships, both of which involve government paying the full costs of off-the-job training.
- The reality that the SDS contribution represents all the funds available for the off-the-job training of Modern Apprentices aged 16-19.

The current funding system provides insufficient support for apprentices and is too provider-driven

There is already recognition that, in developing the apprenticeship system, responsiveness to employer needs will be key. Much of the language of, for example the ‘standards and frameworks’ strategy underlines the desire for a system that is led by employer demand, and rapidly responsive to changes in demand (SDS, 2019^[14]). However the current funding system for Modern Apprenticeships is a barrier to this aspiration as it gives too central a place to the contracted training providers in determining the mix of provision.

There is a skills gap at levels 6-8

Currently 70% of Modern Apprenticeship provision is at SCQF levels 6-8. At this level, the Institute for Public Policy Research have argued that there is a significant skills gap, with inadequate provision relative to the scale of current and likely future demand, across a range of sectors (Gunson, 2016^[15]). While some of this demand is currently being met through, for example, HNCs and HNDs, these programmes involve a limited amount of work-based learning and may therefore not be suitable to many types of employer requirements. This suggests the need for some overall rebalancing: this might be achieved through apprenticeships at SCQF levels 7 and 8 that draw on the best qualities of Scottish HNCs and HNDs. However this is pursued, there should be common funding principles as between HNCs and HNDs and the apprenticeships at this level.

The solution is to adopt an entitlement system, driven by the needs of employers and apprentices

The proposed solution to these challenges is both simple and proven, although it would require careful implementation. Scotland should adopt a funding approach similar to those which obtain in the strongest apprenticeship systems in continental Europe, similar to the funding approaches described in Box 4.1. This means that an apprenticeship would be instigated by an agreement between an employer and a potential apprentice. Such an agreement would automatically lead to an entitlement for that apprentice to receive government-funded off-the-job education and training. Provision, both in overall scale, and in terms of its mix, would therefore be determined by the choices made by employers and potential apprentices in the labour market (subject to any specific policy incentives that the government might choose, as discussed

below). In response, SDS would deliver (through the medium of training providers) and without fees, the off-the-job portion of the apprenticeship education and training in the chosen field.

A demand-led funding system would have multiple advantages

- Off-the-job training would be fully funded by government, providing a consistent funding approach across the apprenticeship family and in relation to higher education.
- The total number of apprenticeships would be determined by market requirements; experience has shown that this tends to vary with the economic cycle (Brunello, 2009^[10]).
- Changes in labour market demand for apprentices would immediately be reflected in the number and mix of apprenticeships, without mediation by training providers.
- There would be little scope for providers to steer provision towards apprenticeships that are easy to deliver, in terms of their location, existing skills of students, or type of employer.
- Off-the-job training for older apprentices would be fully funded, allowing the system to more fully support upskilling and reskilling for adults, a key element in a resilient skills system.
- This approach would permit the pursuit of strategic policy objectives, such as an emphasis on STEM apprenticeships, or improving the gender balance, or increasing the proportion of higher-level apprenticeships or tackling specific skills shortages. Objectives such as these could be achieved through targeted incentive payments to employers. This would follow, for example, the model of Australia, which maintains a wide range of incentive payments to support apprenticeships seen as strategically desirable by government (Australian government, n.d.^[16]).

This reform could be linked to higher expectations on employers to deliver work-based learning

Under this reform, employers would no longer be obliged to fund any off-the-job training for apprentices. The reform might therefore reasonably be linked to increased expectations on employers to deliver high quality work-based training to apprentices. Compared to some other leading apprenticeship countries, Scotland currently expects relatively little of employers – for example in terms of the preparation of those staff in enterprises who have direct responsibility for guiding and training apprentices, although one of the recommendations of SAAB group goes in this direction (see section 4.3.1 and Box 4.2). This reform implies rebalancing, but not necessarily net increases in public expenditure.

This reform involves full funding of off-the-job training for apprentices, without any employer contribution. One implication is that the apprenticeship budget would need to increase, partly because of full funding for off-the-job training, and partly because the cap on the number of apprentices would be lifted. However the net public expenditure effects are uncertain. Given that apprenticeship often competes with higher education, increasing numbers of apprenticeships would displace some higher education programmes. This would often save money, because higher education is usually several times more expensive than apprenticeship programmes. This means that if several additional students take Modern Apprenticeships as a result of the reforms, then even if this only displaces one student on a higher education programme the net public expenditure effects would be close to zero. To realise these savings, some adjustments in the numerical caps on higher education numbers would be necessary. This rebalancing would therefore need a clear lead from the Scottish government.

Box 4.2. How Dutch employers are accredited to offer work placements

The Dutch Cooperation Organization for Vocational Education, Training, and the Labor Market (SBB) is a collaboration of VET (technical education) providers and the private sector. The SBB has a mandate to accredit and coach companies offering work placements both for apprenticeship and other types of technical programmes.

In the Netherlands, accreditation of employers as suitable to provide work placements depends on the training opportunities, the availability of in-house trainers, the capacity to co-operate with the vocational school, and a good workspace. After accreditation, SBB facilitates training provision for in-firm trainers, communication between firms and schools, and knowledge exchange between companies. Accredited workplaces are registered on an open website, helping students and schools to find placements. The quality of placements is monitored by education advisers, who regularly visit workplaces, not only monitoring but also providing advice for all key actors in all aspects of work-based learning.

Source: (Hoftijzer, 2018^[17]).

The COVID-19 crisis means that improved funding overall for apprenticeship is urgent, but changing the differential between age groups should be implemented cautiously

The current (April 2020) COVID-19 crisis is not only disrupting current apprenticeships, but will also reduce the willingness of employers to offer apprenticeship places during the economic downturn which may now be anticipated. Apprenticeship therefore urgently requires a package of support measures to help the current very vulnerable cohort of school-leavers to integrate into the labour market. The wholesale funding reform proposed here should be placed on a separate timeline. One of its implications would be to remove the current subsidy differentials between younger apprentices aged 16-19 and older apprentices. While there are good reasons for doing this, it would not be timely to do so immediately, as the immediate effect might be to displace some apprenticeship places from 16-19-year-olds to older incumbent workers. Once the reform is introduced, one model might be to fully fund all apprenticeship places, but to offer extra financial incentives to employers to take 16-19-year-old apprentices.

Recommendation 1: Introduce demand-led funding for apprenticeship.

In comparison with other countries, Scotland has a skills funding system which is generous to higher education, but relatively unsupportive of apprenticeship, distorting skills provision. It also gives too large a role to training providers in driving the mix of provision. To address these two challenges, Scotland should develop a demand-led apprenticeship funding system, based on an entitlement of apprentices to receive appropriate off-the-job training fully funded by the Scottish government, bringing Scotland into line with other leading apprenticeship countries. The net impact on public expenditure might be close to zero, given that it would imply a rebalancing of participation from higher education to apprenticeships, therefore displacing expensive higher education. This proposal should be developed and implemented incrementally, starting with a pilot in selected apprenticeship frameworks to evaluate potential costs and impact.

4.2.7. Implementation

The recommended reform involves a wholesale change in the funding system for apprenticeship, and would need to be implemented cautiously and carefully, taking adequate time to manage the transition. The following steps might be envisaged:

- A budget to support a pilot exercise should be secured.
- A methodology should be developed to assess the ‘reasonable cost’ of providing the off-the-job training (and assessment) for apprenticeship frameworks. This should determine the payments of SDS to training providers. In the first instance this might be piloted in a small set of selected frameworks of different types.
- This ‘reasonable cost’ approach would be linked to clearer minima defining expectations on off-the-job training and the length of apprenticeships, as proposed under section 4.3 below.
- Incentives would be established to offer extra payments to employers offering apprenticeships meeting defined criteria. This would allow government to encourage, for example, apprenticeships in STEM fields, or apprenticeships for those with a disability. This would follow the model of Australia.
- The current ‘top-down’ system of apprenticeship funding should be abandoned in favour of a ‘bottom-up’ demand-led approach. In this approach, the mix and total number of apprenticeships should be determined by labour market demand, so that an apprenticeship contract between an employer and an apprentice should automatically trigger fully funded off-the-job training provision and assessment.
- Training providers would be contracted by SDS to meet the scale and mix of demand as defined by the apprenticeship contracts concluded between employers and apprentices. Training providers would compete for contracts on grounds of quality in delivering off-the-job training; the current secondary market in which training providers negotiate financial contributions from employers would be outlawed.
- The new funding regime would be piloted in selected frameworks. In these pilot frameworks, apprenticeships would be fully funded for all ages of apprentices with no cap being placed on numbers. Employers taking on an apprentice in these frameworks, and meeting some basic eligibility criteria, would be entitled to have off-the-job training provided to their apprentices, funded by government through SDS.
- In the absence of the previous role of training providers as a ‘salesforce’ for apprenticeship, steps would be necessary to market apprenticeships directly to employers and potential apprentices, giving attention to smaller employers.
- Over the medium term, and once any immediate pressure on employers from the COVID-19 crisis has alleviated, some additional quality expectations would be placed on the employers taking these fully funded apprentices. These might include strengthened expectations for quality work-based learning, with specific learning objectives for the workplace component of the apprenticeship.
- The pilots should be carefully evaluated to determine how the total number of apprenticeships in the piloted sectors increases as the result of the removal of the numerical cap and the increased funding available for older apprentices. It should also examine how the age and regional mix of apprenticeship changes and any implications for the equity mix of apprentices. Employers and apprentices should be surveyed to explore their experience, and to estimate the added effects of the funding changes. To estimate the additional expenditure impact, there would need to be a careful assessment of the extent to which provision is displacing other post-school education and training programmes, including higher education, and the net public expenditure implications.
- In the light of the pilot experience, the full funding scheme would be rolled out covering all frameworks.

4.3. Sustaining and reinforcing a resilient apprenticeship brand

4.3.1. Apprenticeship as a resilient institution

Scotland needs to reinforce apprenticeship

As argued in Chapter 3, the longevity of apprenticeship implies its resilience. This offers an opportunity for Scotland to take advantage of and therefore reinforce this historic strength. As described in Chapter 1, apprenticeship has grown in recent years, aided by a strong improvement strategy, and the development of new types of apprenticeship, but it remains a small element of the skills system, representing only 7% of the youth cohort (Scottish Government, 2019^[11]), far less than in other leading apprenticeship countries. This section looks at some features of apprenticeship that might be adjusted to reinforce the apprenticeship brand.

Clarity about the content of apprenticeship programmes underpins the brand

By international standards, Scotland's apprenticeship system is exceptionally flexible in respect of qualification level, the length of apprenticeship and the mix of off- and on-the-job training. While flexibility allows adaptation to particular trades and occupations, if it goes too far it risks undermining the apprenticeship 'brand'. This is because such fluidity reduces the ability of an apprenticeship qualification to signal to prospective apprentices and employers what an apprenticeship programme involves.

The Scottish Apprenticeship Advisory Board (SAAB) has made clarifying recommendations

Recently, steps have been taken to firm up the definition of apprenticeship in Scotland. The Scottish Apprenticeship Advisory Board, supported by SDS, has sought to develop a set of principles governing the definition of apprenticeship (Scottish Apprenticeship Advisory Board, 2019^[18]). These are based on existing practice, international models, and a wider stakeholder consultation exercise. The 14 proposed principles are:

1. All post-school apprentices are employed.
2. Each apprenticeship is a programme of work-based learning designed to develop competence in a defined occupation and apprenticeship pathway.
3. Apprenticeships are available across a wide range of sectors where there is demonstrable industry demand.
4. Apprenticeships support inclusion and diversity and are designed to ensure there are no unnecessary barriers to learning or assessment.
5. Apprenticeship frameworks are based on occupational standards and integrate professional standards where necessary.
6. The requirements of an apprenticeship are set out in a framework document defined by industry which adapts to emerging and future needs.
7. Apprenticeships offer internationally recognised, accredited or externally quality assured vocational, technical and professional qualifications at SCQF Levels 5 to 12 with clear pathways for progression.
8. Each apprenticeship framework describes the required learning content and method of learning and assessment.
9. The qualifications included in apprenticeship frameworks are designed to develop transferable skills across the sector.
10. Each apprentice is supported in the workplace by a competent mentor and in their learning and assessment by a qualified trainer/ educator/ assessor.

11. Apprenticeship learning is delivered to fit the requirements of the apprenticeship framework, the needs of the business and the individual's pace of learning.
12. Employers and apprentice roles and responsibilities are clearly set out in an apprenticeship agreement.
13. Apprenticeships are underpinned by robust quality assurance processes from design to delivery.
14. Apprenticeship Framework documentation is clear, accessible and in an easy to understand format.

But these principles do not cover programme length and off-the-job training

These principles are a valuable step forward in clarifying the boundaries of apprenticeship, but they leave some quite basic elements undefined – minimum programme length and the proportion of on- and off-the-job training. These two issues are examined below

4.3.2. The length of apprenticeship programmes

Longer programmes can support learning an occupation, not just a specific skill

Going back centuries, apprenticeship across many countries has commonly required fixed periods of training, numbered in years, across a range of occupations. The main rationale for requiring a period of years of training is that apprenticeship, by definition, represents career-training leading to medium or long-term entry to an occupation, rather than skills training for a particular task, which might obviously be completed in a period of days or weeks. Fixed and substantial periods of training may also be necessary for employers to realise benefits from apprenticeship, through the productive contributions of relatively skilled apprentices towards the end of their apprenticeship programme (Kuczera, 2017^[19]). Previous work by the OECD, looking at all the different factors which go into apprenticeship length, has argued for a balance between flexibility in programme length and the need for some clarity in what counts as apprenticeship (OECD, 2018^[20]).

Apprenticeship programme length can be estimated indirectly

In Scotland there are no regular data on the length of apprenticeship, but it is possible to make some estimates. In 2017-18 there were just over 27 000 starts, and in September 2019 there were approaching 39 000 apprentices in training. Comparing these stock and flow measures, and allowing for a proportion of non-completions, suggests that apprenticeships are around 20 months long *on average*. But this average estimate does not tell us what proportion of programmes are very short. Table 4.1 gives some added indications: while apprenticeships in the automotive, chemicals and construction sectors are usually a couple of years, programmes under one year in length are common in the food and drink, and in the retail and customer service fields.

Apprenticeship frameworks only sometimes suggest programme length

Individual apprenticeship frameworks often (although not always) contain guidelines on expected programme length. Some indicate an 'average' completion time of 12 months, implying that some will be significantly less – see (SDS, n.d.^[21]). The SAAB report makes no specific recommendation on the length of apprenticeship as one of the 14 principles, but suggests that such a minimum might be desirable.

Apprenticeship policy in Scotland does not require a minimum duration for Modern, Technical and Professional apprenticeships, although some sectors do mandate this. A minimum duration could have benefits for the apprentice and the employer, by giving wider experience in the business and support to embed new skills. This would provide consistency across the apprenticeship family. (Scottish Apprenticeship Advisory Board, 2019^[18])

Table 4.1. Estimated average length of Modern Apprenticeship programmes in different occupational sectors, 2018/19 data.

Sector	Starts	In training	Implied average length of programme in months
Administration & Related	1 826	1 704	13
Animal Care, Land & Water based	290	463	22
Automotive	1 187	2 974	34
Chemicals & Biotechnology	23	55	33
Construction & Related	6 111	11 857	26
Creative & Cultural Skills	134	176	18
Engineering & Energy Related	1 515	4 242	38
Financial Services	862	923	15
Food & Drink	1 221	956	11
Hospitality & Tourism	2 574	2 362	13
Management	855	900	14
Other Manufacture	177	241	19
IT & Other Services	2 331	2 483	15
Personal Services	848	1 270	20
Retail & Customer Service	2 074	1 528	10
Sport, Health & Social Care	4 019	4 482	15
Transport & Logistics	1 223	1 149	13

Note: Estimated average length of programme is calculated as the ratio of those in training to starts in the course of one year multiplied by 12 to express it in months. The result is adjusted upwards to reflect the proportion of non-completers (24%) who are assumed to only complete half the programme length.

Source: (SDS, 2019^[22]).

Accelerated completion is for those who have a proportion of the required skills

Some apprenticeship systems allow normal programme lengths to be shortened, through recognition of prior learning, where adult starting apprentices have relevant existing skills. Sometimes such flexibility is also used to accommodate those who are simply fast learners rather than because of prior learning (see Box 4.3). In Scotland, since few frameworks formally specify a required (rather than average) programme length, the principle of accelerated apprenticeship works differently. All training providers are required to have an RPL policy, under which they should assess new apprentices and grant credit for prior learning, leading to accelerated completion. Individual apprenticeship frameworks define ceilings for how much recognition of prior learning is possible (SDS, 2019^[3]).

Box 4.3. Accelerated completion of apprenticeship in recognition of prior learning

In **Australia** apprentices may receive course credits for skills they already have and prior work experience, reducing training duration. Apprenticeships are “competency-based”, so that if an apprentice can demonstrate that they have acquired the required skill level, they may progress to the next stage of their training. Competency is assessed both by training providers and employers.

In **Denmark** those aged over 24 may complete an apprenticeship through two alternative pathways following initial competence assessments (which lasts between half a day and ten days). Those with at least two years of relevant experience are exempted from the basic course (which includes school-based vocational training), and follow a shortened main course (which normally combines school-based and work-based training) and do not need on-the-job training. Those with some relevant work experience or prior education and training may follow a shortened basic course (up to 20 weeks), a shortened main course and up to two years of on-the-job training.

In **Germany**, reductions in programme length may be granted to those with prior qualifications or adults aged 21 and above. Those with a secondary qualification can obtain a reduction of six months, and up to 12 months for those with a general upper secondary school qualification, or for those over 21 and already holding a vocational qualification. An apprentice may take the final qualifying examination earlier than usual if both the training firm and the vocational school attest to the strength of their performance.

In **Switzerland**, the duration of apprenticeship may be reduced for those with prior qualifications (e.g. general upper secondary qualification, vocational qualification) or skills that allow them to acquire the targeted skillset faster (e.g. work experience with validated learning outcomes). Typically duration may be reduced by one or two years. In 2020, among apprentices over the age of 25, around 25% of graduations involved reduced programme durations.

In the **United States**, registered apprenticeship programmes range from one to six years, with the majority taking four years. Some programmes are competency-based; others are time-based. In competency-based schemes apprentices may complete faster or take extra time to develop the required competences, though these schemes still have to comply with certain requirements regarding time spent on each major process.

Source: (Kis, 2018^[23]); (SERI, 2020^[24]).

Many Scottish apprenticeship programmes are shorter than in other countries

Scottish apprenticeship programmes are shorter on average than in most countries, and the apprenticeships of less than 12 months found in Scotland are particularly unusual by international standards (see Table 4.2). The International Labour Organisation defines apprenticeship in terms of “long-term training” (ILO, 2017^[4]). CEDEFOP propose that all apprenticeships should ensure “Duration is long enough to ensure meaningful alternation.” (of on and off-the-job training) (CEDEFOP, 2019^[5]). Looked at across the United Kingdom, in Northern Ireland official guidance states that apprenticeships usually take at least two years and up to four years, but they are not ‘time-served’ (Northern Ireland Government, 2017^[6]). In England, following recommendations in the Richard report, apprenticeships are now required to be at least 12 months in length (Powell, 2019^[7]).

Table 4.2 In most countries, apprenticeship is 2-4 years in length

Selected countries responding to the OECD – G20 questionnaire, 2013

Country	Length of apprenticeship programme
Australia	2 - 4 years
Belgium Flanders (Dual System)	1 - 3 years
Canada	2 - 5 years
England (UK)	More than 1 year
Finland	Usually 2.5 years
France	50% more than 2 years
Germany	2 – 3.5 years
Ireland	Usually 4 years
Italy (apprenticeship For Those aged 15-25)	3 - 4 years
New Zealand	3-4 years
Northern Ireland	1-4 years* Two year minimum proposed
Norway	Typically 4 years
Switzerland	3-4 years (except short programme of 2 years)
United States	Majority are 4 years. One year is the minimum

Source: (OECD, 2014^[28]).**4.3.3. The balance of on and off-the-job training***Apprenticeship has been widely defined as a blend of on and off-the-job training*

While practical learning by doing in the workplace is hugely valuable, it is widely recognised, as a rationale for apprenticeship, that more theoretical requirements are best acquired in a classroom context, and that the two forms of learning are complementary. The International Labour Organisation, like many individual countries, therefore expects apprenticeship to involve a combination of on- and off-the-job training (ILO, 2017^[24]). CEDEFOP defines apprenticeship as “Education and training underpinned by structured alternation of learning in an education and training setting, with learning and working at a workplace and leading to a recognized qualification” (CEDEFOP, 2019^[25]). The European Alliance for Apprenticeship defines apprenticeship as formal programmes, combining company and school-based education leading to a recognized qualification (European Alliance for Apprenticeships, 2015^[29]).

Off-the-job training can be defined variously

As indicated by the SAAB report, ‘off-the-job’ has various interpretations. It can, variously, refer to training outside productive work (but possibly still at the workplace); it may mean at a location other than the workplace, and it can also imply delivery by a training provider other than the employer. While some training has all three of these characteristics, this is not universal. In Scotland, the employer can also qualify as a training provider – in which case they may be delivering some classroom elements of an apprenticeship programme in the workplace, although separately from productive work.

Only some Scottish frameworks specify off-the-job training requirements

In Scotland, while there is no general rule for how much off-the-job training is included in Modern Apprenticeship, some individual frameworks set out requirements. For example the Modern Apprenticeship in food and drink SCQF level 6 requires, that for pathways 1-6 10% of programme time (12 months in total) should be spent in off-the-job training, while in pathway 7, 20% of programme time (36 months in total, should be so spent (SDS, n.d.^[30]). The SCQF level 6 customer service framework suggests that “up to 20%” of the average programme time should be spent in off-the-job training (SDS, 2017^[31]). But many

frameworks are silent on this point. During their visit to Scotland, the OECD team were told by interlocutors that some apprenticeship programmes, up to two years in length, are delivered without any off-the-job training. As with the length of apprenticeship, there are no data collections on this topic.

SAAB has proposed leaving off-the-job requirements to individual industry sectors

SAAB considered the issue of off-the-job training requirements, but proposed leaving any such requirement to individual sectors.

SAAB recommends that it is up to the sector to determine whether there should be a mandatory off-the job learning element... The Frameworks and Standards Group will give further consideration to how to define off-the-job learning in order to create guidance for employers and sector groups. (Scottish Apprenticeship Advisory Board, 2019^[18]).

Table 4.3. How countries describe the proportion of 'off-the-job' training

Selected countries responding to the OECD – G20 questionnaire, 2013

Country programme	Off-the-job training arrangements
Australia	Traditional training models provided for apprentices have included one day per week (or the equivalent in 'block training') at a training provider.
Belgium Flanders	Dual system: in-company training (4 days per week) and training (1 day). Part-time education ¹ : 3 days per week of in-company training, 2 days theory in centre for part-time education.
Canada	80% to 90% of an apprentice's training time is in the workplace. The remainder is provided at a public or private providers, usually in eight-week training blocks. In Quebec, the in-class training is taken prior to apprenticeship.
Estonia	One-third of the studies take place at school providing theory and basic practical skills.
Finland	Programme includes 20 to 30% of theoretical instruction in vocational institutions.
France	Usually three weeks a month are dedicated to training with the employer and one week to off-the-job training, which takes place in <i>Centres de Formation des Apprentis</i> .
Germany	Training is mainly provided in the company (3 to 4 days per week) – supported by teaching in vocational schools (1 to 2 days per week).
Ireland	About 20% of the total programme duration is spent in off-the-job training, in a Training Centre, Institute of Technology or College of Further Education.
Italy	In the 3-4-year apprenticeship for 15-25-year olds, off-the-job training includes between 400 and 990 hours/training, depending on entry-level competences of apprentices and the training pathways. Accredited agencies provide the training.
New Zealand	Off-the-job training includes a minimum of 40 credits per year (each credit is equivalent to 10 notional learning hours) or a third of full-time, provided by public and private industry training organisations.
Norway	The programme normally includes two years at school with practical training in school workshops and short work placements in a company, followed by two years with an employer.
Switzerland	Training takes place through the totality of the programme, 3-4 days per week with the employer, leaving 1-2 days at the vocational school.
United States	For each year of the apprenticeship, there is a recommended minimum of 144 hours of related classroom instruction (plus 2 000 hours of on-the-job training). Training is provided by apprenticeship training centres, technical schools, and community colleges.

Source: OECD (2014^[28]) as adapted in Field (2018^[32]).

Other OECD countries often require a minimum of off-the-job training

The Scottish approach contrasts with apprenticeship systems in many countries, which, typically by regulation, require a certain quantity of off-the-job education and training. Table 4.3 provides an indication,

although it should be recognised, as explained above, that some fluidity in the definition of off-the-job training may affect the results reported.

Off-the-job education needs to provide for general education

One important function of off-the-job education and training is to provide general education to apprentices. Particularly for younger apprentices, this may parallel the general education delivered to those in academic secondary education. In Scotland Modern Apprentices are expected to be certificated in a set of five core skills, namely communication, working with others, problem solving, information and communication technology, and numeracy. These core skills may be realised and certificated at different levels, and the required level, for any given apprenticeship framework, will depend on the SCQF level. So, for example, a Modern Apprenticeship at SCQF level 2 implies obtaining core skills certificated at SCQF level 4; a Modern Apprenticeship at SCQF level 3 implies core skills certificated at SCQF level 5, and so on. Sometimes they will already have been certificated in these skills as part of their prior school qualifications, and these five core skills are also integrated into the Scottish national curriculum. Alternatively, if it is possible to map the required core skills to relevant parts of the SCQF qualification which is included in the apprenticeship framework, then they will not need to be separately certificated (SDS, 2014^[33]). This approach is very different from that of other countries. First, it is more closely linked to generic job skills than to factors of general education. Second, the requirement is linked to demonstrated competences rather than required time in off-the-job education (see Box 4.4).

Box 4.4. General education components of off-the-job training for apprentices

In **Switzerland**, all apprentices receive 2.5 hours per week of teaching in the official language, communication, civic education (including some applied mathematics) and 45 minutes of physical education (e.g. see programme for kitchen employees. This adds up to 120 hours of basic skills education and sport per year – so approaching 400 hours over a 3-year apprenticeship.

In **Germany**, apprentices receive 160 hours annually of general education, and this time is divided among subjects such as German, English, sports, and economics or social science.

In **Norway**, most apprentices spend the first two years of their apprenticeship in full-time school education before moving to a work-placement for the remaining two years of their apprenticeship. During the two school-based years apprentices have 588 hours of basic education including Norwegian (or other official language), mathematics, English, science and physical education

In addition to general education, apprentices in the three countries also receive education and training in occupation-specific subjects during their off-the-job education. Conversely, in Australia, the employer-led training packages which define apprenticeships contain relatively limited amount of general education, and for that reason have been criticised as inadequate

Source: (Kuczera and Field, 2018^[34]).

4.3.4. Conclusion: Why reform is needed

Some Scottish Modern Apprenticeships are shorter and/or with less off-the-job training than is usual

It is widely accepted that one of the defining strengths of apprenticeships is its offer of substantial career training through a structured blend of work-based learning and off-the-job education and training. While many Scottish apprenticeships share in these strengths, requirements in terms of programme length and

off-the-job training element are absent or much weaker in Scotland than in most other countries. Data are limited, but some Scottish apprenticeships are well outside international norms. Apprenticeships in the food and drink, and retail sectors are mostly less than one year in length, and it is unusual, internationally, to have apprenticeships, as sometimes in Scotland, with no or very little off-the-job training and education. Lack of data on these topics is itself a problem as it means much uncertainty, both for students and employers, about what an apprenticeship usually involves.

Clarity about design features is a key element in the apprenticeship brand

Divergence from international norms is not in itself a problem. However there are some widely accepted rationales, described above, for defined minima for programme lengths and off-the-job training. Qualification brands in education and training, like strong commercial brands, send quality signals when underpinned by transparent minimum standards. If someone says that they have a degree from a Scottish university, their audience knows that they have had four years of quality-assured education in a reputable institution. That assurance underpins the university degree brand, and the value of the qualification in the eyes of both students and employers. Equally, if in Switzerland someone says that they have an apprenticeship qualification, their audience knows that they have spent 3-4 years in a programme with a substantial element of off-the-job training, and demanding quality-assured learning with their employer, under the supervision of a well-prepared mentor in the workplace. It is this kind of clarity regarding the main parameters of the programmes on offer that underpins the status of degree-level university education in Scotland, and apprenticeship in Switzerland. Unfortunately it is currently lacking in Modern Apprenticeships. This is a compelling argument for clarifying and increasing minimum requirements on apprenticeship in Scotland – with a view to establishing apprenticeship as a brand which conveys a clear signal not only of quality, but also of the quantity and form of training involved. Such minimum standards might be established without seriously disrupting a distinctively flexible approach to apprenticeships.

Growth in apprenticeship, as proposed here, needs to be underpinned by enhanced quality standards

Recommendation 1 above proposes improved funding for apprenticeship, and by implication, more apprenticeship relative to other forms of initial education and training, including higher education. This recommendation needs to be supported by assurance that the apprenticeships on offer are substantial programmes of high quality, so that they can stand comparison with apprenticeships in other countries, and with other forms of education in Scotland. This assurance can only be realised through a significant upgrading of minimum expectations on apprenticeship to meet international norms.

Some forms of work-based learning are desirable, but may not correspond to apprenticeship

In a 2015 survey, 85% of employers taking apprentices in Scotland reported satisfaction with programme length, and good levels of satisfaction with other aspects of the programme (SDS, 2015^[35]). Very short programmes, and/or those with little or no off-the-job training, may indeed be delivering useful workplace skills and deserve support. But it does not follow that they should be described as apprenticeships. This description undermines the brand image of Scottish apprenticeship since it means that a proportion – perhaps a small proportion – of Scottish apprenticeships deliver *much less* in terms of length and therefore substance, and/or in off-the-job education and training, than most international counterparts, including other parts of the United Kingdom. It is a particular challenge when most Scottish apprenticeships are in line with international norms.

The issue of an apprenticeship 'brand' in Scotland is tied closely to nomenclature

'Modern apprenticeships' have existed since 1994, and can therefore no longer reasonably be described as modern. This terminology is also unhelpful for those with Scottish apprenticeship qualifications who wish to work in England, as in England 'modern apprenticeships' used to exist, so it sounds out of date in the English context. Given the substantial reforms in Scottish apprenticeship standards and frameworks now under way, and clarification of the boundaries of apprenticeship as proposed here, alongside other reforms, it would be timely to rename apprenticeships. 'Scottish Apprenticeships', to include Graduate and Foundation alongside Modern Apprenticeships, would be one option, and already appears to have some informal currency. Given increasing divergence between the apprenticeship systems of Scotland those in England, Wales and Northern Ireland, a signal of the difference would be helpful.

Recommendation 2: Establish minimum requirements for the length of apprenticeship programmes and for the proportion of off-the-job training.

A small (currently unquantified) proportion of Modern Apprenticeships are outside internationally accepted norms for quality apprenticeship, in that they are less than one year in length or have no or very little off-the-job training. To strengthen the brand of apprenticeship, and building on the valuable recommendations of the Scottish Apprenticeship Advisory Board, minima should be established for the length of programmes and the proportion of programme time to be spent on off-the-job learning, bringing Scotland into line with other leading apprenticeship countries. Linked to this reform, the whole apprenticeship family should be renamed 'Scottish Apprenticeships'.

4.3.5. Implementation

A sequence of steps is needed

- A first step would be data collection to identify how many apprenticeships are of different length, and what proportion of off-the-job training they include. Regardless of the approach, this information is of policy importance and should be regularly collected in any case.
- Linked to this exercise, a review may be necessary of what type of general education might reasonably be expected to be included in apprenticeship, including transferable skills, as this bears on the minimum requirement for off-the-job training.
- Partly in the light of these data, minima should be introduced for programme length and for the proportion or absolute amount of off-the-job training, in the full knowledge of what proportion of programmes will be affected.
- Some existing apprenticeships would fall below these established minima. They should be assessed to establish whether those programmes are likely to be maintained through realization of the minima. For those that will not do so, there should be an assessment of whether the training involved is desirable and useful, and if it should be supported in some other way as useful training, but not described as apprenticeship.
- Modern, Graduate and Foundation Apprenticeships should all be described as 'Scottish Apprenticeships'. Level 4 and 5 work-based learning is not an apprenticeship, although it could reasonably be described as a 'pre-apprenticeship'. Clearly there are many people already in the labour market who have what they and their employers would naturally describe as 'modern apprenticeship' qualifications, and it would not be constructive to undermine this historic

nomenclature where it works. The aim instead would be to use 'Scottish Apprenticeship' as the standard form in official documentation, without disavowing or treating as incorrect 'Modern Apprenticeship'. Differentiation between different levels of apprenticeship should primarily be in relation to SCQF levels, although there is no reason why the terminology of Graduate Apprenticeship should not be retained.

4.4. Recognition of prior learning (RPL) and apprenticeship

4.4.1. Why recognition of prior learning matters

Recognition of prior learning has multiple benefits

Many adults possess useful work skills that are uncertified, often because they have been acquired through work experience and/or through informal or overseas experience and training. Recognising and certifying these skills helps to make the labour market work better, allowing individuals to obtain work that uses and rewards their skills, while also helping employers to recruit more efficiently, and allocate workers to more appropriate job roles. Moreover the potential of recognition encourages individuals to develop their skills during working life. RPL also has equity benefits, granting recognition to the skills of those with limited formal education or qualifications, including migrants (Kis, 2018^[23]).

Adults entering apprenticeships will often already have relevant skills

In Scotland, many adults entering apprenticeship will already have working skills, sometimes because they were incumbent workers when they started their apprenticeship, and sometimes because they were previously working in a closely related field. As noted in the recent SDS report on standards and frameworks (SDS, 2019^[14]), some European countries have apprenticeship systems that offer recognition of prior learning. This is typically pursued in two forms. The first form, accelerated apprenticeship, was discussed in section 4.3.2. A second form involves direct access to an assessment leading to the qualification that is normally realised through an apprenticeship, without going through an apprenticeship programme. This is explored here.

4.4.2. Direct access to a final assessment and qualification

An accelerated apprenticeship programme will not be suitable for highly skilled individuals

Accelerated apprenticeship, as described in section 4.3.2, suits the needs of those who already have a modest proportion of the skills required for their target qualification. But for those who already have most of the required occupational skillset, no apprenticeship programme would be suitable, as little of the programme would be relevant or necessary. For these individuals a different approach is needed.

In some countries experienced workers have a direct route to a final assessment

Several strong apprenticeship systems in Europe offer a direct route to the qualifications also realised through an apprenticeship programme, usually through a free-standing assessment or examination. This is usually augmented by other prior learning requirements, most commonly that the candidate has been working in a relevant field for a set period of time – for example 5 years in Switzerland (see Box 4.5). This helps to ensure that possession of the qualification is backed by relevant work-based learning. Candidates may pursue some form of tailored preparation for the assessment, since gaps in their occupational knowledge and skills may sometimes need to be filled.

Box 4.5. Direct access for adults to final apprenticeship examinations

In **Austria**, Individuals aged 18 or more with relevant experience may directly apply for the final apprenticeship examination without enrolling as an apprentice. This route accounted for 15 percent of awarded apprenticeship qualifications in 2012.

In **Germany** Individuals may take an “external examination” (*Externenprüfung*), taking the final assessment of regular apprenticeship programmes without completing the programme itself. Access is limited to those who have worked in the target occupation at least for one and a half times as long as the duration of the apprenticeship, and they have been performing skilled tasks in their job. Candidates may prepare for the assessment by following preparatory courses. In 2009 candidates who took the external examination accounted for about 6% of successful apprenticeship final examination candidates.

In **Norway**, it is possible to take the trade or journeyman's examination without an apprenticeship. The candidate must demonstrate comprehensive competence in the field. The candidate must have work experience in the field equal to the length of the apprenticeship plus 25 per cent (usually meaning five years in total) and must pass a theoretical exam. About a third of journeyman certificates were awarded on the basis of experience-based certification in 2015/16.

In **Switzerland**, Adults with relevant work experience may access the final qualifying examination for apprenticeships and obtain a federal vocational diploma or certificate. Five years of work experience are required, and in most cases this includes a minimum of several years - usually three - in the targeted occupation. Cantons provide advice to applicants about how to prepare for the examination. In some occupations, preparatory courses for adults are available. In all occupations, adults may pursue additional training by attending vocational schools or intercompany training centres.

Source (Kis, 2018^[23]).

4.4.3. Conclusion: Why reform is needed

Provision of a direct route to apprenticeship qualifications for experienced adults is needed

In Scotland, while accelerated apprenticeship is a recognised part of the system, there is no option for direct access to an assessment leading to the same qualification as that obtained through apprenticeship. This is a significant gap in provision, which bears particularly on adults seeking to upskill and reskill, while building on existing skills. Leading apprenticeship countries have demonstrated the importance of this route. In Norway for example, one third of those qualifying as journeypersons go through this route; two thirds follow a regular apprenticeship programme. In Scotland, particularly given the strong arguments for improving the capacity to serve adults, provision of this type is needed.

A direct route may need to be established quickly in response to the COVID-19 crisis

As signaled in Chapter 1, many current apprentices are, at the time of writing in April 2020, having their apprenticeship programmes disrupted as a result of the COVID-19 lockdown, and in the coming months economic disruption will continue to interrupt programmes. Some of these apprentices will not be able to complete their programme in the usual way, because they are made redundant, or because of sustained disruption of their normal workplace, as well as sometimes in their training location. These individuals will need effective support so that they can complete and gain their desired occupational qualification. To this end, it will be very important to revisit assessment arrangements, and establish, so far as possible a final

assessment which is accessible to individuals who may not have completed their apprenticeship programme in the normal way. The aim should be to offer flexibility, while maintaining the standards required for occupational competence. Such a free-standing flexible assessment arrangement, while established for a separate purpose, would be very similar to the arrangement proposed here to provide a direct route for experienced adults to obtain a qualification similar to that realized through an apprenticeship programme. Consequently the flexibilities which may need to be created urgently in response to the COVID-19 crisis would naturally lend themselves to the wider purposes set out in this review.

The direct route would effectively serve migrants

Recent OECD work has described how vocational education and training systems can and should adapt to respond to migrant needs (Jeon, 2019^[36]). A direct route would also be an effective way of recognizing the prior learning of migrants. Adult migrants often have most of the skills required for a target occupation as a result of previous experience or qualifications, but the occupation in Scotland may involve slightly different requirements from those they are used to. The needs of such migrants will be most effectively met through a direct route to an assessment, supported by some training tailored to match the gaps in their skillset. At present, England, like Scotland, lacks a direct route to a final assessment for apprenticeship, although it has been suggested that one should be created - see (Field, 2018^[32]). Creating a direct route in Scotland might therefore be a means of competing with England for migrant labour in key areas of skills shortage. It would also help to ensure that the skills of migrants are fully utilized, both for their benefit, and to the advantage of the Scottish economy.

Recommendation 3: Develop a non-apprenticeship route to the qualifications currently obtained through apprenticeship.

For experienced adult workers, Scotland should establish direct access routes to the qualifications currently realised through apprenticeship. This would follow the model of other countries and fill a gap in provision. Such routes would not be apprenticeship programmes, but would require previous relevant work experience. An assessment procedure would be defined for such individuals, assessment bodies identified, and funding arrangements addressed. This approach would also lend itself to the immediate requirements of the COVID-19 crisis, in offering a route to certification for those individuals who have had their apprenticeship programmes interrupted.

4.4.4. Implementation

Implementation could be pursued through the standards and frameworks group

The feasibility of this approach has been well-demonstrated in many other countries. Implementation would involve several steps:

- A direct access route would need to be clearly defined in relation to the parallel apprenticeship programme leading to the same qualification. Since, at present, each apprenticeship framework sets out a context in which different SQA (or other) qualifications are obtained, this approach would need to be modified so as to define a single qualification associated with an occupational standard. That single qualification would then be obtained either through apprenticeship, or through a direct access route. Such an arrangement would most naturally be pursued through the standards and frameworks group, in consultation between SDS and the SQA.

- The mastery of an occupational skillset requires the development through practice under professional guidance of occupational skills. This principle underpins apprenticeship. Any direct route to a qualification would need to reflect this point. Following the example of other countries, a substantial amount of relevant work experience should be a required precondition for access to a final assessment. The assessment itself should also include practical demonstration of skills, as well as knowledge.
- The assessments could be undertaken by the training providers that also deliver the linked apprenticeship in the target occupational field. A responsible body would be designated to administer the assessment, and ensure the eligibility of each candidate, and a system to fund the assessments. Quality assurance oversight would be necessary.

4.5. Higher level vocational qualifications for qualified apprentices

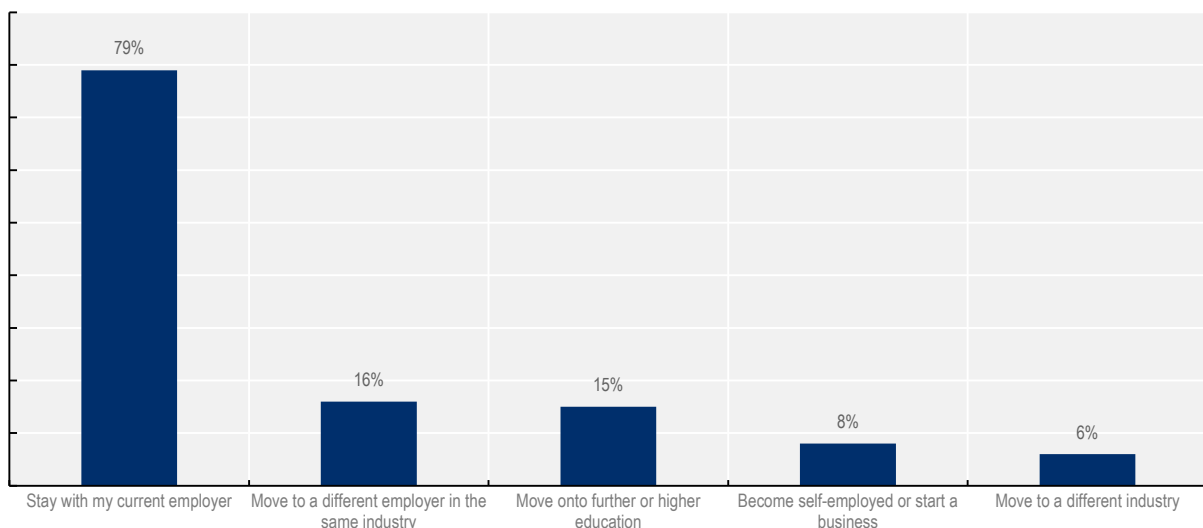
4.5.1. The master craftsperson qualification

Some apprentices in Scotland expect to pursue further learning

Figure 4.1 provides an indication of how current apprentices in Scotland see their future. Four out of five expect to stay with their current employer, but some anticipate further learning, and some to be self-employed. Further disaggregation shows that older apprentices are less likely to anticipate further education or training, with only half as many over-25s (9%) as younger apprentices expecting this pathway, and fewer expecting to become self-employed. Female apprentices lean more towards further learning, but less toward self-employment and small business – only half as many female apprentices expected to follow this latter route compared to their male counterparts (SDS, 2019^[8]).

Figure 4.1. Apprentice expectations on completion of their programme

Share of apprentices



Note: Apprentices were asked what they expected to do on completion of their apprenticeship. Multiple responses were permitted.

Source: Adapted from SDS (2019^[37]).

Technical and vocational education programmes need to offer pathways to further learning

Chapter 3 argued that changing and increasing skills requirements, alongside increasing aspirations, imply the need for Scotland to offer further learning opportunities to those leaving an initial apprenticeship. Work by the IPPR has demonstrated that in Scotland the supply of skills at mid-level – post-school but below university degree level at SCQF levels 6-8 – is currently insufficient to meet demand, and this gap in

provision is on track to grow in the future (Gunson, 2016^[15]). In OECD countries, including Scotland, where degree-level university education is so often seen as the 'royal road', and tertiary participation rates have been increasing fast, apprenticeship needs to demonstrate that it too offers options for further learning, including higher education. Part of the country response has been to establish pathways for qualified apprentices to enter higher education. In Germany, Austria and Switzerland, these efforts have concentrated on offering 'permeability' such that those completing apprenticeship programmes have also been able to qualify to enter higher education, by following a programme, consecutively with, or subsequent to their apprenticeship, to qualify them for entry into higher education (Field, 2018^[38]).

Meister – mastercraftsperson qualifications are one element in such pathways

However higher education pathways are not always what is wanted or needed. Some skilled workers want and need further specialist training in their occupational field, rather than more general higher education. The existence of such higher-level occupational programmes reinforces initial training with a career structure. In the dual system countries, those who complete apprenticeships can aspire to higher level vocational qualifications, typically in the form of professional examinations involving flexible preparation, that can be taken by those also working in a professional field. In the form of 'Meister' qualifications, they offer a combination of higher level technical and professional skills, entrepreneurial skills required to run a small business, and skills in training apprentices (see Table 4.4).

Table 4.4. Master craftsperson qualifications in Austria, Germany and Switzerland

	Austria	Germany	Switzerland
Examination	<i>Meisterprüfung</i> (Master craftsman)	<i>Meisterprüfung</i> (Master Examination)	<i>Hoehere Fachprüfung</i> (Federal professional examination - level 2)
Objectives	To acquire specialist + managerial knowledge to run one's own handicraft business, to be entitled to train apprentices	To acquire specialist + managerial knowledge to run one's own handicraft business, to be entitled to train apprentices	- To acquire specialist + managerial knowledge to run one's own handicraft business, to be entitled to train apprentices - To certify required competencies in legally regulated areas (e.g. electrician, tank inspector) - To facilitate promotion; even university graduates use the exam to prove specialist qualifications.
Regulation	Austrian Chamber of Commerce.	Federal Ministry of Economics and Technology	State Secretariat for Education, Research and Innovation (SERI). Professional organisations submit their exam rules to the SERI for approval. The development of new exams takes 1-2 years.
Fields of study	Trade, Construction, Technology	Trade, Construction, Technology	Trade, Construction, Technology, Commerce, Service, Security
Pre-requisites	Completion of the Apprenticeship exam. Candidates must be over 18	Completion of the Apprenticeship exam	A Federal PET Certificate or qualification. The professional organisations define the entry requirements
Preparation	Preparation courses offered by the Institutes of Economic Promotion and Chambers of Commerce.	The Chambers of Crafts and Commerce offer non-obligatory preparatory courses.	Preparatory courses, pursued by most candidates, are offered by public and private training centres.
Examination	Includes 1. Practical; 2. Oral; 3. Written 4. Instructor examination; 5. Entrepreneur examination	Includes practical and theoretical components specific to the trade and economic and legal knowledge, pedagogical skills the same in all trades.	The exam characteristics depend on the professional field.
Finance	2010: The Meister examination fees were EUR 2 329.	The Meister exam fee is EUR 2 000-2500.	The exam is subsidised by the Confederation, preparatory courses by the Cantons. 50% of employers support exam preparation.

Source: Bundesamt für Berufsbildung und Technologie BBT (2011). *Skills beyond School-The OECD Policy Review of Post-secondary Vocational Education and Training: Background Report Switzerland*; Centre Suisse de coordination pour la recherche en éducation CSRE (2010). *L'éducation en Suisse rapport-2010*; Bundesministerium für Berufsbildung und Technologie BBT <http://www.bbt.admin.ch/>; Wirtschaftskammer Österreich WKO; Bundesministerium für Bildung und Forschung BMBF.

4.5.2. Conclusion: Why reform is needed

Practical initiatives are needed to build lifelong learning into the careers of apprentices

Currently, apprenticeship in Scotland is primarily seen, by both potential apprentices and employers, as a preparation for a particular occupation (see Figure 4.1). At the same time, at a strategic level, Skills Development Scotland and the Scottish government are actively addressing the need for a skills system that embraces lifelong learning. This strategic objective needs to be translated into a set of practical design features of apprenticeship in relation to learning careers. One aspect of this is the development of higher-level professional qualifications to which those completing apprenticeships may aspire.

The mastercraftsperson model of the German-speaking countries might be emulated

The model of the German-speaking countries has much to offer, but would need to be modified to fit the Scottish environment. The Meister qualification, available as a higher-level qualification to those with initial apprenticeship helps to professionalise apprenticeship in several ways. First, it provides a career structure, and an aspiration for those pursuing an apprenticeship. Second, it trains experienced practitioners so that they, in turn, have the skills to train up the next generation of apprentices. Third, it provides a framework in which the developing technical skills of practitioners can be recognised and certificated, while also updating technical knowledge. Fourth, it is designed as flexible provision for working adults, since it takes the form of an examination, with preparation for that examination being optional and tailored to individual needs. These are powerful advantages, and it is no surprise that Wales is actively pursuing the introduction of these qualifications (Welsh Government, 2017^[39]). The Welsh government also cite as a factor their wish to take advantage of the experience and mentoring potential of older workers.

Recommendation 4: Establish mastercraftsperson qualifications.

For apprenticeship to be attractive to able young people, it needs to open up future learning opportunities. This means options for transition to higher education, but it also requires pathways to higher level technical qualifications within a professional field. In the German-speaking countries in Europe, this is partly addressed through the 'master craftsperson' qualification. This allows qualified apprentices, often with work experience, to acquire higher level professional skills, learn how to run their own small business, and develop skills in training further apprentices. Typically such qualifications are acquired through a free-standing examination, following preparation courses which are optional and can be tailored to the existing skills of the candidate. Scotland should develop such qualifications.

4.5.3. Implementation

- As an initial step, such an initiative might be piloted in one or two occupations where there is strong employer support for the higher level 'mastercraftsperson' qualification. Such a qualification would be developed through the SQA, but with close employer engagement, and ideally an employer lead, following the model of other countries.
- Given that the Welsh government is pursuing the development of these qualifications in a context which is not dissimilar to Scotland, it would be helpful to liaise closely with the Welsh government.
- A funding model would be developed. As with other elements in the Scottish skills system, it would need to take account of the fact that potentially competing qualifications in the higher education system are free of tuition fees. One model would be to directly fund the examinations, but invite individuals to contribute to the cost of preparatory courses.

- The pilots would be carefully evaluated from the perspective of individuals, employers and government, and in the light of the evaluations, additional fields of mastercraftsperson qualifications would be added to the offer.

4.6. Conclusion

This chapter has identified four key policy priorities for Scotland designed to improve the resilience of the apprenticeship system. The chapter has set out the challenges which need to be addressed, why action is necessary, a policy proposal and steps for implementation. These are ambitious reforms, based on benchmarking the Scottish system against the strongest apprenticeship systems internationally, adapted to the specific needs and circumstances of Scotland, and designed to establish and develop Scottish apprenticeship as an institution which is not only resilient but will also allow apprenticeship to claim its rightful place as a central element in the Scottish skills system.

- **Recommendation 1: Introduce demand-led funding for apprenticeship.** Funding for apprenticeship needs to offer the right scale and mix of provision to meet the needs of potential apprentices and the Scottish economy, and to respond quickly to changes in demand. Against this test, the current funding system for Modern Apprenticeship has several drawbacks. As it is based on a partial subsidy, with employers supporting most adult apprenticeships, it makes more demands on employers than higher education, or Foundation and Graduate Apprenticeships, all of which are normally fully funded by government. It also makes more demands on employers than apprenticeship systems in many continental European countries, where off-the-job training is normally fully funded by government, and employers sometimes also receive tax breaks or other subsidies when they take apprentices. This distorts skills provision in Scotland in favour of (expensive) higher education relative to apprenticeship, reduces the effectiveness and responsiveness of the skills system, and damages equity (since higher education students are normally in more favourable circumstances than apprentices). Moreover the current funding system is complex, and grants substantial influence to training providers to drive the mix of provision, reducing the ability to respond rapidly to innovating and growing parts of the economy, since responding to new requirements is demanding and costly for training providers. The solution to these challenges is to adopt a demand-led funding approach similar to those of the strongest apprenticeship systems in continental Europe, in which government responds to the decisions made by employers and starting apprentices by ensuring, through training providers, fully-funded off-the-job training. In this way it is employers and apprentices who determine the scale and mix of provision, rather than government and training providers. While the budget for apprenticeship would rise under this proposal the net public expenditure impact might involve some reduction, since even fully funded apprenticeship is very inexpensive for government relative to other competing forms of education and training, including higher education. This proposal would have to be carefully implemented, starting with a pilot in selected sectors.
- **Recommendation 2: Establish minimum requirements for the length of apprenticeship programmes and for the proportion of off-the-job training.** Since recommendation 1 above proposes better funding and expansion of apprenticeship relative to other forms of education and training, this needs to be supported by strengthened quality standards for apprenticeship. Good progress has been made on this through the work of the Scottish Apprenticeship Advisory Board and their 14 principles, but more needs to be done. Apprenticeship systems in most other countries set minima for the length of apprenticeship programmes and required proportions of off-the-job learning. The rationale for such minima is that they are defining features of apprenticeship as a form of substantial career training. Scotland is unusual in lacking such requirements and in having programmes with programme lengths of less than one year and sometimes with no or very little off-the-job training.² This absence of minimum standards damages the value of the apprenticeship

brand as a signal of substantial career training, and is particularly unfortunate given that many Scottish apprenticeships are, both in length and in the balance of on and off-the-job training, fully in line with international standards. Alongside a reinforcement of minimum standards, it would be timely to phase out the terminology of ‘modern apprenticeship’, since this model of apprenticeship is no longer modern. ‘Scottish apprenticeship’ could instead be used to describe Foundation, Graduate and other forms of apprenticeship.

- **Recommendation 3: Develop a non-apprenticeship route to apprentice qualifications.** Some adults with work experience, including some migrants, will already have most of the skills embodied in a qualification normally obtained through apprenticeship. Recognition and certification of their skills would help both these adults to pursue their careers, and help employers to use the skills of these individuals constructively. In the apprenticeship systems of many European countries, this challenge is addressed by establishing non-apprenticeship routes to the qualifications normally obtained through apprenticeship. For example in Norway, about one third of journeyman qualifications are realised through this route, with two thirds obtained through apprenticeship programmes. Such routes are usually only available to adults who can demonstrate relevant working experience, and are subject to some kind of assessment or examination to confirm that an individual has the required skillset. Often, even for experienced practitioners, some tailored training may be necessary for individuals to fill in any gaps in the skillset. Scotland would benefit greatly from establishing such a route, as it would provide a flexible means of recognising prior learning, often meeting the needs of migrant workers, and improving the working of the labour market. In response to the COVID-19 crisis such a direct route might also prove necessary as a matter of urgency to cope with the need to certify those who have had their apprenticeship programmes disrupted by the lockdown or associated economic impact.
- **Recommendation 4: Establish mastercraftsperson qualifications.** For apprenticeship to be attractive to able young people, it needs to open up future learning opportunities. This means options for transition to higher education, but it also requires pathways to higher level technical qualifications within a professional field. In the German-speaking countries in Europe, this is partly addressed through the ‘master craftsperson’ qualification. This allows qualified apprentices, often with work experience, to acquire higher level professional skills, learn how to run their own small business, and develop skills in training further apprentices. Typically such qualifications are acquired through a free-standing examination, following preparation courses which are optional and can be tailored to the existing skills of the candidate. Scotland should develop such qualifications, starting with a pilot in selected occupational sectors where there is employer support.

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Notes

¹ Part-time vocational secondary education combines 1-2 days a week at school and 3-4 days of a) labour participation (e.g. paid or unpaid labour, volunteering); b) bridging projects to develop employability skills); and c) intensive individual guidance for vulnerable students (Kis, 2010^[13]).

² There are no data on either point, although some rough estimates of the length of programmes can be made.