An international comparison of apprentice pay: Final Report

Low Pay Commission

London Economics

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Contents

Contents

Tables, Figures & Boxes

Page

Tables, figures & boxes

Page

Tables, Figures & Boxes

Page

Tables, figures & boxes

Page

1 Introduction

London Economics were commissioned by the Low pay Commission to undertake an investigation of the level of apprenticeship pay across fourteen countries. The countries included in the original terms of reference (see Annex 1) are

- United Kingdom (broken down by Home Nation)
- Australia
- New Zealand
- Germany
- Austria
- Switzerland
- Netherlands
- Spain
- Italy
- France
- Belgium
- Ireland
- Denmark, and
- Sweden

As part of the analysis, we provide a detailed explanation of the nature of the educational structure in each of the countries; the incidence of vocational training and apprenticeships; apprenticeship structure; and the funding of vocational training and apprenticeships. This information is presented country by country in Chapters 0 to 16 of this report. Chapter 17 concludes.

However, the primary focus of the analysis relates to the assessment of apprentice pay, in absolute terms, and as a proportion of both any national minimum wage (where it exists) and as proportion of the 'fully qualified rate' (or equivalent). Note that given the nature of the analysis, there is a significant amount of variation between - and within - countries in both the apprenticeship systems, as well as the approach taken to apprenticeship remuneration. In addition, although there are statutory minimums for apprentice pay in a number of jurisdictions, it is often the case that apprentices are paid significantly more than the legal minimum. As such, throughout the analysis, when comparing apprentice pay to both the fully qualified rate and any national minimum wage, we provide the best available evidence on the **actual** hourly rate of apprentice pay compared to the adult minimum wage, as well as actual hourly apprentice pay relative to a fully qualified worker (where the fully qualified worker is in an occupation requiring an apprenticeship to undertake the work or has an apprenticeship as their highest level of qualification). In a number of cases, apprenticeship wages are determined at the sectoral-level through bargaining between the social partners (as are minimum wages), and can be dependent on the age of the apprentice or the location in which the apprenticeship is undertaken. In these cases we provide information on the sector of employment of the relevant personal characteristics of the apprentice.

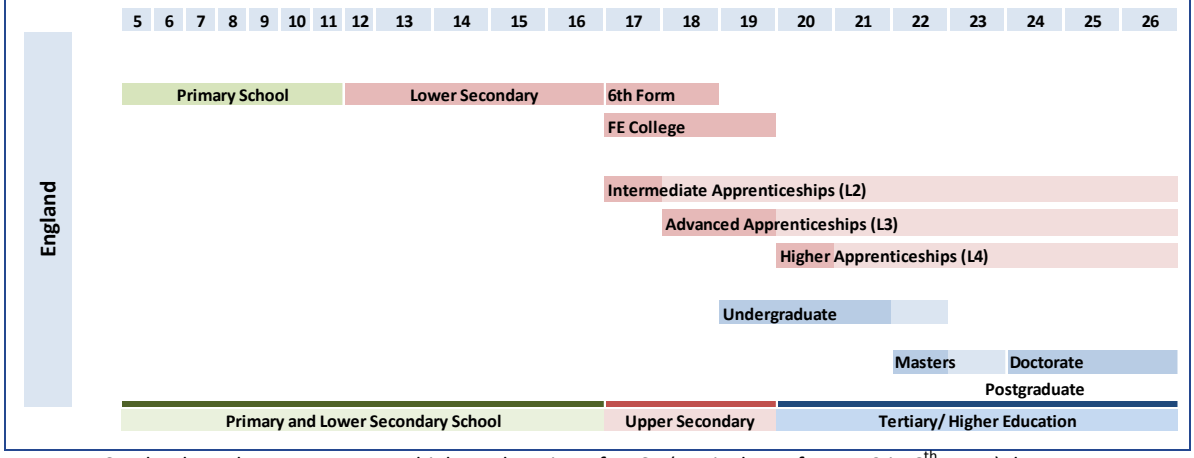
For the sake of comparability, throughout the analysis, we have used domestic consumer price indices to up-rate older estimates of wage rates to 2013 prices, as well as converting all estimates adjusting for Purchasing Power Parity.

2 Apprenticeships and apprentice pay in the United Kingdom

2.1 Overview of the education system in the United Kingdom

At the age of 16, with compulsory education at an end[1], pupils undertake GCSE level qualifications in England, Wales, and Northern Ireland, or equivalently, Standard Grades in Scotland (at the age of 15). Following this, there is the option of continuing with the further traditional academic education route or taking the vocational education route[2]. The chart below depicts the possible educational paths In England, Wales and Northern Ireland.

Figure 1: The education system in the the United Kingdom



Note: In Scotland, students can go on to higher education after S5 (equivalent of year 12 in 6th Form), however most stay on to S6. ***Source: London Economics***

Upon completion of their GCSEs or Standard Grades, a majority of students continue with the traditional academic route into 6th Form (England, Wales and Northern Ireland) or upper-secondary education (S5 and S6) in Scotland. This upper-secondary education generally consists of two-year courses culminating in either A-Level examinations in England, Wales and Northern Ireland or Higher Grade examinations in Scotland.

Students that wish to participate in vocational education can begin an apprenticeship or take vocational courses offered at colleges of Further Education.

[1] Note that it is possible to leave compulsory educatio0n at the age of 16 in England if an individual turns 16 in the August following the end of the school year. For individuals currently in Year 11 (completing GCSEs), the minimum school leaving age has been raised so that these individuals must remain in education or training until the end of the academic year after they turn 17. For individuals currently in Year 10, the minimum school leaving age will be raised further so that these individuals must remain in education or training until the end of the academic year after they turn 18.
In Northern Ireland: a person is no longer of compulsory school age after the 30th June of the school year in which their 16th birthday occurs. In Scotland: pupils whose 16th birthday falls between 1st March and 30th September may not leave before the 31st May of that year. Pupils aged 16 on or between 1st October and the last day of February may not leave until the start of the Christmas holidays in that school year.

[2] In the UK, in the last years of compulsory education, 14 to 16 year olds also have the option to take up vocational subjects. This sees pupils receive vocational education alongside the National Curriculum in England and Wales, the Northern Ireland Curriculum in Northern Ireland and the Curriculum for Excellence in Scotland. In 2013, an estimated 630,000 to 800,000 pupils aged 14 to 16 engaged in vocational training. (Cook (2013), Institute for Public Policy Research, May 2013)

In England in 2010/11, of the **568,000** students completing Key Stage 4[3], **49%** of pupils continued on into School or College 6th Form after the end of compulsory schooling compared to **37%** engaged in other vocational education and approximately **5%** undertaking apprenticeships[4]. In 2012, **45%** of Welsh Year 11 pupils went into 6th Form and **39%** entered Further Education Colleges. A further **7%** of Welsh Year 11 school leavers joined a work based learning programme (including apprenticeships)[5]. In Northern Ireland, of those pupils leaving school in 2011/12 with GCSEs as their highest qualification, approximately **60%** carried on to a Further Education College, while a further **25%** undertook some other form of training (**6.4%** moved straight to employment, **4.3%** moved into unemployment[6].

Upon completion of A-Levels or Higher grade examinations, it is possible to transfer educational paths and commence vocational education, albeit later than when the majority take up this path. Specifically, of the 341,000 individuals completing qualifications at Key Stage 5 in 2011/12 in England, **48%** of students entered higher education institutions compared to **3%** taking up apprenticeships (although a further **4%** did enter employment with training). Just **11%** of those that leave secondary education following the completion of A-Levels choose to attend Further Education institutions[7].

At the end of Year 13, Welsh students have similar destinations to students in England, with **56%** of these Welsh students continuing on into institutions of higher education in 2012, and **10%** attending Further Education colleges. A small proportion (**2%**) entered work based training programmes (including apprenticeships) in the same year[8]. In Northern Ireland, school leavers with A-Level qualifications in 2011/12 had a high likelihood of continuing with the traditional academic route with **72%** entering higher education. Approximately **18%** attended Further Education institutions and **1%** entered some other form of training[9].

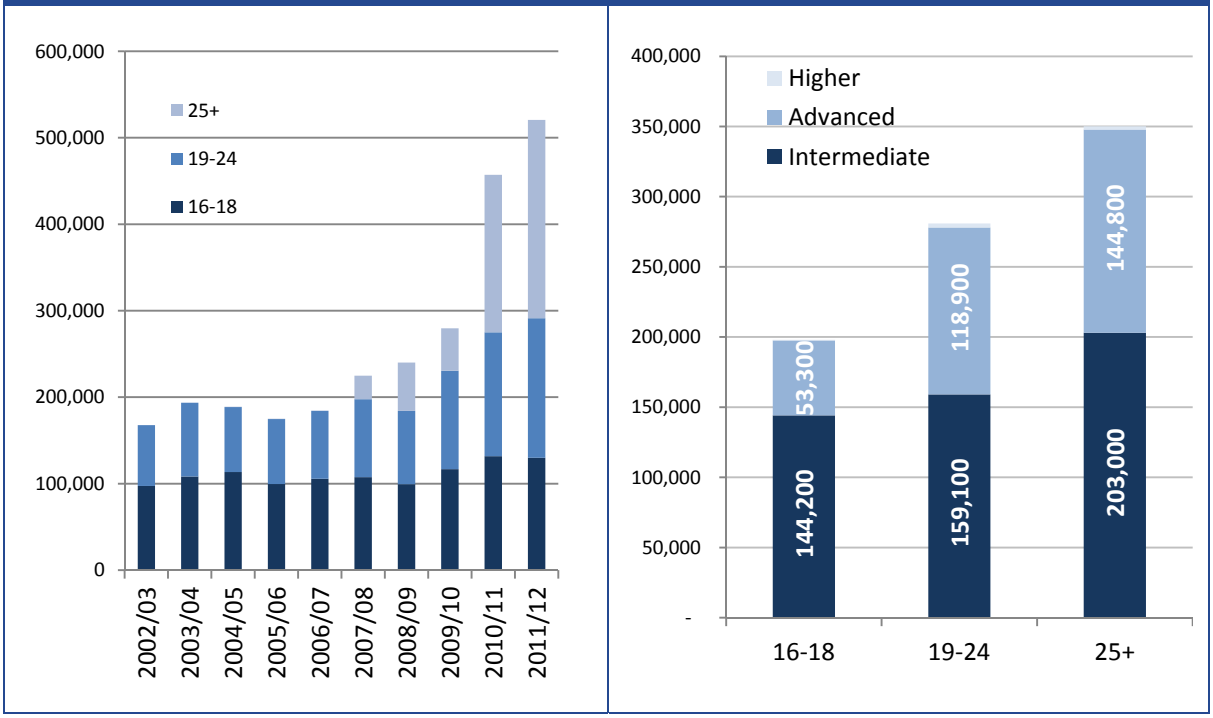
36% of Scottish school leavers from publicly funded secondary schools in 2010/11 went into higher education, with **27%** entering Further Education in the same year and **6%** engaging in training[10]. These figures include school leavers of varying levels of attainment from S4 to S6.

2.1.1 Apprenticeship key statistics

There have been contrasting trends in the take-up of apprenticeships across the UK Home Nations. In England, apprenticeship take-up has increased significantly since 2002/03 with the number of apprentice starts more than tripling from just over 150,000 to over 520,000 over the period from 2002/03 to 2011/12. This trend is shown in Figure 2 overleaf.

[3] The two years of education incorporating GCSEs in England, Wales and Northern Ireland, normally for children aged 14 to 16
[4] Department for Education Statistical First Release (2013) "*Destinations of Key Stage 4 and Key Stage 5 pupils (2010/11)*" 20/06/2013. A further 2% of students were in sustained employment and 12% not recorded.
[5] Careers Wales http://destinations.careerswales.com/year11.html
[6] Statistical Press Release Northern Ireland, *Qualifications and Destinations of Northern Ireland School Leavers 2011/12*, 30 May 2013
[7] Department for Education Statistical First Release (2013) "*Destinations of Key Stage 4 and Key Stage 5 pupils (2010/11)*" 20/06/2013.
[8] Careers Wales http://destinations.careerswales.com/year11.html
[9] Statistical Press Release, Northern Ireland, 30 May 2013
[10] Scotland Destinations – Statistical Bulletin May 2012 http://www.scotland.gov.uk/Resource/0039/00395665.pdf

Figure 2: Total apprenticeship starts and total participationby age and level, England, 2002/03 to 2011/12



Source: Skills Funding Agency "Quarterly Statistical First Release Further Education & Skills: Learner Participation, Outcomes and Level of Highest Qualification Held" 27th June 2013 Note: Left panel presents apprentice starts between 2003 and 2011, while the right panel presents total participation in 2011.

The increase in the number of apprenticeship starts shown in Figure 2 can be mostly attributed to the increasing numbers of over 25 year olds entering apprenticeship schemes. Prior to 2005, adults aged over 25 were not eligible for SFA funded apprenticeships. A pilot programme for Adult Apprenticeships was initiated in 2005 with a small number of participants. The number of adult apprentices remained relatively low until a £25 million funding allocation in 2007/08 triggered an upward trend in adult apprenticeship starts.

Table 1: Apprenticeship starts by age group, England, 2009/10 to 2011/12

	2009/10	2010/11	2011/12	% Change 2009/10 to 2011/12
Under 16	400	320	210	-48%
16	29,380	30,490	29,890	2%
17	40,780	44,840	43,200	6%
18	46,220	56,050	56,590	22%
19-24	113,770	143,430	161,420	42%
25-34	25,250	73,400	97,060	284%
35-44	13,680	54,470	66,320	385%
45-59	9,810	50,320	62,200	534%
60+	400	3,890	3,680	820%
Total	**279,700**	**457,200**	**520,600**	**86%**

Source: Department for Business Innovation and Skills' Skills Data Service, 2013.

Note that the composition of apprenticeships – and in particular the high incidence of apprentices aged 25 or above - is of crucial importance when considering average apprentice pay.

Table 1 shows that the overall increase in total apprenticeship starts was approximately 86% between 2009/10 and 2011/12. There has been an increase in apprenticeship start numbers across all age groups except under-16 year olds over this period.

Similarly, Scotland saw the number of total apprenticeships increase from 2005/06 to 2011/12. Table 2 shows that despite a large decline in the number of starts between 2005/06 and 2008/09, the number rapidly recovered and has increased in recent years. The Scottish Government has pledged to create 25,000 new apprenticeship starts in each of its remaining years in parliament, backed up with an increase in apprenticeship funding from £56 million in 2005/06 to approximately £69 million in 2010/11[11].

Table 2: Number of Modern Apprenticeship starts, Scotland

Year	Number of starts
2005/06	20,196
2006/07	15,869
2007/08	15,010
2008/09	10,579
2009/10	20,216
2010/11	21,561
2011/12	25,000*

Note: *As of 21st March 2012

Source: The Scottish Government website

Meanwhile, Wales has fared much less well with regard to the number of apprenticeship starts as figures decreased over the period from 2006/07 to 2010/11. It has been suggested that the decline in the number of apprenticeships in Wales has been as a result of the reluctance of employers (especially SME employers) to offer apprenticeships resulting from a lack of awareness of the importance and cost effectiveness of this training option[12]. As shown in Table 3, the number of people in Modern Apprenticeships, Foundation Modern Apprenticeships and undertaking Modern Skills Diplomas has fallen on an annual basis[13].

Table 3: Number of people on apprenticeship related work-based learning programmes, Wales

Academic Year	Modern Apprenticeships	Foundation Modern Apprenticeships	Modern Skills Diploma
2006/07	19,820	30,465	2,880
2007/08	17,965	26,895	2,430
2008/09	17,365	24,510	2,075
2009/10	16,665	21,575	2,155
2010/11	16,450	21,035	2,115

Source: National Assembly for Wales, Enterprise and Business Committee, October 2012

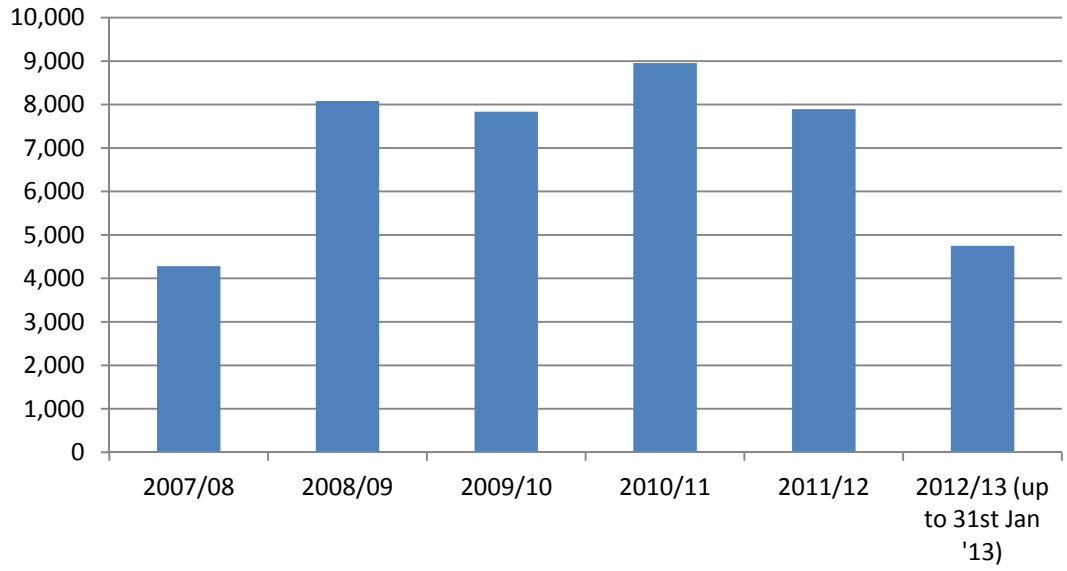
[11] Scottish Government, http://www.scotland.gov.uk/News/Releases/2013/04/modern-apprentices11042013

[12] See National Assembly of Wales Enterprise and Business Committee (2012), "Apprenticeships in Wales" http://www.senedd.assemblywales.org/documents/s11015/Apprenticeships%20in%20Wales%20Report%20-%20October%202012.pdf

[13] National Assembly for Wales, Enterprise and Business Committee, October 2012 http://www.senedd.assemblywales.org/documents/s11015/Apprenticeships%20in%20Wales%20Report%20-%20October%202012.pdf

Apprenticeship starts in Northern Ireland (shown in Figure 3) have remained fairly steady after a rapid increase between 2007/08 and 2008/09. As with England, this change coincided with apprenticeships being opened up to over 25 year olds after being previously targeted at 16 to 24 year olds only. At the same time, *Apprenticeships-NI* was set up to replace the Modern Apprenticeships scheme in September 2007, and may have also helped to promote and increase participation. The 89% increase in apprenticeship starts from 2007/08 to 2008/09 is similar to the trend in England where the number of apprenticeship starts began to rise after being opened up to over 25 year olds. However, where the two differ is in the respect that English apprenticeship starts continued to rise throughout the period whereas Northern Irish apprenticeship starts levelled off[14].

Figure 3: Apprenticeship starts in Northern Ireland, 2007/08 to 2012/13



Source: Department for Employment and Learning Northern Ireland (2013).

Considering the UK as a whole, over the period from 2007/08 to 2011/12, the number of apprenticeships starts more than doubled (as shown in Table 4). This growth is mostly as a result of the large increase in apprenticeship starts in England amongst individuals aged 25 and above. Apprenticeship starts also rose in Scotland and Northern Ireland over the period (with apprenticeship starts in Northern Ireland falling slightly at the end of the period), whilst apprenticeship starts in Wales have fallen by approximately **18%** (2007/08 to 2011/12).

[14] One reason given for the reduction in apprentice starts in Northern Ireland is the difficulty small and medium sized enterprises have in guaranteeing the employment of apprentices following the completion of training. http://www.niassembly.gov.uk/Assembly-Business/Official-Report/Committee-Minutes-of-Evidence/Session-2012-2013/May-2013/Review-of-Apprenticeships--Ministerial-Briefing/

Table 4: Number of apprenticeship starts in the United Kingdom 2003/04 to 2011/12					
Thousands	UK	England	Northern Ireland	Scotland	Wales
2003/04		193,600	3,500		
2004/05		189,000	3,400		24,600
2005/06		175,000	3,300		28,100
2006/07		184,300	3,300		19,600
2007/08	266,600	224,800	5,500	14,700	21,600
2008/09	275,700	239,800	7,100	10,600	18,100
2009/10	323,400	279,700	7,100	20,200	16,400
2010/11	506,200	457,200	8,900	21,500	18,600
2011/12	573,400	520,600	8,700	26,400	17,700

Notes: England data for 2011/12 are provisional, and may be subject to small revision. They exclude the small number of Level 4 apprenticeship starts from 2008/09. In Northern Ireland, Apprenticeships NI replaced Modern Apprenticeships in September 2007; hence the figures from 2007/08 are the sum of these two schemes. Figures for Scotland are only available for Modern Apprenticeships, which will not include all those at Level 2. Figures rounded to nearest 100.
Source: National Apprenticeship Service

2.2 The UK apprenticeship system: general characteristics

2.2.1 The UK apprenticeship programme

Apprenticeships in the UK generally take between one and four years to complete, depending on the level of the final apprenticeship qualification. During this time, an apprentice will train both on-the-job as an employee and in a college or specialist training organisation to fulfil all training requirements. Off-the-job training can be structured by day release where the apprentice visits the learning provider on non-consecutive days (e.g. one day per week) or by block release where the apprentice visits the learning provider for a consecutive number of days (e.g. one week per month). Minimum employment for an apprentice is generally around **30** hours per week, but in reality apprentice working hours are likely to exceed this. Information from the 2011 Department for Business, Innovation and Skills *Apprentice Pay Survey* indicates that under the average apprenticeship contract, apprentices work **34.5** hours per week in England (**37** hours per week in Scotland; **34.7** hours per week in Wales and **34.6** hours per week in Northern Ireland).

In order to complete an apprenticeship successfully, apprentices must gain some or all of the following qualifications:

- a National Vocational Qualification (NVQ) or Scottish Vocational Qualification (SVQ) from Level 2 to Level 5[15], depending on the level of the apprenticeship (see section 2.2.2);
- a functional skills qualification;
- a knowledge based qualification such as a Foundation Degree or HND; and
- a technical certificate (e.g. a BTEC).

Across the United Kingdom, employer-led Sector Skills Councils design the apprenticeship system with guidance from the employers themselves. The respective Home Nation governments provide

[15] Level 2 corresponds to 5 or more GCSEs at grades A*-C or Credit Standard Grades in Scotland, Level 3 corresponds to 2 or more GCE 'A' Levels (or Scottish Highers or a Higher National Certificate), and Level 4 corresponds to a Higher National Diploma or Foundation Degree.

funding for apprenticeships and determine overall vocational educational requirements in their country.

In England, the Skills Funding Agency (an agency of the Department for Business Innovation and Skills) and the National Apprenticeship Service sets out the minimum requirements for completing an apprenticeship (through the Specification of Apprenticeship Standards for England)[16], with an equivalent framework in Wales (Specification of Apprenticeship Standards for Wales). In Scotland, the Skills Development Scotland organisation delivers the Modern Apprenticeship programme and provides funding. In conjunction with this, the Modern Apprenticeship Group approves the Modern Apprenticeship frameworks and gives advice to the Sector Skills Councils operating in Scotland[17].

2.2.2 Levels and duration of apprenticeships

In England, there are three different levels of apprenticeships: *Intermediate*, *Advanced* and (more recently) *Higher*. These each have an NVQ qualification relating to them (Levels 2, 3, and 4 respectively (or equivalent)) along with a relevant key skills and technical certificate. The *Intermediate* level apprenticeship tends to be the initial qualification for most young people – enabling further progression onto the more complex levels. The *Intermediate* apprenticeship generally takes 12 months (which will in future serve as the minimum length) with the *Advanced* level apprenticeship taking approximately 18 months on average (although there is significant variation depending on the industrial sector). The *Higher* level apprenticeships take between 12 and 24 months due to the inclusion of a knowledge-based qualification (a Foundation Degree for example).

Using information from the SFA Individualised Learner Record, in Table 5 we provide information on apprenticeship duration by level of apprenticeship and sector in England (for the 20 most popular sectors). Although the average length of an Intermediate Apprenticeship is 11.1 months, some of these apprenticeships are completed within 7-8 months, while Intermediate Apprenticeship in motor vehicle repair and plumbing can last more than 20 months. As the ILR provides information on England only, comparable information for the other Home Nations is not presented

In England, *Advanced* Apprenticeships require 18 months to complete on average. However, again, there is significant variation depending on the sector of the apprenticeship. The longest duration apprenticeship requires approximately 43 months (electotechnical), while Advanced Apprenticeships in the plumbing industry require 36 months. In general, there are very few Advanced Apprenticeships lasting less than 12 months.

[16] http://www.apprenticeships.org.uk/About-Us/News/~/media/Documents/SASE/11-521-Specification-of-apprenticeship-standards-for-england.ashx

[17] http://www.scotland.gov.uk/Resource/Doc/274739/0082200.pdf

Table 5: Apprenticeship durations in 2010/11 in England			
Intermediate	**Months**	**Advanced**	**Months**
Customer service	7.8	Telecommunications	6.9
Business, Administration and Law	9.7	Child care, learning, development	16.0
Hospitality and Catering	9.9	Business, Administration and Law	12.2
Retail and Commercial Enterprise	8.6	Engineering and Manufacturing Technologies	36.9
Health and Social Care	10.8	Electrotechnical	43.0
Hairdressing	19.6	Team leading & management	12.1
Childrens' care learning, development	11.7	Health and Social Care	14.9
Active leisure and learning	7.6	Customer service	11.7
Construction, Planning and Built Environment	19.4	Active leisure and learning	11.8
Engineering	14.8	Hospitality and Catering	15.1
Team leading / management	10.1	Dental nursing	19.3
Vehicle maintenance/repair	21.1	Sporting excellence	21.9
ICT	9.0	Hairdressing	15.5
Plumbing	20.9	Accountancy	12.4
Warehousing /Storage	10.1	Retail and Commercial Enterprise	14.6
Accountancy	10.2	Plumbing	36.0
Public services	6.0	Leisure, Travel and Tourism	8.4
Telecommunications	9.0	Construction, Planning and Built Environment	17.2
Sales and Telesales	7.4	Gas industry	23.1
Security services	7.3	Supporting teaching and learning	15.9
Average	**11.1**	**Average**	**18.4**

Source: London Economics' analysis of Individualised Learner Record

Welsh apprentices also have three levels of apprenticeship to choose from: *Foundation Apprenticeships*, *Apprenticeships*, and *Higher Apprenticeships*. A *Foundation Apprenticeship* is the equivalent of five GCSE passes and the apprentice works towards a NVQ level 2. The second level – an Apprenticeship – is equivalent to two A-Level passes as the apprentice works towards a NVQ Level 3. Finally, *Higher Apprenticeships* involve the apprentice working towards a Foundation Degree. In this respect, the levels of apprenticeships in Wales are similar to those in England.

Modern Apprenticeships in Scotland are available at 4 different SVQ levels, from SVQ Level 2 to SVQ Level 5. The level that a given apprentice works towards is dependent on their particular job and skill level.

- Modern Apprenticeships at SCQF 5 (SVQ 2)
- Modern Apprenticeships at SCQF 6/7 (SVQ 3)
- Technical Apprenticeships at SCQF 8/9 (SVQ 4)
- Professional Apprenticeships at SCQF 10+ (SVQ 5).

In Northern Ireland, Apprenticeships-NI are available at two different levels: Level 2 and Level 3. Level 2 is the starting level that new apprentices can complete before progressing to Level 3. However, as with England, some apprentices may opt to go straight into Level 3 (as long as they have the relevant qualifications and experience). The completion of a Level 2 apprenticeship generally takes between one and two years but completing both Level 2 and Level 3 apprenticeships can take as long as four years, depending on the ability of the apprentice.

2.2.3 Apprenticeship minimum entry requirements

In order to be considered for an apprenticeship, the applicant must be over the age of 16 and not be in full time education, whilst also residing in the Home Nation that they plan to carry out the apprenticeship in. Furthermore, for those who sat their GCSEs more than five years prior to applying for an apprenticeship and didn't obtain English language and maths qualifications as part of compulsory education, a literacy or numeracy test may be required. However, competition for places tends to be high[18] and therefore employers *may* set their own additional requirements for their scheme. This means that despite there being no overall formal qualification requirements, depending on the type of apprenticeship and the competition, strict requirements may be enforced in practice.

Content of apprenticeship training in England

The Specification of Apprenticeship Standards in England (SASE) and Specification of Apprenticeship Standards in Wales (SASW) provide detailed descriptions of the requirements to complete an apprenticeship in England and Wales.

In England, an *Intermediate or Advanced Level Apprenticeship Framework* specifies the number of Guided Learning Hours (GLH) that an apprentice must receive to complete the apprenticeship. In the first year of an apprenticeship, the required number of GLH is a minimum of 280 of which at least 100 or 30% (whichever is the greater) must be delivered off-the-job and clearly evidenced (and must occur within 12 months of commencing the apprenticeship)[19]. The remaining GLH must be delivered on-the-job and clearly evidenced. Guided learning relates to training that is designed to achieve clear and specific outcomes that contribute directly to the successful achievement of the Apprenticeship framework. In subsequent years, there is a further requirement to provide another 280 Guided Learning Hours to the apprentice (or the equivalent proportion if the apprenticeship has less than 12 months to run)[20].

Content of apprenticeship training in Wales

In Wales, Apprenticeships (at level 3) must be at a minimum of 37 credits. Although 37 credits is the minimum size, the SASW framework should reflect the volume of learning required for an apprentice to achieve full competency in the skill, trade or occupation to which it relates, and many apprenticeships will consist or significantly more than 37 credits.

The balance of credits between occupational competencies and relevant technical knowledge qualifications is determined by the employer. However the framework must specify:

- a minimum of ten credits achieved through an occupational competence based qualification or competence element of an integrated qualification, which specifically

[18] For instance, a branch of General Electric in Wales received nearly 900 applications for 25 places

[19] More generally, the Qualifications and Credit Framework refers to vocational qualifications only and introduces 'depth' to the qualification (in addition to difficulty) through the classification of learning aims as *Awards*, *Certificates* and *Diplomas*. The difference between these three qualification types relates to the number of 'credits' incorporated into each, with 1 to 12 credits making up an *Award*; 13 to 36 credits making up a *Certificate* and 37 or more making up a *Diploma*. In terms of the number of hours of learning activity required to achieve a credit, as a very general indication, there are approximately 10 learning hours per credit (and 6 Guided Learning Hours (GLH) per credit).

[20] Note that according to the 2011 BIS Apprentice Pay survey, 20% of apprentices indicate that they receive no on-the-job or off-the-job training, while a further 34% indicate that they receive on-the-job training only.

relates to the skill, trade or occupation and is based on the National Occupational Standards (NOS); and
- a minimum of ten credits from a technical knowledge qualification or knowledge element of an integrated qualification, which provides the technical knowledge and understanding of the theoretical concepts specifically relating to the skill, trade or occupation to underpin occupational competence; or,
- a minimum of ten credits from an equivalent competencies qualification (non-CQFW) recognised by a professional body for a Higher Apprenticeship at levels 5 - 7 where the successful completion of such an apprenticeship is a recognised pathway to professional registration.

Content of apprenticeship training in Scotland

In Scotland, as there are four possible levels determined by SCQF level, the main component qualification must be credit rated for the SCQF. According to Skills Development Scotland, they all contain the same 3 basic criteria:

- A relevant SVQ (or alternative competency based qualifications)
- Core Skills
- Industry specific training

In terms of core skills, each apprentice is required to achieve the following:
- Communication
- Working with others
- Problem Solving
- Information and Communication Technology, and
- Numeracy

2.2.4 Apprenticeship trades

Traditionally, apprenticeships across the United Kingdom were undertaken in construction and craft industries. However, as the requirements of the economy have changed, so has the demand for apprentices, with the service sector responsible for a large number of apprenticeship starts.

With the number of apprenticeships rising across the board in England, there are some sectors in particular that have driven this increase, including the Business, Administration and Law sector, the Health, Public Services and Care sector and the Retail sector. Meanwhile, with the decline of the Construction sector since the onset of the most recent recession, this was the only sector to experience a fall in apprenticeship starts.

Table 6: Apprenticeship starts by sector subject area in England

	2009/10	2010/11	2011/12	% Change since 2009/10
Agriculture, Horticulture and Animal care	5,690	7,380	7,570	33%
Arts, Media and Publishing	440	1,030	1,210	175%
Business, Administration and Law	76,590	133,820	164,830	115%
Construction, Planning and the Built Environment	25,210	28,090	24,000	-5%
Education and Training	860	4,070	7,120	728%
Engineering and Manufacturing Technologies	37,860	48,970	59,480	57%
Health, Public Services and Care	44,150	89,970	109,410	148%
Information and Communication Technology	12,570	19,520	18,520	47%
Leisure, Travel and Tourism	14,690	21,590	19,770	35%
Retail and Commercial Enterprise	61,620	102,770	108,300	76%
Total	**297,700**	**457,200**	**520,600**	**86%**

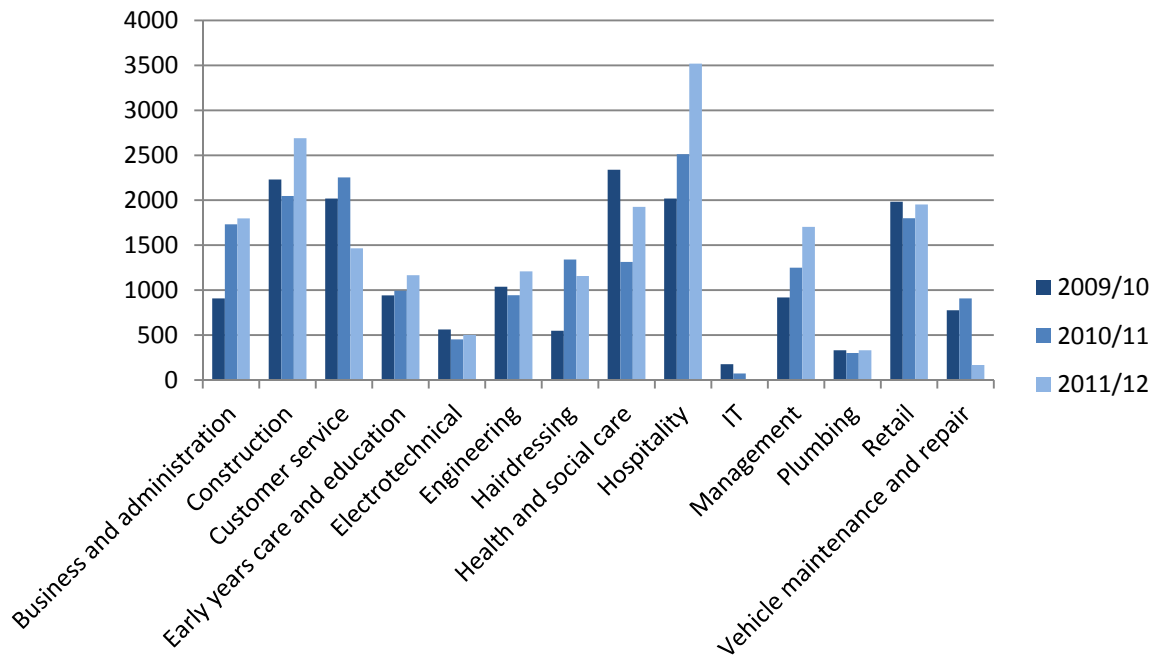
Note: Rounded to nearest 10 and excludes sectors with very few apprentice starts (hence may not sum).
Source: BIS Data Service, 2013.

In Scotland, the Business and Administration sector also experienced a large increase in the number of apprenticeships over the period 2009/10 to 2011/12. This has been coupled with an increase in apprenticeship starts in the Hospitality and Catering sector, which attracted the most apprentices in Scotland in 2011/12. However, where Scotland and England differ greatly is the Construction sector, which saw an increase in apprenticeship starts in Scotland over the same time period and was the second most popular sector of apprenticeship starts in 2011/12[21][22] .

[21] In Wales, of all Foundation Apprenticeships and Apprenticeships (approximately 36,000 participants in total), approximately 21% were being undertaken in Health and Social Care (7.605), 7% in Business Administration (2,580), 7% in Customer Service (2,515), 6% in Management (2,295), 6% in Engineering (2,055), 5% in Construction (1,995) and 4% in Hospitality (1,550). http://wales.gov.uk/topics/statistics/headlines/post16education2013/further-education-work-based-learning-adult-community-learning-statistics-2011-12/?lang=en

[22] Of the total number of apprentices (all levels) in Northern Ireland in April 2103 (8,998), approximately 16% trained in Health and Social Care (1,421), 15% were in Catering and Hospitality (1,336), 8% were in Customer Service 693), 8% were in Engineering (737), 6% were in Management (495), 5% were in team Leading (401), 4% were in Retail professions (364), 4% were in Childcare, Learning and Development (356) and 4% were trained in Warehousing and Distribution (321). http://www.delni.gov.uk/appsni-bulletin-aug-13.pdf

Figure 4: Apprenticeship starts by framework in Scotland, 2009/10 to 2011/12



Source: Skills Development Scotland, 2009/10 to 2011/12 and cited by the Low Pay Commission (2013)

2.2.5 What are the destinations of apprentices post completion

The Department for Business, Innovation and Skills Apprentice Pay Surveys collect information on the intended destinations of apprentices post completion. The analysis suggests that for apprentices in England, approximately 67% indicate that they planned to remain working for the same (training) employer[23]. This compares to 17% indicating that they planned to continue working in the same sector (but not with the same employer). A further 7% responded that they intended to work in an entirely different sector, while 6% indicated that they intended to remain in education. The remaining 2% responded that they did not intend to pursue any of the options mentioned. Information for the other Home nations is presented in Table 7.

Table 7: Destinations of apprentices post completion (2012)

Proportion	England	Northern Ireland	Scotland (2011)	Wales
Stay working for same employer	67%	77%	68%	74%
Stay working in same sector	17%	11%	20%	14%
Work somewhere completely different	7%	4%	7%	6%
Stay in education	6%	5%	4%	4%
None of these/ something else	2%	1%	2%	2%

Source: Department for Business, Innovation and Skills Apprentice Pay Surveys 2011 and 2012

[23] Note that these estimates are broadly comparable to those in Germany, where in 2010, approximately 61% of apprentices remained with their training employer post the completion of their apprenticeship (ranging from 48% for firms with up to 9 employees and 75% for firms with more than 500 employees. http://www.bildungsbericht.de/index.html?seite=10217

2.3 Funding of the apprenticeships in England

2.3.1 General structure of funding

In England, apprenticeship funding is available from the National Apprenticeship Service (NAS). The size of the contribution varies depending on the sector and the age of the candidate. If the apprentice is aged between 16 and 18 years old, the employer receives 100% of the cost of the training (undertaken by the learning provider). If the apprentice is aged between 19 and 24 years old, the employer receives up to 50% of the cost of training[24]. From August 2013, if the apprentice is aged 25 or over and is undertaking an Advanced or Higher Apprenticeship, the individual apprentice (through income contingent loans or *Advanced Learning Loans*) or the employer may have to pay for the entirety of the training.

The National Apprenticeship Service/ Skills Funding Agency funding is paid directly to the organisation that provides and supports the Apprenticeship (in most cases this will be a learning provider); however, large employers with a direct contract with the National Apprenticeship Service may receive the funding themselves.[25]

2.3.2 Additional specific employer incentives in England

Apprenticeship Grant for Employers (AGE)

In addition to the funding received to cover the off-the-job training, the Apprenticeship Grant for Employers of 16 to 24 year olds (AGE 16-24) is aimed at helping eligible employers to offer young people employment through the Apprenticeship programme, by providing wage grants to assist employers in recruiting a young apprentice. The National Apprenticeship Service provides up to 40,000 apprenticeship grants to employers (with up to 1,000 employees)recruiting 16 to 24 year olds. The grants have a value of £1,500 to encourage employers to take on new apprentices (and employers can be paid ten grants in total during the lifetime of the initiative). The £1,500 is in addition to the training costs of the Apprenticeship framework which are met in full by NAS for young people aged 16 to 18 and 50% for those aged 19 to 24.

An enhanced London AGE 16 to 24 grant of £3,000 is available to employers with London borough postcodes from June to December 2013. The enhanced London AGE grant comprises of the £1,500 available as part of the existing AGE 16 to 24 Age grant, matched by another £1,500 from the London Enterprise Panel (LEP) to make a total enhanced grant to eligible employers of £3,000.

2.3.3 Aggregate funding levels in England

The total Skills Funding Agency (SFA) budget (covering Community Learning, ASB, Offender Learning Learner Support Funds, the National Careers Service, Skills Infrastructure, Capital budget,

[24] The government provides the funds to cover the full cost of the mandatory training required to complete the framework as determined by the relevant SSC for a young person aged 16-18 on an Apprenticeship. If employers or providers choose to deliver additional qualifications or courses as part of the delivery of the overall framework then these courses will not be funded and will need to be paid for by the provider or employer

[25] In Scotland, Skills Development Scotland provides support to employers providing apprenticeships. The extent of funding is dependent on the level of apprenticeships (increasing as the level of apprenticeship increases) and the age of the apprentice (declining as the age of the apprentice increases). The funding is paid directly to the learning provider. The typical value of the support for a Level 2 apprentice aged 16-19 stands at £3,000 (£7,000 at Level 3) compared to £1,000 for an apprentice at Level 2 aged 25 or above (£3,000 at Level 3). [25] http://www.providercentral.org.uk/OurServices/NationalTrainingProgrammes/Modern_Apprenticeships.aspx

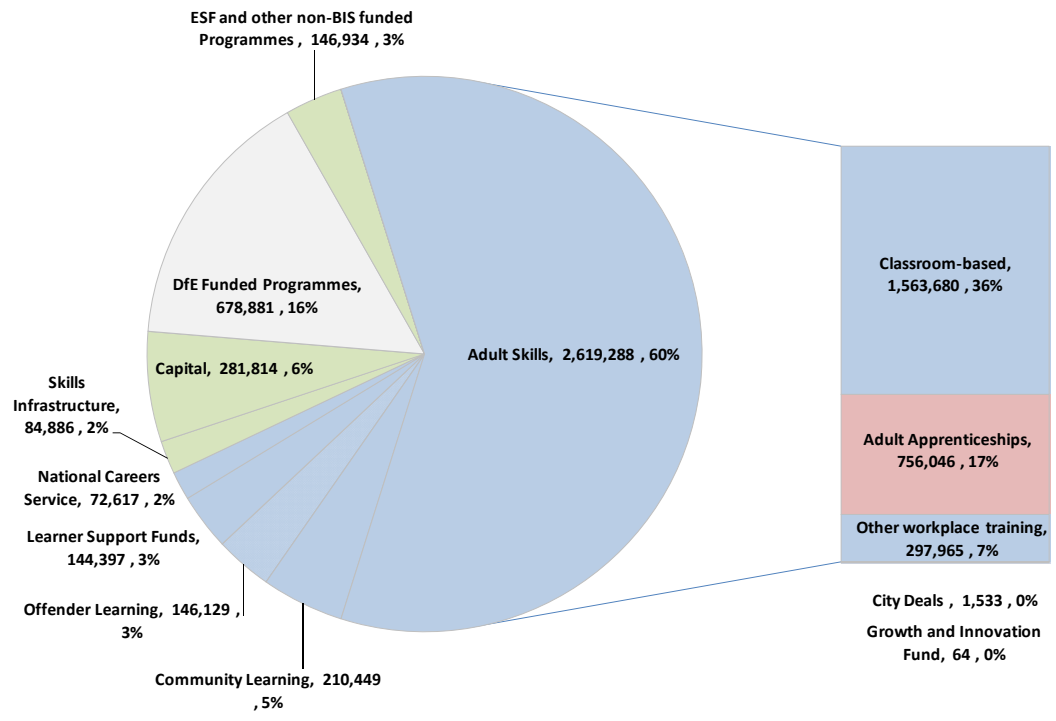
Department of Education Funded Programmes, and European Social Fund and other non-BIS funded programmes) stood at **£4.386 billion** in 2012/13 (**£4.610 billion** in 2011/12). Of this total amount, approximately **one-third** is spent on apprenticeship provision and associated support.

In more detail, reflecting the change in the distribution of apprentices (see Figure 2), our analysis indicates that the SFA invested **£756.0 million** in adult apprenticeships in 2012/13 (**£624.6 million** in 2011/12). Of this amount, approximately **£296 million** was used to fund FE Colleges (**£155 million** relating to 19-24 year old apprentices and **£140 million** relating to 25+ apprentices). In addition, approximately **£447 million** was used to fund training providers (**£218 million** relating to 19-24 year old apprentices and **£227 million** relating to 25+ apprentices). There was further **£13 million** provided in relation to the Apprenticeship Grant for Employers (AGE) for apprentices aged between 19 and 24.

The SFA also invested **£643.7 million** in 16-18 Apprenticeships in 2012/13 (**£759.6 million** in 2011/12), with a further **£25 million** provided in relation to the Apprenticeship Grant for Employers (AGE) for apprentices aged between 16 and 18.

We have been unable to source comparable information on aggregate funding for the other Home Nations.

Figure 5: Annual expenditure by the Skills Funding Agency 2012/13 (£ 000's)



Source: Skill Funding Agency Annual Report 2012/13

Employers' cost of training in England

Taking information from research commissioned by the Department for Business, Innovation and Skills[26], the Institute for Employment Research collected information in relation to all the costs the employer bears (including the wages of apprentices and trainees, the costs of training materials and courses, the costs of supervision whilst learning on-the-job, and the costs of organising training) and subtracted from this all the benefits the employer derives (i.e. the productive contribution of the apprentice or trainee whilst training). The analysis suggests the net cost of training for employers stands at between **£3,000** and **£7,250** per apprentice at Level 2 (Intermediate apprenticeships). However, for apprenticeships at Level 2/Level 3 in the engineering and construction sectors, the net cost to employers is considerably higher (**£39,600** and **£26,000** respectively), in part reflecting the greater degree of structure associated with these sectors, as well as the longer duration (see Table 5).

Table 8: Employer costs associated with apprenticeship training in England (2012)

	Apprenticeship			Workplace Learning
Sector	Level 2	Level 3	Level 2/Level 3 combined	Level 2
Engineering			£39,600	
Construction			£26,000	
Retailing	£3,000			£1,650
Hospitality	£5,050			£1,950
Logistics	£4,550			£2,500
Finance	£7,250	£11,400		
Business Administration	£4,550			
Social Care	£3,800			£1,250

Department for Business, Innovation and Skills, "Employer Investment in Apprenticeship and Workplace Learning: The 5th net benefits of training to employers study", BIS Research Report 67, May 2012.

2.4 Apprentice pay in the United Kingdom

2.4.1 Apprentice Minimum Wage

In addition to the training provided (and combined within the estimates of the net costs associated with apprenticeships presented in Table 8), employers are required to pay at least the statutory Apprentice rate of the minimum wage if the individual is an apprentice at or below the age of 18 *or* aged 19 and over in the first year of their apprenticeship. This stood at **£2.65** per hour in October 2012 (**£2.68** from October 2013)). If the apprentice is 19 or over and not in the first year of apprenticeship, then the employer must pay at least the Youth Development rate in the case of 19 and 20 year olds (**£4.98** per hour in October 2012 (**£5.03** per hour form October 2013)) or the full adult National Minimum Wage rate if aged 21 or above (**£6.19** per hour in October 2012 (**£6.31** per hour form October 2013)).

[26] http://www.bis.gov.uk/assets/biscore/further-education-skills/docs/e/12-814-employer-investment-in-apprenticeships-fifth-net-benefits-study.pdf

The minimum wage must be paid during the period on the job training, as well as the any time spent with a training provider that is related to the apprenticeship. As will be seen in the next section, the fact that there is a high proportion of apprentices aged 25 or above is a key determinant of apprentice pay in aggregate; however, this fact does skew the results when comparing apprentice pay in the UK with other countries.

2.4.2 Apprenticeship pay as a proportion of the National Minimum Wage

Rather than relying on administrative data sources as with the other countries under consideration, when considering apprentice pay in the United Kingdom, we rely on primary data collected from apprentices through research commissioned by the Department for Business, innovation and Skills. The data collected from apprentices in the *Apprentice Pay Survey* included information on their levels of pay and contractual hours, broken down by a number of personal and employment related characteristics. Although the original information relates to 2011, we have up-rated all estimates of apprentice pay to (March) 2013 prices to ensure comparability with the information contained on apprentice pay elsewhere in this report. Note that although booster samples were undertaken, the information relating to Northern Ireland should be treated with some caution when considering disaggregated results. In addition, although the 2012 Apprenticeship Pay report has been administered and analysed, the report has not yet been published, as there are some concerns in relation to the quality of the data surrounding compliance and non-compliance (given the fact that the fieldwork was undertaken around the time when the minimum wage is up-rated).

In aggregate, across the United Kingdom, the survey information suggests that average hourly apprentice pay stands at **£6.05** per hour, although there is a small amount of variation depending on Home Nation, with apprentices in England earning approximately **£6.02** per hour; apprentices in Scotland earning **£6.13** per hour; **£6.87** per hour in Wales and **£5.92** per hour in Northern Ireland. Table 9 also presents the dispersion of hourly pay. Specifically, whereas the *median* apprentice hourly pay rate stands at **£6.09** per hour, an apprentice on the first decile (i.e. in the bottom 10% of the income distribution) earns **£2.60** per hour (which is marginally above the statutory minimum for apprentices at the time). In contrast, an apprentice in the top earning decile achieves an average wage of **£9.39** per hour. However, because of the different minimum wages applying to apprentices according to their age and year of study, the survey suggests that **20%** of apprentices are paid at rates that are not compliant with the relevant minimum wage.

It is very important that a full understanding of the variation in apprentice pay is understood. Specifically, although the average apprentice pay across the UK stands at approximately £6.05 per hour, for those apprentices aged less than 19, average pay rate is approximately £3.88 per hour (compared to an average apprentice pay rate of £8.15 for those aged 25 or above). Thus, average pay rate reflects the increasing proportion of older learners, and potentially undermines the comparability of findings internationally, especially in relation to those countries where apprenticeship training is predominantly the preserve of younger learners.

By gender, with the exception of Scotland, female apprentices were paid *more* than male apprentices. Across the United Kingdom as a whole, female apprentices received **3%** higher hourly earnings than male apprentices. In Northern Ireland, female apprentices earned approximately **36%** more, while in Wales and England the female gender premium was **8%** and **3%** respectively. In Scotland, male apprentices earned **2%** more than female apprentices. Hourly apprentice pay also varied considerably depending on the age of the apprentice (ranging from **£3.88** per hour for

those apprentices aged between 16 and 18, to **£5.79** per hour for apprentices aged between 19 and 24, and **£8.15** on average for apprentices aged 25 or more).

Table 9: Apprenticeship hourly pay in the UK (2011 uprated to 2013 prices)

	United Kingdom	England	Scotland	Wales	Northern Ireland
Average	**£6.05**	**£6.02**	**£6.13**	**£6.87**	**£5.92**
Average contractual hours per week	**34.5**	**34.5**	**37.0**	**34.7**	**34.6**
Female	£6.16	£6.10	£6.03	£7.15	£6.80
Male	£5.97	£5.93	£6.18	£6.62	£5.00
Under 19	£3.88	£3.87	£4.22	£3.49	£3.71
19-24	£5.79	£5.78	£6.08	£5.82	£5.36
25+	£8.15	£8.11	£8.89	£8.35	£7.53
10th percentile	£2.60	£2.60	£2.66	£2.77	£2.78
20th percentile	£3.18	£3.11	£3.51	£4.44	£3.75
30th percentile	£4.42	£4.37	£4.36	£5.42	£4.52
40th percentile	£5.22	£5.19	£5.11	£6.16	£5.70
50th percentile	£6.09	£6.05	£5.83	£6.54	£6.16
60th percentile	£6.46	£6.44	£6.49	£7.12	£6.23
70th percentile	£7.13	£6.95	£7.27	£7.88	£6.62
80th percentile	£7.89	£7.79	£8.19	£8.82	£7.23
90th percentile	£9.39	£9.41	£9.34	£10.50	£8.29
Team Leadership and Management (1)	£9.93	£9.71	£12.99	£11.74	£9.30
Electrotechnical	£7.20	£7.25	£7.77	£7.93	£7.33
Customer Service	£7.18	£7.12	£8.18	£7.86	£7.20
Health and Social Care	£6.82	£6.76	£7.17	£7.15	£6.78
Retail	£6.60	£6.61	£6.63	£7.14	£6.67
Engineering	£6.47	£6.47	£6.30	£6.76	£6.63
Business Administration and Law	£6.25	£6.22	£6.23	£6.76	£6.34
Hospitality and Catering	£6.04	£5.98	£5.94	£6.63	£5.13
Other	£5.54	£5.51	£5.38	£6.06	£4.83
Childrens' care and learning (2)	£5.07	£5.07	£5.21	£5.73	£4.52
Construction	£4.97	£4.79	£4.05	£4.60	£3.72
Hairdressing	£3.51	£3.52	£3.40	£3.77	£2.49
Year 1	£6.04	£6.02	£5.42	£6.93	£6.02
Year 2	£5.68	£5.58	£6.36	£6.80	£5.59
Year 3	£7.23	£7.32	£6.93	£6.72	£6.05
	-	-	-	-	-
Level 2	£5.52	£5.47	£5.75	£6.47	£5.93
Level 3	£6.86	£6.93	£6.23	£7.39	£5.91

Source: Department for Business, Innovation and Skills Apprenticeship Pay Survey 2011, BIS Research Report 64, March 2012 (1) Known as 'Management' in Scotland, (2) Known as 'Early Years Care' in Wales.

There are substantial variations in the rate of pay depending on the sector of apprenticeship training. At the higher end of the spectrum, individuals engaged in 'Team Leadership and Management' apprenticeships earn an average of **£9.93** per hour. Other apprenticeships paying above average rates of pay include 'Electro-technical' apprenticeships (**£7.20** per hour), Customer Service apprenticeships (**£7.18** per hour), Health and Social Care apprenticeships (**£6.82** per hour), Retail apprenticeships (**£6.60** per hour), Engineering apprenticeships (**£6.47** per hour), and

Business Administration and Law apprenticeships (**£6.25** per hour). At the lower end of the spectrum, apprenticeships in Hairdressing pay **£3.51** per hour on average, while construction apprenticeships pay **£4.97** per hour.

In addition to apprentice pay depending on the level of apprenticeship (**£5.52** per hour for an *Intermediate Apprenticeship* and **£6.86** for an *Advanced Apprenticeship*), apprentice pay depends on the year of training. Although there is a dip in the average rate of pay in the second year of training, the analysis indicates that apprentices in the 1st year of training receive **£6.04** per hour in their first year (**98%** of the Adult NMW), £5.68 in their 2nd year (**92%** of the Adult NMW)[27], and **£7.23** in their 3rd year (**117%** of the Adult NMW).

2.4.3 Apprentice pay as a proportion of the fully qualified rate

Finally, using information from the pooled 2011-2012 Labour Force Survey, we have estimated the weighted average hourly earnings by Home Nation for those individuals in possession of an apprenticeship as their highest qualification. The analysis demonstrates the variability in the fully qualified rate across the Home Nations. Compared to a fully qualified rate of **£10.50** per hour in Northern Ireland, the fully qualified rate in Scotland stands at approximately **£12.84** per hour. The average across the entire United Kingdom stands at **£11.92** per hour.

Combining these findings with the information on apprentice pay from the previous section, this implies that apprentices in England earn approximately **51%** of the fully qualified rate in their 1st year of training, **47%** in their 2nd year and **62%** of the fully qualified rate in their 3rd year. As a result of the higher than average fully qualified rate in Scotland (and the relative comparability of apprentice pay in absolute terms), apprentices in Scotland earn approximately **42%** of the fully qualified rate in their 1st year, **50%** in their 2nd year and **54%** in their 3rd year.

Table 10: UK apprenticeship hourly pay as proportion of fully qualified rate

	United Kingdom	England	Scotland	Wales	Northern Ireland
Fully Qualified rate	**£11.92**	**£11.89**	**£12.84**	**£10.96**	**£10.50**
Year 1	£6.04	£6.02	£5.42	£6.93	£6.02
Year 2	£5.68	£5.58	£6.36	£6.80	£5.59
Year 3	£7.23	£7.32	£6.93	£6.72	£6.05
Apprentice pay as proportion of fully qualified rate					
Year 1	51%	51%	42%	63%	57%
Year 2	48%	47%	50%	62%	53%
Year 3	61%	62%	54%	61%	58%

Source: Department for Business, Innovation and Skills Apprenticeship Pay Survey 2011, BIS Research Report 64, March 2012; London Economics' analysis of pooled 2011-2012 Labour Force Survey (uprated to march 2013 prices using ONS measures of Consumer Price Inflation).

[27] It should be noted that the apparent dip in apprentice pay for apprentices in their second year might be as a result of different compositions across the different years of training. It should not be concluded that (the same) apprentices receive a reduction in pay between the first and second years of training.

At the other end of the spectrum, combining the higher than average apprentice hourly rate and the lower than average fully qualified rate, apprentices in Wales earn between **61%** and **63%** of the fully qualified rate over the duration of their apprenticeship, while apprentices in Northern Ireland earn between **53%** and **58%** of the relevant fully qualified rate.

However, again this analysis ignores the distribution of apprentice pay. The average hourly rate for apprentices aged less than 19 stands at £3.88, which implies that younger apprentices earn approximately 32% of the fully qualified rate.

2.4.4 Minimum Wage non-compliance

The Department for Business, Innovation and Skills 2011 Apprenticeship Pay Survey compares the reported hourly pay rate of apprentices to the minimum wage that they should be expected to receive based on their personal characteristics (age) and the year of study. It is important to note that the timing of the apprentice pay survey is in the final quarter of the year. Given the fact that the relevant national minimum wage is up-rated in October of each year, there is some degree of uncertainty in relation to whether pay rates have been reported pre or post the annual up-rating. However, despite this, the analysis indicates that **9%** of apprentices were paid less than **£2.50** per hour (the apprenticeship minimum wage at the time of the report), with a further **8%** paid between **£2.51** and **£4.91** per hour (i.e. the minimum apprentice rate and the Development rate), which was estimated to be below their minimum wage based on their age and year of training. A further **2%** of apprentices were paid between **£4.92** and **£5.92** (the Development rate and the Adult rate), again less than the statutory minimum based on their age and training year. In total, the analysis found that non-compliance with minimum wage rates stood at **19%**. There was significant variation in the rate of non-compliance, with **48%** of individuals in the hairdressing sector suggesting they were paid below the relevant national minimum wage compared to **4-5%** in the Retail, Health and Social care and Customer Service sectors.

3 Cross county comparison of key indicators

In this section of the report, we provide some broad comparisons of the educational and apprenticeship structure in the countries under consideration, followed by a discussion of apprentice pay rates as a proportion of the fully qualified rate and the relevant minimum wage. Table 11 provides information on a number of different characteristics of the various education systems (and apprenticeships).

Specifically, we present the estimated *median* length of apprenticeship (as well as whether the *mean* apprenticeship length is longer or shorter) and the estimated per capita funding level (in constant US$ adopting *purchasing power parity*) associated with academic and vocational training at secondary level (from recent OECD *Education at a Glance*). To illustrate the relative incidence of vocational training (and the level of vocational training), again from OECD *Education at a Glance*, we show the proportion of the adult population in possession of their highest qualification at ISCED[28] Level 3A (i.e. academic), ISCED Level 3B (vocational) and ISCED Level 4 (post-secondary vocational training). We also present the incidence of workplace, classroom and academic enrolments amongst young people.

Finally, adjusting for the different price levels in the different countries (using PPP indices), we present information on apprentice pay as a proportion of the fully qualified and relevant minimum wage data (duplicating the information presented in Table 14 and Table 15). We also present the point in an apprentice's training at which they would be expected to earn more than 50% of the fully qualified rate and 100% of the relevant minimum wage respectively. In the remainder of this section of the report, we provide more detailed information on each of the variables presented in Table 11.

[28] International Standard Classification of Education: Programmes at ISCED level 3, or upper secondary education, are typically designed to complete secondary education in preparation for tertiary education or provide skills relevant to employment, or both. ISCED level 3 begins (after 8 to 11 years of education since the beginning of ISCED level 1). Pupils enter this level typically between ages 14 and 16. ISCED level 3 programmes usually end 12 or 13 years after the beginning of ISCED level 1 (or around age 17 or 18), with 12 years being the most widespread cumulative duration. ISCED Level 3A education refers to predominantly general or theoretical upper-secondary schooling while ISCED Level 3B refers to predominantly vocational upper-secondary schooling

Table 11: Summary information on apprenticeships by country

	Duration (Mean (median (+/-))	Funding Level (Academic/ Vocational) US$ PPP	Highest level of Attainment (ISCED 3A/3B/4)	'Fully Qualified Rate' / Adult NMW (PPP)	Year 1	Year 2	Year 3	Year 4	Year 5	Year in which pay >= 50% of FQR/ 100% NMW
Australia (A, B)	42 (-)	11,299/6,657	16.5/14.8/4.3	£12.61/£7.43	42%/71%	42%/71%	64%/109%	70%/119%	-	Year 3, Year 3
Austria	36 (+)	12,387/12,852	6.0/47.4/10.0	£10.58/£5.68	25%/47%	33%/61%	44%/82%	53%/99%	-	Year 4, Never
Belgium (C, E)	36	10,775	24.0/9.8/2.0	£12.52/£7.05	21%/38%	23%/41%	25%/44%	26%/47%	28%/50%	Never, Never
Denmark (D, E)	42 (-)	10,996	6.3/36.0/-	£13.39/£8.96	38%/57%	45%/68%	55%/82%	64%/95%	-	Year 3, Never
France (C)	36 (-)	12,443/13,373	11.4/30.3/-	£11.73/£7.52	16%/25%	24%/37%	34%/53%	-	-	Never, Never
Germany	36 (+)	9,171/13,028	2.9/ 48.7/7.6	£16.66/£8.85	21%/39%	24%/45%	27%/50%	28%/52%	-	Never, Never
Ireland (D, E)	48 (-)	12,731	23.9*/-/12.3	£13.29/£6.48	33%/68%	50%/103%	75%/154%	90%/184%	-	Year 2, Year 2
Italy (D, E, G)		9,076	32.4/ 7.0/0.9	£7.50/£6.36	74%/87%	79%/93%	86%/101%	91%/107%	96%/113%	Year 1, Year 3
Netherlands (C, D)	30 (+)	9,765/12,860	22.6/ 14.6/3.4	£15.25/£6.84	31%/69%	38%/85%	45%/100%	52%/115%	-	Year 4, Year 3
New Zealand	42 (-)	7,940/10,764	8.9/12.2/11.3	£11.65/£6.27	43%/80%	43%/80%	43%/80%	43%/80%	-	Never, Never
Spain (E)	24	11,265	14.2/7.9/-	£10.53/£4.35	31%/75%	35%/85%	-	-	-	Never, Never
Sweden (D, E)	36 (-)	10,599/10,221	45.8*/-/-	£12.15/£10.20	36%/43%	44%/53%	53%/63%	63%/75%	74%/88%	Year 3, Never
Switzerland	48 (-)	12,188/19,900	4.8/40.5/7.0	£14.69/£11.62	9%/12%	13%/16%	17%/21%	20%/26%	-	Never, Never
UK (E)	12/18/12	10,013	7.0/29.8/6.0	£11.92/ £6.19	51%/98%	48%/92%	61%/107%	-	-	Year 1, Year 3
England				£11.92/ £6.19	51%/97%	47%/90%	62%/108%	-	-	Year 1, Year 3
Scotland				£12.84/ £6.19	42%/88%	50%/103%	54%/112%	-	-	Year 2, Year 2
Wales				£10.96/ £6.19	63%/112%	62%/110%	61%/108%	-	-	Year 1, Year 1
N. Ireland				£10.50/ £6.19	57%/97%	53%/90%	58%/98%	-	-	Year 1, Never

Notes: (A) Junior Rate; (B) Actual as a proportion of **minimum** fully qualified rate; (C) Apprentices aged below 18/Staring age 17; (D) Building and Construction; (E) ISCED 3A (academic) and ISCED 3B (vocational) combined; (F) The Swedish apprentice pay refers to apprenticeship 'steps', which are shorter than a year in duration and explains why there is a discrepancy with the information presented on median duration. (G) In the Netherlands, we present apprenticeship pay in the construction industry as a proportion of average hourly earnings across all industries; (G) Assuming the apprentice within the construction industry working towards qualification at Level 3 'specialised' trade. All wage rates are presented in Sterling and have been adjusted for Purchasing Power Parity.

Duration of apprenticeship: Where information exists, we present the median duration of apprenticeships (in months). This is a crude figure, so where possible we also provide an *indication* of whether the mean duration is greater (+) or lesser (-) than the median. In the case of England, we have provided the average length of "Intermediate Apprenticeships", "Advanced Apprenticeships" and "Higher Apprenticeships" as per information from the 2011 Individualised Learner record. ***Source: London Economics***

Attainment: Educational Attainment across country (25-64 year olds) (see Table 12 for full description of notes) ***Source: OECD Education at a Glance (2012)***

Funding: Annual expenditure per student by educational institutions, by type of programme (see Table 13 for full description). Information is presented in relation to academic and vocational programmes separately where available. In the absence of this information, we present the aggregate funding level across all students. **Ireland/ Italy**: Public institutions only. In equivalent USD converted using PPPs for GDP, by level of education, based on full-time equivalents. **Spain:** Expenditure for retirement of personnel other than teachers in public institutions is not included. Information relates to 2009. In equivalent USD converted using PPPs for GDP, by level of education, based on full-time equivalents**. Source:** ***OECD Education at a Glance*** **(2012)**

3.1 Educational Attainment

In column 3 of Table 11 and Table 12/ Figure 6, we provide information on the level of educational attainment amongst the adult population (25-64 year olds). Although there is some degree of variation by Home Nation within the United Kingdom (as demonstrated in section 2), the information gathered from the OECD *Education at a Glance* indicates that approximately **38%** of the UK adult population is in possession of higher education or advanced qualifications (as ISCED Level 5A/5B or 6). This is comparable to New Zealand (**41%**), Australia and Ireland (**37%**); the Netherlands, Switzerland, Belgium, Denmark and Sweden (**32-34%**), but considerably higher than Spain (**30%**), France (**29%**), Germany (**26%**), Austria (**19%**) or Italy (**14%**).

Approximately **30%** of the UK adult population has their highest qualification at ISCED Level 3B (i.e. upper-secondary vocationally orientated training), with approximately **7%** in possession of GCE 'A' Levels as their highest qualification, while a further **14%** are in possession of qualification at ISCED 3C[29] as their highest qualification (i.e. short course vocational qualifications).

Although the aggregate proportion of the adult population with ISCED Level 3/4 qualifications is similar to countries such as Australia, Belgium, Italy and the Netherlands, the UK has a higher proportion of the adult population trained in vocational orientated subjects (i.e. in Australia **19%** vocational compared to **16%** academic; **12%** vocational compared to **24%** academic in Belgium; **8%** compared to **32%** in Italy; and **18%** compared to **23%** in the Netherlands). However, in those countries offering the established Dual apprenticeship system (Germany, Austria and Switzerland), the incidence of vocational qualifications at ISCED Level 3/4 as the highest qualification is substantially higher than in the UK (between **40%** and **49%**).

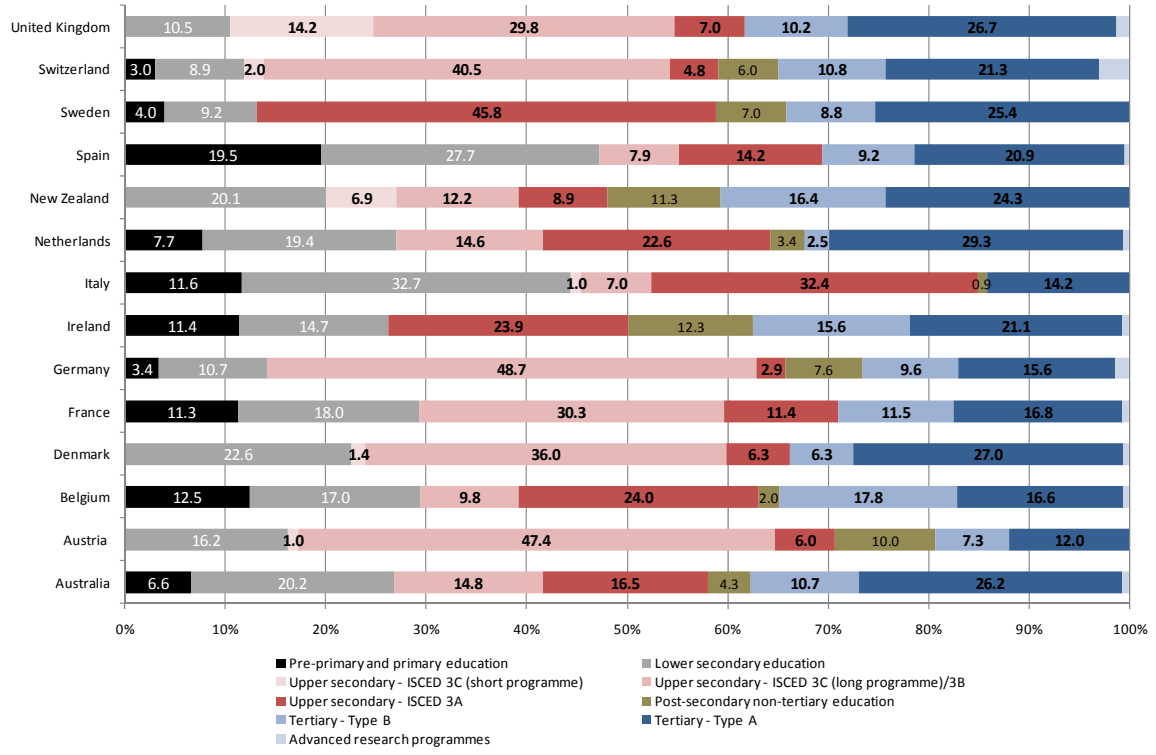
Table 12: Educational Attainment across country (25-64 year olds in 2010)

	Pre-primary /primary	Lower Secondary	Upper secondary			Post-secondary non-tertiary	Tertiary education			All levels
	ISCED 0/1	ISCED 2	ISCED 3C(S)	ISCED 3C(L) /ISCED 3B	ISCED 3A	ISCED 4	ISCED 5B	ISCED 5A	ISCED 6	
Australia	6.6	20.2		14.8	16.5	4.3	10.7	26.2	0.8	100.0
Austria (A)		16.2	1.0	47.4	6.0	10.0	7.3	12.0*		100.0
Belgium	12.5	17.0		9.8	24.0	2.0	17.8	16.6	0.6	100.0
Denmark		22.6	1.4	36.0	6.3		6.3	27.0*	0.6	100.0
France	11.3	18.0		30.3	11.4		11.5	16.8	0.7	100.0
Germany (B)	3.4	10.7		48.7	2.9	7.6	9.6	15.6	1.4	100.0
Ireland	11.4	14.7			23.9*	12.3	15.6	21.1	0.7	100.0
Italy	11.6	32.7	1.0	7.0	32.4	0.9		14.2		100.0
Netherlands	7.7	19.4		14.6	22.6	3.4	2.5	29.3	0.6	100.0
New Zealand (D)		20.1	6.9	12.2	8.9	11.3	16.4	24.3*		100.0
Spain (C)	19.5	27.7		7.9	14.2		9.2	20.9	0.5	100.0
Sweden (B)	4.0	9.2			45.8**	7.0	8.8	25.4*		100.0
Switzerland (B)	3.0	8.9	2.0	40.5	4.8	6.0	10.8	21.3	3.0	100.0
UK (E)		10.5	14.2	29.8	7.0		10.2	26.7	1.3	100.0

Note: **A**: Lower secondary = ISCED 0/1/2. **B**: Pre-Primary/Primary = ISCED 1; Lower secondary = ISCED 2A. **C**: Pre-Primary/Primary = ISCED 0/1; Lower secondary = ISCED 2A/2C. **D**: Lower secondary = ISCED 1/2; **E**: Pre-Primary/Primary = ISCED 0; Lower secondary = ISCED 2. * ISCED 5A/6 ** ISCED 3A/3B. ***Source: OECD Education at a Glance (2012)***

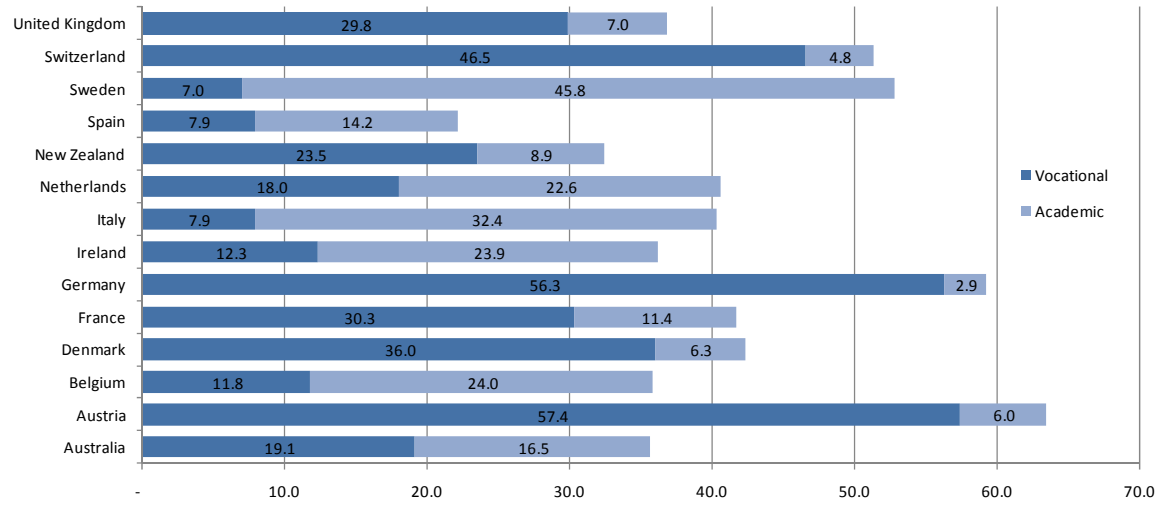
[29] ISCED 3C short course vocational qualifications are designed to prepare for workforce or for post-secondary non-tertiary education at level ISCED 4. See Annex for further information on qualification attainment.

Figure 6: Educational Attainmmet across country (25-64 year olds in 2010)



Source: OECD Education at a Glance (2012). Notes as per Table 12 apply

Figure 7: Incidence of vocational training amongst ISCED 3/4 as highest qualification

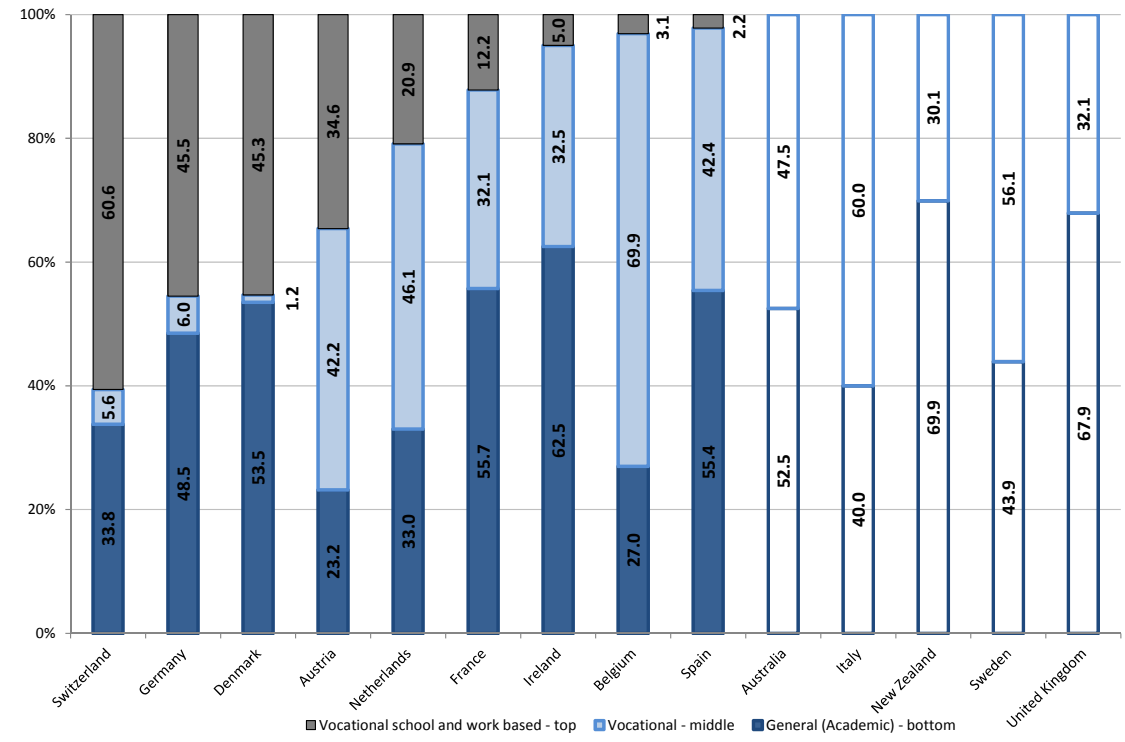


Source: OECD Education at a Glance (2012). Notes as per Table 12 apply

3.2 Enrolment patterns

Building on the previous information relating to the highest qualification attained amongst the adult population, Figure 8 presents information on enrolment patterns amongst students at upper-secondary or post-secondary level. The evidence is striking in terms of the proportion of young people in some countries engaged in work place training (i.e. apprenticeships). Specifically, in Switzerland, more than **60%** of young people are engaged in apprenticeships, while the estimate in Germany, Denmark and Austria stand at **45%**, **45%** and **35%** respectively. In Spain, Belgium and Ireland, the equivalent estimates are less than **5%**. As will be seen in the next section relating to youth unemployment, there does appear to be a link between the extent to which young people are integrated into the labour market during their time in upper-secondary and post-secondary education and the prevalence of youth unemployment.

Figure 8: Upper secondary and post-secondary non-tertiary enrolment patterns (2010)



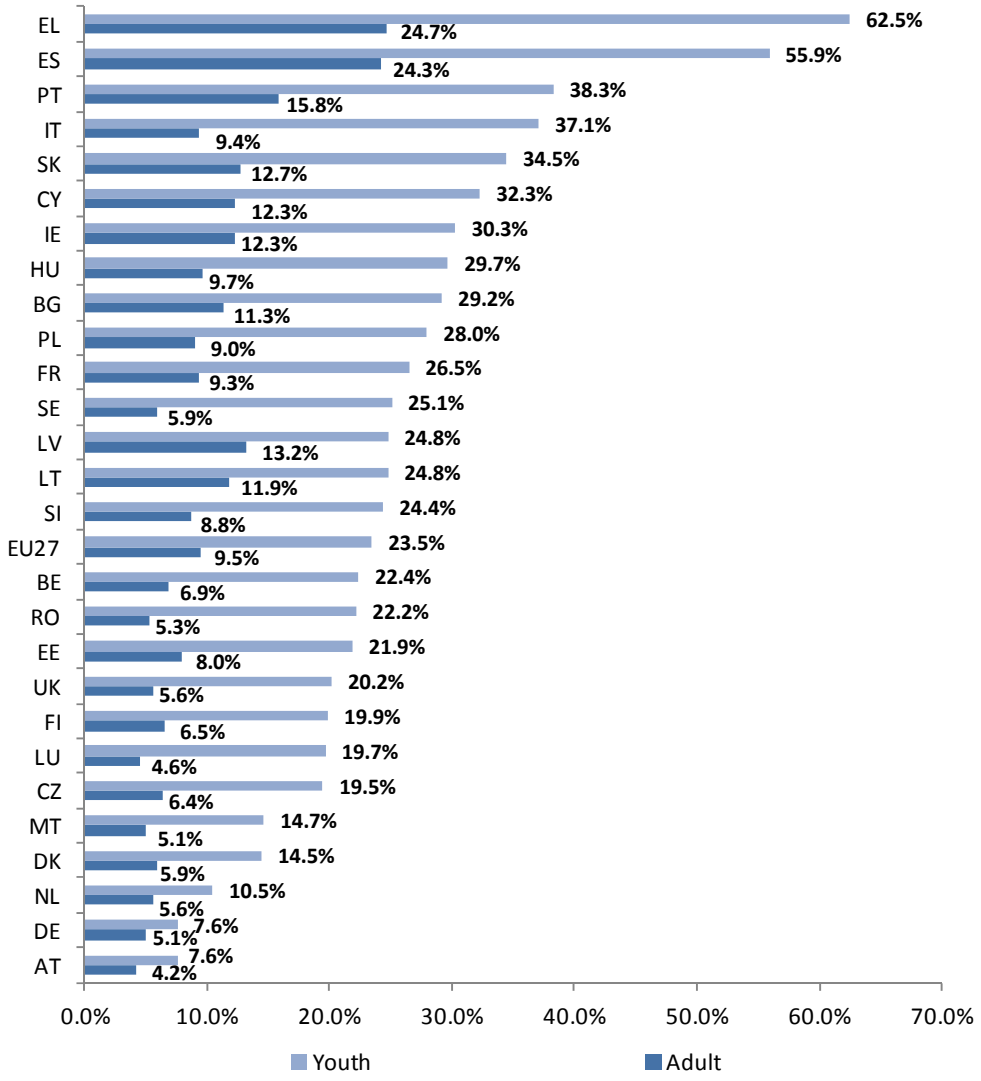
Source: OECD Education at a Glance (2013). Notes as per Table 12 apply. There are a number of countries (presented to the right) where there is no breakdown between the nature of the vocational training undertaken. In these cases, the internal shading has been removed, and aggregate academic and vocational enrolments are presented.

3.3 Youth unemployment

Linked to the incidence of vocational education and training (and in particular 'combinations of vocational education and training and work' (i.e. apprenticeships)), we provide some information

on the context of apprenticeship training by presenting the incidence of youth unemployment (i.e. age of 16 to 24) across EU Member States[30].

Figure 9: EU Member States (seasonally-adjusted unemployment rates, March 2013)



Source: London Economics' analysis of Eurostat data. Note: Not all countries have both youth and adult unemployment data for March 2013. For Italy, Latvia, and Romania data from December 2012 is used; for Estonia, Greece, Hungary and the UK data from February 2012 is used. Source: Eurostat (ei_lmhr_m)

The analysis presented in Figure 9 indicates that youth unemployment in the UK is at the lower end of the spectrum (**20.2%**) and below the average across the EU (**23.5%**). However, although youth unemployment is lower than in Greece (**62.5%**), Spain (**55.9%**), Italy (**37.1%**), Ireland (**30.3%**), France (**26.5%**), Sweden (**25.1%**) and Belgium (**22.4%**), the rate of youth unemployment in

[30] With the exception of Croatia

the UK is considerably higher than in Austria and Germany (**7.6%**), the Netherlands (**10.5%**) and Denmark (**14.5%**).

Consistent with other research in the field, the analysis reflects the fact that those countries that achieve high rates of transition to 'combinations of vocational training and work' by the end of lower secondary education are associated with the lowest youth unemployment rates, and that those countries that have failed to achieve a similar integration of young people in the labour market (for example, the United Kingdom and Sweden) are associated with higher youth unemployment rates.

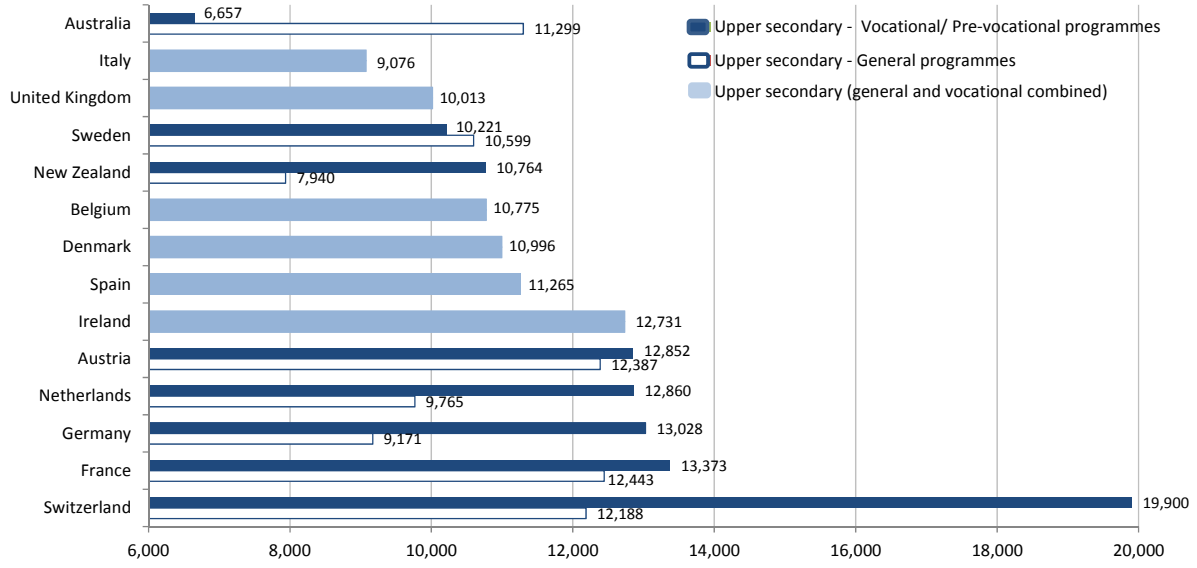
3.4 Funding for vocational training

In Table 13, we provide some information from the OECD on the level of funding by country in 2011 at the different levels of educational attainment, while in Figure 10, we provide information on the proportion of funding that is provided by the state and the proportions funded through private households or other private entities (generally private firms). The information in Table 13 is presented in constant US$ adjusted for differences in purchasing power in the different jurisdictions.

Although there is no breakdown of funding per full time equivalent learner in the United Kingdom at upper-secondary level (by general academic programmes or vocational programmes), the information in Table 13 indicates that average expenditure at upper secondary level education in the United Kingdom stood at approximately **US$10,013** per FTE learner per annum (**£6,618**). This average level of expenditure is approximately equivalent to the average levels of expenditure in Australia and Sweden (**US$9,916** and **US$10,375** respectively (**£6,452**and **£6,750** respectively), although the focus of funding in these countries is very different, with average expenditure per FTE learner undertaking academic programmes in Australia almost double the size of the funding levels on vocationally orientated programmes (compared to approximate parity in Sweden). With the exception of Italy and New Zealand, the UK has the lowest funding levels per full time equivalent learner in any of the countries under consideration.

Perhaps unsurprisingly, at **US$17,013 (£11,069)**, Switzerland has the highest level of funding per FTE learner; however, of particular note is the fact that the Swiss funding of vocational training is approximately 65% higher per learner per annum compared to the academic route of qualification attainment. Similarly, German vocational training is funded heavily, with **US$13,373 (£8,701)** on average in funding per full time equivalent learner (compared to **US$9,171** per annum for academic programme learners (**£5,967**)). In Austria, France and Ireland, the average funding level at upper-secondary level is approximately 25-30% higher per annum than the United Kingdom (with a relatively even split in funding across academic and vocational routes of qualification attainment), while in Denmark, Spain and the Netherlands, average funding levels at secondary level are between 10% and 20% higher than the United Kingdom.

Table 13: Annual expenditure per student by educational institutions (FTE, 2010, , US$ PPP)								
	Primary	Secondary					Post-sec. non-tertiary ed.	Primary to tertiary education
		Lower secondary	Upper secondary	All secondary	*Upper secondary - of which*			
	ISCED 0/1	ISCED 2	ISCED 3	ISCED 2/3	General Prog. (ISCED 3A)	Vocational Prog. (ISCED 3B)	ISCED 4	
Australia	8,328	10,273	9,916	10,137	11,299	6,657	7,445	**10,407**
Austria	8,202	10,080	12,442	12,737	12,387	12,852	12,589	**12,285**
Belgium	8,341	10,775						**10,758**
Denmark	11,166	11,078	10,996	11,036	10,996			**12,523**
France	6,373	9,111	12,809	10,696	12,443	13,373		**9,913**
Germany	6,619	8,130	11,287	9,285	9,171	13,028	8,843	**9,779**
Ireland	8,219	11,069	12,731	11,831	12,731		9,047	**10,713**
Italy	8,669	9,165	9,076	9,112	9,076			**9,055**
Netherlands	7,917	11,708	11,880	11,793	9,765	12,860	11,642	**11,493**
New Zealand	6,812	7,304	8,670	7,960	7,940	10,764	9,421	**8,117**
Spain	7,446	9,484	11,265	10,111	11,265			**9,800**
Sweden	9,382	9,642	10,375	10,050	10,599	10,221	5,974	**11,400**
Switzerland	10,597	14,068	17,013	15,645	12,188	19,900		**14,716**
UK	9,088	10,124	9,929	10,013				**10,587**



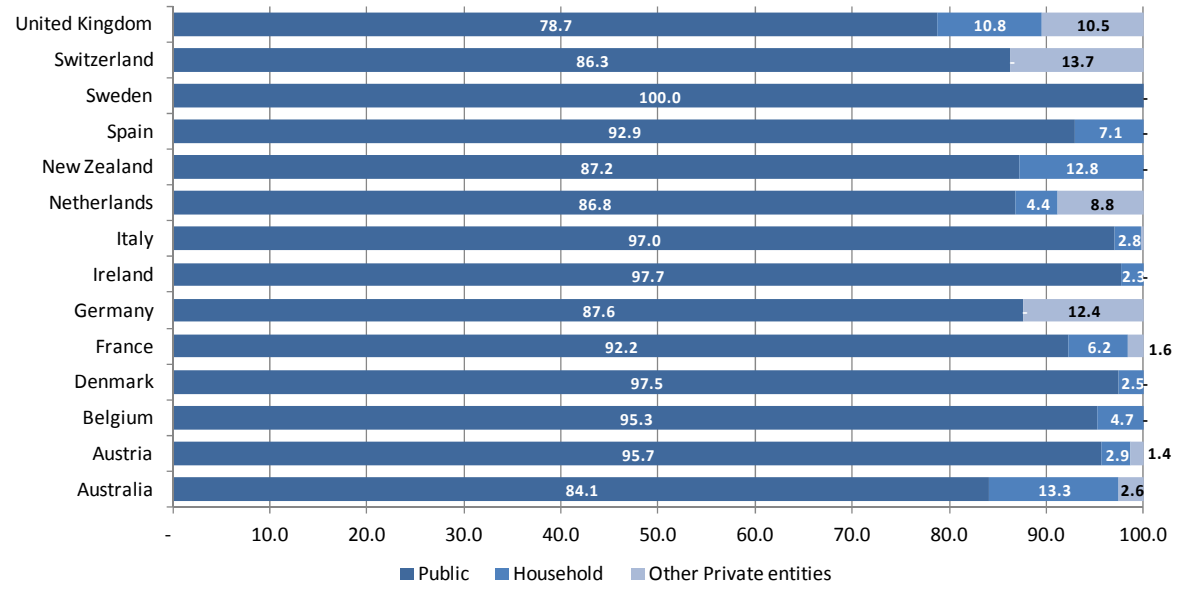
Note. **Ireland/ Italy:** Public institutions only (for Italy, except in tertiary education). **Austria:** Expenditure on R&D in the tertiary sector is partially excluded. **Spain:** Expenditure for retirement of personnel other than teachers in public institutions is not included. Information relates to 2009. In equivalent USD converted using PPPs for GDP, by level of education, based on full-time equivalents**. Source:** ***OECD Education at a Glance*** **(2012)**

3.5 Share of public and private funding in vocational training

Figure 10 illustrates the proportions of public and private funding at *primary*, *secondary* and *post-secondary* non-tertiary education. Although the breadth of the education system is wider than in previous sections, it is informative to note that in the United Kingdom, approximately **79%** of

funding at these levels of attainment is from public sources (which is the lowest proportion amongst the countries under consideration), compared to **11%** from private households and **10.5%** from other private entities. The only other countries with any significant degree of private (employer) contribution are Germany, Switzerland and the Netherlands, where approximately **12.4%** and **13.7%** and **8.8%** of funding is derived from private sources.

Figure 10: Per student at upper secondary level by source of funding



Source: OECD Education at a Glance (2012)

3.6 Apprenticeship duration

There are three levels of apprenticeship in England – 'Intermediate Apprenticeships', 'Advanced Apprenticeships' and 'Higher Apprenticeships', encompassing a range of competencies and incorporating technical proficiencies at NVQ Level 2 or equivalent, NVQ Level 3 or equivalent (broadly corresponding to ISCED Level 3B) and NVQ Level 4 or equivalent, respectively. Information from the National Apprenticeship Service indicates that in 2011/12, of the 520,600 apprenticeship starts, approximately 63% were at Intermediate Apprenticeship level, 36% were at Advanced Apprenticeship level, with the remaining 1% at Higher Apprenticeship level. Of note is the fact that the dominant source of growth in apprenticeship starts has been amongst individuals aged over 25.

Information from the Individualised Learner Record (which is a record of Further Education learners in England administered by the Skills Funding Agency (SFA)) indicates that the average durations of apprenticeships at the three levels were 12 months, 18 months and 12 months respectively implying that the completion of all three apprenticeship stages would require 42 months in total (on average). However, it is important to note that the introduction of Higher Apprenticeships is a relatively recent phenomenon, and as such, it is more likely that an apprentice will spend between 12 months and 30 months undertaking an apprenticeship; however there is some significant degree of variation depending on the sector of employment/training.

The information collected on the representative apprenticeship duration indicates that apprenticeship length in England is at the lower end of the spectrum. In Ireland and Switzerland, apprenticeships are generally **48** months in length, while in Denmark, Australia and New Zealand the median length is **42** months (though the mean length is closer to 36 months). More commonly, apprenticeships last at least **36** months, with Germany, Austria, and Belgium requiring a minimum of 36 months (and often 42 or 48 months in the case of Germany and Austria), while the median length of an apprenticeship in Sweden and France is approximately **36** months (with the mean duration marginally lower). Only Spain, where a new system of apprenticeship training is being initiated, has shorter apprenticeship duration than England (on average **24** months).

3.7 Apprentice pay as a proportion of fully qualified rate

In Table 14 and Figure 11 overleaf, we provide a summary of hourly apprentice wages as a proportion of the fully qualified rate by year of apprenticeship training.

To make an appropriate comparison between the different countries, we have used information from Eurostat and the OECD on Purchasing Power Parities. Specifically, we have used the latest Eurostat information from 2012 relating to actual individual consumption (*prc_ppp_ind*) and rebased the indices so that the UK is the reference country. However, this information is only available for the EU 28 Member States (and Switzerland). Therefore in the case of Australia and New Zealand, we have used standard OECD information on Purchasing Power Parities for GDP for 2012 (again rebasing such that the UK is the base country). Although slightly imperfect (as a result of the different PPP metrics), the analysis illustrates 'normalised' apprentice pay (denominated in sterling) relative to the normalised fully qualified rate and the relevant minimum wage rate.

After adjusting for differences in purchasing power, the *fully qualified rate* varies significantly across jurisdictions, ranging from approximately **£10.50** in Spain to the equivalent of **£16.66** in Germany. Using information from the UK Labour Force Survey (December 2012 up-rated to March 2013), our analysis suggests that the average hourly rate for an individual whose highest qualification is an apprenticeship stands at **£11.89** across the United Kingdom (ranging from **£10.50** in Northern Ireland to **£12.84** in Scotland). The average fully qualified rate across all countries amongst those apprenticeships presented stands at approximately **£12.26** per hour.

Information on actual hourly wage rates from the Department for Business, Innovation and Skills 2011 Apprenticeship Pay Survey (up-rated for comparability), indicates that apprentices across the United Kingdom earn **£6.05** per hour on average (ranging between **£5.92** in Northern Ireland to more than **£6.87** in Wales).

There is some degree of variation depending on the year of apprenticeship training, with apprentices earning approximately **£6.04** in their first year (ranging from **£5.42** in Scotland to **£6.93** in Wales) increasing to **£7.23** on average in their third year (ranging from **£6.05** in Northern Ireland to **£7.32** in England).

Using this information on absolute wage rates suggests that apprentices in England earn approximately **51%** of the fully qualified rate in their first year, **47%** in their second year and **62%** of the fully qualified rate in their third year (though this is likely to be compositional effect and does not necessarily that apprentices get paid more in their first year than their second on a like for like basis). There is some variation across the Home Nations given the differences in the estimates of fully qualified rates. Specifically, as a result of the higher than average fully qualified

rate in Scotland (and the relative comparability of apprentice pay in absolute terms), apprentices in Scotland earn approximately **42%** of the fully qualified rate in their first year, **50%** in their second year and **54%** in their third year.

Table 14: Apprentice pay as a proportion of the fully qualified rate

		FQR (£)	Year 1	Year 2	Year 3	Year 4	Year 5
Australia	All	£12.61	42%	42%	64%	70%	
Austria	All	£10.58	25%	33%	44%	53%	
Belgium	All (starting age 17)	£12.52	21%	23%	25%	26%	28%
Denmark (A)	Construction	£13.39	38%	45%	55%	64%	
France	Under 18	£11.73	16%	24%	34%	-	
	18-20		26%	31%	42%	-	
	21 or over		34%	39%	50%	-	
Germany	All	£16.66	21%	24%	27%	28%	
Ireland	Engineering	£13.03	30%	45%	65%	80%	
	Construction	£13.29	33%	50%	75%	90%	
	Automotive	£11.71	33%	50%	75%	90%	
	Paper/printing	£8.54	75%	80%	90%	-	
	Electrical	£16.01	30%	45%	65%	80%	
Italy (A)	Construction (Level 3)	£7.50	74%	79%	86%	91%	96%
Netherlands (A)	(Level 2/ Starting age 17)	£15.25	31%	38%	45%	52%	
New Zealand	All	£11.65	43%	43%	43%	43%	
Spain	All	£10.53	31%	35%	-	-	
Sweden (A)	School based (<20yo)	£12.15	46%	50%	54%	63%	74%
	Firm based (<20yo)		36%	44%	53%	63%	74%
	>20yo		54%	59%	63%	74%	-
Switzerland	All	£14.69	9%	13%	17%	20%	
United Kingdom	England	£11.89	51%	47%	62%		
	Scotland	£12.84	42%	50%	54%		
	Wales	£10.96	63%	62%	61%		
	Northern Ireland	£10.50	57%	53%	58%		

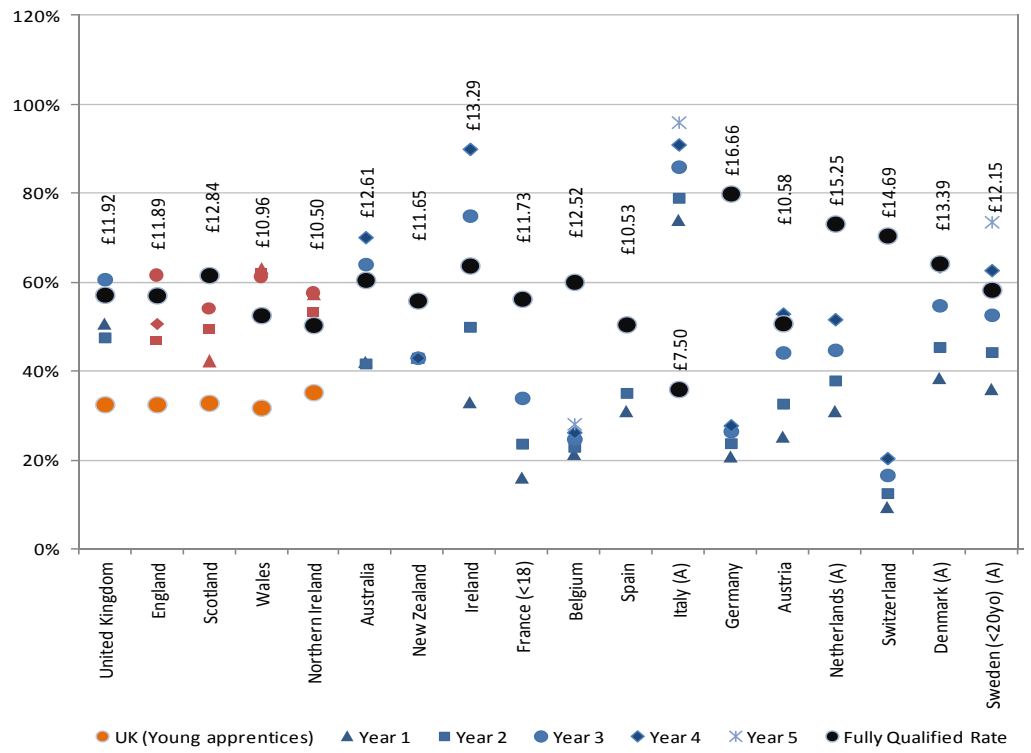
Note: (A) = Building and construction. Note that hourly wages have been converted to Sterling using and adjusted for Purchasing Power Parity. ***Source: London Economics***

At the other end of the spectrum, combining the higher than average apprentice hourly rate and the lower than average fully qualified rate, apprentices in Wales earn between **61%** and **63%** of the fully qualified rate over the duration of their apprenticeship.

However, as a result of the composition of the apprentice cohort, and in particular the very large numbers of apprentices aged 25 or above, there is significant variation in apprentice pay. Specifically, although the average apprentice pay across the UK stands at approximately £6.05 per hour, for those apprentices aged less than 19, average pay rate is approximately £3.88 per hour (compared to an average apprentice pay rate of £8.15 for those aged 25 or above). Thus, average apprentice pay rate reflects the increasing proportion of older learners, and simply looking at averages reduces the comparability of findings internationally, especially in relation to those countries where apprenticeship training is predominantly the preserve of younger learners.

More specifically, focusing on younger apprentices only, the findings indicate that the average hourly rate for these apprentices stands at £3.88, which implies that younger apprentices earn approximately 32% of the fully qualified rate on average over the course of their apprenticeship.

Figure 11: Apprentice pay as a proportion of the fully qualified rate



(A) = Building and construction. Note that hourly wages have been converted to Sterling using and adjusted for Purchasing Power Parity. ***Source: London Economics***

Within the other jurisdictions selected for this analysis, there are some consistent patterns of the treatment of apprentices. Specifically, in Germany, Austria and Switzerland (all of who offer highly structured Dual apprenticeships), remuneration rates are exceptionally low. With the fully qualified rate standing at **£16.66**, **£10.58** and **£14.69** respectively, apprentices receive between **9%** and **25%** of the fully qualified rate in their first year; between **13%** and **33%** in their second year; between **17%** and **44%** in their third year; and between **20%** and **53%** of the fully qualified rate in their fourth year (where applicable). In absolute terms, apprentices are paid the equivalent of between **£3.47** and **£4.64** per hour in Germany; **£2.67** and **£5.60** in Austria and between **£1.39** and **£3.01** in Switzerland, all of which are below the average rates received in the United Kingdom (and substantially so in the earlier years of the apprenticeship). It is interesting to note that in the case of Swiss apprenticeships, wage rates are specifically designed to ensure that firms achieve positive economic benefits from offering apprenticeships *during the apprenticeship period*, and the wages paid are designed to reflect the very significant training input provided by Swiss firms, as well as the reduced level of productivity amongst apprentices during the training period.

While the United Kingdom demonstrates a relatively flat wage progression profile (with only New Zealand (where all apprentices receive **43%** of the full qualified rate irrespective of the year of training), and Belgium (where the difference between a 1st year and 5th year apprentices is just 7 percentage points) offering flatter progression), a number of countries offer much steeper earnings profiles for their apprenticeships (and much more prescribed systems for determining apprentice pay). In particular, in Sweden and Denmark (where the fully qualified rate stands at the equivalent of **£12.15** and **£13.39** respectively), first year apprentices receive **36-38%** of the fully

qualified rate, rising to approximately **63%-64%** in their fourth year (or 'step' in Sweden (with 5th step apprentices in Sweden earning **74%** of the fully qualified rate)). This corresponds to a 30 percentage point increase over their apprenticeship.

Apprentices in Ireland have the greatest pay progression over the course of their training. Relative to a fully qualified rate of **£13.29** per hour (*Building and Construction*), through the agreement of the social partners, first year apprentices earn **33%** of the fully qualified rate (known as the 'basic craft rate' (increasing to **50%** in their second year, **75%** in their third year and **90%** in their fourth and final year).

3.8 Apprentice pay as a proportion of relevant National Minimum Wage

In Table 15 and Figure 12, we have presented the same apprentice wage information, although this time in relation to the National Minimum Wage, where this information exists. We have followed the same approach as presented in section 2.2 in terms of rebasing the wage information using Purchasing Power Parity indices. As previously stated, not all countries have a national minimum wage. Therefore, where possible, we have compared the apprentice pay rate to either the average wage achieved by individuals who are considered to be unskilled or in possession of no formally recognised qualifications or where there is a negotiated settlement guaranteeing a minimum wage in a particular industry or sector.

Given the UK National (adult) Minimum Wage has stood at **£6.19** per hour since October 2012, the analysis undertaken suggests that apprentices in England earn **97%** of the adult NMW in their first year, **90%** in their second year and **118%** in their third year (although as before, care needs to be taken to understand the composition of the apprentice cohort). Although the starting proportion in Scotland is approximately 4 percentage points lower than in England, apprentices in Scotland earn **103%** of the NMW in their second year and **112%** in their third year. In Wales, apprentices earn approximately **10%** more than the National Minimum Wage in each of the three years of their apprenticeship, while apprentices in Northern Ireland (on average) earn between **2%** and **10%** less than the minimum wage over the duration of their apprenticeship.

However, again focusing on younger apprentices only, the findings indicate that given the average hourly rate stands at £3.88, which implies that younger apprentices earn approximately 63% of the full adult minimum wage on average over the course of their apprenticeship.

Turning to the other jurisdictions forming part of this analysis, in Germany and Austria, there is no national minimum wage; rather, minimum wages are bargained by each industrial sector, which also involve an adjustment for location. In these cases, we have taken the weighted average of the relevant minimum wages and estimated these to be **£8.85** and **£5.68** in Germany and Austria respectively. Although not perfectly comparable to a minimum wage, in Switzerland, we have used information on the average hourly wage achieved by an individual in an unskilled profession (**£11.62** per hour). The analysis indicates that the average apprenticeship rate in Germany stands at **39%**, **45%**, **50%** and **52%** of the weighted collectively bargained minimum wage over the course of the apprenticeship.

Table 15: Apprentice pay as a proportion of the relevant National Minimum Wage							
		NMW	Year 1	Year 2	Year 3	Year 4	Year 5
Australia	All	£7.43	71%	71%	109%	119%	
Austria	All	£5.68	47%	61%	82%	99%	
Belgium	All (starting age 17)	£7.05	38%	41%	44%	47%	50%
Denmark (A)	Construction	£8.96	57%	68%	82%	95%	
France	Under 18	£7.52	25%	37%	53%	-	
	18-20		41%	49%	65%	-	
	21 or over		53%	61%	78%	-	
Germany	All	£8.85	39%	45%	50%	52%	
Ireland	Engineering	£6.48	60%	91%	134%	162%	
	Construction		68%	103%	154%	184%	
	Automotive		60%	90%	134%	161%	
	Paper/printing		99%	105%	119%	-	
	Electrical		74%	111%	161%	198%	
Italy (A)	Construction (Level 3)	£6.46	87%	93%	101%	107%	113%
Netherlands (A)	(Level 2/ Starting age 17)	£6.84	69%	85%	100%	115%	
New Zealand	All	£6.27	80%	80%	80%		
Spain	All	£4.35	75%	85%	-	-	
Sweden (A)	School based (<20yo)	£10.20	55%	60%	65%	73%	88%
	Firm based (<20yo)		43%	53%	63%	75%	88%
	>20yo		65%	70%	75%	88%	
Switzerland	All	£11.62	12%	16%	21%	26%	
United Kingdom	England	£6.19	97%	90%	118%	-	
	Scotland		88%	103%	112%	-	
	Wales		112%	110%	108%	-	
	Northern Ireland		97%	90%	98%	-	

(A) = Building and construction. Note that hourly wages have been converted to Sterling using and adjusted for Purchasing Power Parity. ***Source: London Economics***

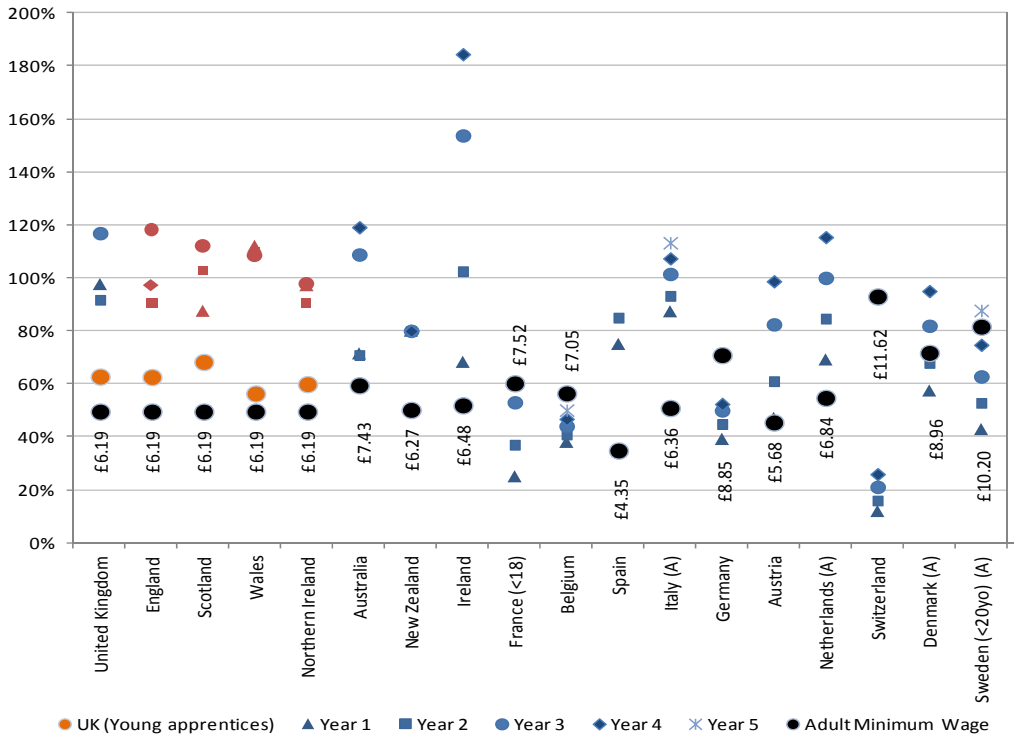
Reflecting the lower (weighted) minimum wage in Austria, the average hourly apprenticeship rate in Austria stands at **47%**, **61%**, **82%** and **99%** of the weighted minimum wage over the course of the apprenticeship. In contrast, reflecting both the attempt to achieve firm level cost neutrality in Switzerland from the provision of apprenticeship positions, as well as the relatively high rate of hourly pay achieved by those in unskilled professions, Swiss apprentices achieve **12%**, **16%, 21%** and **26%** of the unskilled rate over the course of their apprenticeship.

In France, Belgium (French speaking) and the Netherlands, the relevant national minimum wage stands at approximately **£7.52**, **£7.05** and **£6.84** respectively. In France, for an apprentice aged less than 18, apprentice pay increases from approximately **41%** of the National Minimum Wage to **65%** in the third year of the apprenticeship. In contrast, apprentice rates are significantly lower in Belgium, with those apprentices starting at the age of 17 achieving an increase in their apprentice pay from **38%** of the national minimum wage to **44%** in their third year (the normal apprenticeship duration). However, it is also the case that apprentices in both France and Belgium receive several other benefits in kind including subsidised meals in student canteens to mileage and transport allowances. In the Netherlands, apprentices (in the construction industry) earn **69%** of the national minimum wage in their first year, increasing to **100%** in the third year and **115%** in the fourth year.

Despite that fact that Spain has a relatively low minimum wage (standing at **£4.35** per hour) and is at the start of the reform of its apprenticeship provision, our investigation suggests that

apprenticeship pay will be approximately **75%** and **85%** in the first and second years of apprentices' training.

Figure 12: Apprentice pay as a proportion of the national or sectoral minimum/ unskilled wage



(A) = Building and construction. Note that hourly wages have been converted to Sterling using and adjusted for Purchasing Power Parity. ***Source: London Economics***

In Sweden and Denmark, there is no national minimum wage. As with Germany and Austria, the relevant minimum wage is determined by the relevant social partners at sectoral level. Taking the example of the *Building and Construction* industries, the analysis indicates that the relevant minimum wage stands at **£10.20** and **£8.96** per hour in Denmark and Sweden respectively. In both countries, there is a steady increase in the proportion of the sectoral minimum wage paid to apprentices, ranging from **43%** to **88%** for the five apprenticeship 'steps' in Sweden to **57%** to **95%** over the first four years of apprenticeship in Denmark. Note however that there are some important differences in the wage rates achieved by apprentices in Sweden depending on the location of training as well as the age of the apprentice. Specifically, for apprentices aged 20 or above (as in France), there is a 15-20 percentage point uplift in the proportion of the sectoral minimum wage received compared to an apprentice aged less than 20.

Australia and New Zealand adopt very different approaches for the remuneration of apprentices. In New Zealand, apprentices receive the training wage, which stands at **80%** of the full national minimum wage (**£6.27** per hour). It appears to be the case that this training wage applies over the entire apprenticeship and increases alongside increases in the national minimum wage. In contrast, Australia operates a system that is similar to that in Denmark and Sweden where sector level agreements are often in place between social partners. Information from the Australian Bureau of Statistics suggests that compared to a national minimum wage of **£7.45** per hour,

Australian apprentices earn between **71%** and **119%** of the national minimum wage over the course of their apprenticeship.

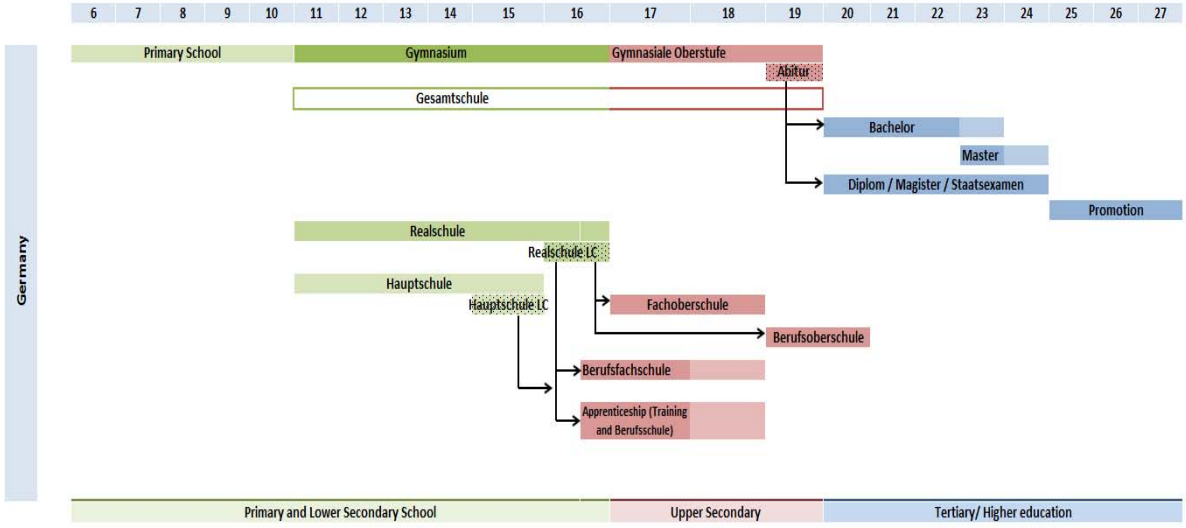
Finally, Irish employers (and the State during periods of classroom-based learning) offer generous remuneration to apprentices. Compared to a national minimum wage of approximately **£6.48** per hour, apprentices in the construction sector achieve **68%** of the national minimum wage in their first year, rising to **103%**, **154%** and **184%** in their second, third and fourth years respectively. The proportions in the other main four-year apprenticeship sectors are broadly similar, with apprentices in the electrical sector earning between 10 and 15 percentage points more than apprentices in Building and Construction, while apprentices in the Automotive and Engineering sectors earning between 10 and 20 percentage points less.

4 Apprenticeships and apprentice pay in Germany

4.1 Overview of educational system in Germany

While the **Federal Government** is involved in the regulation of *some* aspects of Germany's education system (importantly, the regulation of in-company vocational training and vocational Further Education), the responsible authority for educational matters relating to the school and higher education sector, adult education and continuing education lies with the 16 German States[31]. This arrangement of responsibilities provides significant flexibility to balance their training systems to their own regional and local requirements. This decentralised approach to regulation results in considerable **variation** in the characteristics of the educational system across States. While our analysis provides an *overall* picture of the German apprenticeship framework, these inter-state differences should be kept in mind[32]. Figure 13 provides an overview of the German primary, lower- and upper-secondary, and tertiary educational system.

Figure 13: The German educational system



Source: London Economics

[31] The regulatory and legislative powers relating to the German dual VET systems are spread across different governmental levels. The German Federal Government is responsible for the overall VET strategy of the country, as well as for the regulation of in-company vocational training within the dual system. Legal provisions for this training and crafts are set out in the *Berufsbildungsgesetz* (Vocational Education and Training Act) and the *Gesetz zur Ordnung des Handwerks* (Handicrafts Act). In addition, the Federal Government holds authority over training regulations set out in the *Ausbildungsordnungen*, which prescribe the duration and profile of and exam requirements for apprenticeships in each occupation qualification. Below the federal level, the German states carry sole authority over the part-time vocational education provided at the *Berufsschule*, setting out *Rahmenlehrpläne* (framework curricula) governing the organisation and content of the vocational education provided to apprentices. As mentioned in our description of the German education system, the delegation of this authority to the 16 German states results in considerable variation in the setup of vocational education of apprentices throughout the country.

[32] For a detailed analysis of the entirety of the German educational system, please refer to: Secretariat of the Standing Conference of the Ministers of Education and Cultural Affairs of the Länder in the Federal Republic of Germany (2011). *The Education system in the Federal Republic of Germany.* Available at:
http://www.kmk.org/fileadmin/doc/Dokumentation/Bildungswesen_en_pdfs/dossier_en_ebook.pdf [Retrieved 28 May, 2013].

Compulsory schooling for all children in Germany begins in the year in which they reach the age of 6, and the mandatory level of school attendance typically amounts to nine years of schooling, with some States and schools prescribing ten years. In contrast to primary school, which children typically attend for four years, German lower-secondary education is divided into **four main educational paths** involving particular learning certificates, qualifications, school types and levels of duration. In spite of their differences, the paths are interrelated, with the system allowing children to transfer from one school type to another if desired.

First, ***Hauptschulen*** provide their pupils with basic general education from Grade 5 to 9 (typically ages 11 to 15), after which pupils receive the *Hauptschulabschluss (Hauptschule* Leaving Certificate), constituting the most basic leaving certificate in the German school system. Secondly, the ***Realschule*** impart a more extensive level of general education from Grades 5 to 10. Upon leaving this type of school, pupils obtain the *Realschulabschluss* (*Realschule* Leaving Certificate), which allows its recipients to transfer to schools providing vocational education or a qualification for entrance into tertiary education. Thirdly, the ***Gymnasium*** allows children to acquire more concentrated general (academic) education[33]. This type of school covers Grades 5 to 10, as well as higher-secondary education (Grades 11 to 13 - *Gymnasiale Oberstufe)*, after which, graduates from the *Gymnasium* receive their formal entrance qualification into university education (the *Abitur* (or Allgemeine Hochschulreife))[34]. Finally, ***Gesamtschulen*** (comprehensive schools) constitute a hybrid of the above three school types, offering all three courses of education provided in these different institutions.

Following lower-secondary education, pupils with a *Hauptschule* or *Realschule* leaving certificate typically enrol in a vocational pathway. In addition to compulsory education at the primary and lower secondary level, **individuals who do not choose to attend the *Gymnasium* for general upper-secondary education are required to participate in vocational education for the designated duration of training in a "*staatlich anerkannter Ausbildungsberuf*"** (recognised occupation requiring formal training).

First, and most importantly for our analysis, German states have established the *Duales System* (Dual system), which consists of part-time vocational education at the *Berufsschule* as well as on-the-job training within companies. This type of vocational education constitutes Germany's apprenticeship system, and will be the focus of our analysis to follow. Apart from the condition that apprentices must have completed compulsory schooling at primary and lower-secondary level, there are no other formal prerequisites for admission to the dual apprenticeship system.

Second, the *Berufsfachschule* offers full-time vocational education to pupils with a *Hauptschule* or *Realschule* leaving certificate, providing them with part of the vocational training necessary for a recognised occupation requiring formal training (in 1-2 year courses), or leading to a full qualification in a specific occupation (in 2-3 year courses).

Third, pupils who attended the *Realschule* can choose to attend the *Fachoberschule and* receive a certificate to study at a university of applied sciences (typically undertaking degree level courses

[33] Note that there also exist some *Gymnasien* that impart both general and vocational education (so-called *Fachgymnasien*).
[34] Note that in 2007, the G-8 educational reform determined the contraction of upper secondary education in *Gymnasien* to two years, implying that attendants would receive their *Abitur* after 12 years instead of 13. German states are currently in the course of implementing this conversion to 8 years of schooling at the *Gymnasium.*

which put particular emphasis on practical applications in the professional world). Finally, candidates may enter the *Berufsoberschule*, acceptance to which is conditional on a *Realschule* leaving certificate as well as previous training and job experience. These schools provide more extensive occupational knowledge[35].

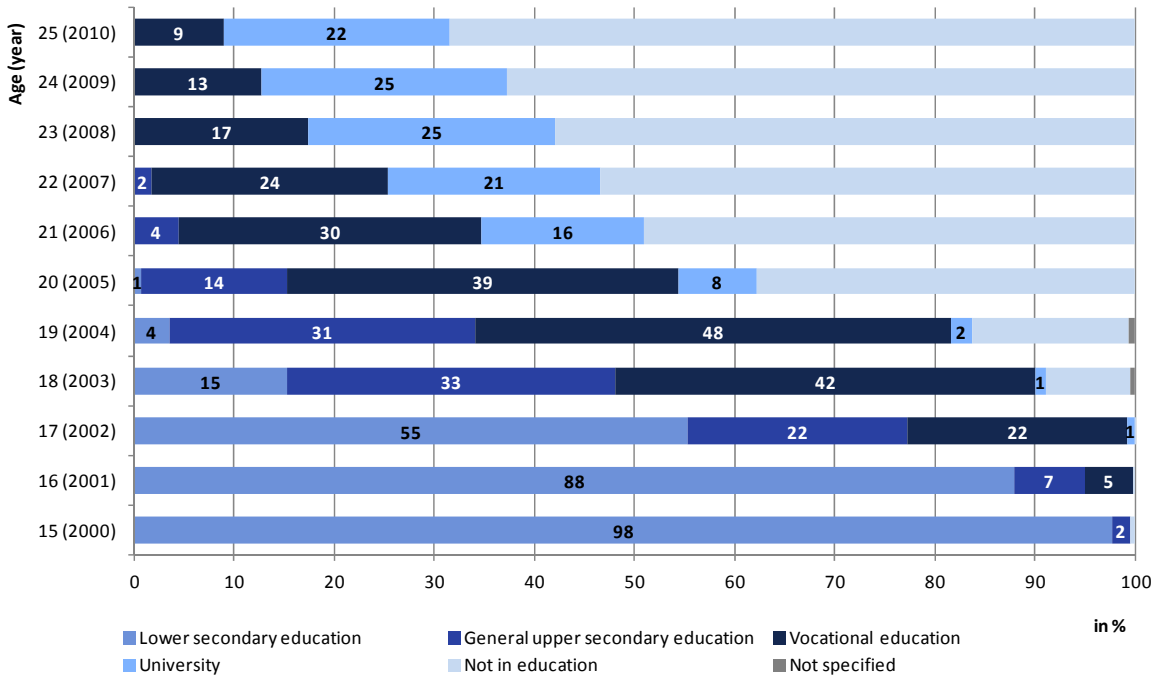
4.2 The German apprenticeship system: general characteristics

While the previous summary of the German education system included a brief description of the different types of vocational education offered within the system, this section provides a more detailed analysis of different aspects of apprenticeship programmes.

4.2.1 Entry rates into vocational education

To gain an understanding of the transition of individuals within Germany's education system described above, Figure 14 follows the German 1985 birth cohort's participation in different parts of the system between the ages of 15 and 25.

Figure 14: Participation of 1985 cohort in the German education system, by age



Source: Autorengruppe Bildungsberichterstattung (2012b)

Figure 14 illustrates that at ages 16 and 17, about equal percentages of the cohort were following general upper-secondary education and vocational education, while individuals aged 18 or older

[35] Finally, considering tertiary education, though the German education system is increasingly subjected to a shift from the traditional degrees of *Diplom*, *Magister* and *Staatsexamen* to the more commonly used Bachelor and Master certificates, all of these different types of tertiary education still co-exist. They can be obtained at universities and equivalent institutions (e.g. technical universities), colleges of art and music, or universities of applied sciences (*Fachhochschulen).* The highest level of tertiary education achievable is the *Promotion* (i.e. the achievement of a Doctorate), for which there is no pre-set duration.

were more likely to enter vocational education, rather than general education at the *Gymnasium* or other general schools. More specifically, at age 18, 33% of young people were participating in general education at the upper-secondary level and 42% undertaking vocational education. Between the ages of 19 to 21, this difference in participation rates widened, with vocational education becoming increasingly more popular compared to general schooling.

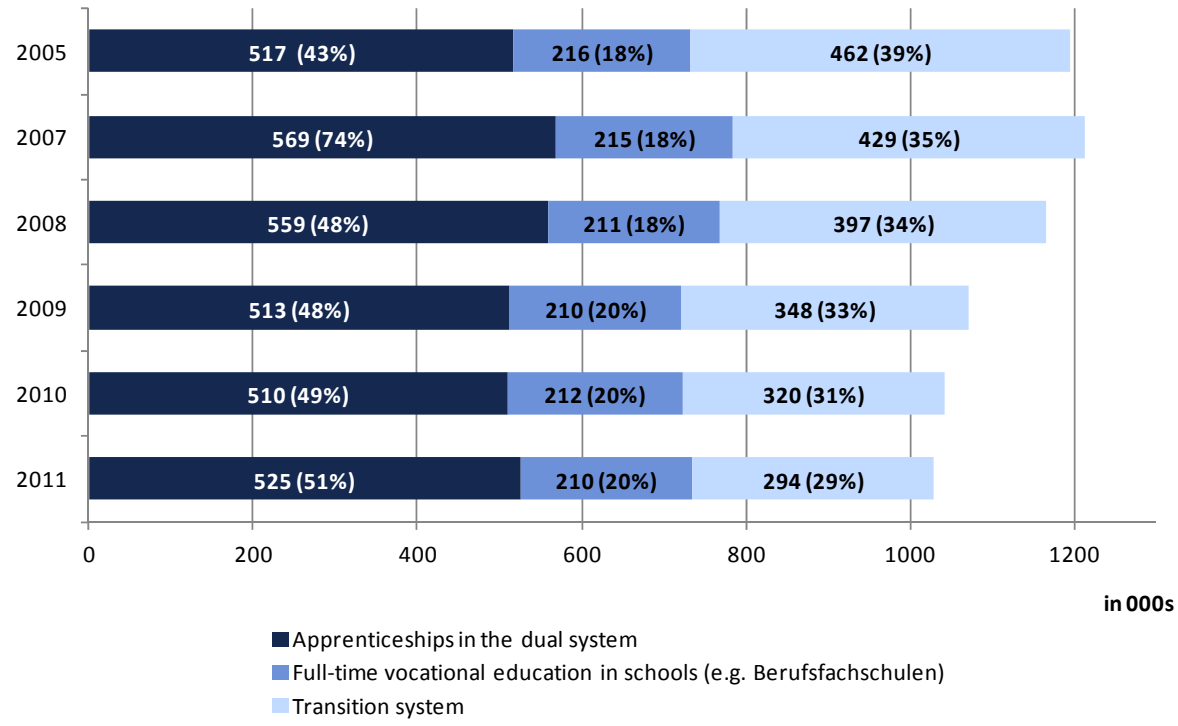
4.2.2 Apprenticeship entry

Figure 15 illustrates the comparative popularity of *apprenticeships* in Germany in terms of the proportions of new entrants into different paths of vocational education and training between 2005 and 2011. In addition to the dual system and the other types of full-time vocational schooling already addressed above, Figure 15 includes the German ***transition system*** as part of the vocational education sector, which offers a variety of measures available to young people who face difficulties in progressing from lower secondary education to upper secondary vocational education and training. Typical elements of this *transition system* include the *Berufsgrundbildungsjahr* (basic vocational year) and the *Berufsvorbereitungsjahr* (pre-vocational year). As part of the transition system, young individuals receive career guidance and acquire basic vocational skills in order to facilitate their acceptance into an apprenticeship or their enrolment in full-time vocational schools (OECD, 2010).

In every year considered in the figure, entrants into the depicted three-element German system of vocational education were most likely to start an apprenticeship, rather than either participating in full-time vocational schooling (e.g. the *Berufsfachschule*) or the transition system of vocational education. Furthermore, this *relative* popularity of apprenticeships among new entrants has increased between 2005 and 2011.

While the share of new entrants into full-time vocational schools remained relatively constant, the proportion (and number) of entrants into the transition system gradually decreased from 39% (462,000) in 2005 to 29% (294,000) in 2011. This was matched by an *increased* inflow into the apprenticeship system, from 43% (517,000) in 2005 to 51% (525,000) in 2011 (*Autorengruppe Bildungsberichterstattung*, 2012a)

Figure 15: Distribution of German new entrants into different paths of vocational education and training

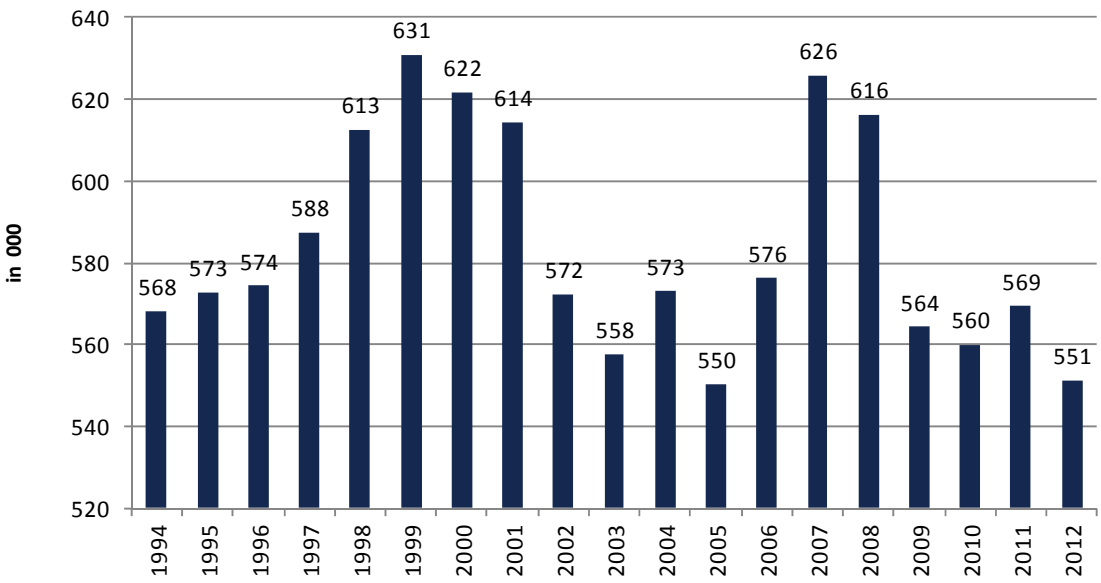


Note: Numbers for 2005 to 2008 are not corrected for double counts across different data sources included in the estimates. ***Source: Autorengruppe Bildungsberichterstattung (2012a)***

Whereas the *relative* prevalence of apprenticeships as the most popular choice among new entrants into vocational education in Germany increased in recent years, the *absolute* number of new apprenticeships over time shows more variation. Figure 16 presents the number of newly concluded apprenticeship contracts in Germany (in thousands) between 1994 and 2012[36]. The analysis illustrates a significant level of variation in the number of new apprenticeship contracts over time, ranging from a minimum of around 550,000 in 2005 to 631,000 in 1999. In general, the number of new apprenticeship contracts in Germany has suffered from a long-term downward trend in the last two decades. Although a comparatively large number of new apprenticeship contracts commenced in 2007 and 2008 (626,000 and 616,000, respectively), the number of apprenticeship contracts dipped noticeably in 2009, with consistently lower levels since. New apprenticeship contracts commenced in 2012 amounted to 551,000, which corresponds to the second lowest level since 1994 (*Bundesinstitut für Berufsbildung*, 2013a).

[36] Note that the number of newly concluded apprenticeship contracts exceeds the number of new entrants into the Dual system of apprenticeships in every year displayed, since not all new apprenticeship agreements are concluded with such new entrants. Instead, new apprenticeship contracts might involve apprentices who previously dissolved their contract with a company prior to completion, or individuals who have already completed an apprenticeship and decide to enter a second one.

Figure 16: Newly concluded apprenticeship contracts in Germany, 1994 to 2012 (in '000s)



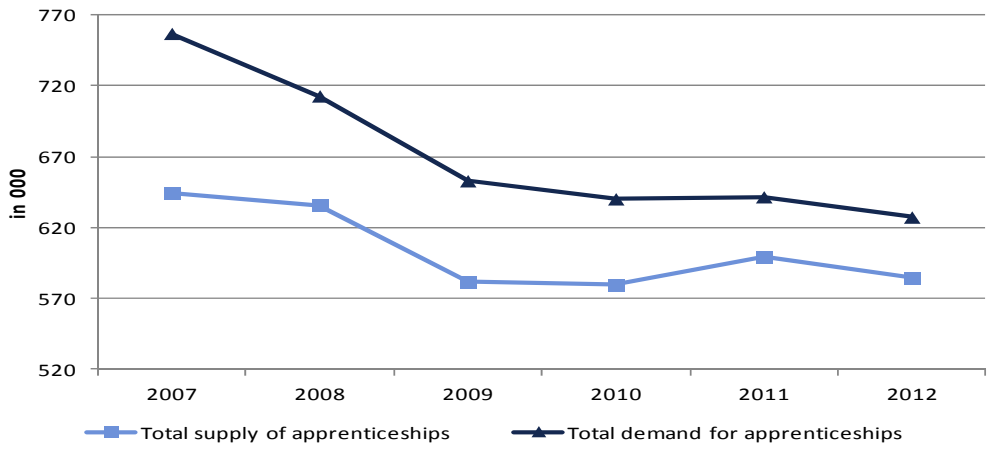
Note: Cut-off date for 2012 numbers was 30 September, 2012. ***Source: Bundesinstitut für Berufsbildung (2013a).***

Figure 17 demonstrates that the downward trend in apprenticeship starts is reflected in both the demand for and supply of apprenticeships. On the demand side, the figure shows an almost continuous decline between 2007 and 2012 (from 760,000 individuals ***interested*** in participating in an apprenticeship in 2007 to 630,000 in 2012). One explanation for this fall in demand is *the long-term demographic decline* in the numbers of young adults who leave general education schools (i.e. *Hauptschulen, Realschulen, Gymnasien and Gesamtschulen*). In addition, the decline in the number of individuals who do **not** hold a qualifying certificate for entry into tertiary education institutions is of particular concern, since these young people commonly comprise the main component of apprenticeship demand (Bundesinstitut für Berufsbildung, 2013a).

The supply of apprenticeships is defined as the number of concluded and open apprenticeship contracts that are offered within the German system. As depicted in Figure 17, despite a slight increase between 2010 and 2011, apprenticeship supply decreased from 640,000 in 2007 to 585,000 in 2012. Bundesinstitut für Berufsbildung (2013a) considers the weak economic climate at the time as the main reason behind this most recent decline in apprenticeship supply, as companies, whose demand for employees (including apprentices) is strongly influenced by economic conditions, supply the majority of apprenticeships in Germany[37].

[37] In addition, the authors find that a fall in the number of external apprenticeships, alongside the recent termination of a programme in the former Eastern Germany (the *Bund-Länder-Ausbildungsplatzprogramms Ost*) that supported young adults' chances of receiving an apprenticeship offer were important in reducing the supply of apprenticeship positions.

Figure 17: Demand and supply of apprenticeships in Germany, 2007-2012



Note: Cut-off date for 2012 numbers was 30 September, 2012. Supply includes those contracts successfully concluded as well as those which remain open / uncovered. Demand includes individuals who are interested in dual system apprenticeships, i.e. those who concluded an apprenticeship contract or those who are applicants for an apprenticeship and are continuing their search for a contract. In contrast to the narrow traditional calculation of apprenticeship demand previously used by the *Bundesinstitut for Berufsbildung*, the new calculation method used to arrive at the above numbers includes those who have an alternative pathway (e.g. to start studying at a university) at their disposal but who are still looking for an apprenticeship contract. The definition of demand excludes those who terminated their search for an apprenticeship and instead decided on choosing alternative pathways.
Source: Bundesinstitut für Berufsbildung (2013a).

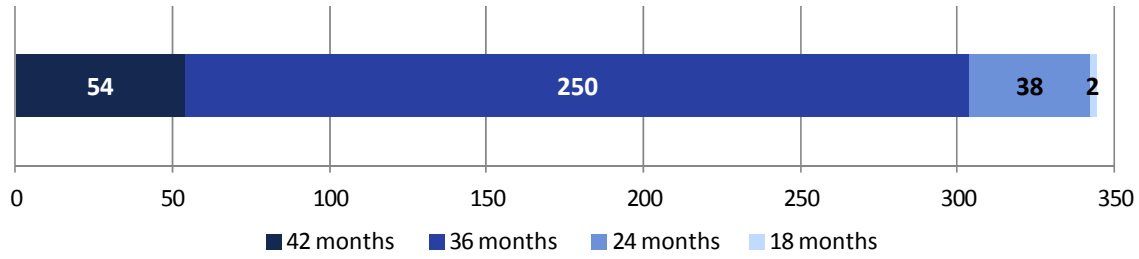
In addition to the changes in supply and demand, Figure 17 also illustrates the gap between supply and demand for apprenticeships in Germany. In every year depicted, the number of individuals demanding apprenticeships exceeded the supply of apprenticeships contracts. In an attempt to cope with this excess demand and the declining trend in extant apprenticeship contracts outlined above, the German government passed the *Nationaler Pakt für Ausbildung und Fachkräftenachwuchs* in 2004. The programme was intended to provide every individual interested in apprenticeships with vocational education leading to a recognised qualification. Particular focus was placed on increasing the provision of additional apprenticeship places. Since the start of the programme in 2004, its time horizon has been lengthened on several occasions, and its termination is currently only planned for 2014.

4.2.3 Organisation and structure of German apprenticeships

Germany's dual vocational education and training (VET) system includes a total of 344 recognised occupations involving formal apprenticeship training[38]. Depending on the respective occupation to be achieved, the duration of vocational training in the dual system is legally set between **2 and 3 years**. However, as illustrated in Figure 18, the system allows for deviations from this legal standard, so that 54 of the 344 recognised occupations are trained in apprenticeships of 42 months, and two apprenticeships have a short duration of 18 months. Apprentices are typically subjected to an intermediate examination after the first half of the total training duration, and a final examination (the *Gesellenprüfung* for crafts occupations), which, if passed, leads to the award of a certificate proving the individual's proficiency as a qualified craftsman.

[38] For a full list of these recognised occupations requiring formal training (as of 1st August 2012), please see: http://www2.bibb.de/tools/aab/aabberufeliste.php.

Figure 18: Number of recognised occupations by apprenticeship duration in Germany (2012)



Note: Based on total of 344 *staatlich anerkannte Ausbildungsberufe* (recognised occupations requiring formal training).
Source: Bundesinstitut für Berufsbildung (2013a).

Similar to a number of other countries' apprenticeship systems, vocational education and training for apprentices in Germany is conducted in two settings. First, apprentices typically spend 3 to 4 days a week participating in on-the-job training, which involves practical training based on requirements for each of the recognised occupations as set out in *Ausbildungsordnungen* (training regulations). The vocational training in the dual system is undertaken by commercial companies, the government/civil service sector, 'independent' professions, by associations of smaller individual companies forming training alliances, publicly promoted bodies, and private institutions.

Second, practical job training is complemented by part-time vocational education provided in *Berufsschulen*. These vocational schools impart a mixture of basic and specialised vocational education, as well as advanced general education to apprentices, with 8 and 4 periods (usually hours) per week spent in vocational and general education courses, respectively. The precise time allocation of these 12 periods of weekly teaching is organised in a variety of ways, requiring apprentices to spend up to two days a week in school, or providing them with teaching in coherent blocks of time. Companies that train apprentices are legally obliged to release apprentices from work for lessons at the *Berufsschule*, and the periods spent in vocational school are calculated as part of apprentices' working hours. In total, the typical number of core working hours for an apprentice in Germany is estimated at between **35** and **40** hours a week (*Industrie und Handelskammer Düsseldorf*, n.d.). However, Beicht (2011), using information from a survey of around 6,000 German apprentices (the *Bundesinstitut für Berufsbildung,* 2008)[39], reported that 59% of apprentices responded that they had to work overtime, amounting to an average of 4.8 hours per week.

4.3 Funding of the apprenticeships in Germany

Public funding for vocational education and training in the dual system in Germany is provided at both the Federal and State level. At the Federal level, whereas the on-the-job training component of apprenticeships is mainly financed by the training firms themselves, the German government also commits financial resources to this training. Federal funding includes measures to promote part-time training within companies as well as 'external' apprenticeships[40] within the dual system,

[39] More information on the survey, called the "*Ausbildung aus Sicht der Auszubildenden*", is available at: http://www.bibb.de/de/wlk29213.htm [Accessed 3 June, 2013].
[40] External apprenticeships are apprenticeship places that are publicly funded and are offered to individuals with special support needs, such as disabilities or social disadvantages)

as well as vocational training assistance contributions made by the Federal Employment Agency and the Federal Ministry of Labour and Social Affairs[41]. In 2009, the total Federal level of funding for apprenticeship training in the dual system was estimated at **€10.90 billion (£9.46 billion)**[42], amounting to about **0.5%** of German GDP in that year (*Statistisches Bundesamt*, 2012a).

Whereas some of the governments of Germany's 16 States provide similar funding for on-the-job training of disadvantaged youths within the dual apprenticeship system, their main financial responsibility lies with the funding of the vocational schooling component of apprenticeships. This includes funding for part-time education at the *Berufsschule* as well as for education received in full-time vocational schools. In addition, State level funding also covers in-school measures implemented in the transition system for young adults who find it difficult to proceed from lower to higher secondary education levels. In 2007, the total public expenditure for vocational schools was estimated at **€7.7 billion (£6.68 billion)**[43] (*Secretariat of the Standing Conference of the Ministers of Education and Cultural Affairs of the Länder in the Federal Republic of Germany*, 2011).

4.4 Apprentice pay in Germany

Having outlined the *public* funding committed to apprenticeships in Germany's Dual system, we now consider the *private* costs of apprenticeship training, focusing on the wages which companies pay to their apprentices. **Every firm or institution offering apprenticeship places in Germany is legally obliged to pay their apprentice an allowance, which typically increases with each training year.** In terms of the benefits to the apprentice, the allowance is intended to support them in covering their costs of living, and to compensate them for their productive efforts within the training company. In terms of the costs of training apprentices for the firm, the allowance constitutes one of the main cost components, averaging **46%** of gross total costs of an apprentice in 2007. This cost share rises to **62%** if all legally prescribed or voluntary social contributions are included in the calculation (Beicht, 2011).

In most industries, the level of apprentice pay is determined by collective bargaining negotiations between the social partners (i.e. between employers' associations and trade unions within that sector). In general, a company that is a member of the respective employers' association is automatically subjected to tariff commitment, stipulating that the firm cannot pay less but is allowed to pay more than the agreed wage to its apprentices. The social partners draw no distinction between different apprenticeship occupations within a sector; nevertheless, there exists large variation in apprentice pay between occupations.

One source of this variation is based on regional discrepancies in the determined size of the allowance, which are particularly pronounced when comparing Germany's Western and Eastern States[44]. In addition, there are large differences in apprentice pay across sectors, making the wage

[41] For example, the Federal government provides financial subsidies to firms offering internships to individuals who have had difficulties in finding a training company, or suffer from social disadvantages or learning disabilities (OECD, 2010).
[42] Note that throughout this analysis, we use a constant £/€ exchange rate where €1.00 = £0.855
[43] To the knowledge of the authors, this appears to be the most recent estimate of German states' total public spending for vocational schools.
[44] Germany's Western states include Baden-Württemberg, Bayern, Bremen, Hamburg, Hessen, Niedersachsen, Nordrhein-Westfalen, Rheinland-Pfalz, Saarland, Schleswig-Holstein, and West Berlin. The East covers Brandenburg, Mecklenburg-Vorpommern, Sachsen, Sachsen-Anhalt, Thüringen, and East Berlin.

an apprentice receives dependent on the industry that the training company is part of. As a result of both regional and sectoral differences, there exists no uniform collectively agreed level of apprentice pay rate for a single recognised occupation within the German apprenticeship system. (*Bundesinstitut für Berufsbildung*, 2013b)

In some companies and occupations (particularly in the IT sector, some crafts and parts of the service sector), the level of apprentice pay is **not** determined by collective bargaining agreements between social partners. Firms that are not bound by a tariff commitment commonly base their apprentices' wages on the standard rate agreed for their sector or region; however, the legal system allows them to pay an allowance that is 20 per cent lower than this standard. In addition, wages paid in the context of 'external'[45] apprenticeships are determined by legislation, and are as a rule, considerably lower than the collective bargaining pay rates for in-company apprenticeships. This again implies substantial variation in actual apprentice pay rates across and within recognised occupations requiring formal training.

The *Bundesinstitut für Berufsbildung* (2013b) publishes yearly data on the level of collectively agreed apprentice pay rates in a variety of occupations, based on around 500 of the largest collective pay agreements prevalent in Germany[46]. The dataset includes the more popular occupations chosen among apprentices, with 189 occupations (89 per cent of all apprentices) covered for the Western States and 149 occupations (79 per cent of apprentices) for the Eastern States. Occupations are categorised into six different sectors, including 'industry and commerce', 'crafts', 'public service', 'agriculture', 'liberal professions' (i.e. tax accountants, legal professions, architects or other professions where individuals are expected to be mostly self-employed (i.e. 'free workers'/Freiberuf)), and 'domestic economy'[47]. Apprentice pay is provided as the average of collectively agreed wages per occupation, by training year and in total. Pay rates are defined as **gross monthly wages**, and apprentices whose income exceeds certain thresholds are obliged to pay social security contributions as well as income taxes.

One caveat of the Bundesinstitut für Berufsbildung's (2013b) data is that it publishes the apprentice pay information separately for Germany's (former) East and West. In order to arrive at apprentice pay rates at the national level, we weighted apprentice pay data for each occupation according to the total number of apprentices in Eastern and Western Germany[48], to arrive at a weighted average of monthly apprentice pay for each occupation (by year and in total) at the national level. We then used these weighted averages to calculate the mean level of apprentice pay across all covered professions.

Table 16 presents the average ***gross monthly*** apprentice wages in Germany developed in this manner, by training year and sector. The table demonstrates that apprentice pay rates determined

[45] The difference between external and company apprenticeships does not concern the location of where the on-the-job training takes place, but is instead related to the funding of the apprenticeship places. In contrast to company apprenticeships, external apprenticeships are publicly funded as part of governmental programmes or on a statutory basis, and are offered to individuals whose ability to participate in apprenticeships is impaired due to social disadvantages or disabilities.

[46] The size of these agreements is based on the number of employees involved in the collective bargaining arrangements. Note that sectors in which apprentice pay is not determined by collective bargaining agreements and external apprenticeships are excluded from the analysis.

[47] The liberal professions sector covers occupations such as qualified medical employees, veterinary medical employees, dental employees and pharmaceutical employees. The dataset includes housekeeping as the only occupation in the domestic economy sector.

[48] The total number of apprentices (most recent numbers were supplied for 2011) for each of these two regions is provided by the Statistisches Bundesamt (2011).

by collective agreements increase with each additional training year, and this relationship holds for each of the sectors covered except for the crafts industry[49]. Apprentice pay is greatest in the 'industry and commerce' sector, with gross monthly pay increasing to **€974 (£845)** in their 4th year of an apprenticeship. In contrast, apprentices in the domestic sector (i.e. those training to become a housekeeper) consistently earn the lowest pay rates across all industries. The same observations hold when considering gross *hourly* apprentice pay (see Table 17)[50].

Table 16: Gross monthly apprentice pay, by training year and sector in Germany (in €)

Training year	Industry and commerce	Crafts	Public service	Agriculture	Liberal professions	Domestic economy
1	€693.45	€499.01	€743.95	€571.81	€533.97	€473.88
2	€783.13	€617.54	€795.18	€630.44	€588.30	€509.35
3	€870.14	€708.69	€845.58	€699.36	€639.07	€555.81
4	€974.07	€615.51	-	-	-	-
1	£592.90	£426.65	£636.08	£488.90	£456.54	£405.17
2	£669.58	£528.00	£679.88	£539.03	£503.00	£435.49
3	£743.97	£605.93	£722.97	£597.95	£546.40	£475.22
4	£832.83	£526.26				

Note: Based on apprentice pay rates agreed on in approximately 500 collective bargaining arrangements. Includes 112 occupations in industry and commerce, 47 in crafts, 11 in public service, 9 in agriculture, 4 in liberal professions and 1 in domestic economy.
Source: Bundesinstitut für Berufsbildung (2013b)

Table 17: Gross hourly apprentice pay, by training year and sector in Germany (in € and £)

Training year	Industry and commerce	Crafts	Public service	Agriculture	Liberal professions	Domestic economy
1	€4.27	€3.07	€4.58	€3.52	€3.29	€2.92
2	€4.82	€3.80	€4.89	€3.88	€3.62	€3.13
3	€5.35	€4.36	€5.20	€4.30	€3.93	€3.42
4	€5.99	€3.79	-	-	-	-
1	£3.71	£2.66	£3.98	£3.06	£2.86	£2.53
2	£4.18	£3.30	£4.24	£3.37	£3.14	£2.72
3	£4.64	£3.78	£4.51	£3.73	£3.41	£2.97
4	£5.20	£3.29				

Note: Based on apprentice pay rates agreed on in approximately 500 collective bargaining arrangements. Includes 112 occupations in industry and commerce, 47 in crafts, 11 in public service, 9 in agriculture, 4 in liberal professions and 1 in domestic economy. Adjusted for Purchasing Power Parity. ***Source: Bundesinstitut für Berufsbildung (2013b)***

[49] In the crafts sector, average apprentice pay rates in the 4th year are lower than in the 2nd or 3rd year of training. Wages in the 4th training year in this sector are only provided for 12 occupations in Western, and for 6 occupations in Eastern Germany.
[50] We divided 52 weeks per year by 12 to arrive at an average of 4.3 weeks per month. 37.5 core working hours constitutes the mid-point between the typical number of 35-40 working hours provided by the Industrie und Handelskammer Düsseldorf (n.d.).

4.4.1 Apprentice pay as a proportion of the fully qualified rate

While the analysis so far discussed German apprentice pay in absolute terms, Table 18 presents apprentice pay rates relative to average hourly earnings in Germany in 2012. Average hourly earnings are defined as mean gross hourly wages, for full-time **"trained employees who perform jobs which require at least a completed apprenticeship"** (sometimes in combination with a certain level of job experience)[51]. The comparison is across all sectors defined by the *Statistisches Bundesamt* (2012b)[52]. This calculated average hourly pay for fully qualified individuals amounts to **€18.81 (£16.33)**.

The *Bundesinstitut für Berufsbildung* (2013c) calculate an average level of apprentice pay in Germany in 2012 of €730 **(£633)**[53]. Converting this into hourly pay rates as described above, a combination of these numbers implies apprentices in Germany earn, on average, only **24%** of the fully qualified rate (though given the fact that the analysis is restricted to full time employees only, the actual percentage may be somewhat higher). Table 18 illustrates that there exists some variation across different sectors and training years. While apprentices in their 3rd and 4th year training in the 'industry and commerce' sector or in the 3rd year in the public sector earn as much as **28%** and **32%** of average hourly earnings respectively, 1st year apprentices in the domestic economy receive as little as **15%**. For every training year, apprentice pay is highest in the industry and commerce and public service sectors, and lowest in the domestic economy.

Table 18: Gross hourly apprentice pay as a % of gross average hourly earnings in Germany

Training year	All	Industry and commerce	Crafts	Public service	Agriculture	Liberal professions	Domestic economy
1	21%	23%	16%	24%	19%	17%	15%
2	24%	26%	20%	26%	21%	19%	17%
3	27%	28%	23%	28%	23%	21%	18%
4	28%	32%	20%				

Note: Based on apprentice pay rates agreed on in approximately 500 collective bargaining arrangements. Includes 112 occupations in industry and commerce, 47 in crafts, 11 in public service, 9 in agriculture, 4 in liberal professions and 1 in domestic economy Hourly wages include additional payments which are paid irregularly and not on a monthly basis, such as Christmas bonuses, paid holidays, etc. Average hourly wages are based on 2012 level of wages of full-time employees within "Leistungsgruppe 3: Fachkräfte" across all industries, excluding agriculture and the domestic economy.

Source: Bundesinstitut für Berufsbildung (2013b), Statistisches Bundesamt (2012b)

4.4.2 Apprentice pay as a proportion of the minimum wage

Finally, Table 19 compares gross hourly apprentice pay to the average hourly minimum wage. There currently exists **no uniform mandatory minimum wage** that holds across all occupations in the German economy; instead, responsibility over the level of minimum pay lies with the social partners in each sector. As of January 2013, minimum wages have been negotiated for 12

[51] This group is defined as "Leistungsgruppe 3: Fachkräfte" (see Statistisches Bundesamt, 2012b).
[52] Agriculture and the domestic economy are excluded from these sectors. It should be noted, however, that the data on apprentice pay include only 9 occupations from the agricultural sector, and one from the domestic economy.
[53] The Bundesinstitut für Berufsbildung (2013c) use a slightly different weighting scheme to arrive at this value, which does not, however, include the detail which is required for the present analysis by sector and training year.

industries[54], and vary considerably across regions and sectors, from a minimum of **€7.00** per hour **(£6.08)** in commercial laundry services in Eastern Germany to a maximum of **€13.69** per hour **(£11.88)** for machine operators, motorists and specialist employees in Western Germany's construction trade. The mean minimum wage across the 12 sectors amounts to **€10.20** per hour **(£8.85)**[55].

Again using the Bundesinstitut für Berufsbildung's (2013c) average level of apprentice pay of €730 **(£633)**, we find that on average, apprentice pay amounts to **44%** of the average minimum wage, though clearly there is variation depending on the year of apprenticeship and the year of training.

Table 19: Gross hourly apprentice pay as a % of average minimum wage in Germany

Training year	All	Industry and commerce	Crafts	Public service	Agriculture	Liberal professions	Domestic economy
1	39%	43%	31%	46%	35%	33%	29%
2	45%	48%	38%	49%	39%	36%	31%
3	50%	54%	44%	52%	43%	39%	34%
4	52%	60%	38%				

Note: Based on apprentice pay rates agreed on in approximately 500 collective bargaining arrangements. Includes 112 occupations in industry and commerce, 47 in crafts, 11 in public service, 9 in agriculture, 4 in liberal professions and 1 in domestic economy. Minimum wage constitutes weighted average of minimum wages across all industries in Eastern and Western Germany as of January 2013.
Source: Bundesinstitut für Berufsbildung (2013b), Statistisches Bundesamt (2013)

[54] Industries for which minimum wages have been negotiated by the social partners include the main construction trade, painting and varnishing, the electrical trade, roofing, security services, specialised mining, industrial cleaning, the care sector, laundry services, pedagogic staff in basic and advanced vocational education and training, the waste industry, and temp work.

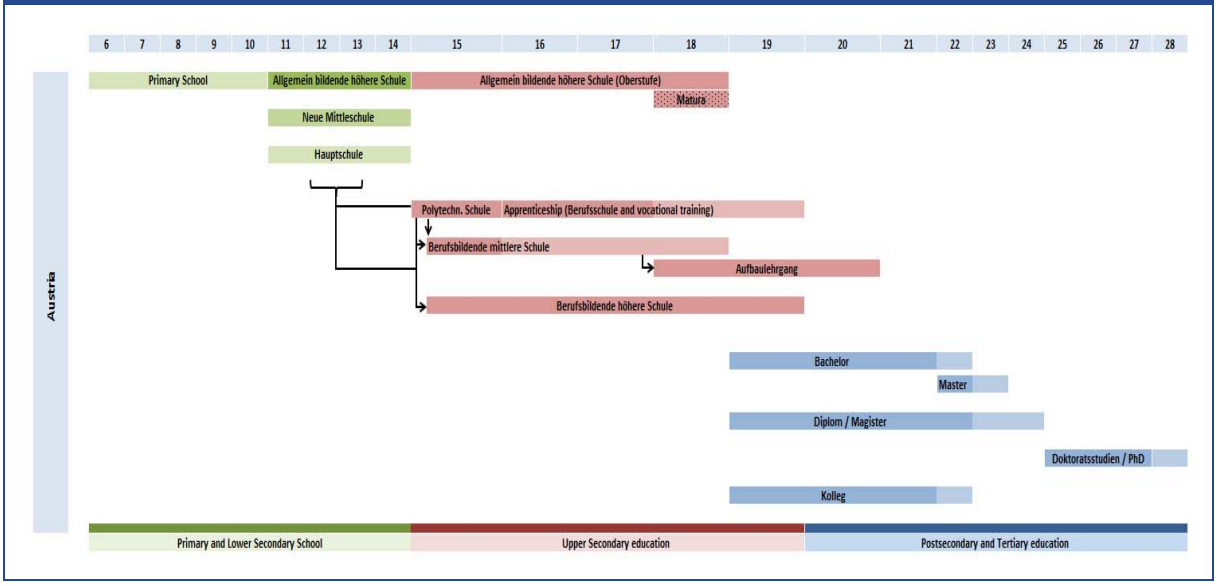
[55] Similar to the apprentice pay data, the minimum wage for each of these sectors is provided separately for West Germany (including Berlin) and East Germany (excluding Berlin). We used the total population size for each of these regions to arrive at weighted average minimum wages per sector in Germany, and at the overall average minimum wage across these industries. Note that for some sectors, the data further quoted separate minimum wages for Berlin and the rest of West Germany, which we similarly weighted according to population size in these regions to arrive at the average per industry for Western Germany.

5 Apprenticeships and apprentice pay in Austria

5.1 Overview of educational system in Austria

Similarly to Germany, **compulsory education in Austria starts at the age of 6, and lasts for a total of 9 years**. In the course of compulsory education (and thereafter), pupils in Austria are offered a variety of schooling options to pursue at both lower- and upper-secondary (as well as at tertiary level). As with the German model, the different types of schools are, despite their distinctiveness, interrelated, providing pupils with numerous opportunities to achieve additional certificates qualifying them for entry into other strands of the education system. In Germany, the government's decentralised approach to educational regulation allows each state government to adapt their schooling systems to regional and local requirements. In Austria, the general principle of *Schulautonomie* (school autonomy) further allows institutions the possibility to adapt their curricula to pupils' specific needs and circumstances. This results in considerable variation of school syllabi, not only across states, but at the individual school level. The following section provides an overall summary of educational arrangements in Austria; however, the potential for variation across individual schools should be kept in mind[56]. A summary is presented in Figure 19 below.

Figure 19: The education system in Austria



Source: London Economics

After finishing primary school, pupils in Austria have the opportunity to enter either of three educational pathways at lower secondary level (i.e. Grades 5 to 8), depending on their interests and achievements during primary school. First, ***Allgemein bildende höhere Schulen*** (academic secondary schools) impose the highest requirements regarding basic general (academic) education among the different lower-secondary school types. Entry into these *Allgemein bildende höhere*

[56] For a more detailed presentation of the Austrian education system, please refer to the *Bundesministerium für Unterricht, Kunst und Kultur* (2013).

Schulen is open for children who achieved sufficient grades during primary school or who passed a special entrance exam. The most common forms of this school type include *Gymnasien, Realgymnasien, and Wirtschaftskundliche Realgymnasien*; however, the principle of school autonomy allows for a variety of different *Allgemein bildende höhere Schulen* specialising their educational curricula in particular subjects, such as specific languages, music or sports education. Note that this type of school covers Grades 5 to 8 at the lower secondary level, as well as Grades 9 through 12 at upper secondary level.

Secondly, ***Hauptschulen*** impart basic general schooling at lower-secondary level between Grades 5 and 8 to prepare them for entry into upper-secondary schooling and, ultimately, into the professional world. While the *Hauptschule* constitutes a traditional component of Austria's lower-secondary schooling, the Austrian government recently initiated their gradual replacement with ***Neue Mittelschulen*** (new secondary schools). This type of school has been part of the school system since September 2012, and it is anticipated that all *Hauptschulen* will have been replaced by these new schools by the 2015/2016 school year. *Neue Mittelschulen* offer comprehensive education to every child who completed the 4th Grade of primary school. The school curriculum combines the requirements of lower-secondary education imparted at the *Allgemein bildende höhere Schulen* with those of the traditional *Hauptschulen*, taking a more individualised approach to learning and teaching.

Pupils who attended any of the previous lower secondary schools are required to attend upper secondary level education for at least another year. Here, they are faced with a choice between following general education or choosing one of several schooling establishments focusing on vocational education. As mentioned above, *Allgemein bildende höhere Schulen* offer the possibility to acquire advanced general knowledge throughout the 4 remaining years of upper-secondary education, at the end of which students receive the *Reifeprüfung* or *Matura* (matriculation examination) leaving certificate that qualifies them for entry into tertiary education.

In terms of **vocational education** at the upper-secondary level, there exist **four types** of educational institutions aiming at equipping students with the skills they need to succeed in the professional world. The ***Polytechnische Schule*** constitute pre-vocational schools, and comprise a single year of schooling providing introductory vocational education, as well as advanced general education. Vocational education courses are categorised into seven broadly defined sectors of the economy[57], and are aimed at providing pupils with a general picture of their future occupational possibilities. Successful completion of the *Polytechnische Schule* qualifies for entry into other types of upper-secondary vocational education: importantly, those who have completed education at this pre-vocational school are subsequently allowed entry into the ***Duales System*** **(Dual system) of apprenticeships. In close accordance with the German apprenticeship arrangements, apprentices in Austria acquire theoretical general and vocational knowledge through part-time attendance of the *Berufsschule* (vocational school), combined with practical on-the-job training within companies.** A detailed description and analysis of this type of vocational training in Austria is provided overleaf.

In addition to the pre-vocational *Polytechnische Schule* and the dual system of apprenticeships, the Austrian education system includes two types of full-time vocational education schools. First, the

[57] These sectors include metals, electronics, wood, construction, commerce, services, and tourism.

Berufsbildende mittlere Schule (secondary technical and vocational school), is open to students who have completed the 8th Grade at any of the three lower secondary schools described above, with less stringent conditions for those who completed the *Polytechnische Schule*[58]. Education at the *Berufsbildende mittlere Schule* lasts between 1 and 4 years. Whereas courses of 1 or 2 years provide individuals only with partial vocational education (but not a full qualification), completion of these 3 to 4 year courses results in the *Abschlussprüfung* (*Berufsbildende mittlere Schule* leaving certificate)[59]. Secondly, ***Berufsbildende höhere Schulen*** (colleges for higher vocational education) have similar entry requirements as *Berufsbildende mittlere Schule*. These schools are attended for a prescribed duration of 5 years, with the final examination, the *Reife- und Diplomprüfung* (matriculation and diploma examination), entitling holders' attendance at tertiary education[60].

5.2 The Austrian apprenticeship system: general characteristics

The previous section provided a brief description of the different parts of the Austrian education system. In the following section, we provide evidence on the extent to which individuals participate in the education system.

5.2.1 Participation in vocational education

Figure 20 displays the percentage of Austrian pupils in Grades 9 to 13 following different types of schooling institutions offered within Austria's educational system, allowing for a comparison of the incidence of adopting the vocational education pathway relative to the general education route. Among those completing their final year of compulsory education in the 9th Grade, while 18% acquire pre-vocational education at the *Polytechnische Schule*, 18% and 31% respectively choose to directly enter into full-time vocational schooling at the *Berufsbildende mittlere Schule* or the *Berufsbildende höhere Schule*. Combining these percentages, a total of 61% of pupils in 9th Grade thus engage in ***vocational*** education at these common school types, compared to a participation rate of only 27% for ***general*** education at *Allgemein bildende höhere Schulen* (and 6% elsewhere[61]).

As with Germany and Switzerland (see Figure 14 and Figure 29), the considerably larger tendency for individuals in upper-secondary education to follow vocational education rather than general education continues throughout Grades 10 to 13. Among the different types of vocational schooling institutions, apprenticeships constitute the most frequently followed path, with 37% of 10th Grade students commencing apprenticeships compared to only 12% and 23% for *Berufsbildende mittlere Schulen* and *Berufsbildende höhere Schulen*, respectively. This relative popularity of apprenticeships further increases when considering Grades 11 and 12. By Grade 13,

[58] In particular, those who have finished the *Polytechnische Schule* are allowed to skip the first year of education at the *Berufsbildend mittlere* Schule. Further, entry into the *Berufsbildende mittlere Schule* for a duration of at least 3 years further requires the successful participation in an entry examination for pupils with lower grades who just finished the 8th grade at a general education school. The entry exam is dropped for those who just visited the *Polytechnische Schule.*

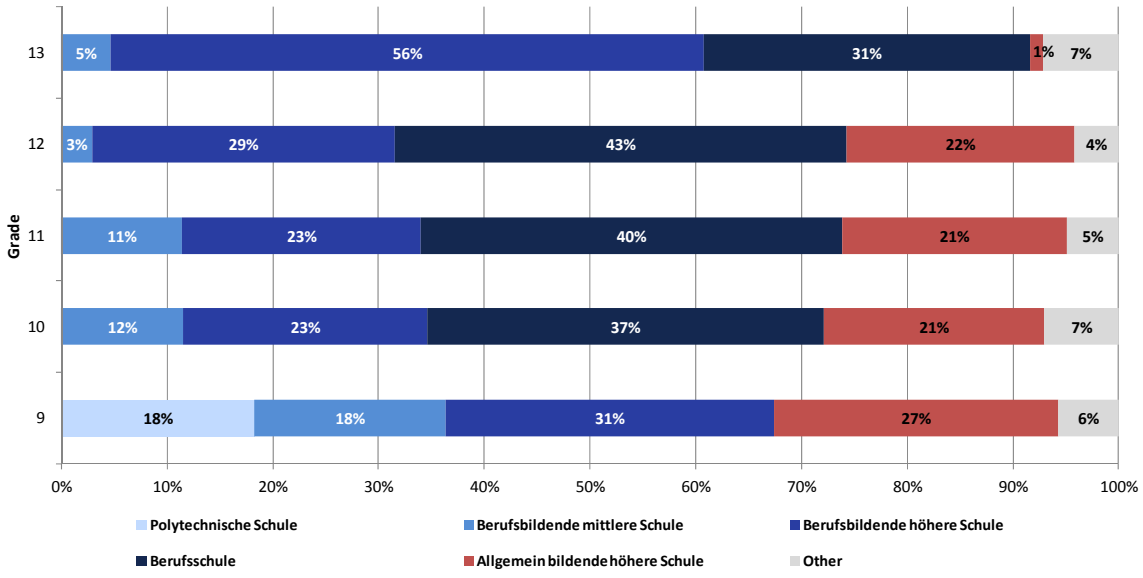
[59] Students who have followed at least 3 years of education at the *Berufsbildende mittlere Schule* are offered the opportunity to attend 3-year *Aufbaulehrgänge* (add-on courses) in order to participate in the *Reife- und Diplomprüfung* (matriculation and diploma examination), allowing them to enter tertiary education if desired.

[60] Tertiary education is commonly supplied at universities, universities of applied sciences, and university colleges of teacher education. In addition to tertiary education, *Kollegs* (colleges) supply post-secondary advanced vocational education. For more details on the education system in Austria please refer to

[61] Other includes pedagogical post-secondary schools (such as Kollegs), special needs schools, and upper secondary private general and vocational schools.

the majority of individuals (56%) attend full-time vocational education at *Berufsbildende höhere Schulen*, compared to 31% undertaking apprenticeships, and only 5% and 1% attending *Berufsbildende mittlere Schulen* or *Allgemein bildende höhere Schulen*, respectively.

Figure 20: Distribution of Austrian pupils by grade and school type, school year 2011/2012

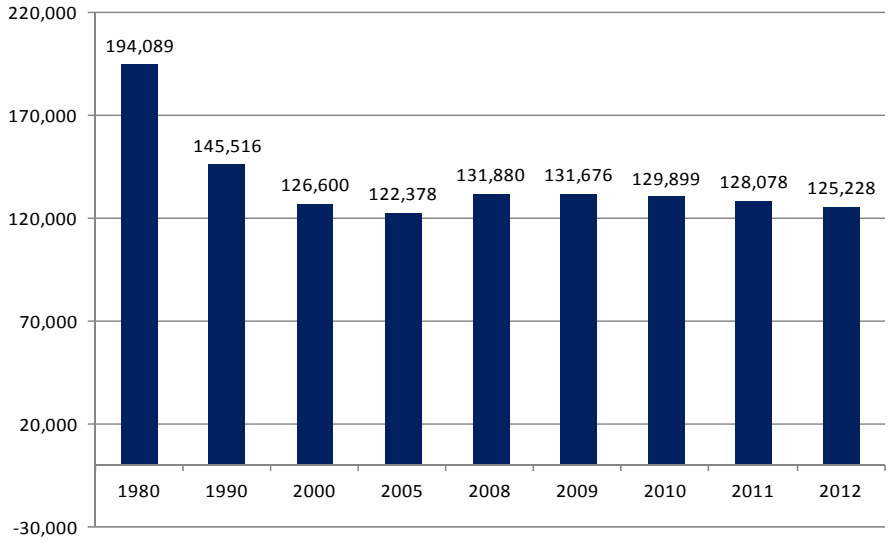


Note: Other includes pedagogical post-secondary schools (such as Kollegs), special needs schools, and upper secondary private general and vocational schools.
Source: Statistik Austria (2013a).

5.2.2 Apprenticeship participation and entry

Having considered the *relative* popularity of apprenticeships among the different components of Austria's upper-secondary education system, Figure 21 illustrates the *absolute* number of apprentices over time. After reaching a 40-year high of 194,000 individuals in 1980, the number of apprentices exhibited a considerable and almost continuous decline up until 2005. In spite of a slight increase between 2005 and 2008, the number of apprentices again decreased noticeably in recent years, from 131,880 in 2008 to 125,228 in 2011.

Figure 21: Total number of Austrian apprentices, 1980-2012



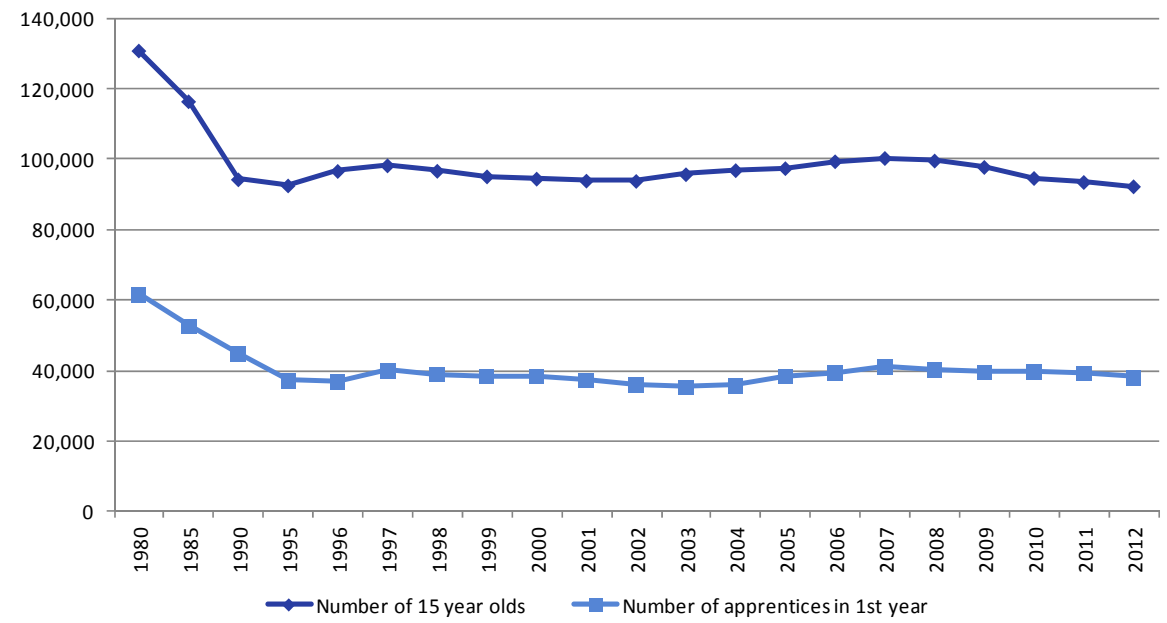
Note: Total number includes those individuals participating in external apprentices (*Überbetriebliche Ausbildung*; see below for a definition of this type of apprenticeships).
Source: Wirtschaftskammer Österreich (2012a).

The Institut für Bildungsforschung der Wirtschaft (2012) suggests two main reasons for the most recent decrease in apprentice numbers, both of which have also been mentioned in connection with a drop in the number of apprenticeship contracts in Germany. On the demand side, the long-term demographic decline in Austria's young population constitutes one of the main reasons behind the recent contraction in the number of apprentices. Figure 22 illustrates this demographic decline of Austria's young population, exhibiting a considerable decrease in the number of 15-year-olds between 1980 and 2012. The correlation between these demographic changes and the changes in the number of apprentices in the first training year[62] appears significant, making the demographic explanation plausible.

On the supply side, it has also been suggested that the recent decrease in apprentice numbers in Austria is a side-effect of the recent global economic and financial crisis, reducing companies' need for new employees and apprentices. Indeed, the number of companies offering apprenticeship placements has declined considerably since 2007, reaching a 20-year-low of only 35,084 firms in 2011 (see Figure 22).

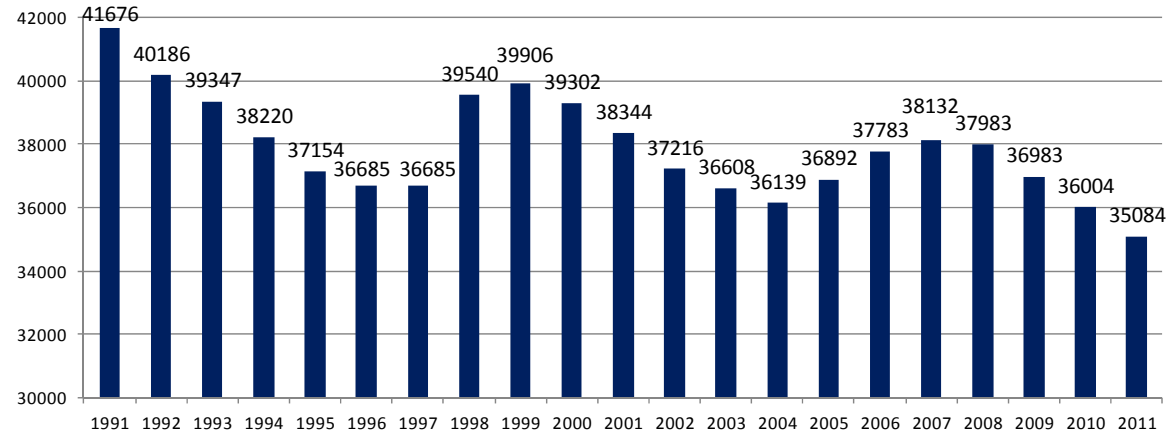
[62] The *Institut für Bildungsforschung der Wirtschaft* uses the number of apprentices in their first year as a measure of the number of new apprentices in Austria's education system. However, they note that this only constitutes an approximate measure of these new entrants, since some individuals in the first year might have followed other apprenticeships previously, and some new entrants into the apprenticeship system are allowed to skip the first training year, based on their pre-existing qualifications.

Figure 22: Number of Austrian individuals aged 15 and number of 1st year apprentices, 1980-2012



Note: Number of 15 year olds constitutes yearly average. The population of 15 year olds in 2012 is based on preliminary estimates for 2012 by Statistik Austria; the yearly average has not been published yet. Number of apprentices in the 1st year constitutes final yearly value. ***Source: Wirtschaftskammer Österreich (2012b).***

Figure 23: Number of companies offering apprenticeships in Austria, 1991-2011



Note: Statistics include only companies which are part of the Wirtschaftskammer Österreich (Austrian Federal Economic Chamber). This implies that those companies which belong to several sectors are counted only once. However, a company with subsidiary branches in several of the Austrian states can be counted several times, as each of the branches is taken account of as member in the 9 states' part of the chambers. ***Source: Institut für Bildungsforschung der Wirtschaft (2012)***

5.2.3 Organisation and structure of Austrian apprenticeships

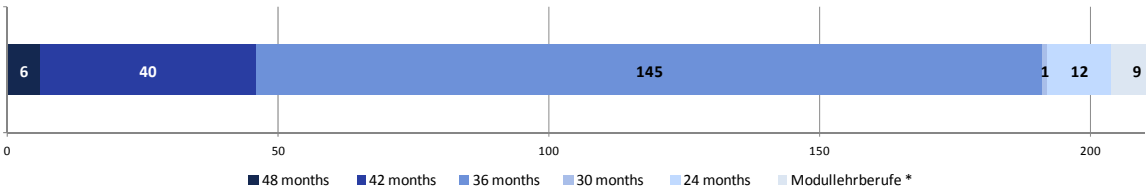
The Austrian apprenticeship system is **open to all young individuals who have completed their 9 years of compulsory schooling**, and no other specific schooling qualification is required. As of June

2013, the dual system trains apprentices in **213 *Lehrberufe*** (recognised occupations requiring training), with 199 of these originating in sectors related to industry, trade and commerce, and 14 occupations in the agriculture and forestry sectors[63]. They are commonly categorised according to the following occupational groups (Bundesministerium für Bildung, Kunst und Kultur, 2011):

- Construction
- Office, administration and organisation
- Chemistry
- Printing, photographic, graphic and paper industries
- Electrical engineering and electronics
- Gastronomy
- Health and body care
- Wholesale and retail trade
- Wood, glass and clay industries
- Information and communication technologies
- Food and beverages
- Metal and machine engineering industries
- Fashion, textiles, leather industries
- Agriculture and horticulture
- Transport and warehousing

The **training duration** for apprenticeships ranges from **2 to 4 years**, and depends on the particular occupation considered. As illustrated by Figure 24, the majority of apprenticeship occupations (145 occupations, or 68% of the total) prescribe a training duration of **3 years** (with the distribution of apprenticeship lengths similar to Germany (see Figure 18) After completion of the apprenticeship training period, apprentices undertake the *Lehrabschlussprüfung* (apprenticeship final exam), which typically consists of both a practical and a theoretical component; however, apprentices with sufficient academic achievements are allowed to skip the theoretical final exam. In addition, following a reform introduced in 2008 (the *Lehre mit Matura* initiative*)* individuals who are about to finish their apprenticeship education have the opportunity to qualify for entry into university, by taking an extended final exam.

Figure 24: Distribution of Austrian apprenticeship occupations by training duration

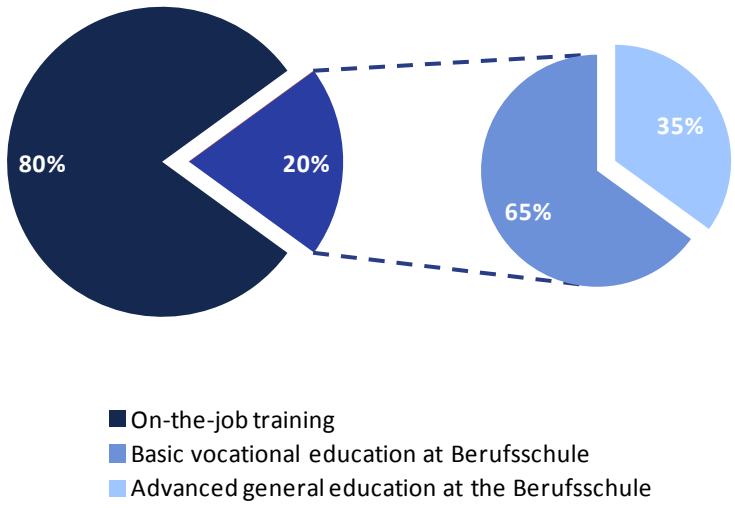


Note: Includes 199 industry and commerce sector apprenticeships as provided by the Bundesministerium für Familie, Wirtschaft und Jugend, as well as 14 apprenticeships in agriculture as listed by the Lebensministerium.
Source: Bundesministerium fuer Familie, Wirtschaft und Jugend (2013); Lebensministerium (2012).

[63] For a full list of *Lehrberufe* in the industry, trade and commerce sectors, please refer to Bundesministerium für Wirtschaft, Familie und Jugend (2013). The list of apprenticeship occupations in the agriculture and forestry sector is provided by Lebensministerium (2012). Note that the stated number of 213 occupations excludes occupations which are currently converted into modular apprenticeships (see below for a definition), but which can still be entered in special cases.

The Austrian dual apprenticeship system demonstrates a close connection between theoretical lessons and practical learning, with **20% of apprentices' working hours typically spent in part-time schooling at the *Berufsschule*, and the remaining 80% in on-the-job training within companies** (see Figure 25). Three typical organisational approaches combining *Berufsschule* attendance with on-the-job training are commonly adopted, depending on the region and sector that the apprentice occupation belongs to. First, the most common arrangement is for apprentices to visit part-time vocational schooling for a full day or two half days each week. Secondly, classes at the *Berufsschule* may be taught in blocks of at least 8 consecutive weeks of teaching. Thirdly, *Berufsschulen* might offer teaching on a seasonal basis (i.e. in block form at a particular time of year). Regardless of the exact organisation of teaching arrangements, every *Berufsschule* intends to impart **a mixture of basic vocational knowledge (65% of lessons) and advanced general knowledge (35% of lessons)**.

Figure 25: Distribution of apprentices' work hours within the Austrian Dual system



Source: Bundesministerium für Wirtschaft, Familie und Jugend (2012).

The on-the-job training component of apprenticeships is, to a large extent, provided by private companies. In addition to the provision of training by individual companies, firms that find themselves unable to independently provide the entire training required for an occupation can enter into a training *alliance* with other firms in the same position. Alternatively, groups of companies in some sectors of the economy have established supra-company training centres ("training construction sites").

It should be noted that apprenticeship occupations within this system are subject to continuous change, adapting to the alternating structure and requirements of the country's society and economy. This is evidenced by two recent policy developments. First, in 2008, the government initiated the *modularisation* of apprenticeships in the Austrian system. Modular apprenticeships, which are mostly offered in technical occupations, begin with a two-year *Grundmodul* (basic module) that combines basic vocational knowledge required for several related occupations. Following the *Grundmodul*, apprentices then choose among a number of *Hauptmodule* (main module) in order to acquire specialised vocational knowledge for their chosen occupation. The

introduction of modular apprenticeships is intended at enhancing the structure and transparency of Austria's dual system.

A second noteworthy change in the Austrian apprenticeship system has been the introduction of the *überbetriebliche Ausbildung* (external apprenticeships) programme by the government in 2009, designed for youths who find it difficult to find an apprenticeship placement[64]. This new type of apprenticeships is provided in 2 modules. Module 1 supplies the entire apprenticeship programme in special *üeberbetriebliche Ausbildungszentren* (external apprenticeship centres) provided by the Austrian Labour Market Service, and is offered to half the pupils who cannot find a regular apprenticeship placement. The other half of individuals are allocated to Module 2, whose key objective is to encourage pupils' eventual transfer into a regular apprenticeship. Individuals participating in Module 2 are trained in 'simulated' companies (*Praxisbetriebe*) for a maximum of one year, in the course of which they are provided with support to find a regular apprenticeship place. Youths who are still unable to achieve a regular apprenticeship place after the one-year training period are allowed to remain in training with the simulated company for the full required duration of training in their occupation. Note that external apprenticeship placements are legally recognised as equivalent to regular apprenticeships, and are subject to the same final assessment of participants (OECD, 2010).

5.3 Funding of apprenticeships in Austria

Whereas the regulation of the apprenticeship system lies within the range of responsibilities of two Federal government departments, the execution of these regulations is handled by governmental institutions within each of Austria's 9 states[65]. At the Federal level, the regulation of on-the-job training, particularly the required training profile for each recognised occupation, is carried out by the Federal Ministry of Economy, Family and Youth (Bundesministerium für Wirtschaft, Familie und Jugend). Further, the Federal Ministry for Education, Arts and Culture (Bundesministerium für Bildung, Kunst und Kultur) is responsible for legislating pedagogical content at vocational education schools and colleges through the Vocational Training Act and the framework curricula setting out schools' educational plans. At the state level, apprenticeship offices carry executive responsibilities over the on-the-job training component of apprenticeships, by supporting youths in finding an apprenticeship placement, supervising training alliances, and educating training staff. In addition, the state education boards are responsible for monitoring and evaluation of vocational schools and informing national legislators (OECD, 2010).

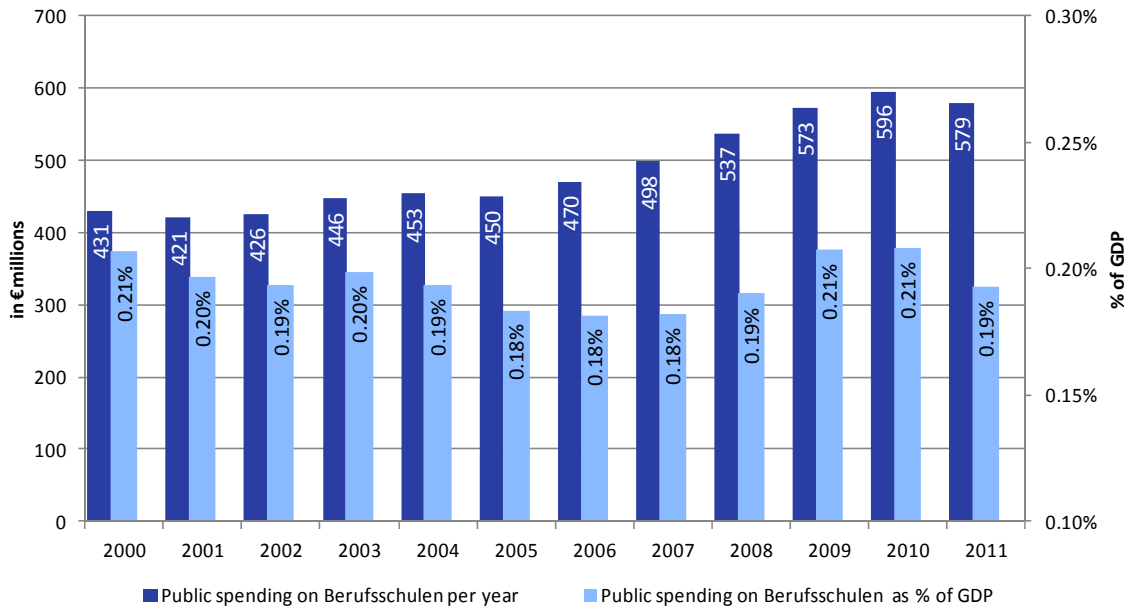
In addition to regulating matters of the dual apprenticeship system, the Austrian government is also involved in financing this system. In this respect, the government's primary financial responsibility concerns the funding of *Berufsschulen*: while the state governments cover the costs of constructing and equipping these vocational schools, the funding required for the costs of vocational school teachers is shared equally among state governments and the Federal authorities. Figure 26 displays the total levels of public funding between 2000 and 2011, in absolute terms and

[64] In contrast to German external apprenticeships, Austrian external placements are not designed for socially disadvantaged or disabled youths. These disadvantaged youths instead have the possibility to enter the *Integrative Berufsausbildung* (integrative apprenticeships), acquiring either a full vocational qualification during a lengthened training duration, or a partial qualification within the regular apprenticeship duration of their chosen occupation.

[65] Austria's states include the Burgenland, Kärnten, Niederösterreich, Oberösterreich, Salzburg, Steiermark, Tirol, Vorarlberg, and Vienna.

as a percentage of GDP, and illustrates an almost continuous increase in absolute levels of public investment between 2000 to 2010, after which funding levels decreased slightly (to **€579 million** (**£466 million**) in 2011). Note that public funding for *Berufsschulen* relative to the gross domestic product for each year remained relatively constant over time, varying between 0.18% and 0.21%.

Figure 26: Austrian public funding for *Berufsschulen*, 2000-2011, in €m and as % of GDP



Source: Statistik Austria (2013b); Statistik Austria (2013c)

In contrast to the *Berufsschulen*, the on-the-job training component of apprenticeships in Austria is mainly financed by the training companies themselves, with apprentice wages, which we will turn to in the following section, representing a major share of firms' training costs. However, the Austrian government has established a variety of subsidies, both for training companies as well as for apprentices to help them cover their costs.

The main subsidies provided include[66]:

> ***Basisförderung*** (basic funding): This first type of public funding granted to companies was introduced in 2010, and is valid for all apprenticeship contracts concluded after 27 June 2008. In contrast to other subsidy types listed below, basic funding is purely quantity-oriented (i.e. is not aimed at enhancing the quality of on-the-job training for apprentices), and is based on the size of collectively agreed apprentice pay levels[67]. Companies can apply for basic funding at the end of every apprenticeship year, and subsidies are differentiated according to the training year of the apprentice:
>
> - Training year 1: three gross apprenticeship refunds pursuant to the respective collective agreement

[66] For a full list, please refer to Bundesministerium für Wirtschaft, Familie und Jugend (2012).
[67] Please refer to the following section for a detailed analysis of the collectively agreed apprentice pay rates.

- Training year 2: two gross apprenticeship refunds pursuant to the respective collective agreement
- Training years 3 and 4: one gross apprenticeship refund, each pursuant to the respective collective agreement
- For half training years: half of one gross apprenticeship refund pursuant to the respective collective agreement.

Inter- and supra-company training measures: These include public subsidies for training alliances, job-specific additional qualifications for apprentices, and preparatory courses for the apprenticeship leave examinations.

Measures of **continuing education and training for training staff**

Measures for apprentices with learning difficulties, e.g. special tutoring courses for these individuals

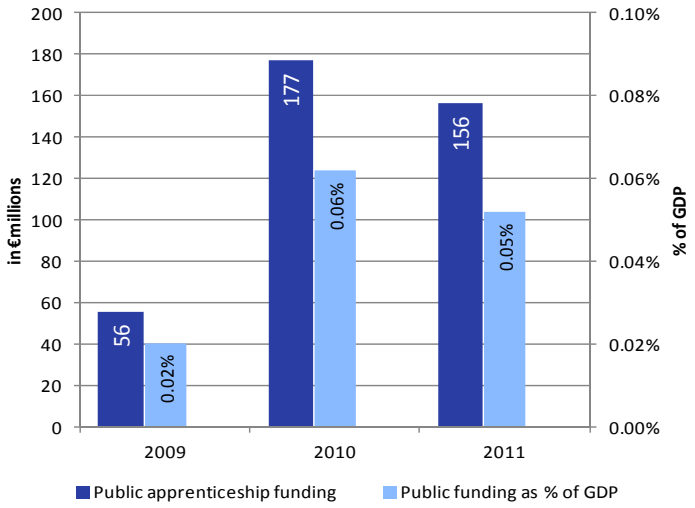
Measures to equalise access by young women and men to different apprenticeship occupations, in order to decrease gender segregation within these occupations

'Overseas' work placements for apprentices

Figure 27 illustrates the government's total spending on the variety of subsidies for companies and apprentices in recent years (again in € millions and as a percentage of Gross Domestic Product). The graph evidences a considerable increase in the level of public funding, from **€56million** (**£45 million**: 0.02% of GDP) in 2009 to **€177 million** (**£143 million:** 0.06% of GDP), which the Institut für Bildungsforschung der Wirtschaft (2012) associates with the initiation of some of the above subsidies (particularly the *Basisförderung*) in 2010. The subsequent drop in public spending on apprenticeship subsidies to **€156.2 million** in 2011 (**£126 million**: 0.05% of GDP), is considered as a result of the termination of a previous public financing scheme (the *Neue Lehrstellen* programme), which provided financial incentives to firms offering apprenticeship placements for the first time[68].

[68] Either entering the apprenticeship system as a training company for the first time, re-entering it after a period of interruption of at least 3 years.

Figure 27: Total public subsidies for Austrian companies and apprentices, 2009-2011



Note: Timeframe of 1 January to 31 December for each year.

Source: Institut für Bildungsforschung der Wirtschaft (2012); Statistik Austria (2013c)

5.4 Apprentice pay in Austria

Training companies bear the primary financial responsibility over the costs of the on-the-job training component of Austria's dual apprenticeship system, of which apprenticeship remuneration constitutes the major share. In addition to the direct pecuniary subsidies described above, the government has established several indirect mechanisms in order to support training companies' to cover the costs of their apprentices. In particular, any health insurance and accident insurance contributions (for both training companies and their apprentices) are waived during the first two years and the entire apprenticeship duration, respectively, with the insurance coverage remaining throughout. In addition, the costs of apprenticeship training reduce training firms' taxable profit levels, constituting another way in which the government, albeit indirectly, co-finances part of the costs of the company-based training of dual vocational education (Bundesministerium für Wirtschaft, Familie und Jugend, 2012).

As with the German system, wages for the majority of apprentices in Austria are determined in the context of **collective bargaining agreements** between the social partners, i.e. between trade unions on the employees' side, and the *Österreichische Wirtschaftskammer* (Austrian Federal Economic Chamber) on behalf of the training firms. The social partners negotiate wage levels on an annual basis, drawing no distinction between different occupations within a sector, but instead prescribing **minimum pay levels for all apprenticeship professions within that specific sector**. Nevertheless, again demonstrating similarities with the German system, the sectoral *and* regional basis of collective agreements displays considerable variation of prescribed wage rates for apprentices within each single occupation, with more than 450 collective agreements[69] currently operating in Austria (Portal der Arbeiterkammern, 2013a). In those sectors of the economy where

[69] For a full list of collective agreements in Austria, please refer to: http://www.kollektivvertrag-online.at/Default.aspx.

no such collective bargaining processes exist, apprenticeship remuneration is agreed between the employer and the apprentice on an individual basis, and there are no legal requirements covering minimum wage rates[70].

The Austrian system allows for apprentices to receive their remuneration not only during the on-the-job training within the firm but also during off the job training received at the *Berufsschule*. Furthermore, wage payments continue throughout the duration of their preparation for and participation in the *Lehrabschlussprüfung* (apprenticeship leave examination). Finally, the described collective wage agreements also govern apprentices' rights to special payments such as Christmas bonuses and holiday pay (Portal der Arbeiterkammern, 2013b).

Rosenthal (undated) provides detailed comprehensive data on the current level of **gross monthly collectively agreed apprentice wages** for a total of 288 Lehrberufe (recognised occupations requiring training). In order to achieve a representative picture of the current average levels of apprentice pay, we matched the list of occupations with those provided in the most recent Lehrberufsliste published by the Bundesministerium für Wirtschaft, Familie und Jugend in June 2013. We then took a simple average across all collectively agreed wage levels[71] for each of the occupations included in the Lehrberufsliste, by training year as well as across all years. We proceeded in a similar manner with the data for modular apprenticeships, taking simple averages across all listed modules to arrive at the mean level of apprentice pay for these occupations as a whole. Finally, we calculated a simple overall average of gross monthly collectively agreed wages across all occupations, per year and in total. These monthly average apprentice pay rates were then converted into hourly apprentice pay[72]. Table 20 presents the results of our calculations, providing average agreed monthly and hourly apprentice pay levels by training year.

Table 20: Gross monthly and hourly apprentice pay by training year in Austria (in €)

Training year	Gross monthly apprentice pay	Gross hourly apprentice pay
Year 1	€575.39 (£463)	€3.32 (£2.67)
Year 2	€745.61 (£600)	€4.30 (£3.46)
Year 3	€1,007.47 (£811)	€5.81 (£4.68)
Year 4	€1,206.30 (£971)	€6.96 (£5.60)

Note: Based on collectively agreed wages for all apprenticeship occupations currently included in the *Lehrberufsliste.* For hourly rates, we divided the average monthly apprentice wages by the average number of weeks per month, and by a number of 40 apprentice work hours. These working hours constitute the maximum average weekly hours an underage apprentice in Austria (i.e. younger than 18) is allowed to work. It is entirely prohibited for apprentices who are younger than 16 to work over hours, and only allowed in exceptional cases for individuals aged between 16 and 18. Assuming that this rule is complied with, the stated hourly wages potentially constitute a lower border of average collectively agreed apprentice wages. Adjusted for Purchasing Power Parity.
Source: Rosenthal (n.d.).; Portal der Arbeiterkammern (2013a)

[70] An example of such requirements is provided by the German system, which only allows employers who are not bound by tariff commitment under a collective bargaining agreement to pay an apprentice wage that is, at maximum, 20% lower than the respective collectively agreed wage rate.
[71] The apprentice pay data provided by Ewaros are considerably detailed, supplying wage data from several collective wage agreements and additional particular rules for different Austrian regions for a large share of the listed occupations.
[72] See the notes on Table 48 for details on this conversion.

The average apprentice wage across all training years amounts to **€861.74 (£693)** per month and **€4.97 (£4.00)** per hour, respectively, with pay rates varying considerably around these averages. In particular, there is a noticeable increase in apprentice wages with each training year, with pay rates for apprentices in Year 4 amounting to more than twice the wage paid to apprentices in Year 1.

5.4.1 Apprentice pay as a proportion of the fully qualified rate

To put the previous estimates into perspective, we compare hourly apprentice wages to hourly pay rates received by fully qualified workers (see Table 21). In this respect, to ensure sufficient comparability, the fully qualified pay rate is defined as the median gross hourly wage[73] for employees (excluding apprentices) who passed the *Lehrabschlussprüfung* (Final apprenticeship examination) as their highest level of education. The most recent year which these data are supplied for is 2010 (up-rated using CPI to 2013), and, based on the above definition, the gross median hourly pay rate amounts to **€13.42 (£10.80)**.

Table 21: Gross hourly apprentice pay as a % of median gross hourly earnings in Austria

Training year	Apprentice pay as a % of fully qualified pay
Year 1	25%
Year 2	32%
Year 3	43%
Year 4	52%

Note: Based on collectively agreed wages for all apprenticeship occupations currently included in the *Lehrberufsliste.* Gross median hourly earnings of workers who completed an apprenticeship in the dual system as their highest level of education; most recent value is provided for 2010, which we adjusted for inflation to arrive at a value in 2013 prices (note that for this conversion, we used the most recently estimated inflation rate for June 2013 to convert to current levels).

Source: Rosenthal (n.d.), Statistik Austria (2012) and Statistik Austria (2013d)

In line with the previous results concerning the absolute levels of apprentice wages per training year, Table 21 shows a considerable increase in gross hourly apprentice remunerations relative to median hourly earnings of a fully qualified worker in the course of their apprenticeship training. While apprentices in the first training year receive only **25%** of the fully qualified wage rate of those who completed an apprenticeship as their highest educational level, apprentices training in the 4th year are paid as much as **52%** of the fully qualified pay level. Although apprentice wages in Austria are lower as a proportion of the fully qualified rate, in absolute terms, apprentice pay in Austria is broadly comparable to the level of apprentice pay in Germany (although there are steeper increments as the apprentice progresses through their training).

5.4.2 Apprentice pay as a proportion of the minimum wage

Finally, we focus on collectively agreed apprentice pay rates per year as a percentage of the average minimum wage rate. **There currently exists no uniform statutory national minimum wage in Austria**; instead, minimum wage rates, similar to apprentice pay, are subject to negotiation between the social partners in the context of collective bargaining agreements.

[73] This excludes payments for over hours, but includes additional payments for particular work shifts, such as weekend or night shifts.

Minimum wages constitute the lowest pay group in each collective agreement, and apply to all employees within the respective sector, apart from apprentices, for whom the previous wage rates apply. In those sectors of the economy that do not determine wages through collective agreements, employees' associations can apply to the Bundesministerium für Wirtschaft, Familie und Jugend (Federal Ministry of the Economy, Family and Youth) for the imposition of a statutory minimum wage by the government. While these statutory minimum wages exist only in a few sectors of the Austrian economy, the determination of minimum wages through the wide range of existing collective bargaining agreements, and the existence of some statutory minimum pay rates, result in considerable diversity of minimum wages across Austrian sectors and regions.

In 2007, the umbrella associations representing employers and employees, i.e. the *Wirtschaftskammer Österreich* and the *Österreichischer Gewerkschaftsbund* (Austrian Federation of Trade Unions) aimed at reducing this variation in minimum wages. The organisations signed a declaration to raise the lowest wage level in all collective bargaining agreements operating in Austria to a minimum of **€1,000 (£805)** per month (again, only apprentices and interns were allowed to be paid less). The declaration was not stated in terms of an overall collective agreement, but was instead planned to be implemented within each single existing collective agreement, by 1 January 2009. All sectors in which some employees earned less than **€1,000 (£805)** were supposed to raise the collective minimum wage to this new level (Wirtschaftskammer Österreich, 2007). However, it appears that the new agreement has not been incorporated into legislation, leaving the initial declaration ineffective. A recent estimate provided to us by the Federation of European Employers puts the average effective adult minimum wage at **€7.05** per hour **(£5.68)**[74].

Table 22: Gross hourly apprentice pay as a % of the average hourly minimum wage in Austria

Training year	Apprentice pay as a % of minimum wage
Year 1	47%
Year 2	61%
Year 3	82%
Year 4	99%

Note: Based on collectively agreed wages for all apprenticeship occupations currently included in the *Lehrberufsliste.*
Source: Rosenthal (n.d.); Data request to the Federation of European Employers

Table 22 presents average gross hourly apprentice pay rates as a percentage of the mean hourly minimum wage rate. Similar to our above observations, there is considerable variation in the size of apprentice wages compared to minimum pay across training years. While individuals training as apprentices in their first year receive only **47%** of the average minimum wage, 4th year apprentices, on average, earn a wage that is approximately equal to the mean minimum wage prevalent across collective agreements in Austria.

[74] The estimate is dated to 1 April 2013. It refers to the hourly minimum wage rate for full-time employees aged 23 or older.

6 Apprenticeships and apprentice pay in Switzerland

6.1 Overview of educational system in Switzerland

The Swiss education system shares some noticeable similarities with educational arrangements in Germany and Austria. For example, similar to the systems prevalent in these two countries, educational structures established in Switzerland include various pathways which enable individuals to shift from one part of the system to another. Importantly, in close correspondence with Germany, the 26 states (cantons[75]) of Switzerland carry primary responsibility over the majority of components within the Swiss educational system. In addition to the geographic spread of the cantons, the linguistic differences between the Italian, French and German-speaking cantons create additional potential for discrepancies in the educational approaches taken in each of the Swiss regions. As will be evidenced throughout our description of the Swiss educational system, cantons often base the structure and duration of their schooling institutions on those neighbouring countries whose language they have adapted. Whereas the following provides an overall summary of the characteristics of the Swiss education system, the reader should be mindful of these idiosyncratic differences across cantons[76]. Figure 28 provides a graphical overview of the Swiss primary, lower- and upper-secondary, and tertiary education system.

As in Germany and Austria, the Swiss government prescribes a level of **compulsory education of 9 years**[77], comprising both primary school and lower secondary education. In the majority of cantons, children enter primary education at age 5, and are obliged to attend primary school for 6 years[78]. At age 12, pupils then enter lower secondary education for 3 years[79], where teaching is commonly differentiated by academic achievements and according to three different class models (the separate, cooperative and the integrated model), depending on the particular canton. There currently exists no uniform leaving certificate for the lower level of secondary schooling, and only few cantons require pupils to sit a final examination at the end of their compulsory schooling period. Those individuals who have difficulty in the transition from lower- to upper-secondary education are given the opportunity to enter bridge-year courses lasting for one Grade.

Upper secondary schooling in Switzerland offers a variety of general academic and vocational educational pathways. Advanced general education can be acquired at either of two schooling institutions, aimed at qualifying individuals for entry into tertiary education. First, ***Fachmittelschulen***, which have been established in 22 cantons and are open to youths who completed compulsory primary and lower-secondary education, impart advanced general education and some basic vocational knowledge. *Fachmittelschulen* offer two types of leaving

[75] The cantons are: Zürich, Bern, Luzern, Uri, Schwyz, Obwalden, Nidwalden, Glarus, Zug, Freiburg, Solothurn, Basel-Stadt, Basel-Landschaft, Schaffhausen, Appenzell Ausserrhoden, Appenzell Innerrhoden, St. Gallen, Graubünden, Aargau, Thurgau, Tessin, Waadt, Wallis, Neuenburg, Genf, and Jura.

[76] For a detailed overview, please refer to Educa (2011).

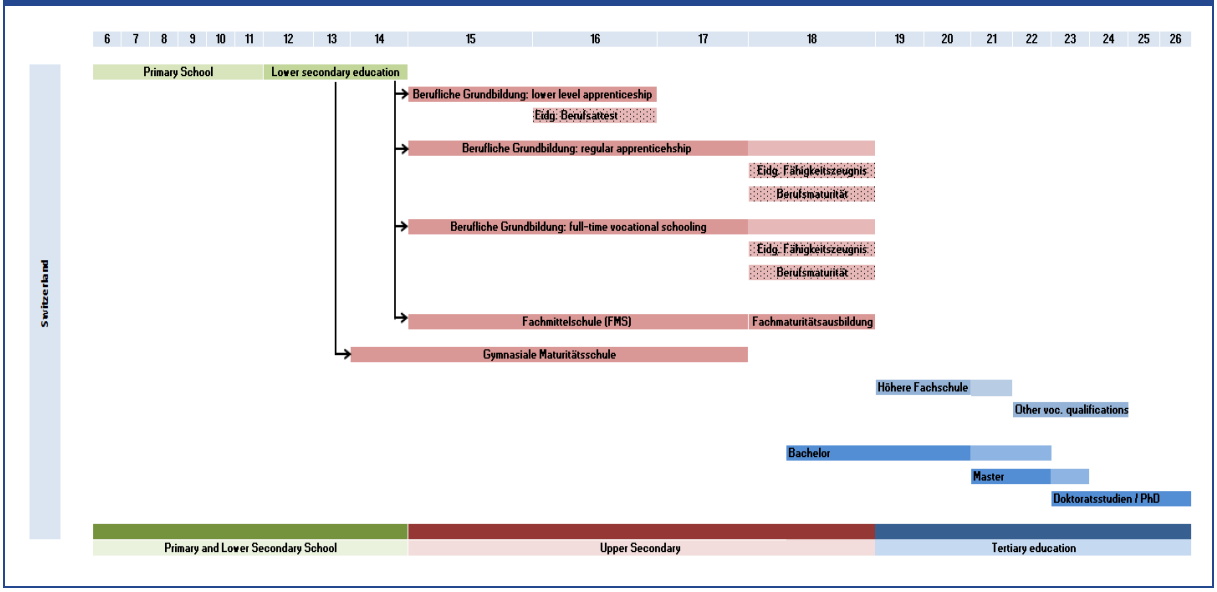
[77] A number of cantons recently signed the *HarmoS-Konkordat*, which obliges participating cantons to introduce a new level of compulsory education of 11 years (2 years of kindergarten, 6 years of primary school and 3 years of lower secondary education) by the start of the 2015/2016 school year. Note that while this is intended at harmonising compulsory education across Switzerland, not all of the cantons have signed this agreement.

[78] In some cantons, primary education lasts for only 4 or 5 years, in which case pupils have to attend lower secondary education for 5 and 4 years, respectively.

[79] As will be outlined below, those individuals who choose to attend the *Gymnasiale Maturitätsschule* at upper secondary level will transition into these schools already in grade 9, thus completing their last year of compulsory education at an upper secondary school.

exams, depending on the duration of schooling: the *Fachmittelschul-Ausweis*, which can be received after 3 years, qualifies recipients for entry into vocational tertiary education paths; in contrast, the *Fachmaturitätsausbildung*, which comprises an additional year of schooling after the usual 3-year period, prepares for academic tertiary education at universities of applied sciences or teacher training colleges. Second, all of the Swiss cantons have established ***Gymnasiale Maturitätsschulen***, which pupils commonly enter in the 9th Grade to complete their final year of compulsory education[80]. Schooling at the *Gymnasiale Maturitätsschule* typicallly lasts for 4 years[81], after which pupils sit a final examination to achieve the *Gymnasiale Maturität*, qualifying for entry into academic tertiary education at universities or teacher training colleges[82].

Figure 28: The education system in Switzerland



Note: *Höhere Fachschulen* are part of the Swiss system of Professional education and training (PET) at the tertiary education level. Entry into these schools is open to individuals who hold a *Eidgenössisches Fähigkeitszeugnis,* a *Fachmittelschulen-Ausweis*, or the *Gymnasiale Maturität* and have collected some years of work experience within their training occupation, and impart more specialised or management-oriented knowledge in their field. The PET system also includes preparatory classes for additional higher vocational education qualifications.
Source: London Economics

In addition to these general educational institutions, the Swiss system incorporates three pathways providing vocational education and training (VET) at the upper-secondary level, all of which combine into Switzerland's system of ***Berufliche Grundbildung*** (initial vocational education). Most importantly for the analysis to follow, youths at the upper-secondary level have the option to participate in a **3-4 year Dual-system apprenticeship** to train in a recognised occupation requiring formal training. Similar to the German and Austrian systems, apprenticeships consist of

[80] Pupils who first complete compulsory schooling at lower secondary level institutions and thus wish to enter the *Gymnasiale Maturitätsschule* in grade 10 are required to participate in preparatory upper secondary education before being granted entry.
[81] The *Gymnasiale Maturitätsschule* in German-speaking cantons exemplifies the alignment of cantons' educational systems with the country whose language they have adapted. Particularly, education at the German *Gymnasium* typically lasts between 8 and 9 years. In close correspondence with the *Gymnasium*, some of the German-speaking Swiss cantons have established *Langzeitgymnasien* (i.e. long-term *Gymnasiale Maturitätsschule*) which describe 7 years of attendance, instead of the regular 4 years in other cantons.
[82] Swiss universities offer Bachelor's and Master's as well as PhD programmes. In contrast, pedagogical colleges and universities or applied sciences only include Bachelor's and Master's programmes.

practical on-the-job training in firms, complemented by theoretical lessons at *Berufsfachschulen* (Dual-system vocational schools). Further, apprentices sometimes attend industry courses outside of their training company (e.g. at out-of-school industry training centres), during which they are provided with more specialised occupational skills. The successful completion of this period of full-time vocational education in schools results in the *Eidgenössisches Fähigkeitszeugnis* (Federal VET Diploma), allowing recipients to practice in recognised occupations and to enter tertiary vocational education[83]. Further, students with particularly high academic achievements are granted the opportunity to additionally receive the *Berufsmaturität* (Federal vocational baccalaureate). This latter leaving certificate comprises the highest vocational qualification at upper secondary level, and can be achieved either in the context of an additional year spent in preparation, or through additional classes during the regular 3-4 year period. The *Berufsmaturität* qualifies students for entry into academic tertiary education at universities of applied sciences.

In addition to these regular apprenticeships, at the lowest level of vocational education, individuals can attend a **two-year lower level apprenticeship to achieve the *Eidgenössische Berufsattest*** (Federal vocational certificate). This type of vocational education is designed for students with strong practical skills but weaker academic achievements who find themselves unable to meet the requirements of a regular three or four year apprenticeship. The shorter programmes prepare them for the practice of professional occupations with relatively low requirements, or, if desired, for the completion of another vocational programme at upper-secondary level. In close correspondence with regular apprenticeships, participants in this two-year programme attend vocational schools on a part-time basis, complementing the theoretical knowledge acquired by on-the-job training within firms and industry courses. Note that this type of apprenticeships was first introduced in 2004, through the passing of the new Federal Vocational and Professional Education and Training Act (VPETA), in order to gradually replace the previous system of *Anlehren*[84].

The final type of vocational education consists of **full-time vocational schooling for a duration of 3-4 years**[85]. The possible leaving examinations for pupils attending full-time vocational education at upper secondary level are the same as for apprentices, i.e. attendees can either receive the *Eigdenössisches Fähigkeitszeugnis* only, or attend additional courses to achieve the *Berufsmaturität*.

[83] Tertiary vocational education in Switzerland is commonly referred to as the system of of Professional education and training (PET) (OECD, 2009), consisting of *Höhere Fachschulen* and the acquisition of additional vocational qualifications. Entry *Höhere Fachschulen* is open to individuals who hold a *Eidgenössisches Fähigkeitszeugnis*, *a Fachmittelschulen-Ausweis*, or the *Gymnasiale Maturität* and have collected some years of work experience within their training occupation, and impart more specialised or management-oriented knowledge in their field. Additional qualifications include the *Eidgenössische Berufsprüfung* (Federal PET Diploma) and the *Höhere Fachprüfung* (Advanced Federal PET Diploma), which are designed for professionals with several years of work experience who would like to improve their knowledge or prepare for a management position.

[84] *Anlehren*, refer to vocational education programmes which had previously been offered to socially disadvantaged and disabled youths who were unlikely to finish a regular 3-4 year apprenticeship or full-time vocational schooling programme. In 2004, it was determined that *Anlehren* should gradually be replaced by the two-year lower level of *Berufliche Grundbildung* ending in an *Eidgenössische Berufsattest*, in order to facilitate the transfer of attendees of these programmes into other vocational education institutions. At the time of writing, there exist only few occupations in which youths can still conduct *Anlehren*, and it is envisioned that these occupations will start offering 2-year programmes to achieve the *Eidgenössische Berufsattest* until 2015 (Berufsberatung.ch, 2013).

[85] Typical examples include *Handelsschulen* (commercial schools) or *Informatikschulen* (IT schools). The number of such full-time arrangements in Italian and French speaking cantons is higher than in German speaking parts of Switzerland.

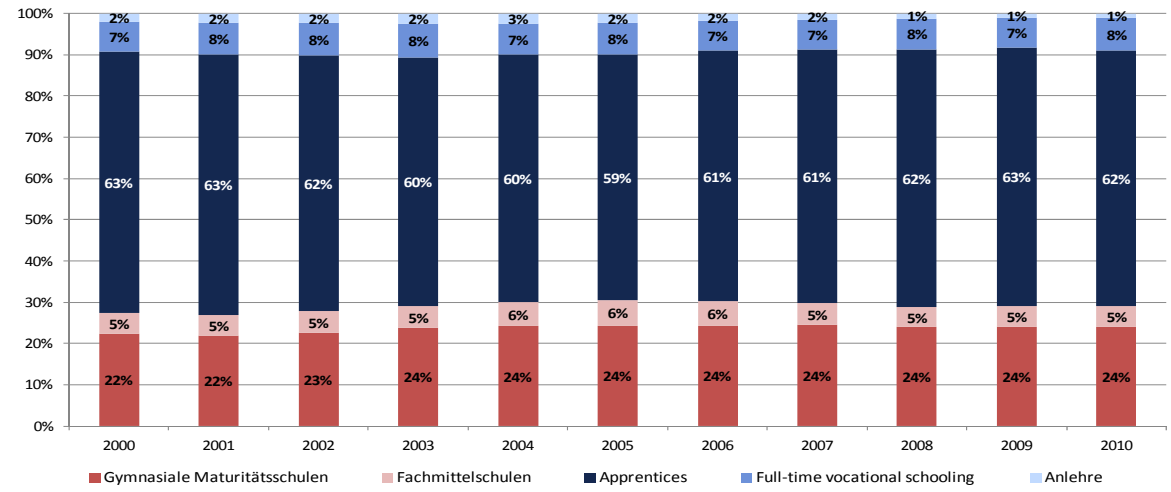
6.2 The Swiss apprenticeship system: general characteristics

Whereas the previous section included a brief summary of the different paths of vocational education and training offered within the Swiss system, the following provides a more detailed analysis of the different features of apprenticeship programmes in Switzerland.

6.2.1 Entry into vocational education and apprenticeships

In order to gain an understanding of the incidence of young people entering different paths of vocational and academic education, Figure 29 displays the percentage of individuals under 20 participating in their first year of upper secondary school in each of the distinct educational programmes briefly described above (between 2000 and 2010). As Figure 29 illustrates, the balance between the different educational paths remained remarkably stable throughout the decade. At an aggregate level, a comparison of the relative popularity of vocational education and training to academic qualifications shows that young people in Switzerland were considerably more likely to enter vocational education paths rather than general education programmes at upper secondary level (linked to the findings presented in Section 2 and the information relating to Germany (Figure 14) and Austria (Figure 20)). In particular, the share of youths entering an apprenticeship, full-time vocational schooling or *Anlehren* varied between 69% and 73% over the period, while only between 27% and 31% chose to attend general education at the *Fachmittelschule* or at *Gymnasiale Maturitätsschulen*.

Figure 29: Proportion of individuals under 20 by route of upper secondary education in Switzerland

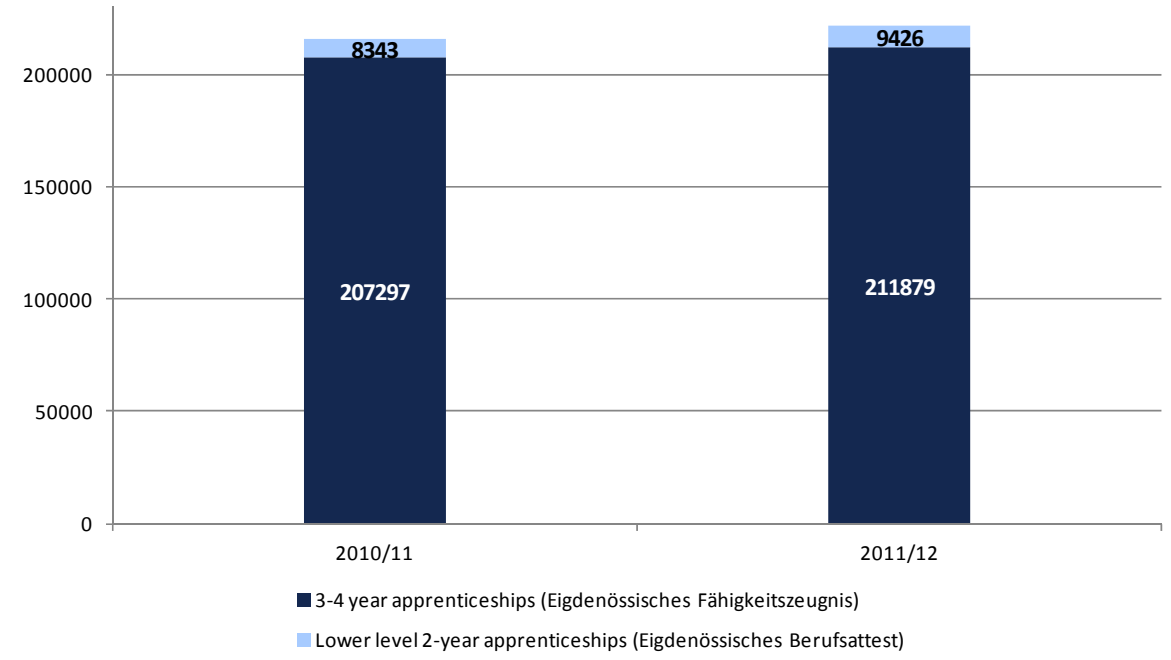


Note: The figure is based on individuals aged younger than 20 in first year of education at upper secondary school, enrolled in a certifying programme of at least 2 years duration. It excludes bridge year courses and other one-year transitional measures, as well as individuals who are preparing for the *Berufsmaturität* or *Fachmaturität* in additional courses following a first qualification.Apprentices include individuals who are conducting the *Berufliche Grundausbildung* in the form of a 3-4 year dual system apprenticeship to receive the *Eidgenössische Fähigkeitszeugnis*, or a 2-year lower level apprenticeship to achieve the *Eidgenössische Berufsattest*. Note that the category of full-time vocational schooling includes a small number of individuals who attend vocational schools on a part-time basis (but with no complementary on-the-job training, as in apprenticeships). Those who are participating in one-year transitional measures or bridge years are excluded.

Source: London Economics' analysis of Bundesamt für Statistik (2013a) and Bundesamt für Statistik (2013b).

Figure 30 further illustrates that among the different programmes of vocational education and training offered within the Swiss system, apprenticeships constitute by far the most popular format of vocational training at upper secondary level. In particular, compared to only 1-3% and 7-8% of young people in Switzerland deciding to enter *Anlehren* or full-time vocational schooling respectively, a total of between 59% and 63% opted for Switzerland's Dual system of apprenticeship instead. A study conducted by the OECD (2009)[86] leads to a similar conclusion, demonstrating that vocational education programmes combining school and workplace education are considerably more common than full-time attendance of vocational schools within the Swiss system.

Figure 30: Number of apprentices in Switzerland, 2010/11 and 2011/12



Note: Number of individuals participating in regular 3-4 year apprenticeships includes those youths who are simultaneously preparing to receive the *Berufsmaturität,* but excludes individuals who are currently attending an additional year of classes to receive the latter certificate, i.e. after completing their apprenticeship qualification.
Source: Bundesamt für Statistik (2013c).

Following the previous analysis of the *relative* popularity of different paths of vocational education, Figure 30 presents the *absolute* number of apprentices in the school years 2010/11 and 2011/12. It shows a slight increase in the total number of apprentices between the two years displayed, from 215,640 apprentices in the school year 2010/11 to 221,305 in 2011/12. Figure 30 further allows for an assessment of participation rates in lower-level 2-year apprenticeship programmes leading to the *Eidgenössische Berufsattest* and regular 3-4 year apprenticeships resulting in the *Eidgenössische Fähigkeitszeugnis*. Individuals participating in apprenticeships of a short duration of 2 years comprise only 4% of apprentices in both years, with the remaining 96%

[86] The OECD's (2009) numbers date back to 2006. The analysis focuses on the percentage of individuals aged 15-64 participating in apprenticeships compared to full-time vocational schooling.

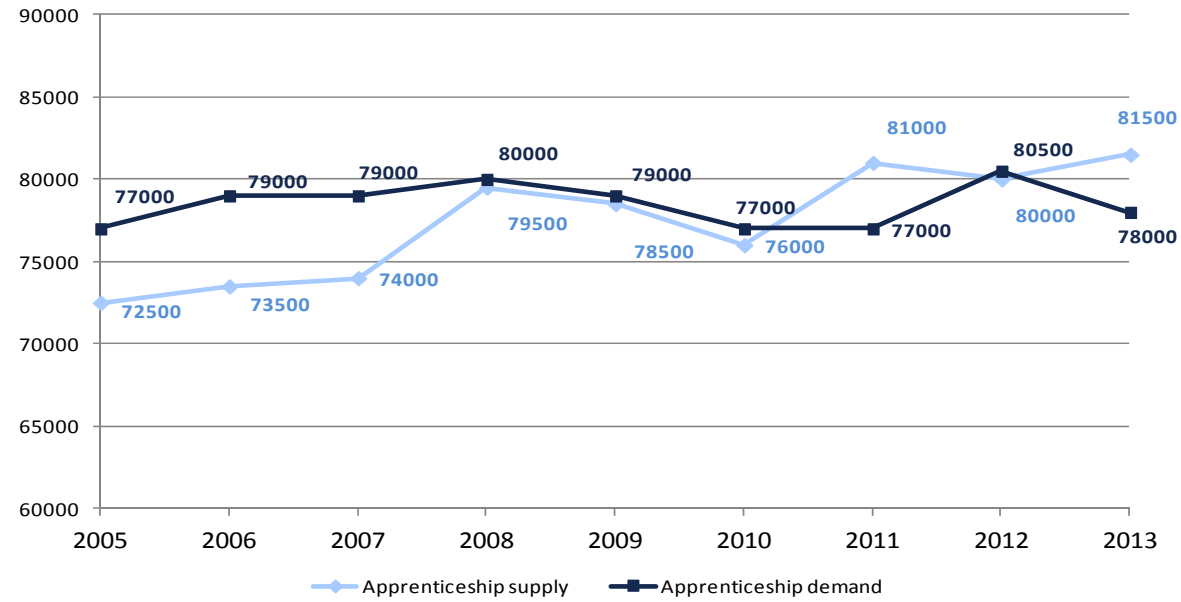
conducting 3-4 year apprenticeship programmes (demonstrating comparable durations with Germany (Figure 18) and Austria (Figure 24).

The *Lehrstellenbarometer* (LINK Institut, 2013) conducts bi-annual surveys of companies and youths to monitor the match between apprenticeship demand and supply in Switzerland, thus providing additional insight into the tendency for youths to participate in apprenticeships within the Swiss educational system (see Figure 31).

On the supply side, the incentive to offer apprenticeship placements primarily originates in the benefits which training firms derive in terms of the productive outputs delivered by apprentices during their training period (OECD, 2009)[87]. Based on the most recent estimates (April 2013), 50,500 companies[88] supply a total of approximately 81,500 apprenticeship starts, of which 4,500 constitute lower level 2-year apprenticeship placements and 77,000 consist of regular 3-4 year apprenticeship programmes (reflecting the distribution of apprentices discussed above). Figure 31 illustrates an overall increase in the level of supply of apprenticeship training placements since 2005. In spite of the overall increase in supply, the number of apprenticeship placements has exhibited a noticeable decrease between 2008 and 2010, and again between 2011 and 2012. The ongoing global recession is asserted as the main reason behind these recent drops in the supply of apprenticeship programmes by firms (OECD, 2009).

[87] We return to this discussion of companies' benefits and costs of offering apprenticeship training in Section 10.3.
[88] This constitutes approximately one third of all companies which would have the capacity to train apprenticeship training (OECD, 2009).

Figure 31: Supply of and demand for apprenticeships in Switzerland



Note: Demand for apprenticeship placements is based on a telephone survey of 2798 individuals aged between 14 and 20 years old, and is defined as those individuals who are interested in training as an apprentice. The supply of apprenticeships has been assessed through a survey in writing of a sample of 5889 companies (of which 1694 firms offer apprenticeship placements). Survey results for both demand and supply were then extrapolated to arrive at aggregate numbers of apprenticeship placements offered and demanded. The numbers provided include both regular 3-4 year apprenticeships leading to the *Eidgenössische Fähigkeitszeugnis* as well as lower level 2-year apprenticeships resulting in the *Eidgenössische Berufsattest*.

Source: LINK Institut (2013).

In contrast to the provision of apprenticeship placements by training companies, the demand for apprenticeships appeared relatively constant over time. In 2013, approximately 78,000 individuals aged between 14 and 20 were interested in participating in an apprenticeship within Switzerland's Dual system. While the OECD (2009) points to demographic changes as a main threat to individuals' demand for apprentices, and as a potential factor to increase competition between academic and vocational education, apprenticeship demand exhibited only small decreases between 2009 and 2010 and between 2012 and 2013.

Finally, in addition to looking at demand and supply independently, it is instructive to consider the match between the provision of and the interest in apprenticeship placements in Switzerland. Overall, Figure 31 demonstrates a considerably close match between apprenticeship demand and supply in recent years. While there existed some excess demand for apprenticeships ranging from 4,500 to 5,500 placements between 2005 and 2007, estimated demand and supply levels have been converging since. The most recent estimates suggest an of excess supply of 3,500 apprenticeship placements, which is commonly associated with companies' slight current difficulty of finding youths with sufficient skills and qualifications to fill their open apprenticeship placement (LINK Institut, 2013).

6.2.2 Organisation and structure of Swiss apprenticeships

Referring again to the two types of apprenticeships outlined in our above summary of the Swiss education system, both 2-year lower level apprenticeships and regular 3-4 year apprenticeships commonly take place in at least two learning locations, with a variety of different patterns describing the distribution of apprentices' time between them. In particular, in line with the provisions in other countries, Swiss apprentices acquire advanced general and basic vocational knowledge in *Berufsfachschulen*, complemented by practical on-the-job learning within training companies. Further, depending on the training occupation, apprentices attend additional courses imparting professional occupational knowledge at off-the-job industry centres[89]. Commonly, apprentices spend 1 day per week at the *Berufsfachschule* and 4 days in practical training at the training company, or 2 days in school and 3 days at the firm. In case individuals are required to attend additional classes in industry occupational centres, they frequently alternate between attending vocational school and courses at these learning centres across different weeks. Finally, some apprenticeship programmes predicate a gradual shift from in-school education towards more on-the-job training in the course of the training duration. (OECD, 2009)

According to the current list of recognised occupations requiring training provided by the Swiss Berufsberatung (2013b), youths in Switzerland are offered the possibility to train in a total of 392 occupations, although this list also includes old occupational classifications for some professions. To provide an additional indication of the number of apprenticeship occupations in Switzerland, the London School of Economics (2010) asserts that apprenticeship placements are offered in **approximately 250 professions**. These include both occupations in which it is possible to train for 3 or 4 years, or, with less stringent academic requirements, for a shorter duration of 2 years. Table 23 categorises all of these occupations into **22 professional areas**, emphasising the variety of sectors in which individuals can train as apprentices.

Table 23: Occupational areas of apprenticeship programmes in Switzerland

Nature	Electrical engineering
Food	Metal and machinery
Hospitality	Chemistry and physics
Textiles	Planning and architecture
Sports and aesthetics	Sales
Arts and design	Business administration
Print	Traffic and logistics
Construction	Information technology
Building services engineering	Culture
Wood and interior fittings	Health
Vehicles	Education and social affairs

Source: Berufsberatung.ch (2013b).

[89] Due to this potential for third learning locations, the Swiss apprenticeship system is sometimes referred to as the "threeal system" (LSE, 2010, p.33).

6.3 Funding of apprenticeships in Switzerland

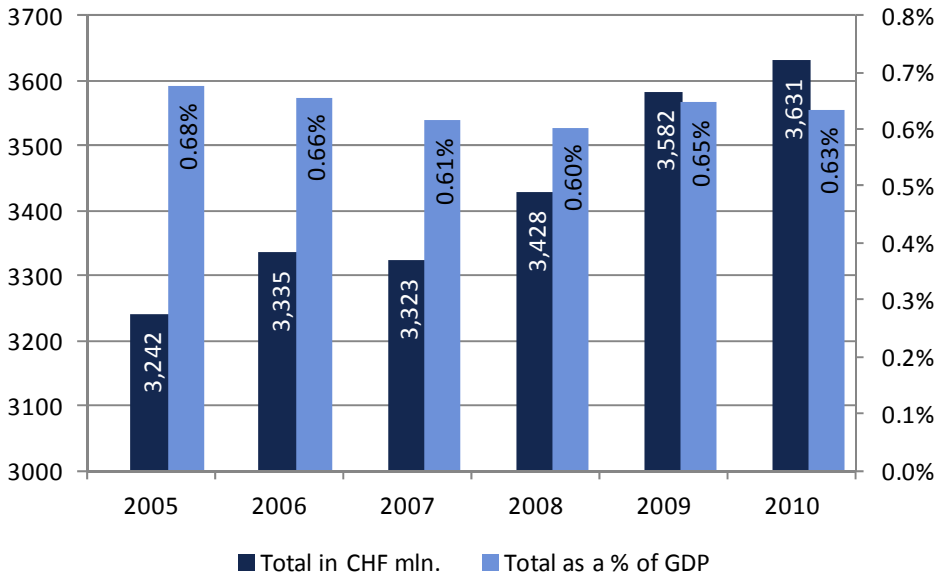
Whereas other parts of the Swiss education system are primarily a cantonal responsibility, Switzerland's vocational education and training structures are regulated and implemented by 3 social partners at a national level. First, the Confederation (i.e. the Swiss Federal government) carries primary regulatory responsibility over the Swiss system of vocational education. In particular, the State Secretariat for Education, Research and Innovation (SERI)[90] is responsible for the quality, strategic planning and development of vocational and professional education and training programmes, and issues the more than 250 training ordinances[91] for each recognised occupation requiring training, ensuring their compatibility across the country. Secondly, the 26 Swiss cantons, through cantonal vocational education and training agencies, implement and supervise the designated vocational education and training programmes. Further, they carry primary authority over vocational schools (both full-time and part-time schools), provide career guidance and inspect the training companies and off-the-job industry training centres. Finally, Swiss professional organisations (i.e. employers' associations, trade associations or trade unions) are also significantly involved in the determination of vocational education and training arrangements in Switzerland, by establishing the course content, qualifications and exams, and offering apprenticeship placements. (OECD, 2009)

Together, members of these three partners develop **vocational training ordinances** as well as **training plans**. Training ordinances cover the legally relevant aspects applying to an apprenticeship occupation, by establishing the occupational profile, the content of training, and the criteria for qualification etc. At a lower level, the training plans then provide the basis for vocational teaching, by structuring vocational education and training courses, guiding teachers and trainers, defining the skills to be acquired throughout the training period, and specifying the particular respective roles of vocational schools, training companies and industry training centres.

Government institutions provide no direct subsidies to training firms for taking on apprentices; instead, the state bears primary responsibility over funding the required off-the job education in *Berufsfachschulen*. The costs for this theoretically-based training are met out of a mix of Federal cantonal and municipal finances, with cantons covering the largest share of the necessary funds. In addition, the Federal government provides funding to set up *Lehrstellenbetriebsverbünde* (host company networks) established by groups of smaller firms which are unable to independently meet all training requirements for an apprenticeship (London School of Economics, 2010). Figure 32 displays the total public funding level for vocational education at upper secondary level (*Berufliche Grundbildung*) in both absolute terms and as a percentage of the Swiss gross domestic product (GDP). The figure demonstrates a noticeable increase in absolute public funding levels in recent years, from approximately **CHF3.2 billion (£1.44bn)** in 2005 to **CHF3.6 billion (£1.62bn)** in 2010. In spite of this absolute increase, public financing granted to the *Berufliche Grundbildung* as a percentage of Switzerland's GDP has remained relatively constant, oscillating between 0.60% - 0.68%.

[90] Previously, the Federal Office for Professional Education and Technology.
[91] See below for a description of these training ordinances.

Figure 32: Public funding of Swiss apprenticeships



Source: London Economics' analysis of Bundesamt für Statistik (2013d) and Bundesamt für Statistik (2013e).

6.4 Apprenticeship pay in Switzerland

Whereas public institutions are responsible for financing the off-the-job training component of the Swiss dual apprenticeship system, private companies bear the costs of providing the on-the-job training element to their apprentices. As mentioned above, training firms do not receive direct government subsidies to help them cover these costs. Nevertheless, Switzerland presents a particularly interesting case study since it is "the only European apprenticeship country where there is reliable evidence[92] showing that, on average, apprenticeship firms incur no net costs as a result of taking on apprentices" (London School of Economics, 2010, p. 33). According to the previous study, an important reason for the self-financing of the Swiss apprenticeship system for firms is the particular balance between training and productive work contributions by apprentices that training firms achieve. Further, as pointed out in a report by the OECD (2009), training companies in Switzerland aim at ensuring that their apprentices reach a high level of productivity by their 2nd or 3rd training year. As a result, on average, training companies in Switzerland manage to cover the training costs incurred over the apprenticeship duration and are even able to make a small profit.

One primary reason contributing to the cost neutrality of apprenticeships from the firms' perspective might be the level of wages that these companies pay to their apprentices, and which comprise a large share of their apprenticeship training expenses. Commonly, apprentice wages are subject to bargaining between the training firms and their apprentices during the setup of contractual agreements. There exists **no legal mandatory statutory minimum apprentice wage**, and trade and industry associations merely provide non-binding recommendations on apprentice pay as guidance to training companies within the respective sectors. Whereas apprentice wages

[92] For a recent example, please refer to Strupler and Wolter (2012a).

are generally subject to bargaining at the company level, in some industries they are determined in the context of collective bargaining agreements between trade unions and employer representatives, in which case the agreed minimum wages are legally binding across all companies that are part of the respective employers' association (*Berufsberatung*, no date).

In their analysis of the costs and benefits of apprenticeship training to firms and trainees, Strupler and Wolter (2012b) provide 2009 levels of yearly median gross apprentice wages, categorised by training year. To arrive at hourly rates, we assumed a 45 hour working week for apprentices[93] and 52.14 weeks per year. The resulting hourly rates were then adjusted for inflation to arrive at the respective values in 2013 prices. Based on recent estimates by the Bundesamt für Statistik (2013f), 2013[94] median apprentice wages across all training years amount to **CHF11,928 (£5,354) per year**, resulting in an **hourly rate of CHF5.08 (£2.28)** based on our calculations.

Table 24 displays the hourly apprentice wages by training duration[95] and year calculated in the above manner. For both apprenticeships with a duration of 3 or 4 years, the wages received by the trainees increases throughout the training period, from **CHF3.90** to **CHF6.70** for 3-year apprenticeships **(£1.75 and £3.01)**, and from **CHF3.09** to **CHF6.70** (**(£1.39 and £3.01)** for 4-year apprenticeships. Hence, although apprentices in programmes of different durations earn the same level of hourly pay during their final training year, first year wages differ between the two groups, with 4-year apprentices earning noticeably less than 3-year apprentices during the initial training year. Considering the entire training period, apprentices training for 4 years witness a steeper overall increase in hourly wages over the course of their apprenticeship.

Table 24: Gross hourly apprentice pay by training duration and training year in Switzerland

Training year	3-year apprenticeships	4-year apprenticeships
Year 1	CHF3.90 **(£1.75)**	CHF 3.09 **(£1.39)**
Year 2	CHF 5.03 **(£2.26)**	CHF 4.13 **(£1.85)**
Year 3	CHF 6.70 **(£3.01)**	CHF 5.16 **(£2.32)**
Year 4		CHF 6.70 **(£3.01)**

Note: Values reflect median gross hourly apprentice pay, and include monthly basic pay rates as well as irregular payments such as commissions, bonuses, in-kind payments, allowances, profit sharing arrangements etc., before deduction of social contributions or insurance contributions. Note that no wage deductions are allowed for apprentices' attendance of the Berufsfachschule, introductory courses, or their final exam. Numbers originally provided for 2009 (CPI-adjusted for March 2013, using inflation rates relative to March of each year between 2009 and 2013). Adjusted for Purchasing Power Parity.

Source: London Economics' analysis of Struper und Wolter (2012b) and Bundesamt für Statistik (2013g).

Table 25 exhibits the differential levels of hourly apprentice wages by the industries in which Swiss apprentices train, again drawing the distinction between apprenticeship programmes lasting 3 or 4

[93] According to KV Schweiz (no date), the regular maximum number of work hours that Swiss apprentices complete per week amounts to 45 hours (i.e. 9 hours a day within a 12 hour span (ending at 10PM at the latest), excluding overtime *and* lunch hour). Note that, similar to other countries, these work hours include the time which apprentices spent in theoretical lessons at the *Berufsfachschule*. Underage youths (i.e. individuals who are younger than 18) are not allowed to perform overtime, and for those aged 18 or older, overtime is only permitted in exceptional cases and on an irregular basis. Since 45 hours constitute the maximum number of apprentice work hours per week, the hourly rates provided here constitute minimum levels of hourly apprentice pay.

[94] Values are originally provided for 2012 (inflation-adjusted for March 2013 using inflation rate compared to March of 2012).

[95] Pay levels for lower level 2-year apprenticeships are not included in the analysis.

years[96]. Apprentice pay varies noticeably across industries, with wages for 3-year apprentices ranging from **CHF4.61 (£2.07)** per hour for the "trading, maintenance and repair of motor vehicles" to **CHF6.72 (£3.02)** in the "hospitality sector". For 4-year apprenticeship programmes, wages are lowest in the "motor vehicles sector" (**CHF4.40 (£1.98)**) and highest (**CHF 5.35 (£2.40)**) in "Other services". According to Strupler and Wolter (2012c), these inter-industry variations reflect the labour market conditions which apprentices face on completion of their training periods, resulting in high apprentice pay for those economic sectors (and professions) paying high wages to fully trained employees.

Table 25: Gross hourly apprentice pay by training duration and industry in Switzerland

Industry	3-year apprenticeships	4-year apprenticeships
2nd sector (Industry trades)		
Product manufacturing	CHF 5.09 **(£2.28)**	CHF 4.88 **(£2.01)**
Construction	CHF 5.17 **(£2.32)**	CHF 4.65 **(£2.09)**
Other industry trades	CHF 5.32 **(£2.39)**	CHF 5.33 **(£2.48)**
3rd sector (Services)		
Trading, maintenance and repair of motor vehicles	CHF 4.61 **(£2.07)**	CHF 4.40 **(£1.98)**
Hospitality, accommodation and gastronomy	CHF 6.72 **(£3.02)**	-
Other business services	CHF 5.73 **(£2.57)**	-
Health and social services	CHF 5.23 **(£2.35)**	-
Other services	CHF 5.32 **(£2.39)**	CHF 5.35 **(£2.36)**

Note: Values reflect median gross hourly apprentice pay, and include monthly basic pay rates as well as irregular payments such as commissions, bonuses, in-kind payments, allowances, profit sharing arrangements etc., before deduction of social contributions or insurance contributions. Note that no wage deductions are allowed for apprentices' attendance of the *Berufsfachschule*, introductory courses, or their final exam. Numbers originally provided for 2009 (CPI-adjusted for March 2013, using inflation rates March of each year between 2009 and 2013). Detailed data are provided for the largest 4 industries (where size is based on total employment), and all smaller industries within the two main sectors are summarised under 'other'. No numbers are provided if any category involves less than 4 cases. Adjusted for Purchasing Power Parity.

Source: London Economics' analysis of Strupler and Wolter (2012b) and Bundesamt für Statistik (2013g).

6.4.1 Apprentice pay as a proportion of the fully qualified rate

While the analysis so far discussed apprentice pay in Switzerland in absolute terms, we now consider apprentice wages relative to the wages of fully qualified workers. As our measure of the fully qualified wage rate, we use median gross hourly wages paid to employees who *perform tasks requiring vocational and professional skills*. The data are provided by the Bundesamt für Statistik (2013h)[97] as monthly full-time equivalent wages standardised according to 4.33 weeks per month and 40 hour working week. The **median gross hourly wage for full-time employees performing tasks requiring vocational and professional skills amounts to CHF32.73 (£14.69)**.

[96] Note that a categorisation according to training duration, economic sector *and* by training year is not available

[97] The data are based on four levels of the difficult of employees' jobs: 1. Implementation of highly demanding and most difficult tasks; 2. Performing independent and qualified work; 3. Tasks requiring vocational and professional skills (level used in our analysis); 4. Implementation of easy and repetitive tasks. Wages are originally provided for 2010, and were adjusted for inflation (using the CPI Index for March 2013, based on December 2010) to arrive at values in March 2013 prices.

Table 26 presents hourly apprentice wages by training duration and training year as a percentage of this fully qualified hourly rate. Similar to our above observations, apprentice wages as a percentage of fully qualified earnings increase by training year for both 3-year and 4-year programmes. Whereas for 3-year programmes, apprentice wages are equivalent to between **12%** and **20%** of the fully qualified wage rate, 4-year apprenticeship wages range from just **9%** in the first training year to **20%** in the final year. Using again the overall data supplied by the Bundesamt für Statistik (2013f), the **median apprentice wage across all training years amounts to 16% of median hourly earnings.** The analysis suggests that the absolute level of apprentice pay in Switzerland, as well as the proportion compared to the fully qualified rate is substantially lower than in Germany or Austria.

Table 26: Gross hourly Swiss apprentice pay as a percentage of gross hourly earnings

Training year	3-year apprenticeships	4-year apprenticeships
Year 1	12%	9%
Year 2	15%	13%
Year 3	20%	16%
Year 4	-	20%

Note: Gross hourly wages are defined as 2010 (CPI-adjusted for March 2013). median gross hourly wages paid to employees who perform tasks requiring vocational and professional skills, based on 4.33 weeks per month and 40 weekly work hours. Wages include employers' social contributions, in-kind payments, regular bonuses, profit shares, pay for special work hours (e.g. night shifts), 1/12th of potential pay for a 13th month and 1/12th of yearly special payments.
Source: London Economics' analysis of Strupler and Wolter (2012b), Bundesamt für Statistik (2013h) and Bundesamt für Statistik (2013i).

Table 27 displays the comparison between apprentice pay and the fully qualified rate according to apprentices' training industry and duration. Again, for both 3-year and 4-year apprenticeship programmes, apprentice wages are lowest compared to fully qualified earnings in the industry of trading, maintaining and repairing motor vehicles. Apprentices completing a 3-year training programme in the hospitality, accommodation and gastronomy industry earn **21%** of median hourly wages, representing the maximum across all industries.

The previous tables show that apprentices in Switzerland earn relatively low wages compared to what they will earn once they have completed their training and received a vocational qualification. Returning to our discussion on the costs and benefits of apprenticeships to training companies, the low level of apprentice wages relative to fully qualified workers' earnings constitutes a significant explanation for the fact that firms frequently receive net benefits from training apprentices (OECD, 2009).

Table 27: Gross hourly Swiss apprentice pay as a percentage of gross hourly earnings		
Industry	**3-year apprenticeships**	**4-year apprenticeships**
2nd sector (Industry trades)		
Product manufacturing	16%	15%
Construction	16%	14%
Other industry trades	16%	16%
3rd sector (Services)		
Trading maintenance and repair of motor vehicles	14%	13%
Hospitality, accommodation and gastronomy	21%	-
Other business services	18%	-
Health and social services	16%	-
Other services	16%	16%

Note: Gross hourly wages are defined as 2010 (CPI-adjusted for March 2013). median gross hourly wages paid to employees who perform tasks requiring vocational and professional skills, based on 4.33 weeks per month and 40 weekly work hours. Wages include employers' social contributions, in-kind payments, regular bonuses, profit shares, pay for special work hours (e.g. night shifts), 1/12th of potential pay for a 13th month and 1/12th of yearly special payments.
Source: London Economics' analysis of Strupler and Wolter (2012b), Bundesamt für Statistik (2013h) and Bundesamt für Statistik (2013i).

6.4.2 Apprentice pay as a proportion of the minimum wage

Similarly to Germany and Austria, there exists no mandatory statutory minimum wage in Switzerland; instead, minimum wages are determined as part of collective bargaining agreements between employers' associations and trade unions. Based on the most recent estimates for the year 2009, there exist a total of 614 such collective labour agreements, of which 509 include specific mandatory minimum wages (Bundesamt für Statistik, 2013j). Whereas most agreements only have to be complied with by companies that are represented by the respective employers' association throughout the bargaining process, some of the collective contracts have been declared generally binding, i.e. the terms of these agreements are mandatory for entire geographical areas, occupations or sectors.

At the time of writing, a summary record of the Swiss minimum wage based on the entirety of these collective bargaining agreements was unavailable. In order to conduct the subsequent comparison of apprentice wages to minimum pay levels in Switzerland, we therefore use the earnings of unskilled workers as an alternative indicator of the minimum wage that Swiss employees receive. In this respect, unskilled workers' wages are captured by median gross hourly wages of individuals who do not hold a vocational qualification, i.e. those who have not completed a programme of vocational education and training. The data (Bundesamt für Statistik, 2013k) capture monthly full-time equivalent wage levels standardised according to 40 hour working week and 4.33 weeks a month[98]. Based on our calculations, the **median gross hourly wage rate for a worker without a vocational qualification is CHF25.89 (£11.62)**.

Table 28 presents the comparison between median gross hourly apprentice pay and our proxy for the minimum wage by training duration and year. Again, apprentice pay as a percentage of our

[98] Wages are originally provided for 2010, and were adjusted for inflation (using the CPI Index for March 2013, based on December 2010) to arrive at values in March 2013 prices.

measure of unskilled wages vary noticeably across training years, ranging from **12%** of hourly earnings of workers without a vocational qualification for 4-year apprentices in their first training year to **26%** for both 3-year and 4-year apprentices.

Table 28: Swiss apprentice pay as a percentage of earnings for workers without a vocational qualification

Training year	3-year apprenticeships	4-year apprenticeships
Year 1	15%	12%
Year 2	19%	16%
Year 3	26%	20%
Year 4	-	26%

Note: The wage rate for workers without a vocational qualification is defined as as the median gross hourly full-time equivalent wage for employees, standardised according to 40 hours per week and 4.33 weeks per month. This wage rate includes the same items as the gross hourly pay employed previously. Data are originally provided for 2010 (CPI-adjusted for March 2013). ***Source: London Economics' analysis of Strupler and Wolter (2012b), Bundesamt für Statistik (2013i) and Bundesamt für Statistik (2013k).***

Finally, Table 29 presents a similar comparison across industries. The table again demonstrates considerable variation in apprentice pay rates as a percentage of the median unskilled wage.

Table 29: Swiss apprentice pay as a percentage of earnings for workers without a vocational qualification

Industry	3-year apprenticeships	4-year apprenticeships
2nd sector (Industry trades)		
Product manufacturing	20%	19%
Construction	20%	18%
Other industry trades	21%	21%
3rd sector (Services)		
Trading maintenance and repair of motor vehicles	18%	17%
Hospitality, accommodation and gastronomy	26%	-
Other business services	22%	-
Health and social services	20%	-
Other services	21%	21%

Note: The wage rate for workers without a vocational qualification is defined s as the median gross hourly full-time equivalent wage for employees, standardised according to 40 work hours per week and 4.33 weeks per month. This wage rate includes the same items as the gross hourly pay employed previously. Data are originally provided for 2010 (CPI-adjusted for March 2013). Detailed data are provided for the largest 4 industries (where size is based on total employment), and all smaller industries within the two main sectors are summarised under 'other'. No numbers are provided if any category involves less than 4 cases.

Source: London Economics' analysis of Strupler and Wolter (2012b), Bundesamt für Statistik (2013i) and Bundesamt für Statistik (2013k).

7 Apprenticeships and apprentice pay in the Netherlands

7.1 Overview of educational system in the Netherlands

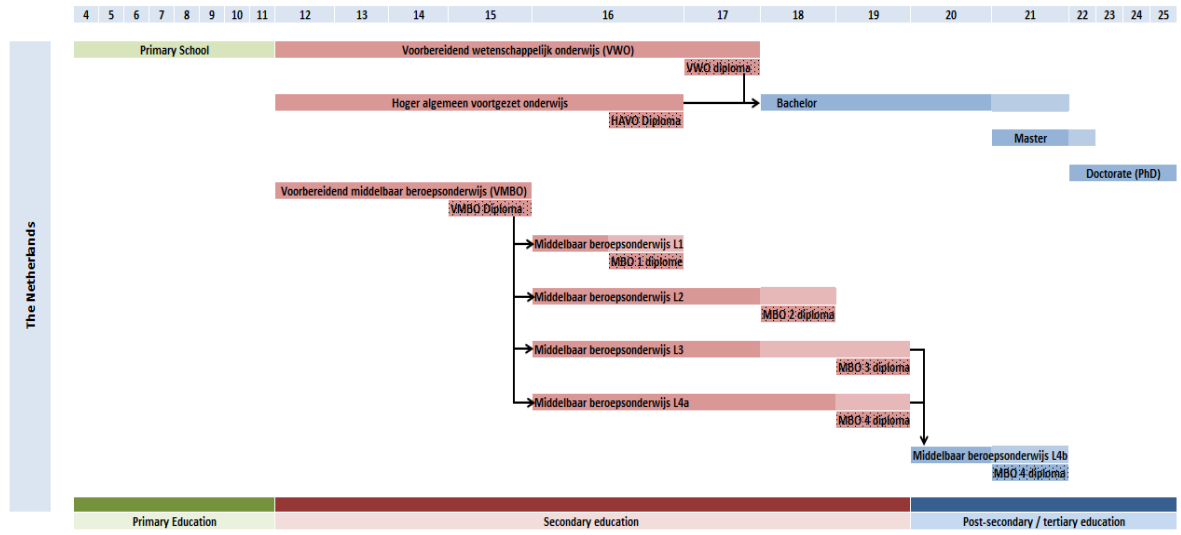
The Dutch education system is composed of a variety of different types of schooling programmes, geared towards individuals' needs and preferences. Similar to educational arrangements prevalent in other northern and central European countries, the system grants a high degree of flexibility for Dutch pupils, allowing them to transfer between the different programmes at various points throughout their transition from primary school through to post-secondary or tertiary education. A unique feature distinguishing the Netherlands from other countries concerns the variety of possible learning pathways which individuals can choose from when attending secondary level vocational education programmes within the Dutch system. As a result, vocational education at secondary level offered throughout the Netherlands is relatively diverse and complex, providing individuals with a variety of pathways to cater to their skills and future career plans. Figure 33 provides a graphical summary of the Dutch education system.

Compulsory schooling in the Netherlands is governed by law to begin at the age of 5, and ends either when individuals have reached the age of 18, or, for individuals aged 16-17, with the achievement of a basic general or vocational officially recognised qualification[99] at upper secondary education level, thus fulfilling their "qualification duty" (ReferNet Netherlands, 2012, p.9).

Following primary education, which pupils typically enter at the age of 4 (i.e. one year earlier than required by law) and attend for a total of 8 years[100], Dutch children receive the opportunity to transfer into a particular variety of different types of schooling at secondary education level. Similar to educational systems in other countries (e.g. Germany), secondary schooling is divided into two main tracks, focusing on either general education with direct transfer possibilities into higher academic education, or vocational education and qualification certificates to enter the professional world. A focus on general education is provided within the **Hoger algemeen voortgezet onderwijs** (HAVO; senior general secondary education), which qualifies for entry into higher professional education at universities of applied sciences, and the **Voorbereidend wetenschappelijk onderwijs**[101] (VWO; pre-university education), preparing attendants for entry into academic universities or into universities of applied sciences[102]. During the first 3 years (the 'lower years') of both of these programmes, attendees acquire basic secondary education emphasising general knowledge and skills. Throughout the 'upper years' (3 years for VWO and 2 years for HAVO), in addition to a remaining general education component, students then specialise in one of four particular topics, including Science and Technology, Science and Health, Economics and Society, or Culture and Society (Government of the Netherlands, no date).

[99] i.e. at least a HAVO, VWO, or MBO 2 diploma; please see below for a definition and detailed description of these officially recognised qualifications.
[100] Note that the compulsory level of primary education in the Netherlands amounts to 7 years.
[101] Note that VWO is further subdivided into the *gymnasium*, which includes Latin and Greek as compulsory parts of its core curriculum, and the *ateneum*, where these two subjects are optional.
[102] Pupils who successfully complete education at HAVO level are granted the possibility to transfer into the VWO in order to enter academic tertiary education, if so desired.

Figure 33: The education system in the Netherlands



Source: London Economics

Vocational education at secondary level is similarly divided into a lower and upper stage; however, in contrast to general secondary education just described, these stages are imparted by two separate vocational programmes. First, **Voorbereidend middelbaar beropesonderwijs** (VMBO; pre-vocational secondary education) constitutes a 4-year vocational programme mainly aimed at preparing attendants for transfer into upper secondary vocational education[103]. Similar to HAVO and VWO, VMBO students follow a curriculum of general education during the first two years, after which they enrol in one of four specialised learning pathways:

- a **theoretical programme** focusing on advanced general knowledge, which is suited to pupils who wish to progress to higher levels of upper secondary vocational education, or who intend to continue their education in the fourth year of HAVO to qualify for entrance into tertiary education at universities of applied science;
- a **combined programme**, which offers the same progression routes towards upper secondary vocational education as the theoretical programme, but which instead imparts a mixture of theoretical knowledge and practical skills, including a pre-vocational orientation for between 10 and 15% of attendants' study time;
- a **middle-management vocational programme**, designed for pupils who intend to participate in higher levels of upper secondary vocational education; and
- a **basic vocational programme**, imparting a mixture of general education and practical on-the-job experience.

In addition to these learning pathways, individuals in the 3rd and 4th year of VMBO choose from one of four learning sectors which they would like to specialise in, including care and welfare, engineering and technology, business, and agriculture.

[103] Note that a transfer to general upper secondary education is possible.

The fourth and final year of each of these programmes involves a final assessment of students' performance in the context of national examinations, the successful completion of which results in the achievement of the VMBO certificate. Though its recipients have acquired some initial vocational knowledge and skills, the VMBO certificate does not qualify as a recognised basic qualification, i.e. in order to fulfil the qualification duty, pupils who completed VMBO but who are younger than 18 are legally required to attain additional education until they come of age or until they attain compulsory basic qualification level.

Second, and as a popular educational choice designed for VMBO graduates, the **Middelbaar beroepsonderwijs** (MBO) constitutes the programme of upper secondary level of vocational education within the Dutch system, and is most important for the analysis at hand. In particular, the programme is divided into **two main learning pathways**, predicating different levels of the relative importance of practical within-company training and learning at school:

- The ***beroepsopleidende leerweg*** (BOL) constitutes a full-time or part-time school-based vocational programme involving comparatively short intermittent practical periods of learning within enterprises. In this learning pathway, practical training periods within firms comprise **between 20% and a maximum of 60% of participants' study time**.
- The **Dutch apprenticeship system** is given by the ***beroepsbegeleidende leerweg*** (BBL), comprising a dual programme of vocational education which combines theoretical learning in vocational schools with practical on-the-job training, where within-company training and working takes up **at least 60%** of participants' study time.

Adding another element to the MBO's structure, both of the above two learning pathways are taught at **4 MBO levels**, including assistant training (Level 1), basic vocational training (Level 2), professional training (Level 3), and middle-management training (Level 4a). Note that, in contrast to all other MBO level certificates, the MBO 1 diploma does is not considered an officially recognised basic qualification in terms of compulsory education, implying that recipients who are younger than 18 are obligated to acquire additional education. The duration, entry requirements and qualifications of these MBO levels will be outlined in more detail in our description of the organisation and structure of the Dutch apprenticeship system. In addition to these four upper secondary vocational programmes, the MBO Level 4 includes a post-secondary vocational programme of specialist training (MBO 4b) open to individuals who successfully completed Levels 3 or 4, with a duration of 1-2 years, and qualifying them to attend education at universities of applied science.

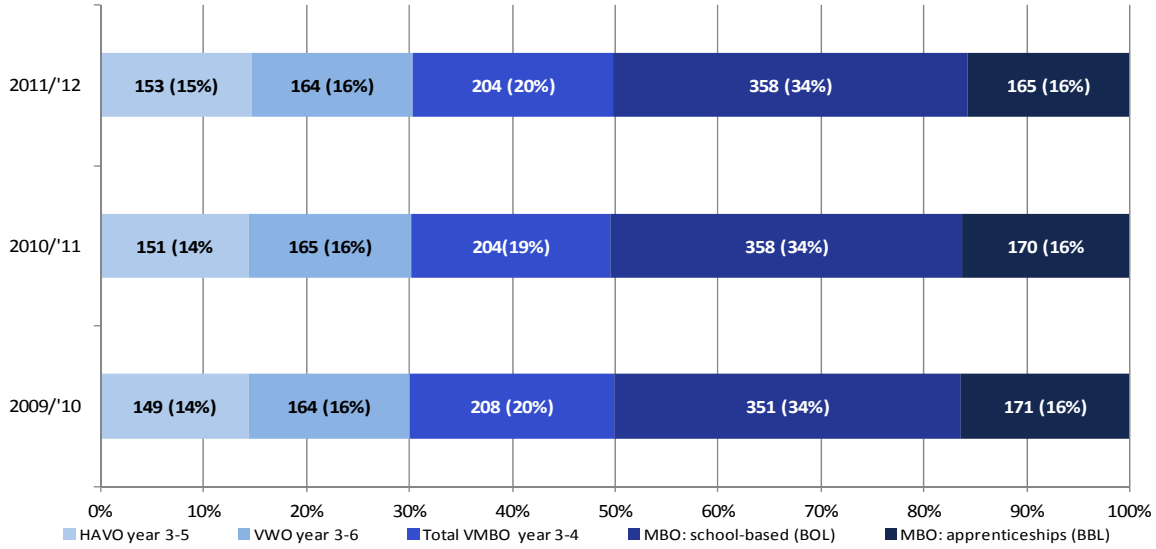
7.2 The Dutch apprenticeship system: general characteristics

The previous section supplied an overall summary of the Dutch education system and its distinct characteristics. In the following section, we examine the extent to which individuals in the Netherlands enter vocational education, with our specific focus of analysis being their participation in, features of, and public support for the Dutch Dual apprenticeship system.

7.2.1 Entry into vocational education

In order to gain an understanding of the extent to which Dutch students attend general and vocational education, Figure 34 displays the percentage of individuals participating in the different education pathways at upper-secondary education level, between the school years 2009/10 and 2011/12[104]. During each of the years considered, the majority of pupils at upper-secondary schooling level (69-70%) chose to participate in the vocational track, i.e. in either VMBO or MBO, compared to only 30-31% attending general schooling in either HAVO (years 3-5) or VWO (years 3-6).

Figure 34: Participation in different paths of upper secondary education in the Netherlands



Note: BOL total refers to both part-time and full-time participants. Numbers for school year 2011/12 constitute preliminary estimates. Due to data availability, the numbers provided for participation in the two pathways of MBO (i.e. the *beroepsopleidende leerweg* and the *beroepsbegeleidende leerweg*) also include training at Level 4b (specialist training), which imparts vocational education at post-secondary level. However, note that Level 4b merely accounts for a small share of all participants in MBO, with only 1.02% of individuals in MBO participating in Level 4b of BBL in 2012/13, and 0.01% enrolled in the same level of BOL.

Source: London Economics' analysis of Centraal Bureau voor de Statistiek (2013a) and Centraal Buraeu voor de Statistiek (2013b)

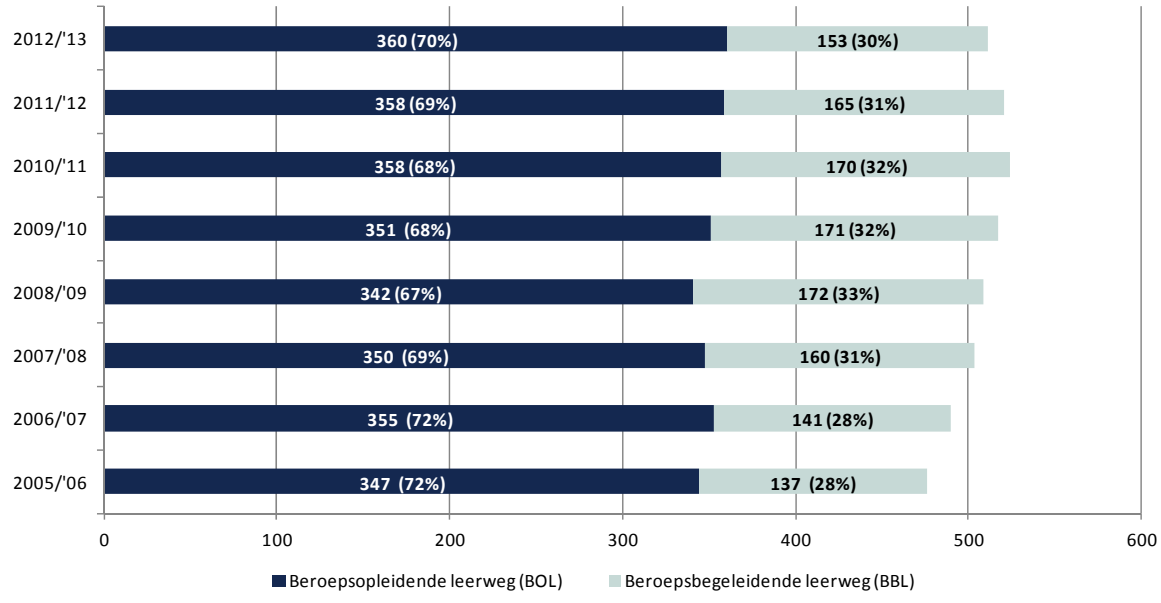
The figure further shows that this dominance of the vocational track compared to general education remained constant throughout the three recent school years depicted. Considering individual paths within the vocational track, whereas between 19 and 20% of participants in upper

[104] Note that the information presented here differs from the corresponding participation figures for countries such as Germany and Austria. In these countries, we were able to present the differential participation rates of a given cohort at different points in time (i.e. at different ages or school grades), thus capturing the extent to which youths in the cohort at hand choose between educational paths offered to them in the course of their transition through the education system. To our knowledge, recent information of this kind is not available for the Netherlands. In contrast, Figure 58 presents a snapshot of overall participation in different paths of upper secondary level schooling programmes at a given point in time, using participation rates in the third year and beyond of HAVO, VWO, and VMBO as well as attendance of MBO to capture the Dutch upper secondary level of schooling. In spite of its caveat, the figure is indicative of individuals' tendency to attend different types of vocational and general education programmes at Dutch upper secondary level.

secondary education participated in the two upper years of preparatory vocational education at VMBO, 34% and 16% attended the predominantly school-based *beroepsopleidende leerweg* and apprenticeships in the Dual system of the *beroepsbegeleidende leerweg*, respectively.

The relative popularity of school-based upper secondary vocational education in comparison to apprenticeships is of particular interest to our analysis. In this respect, Figure 35 examines the differential tendency of individuals to participate in these two distinct paths of MBO over time. Overall, the figure exhibits a noticeable degree of fluctuation in the total number of individuals participating in MBO over the years depicted. Specifically, while attendance increased from 484,000 in the school year 2005/2006 to 528,000 in 2010/2011, participation declined to 513,000 in the most recent school year. Further, (unlike Germany, Austria and Switzerland) the analysis confirms the dominance of school-based vocational training as the more popular choice among students in the Netherlands. Looking at changes over time, apprenticeship participation rates mirror the overall MBO attendance, with its relative prevalence slightly increasing between 2005/2006 and 2008/2009, and decreasing thereafter. In contrast, school-based vocational training within MBO has recently regained popularity, with 67% of MBO students attending BOL in 2008/2009 to 70% in 2012/2013.

Figure 35: Number of individuals participating in MBO, by learning pathway in the Netherlands



Note: Graph includes only participants in MBO levels 1-4a, (i.e. vocational education in MBO at the secondary education level), and excludes the post-secondary Level 4b of the MBO programme (note that Level 4b accounts for only a small share of all participants in MBO, with 1.02% of individuals in MBO participating in Level 4b of BBL in 2012/13, and 0.01% enrolled in the same level of BOL). BOL includes full-time and part-time programmes. Numbers for 2011/2012 and 2012/2013 constitute preliminary estimates.

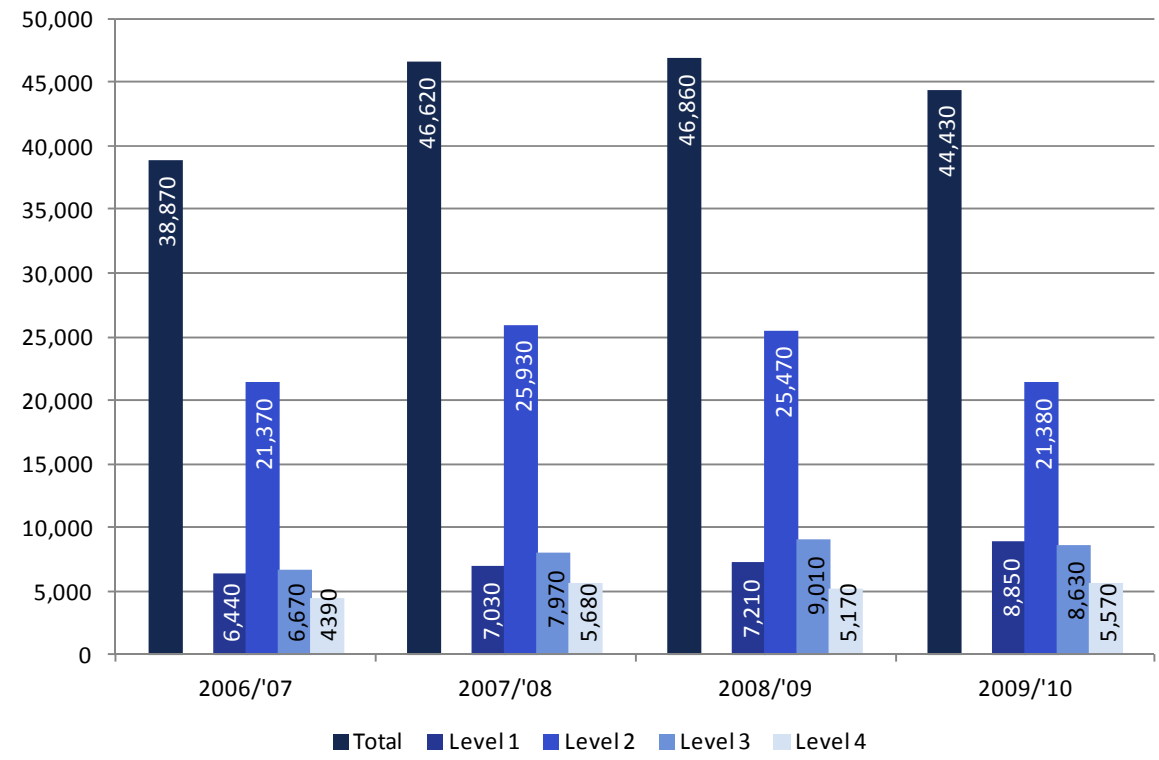
Source: London Economics' analysis of Centraal Bureau voor de Statistiek (2013b)

7.2.2 Entry into apprenticeships

Having considered the *relative* popularity of apprenticeships in the Netherlands compared to the school-based pathway, Figure 36 focuses on their *absolute* prevalence in terms of the number of first-time entrants into the apprenticeship system by year, by level and in total. Similar to the

overall evolution of the number of apprentices presented above, apprenticeship entry peaked (at 46,860) in 2008/2009, and declined (to 44,430) in 2009/2010. Distinguishing across the four different levels of apprenticeships, Level 2 (basic vocational training) constitutes by far the most prominent apprenticeship programme[105]. In particular, whereas between 44-52% of new apprentices participate in programmes at Level 1, 3 or 4, Level 2 independently accounts for the remaining 48-56% of entrants into the apprenticeship system. However, in line with overall apprenticeship entry, the number of new apprentices at Level 2 has been declining in recent years.

Figure 36: New entrants into the apprenticeship system (BBL) in the Netherlands



Note: Latest data are available for 2009/2010. Due to data availability, the totals for Level 4 include both secondary Level 4a (middle-management training) as well as post-secondary Level 4b (specialist training); however, as noted before, specialist training constitutes a relatively less popular programme, with only small numbers of individuals participating in dual training of this kind. ***Source: London Economics' analysis of Centraal Bureau voor de Statistiek (2013c).***

In addition to the distinction of apprenticeship entry by programme level chosen, it is interesting to consider the age of new apprentices entering the system. Only individuals aged 16 or older are eligible to undertake an apprenticeship within the Dual system in the Netherlands. As outlined in an analysis by ReferNet (2012), participants in Dutch upper-secondary vocational education spread across a comparatively wide age range, with both youths and adults choosing to acquire a vocational qualification within the MBO programme.

[105] Please see below for further details on the organisation and structure of these different apprenticeship levels / programmes.

Figure 29 provides a categorisation of new entrants into the Dutch apprenticeship system (for the school year 2009/2010[106]) by different age groups. The data presented in the table provide evidence of considerable variation in the age of first-time entrants into the Dutch apprenticeship system. While 48% of new apprentices are 30 or younger, a total share of 52% of entrants are older than 30, with between 8% and 12% of individuals belonging to any of the age categories over 30[107]. The findings support the "emancipatory function" of upper-secondary vocational education in the Netherlands (ReferNet, 2012, p. 16) - i.e. providing individuals across the age spectrum with the opportunity to achieve a vocational qualification.

Table 30: Entry into the Dutch apprenticeship system (BBL) by age group, 2009/10

	<20	20-25	25-30	30-35	35-40	40-45	45-50	50+
Number	14,230	3,110	3,930	3,610	4,290	4,930	4,980	5,360
%	32%	7%	9%	8%	10%	11%	11%	12%

Note: 2009/10 constitutes last year for which the required data is available. The totals for Level 4 again include both secondary Level 4a (middle-management training) as well as post-secondary Level 4b (specialist training); however, as noted before, specialist training constitutes a relatively less popular programme, with only small numbers of individuals participating in dual training of this kind.

Source: London Economics' analysis of Centraal Bureau voor de Statistiek (2013d).

7.2.3 Organisation and structure of Dutch apprenticeships

The structure of the Dutch Dual system offers its participants the opportunity to choose from a number of different industries to train, as well as a variety of qualifications and diplomas to acquire. Apprenticeships are categorised according to four main sectors, including Agriculture, Technology, Economics, and Health and social care, and allows apprentices to focus on one or any combination of these throughout their training duration. Across all of these sectors and combinations, Dutch apprenticeship arrangements comprise a total of 237 competence-based qualifications covering 612 exit diplomas (ReferNet, 2012). Note that these qualifications are the same for individuals who acquire vocational education in the context of MBO's school-based pathways.

In line with the variety of other Dual apprenticeship systems considered, learning in Dutch apprenticeships takes place in two locations, with students typically attending formal school-based lessons for 1-2 days per week and practical on-the-job training for 3-4 days a week, respectively. The school-based component of apprenticeship programmes[108] is offered by three types of institutions, depending on the particular industry or sector of focus. The multi-sectoral **regionaal opleidingscentrum** (ROC), of which there currently exist 43 in the Netherlands, provides the required general and vocational schooling to apprentices in the Health and social care, Economics, and Technology sectors. In addition, 12 **agrarische opleidingscentra** (AOCs, for the Agricultural sector) and 12 specialised **vakscholen** provide the school-based component of apprenticeship

[106] As stated above, to our best knowledge, more recent data on apprenticeship entry is unavailable at the time of writing. Further, note that the total number of entrants in Table 63 amounts to 44,440, while the distinction by level in Figure 60 displays a total of 44,440 entrants for the year 2009/2010, and the data sources do not provide an explanation for this small discrepancy in numbers.

[107] Again, it should be noted that due to data availability, the table includes individuals participating in the post-secondary programme Level 4b; however, as noted before, only about 1% of apprenticeship participants were attending dual vocational training at this level in 2012/2013.

[108] Note that students participating in the *beroepsopleidende leerweg* of MBO attend the same institutions to acquire their predominantly school-based vocational education.

training to apprentices within other specific industry branches or trades. In contrast, the on-the-job learning component of apprenticeship training is completed within specifically qualified training firms, or in the context of training alliances, which are groups of companies unable to independently provide their apprentices with the training required for a given qualification. (European Commission, 2012).

In Table 31, we briefly outlined the different levels at which participants in both pathways of MBO can acquire their upper secondary vocational education. Table 31 provides a detailed description of the duration, entry requirements, content, leaving certificates, and progression options for apprenticeships at each of these MBO levels (all of which are equivalent for apprentices and participants in the school-based pathway).

Table 31: Features of levels of Dutch upper secondary vocational education (MBO)

	Level 1	Level 2	Level 3	Level 4 (a)
	Assistant training	Basic vocational training	Professional training	Middle-management training
Duration	6-12 months	2-3 years	3-4 years (2 if completed MBO L2)	3-4 years
Minimum entry requirements	None	Successful completion of basic vocational programme of VMBO or MBO 1 diploma	Any VMBO diploma or proof of successful completion of year 1-3 of HAVO or VWO	Any VMBO diploma or proof of successful completion of year 1-3 of HAVO or VWO
Course content	Assistant training is targeted at young individuals who might find themselves unable to attain a minimum basic qualification at MBO Level 2.	Preparation for largely independent implementation of tasks	Preparation for completely independent implementation of tasks	Preparation for independent implementation of high-responsibility and specialised tasks
Qualification certificate	MBO 1 diploma	MBO 2 diploma	MBO 3 diploma	MBO 4 diploma
Progression options	Progression to MBO level 2; progression into the labour market for individuals aged 18 or older	Progression into the labour market; under certain conditions, transfer into MBO 3 or MBO 4	Progression into the labour market; middle-management training (MBO 4a) specialist training (MBO 4b);	Progression into the labour market; specialist training (MBO 4b); university of applied science

Note: As described above, MBO Level 4b constitutes a post-secondary programme of vocational education, so it has been excluded from the table. Shading indicates the relative duration and difficulty of each level.
Source: London Economics' analysis of ReferNet Netherlands (2012).

Table 31 demonstrates a noticeable variation in the duration of apprenticeships at the different levels, with particular discrepancies between the short Level 1 Assistant training apprenticeships lasting 6-12 months, and considerably longer programme durations for the higher levels. Similarly, the stringency of programme access requirements and the difficulty of the course content increase from lower to higher levels. These differences reflect that, and as mentioned above, the successful completion of an apprenticeship at Level 1 is not legally recognised as a basic qualification (i.e. it does not cover the 'qualification duty'). As a result, youths who finish Assistant-level apprenticeship training at an age younger than 18 are required to acquire additional education (e.g. by entering a basic vocational training apprenticeship at Level 2).

Finally, in addition to the public funding and efforts invested into the Dutch apprenticeship system and apprentice wages (which are a significant component of private funding by training firms), apprentices themselves might have to incur certain expenses to be able to participate in the Dual system. Specifically, individuals who enter an apprenticeship programme at age 18 or higher are obliged to pay a **variable course fee**, subject to the level of study. In the current school year, the course fee for individuals participating in Level 1 or Level 2 apprenticeships is set at **€226 (£181)**; in comparison, attendants of Level 3 or 4 programmes pay **€549 (£440)**. Payment of these course fees qualifies the individual for attendance of the above-described vocational education institutions and for entrance into the necessary exams required for successful programme completion (*Jongeren Organisatie Beroepsonderwijs*, undated)

7.3 Funding of apprenticeships in the Netherlands

The apprenticeship system[109] prevalent in the Netherlands is governed and structured at three organisational levels. First, at the national level, the *Ministerie van Onderwijs, Cultuur en Wetenschap* (Ministry of Education, Culture and Science) and the *Ministerie van Economische Zaken* (Ministry of Economic Affairs) are responsible for regulating and legislating vocational education and training, using the General Adult Education and Vocational Education Act as their main legislative instrument. Secondly, at sectoral level, compared to arrangements in other countries, the social partners (trade unions and employers) assume a particularly important role in shaping the Dual apprenticeship system. In a collaborative effort, these partners determine and validate the profiles of occupations within which individuals can train as apprentices. Furthermore, representatives of trade unions and employers have assembled into 17 branch-specific *Knowledge Centres for VET - Trade and Industry*, which develop and maintain vocational qualification profiles, describing key tasks, processes and competencies for nationally recognised occupations and apprenticeship programmes. Thirdly, the above-described vocational education institutions (i.e. trade schools, AOCs and ROCs) are granted considerable autonomy to adapt their teaching to regional skills needs. In co-operation with training firms, and based on the qualification profiles developed by the industry representatives, these training providers design their teaching curricula, reflecting each institutions' objectives, course content, organisation and evaluation structure. (ReferNet, 2012)

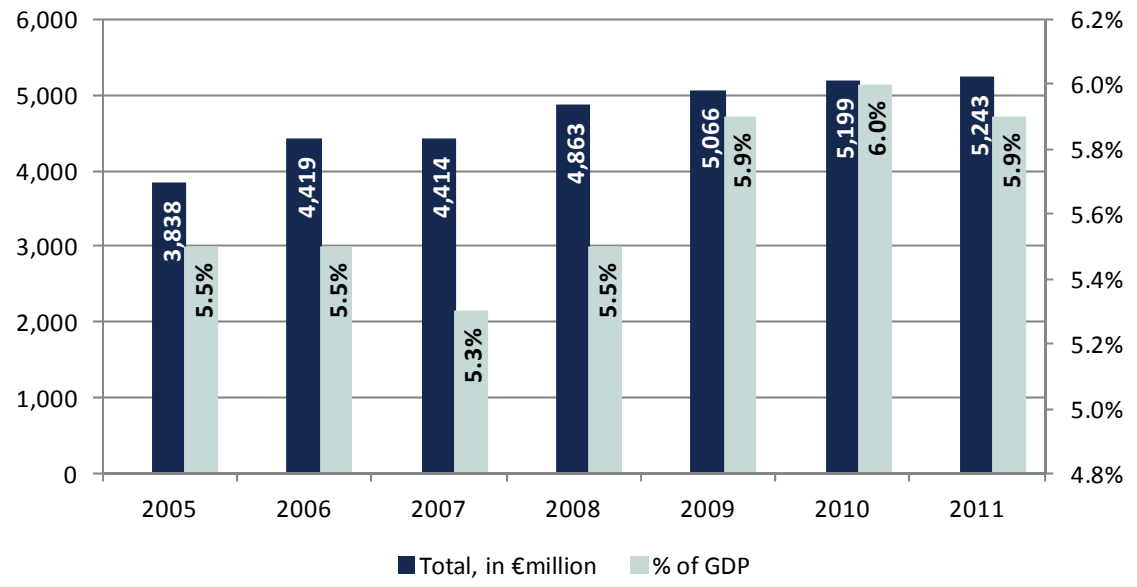
In addition to its legislative function, the Dutch national government also carries key responsibility over the financing of the dual apprenticeship system, focusing on two types of expenditure. First, the costs of the school-based education component of apprenticeship training constitute the primary financial obligation of the Dutch government. This is administered by an agency of the Ministerie van Onderwijs, Cultuur en Wetenschap (Ministry of Education, Culture and Science) that directly finances the vocational schooling institutions. The government provides lump-sum grant funding to these schools, the size of each grant depending on the number of students per course and learning path, as well as the number of leaving certificates awarded per institution (ReferNet, 2012). Secondly, whereas training firms are responsible for paying the costs of the on-the-job training component of their apprentices, the Dutch government grants financial support to training companies in the form of tax incentives. Specifically, firms participating in the Dual

[109] In this respect, and as before, both pathways of MBO are organised within the same administrative structures and are financed with the same means.

apprenticeship system are eligible to receive an enterprise tax facility of **€2,500 (£2,003)** per filled apprenticeship placement (ReferNet, 2012, Trampusch, 2010).

Figure 37 displays the total level of public funding for MBO and adult professional education over time, both in absolute terms and as a percentage of gross domestic product (GDP)[110]. The figure shows an almost steady increase in the level of government spending on this type of education in recent years, from €3.8 billion **(£3.05bn)** in 2005 to €5.2 billion in 2011 **(£4.17bn)**. In 2011, public funding levels amounted to a total of 5.9% of Gross Domestic Product (note that this includes adult training **and** school based vocational training).

Figure 37: Total public funding for MBO and adult vocational education in the Netherlands



Note: Numbers include the value of public funding provided by the national government, provinces and municipalities. Funding captures public expenditures on vocational education institutions as well as student loans and grants which are granted to individuals who participate in the school-based BOL programme and who are at least 18 years old. Values relating to 2011 constitute preliminary estimates.

Source: London Economics' analysis of Centraal Bureau voor de Statistiek (2013e).

7.4 Apprentice pay in the Netherlands

The determination of apprentice pay in the Netherlands is exceptionally complex, and varied, and therefore a great deal of care should be exercised when interpreting the findings.

In addition to the social partners' influence over the design and structure of the Dual apprenticeship system, sectoral representatives play a key role in the determination of

[110] As emphasised above, the two learning pathways offered within the MBO programme are closely related, and participants in the school-based *beroepsopleidende leerweg* as well as apprentices attend identical vocational schools for the theoretical learning component of their training. As a result, the public funding granted to the two learning pathways are hard to distinguish, so that government expenditure is commonly presented for the entire MBO programme (including post-secondary vocational education), rather than separately for each learning pathway. Further, due to statistical aggregation, public funding for adult vocational education is typically included in these numbers.

apprenticeship wages, following a traditionally self-regulatory approach (Trampusch et al., 2010). Whereas in principle, the Dutch system predicates no legal requirement of training firms to compensate apprentices for their productive efforts, apprentice salaries are typically settled in the context of **collective labour agreements**. In line with other countries (e.g. Germany, Austria, Australia and Italy), collective bargaining takes place at the industry level between trade unions and employers' organisations; however, negotiations at the company level are of similar importance, with a variety of companies entering separate collective agreements.

As a result, **apprentice wages are set within a considerable number of collective bargaining contracts operating within the Netherlands, depending on the particular economic sector, occupation, and company**. Apprentice wages determined within these contracts may not be lower than legal minimum wages for youths and adults, and, once determined, constitute the minimum wage paid to apprentices whose training firms' are bound (i.e. which are members of the respective employers' association). Additionally, collective bargaining agreements can be declared generally binding, thus extending the tariff commitment to all firms within the industry in question (as in France). In total, about 80% of all employees in the Netherlands are covered by a collective labour agreement (Federatie Nederlandse Vakbeweging, 2013).

As discussed, the prevalence of collective bargaining at the sectoral as well as at company level is reflected in a massive number of collective labour contracts operating in the Netherlands[111]. Similar to the methodological approach used in the analysis of other countries, in order to inform an understanding of the level of wages paid to training apprentices in the Netherlands, the analysis considers the **construction sector** as a 'representative' industry for apprenticeship training. To provide an indication of the level of apprenticeship wages within this industry, we present earnings determined by a collective bargaining agreement concluded between organisations of the two biggest Dutch trade unions (the FNV Bouw and the CNV Vakmensen) and 16 employers' associations.

Gross hourly apprentice wages in the construction sector predicated by this collective labour agreement are displayed in Table 32. In contrast to a variety of other countries in which the structure of apprenticeship pay is based on the level and *training year* of the respective vocational programme, wages in the collective labour agreement under consideration instead increase with the level and *age* of each individual apprentice. Wages between the ages of 16 to 21 thus increase with each year at each programme Levels (1, 2[112] and 3), and are highest for Level 3 apprentices at each age. In contrast, as an exception to this rule, wages for Level 4 apprentices are not classified according to age. Instead, independent of their age, Level 4 apprentices are paid according to the particular function which they hold within the training firm, where each function is categorised into one of five groups[113], and salaries increase between groups. Wages of Level 1, 2, and 3 apprentices who are older than 22 similarly depend on this functional classification. As a result of this specific structure, Dutch apprenticeship wages in the construction sector range from €4.88 per

[111] To provide an indication of the approximate size of this number, consider the number of collective bargaining agreements concluded by the two biggest Dutch trade unions: the Federatie Nederlandse Vakbeweging (FNV) is involved in more than 900 collective labour contracts, and the Christelijk Nationaal Vakverbond, whose sub-organisation representing industry sectors negotiates more than 600 of such contracts (Federatie Nationale Vakbeweging, 2013; Christelijk Nationaal Vakverbond Vakmensen, 2013).
[112] Note that during the first 26 weeks of their training, Level 2 apprentice wages differ from the values presented in Table 65; however, the discrepancies are small in size (with a maximum difference of €0.01) and only apply to some of the given age categories.
[113] For a detailed categorisation of each function into these groups, please refer to Federatie Nederlandse Vakbeweging Bouw en Infra (2013).

hour for 16-year old Level 1 apprentices **(£3.91)** to €15.38 **(£12.33)** for individuals aged above 21 performing tasks within function E (independent of the apprenticeship level).

Table 32: Gross hourly apprenticeship pay in the construction sector in the Netherlands

Age	Level 1	Level 2	Level 3	Level 4
16	€4.96	€5.25	-	No distinction by age, only by functions (see below)
17	€5.58	€5.90	€7.93	
18	€6.82	€7.22	€9.38	
19	€8.06	€8.53	€10.82	
20	€9.30	€9.84	€12.62	
21	€10.85	€11.48	€14.43	
22 and older and Level 4: by functional group				
A	€12.40			
B	€13.12			
C	€13.94			
D	€14.91			
E	€15.65			

Note: Values are based on the most recent version of the collective bargaining contract for the construction sector as amended on 1 July 2013. Numbers do not include specific collective agreement payment terms for some particular occupations such as foremen or instructors. Note that wages presented for Level 2 and Level 3 apprentices younger than 22 reflect recent changes to the collective contract, based on which individuals who entered these apprenticeship programmes after 1 August 2012 do not, as previously, receive wages for 40 weekly work hours. Instead, according to the amended contract, young apprentices at these Levels are only paid for 32 hours per week, thus excluding the day spent in theoretical lessons at school for these apprentices from the wage they receive.
Source: London Economics' analysis of Federatie Nederlandse Vakbeweging Bouw & Infra (2013).

7.4.1 Apprentice pay as a proportion of the fully qualified rate

The collective labour contract presented in the previous section also includes settlements regarding the gross hourly earnings of workers who successfully completed apprenticeship, and these settlements follow the same structure as apprenticeship earnings. In order to provide a comparison of apprentice wages in construction relative to what they will earn in this sector upon their entrance into the labour market, Table 33 presents **apprenticeship earnings as a percentage of fully qualified wage rates in the construction industry**.

As the table demonstrates, for youths aged between 16 and 21, the collective labour agreement predicates the same wage for apprentices and fully qualified workers who finished apprenticeship Level 1. In contrast, for Levels 2 and 3, apprentice earnings converge to the fully qualified rate with increasing age, with participants in Level 2 programmes earning **78%** of the fully qualified rate at age 17, compared to 83% at age 21. As with absolute levels, apprentice wages relative to qualified wages are larger for Level 3 than for Level 2 apprentices at every age below 22. While Level 3 apprentices at 18 earn **87%** of the fully qualified rate, they receive **100%** of the fully qualified rate by the age of 21. Finally, all apprentices who are 22 or older are entitled to the same earnings as workers who successfully completed an apprenticeship programme in the construction sector, independent of the level, function and age.

Table 33: Gross hourly Dutch apprenticeship pay in the construction sector				
Age (function)	**Level 1**	**Level 2**	**Level 3**	**Level 4**
16	100%	-	-	No distinction by age, only by functions
17	100%	78%	-	
18	100%	80%	87%	
19	100%	82%	86%	
20	100%	81%	87%	
21	100%	83%	100%	
22 and older: by functional group				
A	100%			
B	100%			
C	100%			
D	100%			
E	100%			

Note: Apprentice wages and fully qualified wage rates in the construction sector were extracted from the same overall collective labour agreement for the Dutch construction industry. Note that the fully qualified wage rate only includes construction site employees, and does not take account of earnings received by administrative workers employed within the sector.

Source: London Economics' analysis of Federatie Nederlandse Vakbeweging Bouw & Infra (2013).

To understand the extent to which the construction sector is representative of the economy as a whole, Table 34 displays the above-presented **apprentice wages in the construction sector as a percentage of the overall fully qualified wage rate of workers across all sectors**. In this respect, the overall fully qualified wage is defined as average gross hourly earnings[114] of workers whose highest level of education is categorised as 'middelbaar' (i.e. who completed either general secondary education at the upper levels of HAVO or VWO, or an MBO programme at Levels 2, 3 or 4). Apprentice wages are lower relative to this overall fully qualified wage than relative to earnings of workers in the construction sector only. As before, values are lowest for Level 1 apprentices, who earn **26%** of the full wage rate at age 16 increasing to **57%** at age 21. For Level 2 and 3 apprentices, values increase between **31%** and **60%** and **42%** and **76%** between the ages of 17 and 21. From age 22 and onwards, apprentices (and fully qualified workers) in construction earn between **65%** and **82%** of the overall fully qualified wage, depending on the particular function which they fulfil within the training firm.

[114] Wages are defined as personal primary income (i.e. from employment or self-employment) for individuals within the working population, aged between 15 and 65 years.

Table 34: Gross hourly Dutch apprenticeship pay in the construction sector relative to fully qualified wage

Age (function)	Level 1	Level 2	Level 3	Level 4
16	26%	28%	-	No distinction by age, only by functions
17	29%	31%	42%	
18	36%	38%	49%	
19	42%	45%	57%	
20	49%	52%	66%	
21	57%	60%	76%	
22 and older: by functional group				
A	65%			
B	69%			
C	73%			
D	78%			
E	82%			

Note: The data source supplied the fully qualified wage as gross yearly earnings, which we divided by a total of 2050 yearly work hours (based on 52.14 weeks per year and 39.3 average weekly work hours, including over time, for individuals working more than 35 hours a week). Further, values were provided for the year 2011 (preliminary estimates), which we adjusted for inflation to arrive at 2013 values.

Source: London Economics' analysis of Federatie Nederlandse Vakbewegin Bouw & Infra (2013), Centraal Bureau voor de Statistiek (2013f), Centraal Bureau voor de Statistiek (2013g) and Centraal Bureau voor de Statistiek (2013h).

7.4.2 Apprentice pay as a proportion of the minimum wage

Table 35 compares apprenticeship wages in the construction sector to Dutch national minimum wages. The government of the Netherlands imposes a legally binding national minimum wage for all adult employees between the ages 23-64, and separate minimum wages for each age category between 15 and 22 for young participants in the labour force (amounting to between 30% and 85% of the adult national minimum wage).

Table 35: Dutch apprenticeship wages in the construction sector as a percentage of hourly minimum wage

Age (function)	Level 1	Level 2	Level 3	Level 4
16	169%	179%	-	No distinction by age, only by functions
17	166%	175%	235%	
18	176%	186%	242%	
19	180%	190%	242%	
20	177%	188%	241%	
21	176%	186%	233%	
22 and older: by functional group				
A	171%			
B	181%			
C	192%			
D	206%			
E	216%			

Note: the data source for minimum wages provides these hourly pay levels for individuals working 36, 38 and 40 hours. For the purpose of our analysis, the above percentages are based on minimum wages for a work week of 40 hours. Since hourly minimum wages decrease with the total number of work hours, these constitute the lowest national minimum earnings for each age category. ***Source: London Economics' analysis of Federatie Nederlands Vakbeweging Bouw & Infra (2013) and Rijksoverheid (2013).***

Table 35 divides apprentice pay in the construction sector by the respective gross hourly legal minimum wage for each age level. As can be observed from the estimates, apprentices in construction earn noticeably more than the predicated minimum wage level, independent of their age and training level, with apprentice wages amounting to between **169%** and **216%** of the age dependent minimum wage. Interestingly, whereas for Level 1, 2 and 3 apprentices, wages as a percentage of the minimum wage increase from ages 16 to 19, these percentages decrease between the ages of 19 and 21 (i.e. age dependent minimum wages increase at a faster rate than apprentice wages between these ages). From age 22, apprentices at each level receive between **171-216%** of the national minimum wage.

Finally, in Table 36 given the fact that the full adult (23-64 year old) minimum wage stands at **€8.53**[115] per hour **(£7.29)**, we also provide apprentice pay as a proportion of the full adult national minimum wage. The analysis demonstrates that an apprentice undertaking a Level 2 apprenticeship at the age of 17 receives **69%** of the full adult national minimum wage, while a Level 2 apprentice aged 19 would earn **100%** of the full adult national minimum wage.

Table 36: Dutch apprenticeship wages in construction as percentage of adult national minimum wage

Age (function)	Level 1	Level 2	Level 3	Level 4
16	58%	62%	-	
17	65%	69%	93%	
18	80%	85%	110%	
19	94%	100%	127%	
20	109%	115%	148%	
21	127%	135%	169%	
22 and older: by functional group				
A	145%			
B	154%			
C	163%			
D	175%			
E	183%			

Note: the data source for minimum wages provides these hourly pay levels for individuals working 36, 38 and 40 hours. For the purpose of our analysis, the above percentages are based on the adult minimum wage for a work week of 40 hours. Since hourly minimum wages decrease with the total number of work hours, this constitutes the lowest national minimum level of pay. ***Source: London Economics' analysis of Federatie Nederlands Vakbeweging Bouw & Infra (2013) and Rijksoverheid (2013).***

[115] http://www.rijksoverheid.nl/onderwerpen/minimumloon/vraag-en-antwoord/hoe-hoog-is-het-minimumloon.html

8 Apprenticeships and apprentice pay in France

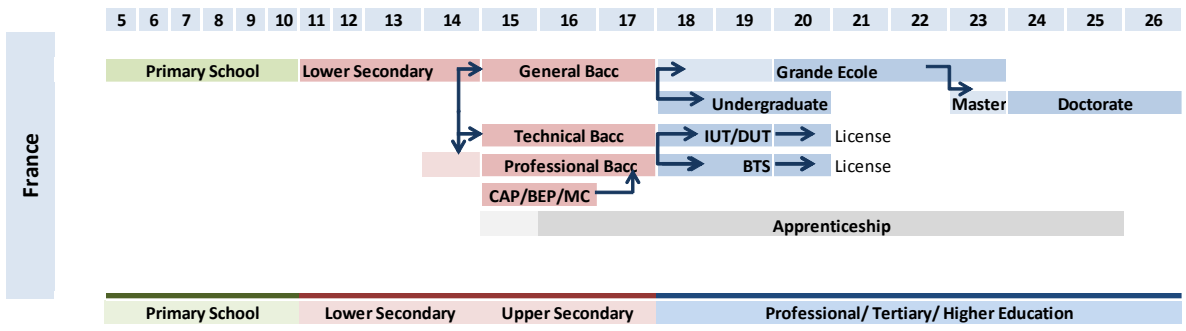
8.1 Overview of the educational system in France

Turning to French the predominantly speaking countries in the analysis, at the end of the lower-secondary education (age 16), students can choose to enter two different types of upper-secondary school. The first is "*General and Technological*" upper-secondary education (*'lycée général et technologique'*), which leads to either a general Baccalaureate or a Technological Baccalaureate. The former focuses on traditional academic and theoretical subjects (history, philosophy, physics, mathematics, chemistry and literature etc), while the latter includes more practical topics such as accountancy, human resources management or graphic design depending on the speciality chosen by the student.

A General Baccalaureate can lead to any higher education course. A Technological Baccalaureate is designed to prepare students for a technological 2-year university course: the '**Brevet de Technicien Supérieur (BTS)**' or the '**Diplome Universitaire de Technologie (DUT)**' – both can be followed by a year-long course called the **Professional Licence** that gives a further vocational specialisation.

Alternatively, students can enter a 'professional' upper-secondary education institution (*'lycée professionel'*) that provides vocational training (in the traditional trades such as plumbing, carpentry etc). In this type of educational establishment, students can acquire a **Professional Baccalaureate ('Bac-Pro')** over three years, which would provide a comprehensive grounding to become a qualified worker in the associated field. The Professional Baccalaureate is designed to prepare people for the labour market (but it can also lead to further study and the acquisition of a BTS).

Figure 38: Overview of Educational System in France



Source: London Economics

Below the qualification level of a Bac-Pro, students can complete a 2-year qualification that provides training for a particular job (in those same trades, but would also include sectors such as hairdressing, social care, nursery and childcare etc). There are two of these intermediate

qualifications: the '**Brevet d'Etudes Professionelles' (BEP)**[116] which acts as evaluation stage towards the full Bac-Pro; and the '**Certificat d'Aptitude Professionnelle (CAP)**', which is potentially more 'stand-alone', such that students can enter the labour market directly upon completion or undertake another year of study to prepare a Bac-Pro. A significantly higher proportion of apprentices undertake and complete the CAP compared to the BEP, with only a very small proportion undertaking the **Mention Complémentaire** (which is a further specialist qualification undertaken after the CAP (i.e. vehicle maintenance of HGVs as opposed to mainstream automotive sector)).

Table 37 below summarises the different levels of qualification that can be achieved in a vocational training institution. The French classification starts at Level 5 for the lowest qualification level with a qualification at Level 1 corresponding to the highest qualification level.

Table 37: Levels of vocational qualification in France

	Level 5	Level 4	Level 3	Level 2 and 1
French system	Brevet d'Etudes Professionelles (BEP) 'Certificat d'Aptitude Professionnelle (CAP)	Professional Baccalaureate (Bac-Pro) Brevet Professionel (BP)	Brevet de Technicien Supérieur (BTS) Diplome Universitaire de Technologie (DUT)	Professional Licence
English 'equivalent'	5 GCSEs A*-C/ NVQ Level 2/ Intermediate Apprenticeship	GCE 'A' Levels/ NVQ Level 3/ Advanced Apprenticeship	Foundation Degree NVQ Level 4/ Higher Apprenticeship	

Source: London Economics

8.2 The French apprenticeship system: general characteristics

8.2.1 How is the apprenticeship integrated into the education system in France?

In addition to these standard routes of educational attainment, students can undertake a Bac-Pro or a CAP within the apprenticeship structure. In these cases, part of the upper secondary level qualification is undertaken in a classroom setting (Qualification Centre for Apprentices ('**Centre de Formation d'Apprentis (CFA)**') and partly in the workplace. Note also that there is a significant degree of flexibility in terms of the level of qualification achievable within the apprenticeship framework. Higher education degrees can also be completed within the apprenticeship framework (including the BTS, DUT, and professional licences as well as traditional undergraduate degrees, masters degrees and Grandes Ecoles courses)[117].

[116] In addition to these qualifications, there is also the Brevet Professionel, which are aimed at validating specialised skills acquired through work or an apprenticeship. The primary characteristic of this qualification is that it is only delivered to people who are working.
[117] However, it is worth noting that not many undergraduate degrees offer the possibilities to complete the course in apprenticeship. At the masters level, the universities and Grandes Ecoles tend to give the option to complete the course in apprenticeship. However, most students prefer to adopt the traditional route.

8.2.2 Apprenticeships - the apprenticeship contract

In general, to engage in an apprenticeship contract in France, the individual in question must be aged between 16 and 25[118]. The apprenticeship contract is a short term contract (between the apprentice and an employer) that can last between 6 months and 3 years – with the actual duration of the apprenticeship determined by the length of the underpinning qualification the apprentice is undertaking (**generally 2 or 3 years**). The contract states that the apprentice must spend at least 400 hours per year in the CFA and has to complete 800 hours of classes for a CAP in two years and 1,850 hours of classes for a Bac-Pro in three years (so between 20% and 30% of time is spent in a classroom setting). Students must have a signed apprenticeship contract with an employer in order to start the classes in a CFA.

The contract foresees a weekly working time of **35** hours (though there is no prescribed pattern in relation to the hours spent in the firm or at the CFA). The 35 hours includes the time when the apprentice is at the CFA. The apprentice is paid both during the time on the job and while undertaking off the job training (although firms receive some taxation subsidies from the national government when employing apprentices). Apprentices under the age of 18 cannot work overtime. The apprentice's employment status (subject to a 2 month probationary period) provides the same rights as other employees in the company. This means that the apprentice receives 5 weeks of annual paid leave and the same access to social security (maternity leave, unemployment allocation, pension rights etc.). In addition, apprentices receive 5 days of study leave prior to the relevant examination.

8.2.3 What proportion of young people are apprentices?

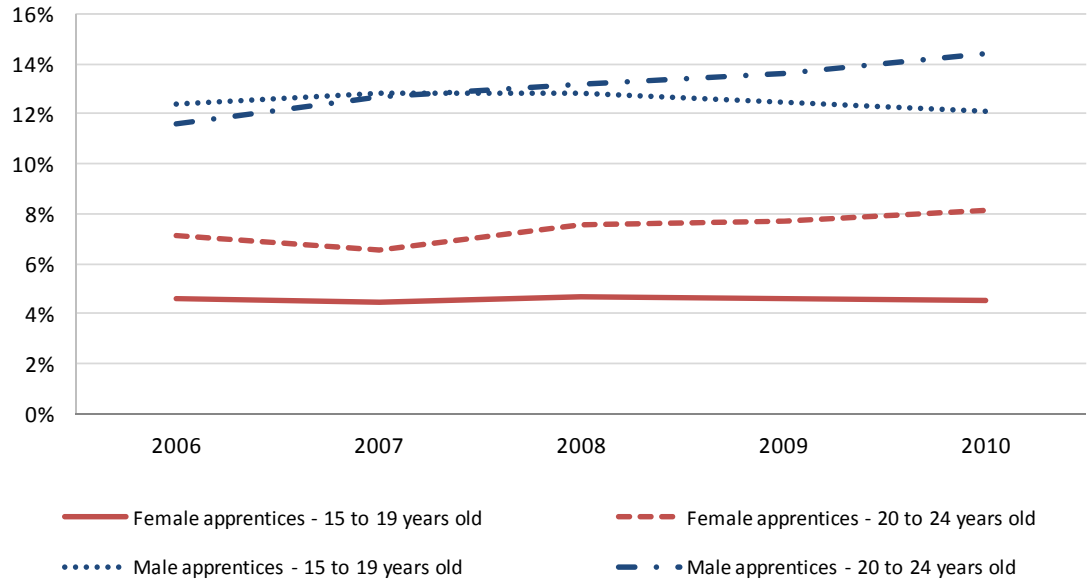
This section highlights some of the important characteristics of the apprenticeship take-up in France.

In general, approximately 55% of French students at upper secondary level enrol on the academic route of qualification attainment, with the remaining 45% engaged on the vocational route; however of this proportion, approximately 75% undertake their vocational training in a classroom setting with just 12% of the overall cohort engaged in predominantly workplace-based training (see Figure 8). This is substantially lower than countries such as Germany, Switzerland and Austria, although substantially higher than Belgium.

Figure 39 illustrates the proportion of young people undertaking apprenticeships compared to both the wider vocational and academic routes of qualification attainment. The analysis indicates that (unsurprisingly) apprenticeship seems to be more popular among men with up to 15% of the cohort of males aged 20-24 engaged in apprenticeships compared 8.5% of women aged 20-24.

[118] There are some exceptions. Some individuals over the age of 25 can sign an apprenticeship contract in case of disability or if they are starting a new business or planning to take over a company. Note also that some apprenticeships require medical examinations to certify the candidate's physical ability to complete the job.

Figure 39: Proportion of apprentices by age cohort and by gender I France, 2006-2010



Note: Figures are as a proportion of corresponding category in education.
Source: French Ministry of Education.

Apprenticeships sit within the wider vocational education and training system. Undertaking a vocational qualification does not necessarily imply becoming an apprentice. As presented in Table 38, only **12%** of the candidates undertaking a Bac-Pro are apprentices compared to 83.5% undertaking the qualification exclusively in a classroom setting. Although this classroom-based learning involves some technical training, the students do not work for a company. The BEP is not usually completed in apprenticeship (less than **5%** of these qualification aims being undertaken by apprentices). Elsewhere, a substantial proportion of students complete their CAP and MC as part of their apprenticeship (**37%** and **45%** respectively).

Table 38: Distribution of vocational training by type of learning route in France

	CAP	BEP – new style	BEP – old style	MC	BP	Bac-Pro
At school	37.0%	90.1%	87.7%	42.6%	0.0%	83.5%
Apprenticeships	**36.6%**	**3.4%**	**5.0%**	**44.6%**	**73.1%**	**12.0%**
Professional qualification	10.5%	1.1%	2.1%	10.9%	19.5%	3.1%
Others (1)	15.9%	5.4%	5.3%	1.9%	7.4%	1.4%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Total	222,948	190,250		12,300	24,948	243,390

Note: (1) individual candidates or people following distance education
Source: French Ministry of Education, French Ministry of Agriculture, French Ministry of Higher Education and Research – 'Direction de l'évaluation, de la prospective et de la performance', 2012 exam session

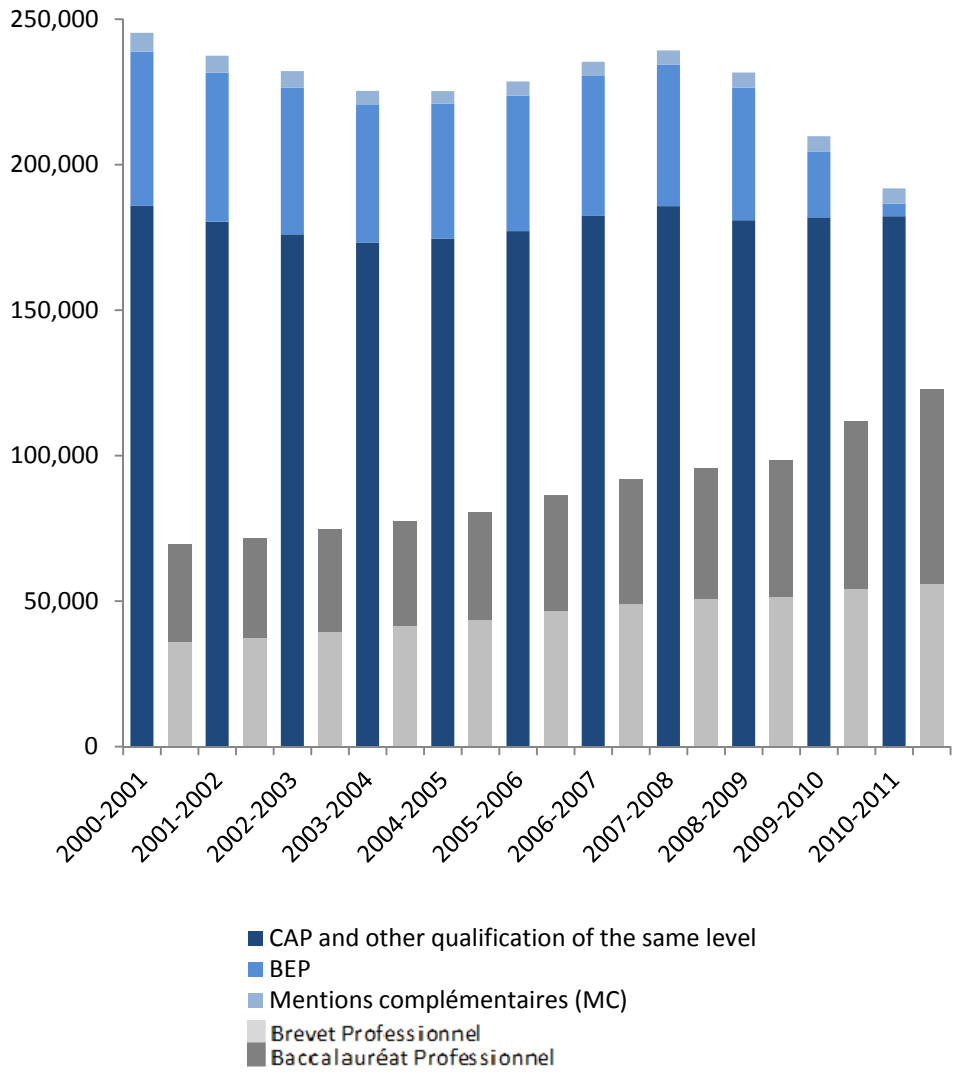
The BP (Brevet Professionel) stands out and deserves further comment. This qualification is exclusively delivered to candidates who are in work. As a result, most people would complete it in apprenticeship (**73%**) or as part of their job to meet some specific training requirement.

The analysis indicates that in total there are approximately 693,000 individuals undertaking some form of vocational training, with 141,000 engaged in apprenticeships. Of this 141,000, **58%** are undertaking a CAP; approximately **4%** are undertaking a BEP or a MC, while **21%** are undertaking a Bac-Pro and **13%** undertaking a BP.

8.2.4 What qualifications do apprentices undertake?

Figure 40 illustrates the number of apprentices enrolled in the different courses over time. The darker series represents the Level 5 qualifications and the lighter series illustrates Level 4 qualifications. The equivalency between qualifications and levels is presented in Table 37.

Figure 40: Apprentices by qualification level in France



Source: French ministry of Education from the survey sent to CFAs, school year 2010-2011

The analysis shows that the number of apprentices enrolled in a CAP has remained relatively stable over the past 10 years with around 180,000 students engaged in training at this level,

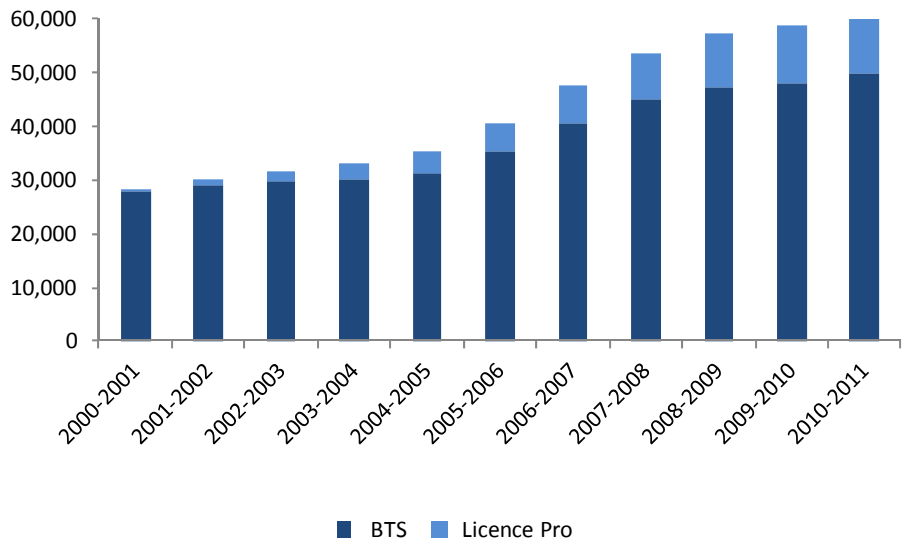
compared to approximately 5,000 apprentices preparing an MC each year. In contrast, enrolment levels on the BEP have dropped since 2009; however, this has been driven by a change in government policy – namely that the BEP is no longer an independent qualification, but rather an intermediary step towards the Bac-Pro. As such, those individuals that might have previously counted towards BEP programme would now be counted as entering the Bac-Pro programme.

The re-organisation of the BEP is not the only reason of the growing number of people involved in Bac-Pro, as the increase in those undertaking this qualification pre-dated recent reforms. In fact, the number of apprentices preparing a Bac-Pro doubled over the past 10 years increasing from 33,000 to 67,000. It is still low compared to the number of apprentices undertaking Level 5 qualifications, but these proportions seem to be slowly converging.

8.2.5 Progression into higher education

In addition to the positive shift in attainment at Level 4 (at the expense of Level 5 qualifications), the information presented in Figure 40 also indicates that as part of an apprenticeship, there is increasing demand for vocational qualifications at Level 3. Specifically, the numbers of apprentices undertaking vocational qualifications (the BTS and DUT) has increased from approximately 30,000 in 2000/01 to more than 60,000 in 2010/11.

Figure 41: Number of apprentices enrolled in higher education in France



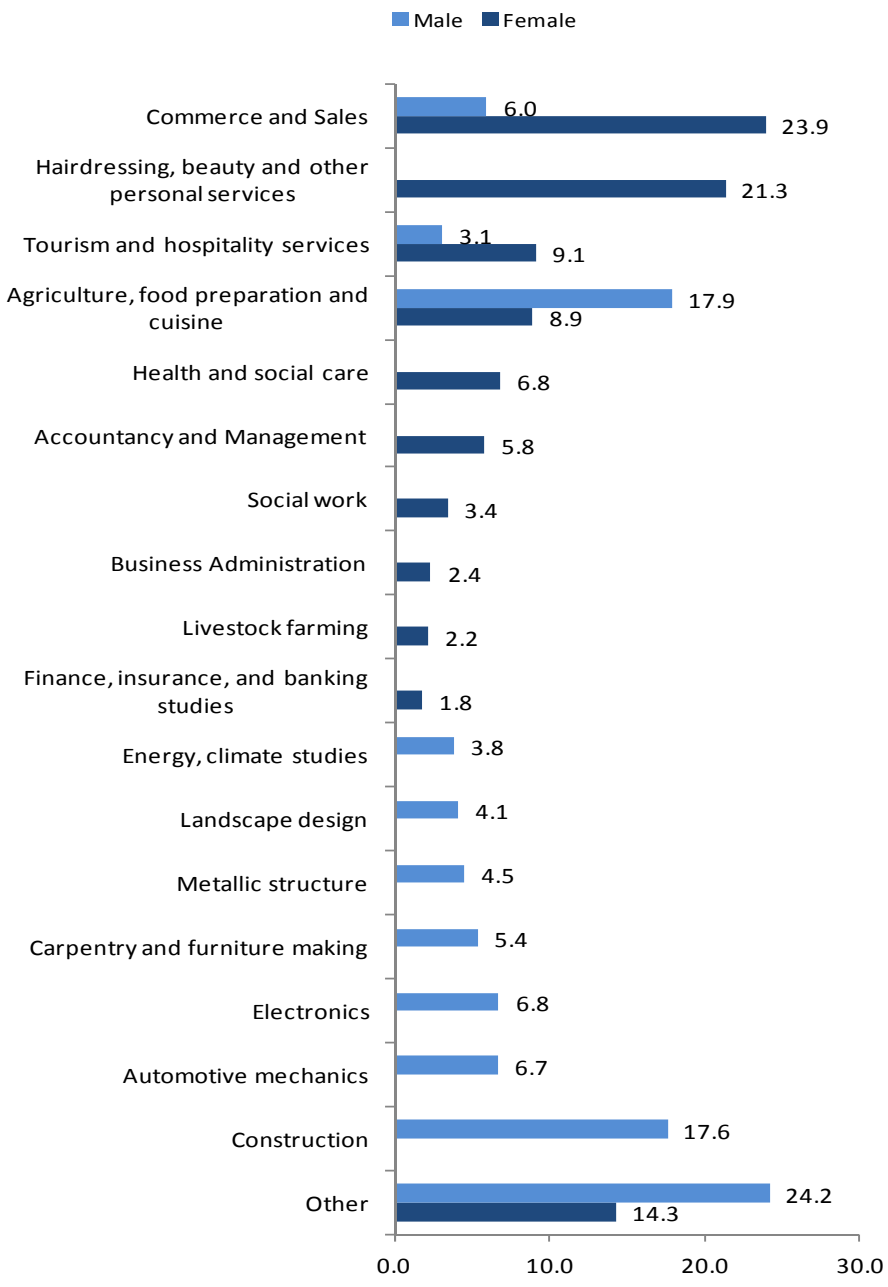
Source: French ministry of Education from the survey sent to CFAs, school year 2010-2011

8.2.6 Which sectors do apprentices chose?

The French Ministry of Education provides a breakdown of apprentices by sector over time (in Figure 42). Amongst female apprentices, the business sector, particularly *Sales and Commerce* related subjects, is the most popular sector of training and skills acquisition. Its popularity has decreased slightly over the past few years but it has remained in premier position with approximately **24%** of the female apprentices working and training in this sector. It is followed by the '*Hairdressing, beauty and other personal services*' (**21%**). These two most popular sectors are

more than twice as common as the third one – '*Tourism and hospitality services*', which has approximately **10%** of female apprentices.

Figure 42: Proportion of female apprentices by sector in France



Source: French Ministry of Education, school year 2011-2012

Male apprentices tend to enter fundamentally different sectors from women. In fact, only three sectors are common to both men and women – '*Agriculture, food preparation and cuisine*', '*Commerce and sales*' and '*Tourism, and Hotel trade*'. '*Agriculture, food preparation and cuisine*' is ranked first in terms of number of male apprentices and has been gaining popularity in recent

years (**18%** are now undertaking training in the field). The other sectors that are most popular amongst men are "*Construction*", "*Electrical*", "*Automotive*" and "*Engineering"* trades.

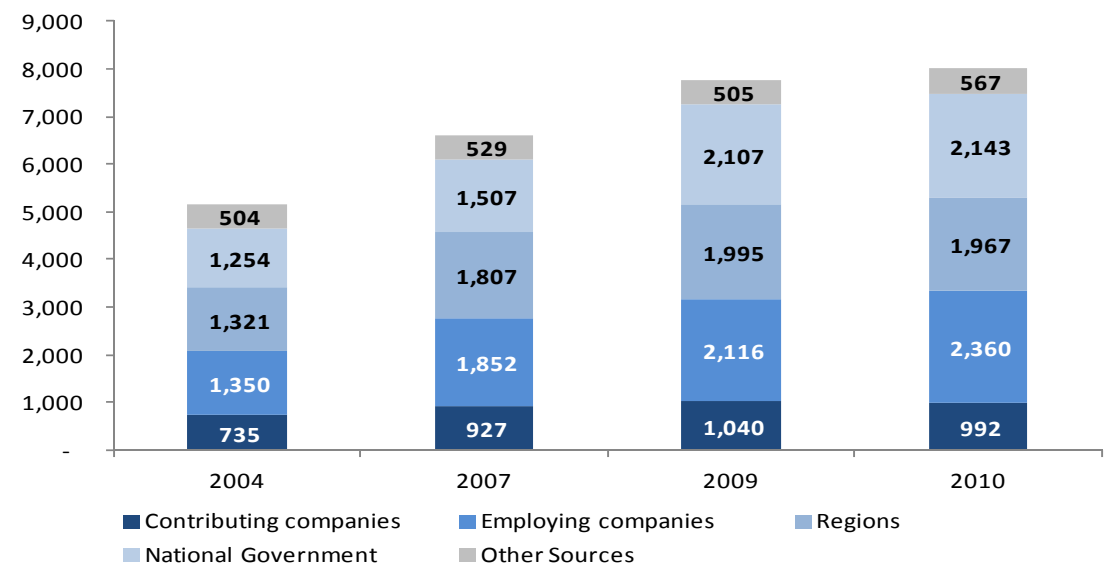
8.3 Funding of the apprenticeships in France

The main sources of funding for apprenticeship programmes are national government, regional governments and both companies employing apprentices, *as well as non-training companies*. In summary:

- National government finances firms through some fiscal exemptions and provides a budget to the Regions to manage and deliver the apprenticeships;
- The Regional governments are responsible for funding the training centres (CFAs) and providing some compensation to the training firms;
- Crucially, and unlike the system in the United Kingdom (*and most other jurisdictions*), all firms pay an **apprenticeship levy** that can be allocated to a training centre, the Regional government or to any other institution of the employer's choice if they don't employ any apprentice.

The CNFPTLV (*Conseil National de la Formation Professionnelle Tout au Long de la Vie*) is responsible for the monitoring and evaluation of apprenticeship programmes in France. The most recent report on the cost of the French apprenticeship system (2012)[119] illustrated that apprenticeship in France cost approximately **€8 billion (£6.38 billion)** of which 41% was financed by the private sector, 24% came from the Regional governments and 27% from National government. The breakdown of the financing is illustrated in the Figure 43 and the data is detailed in Table 39.

Figure 43: Contribution to the French apprenticeship system (€ million)



Source: CNFPTLV (2012) 'Funding and headcounts of the apprenticeship in France, data 2010'

[119] CNFPTLV (2012) 'Funding and apprenticeship headcount in France, data 2010'

Table 39: Contribution to the French apprenticeships system (€ million)

	2004 (€m)	2004 (%)	2010 (€m)	2010 (%)	From 2009 to 2010	From 2004 to 2010
Contributing companies	735	14%	992	12%	-5%	35%
Employing companies	1,350	26%	2,360	29%	12%	75%
Regions	1,321	26%	1,967	24%	-1%	49%
State	1,254	24%	2,143	27%	2%	71%
Managing organisms	73	1%	87	1%	9%	19%
Apprentices and their families	43	1%	58	1%	-8%	35%
Other sources	388	8%	422	5%	17%	9%
Total of contributions	5,164	100%	8,029	100%	3%	55%

Source: CNFPTLV (2012) 'Funding and headcounts of the apprenticeship in France, data 2010'

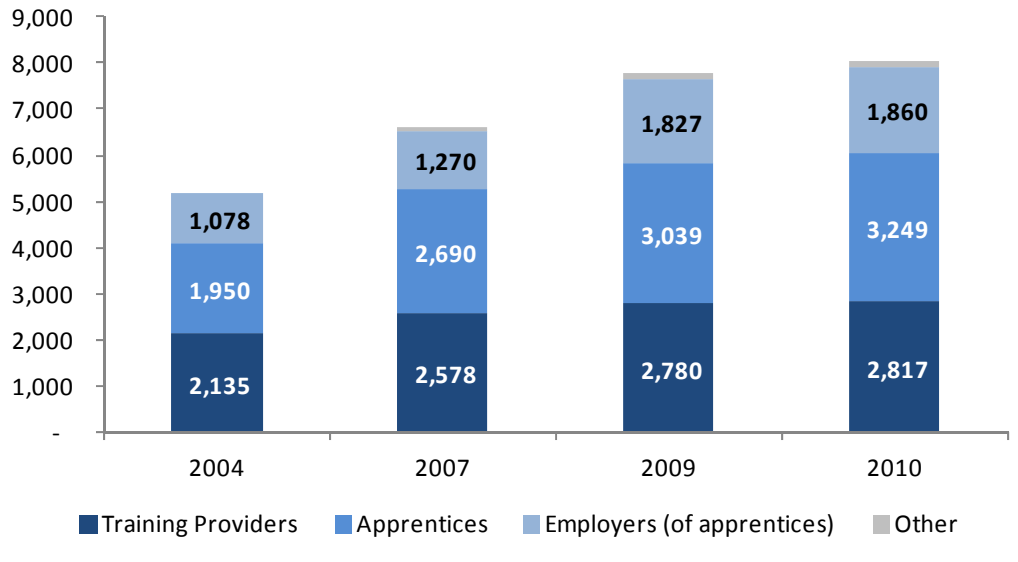
This funding is mainly used to finance the CFA training centres, to pay for the apprentices' training allowances and to provide incentives to compensate the companies who hire apprentices. Precise data is reported in Table 40 while Figure 44 provides a visual illustration of the distribution of the funds over time.

Table 40: Destination of French apprenticeship system funding (€ million)

	2004 (€m)	2007 (€m)	2009 (€m)	2010 (€m)	From 2009 to 2010	From 2004 to 2010
Training Provider (CFA)	2,135	2,578	2,780	2,817	1%	32%
Apprenticeship Pay	1,950	2,690	3,039	3,249	7%	67%
Apprentices' Employers	1,078	1,270	1,827	1,860	2%	73%
Other		84	117	103		
Total beneficiaries	5,163	6,622	7,763	8,029	3%	56%

Source: CNFPTLV (2012) 'Funding and headcounts of the apprenticeship in France, data 2010'

Figure 44: Expenditure relating to the apprenticeship system in France (€ million)



Source: CNFPTLV (2012) 'Funding and headcounts of the apprenticeship in France, data 2010'

8.4 Apprentice pay in France

8.4.1 Apprentice pay as a proportion of National minimum wage

In general, **apprentices in France are paid a percentage of the national minimum wage** (**€9.43** per hour effective from 1st January 2013 (**£7.52** per hour)). Apprentice wages are exempt from tax as long as they earn no more than the minimum wage. **Apprentice pay varies with their age and level of apprenticeship qualification**. Presented in Table 41, the analysis suggests that for an apprentice aged between 18 and 20, their minimum earnings stand at **41%** of the national minimum wage in the 1st year, **49%** of the national minimum wage in the 2nd year and **65%** of the national minimum wage in their 3rd year. Apprentice rates of pay are significantly lower for those learners aged 18 or below (ranging from **25%** to **53%** of the national minimum wage (which is lower than relative apprentice pay in the United Kingdom).

Table 41: Minimum apprenticeship wages in France

Years of experience	Under 18 years old	18 – 20 years old	21 years old and above
1st year	25%	41%	53%
2nd year	37%	49%	61%
3rd year	53%	65%	78%
1st year	€2.36	€3.87	€5.00
2nd year	€3.49	€4.62	€5.75
3rd year	€5.00	€6.13	€7.36
1st year	£1.88	£3.09	£3.99
2nd year	£2.78	£3.69	£4.59
3rd year	£3.99	£4.89	£5.87

Note: The hourly rate for the minimum wage is €9.43 **(£7.52)** (since the 1st of January 2013), information relating to which is available from http://vosdroits.service-public.fr/F2300.xhtml#N100A1. Adjusted for Purchasing Power Parity.
Source: Ministry of employment website https://www.alternance.emploi.gouv.fr/portail_alternance/jcms/tomcatleader_9222/la-remuneration/la-remuneration?cid=tomcatleader_9260

8.4.2 Minimum wage in different sectors

However, in some industries, trade unions have negotiated a contract (a 'convention collective') with the employer associations to ensure acceptable working conditions for workers at all levels. These 'contracts' set up conditions such as a minimum wage, minimum break-times during the day, maximum number of hours worked per day or some extra benefits such as food and housing subsidies.

There are 700 industries covered by these contracts. However, they only apply if the employer is member of one of the employers' associations that are signatories to the agreement, *or* if the employer decides to apply it voluntarily *or* if the contract has been "extended". These contracts are "extended" by a Ministerial decree and therefore become legally binding for all companies in the geographical and industrial scope of the legal text. Where one of these contracts applies, the apprentice's working conditions can be affected. If the apprentice is **aged 21 or over** and if the agreed bargained outcomes (wage *and* non-monetary benefits) are greater than that the minimum

wage, then the bargained contract applies rather than the national minimum wage. Below are some examples of industries with 'extended' contracts.

Hotels, cafés and restaurants

The collective agreement in the Hotel, Cafes and restaurant sector states that someone already in possession of a CAP or an equivalent professional experience (i.e. a Level 5 qualification or in possession of 2 years professional experience) would be classified as "Level 2-Grade 1" worker and receive the corresponding minimum wage rate **(€9.59 (£7.65)**). An apprentice might be typically classified as 1 point lower on the scale and would therefore be classified as "Level 1-Grade 3" worker. As such, their wage would be the corresponding proportion of the relevant minimum wage (i.e. a 2nd year apprentice aged 22 receives 61% of **(€9.46 (£7.55)**) per hour as a minimum).

Table 42: Agreed apprentice wage in the French hotels, cafés and restaurants sector

	Level 1	Level 2	Level 3	Level 4	Level 5
Grade 1	€9.43*	€9.59	€10.06	€10.64	€12.58
Grade 2	€9.43*	€9.72	€10.15	€10.82	€14.66
Grade 3	€9.46	€10.00	€10.37		€17.93

Note: The minimum wage for these categories has caught up the agreed wage such that the national minimum wage applies. ***Source: National collective agreement of hotels, cafés and restaurants (HCR) of 30 April 1997. – Amendment No. 14 of 1st March 2012 regarding minimum wages as of 1st January 2012 – Article 2***

Construction

In the construction sector, the levels are defined clearly according to the education attainment. A CAP or BEP corresponds to a *Level B* worker; a BP or Bac-Pro would correspond to a *Level C* worker; while the BTS and DUT would correspond to *Level E* worker. Wages are negotiated at the regional level. For example, the following table presents the latest negotiation in Aquitaine (south west of France).

Table 43: Agreed apprentice wage in the French construction sector

	Monthly gross wage	Weekly gross wage	Hourly gross rate
A	€1,476.93	€340.83	€9.74
B	€1,531.64	€353.46	€10.10
C	€1,617.89	€373.36	€10.67
D	€1,752.77	€404.49	€11.56
E	€1,971.86	€455.04	€13.00
F	€2,262.56	€522.13	€14.92
G	€2,534.12	€584.80	€16.71
H	€2,765.56	€638.21	€18.23

Source: National collective agreement of employees, technicians and supervisors of the construction sector – Texts Salaries – Aquitaine. Agreement of 29 November 2012 regarding minimum wages as of 1st January 2013)

Apprentices are positioned one point below the corresponding worker with the full qualification / professional experience. Therefore, an apprentice working towards a CAP or BEP would be classified as *Level A* worker; *Level B* worker for a Bac-Pro or *Level D* worker for a BTS or DUT until the completion of their qualification, and would receive the corresponding proportion of that hourly rate.

Hairdressing and related activities

In the *Hairdressing, Beauty and personal services* industry, the collective agreement specifically determines the apprentice wage. For a student involved in a Level 5 qualification (CAP), the minimum wage follows the same pattern as the national minimum apprentice pay but all

proportions are increased by *two percentage points* compared to the national Minimum Wage apprentice proportions. If the apprentice is following a Level 4 qualification the minimum wage is as follows:

Table 44: Agreed apprentice wage in the French hairdressing and related activities sector

	16 – 17	18 – 20	21 +
1st Year	57%	67%	80%
2nd Year	67%	77%	80%

Source: National collective agreement of the hairdressing sector and related occupations of 10 July 2006. Extended by the decree of 3rd April 2007 (JORF 17 April 2007) Amendment No. 28 regarding the remuneration of apprentices

Bakery and pastry making

In this *Bakery and pastry making* sector, the centralised bargaining contract explicitly states the wage of the apprentice. Corresponding to a two-year apprenticeship where the apprentice completes a CAP, the apprentices are paid the following proportions of the minimum wage:

Table 45: Agreed apprentice wage in the French bakery sector

	1st 6 months	2nd 6 months	3rd 6 months	4th 6 months
% of the National Minimum Wage	20	30	40	50

Source: National collective agreement of the bakery-patisserie sector of 19 March 1976. Extended by the decree of 21 June 1978 JONF 28 July 1978. Article 38.

Automobile industry

The collective agreement in the automotive industry states that for an apprentice in Bac-Pro, the gross wage follows the same proportions as the minimum apprentice wage defined in the section 8.4.1 (i.e. **53%/61%/78%** for an individual aged 21 or more in their 1st/2nd/3rd year of training); however, the hourly rates cannot be less than the Grade 3 in the 1st year, Grade 6 in the 2nd year and Grade 9 for the 3rd year.

Table 46: Agreed apprentice wage in the French automobile industry

Grade	Monthly gross wage	Weekly gross wage	Hourly gross rate
12	€1,816	€419.08	€11.97
11	€1,768	€408.00	€11.66
10	€1,721	€397.15	€11.35
9	€1,682	€388.15	€11.09
8	€1,628	€375.69	€10.73
7	€1,578	€364.15	€10.40
6	€1,547	€357.00	€10.20
5	€1,515	€349.62	€9.99
4	€1,489	€343.62	€9.82
3	€1,468	€338.77	€9.68
2	€1,452	€335.08	€9.57
1	€1,437	€331.62	€9.47

Source: National collective agreement of the trade sector, the repair of motor vehicles, bicycles and motorcycles sector and related activities and the vehicle roadworthiness testing sector of 15 January 1981. Extended by the decree of 30 October 1981 (JONF 3 December 1981). Amendment "salaries" No. 65 of 27 November 2012)

8.4.3 Other apprenticeship benefits

There are some additional benefits that accrue to apprentices over and above the direct financial minimums. In France, there is a legal requirement for employers to pay for **50%** of the transport

cost of the employees if they use public transport. If they use their own vehicle to commute, there is also a strong incentive for firms to contribute to these transport costs (although it is not obligatory). This rule is applied to apprentices as well.

In addition to these benefits-in-kind, as with any other student, apprentices can also ask for help with housing costs ('*Aide Personalisée au Logement*') that consists of a monthly allowance provided by the government. There is also assistance in the form of a cash advance to pay for the landlord's deposit that can be reimbursed in instalments. Apprentices also benefit from a 'student card' (*Carte d'étudiant des métiers*). This provides discounts or free access to cultural institutions (cinemas, museums, galleries etc.), discounts for transport, and access to subsidised 'student canteens' ('*Restaurants Universitaires*').

Finally, apprenticeships are managed at a regional level. As a result, each region provides apprentices with some further assistance to pay for the transport, food, housing, and trade relevant equipment. This subsidy varies significantly between regions and the level of qualification. In Table 47 below, we present some *representative* examples.

Table 47: Help provided to French apprentices in different regions

	Food	Transport	Housing	Books	Professional equipment
Alsace	Help when using the CFA facility	€0.04 per km	Help when using the CFA facility	-	€50 to €250 per year
Aquitaine	€1.50 per meal taken in the CFA	€32 to €600 per year	€4 to €5 per night whilst at CFA	-	-
Bourgogne	€0.95 per meal taken in the CFA	€5 to €40 per week whilst attending CFA	€2.95 per night whilst at the CFA	-	-
Ile-de-France	€25 to €80 year	€20 to €60 per year	€30 to €60 per year	€0 to €30 per year	€0 to €60 per year
Nord-Pas de Calais	€1.50 to €3.00 per day in the CFA	€0€ to €560 per year		-	€200 per year
Picardie	€1.81 per meal in the CFA	€31.62 to €803.76 per year	€4.01 per night whilst at the CFA	-	Varying according to the price of the equipment

Source: Regional council websites except for the Ile-de-France (brochure 2007): http://www.carif-idf.org/upload/docs/application/pdf/2008-01/actu-apprentissage-05-aides-aux-apprentis.pdf

8.4.4 Apprentice pay in France as a proportion of a fully qualified worker

In this section we compare the apprentices' minimum hourly rate with the rates of qualified workers and average earnings in different industries. The French National Statistical Agency provides a broad definition of a 'qualified worker' as a worker undertaking Jobs done by employees who mostly have the relevant type of qualifications (in essence a qualified apprentice or tradesman).

Table 48 gives the apprentices' hourly earnings as a proportion of the **average hourly wage** in different industries (i.e. all workers within that industry). Overall, young apprentices starting their course are paid between **11%** and **17%** of the average wage of the industry. After 3 years of apprenticeship, they earn between **23%** and **36%** of the average industry wage. For an older apprentice in third year of his qualification, this proportion ranges between **33%** and **54%**.

Table 48: Minimum hourly earnings of French apprentices relative of the average by sector

	Average hourly wage by industry	Under 18			18 to 20			Above 21		
		Year 1	Year 2	Year 3	Year 1	Year 2	Year 3	Year 1	Year 2	Year 3
Overall	€18.90	12%	18%	26%	20%	24%	32%	26%	30%	39%
Manufacturing and others	€20.00	12%	17%	25%	19%	23%	31%	25%	29%	37%
Construction*	€17.30	14%	20%	29%	22%	27%	35%	32%	37%	47%
Vehicle trade and repair*	€16.10	15%	22%	31%	24%	29%	38%	32%	39%	54%
Retail (except auto)	€20.50	12%	17%	24%	19%	23%	30%	24%	28%	36%
Wholesale (except auto)	€14.70	16%	24%	34%	26%	31%	42%	34%	39%	50%
Transport and storing	€17.30	14%	20%	29%	22%	27%	35%	29%	33%	42%
Accommodation and catering*	€13.80	17%	25%	36%	28%	33%	44%	36%	42%	53%
Other services	€22.00	11%	16%	23%	18%	21%	28%	23%	26%	33%
Public admin., teaching, health and social services	€16.50	14%	21%	30%	23%	28%	37%	30%	35%	45%

Note 1: In the industries highlighted with a (*), there is an agreed minimum wage that was taken into account. Rates of the Bac-Pro have been used as the agreed wage applies only to people above 21; this implies that the apprentice pay rate as a proportion of the fully qualified rate is toward the upper end of the range. For the construction industry, the Lorraine 2010 agreement has been taken. Note 2: The data has been adjusted for inflation such that all of it is expressed in 2012 prices. ***Source: Insee, Déclaration Annuelle des Données Sociales (DADS) 2010***

Table 49 shows the hourly minimum wage of the French apprentices as a proportion of the wage of a **fully qualified worker**. We take the INSEE (National Statistics Agency) definition of an '*ouvrier qualifié*' as a worker in a job that is generally undertaken by a person who has the relevant qualification (in essence an apprenticeship). A young apprentice earns between **16%** and **18%** of the fully qualified rate at the beginning of his apprenticeship and between **34%** and **39%** at the end. For an older apprentice, hourly earnings range between **50%** and **64%** of a qualified worker's pay. The information presented here is the most comparable with that presented for other countries.

Table 49: Hourly earnings of French apprentices relative to the fully qualified rate by sector

	Average hourly wage by industry	Under 18			18 to 20			Above 21		
		Year 1	Year 2	Year 3	Year 1	Year 2	Year 3	Year 1	Year 2	Year 3
Overall	€14.70	16%	24%	34%	26%	31%	42%	34%	39%	50%
Manufacturing and others	€15.50	15%	22%	32%	25%	30%	39%	32%	37%	47%
Construction*	€15.10	16%	23%	33%	26%	31%	41%	37%	42%	54%
Vehicle trade and repair*	€13.40	18%	26%	37%	29%	34%	46%	38%	46%	64%
Retail (except auto)	€13.80	17%	25%	36%	28%	33%	44%	36%	42%	53%
Wholesale (except auto)	€13.10	18%	27%	38%	30%	35%	47%	38%	44%	56%
Transport and storing	€14.40	16%	24%	35%	27%	32%	43%	35%	40%	51%
Accommodation and catering*	€13.10	18%	27%	38%	30%	35%	47%	38%	44%	56%
Other services	€14.20	17%	25%	35%	27%	33%	43%	35%	41%	52%
Public admin., teaching, health and social services	€12.90	18%	27%	39%	30%	36%	48%	39%	45%	57%

Note 1: In the industries highlighted with a (*), there is an agreed minimum wage that was taken into account. Rates of the Bac-Pro have been used as the agreed wage applies only to people above 21; this implies that the apprentice pay rate as a proportion of the fully qualified rate is toward the upper end of the range. For the construction industry, the Lorraine 2010 agreement has been taken. Note 2: The data has been adjusted for inflation such that all of it is expressed in 2013 prices. ***Source: Insee, Déclaration Annuelle des Données Sociales (DADS) 2010***

An additional comment needs to be made about the previous tables as they provide the **gross** average wage per industry. However, it is important to note that as long as earnings are below the minimum wage, apprentice pay is not taxable. Therefore, the proportions reported are higher when considering earnings net of taxation. In addition, the apprentices benefit from the regional help and the student discounts that are not taken into account in these tables.

Apprentice pay in France is substantially lower than apprentice pay in the United Kingdom (irrespective of age).

8.4.5 Compliance and non-compliance

There is no data on the actual wage of the apprentices in France such that it is difficult to evaluate if employers comply with the legal requirements on minimum wage. However, there is a large awareness of the general minimum apprenticeship pay. Any publicly available data sources dealing with apprenticeships will provide the information on the minimum apprentice rate and the majority of phone interviews undertaken as part of this analysis confirmed this information. It suggests that the compliance with the national apprentice minimum wage is reasonably good.

On the other hand, in industries where there is a legally binding bargained wage, the interviewees did not confirm whether the apprentices benefited from it. We interviewed some local training centres, one institution in charge of a group of training centres, a trade union and two of its industry branches ('transports' and 'hotel, café and restaurants'), as well as an OPCA ('Organisme paritaire collecteur agréé' – (i.e. the institution in charge of collecting firms' training levy). None of the individuals we interviewed were able to provide information on the impact of the bargained wage on the apprentice pay in their industry or the extent of compliance. This potentially suggests very little awareness of the obligation to treat the apprentice as any other employee and consequently may imply a poor compliance with regard to the collectively bargained wages.

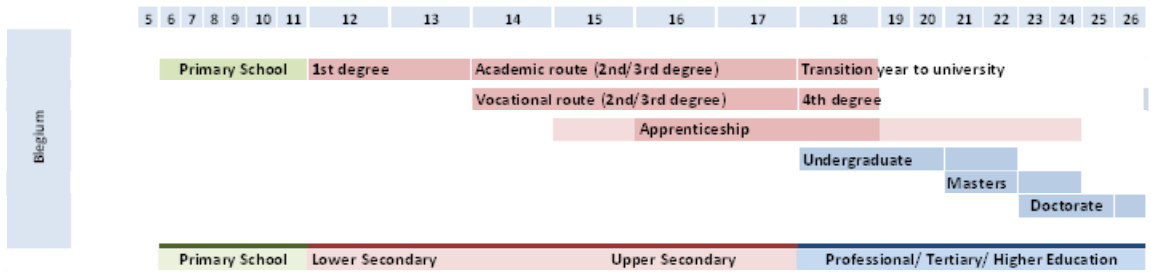
9 Apprenticeships and apprentice pay in Belgium

9.1 The educational system in Belgium

To understand the apprenticeship system in Belgium, we start with a description of the education system in which the apprenticeship is integrated.

In the Walloon region in Belgium, children start primary school when they are 6 years old and finish at the age of 12. If they pass their Basic Studies Certificate, pupils enter the '1st common', which is the general first year of secondary school. Pupils who fail the exam enter the '1st differentiated', allowing them to retake the exam and join the common track as soon as they pass. Following the 1st common, students progress to a 2nd common, and together they constitute the 'first degree'. At the end of the first degree, pupils can decide between an academic (called 'transition') and a vocational (called 'qualification') education.

Figure 45: The education system in Belgium



Source: London Economics

The academic and vocational routes work in a symmetric fashion. They are both divided into three sections. For the academic route, there is a general, a technical and an artistic branch. At the end of the 4 years of academic education (i.e. 6 years of secondary school), the student can do a 7th year called the 'preparatory year for higher education'. In the vocational training route, students choose between a technical, an artistic and a professional qualification. At the end of these 4 years of vocational training, a complementary or a qualifying year can be undertaken. Table 50 summarises the information.

Table 50: Oragnisation of the secondary education in the Walloon Region

Age	Degree	Different options for the secondary education					
12	1st Degree	1st Common			1st Differentiated		
13		2nd Common			2nd Differentiated		
		Transition Education (academic)			**Qualification Education (vocational)**		
14	2nd Degree	3rd G	3rd T	3rd A	3rd TQ	3rd AQ	3rd Prof
15		4th G	4th T	4th A	4th TQ	4th AQ	4th Prof
16	3rd Degree	5th G	5th T	5th A	5th TQ	5th AQ	5th Prof
17		6th G	6th T	6th A	6th TQ	6th AQ	6th Prof
18		7th transition for higher education			7th TQ		7th Prof

Note: G stands for General, T for technical, A for artistic and Q for qualification.

Source: French speaking ministry of education http://www.enseignement.be/index.php?page=24547&navi=45

9.1.1 Apprenticeships within the educational system

To undertake an apprenticeship, students must finish full time compulsory education – i.e. the end of the 1st degree. In other words, they must have spent two (distinct) years in secondary education. This means that repeating the first year is not enough to comply with the apprenticeship entry requirement. However, someone in the differentiated 2nd year can be accepted for an apprenticeship if he/she has a letter that recommends him/her for a common 2nd year. The student must also be 15 years old.

Apprenticeships normally last for **3 years** (other than in the retail sector), where apprenticeships last only 2 years. This implies that the students finish their apprenticeship when they are 18 years old, which is the end of compulsory schooling in Belgium. The duration can be reduced if the apprentice is making substantial progress but it can never be less than 1 year. The duration can be extended beyond 3 years if the apprentice fails his/her exams.

There exist two different types of apprenticeship in Belgium. One route runs parallel to the vocational training undertaken in schools whereby students study the same subjects and acquire the same competences as the classical vocational training. This apprentice route is called the 'Article 49' route after the legislation introducing this form of apprenticeship. At the end of an 'Article 49' apprenticeship, students receive a technical upper-secondary education certificate. This certificate is the same as the classical vocational training certificate other than that there is a mention that the training has been done partly in a firm.

Apprentices undertake their classroom based training in a CEFA (*Centre d'Education et de Formation en Alternance*). The CEFAs have their administrative headquarters in a secondary education institution and are responsible for organising off the job vocational training on behalf of secondary education institutions. Several secondary schools can have their vocational training based in the same CEFA.

9.2 The Belgian apprenticeship system: general characteristics

The apprenticeship contract (contrat d'apprentissage)

Apprenticeship contracts can have a number of different titles. In some sectors, apprenticeship contracts are called '*Industrial Apprenticeship Contracts*' (contrat d'apprentissage industriel), while in others (such as the construction sector), contracts are known as '*Youth Training Schemes*' for younger apprentices (*Régime d'Apprentissage pour les Jeunes*') and '*Training Schemes*' for apprentices over the age of 18 (*Régime d'Apprentissage de la Construction*). All of these names refer to a contract that combines some classroom learning with some on-the-job training in a firm.

The definition of apprenticeship conditions

In general, the apprenticeship contract is designed for young people aged 15 to 18. It generally lasts for 3 years, although this may be extended (in the case of exam failure) or compressed (in the case of substantial progress). The contract includes a 3-month probation period. The apprenticeship contract determines the amount of time spent in the classroom setting and undertaking training within the firm. Generally, students must spend at least 500 hours in the vocational school over 40 weeks and 600 hours in the company over 40 weeks (annually). The division of time between school and the workplace is agreed by the apprentice and the firm, and

there is some flexibility in terms of how the classroom-based and workplace-based learning is undertaken (for instance, apprentices may undertake classroom-based learning for 3 days followed by workplace-based learning for 2 days, or alternate between a full week in the training centre followed by a full week in the training firm).

In each industrial/ apprenticeship sector there is a Commission that defines the rules and guidelines relating to apprenticeships. In particular, each Commission regulates:

- the approach for assessing/determining apprentice pay;
- the entry age for the programme;
- general requirements for firms and training centres to be accredited to have an apprentice;
- types of employment/occupations for which the contract can be signed;
- levels of qualification available;
- the length of the apprenticeship (by type of qualification);
- the division of time between classroom-based and workplace-based learning;
- the maximum number of apprentices per company;
- examinations relating to the classroom-based training;
- the training centres at which classroom-based training can be undertaken.

9.2.1 Apprenticeship key figures

The statistics about the education system in the French speaking region is managed by the ETNIC (*Entreprise publique des technologies nouvelles de l'information et de la communication*). The latest data available on the number of students in secondary school is from the 2008-2009 academic year[120]. In this year there were 365,894 pupils registered in secondary schools in the French speaking community. This includes French speaking schools in Flanders. Among these secondary school pupils, 233,142 had finished the 1st degree. 112,845 of them had opted for vocational training. Of these, only 9,076 were registered in a CEFA.

In the academic year 1984/85 apprentices constituted only 0.8% of the young people in secondary school. Apprenticeship participation has been steadily increasing since the early 1980s and by 2008/09, apprentices accounted for 2.7% of the secondary school population.

It is important to notice that in Belgium, as in other countries, apprenticeships are more common for men. Among the 9,076 apprentices in 2008/09, 6,133 were men (68%).

9.3 Funding of apprenticeships in Belgium

In December 2012, the ETNIC published a report called 'Education in Figures'[121], which includes data on the funding of the educational system in the French Speaking Community. Secondary education, including both academic and vocational training, has a budget of **€2.4 billion (£1.86bn)**.

[120] http://www.etnic.be/
[121] ETNIC (2012) '2008-2009 - L'enseignement en chiffres'

This budget includes €49 million for the CEFAs that are responsible for the apprentices. Funding for CEFAs is equal to 0.06% of the regional GDP[122].

The ETNIC[123] *Statistics on full time education and spending on education* illustrate the evolution of the cost per student across all education routes (standardising values in 1999 to 100 to show the evolution over time). The statistics show that, in 2008, a student in classical secondary education costed 4.7% more than 9 years earlier, whereas an apprentice in a CEFA cost 10.1% more.

9.4 Apprentice pay in Belgium

9.4.1 Apprentice pay relative to the national minimum wage

The maximum pay defined at the federal level

Table 51 provides information on the "*maximum*" pay for an apprentice in Belgium. "Maximum" apprentice pay is defined in terms of the minimum monthly wage (**€1,501.82 (£1,161)** equivalent to **€9.12** per hour **(£7.05** per hour)) and in accordance with the proportion of time spent in on-the-job training, since apprentices receive a wage only for their time spent training on-the-job and receive no compensation for their off-the-job training. For standard apprenticeships, approximately half the time is spent in on-the-job training.

Maximum apprentice pay further depends on the age of the apprentice. The maximum apprentice wage for 15 year old apprentices is equal to 64% of the national minimum wage for the time the apprentice spends in on-the-job training. For a standard apprenticeship, the maximum monthly apprentice wage for a 15 year old apprentice is therefore equal to **32%** of the national minimum monthly wage. The ratio of the maximum apprentice wage to the national minimum wage for the hours spent in on-the-job training increases by 6 percentage points with each additional year of age of the apprentice. Therefore, the maximum apprentice wage for a 21 year old apprentice is **100%** of the national minimum wage for hours spent in on-the-job training. For a standard apprenticeship, a 21 year old apprentice has a maximum monthly wage of 50% of the national minimum monthly wage. The standard rate for an apprentice aged 18 is **41%** of the National Minimum Wage, which corresponds to a monthly pay of approximately **€616 (£476)**.

Table 51: Monthly maximum apprentice pay in Belgium

Age	% minimum wage	Standard	% minimum wage	Reduced	% minimum wage	Special (example)
15	32%	€480.60	21%	€320.40	45%	€672.80
16	35%	€525.70	23%	€350.50	49%	€735.90
17	38%	€570.70	25%	€380.50	53%	€799.00
18	41%	€615.80	27%	€410.50	57%	€862.10
19	44%	€660.90	29%	€440.60	62%	€925.20
20	47%	€705.90	31%	€470.60	66%	€988.20
21+	50%	€751.00	33%	€500.70	70%	€1051.30

Note: based on the minimum monthly wage of the 1/12/2012 of **€1,501.82 (£1,161).** Adjusted for Purchasing Power Parity. ***Source: http://www.emploi.belgique.be/defaultTab.aspx?id=22774***

[122] Regional GDP data from the 'Institut des comptes nationaux (ICN)', Eurostat

[123] ETNIC (2012) 'Statistiques de l'enseignement de plein exercice et budget des dépenses d'enseignement' annuaire 2008-2009 http://www.etnic.be/fileadmin/Statistiques/publications/2008-2009/0809_V1_volume_complet.pdf

In all sectors, the Commissions decide the minimum apprentice pay. Usually, the defined "maximum" monthly wages are used as minimum monthly wages, although there are some sectoral variations. Firstly, for some sectors, when apprentices start their contract, they may receive a reduced rate for a probationary period (which may last between a month and a year). This reduced rate is approximately one-third less than the standard rate. The ratio of maximum apprentice wage to national minimum wage for each apprentice age is shown in Table 51.

Secondly, for some apprenticeships, time may not be divided equally between on-the-job and off-the-job training. For example, in the car industry (car repair, bodywork manufacturing, car trade etc.) some contracts foresee four days in the company and one day in the classroom per week. In this case, a special rate is applied, with apprentices earning up to 70% of the national minimum monthly wage, as shown in Table 51. Similarly, to qualify as an electrician, apprentices who spend 4 days a week in the firm are paid up to 80% of the minimum monthly wage.

9.4.2 Other financial benefits for apprentices

The starting bonus
All young people who study part-time in school and work part-time in a firm – even if they don't have an apprenticeship contract but some other sort of training contract – gain the right to a bonus each year they successfully complete their training. The bonus is **€500 (£386)** for the first two years of the training contract and **€750 (£579)** in the third (and generally final) year. This bonus can only be earned for a maximum of three years.

The employment bonus **('bonus à l'emploi')**
From the 1st of January of the year when the apprentice will turn 19, he/she starts to contribute fully to the social security. At the same time, he/she becomes eligible for the employment bonus. This bonus consists in a reduction in the income tax paid by the employee, starting from **€184 (£142)** per month and falling to zero as the employee's remuneration increases.

Transport
There is a legal obligation for the company to contribute to the transport expenses of the apprentice if they use public transport, and if the distance travelled exceeds 5km. For example, for train tickets, there is a legal obligation for the company to pay between 55% and 65% of the amount.

9.4.3 Apprentice pay relative to the 'fully qualified' rate

There is some ambiguity in relation to the relevant fully qualified rate in Belgium. In Table 52, using information from Statistics Belgium, we have presented average wage rates by occupation. Across the whole of Belgium, if we assume that the fully qualified rate relates to those individuals working in 'craft and related trades', the analysis suggests that apprentice pay stands at approximately **21%** of the fully qualified rate for those individuals starting their apprenticeship at the age of 17, increasing to approximately **25%** at the end of the standard 3-year apprenticeship. These rates are amongst the lowest of all apprentices in the jurisdictions considered as part of this analysis.

Although apprentice pay rates are higher in Belgium than in France in absolute terms, relative to the fully qualified rate, apprentice pay rates are broadly comparable with those achieved by French apprentices, but lower than apprentice pay rates in the United Kingdom.

Table 52: Apprentice pay in proportion of a fully qualified worker in Belgium

Age			15	16	17	18	19	20	21
Age %		100%	32%	35%	38%	41%	44%	47%	50%
Minimum hourly gross wage		€9.12	€2.92	€3.19	€3.47	€3.74	€4.01	€4.29	€4.56
Flanders	Workers in services sellers in shops and markets	€15.60	19%	20%	22%	24%	26%	27%	29%
	Craft and related trades workers	€16.32	18%	20%	21%	23%	25%	26%	28%
	Plant and machine operators and production chain workers	€17.01	17%	19%	20%	22%	24%	25%	27%
	Unskilled workers and employees	€15.65	19%	20%	22%	24%	26%	27%	29%
	TOTAL	€19.53	15%	16%	18%	19%	21%	22%	23%
Walloon region	Workers in services sellers in shops and markets	€14.72	20%	22%	24%	25%	27%	29%	31%
	Craft and related trades workers	€15.93	20%	22%	24%	25%	27%	29%	31%
	Plant and machine operators and production chain workers	€16.61	18%	19%	21%	23%	24%	26%	27%
	Unskilled workers and employees	€14.84	20%	22%	23%	25%	27%	29%	31%
	TOTAL	€18.74	16%	17%	18%	20%	21%	23%	24%
Brussels	Workers in services sellers in shops and markets	€15.31	19%	21%	23%	24%	26%	28%	30%
	Craft and related trades workers	€16.34	18%	20%	21%	23%	25%	26%	28%
	Plant and machine operators and production chain workers	€16.89	17%	19%	21%	22%	24%	25%	27%
	Unskilled workers and employees	€14.05	21%	23%	25%	27%	29%	31%	32%
	TOTAL	€23.32	13%	14%	15%	16%	17%	18%	20%
Belgium	Workers in services sellers in shops and markets	€15.35	19%	21%	23%	24%	26%	28%	30%
	Craft and related trades workers	€16.21	18%	20%	21%	23%	25%	26%	28%
	Plant and machine operators and production chain workers	€16.92	17%	19%	20%	22%	24%	25%	27%
	Unskilled workers and employees	€15.27	19%	21%	23%	24%	26%	28%	30%
	TOTAL	€19.94	15%	16%	17%	19%	20%	21%	23%

Note: The data of the hourly rate per socio-professional category is from 2010 but has been adjusted for the inflation.
Source: ***http://statbel.fgov.be/fr/statistiques/webinterface/?loadDefaultId=105&IDBr=tcm:326-22196-4*** ***Belgian Statistics.***

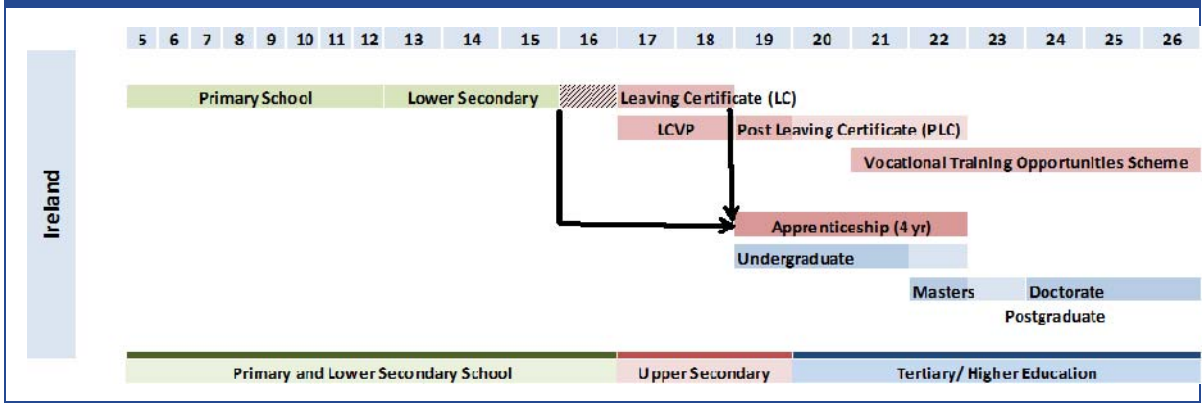
10 Apprenticeships and apprentice pay in Ireland

10.1 Overview of educational system in Ireland

10.1.1 Education system

In Ireland, all young people participate in compulsory classroom-based learning until the age of 15 or 16 when they sit State examinations (**Junior Certificate**). After this point, they have the option to engage in vocational or traditional academic education. In 2011/12, there were approximately 57,000 Junior Certificate candidates[124]. A summary of possible educational paths in Ireland is presented in the chart below.

Figure 46: The education system in Ireland



Source: London Economics

Following completion of the Junior Certificate, the majority of students at this point choose the traditional academic route of the **Leaving Certificate (LC)**. This is generally a two-year programme that concludes with examinations which are the basis for allocation of places in third level institutions. Note that the Irish upper-secondary education system offers significantly more breadth than the UK system (excluding Scotland) with students obliged to undertake 6 subjects (with English, Irish and Mathematics being mandatory). The **Leaving Certificate Vocational Programme** (LCVP) also offers opportunities to progress into third level education; however, includes activity-based modules such as *Enterprise Education*, *Preparation for Work* and *Work Experience*. There were 50,000 school based candidates and 3,200 non-school based Leaving Certificate candidates in 2011/12.

A second alternative, the **Leaving Certificate Applied** programme, offers courses in vocational education, vocational preparation and general education. Students that complete the Leaving Certificate Applied programme (3,200 in 2011/12) cannot gain direct entry into universities or Institutes of Technology but can proceed into **Post Leaving Certificate** (PLC) vocational courses (i.e. equivalent to Further Education in the UK) or apprenticeships.

[124] Figures provided in this section are official government figures (Department of Education and Skills, 2012).

Most individuals progress to formal apprenticeship programmes having completed one of these Leaving Certificate programmes (approximately **75%**), although it is also possible to progress to the apprenticeship programme upon completion of the Junior Certificate stage of secondary education.

As will be detailed in later sections, the apprenticeship system in Ireland tends to draw a very small proportion of female applicants, an issue that the regulatory body (FÁS) has attempted to redress by offering bonuses to employers that recruit female apprentices.[125]

Other Irish vocational and work-based training programmes include:

a) The *National Traineeship Programme* which combines workplace training with formal training provided by the apprenticeship regulator, FÁS;
b) *Skillnets* programmes in which networks of employers manage cross-organisational training activities for the employed and unemployed;
c) *Vocational Training Opportunities Scheme* (VTOS) which offers education and training courses to unemployed individuals, targeting early school-leavers in particular; and
d) *Youthreach* which offers vocational training and basic education to early school-leavers.

10.1.2 The Irish apprenticeship programme

The apprenticeship programme in Ireland is regulated by FÁS, the Irish National Training and Employment Authority. Their statutory functions regarding apprenticeship training include maintaining a register of all apprentices; setting and charging fees for courses, facilities and services; and controlling and consenting to the employment of apprentices within designated activities.

Apprenticeship is formally described as a "**blended alternating training programme**" or a "dual system" (see Figure 52) where training alternates between on-the-job training provided by employers and off-the-job training provided in blocks by FÁS, Institutes of Technology and Colleges of Further Education. Apprenticeships last a minimum of **four years** with one exception (the paper and printing apprenticeship that lasts three years). The duration of Irish apprenticeships is amongst the highest in any of the countries considered. Further details on the structure of the apprenticeship programme are provided in a later section.

In recent years, the economic downturn has had an effect of reducing demand for apprenticeships in Ireland, especially in the construction industry. In addition, in many cases, apprentices taking on an apprenticeship have been made redundant by their employer and have therefore been unable to complete their apprenticeship. According to FÁS, the total number of redundant apprentices in June 2013 was 1,166 or approximately **15%** of the total apprentice population in 2013.[126]

[125] In a study of the Irish post-Leaving Certificate sector, Watson et al suggest that the gender imbalance is due to the focus of the programme on traditionally 'male' occupations. They note that although women are largely unrepresented in the apprenticeship programme, they are the majority in Post Leaving Certificate courses, which offer a combination of practical and academic work and work experience, and which include courses in traditionally 'female' occupations such as hairdressing and beauty therapy. See Watson D., McCoy, S. and Gorby, S., 2006. *The Post-Leaving Certificate Sector in Ireland: A Multivariate Analysis of Educational and Employment Outcomes*.

[126] In the FÁS 2011 Annual Report, it was stated that a total of 4,673 cases had been notified to FÁS in the period from 2007 to the end of 2011.

10.1.3 Apprenticeship minimum entry requirements

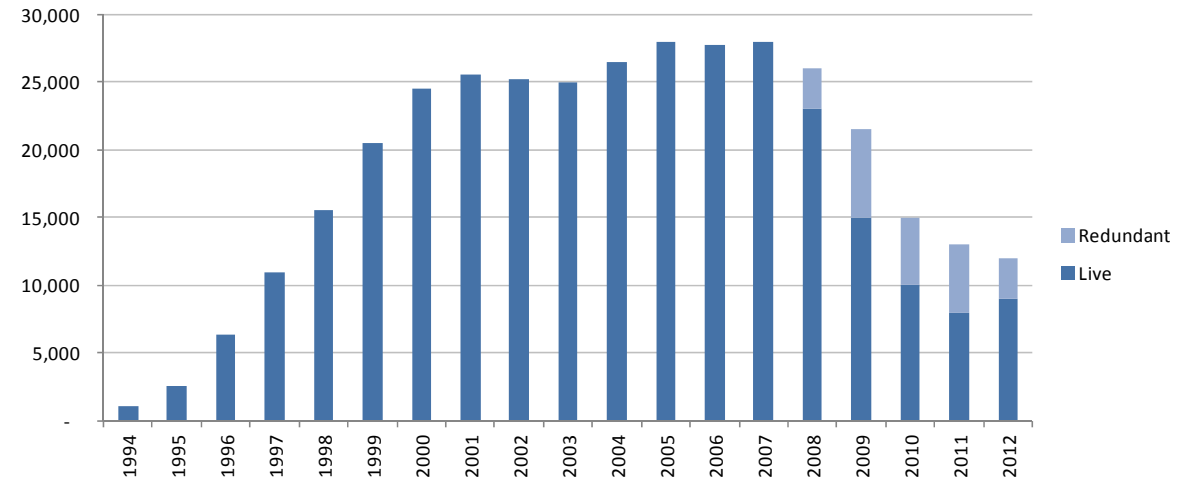
In order to be eligible for the apprenticeship programme, applicants must be over 16 years of age and have a minimum of five grade Ds in any subjects in the Junior Certificate or equivalent (i.e. English GCSEs). However, individual employers may require further qualifications. If a candidate does not meet those criteria, they may still be taken on as an apprentice by an employer if they are over 18 years of age with at least three years of relevant work experience and a successful assessment interview or if they are successful at an approved preparatory training course and assessment interview. For some trades, entry is contingent on passing a colour vision test.

Although these are the minimum entry requirements, information from 2011 indicates that only **26%** of apprentices were in possession of Junior Certificate qualifications as their highest qualification, while **73%** were in possession of a Leaving Certificate (presented in more detail in Figure 51). It is also important to note that given the reduced training and labour market opportunities available in Ireland in recent years, the average level of qualification on entry to apprenticeship has increased.

10.1.4 Apprenticeship key figures

The popularity of the apprenticeship programme has varied greatly over time. The total population of apprentices from 1994 to 2012 is shown in the chart below. The programme reached its peak between 2005 and 2007, when there were 28,000 apprentices in training; however, by 2012, the number of 'live' apprentices in training had fallen to approximately 8,000 per annum. According to FÁS, the figure was approximately 9,000 in June 2013.

Figure 47: Apprentice population by year in Ireland



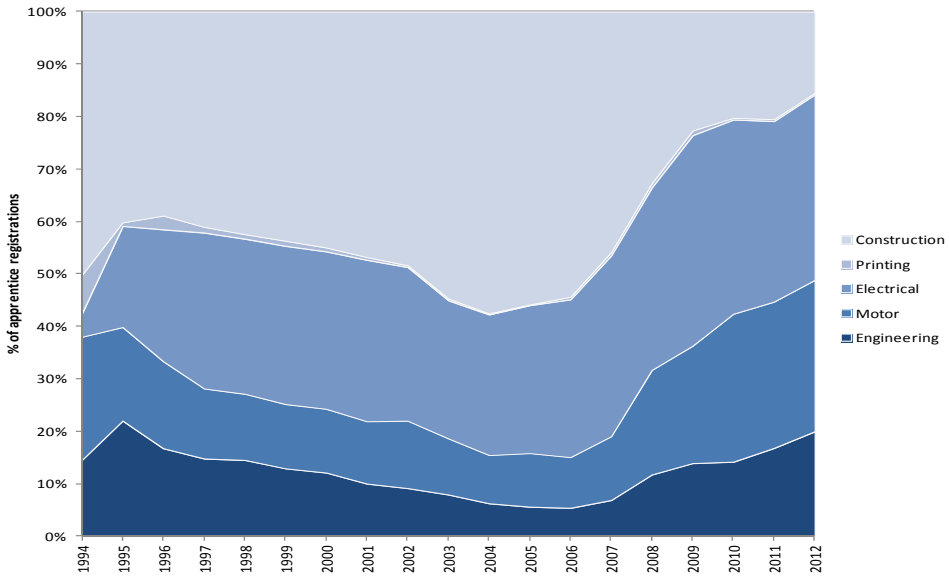
Note: Figures as of year-end. Figures for apprentices made redundant in the course of their apprenticeship were not collected before 2008.

Source: Department of Education and Skills (2013).

Placing this in context (Figure 8), although approximately 37% of Irish students follow the vocational path (which is higher than the United Kingdom), only 5% of the cohort undertake predominantly workplace based vocational education, which is significantly lower than in the northern/central European countries under consideration (Germany, Austria, Switzerland and the Netherlands).

In the Irish Department of Education and Skills' Background Issues Paper (2013), the increasing popularity of the apprenticeship programme up to 2007 is primarily attributed to the growth in the construction industry. Indeed, **85%** of apprenticeships between 2004 and 2006 were in construction, according to the report. The report notes that the construction sector now accounts for just over 700 apprentice recruits per annum, which is approximately **10%** of the level seen at the peak. Other sectors have experienced declines but to a lesser extent.

Figure 48: Distribution of apprentice population by sector in Ireland

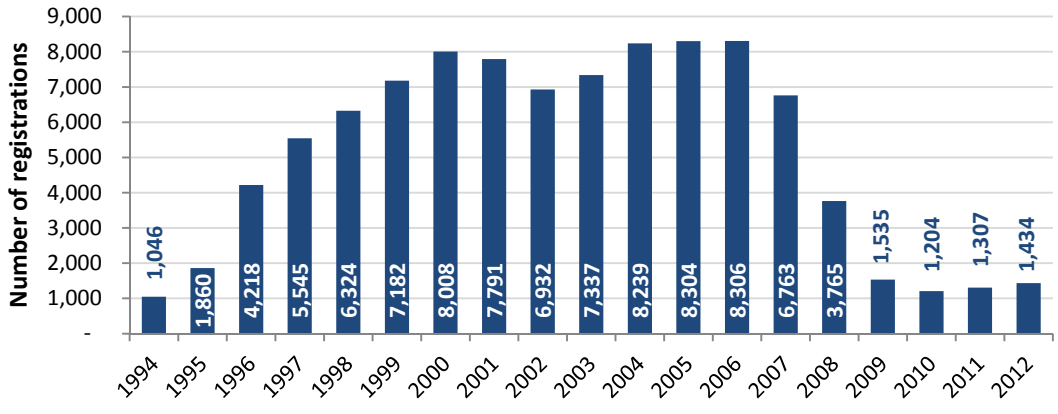


Note: Figures as of year-end. Figures for apprentices made redundant in the course of their apprenticeship were not collected before 2008.

Source: Department of Education and Skills (2013).

Figure 49 illustrates annual recruitment figures where a similar trend is demonstrated. Compared to a peak of 8,306 apprentice registrations in 2007, there were just 1,434 apprentice registrations in 2012.

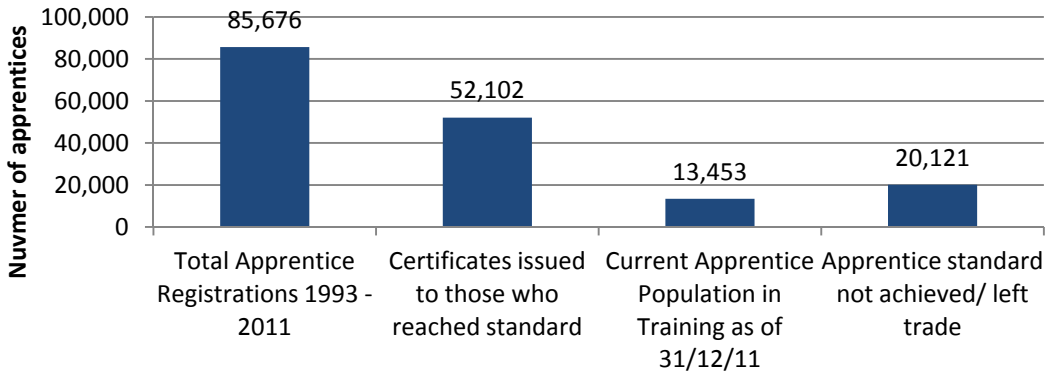
Figure 49: Apprentice registrations by year in Ireland



Source: Department of Education and Skills (2013).

The outcomes for apprentices registered between 1993 and 2011 who completed the *first phase* of training (see Figure 50) are represented below. **61%** (52,102) of apprentices had completed training successfully and a further **16%** (13,453) were still in training by December 2011.

Figure 50: Outcomes for Irish apprentices registered from 1993-2011

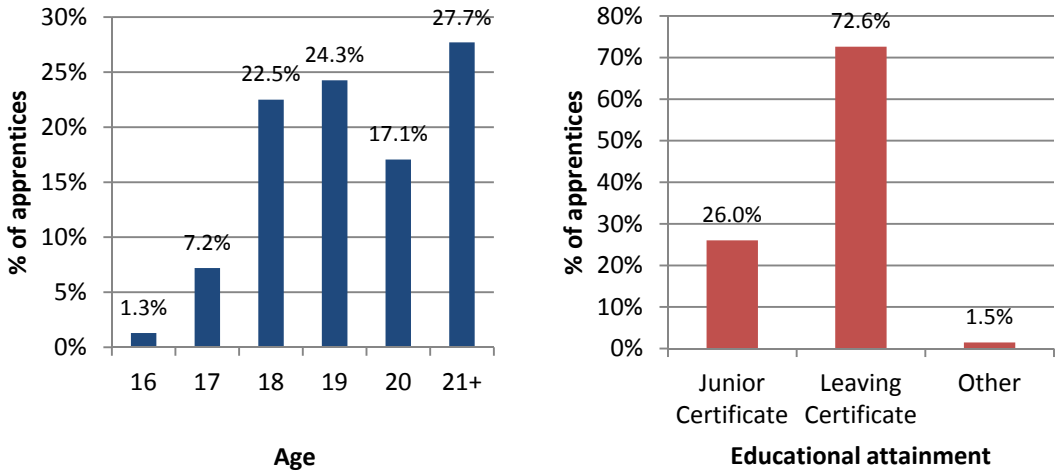


Source: Department of Education and Skills (2013). Figures were provided originally by FÁS to the Department.

10.1.5 Apprentice profile in Ireland

Figure 51 shows the breakdown of apprentices registered as of 31 December 2011 (1,307 in total) by age and by previous educational attainment. The majority of apprentices at this time (**73%**) had completed their Leaving Certificate. This is consistent with the age breakdown of apprentices, whereby a large majority (**91%**) aged 18 or over. In previous years, the proportion of apprentices that were in possession of Leaving Certificate qualifications appears to be lower. For instance, the Department of Enterprise, Trade and Employment (2010) reports that just **57%** of new apprenticeship registrants in 2008 had completed the Leaving Certificate.

Figure 51: Irish apprenticeship registrant profile – age and educational attainment (2011)



Source: Charts constructed by London Economics using figures from Irish Department of Education and Skills (2013). Age figures were provided originally by FÁS to the Department.

Apprentices in Ireland are overwhelmingly male. The proportion of females on the FÁS apprenticeship register has been under **1%** since 2007. In order to combat the gender imbalance in the apprenticeship programme, employers are granted a bursary of **€2,667 (£2,000)** for each female apprentice they hire[127].

10.2 The Irish apprenticeship system: general characteristics

10.2.1 Apprenticeship trades

Apprenticeships in Ireland are available in the five apprenticeship sectors shown in Table 53 below. Within these 5 sectors, there are 26 specific trades, and in all cases (with the exception of the Print Media sector where an apprenticeship is completed in three years), apprenticeships require a minimum of **four years** to complete their training. All the trades are in the more traditional apprenticeship sectors, and unlike the united Kingdom, there are no apprenticeships available in areas such as Business Administration, Health and Social care, Hairdressing and personal services.

Table 53: FÁS apprenticeship trades in Ireland

Construction sector	Electrical Sector	Motor Sector	Engineering Sector	Printing Sector
Brick and stonelaying	Electrical	Agri-mechanics	Fitting	Print Media
Cabinetmaking	Electrical Instrumentation	Construction Plant Fitting	Metal Fabrication	
Carpentry and Joinery	Instrumentation	HGV Mechanics	Sheet Metalwork	
Floor & Wall Tiling	Refrigeration & Air Conditioning	Motor Mechanics	Tool-making	
Painting & Decorating	Aircraft Mechanics	Vehicle Body Repairs	Industrial Insulation	
Plastering	Electronic Security		Farriery	
Plumbing				
Wood Machinery				

Source: Information from Department of Education and Skills (2013) and FÁS website [128]

There are a number of advantages and disadvantages to the relatively 'tight' apprenticeship framework. In the 2010 OECD report on Irish vocational education and training, it was noted that the framework resulted in the close involvement of social partners in the design of the apprenticeship programme in terms of ensuring support for the programme. However, it was also suggested that the adopted approach can also result in low responsiveness of the apprenticeship system to changes in labour demand or skill requirements. For instance, the process of creating an apprenticeship programme in a new trade was described as "extremely lengthy and difficult as it requires the agreement of all relevant stakeholders".

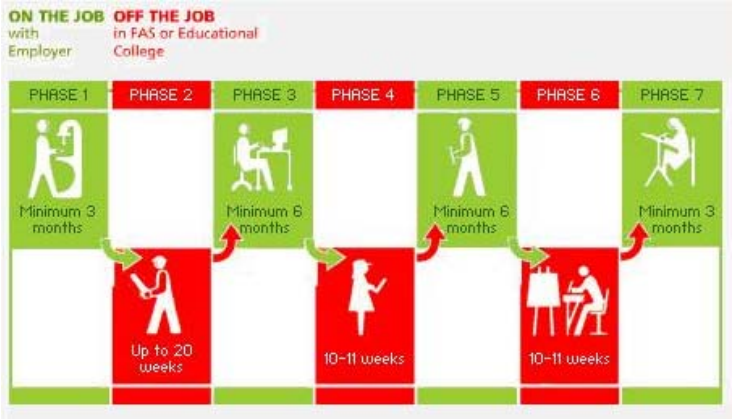
10.2.2 Apprenticeship structure in Ireland

In most cases, the apprenticeship consists of seven phases. Figure 52 shows how the combination of on-the-job and off-the-job training is structured. Phases 1, 3, 5 and 7 are provided by the employer. Over the four year duration, the off-the-job phases account for approximately 40 weeks in most of the apprenticeships in aggregate, with the remainder being spent on-the-job.

[127] See FÁS website at www.fas.ie/en/Allowances+and+Grants/Female+Bursary.htm
[128] See www.fas.ie/en/Training/Apprenticeships/Frequently+Asked+Questions.htm

Of the off-the-job training phases, Phase 2 is provided at a FÁS training centre whereas Phases 4 and 6 are provided at Institutes of Technology or Colleges of Further Education. In the 2010 OECD report, the alternating structure of the programme was identified as one of its strengths.

Figure 52: Apprenticeship structure in Ireland



Note: Exceptions to this chart are apprenticeships in floor & wall tiling and printing.
Source: FÁS website[129]

10.2.3 Qualifications

Those individuals that successfully complete an apprenticeship are awarded a **FETAC Advanced Certificate – Craft** by Quality and Qualifications Ireland, which is an internationally recognised qualification. This ranks as a Level 6 qualification in the National Framework of Qualifications which is comprised of 12 levels in total. The Level 6 qualification is the highest award offered by FETAC (Further Education and Training Awards Council) and the lowest award offered by HETAC (Higher Education and Training Awards Council). Qualified apprentices can then progress to a selection of higher certificate, ordinary Bachelor's degree and honour Bachelor's degree courses and can benefit, in some cases, from coursework exemptions.[130]

10.3 Funding of the apprenticeships in Ireland

10.3.1 Costs to the state

The total annual cost of the apprenticeship programme to the Irish state is presented in Table 54, as well as the derived Exchequer cost per apprentice per year. FÁS is responsible for its own internal management and administration costs, the payment of the 'student charge' to Institutes of Technology, the cost of training in FÁS training centres and the payment of *training allowances* and subsistence to apprentices while in off-the-job training. The Higher Education Authority, which oversees the Institutes of Technology and Colleges of Further Education, is responsible for the costs of training in its institutes. Apprentices are themselves responsible for examination fees (which are approximately **€200** per annum **(£150)**).

[129] See www.fas.ie/en/Training/Apprenticeships/Frequently+Asked+Questions.htm
[130] Selected courses listed on the FETAC website: www.fetac.ie/fetac/documents/Progression_from_FETAC_Adv_Cert-Craft_to_HE_Courses.pdf

The cost of Irish apprenticeships is judged to be high relative to other OECD countries (OECD, 2010), a view reinforced by the Irish Department of Education and Skills (2013). In its Background Issues Paper (2013), the Department of Education and Skills adopts a similar approach as used in the 2010 OECD paper to calculate the cost to the state of an apprenticeship. The analysis suggests that the average cost to the state per apprenticeship stands at **US$29,000** (equivalent to **€24,795** or **£18,585**[131]) using Purchasing Power Parity rates for GDP.[132]

Table 54: Costs of the apprenticeship programme to the Irish government

	2008 costs	2011 costs
FÁS costs including overheads but excluding student charge and apprentice allowances[(a)]	€60.09m	€13.376m
Education sector costs[(b)]	€57.16m	€35.716m[(c)]
Student charge paid by FÁS[(d)]	€2.13m	€2.308m
Total delivery costs	€119.38m	€51.400m
Apprentice training allowances	€105.58m	€36.404m
Total programme costs	**€224.96m**	**€87.804m**
Income[(e)]	€0.83m	€0.900m
Net costs to state of programme	**€224.13m**	**€86.904m**
Apprentice throughput (graduates from phases 2, 4 and 6)	18,237	7,418
Cost per apprentice per calendar year	**€12,290**	**€11,715**

Note: [(a)] Includes FÁS pay and overhead management and administration costs.
[(b)] Cost to the Higher Education Authority (which funds training in academic institutions) derived from unit cost returns by Institutes of Technology in 2009/10. [(c)] Estimated cost. [(d)] Increases in student fees, over this period, account for stability of student charges despite reduced numbers. [(e)] Assumption that income is the examination fee paid by apprentices to Institutes of Technology. Increases in student fees, over this period, account for stability of student income despite reduced numbers. ***Source: Table from Department of Education and Skills (2013) based on figures provided by FÁS in September 2012***.

Regarding the relatively high costs, the authors of the 2013 Background Issues Paper urge caution in interpretation noting that Irish apprenticeships tend to be concentrated in technological fields, which are associated with higher training costs.

10.3.2 Costs to employers

In a four year apprenticeship, employers will generally pay the apprentice for 168 weeks spent in on-the-job training. The total wage cost of one apprentice to an employer is estimated in Table 55 below. Unsurprisingly, the total wage cost is substantially higher than the cost of the apprentice to the state, as estimated above, which can be attributed to the fact that the apprentices spend substantially more time with the employer than they do on the off-the-job phases (generally just 40 weeks).

[131] Exchange rates of $1 = €0.855 = £0.6513
[132] The authors of the Background Issues Paper note that the figure presented in the OECD paper ($19,000) was based on a misinterpretation of data provided by FÁS.

The calculation of total wage costs does not include any costs to the employer related to the provision of training. However, the employer does also benefit from the labour supplied by the apprentice. Wage rates for apprentices are presented in detail in a later section.

Table 55: Total apprentice wage cost to employer in Ireland

	Construction	Electrical	Engineering	Motor
Wage cost of 1 apprentice over 4 years	€88,700 (£66,487)	€87,600 (£65,662)	€71,870 (£53,872)	€71,435 (£53,546)

Source: Department of Education and Skills (2013). Adjusted for Purchasing Power Parity

10.3.3 Recent reforms to the apprenticeship programme

In order to combat the problem of apprentices being made redundant in the course of their training, FÁS has introduced a number of reforms to the apprenticeship programme including:

a) Allowing redundant apprentices to move on to the next off-the-job training phase;
b) Introducing the *Redundant Apprentice Placement Scheme* which helps redundant apprentices find new employers;
c) Piloting a programme to move electrical and plumbing apprentices from the construction sector into other sectors; and
d) Developing assessments equivalent to the final on-the-job training phase for redundant apprentices in certain sectors.

FÁS also ran the *Employer Based Redundant Apprentice Rotation Scheme* from the start to the end of 2009 which provided a subsidy to employers in certain industrial sectors that hired a redundant apprentice to replace an apprentice that had moved to off-the-job training. Only employers that had not made any apprentices redundant since the start of 2007 were eligible.

In May 2013, the Minister for Education and Skills announced the establishment of an independent Review Group, tasked with the development of a modern apprenticeship programme aligned to labour market needs. Some options for reform are set out by the Department in its Background Issues Paper (2013) such as:

a) A modified dual system with a wider range of occupations and a mechanism for matching supply to demand;
b) A pre-apprenticeship model similar to other European systems where vocational education and training takes place in upper secondary school (or an alternative) before apprentices are recruited by employers to complete their training;
c) An industry provided model in which the State is involved only in regulation and quality assurance and delivery is the sole responsibility of industry networks.

10.4 Apprentice pay in Ireland

10.4.1 On-the-job pay

Apprentices have an employment contract with the employer that lasts over the duration of the apprenticeship programme. In a four year apprenticeship, employers will generally pay the apprentice for the 168 weeks spent in on-the-job training.

Wages for **on-the-job phases** are determined by negotiations between Trade Unions and employers based on the *basic craft rate* in the relevant sector[133]. The basic craft rate is the minimum rate paid to a fully qualified craftsperson. In the construction and electrical sectors, apprentice pay is an element of legally enforceable wage agreements registered by the Labour Court.

With the exception of the construction industry, apprenticeship wages were last updated between 2007 and 2008 and are therefore based on the basic craft rate set at that time (Department of Education and Skills, 2013). Apprentice pay in the construction industry was updated in 2011 when the basic craft rate was reduced by 7.5% from the level previously agreed in 2008. The percentages for all sectors are presented in the following table.

Table 56: Apprentice pay in Ireland as proportion of fully qualified craftsperson

Phase	Engineering Sector[(a)]	Construction sector[(b)]	Motor Sector[(c)]	Printing Sector (3 year cycle)[(d)]	Electrical Sector [(a)]
Phase 2	Based on average of the other sectors	33%	33%	75%	30%
Phase 4		50%	50%	80%	45%
Phase 6		75%	75%	90%	65%
4th year		90%	90%		80%

Note: [(a)] Effective 1/04/07, [(b)] Effective 4/02/11, [(c)] Effective 1/05/08, [(d)] Effective 1/11/07

Source: TTEU (Technical, Electrical & Engineering Union) in private emails to author (2013).

In the electrical sector, for example, 1st year apprentice rates were calculated as **30%** of the relevant basic craft rate (which stands at **€20.74** per hour in the electrical sector **(£15.55)**, 2nd year rates were **45%** of the basic craft rate, 3rd year rates were **65%** and 4th year rates were **80%**. In each sector, pay increases with progression through the training phases, although wage growth differs between sectors. For instance, wage norms are considerably higher in Phase 2 in the Printing sector than in other sectors but the growth in wages is slower in later stages.

The hourly rates for apprentices in each sector are presented in Table 57. In the four year programmes, hourly pay norms for Phase 2 apprentices range from **€5.06** to **€6.22 (£3.79** and **£4.66)**. Hourly pay norms in the printing sector are relatively higher at **€8.30 (£6.22)** for Phase 2 apprentices.

[133] The Technical, Electrical & Engineering Union advises on engineering and electrical apprentice wages. The Society of the Motor Industry advises on wages in the motor sector. The Construction Industry Federation advises in relation to the construction industry. The Print Forum advises on wages in printing.

Table 57: Apprentice gross wage norms in Ireland by sector – hourly pay					
Phase	**Engineering Sector[a]**	**Construction sector[b]**	**Motor Sector[c]**	**Printing Sector (3 year cycle)[d]**	**Electrical Sector [a]**
Phase 2	€5.06 (£3.79)	€5.73 (£4.30)	€5.01 (£3.76)	€8.30 (£6.20)	€6.22 (£4.66)
Phase 4	€7.60 (£5.70)	€8.61 (£6.45)	€7.52 (£5.64)	€8.85 (£6.63)	€9.33 (£6.99)
Phase 6	€11.27 (£8.45)	€12.91 (£9.68)	€11.28 (£8.46)	€9.96 (£7.47)	€13.48 (£10.10)
4th year	€13.63 (£10.22)	€15.49 (£11.61)	€13.53 (£10.14)		€16.59 (£12.44)

Note: [a] Effective 1/04/07, [b] Effective 4/02/11, [c] Effective 1/05/08, [d] Effective 1/11/07. Hourly figures derived from weekly figures using assumption of 39 hour week. Adjusted for Purchasing Power Parity ***Source: Calculations by LE based on figures reported in Department of Education and Skills, 2013.***

It should be noted that apprenticeship wages are not subject to national minimum wage legislation. In Table 58, we provide information on the apprentice hourly rate as a proportion of the full adult level of national minimum wage (**€8.65** per hour **(£6.48)**). The analysis indicates that in the first year of an apprenticeship, an apprentice can expect to earn between **60%** and **75%** of the full national minimum wage, rising to between **90%** and **110%** in the second year and reaching to between **160%** and **200%** by the final year of the apprenticeship. These rates are substantially higher in relative terms than in any other country assessed as part of this analysis.

Table 58: Apprentice pay in Ireland as a proportion of adult national minimum wage					
Phase	**Engineering Sector**	**Construction sector**	**Motor Sector**	**Printing Sector (3 year cycle)**	**Electrical Sector**
Phase 2	60%	68%	60%	99%	74%
Phase 4	91%	103%	90%	105%	111%
Phase 6	134%	154%	134%	119%	161%
4th year	162%	184%	161%		198%

Note: Hourly apprentice pay figures derived from weekly figures using assumption of 39 hour week.
Source: Calculations by LE based on gross wage norms reported in Department of Education and Skills (2013).

Table 59 shows gross weekly wage norms by sector. These rates are based on a **39 hour** working week.

Table 59: Apprentice gross wage norms in Ireland by sector – weekly pay					
Phase	**Engineering Sector[a]**	**Construction sector[b]**	**Motor Sector[c]**	**Printing Sector (3 year cycle)[d]**	**Electrical Sector [a]**
Phase 2	€197.47	€223.47	€195.25	€323.63	€242.58
Phase 4	€296.42	€335.79	€293.17	€345.21	€353.87
Phase 6	€439.51	€503.49	€439.75	€388.36	€525.72
4th year	€531.49	€604.11	€527.70		€647.01

Note: [a] Effective 1/04/07, [b] Effective 4/02/11, [c] Effective 1/05/08, [d] Effective 1/11/07
Source: Department of Education and Skills (2013).

10.4.2 Comparison with average 'fully qualified' pay for these sectors

In addition to considering how apprentice wages are set according to wage bargaining and *basic craft rates*, we can also use information from the National Statistics Authority to compare apprentice wage rates with the average pay in a comparable sector. The average gross weekly earnings for "production, transport, craft and other manual workers", as reported by the Irish Central Statistics Office (2013) was **€627.88 (£471)**. Table 60 shows how this compares to the apprentice gross weekly wage norms by sector. In the first year of an apprenticeship, weekly pay

during Phase 2 ranges from **32**% to **39%** of the average weekly pay of this set of workers. This rises to between **84%** and **103%** in the final phase.

Table 60: Apprentice pay in Ireland as a proportion of average gross weekly earnings

Phase	Engineering Sector	Construction sector	Motor Sector	Printing Sector (3 year cycle)	Electrical Sector
Phase 2	32%	36%	31%	52%	39%
Phase 4	47%	54%	47%	55%	58%
Phase 6	70%	80%	70%	62%	84%
4th year	85%	96%	84%		*103%

Note: * Apprentice wage norms are based on a 39 hour work week which exceeds the average number of hours (31.7) reported in the CSO data which is the source for the average gross weekly earnings. This may explain why 4th year electrical sector wages exceed 100%.

Source: Calculations by LE based on gross wage norms reported in Department of Education and Skills (2013) and average gross weekly earnings for production, transport, craft and other manual workers from Irish Central Statistics Office (2013).

Using the 39 hour work week on which weekly apprentice rates are based, it is also possible to estimate the average hourly rate and compare this to the average hourly rate of **€19.81 (£14.85)** (calculated as the weekly average rate for production, transport, craft and other manual workers divided by the average number of hours per week (standing at 31.7)). In the four year programmes, hourly pay during Phase 2 ranges from **26%** to **31%** of the average pay for this set of workers. This increases to between **68%** and **84%** in the final apprenticeship phase.

Table 61: Apprentice pay in Ireland as a proportion of average gross hourly earnings

Phase	Engineering Sector	Construction sector	Motor Sector	Printing Sector (3 year cycle)	Electrical Sector
Phase 2	26%	29%	25%	42%	31%
Phase 4	38%	44%	38%	45%	47%
Phase 6	57%	65%	57%	50%	68%
4th year	69%	78%	68%		84%

Note: Hourly apprentice pay figures derived from weekly figures using assumption of 39 hour week. Average gross hourly earnings for production, transport, craft and other manual workers derived from weekly figures using assumption of 31.7 hour week.

Source: Calculations by LE based on gross wage norms reported in Department of Education and Skills (2013) and average gross weekly earnings for production, transport, craft and other manual workers from Irish Central Statistics Office (2013).

Note that the percentage figures (in the electrical sector) derived from National Statistics Agency information are broadly equivalent to the percentages based on the centralised bargaining negotiations that were completed between 2007 and 2011 and which form the basis of apprentice pay (i.e. 30% in 1st year, then 45%, 65% and 80%).

10.4.3 Off-the-job pay

During **off-the-job phases**, a *Training Allowance* equal to the on-the-job payment rate is paid to the apprentice by FÁS. The allowance is taxable. Additional travel and subsistence payments can be made by FÁS also. Apprentices themselves pay the cost of examinations during Phase 4 and Phase 6 to Institutes of Technology. Apprentices cannot take holidays during off-the-job training phases.

10.4.4 Non-compliance and apprentice pay in practice

There has been little research conducted into the actual levels of payments received by apprentices and the occurrence of underpayment. In the OECD report on Irish vocational education and training (2010), it is noted that the visiting team was informed of cases where apprentices and employers had come to informal wage reduction agreements. The point is made that although this practice may prevent apprentices from being made redundant in some cases, it may also be used by employers to break wage agreements with the sole aim of increasing profits.

Another risk highlighted in this report is that if pay is lowered for apprentices relative to the industry standard, there is the possibility that employers may choose to make non-apprentice employees redundant in favour of keeping the lower paid apprentices. It was noted that this may be a particular problem in Ireland where employment protection levels for regular and temporary non-apprentice employees is weak relative to other OECD countries.

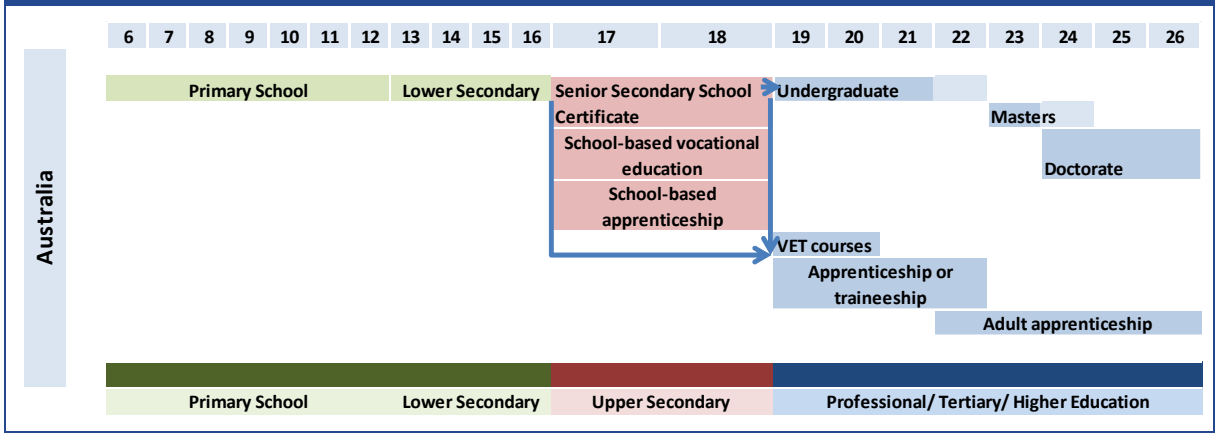
11 Apprenticeships and apprentice pay in Australia

11.1 Overview of the Australian educational system

11.1.1 Education system

Young people in Australia are required to participate in schooling until they complete Year 10 (normally completed at age 16). At this point they have a variety of options, but are required to participate in education, training or employment until the age of 17[134]. Figure 53 summarises the Australian education system, showing students' options following the completion of Year 10 (lower-secondary).

Figure 53: The education system in Australia



Source: London Economics

First, students may continue along an academic route in school to gain a Senior Secondary Certificate of Education, normally achieved at age 18. Secondly, the education system gives students the option of combining Vocational Education and Training (VET) with academic components while in school studying for the Certificate of Education. Students that choose this option can complete the vocational component by either taking formal VET courses, which are offered in school and include work placements, or by completing a *school-based apprenticeship* or traineeship that also include formal VET course study.

VET courses involve a combination of formal study in school and practice in a work placement. The division of time varies between courses and between states[135], but typically around **30%** of the course time is spent in the work placement. On completing VET courses, students gain a VET qualification (normally at Certificate II level) recognised by the Australian Qualifications

[134] This rule came into force in 2010, and prior to this the school leaving age had varied across states between 15 and 17.

[135] Historically curriculums and courses have been determined by state and territory education departments, leading to differences across states in students' requirements to gain the Senior Secondary School Certificate, which also has a different name in some states (for example, the "Higher School Certificate" in New South Wales). However, the Australian Curriculum, Assessment and Reporting Authority was established in May 2009 to create a single Australian Curriculum, and in recent years there has been considerable standardization of curriculums across states. For more information, see http://www.abs.gov.au/ausstats/abs@.nsf/Lookup/by%20Subject/1301.0~2012~Main%20Features~Primary%20and%20secondary%20education~105 [accessed 12/06/2013]

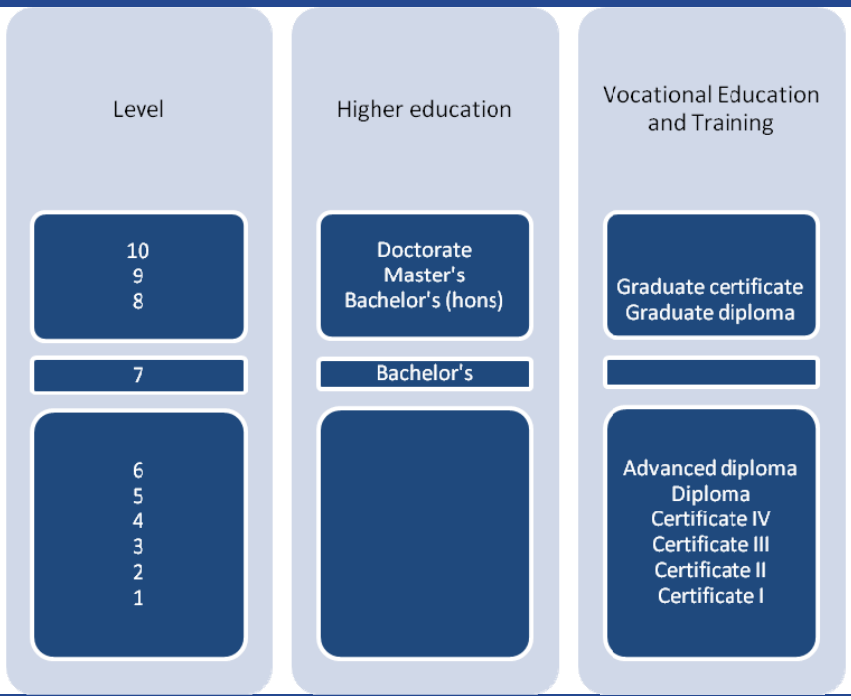
Framework (AQF – see Figure 54 below) and VET courses can count alongside academic courses towards the Senior Secondary Certificate of Education.

School-based apprenticeships and traineeships also involve study for an AQF-recognized VET qualification through a combination of formal study in school and on-the-job training, and are also taken alongside academic qualifications and can count towards the Certificate of Education. However, in contrast to VET courses, apprentices and trainees have formal contracts with employers and spend more time in employment and on-the-job training. Whilst there is variation across courses and states, the time spent in employment is typically around one day per week. School-based apprenticeships and traineeships also typically result in a higher level of qualification than school-based VET courses (normally Certificate III level qualifications) and involve a greater overall time commitment. They also may be started whilst in school but completed as a junior apprenticeship once the student has finished school.

Thirdly, students may leave the school system to enter either a non-school-based apprenticeship or traineeship or full-time employment. Non-school based apprenticeships and traineeships again combine formal study, on-the-job training and employment, and on completion, the apprentice or trainee gains an AQF-recognized VET qualification. Formal study is undertaken through specialist VET Registered Training Organisations (RTOs), rather than in school.

Lastly, students may pursue a combination of the above options, taking each part-time. For example, as discussed below in section 11.2.3, there are more students in school pursuing a part-time non-school-based apprenticeship than there are pursuing a school-based apprenticeship.

Figure 54: Australian Qualifications Framework



Notes: When taken in senior secondary schools, qualifications at Certificate II or III level can count towards the Senior Secondary Certificate of Education. However, the Certificate of Education does not appear in the AQF as it only covers tertiary qualifications.

Source: Australian Qualifications Framework, second edition, January 2013

Tertiary education is divided into the academic route – higher education – and Vocational Education and Training. The Australian Qualifications Framework (see Figure 54) was established in 1985 to bring all academic and vocational qualifications into a single national system of qualifications, so that levels of study can be compared. As with the United Kingdom the academic route involves undergraduate study for a Bachelor's Degree, which takes three to five years' full-time study depending on the course and the level of study, and students can progress to postgraduate study for Master's and Doctoral Degrees.

Vocational Education and Training (VET) courses at the tertiary level are mostly provided by Technical and Further Education (TAFE) institutes. Usually, completion of Year 10 is a minimum entry requirement, and students can apply for courses at age 16 or after attainment of the Senior Secondary Certificate of Education.

VET courses can be taken at a variety of levels. Firstly, there are certificates Levels I to IV, which require between 6 and 24 months study. As discussed above, when taken in schools, Certificates II and III qualifications can count towards the Senior Secondary Certificate of Education. Secondly, vocational qualifications extend to Diploma, Advanced Diploma and Associate degree levels, which are classified by the AQF as one level below a Bachelor's degree. The highest level VET qualifications, the Vocational Graduate Certificate and Vocational Graduate Diploma, are classified by the AQF as equivalent to a Bachelor's Honours degree.

Apprenticeships, and the closely related system of traineeships, are one element of the VET system. They can be undertaken by anyone of working age. There is a large amount of flexibility in the apprenticeship and traineeship system, although they always involve a formal arrangement between an employer and employee to combine work with study for one of the VET qualifications determined by the Australian Qualifications Framework (AQF). The apprenticeship and traineeship system is described in more detail in section 11.2.

11.1.2 Incidence of vocational education in schools

In 2011, there were **249,400** students taking a VET course in school, including school-based apprenticeships and trainees[136]. Since the majority of VET courses are taken in Year 11 and Year 12, this compares to a total population of 476,400 Year 11 and Year 12 students in 2011[137], indicating that a significant proportion of senior secondary students take VET courses. However, it should be noted that this is not a direct comparison since it is possible to take some VET courses at a younger age.

Approximately **60%** of VET courses were at Certificate II level, and the most popular areas of study were Tourism, Hospitality and Events (**16.6%** of courses taken), Business Services (**12.2%**), Information and Communications Technology (**10.2%**) and Construction, Plumbing and Services (**7.3%**).

There were **18,500** school-based apprentices and trainees in 2011 which equates to **7.4%** of the total VET amongst school students. However, the number of school-based apprentices and trainees has declined from 25,700 in 2008.

[136] NCVER, National VET in Schools Collection, 2007-11
[137] ABS, Schools, Australia Collection, 2012

11.1.3 Tertiary vocational education

Vocational education and training at the tertiary level attracts more students than at the secondary level. In 2010, there were **1.80 million** students enrolled in the public tertiary VET system, which included TAFE institutes, other higher education institutions and community education providers. TAFE institutes provide roughly two thirds of all tertiary VET education. In contrast there were **1.193 million** (**39.9%** of total tertiary students) higher education students in 2010. However, comparing "equivalent full-time students", **56.7%** were in higher education, since many VET courses are taken part-time. The most popular fields of study for VET courses are Management and Commerce (**20.4%** of courses taken), engineering and related technologies (**16.9%**) and society and culture (**15.7%**)[138].

VET courses are generally taken at a much lower level than higher education courses. **71.7%** of VET qualifications are at the certificate I to IV level, with just under half of these at the certificate III level. Just **11.5%** are at the Diploma level and just **2.3%** at a higher level. In contrast, **73.6%** of academic higher education courses are a Bachelor's degree and only **3.2%** are at a level below undergraduate degree level[139].

There are some inter-linkages between the two pathways: 32,800 (**7.1%**) starting full-time equivalent VET students had a Bachelor's degree prior to commencing their VET studies, whilst 16,700 (**7.0%**) commencing full-time higher education students had completed a VET course prior to commencing higher education[140].

11.2 The Australian apprenticeship system: general characteristics

11.2.1 Apprenticeships and traineeships

Australia has a developed system of apprenticeships and traineeships. Both involve formal arrangements between an employer and employee and combine work with study for an AQF-recognised qualification. Both apprenticeships and traineeships can be taken full-time or part-time and can also be school-based. State training authorities decide which qualifications are termed apprenticeships and which are traineeships.

Apprenticeships have a long history, having been introduced and regulated from the early twentieth century. Traineeships were created in 1985 following the Kirby review, which recommended the introduction of traineeships as generally shorter and lower-level alternatives to apprenticeships – essentially as an active labour market policy for disadvantaged school leavers.

In general, an apprenticeship involves training in a skilled trade and is more industry-specific, whereas traineeships are in a broader vocational area such as "office administration" and "Information Technology"[141]. However, the overlap between apprenticeships and trades is not perfect; it is possible to undertake apprenticeships in non-trade industries and also to take

[138] NCVER, Tertiary Education and Training in Australia, 2010
[139] ibid.
[140] ibid.
[141] http://www.apprenticepower.com.au/hints-and-tips/australian-apprenticeships-traineeships/ [accessed 12/06/2013]

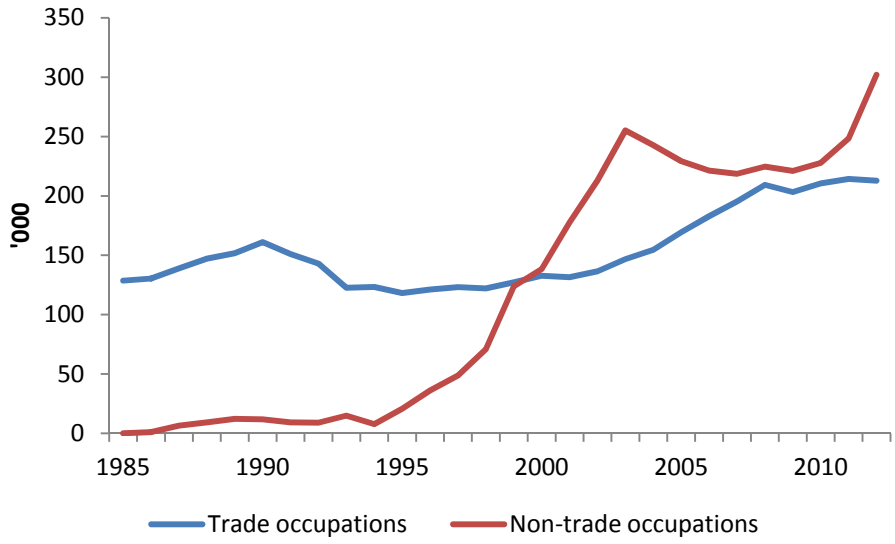
traineeships in trade industries. In general, apprenticeships tend to have a longer duration than traineeships, although as discussed below this is not always the case.

11.2.2 Characteristics of apprenticeships and traineeships

The apprenticeship and traineeship system is flexible. It is possible to take an apprenticeship or traineeship in more than 500 occupations[142] at a range of qualification levels and the duration ranges from less than a year to four years or longer.

One notable trend has been in the increasing proportion of apprenticeships and traineeships in 'non-trade'[143] occupations, which was especially pronounced between 1994 and 2003, as shown in Figure 55. The increase in non-trade apprenticeships and traineeships is largely as a result of the creation of traineeships in 1985 as they are more likely to be in non-trade occupations than apprenticeships.

Figure 55: Australian apprentices and trainees in trade and non-trade occupations, 1985 to 2012



Note: The classification into trade and non-trade follows the Australia and New Zealand Standard Classification of Occupations (ANZSCO).

Source: NCVER, 'Apprentices and trainees 2011: annual', Available at http://www.ncver.edu.au/statistic/31250.html [accessed 10/06/2013]

Traditionally, apprenticeships were dominated by the metal and vehicle industry, which accounted for **44%** of apprenticeships in 1969. Over time there has been a shift within trades industries away from the metal and vehicle industry towards the electrical and building industries. However, there has been a much larger shift towards non-trade industries in occupations such as community and

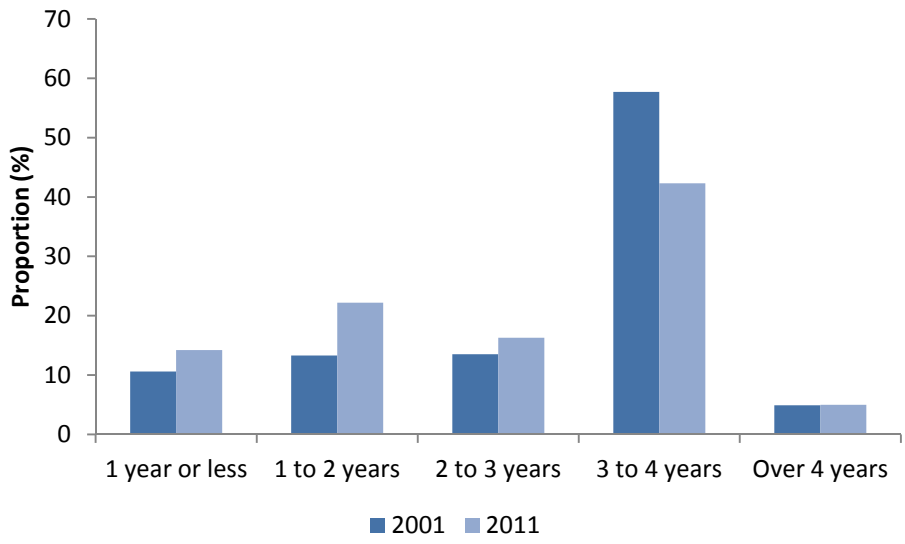
[142] http://www.australianapprenticeships.gov.au/employers [accessed 12/06/2013]

[143] The classification into trade and non-trade follows the Australia and New Zealand Standard Classification of Occupations (ANZSCO). Trade occupations include automotive and engineering workers, electro-technology and telecommunications workers, construction workers, printing workers and food trade workers. Non-trade occupations cover all others, and include managers, education and health professionals, community and personal service workers, sales workers, machinery operators and drivers and labourers.

personal service workers, clerical and administrative workers and sales workers. These three categories accounted for **66%** of non-trade apprenticeships and traineeships in 2011.

Apprenticeships and traineeships can take from one to four years to complete, depending on the trade or study area chosen and the level of qualification to be gained. Traditionally trade apprenticeships in Australia lasted for **4 years**, but this has changed due to the many reforms since 1985. As Figure 56 shows, in trade occupations, **42%** of apprenticeships and traineeships are between 3 and 4 years, although they became, on average, shorter in duration between 2001 and 2011. This is at the longer end of the spectrum and comparable with the apprenticeship durations in Ireland (and the central/northern European countries).

Figure 56: Duration of apprenticeships and traineeeships in trade occupations in Australia

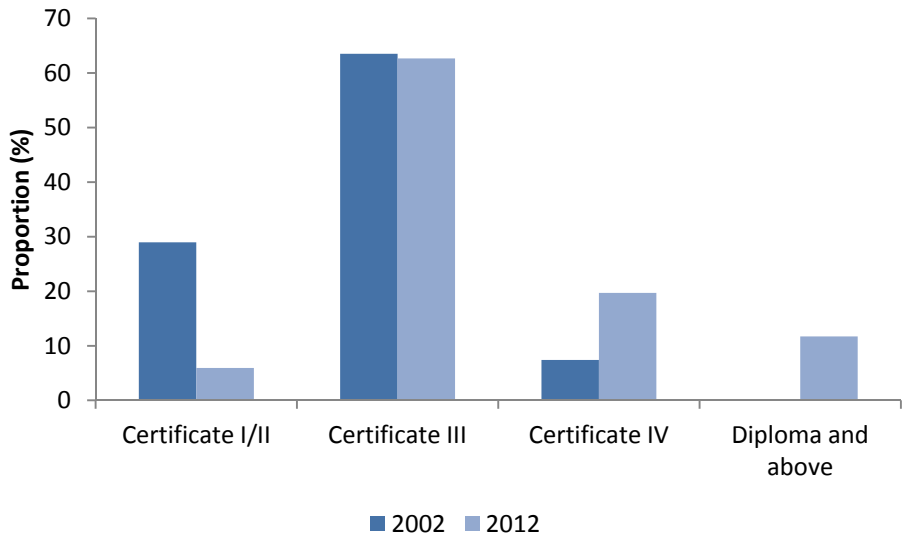


Source: NCVER, 'Apprentices and trainees 2011: annual', Available at http://www.ncver.edu.au/statistic/31250.html [accessed 10/06/2013]

Apprenticeships and traineeships in non-trade occupations are generally much shorter than those in trade occupations. In 2011, **94%** of apprenticeships and traineeships in non-trade occupations lasted for less than two years, and there has been little change in their duration since 2001.

Figure 57 shows that more high level qualifications (Certificate IV, Diploma and above) were being acquired in 2012 than in 2002. This is most likely due to the rise in the ratio of non-trade to trade apprenticeships and traineeships. Despite generally being shorter, non-trade apprenticeships and traineeships are often for a higher level qualification than those in the trades. **85%** of Certificate IV and **98%** of Diploma qualifications were in non-trade occupations. In 2012, the vast majority (**87%**) of apprenticeships and traineeships in trade occupations were at **Certificate III** level, roughly the same proportion as in 2002.

Figure 57: Level of qualification of apprenticeships and traineeships in Australia



Source: NCVER, 'Apprentices and trainees 2012 – December quarter', Available at http://www.ncver.edu.au/statistic/31250.html [accessed 10/06/2013]

11.2.3 Who undertakes apprenticeships?

Apprenticeships and traineeships can be undertaken by anyone of working age.

School-based apprenticeships are undertaken part-time and combine paid employment as an apprentice or trainee, off-the-job vocational training and senior secondary school studies. Normally, formal training is delivered for ***two hours*** a week by a Registered Training Organisation (which may be a school)[144] and apprentices spend around one day per week in employment and on-the-job training. The rest of their time is spent at school taking other subjects for the Senior Secondary Certificate of Education.

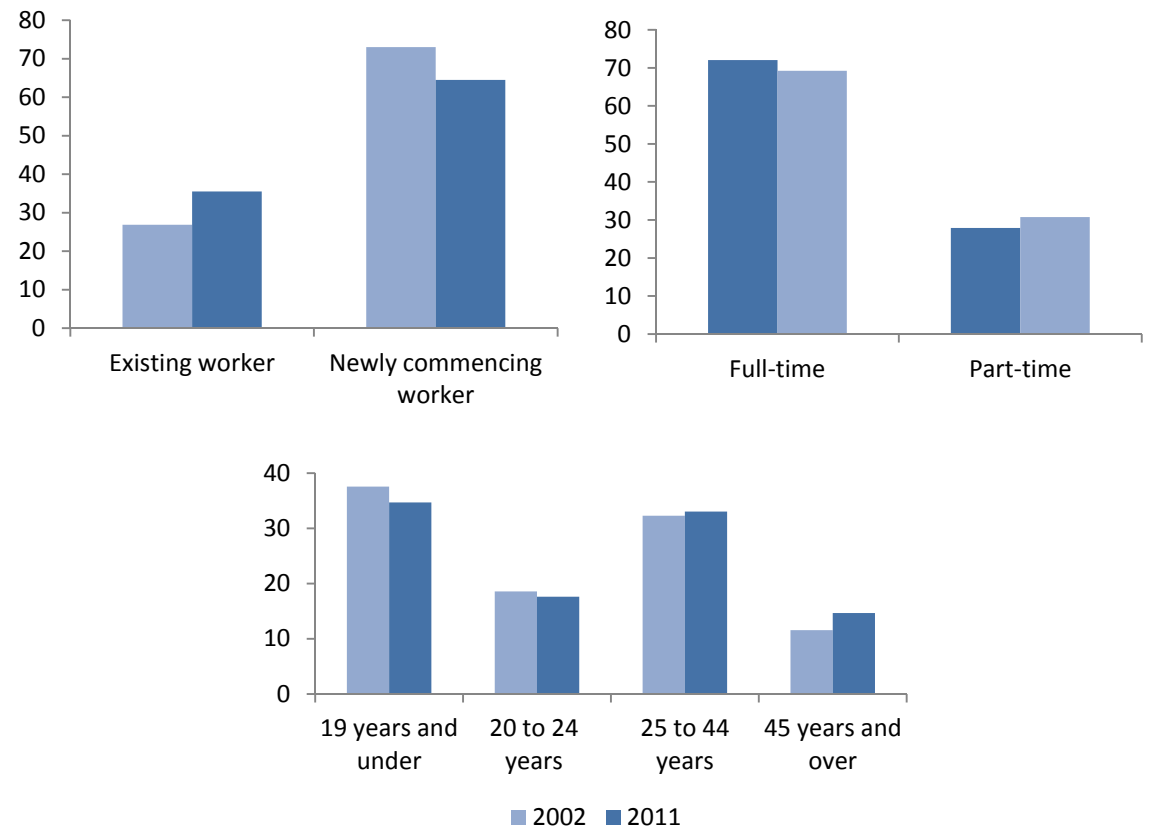
There were **18,500** school-based apprenticeships and traineeships in 2011, equivalent to just **6%** of all apprenticeships and traineeships.[145] However, an additional **10%** of apprentices and trainees were still attending school whilst undertaking a non-school-based apprenticeship part-time (NCVER 2011a).

The proportion of apprentices and trainees in school varies considerably with the occupation. School children comprise very significant proportions of some apprenticeships or traineeships, notably "food preparation assistants", "sports and personal service workers" and "agricultural workers", all of which have proportions greater than **40%**. In numerical terms the occupation with the largest number of school children is "sales worker". While some are in a school-based program, the majority are trainees while in part-time jobs (NCVER 2011a).

[144] Australian Apprenticeships (2012), *About Australian School-based Apprenticeships*
[145] NCVER, *Apprentices and trainees 2011: annual*

Mirroring the trend in the United Kingdom, it is notable that nearly half of Australian apprentices and trainees are over 25. The proportion of apprentices that are over 25 increased from **44%** to **48%** between 2002 and 2011. There is also a sizeable proportion (**14%**) of apprentices over 45. Along with the shift towards older apprentices and trainees, in 2011, there were also more apprentices that had pre-existing work experience in the industry, although the majority remain newly commencing workers. There has also been a very marginal increase in the proportion of part-time apprentices and trainees since 2002, as shown in Figure 58.

Figure 58: Changing characteristics of Australian apprentices and trainees



Source: NCVER, Apprentices and trainees 2011: annual, Available at http://www.ncver.edu.au/statistic/31250.html [accessed 10/06/2013]

Overall, **56%** of apprentices and trainees in 2011 were male, roughly the same number as in 2002. However, trade occupations are heavily male dominated whereas there are more females than males in apprenticeships and traineeships in non-trade occupations. There is also a higher proportion of females taking qualifications at the Certificate IV and Diploma level, although this is most likely because very few qualifications in trade occupations are at these levels.

11.3 Funding of the apprenticeships in Australia

11.3.1 Cost to government

Costs to the government include the management costs of the system, the costs of off-the-job formal training in the VET system, and the costs of incentive payments and tax exemptions to employers and apprentices and trainees.

NCVER (2011a) estimated the total **annual** cost to the government per apprentice or trainee, using data from 2008 and 2009 to be **AUD$7,081**[146] **(£3,205)**. The majority of these costs are the operating expenditures of the public VET system used by apprentices and trainees for formal off-the-job training. Nearly a quarter of the overall cost relate to incentives paid to employers to provide apprenticeships. In comparison to these two costs, the personal benefit and income support payments made to individuals and management costs of the apprenticeship system are relatively small, as shown in Table 62 below.

Table 62: Government annual costs of Australian apprenticeship and traineeships (2008-09)

Category of expenditure	Annual total (AUD millions)	Proportion of total (%)
Formal training*	1.73 (£0.78m)	59.1
Incentives to employers	0.70 (£0.32m)	24.0
Payments to employees**	0.20 (£0.09m)	6.7
Administrative costs of the system	0.30 (£0.14m)	10.2
Total cost to the government	2.92 (£1.32m)	100.0

Notes: * Estimate of the cost of apprentices' and trainees' use of the public VET system. ** Includes personal benefit payments and income support payments. Adjusted for Purchasing Power Parity.
Source: NCVER (2011a)

11.3.2 Sources of government funding for employees

Under the *Australian Apprenticeships Incentives Program* (AAIP) apprentices and trainees in national skills shortage occupations, as defined by the National Skills Needs List, are eligible for Tools for Your Trade incentive payments. These are five tax exempt cash payments that increase over the course of the apprenticeship and total **AUD$ 5,500 (£2,490)**. There are also personal benefits provided to adult apprentices in their first two years of an apprenticeship at the Certificate III or IV level ranging from **AUD$50** to **AUD$150** per week (**£23** to **£69** per week).

In addition, apprentices and trainees may also be eligible for government income support payments, including the Youth Allowance, Austudy and Abstudy (for indigenous Australians), if their personal income is below certain thresholds. For example, under the Youth Allowance, those not living at home and earning less than **AUD$ 877.67 (£397)** per fortnight may be eligible for up to **AUD$377 (£171)** per week. Apprentices and trainees may also be eligible for the Living Away From Home Allowance if they are required to move to undertake an apprenticeship. However, overall only 1.2% of apprentices receive any one of these allowances (NCVER 2011a) and as shown in Table 62 the proportion of government funding for apprenticeships that is spent on incentives and allowances to apprentices is small.

[146] We have assumed that AUD$1= £0.637

11.3.3 Sources of government funding for employers

The AAIP also includes a range of incentives for employers to take on apprentices in the form of commencements, recommencement and completion payments. Commencement incentives range from **AUD$750 (£339)** for school-based apprenticeships to **AUD$1,500 (£778)** for 'new worker' full-time apprenticeships at the Certificate III level or above. Completion incentives are only paid for apprenticeships at the Certificate III level or above and range from **AUD$2,500** to **AUD$3,000** (**£1,131** to **£1,358**).

11.4 Apprentice pay in Australia

11.4.1 Apprentice and trainee minimum wages

There is a very complex arrangement of Modern awards[147] that sets minimum wages for apprentices and trainees. There are 122 Modern awards that were determined by the Fair Work Act 2009. **Each Modern award covers a specific industry or occupation. There are separate minimum wages for apprentices and trainees**. Whilst for apprentices, there are different minimum wages for different awards, there is only one National *Training Wage* Schedule. There are also separate rates for junior and adult apprentices and trainees, where a junior is defined as an apprentice or trainee that began their apprenticeship or traineeship aged 20 or under.

We describe the system in the first instance, providing examples, and then use information from the Australian Bureau of Statistics to generate information on actual median apprentice hourly wage rates, and compare these to average occupational rate and the lowest sectoral minimum wage for comparability.

11.4.2 Apprentice minimum wages as a proportion of the minimum fully qualified rate

For most apprentices, minimum wages are set by one of the 122 Modern awards. For some apprentices, minimum wages are still determined by pre-existing State awards but over time these will be phased out and replaced by the Modern awards. In the rare cases that an apprenticeship is not covered by a Modern award, it is subject to minimum wages as determined by the National Minimum Wage Order[148]. We focus our analysis on Modern awards only as they are the relevant legislation for most apprentices.

Modern award apprentice minimum wages depend on a large number of factors, including:

- the occupation;
- whether the apprentice is a junior or adult;
- the highest year of schooling they have achieved;
- the length of the apprenticeship;

[147] An award is a type of legislation that sets the minimum employment entitlements for specific industries and occupations. For more information see http://www.fairwork.gov.au/modernawards

[148] The National Minimum Wage Order is set by the Miscellaneous Award 2010. It determines apprentice minimum wages that apply only in cases, of which there are few, that an apprenticeship is not covered by a modern or pre-existing award. The National Minimum Wage Order apprentice minimum wages are higher than the apprentice minimum wages set by some awards and lower than those set by others.

- the current year of the programme; and
- the level of qualification to be gained.

For all apprenticeships, minimum wages for **school-based apprentices** are set at the same hourly rate as those for **junior apprentices** (NCVER 2011c).

Comparable to countries like Italy, **most awards determine the minimum wage for the apprentice as a proportion of the qualified minimum wage in the same occupation, which is also set by the same award**. For nearly all occupations the qualified minimum wage is set at the **Level 3 national minimum wage** (the 'tradesperson rate'), which is for employees that have "a trade qualification or equivalent" (Fair Work Commission 2010). The tradesperson rate was **AUD$706.10 (£320)** per week in 2012 based on a 38 hour week, or **AUD$18.58 (£8.41) per hour**.

Since there are many different apprentice minimum wages, we have focused our analysis on the most popular apprentice trades. The four most popular trade categories (defined in terms of ANZSCO 'sub-major groups'[149]) were automotive and engineering trades workers, construction trades workers, electro-technology and telecommunications trades workers; and food trades workers. These four trades together accounted for **76%** of all trade apprentices in 2011[150].

In our analysis we follow NCVER (2011c) in matching the four most popular trade occupations to the most closely related 12 Modern awards, as shown in Table 63. Note that the trade categories do not match the award categories exactly since the Modern awards are not based on the ANZSCO classification. For example, the hospitality industry award covers food trade workers such as cooks and kitchen attendants alongside other non-food trade workers such as gardeners and guest service supervisors.

Table 63: Trade occupations and relevant Modern awards in Australia

Occupation (ANZSCO sub-major group)	Relevant modern awards
Automotive and engineering trades workers	Vehicle manufacturing, repair, services and retail award Manufacturing and associated industries and occupations award
Construction trades workers	Building and construction general on-site award Joinery and building trades award Plumbing and fire sprinklers award
Electro-technology and telecommunications trades workers	Electrical, electronic and telecommunications contracting award
Food trades workers	Restaurant industry award Hospitality industry award Registered and licensed clubs award Food, beverage and tobacco manufacturing award General retail award Meat industry award

Source: NCVER (2011c)

[149] For more information, see http://www.abs.gov.au/ausstats/abs@.nsf/mf/1220.0
[150] NCVER (2012b)

Table 64 gives the ratio of the junior apprentice minimum wage to the qualified minimum wage for each of the Modern awards listed in Table 63. In each case pay rises during the course of the apprenticeship. For first year junior apprentices, the ratio ranges from **37.5%** of the tradesperson rate for plumbers to **55%** for the restaurants and hospitality industries, whilst for fourth year junior apprentices the ratio ranges from **82%** to **95%**.

Table 64: Junior apprentice minimum wages in Australia (relative to tradesperson minimum wage)

Award	Year 1	Year 2	Year 3	Year 4
Vehicle manufacturing, repair, services and retail	42%	55%	75%	88%
Manufacturing and associated industries *				
Building and construction	45%	55%	75%	90%
Joinery and building trades				
Plumbing and fire sprinklers	37.5%	55%	70%	90%
Electrical, electronic and telecommunications contracting	40%	52%	70%	82%
Restaurant industry	55%	65%	80%	95%
Hospitality industry				
Registered and licensed clubs				
Food, beverage and tobacco manufacturing	42%	55%	75%	88%
General retail	50%	60%	80%	90%
Meat industry	50%	60%	85%	95%

Note: *Minimum rates in manufacturing and associated industries assume a highest level of schooling of Year 10. There are higher rates for those that have completed Year 11 or Year 12, as discussed below.
Source: NCVER (2011c)

Table 65 provides the corresponding minimum hourly wage in 2012 for junior apprentices in each award by year of the apprenticeship. In each award, the qualified minimum wage is the tradesperson rate of **AUD$18.58 (£8.41)** per hour.[151]

[151] The manufacturing and associated industries and occupations award uses both the tradesperson rate and also a higher minimum wage for "higher engineering tradespersons", set at AUD$728.30 in 2012 based on a 38 hour week, or AUD$19.17 per hour. However, the most common four year apprenticeship uses the tradesperson rate as its qualified minimum wage.

Table 65: Junior apprentice minimum hourly wage in Australia				
Award	**Year 1**	**Year 2**	**Year 3**	**Year 4**
Vehicle manufacturing, repair, services and retail	$7.80	$10.22	$13.94	$16.35
Manufacturing and associated industries				
Building and construction	$8.36	$10.22	$13.94	$16.72
Joinery and building trades				
Plumbing and fire sprinklers	$6.97	$10.22	$13.01	$16.72
Electrical, electronic and telecommunications contracting	$7.43	$9.66	$13.01	$15.24
Restaurant industry	$10.22	$12.08	$14.87	$17.65
Hospitality industry				
Registered and licensed clubs				
Food, beverage and tobacco manufacturing	$7.80	$10.22	$13.94	$16.35
General retail	$9.29	$11.15	$14.87	$16.72
Meat industry	$9.29	$11.15	$15.79	$17.65

Source: NCVER (2011c)

Table 64 and Table 65 provide the junior apprentice minimum wages for four year apprenticeships under the most common modern awards. However, as noted above apprentice minimum wages depend on a number of other factors.

Firstly, in three of the above awards there are provisions for three year apprenticeships, which are either for lower level qualifications or for apprentices who complete the same qualification in less time. The ratios of three year apprenticeship minimum wages to the tradesperson rate for these awards are given in Table 66. In the case of building and construction and joinery and building trades, the three year apprenticeship minimum wages are set at similar rates to **the last three years** of the four year apprenticeship. In contrast, the general retail minimum wages are the same as **the first three years** of the four year apprenticeship.

Table 66: Junior apprentice minimum wages in Australia (relative to tradesperson minimum wage)			
Award	**Year 1**	**Year 2**	**Year 3**
Building and construction	55%	75%	90%
Joinery and building trades	50%	75%	90%
General retail	50%	60%	80%

Source: NCVER (2011c)

Secondly, some awards take into account the highest level of schooling of the apprentice. For instance, of the main awards listed in Table 63, only the manufacturing award has minimum wages that depend on the level of schooling achieved.

Table 67: Manufacturing apprentice minimum wages in Australia (relative to tradesperson minimum wage)				
Highest level of schooling completed	**Year 1**	**Year 2**	**Year 3**	**Year 4**
Year 10 or less	42%	55%	75%	88%
Year 11	48%	55%	75%	88%
Year 12	51%	59%	75%	92%

Source: Fair Work Commission (2010b)

Lastly, for those that start the apprenticeship aged 21 or over, many awards have separate adult apprentice minimum wages that are higher than those for junior apprentices. In some cases adult apprentice minimum wages have been set at a level higher than junior apprentice wages in each year of the apprenticeship. In other cases, such as for the building and construction and plumbing awards, a minimum threshold has been set that adult apprentice wages cannot fall below.

Table 68: Adult apprentice minimum wages in Australia (relative to tradesperson minimum wage)				
Award	**Year 1**	**Year 2**	**Year 3**	**Year 4**
Vehicle manufacturing, repair, services and retail	76%	86%	88%	92%
Manufacturing and associated industries				
Building and construction	90%	90%	90%	90%
Joinery and building trades	81%	85%	88%	94%
Plumbing and fire sprinklers	86%	86%	86%	90%
Electrical, electronic and telecommunications contracting	75%	80%	84%	90%
Food, beverage and tobacco manufacturing	76%	86%	88%	92%
Hospitality industry	No special provisions made for adult apprentices			
Restaurant industry				
Registered and licensed clubs				
General retail				
Meat industry				

Source: NCVER (2011c)

11.4.3 Trainee minimum wages

Trainee minimum wages are set by the National Training Wage Schedule (NTWS), which is contained within the modern awards. There are separate minimum wages for school-based, junior and adult apprentices. Trainee minimum wages are set as a percentage of the lowest national minimum wage, which was **$15.96** per hour **(£7.23)** in 2012.

For trainees, there are three different minimum wage levels depending on the industry in which the traineeship is based. Wage Level A pays the highest wage and includes traineeships in business and financial services, manufacturing, tourism services and hospitality and events services. Wage Level B includes traineeships in animal care, the meat industry, automotive retail, service and repair, furnishing and property services. Wage Level C includes primary industries such as agri-food, conservation and land management, rural production and the seafood industry (NCVER 2011c).

Junior trainee minimum wages depend on the wage level, the highest year of schooling the trainee has achieved and the number of years the trainee has been out of school. Table 69 shows the ratio of the minimum junior trainee wage to the National Minimum Wage for trainees whose highest level of schooling is Year 10. The ratio ranges from **56%** for school leavers in all wage levels, to **114%** for wage Level A trainees that have been out of school for five years or more.

Table 69: Junior trainee minimum wages wages in Australia (relative to national minimum wage)

Number of years out of school	Wage level A	Wage level B	Wage level C
0 (school leaver)	56%	56%	56%
1	62%	62%	62%
2	74%	72%	72%
3	86%	82%	81%
4	100%	97%	90%
At least 5	114%	110%	100%

Source: National training wage schedule, see Fair Work Commission (2010a). We have presented information based on the assumption that the trainee has Year 10 qualifications.

Table 70 provides the minimum hourly wage for junior trainees whose highest level of schooling is Year 10.

Table 70: Junior trainee minimum hourly wages wages in Australia (schooling Year 10)

Number of years out of school	Wage level A	Wage level B	Wage level C
0 (school leaver)	$8.96	$8.96	$8.96
1	$9.88	$9.88	$9.88
2	$11.76	$11.45	$11.45
3	$13.69	$13.16	$12.88
4	$15.93	$15.44	$14.39
At least 5	$18.23	$17.61	$16.03

Source: National training wage schedule, see Fair Work Commission (2010a)

For junior trainees whose highest level of schooling is Year 11 or Year 12, minimum wages are set by the same schedule but each school year completed after Year 10 counts as one year out of school. For example, the minimum wage level A for a school leaver who has completed Year 12 is **AUD$ 11.76** per hour **(£5.32)**.

For school-based trainees, minimum wages are set according to the school year that they are in. For trainees in Year 11, the minimum wage is the same as for school leavers whose highest level of education is Year 10 (**AUD$8.96** per hour **(£4.06)**). For trainees in Year 12, the minimum wage is the same as for trainees that have been out of school for one year and whose highest level of education is Year 10 (**AUD$9.88** per hour **(£4.47)**).

Adult trainee minimum wages are the same as junior trainee minimum wages for certificate I-III qualifications[152]. However, for certificate IV traineeships, adult minimum wages depend on the wage level and on the current year of the traineeship. The ratio of adult minimum wages to the national minimum wage for certificate IV qualifications is shown in Table 71.

Table 71: Adult trainee minimum wages in Australia (relative to the national minimum wage)

	Wage Level A	Wage Level B	Wage Level C
First year	119%	114%	104%
Subsequent years	123%	119%	108%

Source: National training wage schedule, see Fair Work Commission (2010a)

11.4.4 Actual apprentice and trainee wages

Of course, apprentices and trainees may be paid more than the minimum wage. NCVER (2011c) conducted an analysis of actual apprentice and trainee pay for all trainees and for apprentices in the three most popular trade categories: automotive and engineering trades, construction trades, and electrotechnology and telecommunications trades. The researchers used data on actual apprentice and trainee pay from the Household, Income and Labour Dynamics in Australia (HILDA) dataset, and compared this with the median apprentice and trainee minimum wage as determined by the relevant awards[153].

Looking first at apprentice pay, NCVER (2011c) found that apprentice pay was often higher than the minimum apprentice wage for the occupation. Overall, **62.7%** of apprentices were paid above the minimum apprentice wage. However, adult apprentices were considerably more likely than junior apprentices to be paid above the minimum wage. Across the sample of apprentices, the median apprentice pay was **30%** higher than the median apprentice minimum wage. The difference between median weekly income and the minimum weekly wage ranged from **AUD$42 (£19)** in construction trades to **AUD$134 (£61)** in electro-technology and telecommunications trades. Table 72, Table 73 and Table 74 summarise the main results of NCVER (2011c).

Table 72: Median apprentice weekly wages compared to minimum apprentice weekly wages in Australia

Occupation	Median minimum wage	Median actual wage	Difference	% paid at award level*
Automotive and engineering trades	$356	$500	$144	43.2%
Construction trades	$399	$441	$42	42.4%
Electro-technology and telecommunications trades	$518	$652	$134	24.4%
Other trades	$414	$502	$88	29.1%

Source: NCVER (2011c)

[152] As adult trainees are those that begin the traineeship at age 21 or over, they will most likely have completed Year 10 at least five years ago. Therefore, adult trainee minimum wages for certificates I-III are set at the highest rate for each wage level.
[153] The analysis was conducted using data from May 2009, before the introduction of modern awards through the Fair Work Act 2009. Therefore, minimum wages are based on pre-existing awards.

Table 73: Actual apprenticeship weekly wages compared to minimum wages in Australia (2009)				
	Median minimum wage	Median actual wage	Difference	% paid at award level*
Year 1	$274.00	$403.00	$129.00	22.4%
Year 2	$356.00	$400.00	$44.00	57.6%
Year 3	$484.00	$614.00	$130.00	34.7%
Year 4	$567.00	$672.00	$105.00	38.9%

Source: NCVER (2011c)

Table 74: Actual apprenticeship weekly wages compared to minimum wages in Australia (2009)				
	Median minimum wage	Median actual wage	Difference	% paid at award level*
Adult	$517.00	$620.00	$103.00	19.2%
Junior	$356.00	$464.00	$108.00	42.1%

Note: * "at award level" is defined as within AUD 50 of the award level
Source: NCVER (2011c)

In the case of trainee pay, NCVER (2011c) similarly found that actual trainee pay was often above the minimum trainee wage. Only **20.8%** of all trainees were paid at the minimum trainee wage. Interestingly, junior apprentices were less likely to be paid the minimum trainee wage than adults, although the difference between the median actual wage and the minimum wage was significantly greater for adults than juniors.

Table 75: Actual traineeship weekly wages compared to minimum wages in Australia (2009)				
	Median minimum wage	Median actual wage	Difference	% paid at award level*
Adult	$501	$761	$260	22.7%
Junior	$269	$380	$60	18.7%

Note: * "at award level" is defined as within AUD 50 of the award level
Source: NCVER (2011c)

11.4.5 Comparison of average apprentice rates with average occupation pay

It is possible to compare the average apprentice wage with the average occupation wage of those in comparable ANZSCO groups. Data on average occupation wages comes from the Australian Bureau of Statistics (ABS) Employee Earnings and Hours survey from May 2010, one year later than the apprentice pay data used by NCVER (2011c). To achieve comparability with the data on apprentice pay, average occupation wages in 2010 have been deflated by the overall average wage growth between 2009 and 2010 (4.7%)[154].

Table 76 compares median apprentice wages to the average occupation wage across all trade occupations[155] (**AUD$25.21** in 2009 **(£11.41)**). First year apprentices, on average, earn just **28.6%**

[154] This has been calculated using data from ABS (2013b) and ABS (2013c).
[155] As defined by ANZSCO

of the average wage, but the ratio rises to **59.2%** by the fourth year of the apprenticeship. Junior apprentices, on average, earn **37.2%** of the qualified wage, whereas for adult apprentices the ratio is **54.0%**.

The tables show that, despite most junior apprentices earning more than **50%** of the tradesperson minimum wage and most adult apprentices earning more than **75%** of the tradesperson minimum wage, they earn significantly lower proportions of average occupational wages.

Table 76: Comparison of median apprentice and fully qualified wage in Australia (2009)

	Median hourly apprentice wage (AUD$)*	Ratio of apprentice to average occupation wage (%)
Year 1	10.61	42%
Year 2	10.53	42%
Year 3	16.16	64%
Year 4	17.68	70%
Adult	16.31	65%
Junior	12.21	48%

Note: * Calculated using figures from Table 73, assuming a 38 hour week.
Source: NCVER (2011c) and ABS (2010)

11.4.6 Comparison of actual apprentice rates with lowest sectoral minimum wage

To compare apprentice pay with national minimums, we use the lowest national minimum wage, which was **$15.96 (£7.23)** per hour. The analysis indicates that the median actual apprentice wage stood at approximately **71%** of the minimum wage in the 1st and 2nd year of training, increasing to **109%** and **119%** in the 3rd and 4th years respectively. These estimates are at the higher end of the spectrum compared to the other countries forming this analysis.

Table 77: Comparison of actual apprentice wage and minimum wage in Australia (2009)

	Median hourly apprentice wage (AUD$)*	Ratio of apprentice wage minimum wage (%)
Year 1	10.61	71%
Year 2	10.53	71%
Year 3	16.16	109%
Year 4	17.68	119%
Adult	16.31	102%
Junior	12.21	76%

Note: * Calculated using figures from Table 73, assuming a 38 hour week.
Source: NCVER (2011c) and ABS (2010)

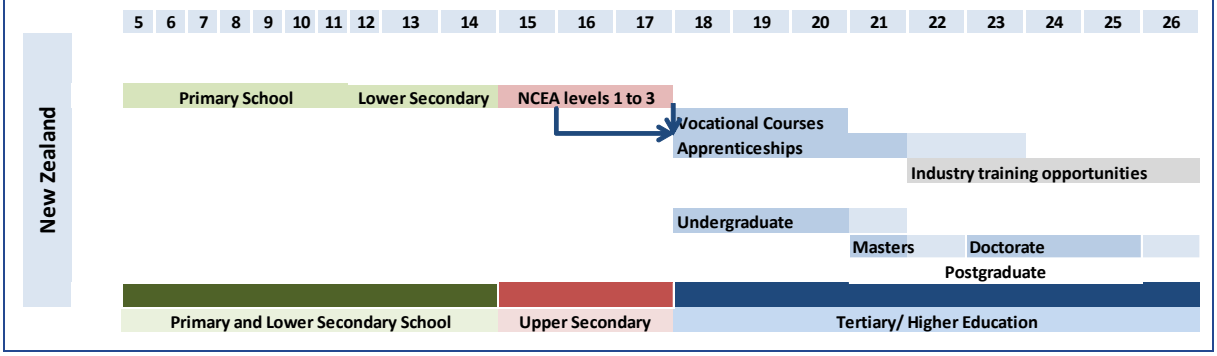
12 Apprenticeships and apprentice pay in New Zealand

12.1 Overview of the education system in New Zealand

12.1.1 Education system

Education in New Zealand is compulsory until the age of 16, which corresponds to school Year 11, although, most students continue to Years 12 and then 13, which is normally completed aged 18. In Years 11, 12 and 13 students work towards the National Certificate of Educational Achievement (NCEA) at levels one, two and three respectively. At each of the three levels, gaining the NCEA involves achieving a certain number of credits, which can be achieved in a wide range of subjects. Whilst studying for the NCEA at any level, students can choose to specialise in vocational learning or may integrate vocational courses into a more general programme of study. However, all students work towards the same overall qualification: there is no separation into academic and vocational streams (Ministry of Education New Zealand, 2013a). Figure 59 presents an overview of the New Zealand education system, showing students' options after leaving school.

Figure 59: The education system in New Zealand



Source: London Economics

On leaving school, students have options to pursue both academic and vocational qualifications. As with the educational system in Australia, all tertiary qualifications are governed by the New Zealand Qualifications Framework (NZQF), which links academic and vocational qualifications by designating each a level from 1 to 10. The lowest level qualifications are Certificates (Levels 1 to 4), followed by Diplomas, which are at NZQF Levels 5 and 6. Certificates and Diplomas are normally achieved through vocational study but can also be academic. Levels 7 to 10 include traditional academic degrees, ranging from Bachelor's degrees to Doctorates. However, some degrees can also be achieved in vocational studies. For example, a vocational degree from an Institute of Technology or Polytechnic has the same notional standing as a university Bachelor's degree.

Vocational education at the tertiary level can be taken through either **formal course study** or through **industry training**, which takes place mainly on-the-job and includes apprenticeships.

Formal vocational tertiary courses are provided by the following institutions.

- Institutes of Technology and Polytechnics (ITPs) provide a range of vocational courses ranging from certificate to degree level. Courses are mainly class-based but often also involve work experience and on-the-job training.

- Private training establishments (PTEs) also provide vocational courses, most commonly at certificate or diploma level (NQF levels 1 to 6). PTE programmes are normally in specific or niche vocational areas such as travel, tourism, design and ICT.
- Wānanga provide mainly vocational training, alongside some academic courses, in a Maori cultural context. The vast majority of courses are at certificate or diploma levels.
- A small number of vocational courses are offered at universities, such as in physiotherapy and viticulture.

Industry training, of which apprenticeships are one part, is the responsibility of **Industry Training Organizations** (ITOs). ITOs are government and industry funded bodies that represent particular industries or sectors. There were 38 ITOs in 2012. Each ITO often represents several industries. Industry training involves a combination of on-the-job work experience and training with formal study at one of the vocational education providers listed above. Qualifications gained are almost entirely at certificate levels (levels 1 to 4). ITOs are responsible for setting qualification standards in their industry and purchasing formal courses for trainees, for which they are subsidised by the government and may also charge a fee to employers or employees.

Industry training, excluding apprenticeship training, tends to be for older, established workers rather than new entrants to an industry. The **Modern Apprenticeships** program was created in 2000 to cater specifically for young people, including school leavers. Only 16 to 21 year olds are eligible for a Modern Apprenticeship. Some apprenticeships set entry requirements including credits earned in NCEA qualifications but other apprenticeships are available to school leavers with no formally recognised qualifications. Industry training and apprenticeships are discussed in more detail in Section 12.2 below.

12.1.2 Proportions taking different educational routes

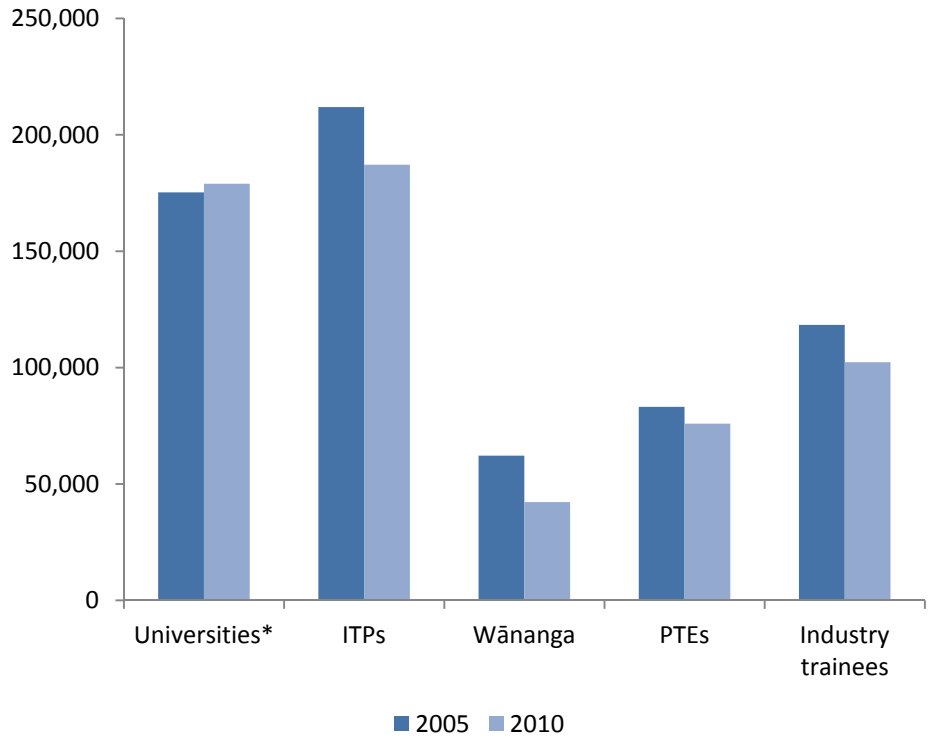
In 2010, there were 446,000 students enrolled in formal tertiary education in one of the four providers listed above (universities, ITPs, PTEs and Wānanga). 39% of tertiary education students were in university while 61% studied at vocational institutions. However, two-thirds of university students were studying full-time compared to just under half of students at vocational institutions. Of the vocational students, 58% were in ITPs, 28% in private training establishments and the remainder (14%) in Wānanga[156] (NZ *Education Counts*, 2012).

The total number of students in formal tertiary education declined from a peak of 532,000 students in 2005. The number of students in university increased slightly, by 3,700, between 2005 and 2010. In contrast, the total number of tertiary vocational students fell by 51,800 (14.5%) over the same period. The fall in student numbers was common to all vocational education providers, as shown in Figure 60.

There were 102,000 industry trainees enrolled in December 2010. This number also fell from a peak of 133,280 at the end of 2008. The total for industry trainees includes apprentices. There were **11,634** apprentices in December 2010, down from a peak of **12,149** in December 2008.

[156] The number of students in Wānanga also includes a minority of students taking academic courses.

Figure 60: Number of New Zealand students in tertiary education, by provider, 2005 and 2010



Note: * The number of students in universities in 2005 includes 6,990 students enrolled in Colleges of Education, which were merged with universities in 2007.
Source: Education Counts (2011, 2012)

In contrast to United Kingdom apprenticeship provision, the decline in vocational student numbers was especially pronounced for older students. The number of students aged 25 or over in tertiary vocational education fell by 22.8% between 2005 and 2010 whilst the number of under-25s fell 1.1%. In universities, the number of learners aged 25+ also fell 8.2% between 2005 and 2010 whilst the number of under-25s increased 18.7%.

Older students were also much more likely to be in vocational education than younger students. In 2010, around three-quarters of tertiary education students aged 25 or over were in vocational education, compared to just over half of under-25s.

In 2010, 56% of all tertiary students were female. This proportion was similar for university and vocational students. However, the proportion varied across vocational tertiary education providers, from 51% in ITPs to 69% in Wānanga.

12.2 The New Zealand apprenticeship system: general characteristics

12.2.1 Recent history of the apprenticeship system

Although there was an apprenticeship system in operation in place prior to 1992 (directed mainly at school-leavers), the system had come to be viewed as inflexible as it was difficult for new industries to enter into the system. The formal course study required was also viewed as being

unrelated to on-the-job experience (Ministry of Education New Zealand, 2012a). In 1992 the Industry Training Act abolished the apprenticeship system and replaced it with an industry training system. The Industry Training Act created Industry Training Organizations (ITOs) that were responsible for industry training in the industries or sectors they represented. These organisations set national standards and qualifications and purchase off-the-job training on behalf of trainees. This system was intended to improve the relevance of off-the-job training to the nature of work in each industry. Industry training, combining on-the-job training and off-the-job study for an AQF qualification, also involved many more industries than were incorporated in the old apprenticeship system.

However, the industry-led training system was focussed mainly on older, established employees, as they were seen as less risky prospects than young, new entrants to the trade. In 1999, two-thirds of industry trainees were age 25 or over. Given this, the Modern Apprenticeship programme was introduced in 2000 to address the perceived under-representation of young people in the training system (Ministry of Education New Zealand, 2012a).

12.2.2 Modern Apprenticeships

The Modern Apprenticeship programme is eligible only to 16 to 21 year olds and apprenticeships last three or four years, longer than the typical traineeship under the industry training system. Normally, four-year Modern Apprenticeships require apprentices to gain 120 credits in total. This is in contrast to other industry training, which often consists of around 40 credits per trainee (Ministry of Education New Zealand, 2010). On successful completion, apprentices gain a certificate level qualification (Level 3 or 4).

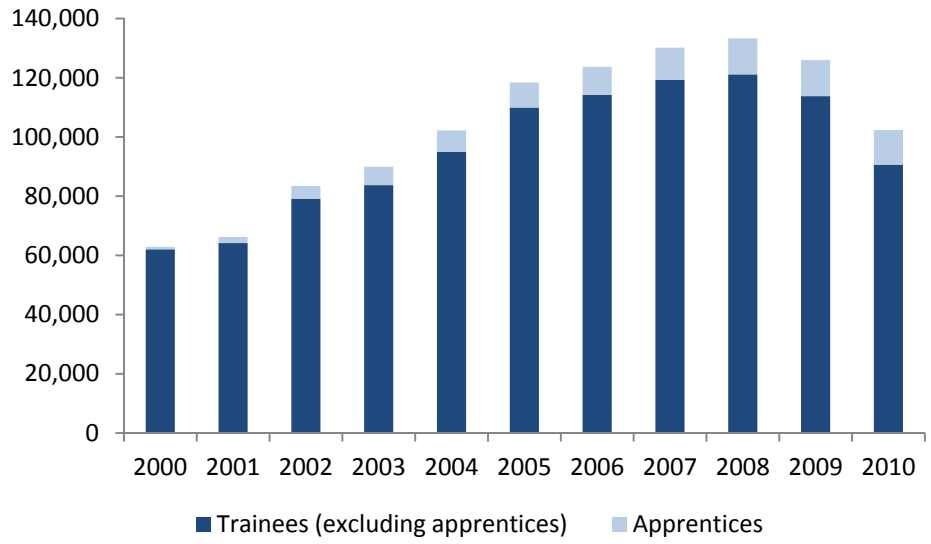
However, it should be noted that from January 2014, apprenticeships in New Zealand will be open to anyone over the age of 16 under the most recent policy changes (the new *New Zealand Apprenticeships* programme). The motivation for the policy change is that currently many industry trainees over the age of 21 are undertaking 'apprenticeship-type' training. However, because they are not classed as apprentices, they receive lower government subsidies than Modern Apprentices. From 2014, apprenticeships will also involve training for a minimum of a Level 4 certificate (Joyce 2013).

Employers and apprentices are supported by Modern Apprenticeship co-ordinators. Co-ordinators help match employers to apprentices and provide on-going support aimed at reducing the risk to employers of taking on an apprentice. Co-ordinators may be based in ITOs or other tertiary training institutions such as PTEs. In 2010, 72% of co-ordinators were based in ITOs (NZ *Education Counts*, 2011).

Apprenticeships are similar to other forms of industry training in that both involve a mix of on-the-job training and experience with off-the-job study in an ITP or PTE. However, apprenticeships last at least three years (and normally at least four), whereas other industry training is often much shorter. In addition, apprenticeships are often at a higher level than other industry training: in 2010, 89% of apprenticeships were at Certificate Level 4, whereas just 29% of other industry training was at this level or higher (NZ *Education Counts*, 2011). Apprentices are also much more likely to be new entrants to the industry, whereas other industry trainees are often existing workers.

The number of Modern Apprentices has increased from 800 in its first year in 2000 to 11,634 in 2010. The proportion of industry trainees that are apprentices has also increased since the creation of Modern Apprenticeships in 2000. Nevertheless, apprentices made up just 11.4% of industry trainees in 2010 (which is relatively low compared to most of the countries forming part of this analysis). The evolution of industry trainee and apprentice numbers is shown in Figure 61.

Figure 61: Numbers of industry trainees and apprentices in New Zealand, 2000-2010



Source: Education Counts, 2011

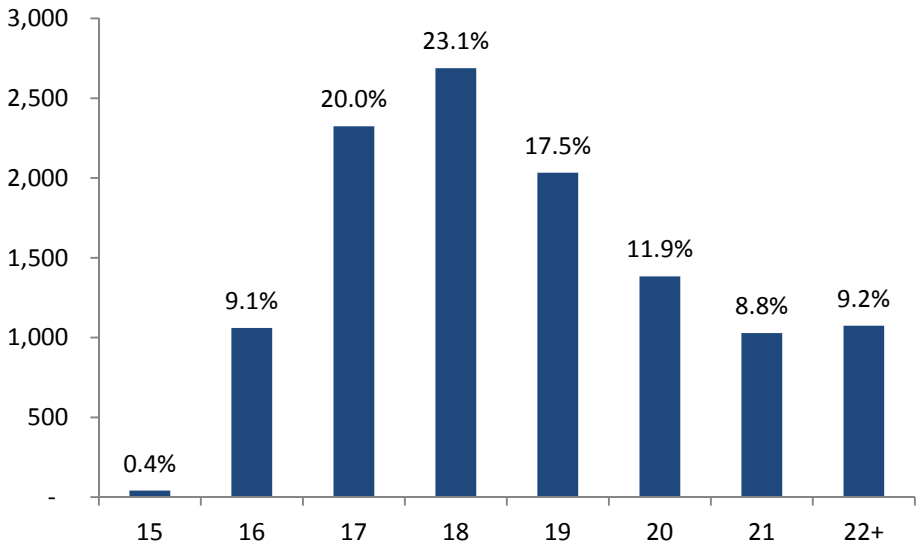
12.2.3 Characteristics of apprentices and apprenticeships

Apprentices have the following notable demographic features.

- The most common ages to commence an apprenticeship are 17 and 18. Despite the age requirements (only 16 to 21 year olds are eligible for apprenticeships) there were 41 (0.4%) apprentices that began aged 15 and 9.2% of apprentices were older than 21 when they started the apprenticeship (see Figure 62)[157]. This age profile is considerably lower than the apprentice age profile in the United Kingdom.
- Apprentices are predominantly male; 87% of apprentices were male in 2010. This contrasts with industry trainees as a whole, 68% of which are male.
- 89% of apprenticeships were for a Certificate level 4 qualification, whilst practically all of the rest were for a Certificate level 3 qualification. Out of the total 11,631 apprenticeships, just four were not enrolled for either of these qualifications (specifically three for a Certificate Level 2 and one for a Diploma). ITOs determine the level of qualification whilst the New Zealand Qualifications Authority ensures that qualifications are of the same standard across industries.

[157] Some ITOs appear to allow those older than 21 to start apprenticeships even under the current scheme. For example, the Motor Industry Training Organization states that, to be an apprentice, 'There are no age limits'. See http://www.mito.org.nz/qualifications/apprenticeship.html [Accessed 21st June 2013]

Figure 62: Age of New Zealand apprentices when they began their apprenticeship



Source: Education Counts (2011)

Modern Apprenticeships are available in 32 different industries (Modern Apprenticeships, 2013). The most popular industries for apprenticeships are *Building and Construction* and *Motor engineering*, which made up a third of apprenticeships between them in 2010. Other popular industries for apprenticeships include *Engineering*, *Horticulture*, *Agriculture*, *Electro-technology*, *Hairdressing* and *Plumbing*. Table 78 shows the number of apprentices and the proportion of total apprentices in the most popular eight industries. Between them, these eight industries account for almost 75% of all apprenticeships.

Table 78: Number of New Zealand apprentices in most popular industries, 2010

Industry	No. apprentices	% of total
Building and construction	2,179	18.7%
Motor engineering	1,769	15.2%
Engineering	1,308	11.2%
Horticulture	828	7.1%
Agriculture	758	6.5%
Electrotechnology	721	6.2%
Hairdressing	555	4.8%
Plumbing	531	4.6%

Source: Education Counts (2011)

12.3 Funding of apprenticeships in New Zealand

12.3.1 Cost to the government

Government funding for apprenticeships is channelled entirely through Industry Training Organizations (ITOs). The government gives ITOs a set amount per Standard Training Measure (STM) for all industry trainees, including apprentices, as a subsidy towards formal training costs.

The STM is defined as 120 credits, the usual number of credits contained in a Modern Apprenticeship. If an apprenticeship contains a lesser or greater credits, the funding received is in proportion to the number of credits. In 2011, government funding per STM was **NZD$2,919 (£1,330)** (Ministry of Education New Zealand, 2013b).

In addition, the government also gives a set amount to apprenticeship co-ordinators per STM. The rate of funding depends on whether the co-ordinator is an ITO or not. ITO co-ordinators receive NZD$1,777 **(£810)** per STM. Non-ITO co-ordinators receive NZD$1,956 **(£891)** per STM.

The total cost to the government of funding apprenticeships in 2011 was NZD$40.3 million **(£18.37m)**. Table 79 summarises the costs to the government per apprentice and the total governmental cost.

Table 79: Costs to the New Zealand government of funding apprenticeships, 2011 (NZD)

Subsidy to ITOs for formal training costs (per STM)	$2,919
Subsidy to apprentice co-ordinator (ITO)	$1,777
Subsidy to apprentice co-ordinator (non-ITO)	$1,956
Total cost to the government in 2011	$40.3 million

Source: Ministry of Education New Zealand (2012b, 2013b)

12.3.2 Cost to employers and employees

Employers have to pay the wages of the apprentice, and cover all the costs of on-the-job training. In addition, ITOs normally charge employers a fee that contributes to formal vocational training alongside the government subsidy. This fee depends on the industry and the ITO in charge of the apprenticeship, but usually ranges from around NZD$500 to NZD$1,500 per year **(£227 to £454)**. **Employers have the option to pass this fee on to apprentices by deducting a monthly sum from apprentices' wages to cover the fee. Whether the employer or apprentice pays the fee towards the formal training costs depends on the contract between employer and apprentice.**

12.4 Apprentice pay in New Zealand

12.4.1 Minimum apprentice wages

There are three minimum wage rates in New Zealand (Ministry of Business, Innovation and Employment New Zealand, 2013).

- The **starting-out wage** applies to:
  - 16 and 17 year old employees who have not yet completed six months of continuous employment;
  - 18 and 19 year old employees who have not yet completed six months of continuous employment and had previously received social security benefit for at least six months, and;
  - 16 to 19 year old industry trainees who are undertaking training for at least 40 credits a year.
- The **training minimum wage** applies to industry trainees aged 20 years or over who are undertaking training for at least 60 credits a year.

- The adult minimum wage applies to all other employees aged 16 and over.

Since apprentices are required to undertake training for more than 60 credits a year, the apprentice minimum wage is the starting-out wage for apprentices aged 16 to 19 and the training minimum wage for apprentices aged 20 or over. However, since the creation of the training minimum wage in 2003, the **starting-out wage and the training minimum wage have been the same hourly rate**. Therefore, there is effectively a single minimum wage that applies to all apprentices.

The starting-out wage and the training minimum wage were set at **NZD$11.00 (£5.01)** per hour from April 2013. This rate is 80% of the adult minimum wage, as it has been in every year since the creation of the training minimum wage in 2003. The adult minimum wage was set at **NZD$13.75 (£6.27)** in April 2013 (Ministry of Business, Innovation and Employment New Zealand, 2013).

Apprentice pay in New Zealand is significantly higher than that achieved by apprentices in the United Kingdom, both in absolute terms and as a proportion of the full adult minimum wage.

Table 80: Apprentice minimum wage and adult minimum wage in New Zealand (NZD)

Apprentice minimum wage per hour	Adult minimum wage per hour	Training minimum wage as proportion of adult minimum wage
$11.00 **(£5.01)**	$13.75 **(£6.27)**	80%

Source: Ministry of Business, Innovation and Employment New Zealand (2013)

12.4.2 Minimum apprentice wages as a proportion of the fully qualified rate

It is possible to compare the minimum apprentice wage with the average fully qualified rate. Data on the average fully qualified rate comes from the New Zealand Income Survey (*Statistics New Zealand* 2012) and represents the hourly rate for those individuals in possession of an apprenticeship as their highest qualification. In June 2012 the average hourly earnings of an employee whose highest level of qualification was a vocational or trade qualification was NZD$24.81 **(£11.31)**. The starting-out wage and the training minimum wage stands at NZD$11.00 **(£5.01)** per hour in 2013. Therefore, minimum apprentice pay as a proportion of the fully qualified rate in 2013 stands at 43%.

Table 81: Apprentice minimum wage and average fully qualified rate in New Zealand (NZD)

Apprentice minimum wage per hour	Average fully qualified rate per hour*	Training minimum wage as a proportion of average qualified wage
$11.00 **(£5.01)**	$25.55 **(£11.65)**	43%

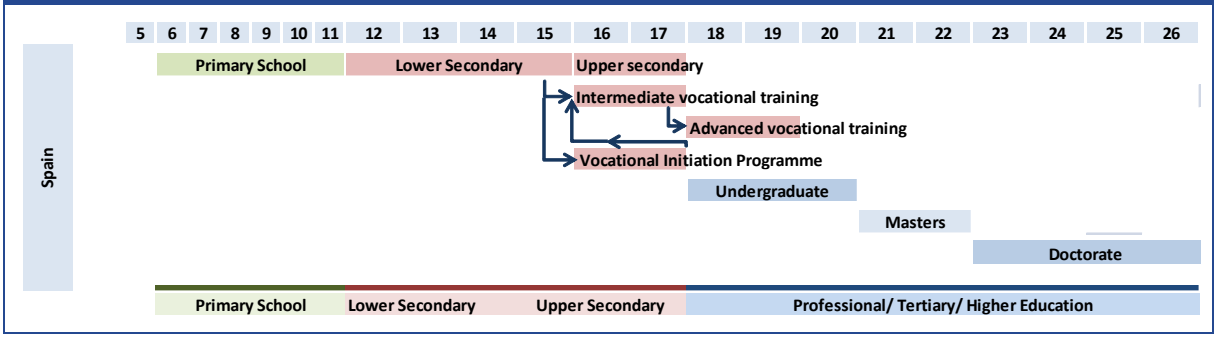
Note: * Average hourly earnings of those earning income from wage/salary jobs whose highest qualification is a vocational or trade qualification. The fully qualified rate has been uprated by 3.0% to reflect annual rate of inflation.
Source: Ministry of Business, Innovation and Employment New Zealand (2013), Statistics New Zealand (2012)

13 Apprenticeships and apprentice pay in Spain

13.1 Overview of educational system in Spain

Education in Spain is compulsory until the end of the lower secondary education ('Educación Secundaria Obligatoria (ESO)'). The ESO commences when students are aged 12 and finishes 4 years later with a compulsory education certificate (the 'Graduado ESO' (GESO)). Successful completion of lower-secondary education allows access to upper-secondary education. Students can chose either academic upper-secondary education ('Bachillerato') or Intermediate vocational training (Ciclos de grado medio) leading to the Advanced vocational training (Ciclos de grado superior). This is presented in further detail in Figure 63 below.

Figure 63: The education system in Spain



Source: London Economics

13.1.1 Academic upper-secondary education - the Bachillerato

Academic orientated upper-secondary education comprises the Bachillerato. The Bachillerato lasts for two years and gives theoretical knowledge of subjects including literature and Spanish, science and mathematics, and foreign languages. There are three possible options within the Bachillerato: 1) *Arts,* 2) *Technology and Science* and 3) *Humanities and Social Sciences*. Successful completion of the two-year Bachillerato gives the title of 'Bachiller'. This is a necessary but not sufficient condition for entry to the higher education system. To achieve entry to higher education, students must take a 'University Access Exam' ('Prueba de Acceso a la Universidad' or 'Selectividad'). The grades obtained during the Bachillerato count for 60% of the final grade and the results of the 'Selectividad' count for 40% of the entry requirements for Spanish Universities. In 2012, **278,818** candidates – of which 55% were women – undertook the University access exam. Eighty four percent passed.

13.1.2 Vocational education and training

There are three types of vocational training in Spain. Firstly, the *Intermediate* vocational training cycle can be entered after the end of compulsory (lower-secondary) education. This cycle lasts for **2 years** in total, of which approximately 3 months are spent in a firm undertaking on-the-job training. Secondly, the *Advanced* vocational training cycle can be undertaken after upper-secondary education (or intermediate vocational training), and also lasts **2 years** (of which approximately 3 months is spent in a firm undertaking on the job training). Thirdly, there are Vocational Initiation Programmes (VIP), designed for young people who failed the lower-secondary

schooling examination. These programmes take place at the end of compulsory schooling and lead to acquisition of the GESO as well as the lowest level of professional/vocational qualification.

There are two means of entry to the *Intermediate* vocational training cycle. First, students who passed the GESO can automatically gain access to this type of course. However, if students have failed the lower-secondary education exam (GESO), and if they are aged over 17, then there is a second entry exam that will allow them to participate in this vocational training cycle.

The *Advanced* vocational training cycle is a higher vocational qualification. To enter one of these advanced training modules, a learner needs either to have completed the Bachillerato or to have successfully completed an intermediate vocational training cycle and be 18 years old. There is also an alternative exam for those who could not comply with these academic requirements and are aged above 19.

According to the Spanish Ministry of Education, one quarter of the school cohort does not pass the GESO. To address this issue and re-integrate these students into the educational system, the Vocational Initiation Programme (VIP) has been created. These programmes are composed of 3 types of training module: *specific* modules that give students a set of professional competences (such as carpentry or plumbing); *educational* modules that are more general and give students more basic competences (such as mathematics and Spanish); and *voluntary* modules, to be chosen in the same sort of general education subject areas. If students pass the agreed modules, they receive the GESO in addition to a professional qualification of Level 1 in the National Classification of Professional Qualifications (*Catálogo Nacional de Cualificaciones Profesionales*).

This classification lists all the professional qualifications one can obtain through vocational training in Spain. There are approximately 150 qualifications and they are organised in 26 different families including Sport and physical activities, Management and administration, Information and Communication Technologies, and Health, and Transport and Vehicle maintenance. The 3 most popular, according to the Spanish Ministry of Education data, are Management and administration, Health and social care and Electricity and electronics.

As previously mentioned, at the end of each of these vocational programmes (i.e. VIP, Intermediate and Advanced programmes), students have to gain professional experience through the so-called 'professional modules'. This compulsory work experience (ranging between 3 and 6 months) counts as a part of the education and training programme. As a result, students are evaluated during and at the end of their internship by their tutors in the company and in the training centre. The professional modules correspond to 400 hours of work for the programmes that have been adapted in line with the most recent reforms to education and training policy. The programmes that have not yet been reformed consist of between 350 and 700 hours of work experience. Students should work roughly the same number of hours per week as standard employees of the company. Importantly, this work experience is not considered to be time in employment (rather it is considered time taken to complete a qualification) and there is no contract between the student and the firm (although there is a contract between the firm and the educational institution).

13.2 The Spanish apprenticeship system: general characteristics

13.2.1 The nascent apprenticeship programme

Spain faces a very high rate of unemployment among young people, with 54% of 20-24 year olds unemployed in 2013. To counter this problem, the government has decided to initiate the German model of Dual Training **which consists of part-time vocational education, as well as on-the-job paid training within companies**[158]**.** Some pilot projects and experiments are therefore running in the country but they are still nascent projects.

The legislation indicates that apprenticeships are normally designed for people aged 16 to 25[159]. The apprenticeship contract should last between 1 year and 3 years, which is comparable with the United Kingdom, but of significantly shorter duration than apprenticeships in countries such as Germany, Austria and Switzerland). According to the productive needs of the companies, the parties can agree to have a shorter contract, but the length should be no less than six months. Apprentices should not spend more than 75% of their contractual hours working during the first year (85% during the second year), so as to allow for sufficient time for their theoretical and vocational training (which takes place in the same vocational training centre as *Intermediate* or *Advanced* vocational training). Apprentices cannot be employed on part-time contracts, while night-shifts and overtime hours are not allowed. Finally, the actual activities of the company should match the training field of the apprentice.

As part of the apprenticeship contract, apprentices benefit from all social security protections, including unemployment insurance, and do not pay social security contributions. Employers from large companies (over 250 employees) only pay 25% of the applicable social contributions and small companies benefit from a 100% discount. This discount forms a subsidy for firms contributing towards their apprentices' training. When firms employ an apprentice on a long-term contract after the end of the apprenticeship, they benefit from some additional public subsidies – namely a **€1,500 (£1,401)** reduction in their social contributions for 3 years (and a further **€300 (£280)** if the apprentice is female).

13.2.2 An example from Madrid

The national law will eventually be rolled out at the regional level with individual regions able to tailor their apprenticeship system. However, currently there is only very limited information on how the apprenticeship system will actually work in practice. One specific example comes from Madrid, where a two-year apprenticeship[160] will start in October 2013 and finish in June 2015 according to the timetable set out in Figure 64.

[158] The legal framework of this system has been detailed in the Royal Decree of the 8th November 2012 (Boletin Oficial del Estado (2012) 'Real Decreto 1529/2012, de 8 de noviembre, por el que se desarrolla el contrato para la formación y el aprendizaje y se establecen las bases de la formación profesional dual')

[159] However, this age limit has been extended to 30 years old until the unemployment rate decreases to below 15%.

[160] This programme will be running in 20 different areas with those marked (*) are to be confirmed by the administration: Coordination of physical and sportive activities*; Network administration; Finance and administration; Prosthetic audiology*; Automation; Automation and industrial robotics*; International trade*; Multiplatform application development; Kitchen direction; Catering services direction; Commercial management and marketing; Management of tourist accommodation; Images for the diagnosis; Analysis and quality control laboratories; Clinical diagnosis laboratories; Industrial electronics and mechanics; Aero-engine maintenance; Avionics maintenance; Design and fashion; and Programming the production chains in mechanics manufacturing*.

Figure 64: Example of a Dual Training from the city of Madrid

Source: Madrid regional council

The programme starts with some classroom-based learning in order for students to acquire certain basic knowledge that will underpin the remainder of their apprenticeship. The students then spend approximately 12 months in on-the-job training with a firm. The training centre and the company will coordinate their programmes such that they complement each other. During the **on-the-job** component of the apprenticeship (only), the apprentices follow the same timetable as any other employee and receive **€300 (£280)** per month from their employer.

13.3 Apprentice pay in Spain

13.3.1 Apprentice pay

There is currently very limited information on apprentice pay in Spain. The legislation underpinning the Dual training contract states that apprentices should be paid and that the wage should not be inferior to the minimum wage (corresponding to the apprentice's effective working time). As with the French system of apprentice remuneration, apprentice pay in Spain should be consistent with any collectively agreed or bargained wage in the industry.

13.3.2 Apprentice pay as a proportion of the minimum wage

The Spanish minimum wage is **€9,034.20 (£8,438)** per annum (which equates to approximately **€4.66** per hour **(£3.35)** based on a 1,938 hour working year (37.5 hours per week incorporating 33 days annual leave and public holidays). According to the legislation, apprentices should be paid at least 75% of the minimum wage in the first year[161] (i.e. €3.51 per hour **(£3.28)**) and 85% in the second year (€3.97 per hour **(£3.71)**), which is respectively €6,776 and €7,679 per year **(£6,329** and **£7,172** respectively**)**. Note again that apprentices are not paid whilst undertaking training in the classroom – so although they receive the minimum wage during the time in the firm, this needs to cover their costs whilst in college.

13.3.3 Apprentice pay as a proportion of the fully qualified rate

Table 82 shows the minimum apprentice wage as a proportion of average industry wages. The average wage of people with an intermediate vocational training as their highest qualification (this acts as a proxy for the fully qualified rate) stands at approximately €22,169 per annum (**(£20,716 or £10.53** per hour**)** in 2013 prices). This implies that apprentices in their first year earn approximately **31%** of the fully qualified worker wage and approximately **35%** in the second year, although there is some significant variation around the mean. As will be seen in the next section, these proportions are significantly lower than in countries like Italy.

[161] Apprentices must be paid at least the minimum wage for time spent in on-the-job training or work experience with a firm, and apprentices should not spend more than 75% of their contractual hours working during their first year.

Table 82: Minimum apprentices' wage as a proportion of industry wages in Spain

	Average wage (€)	1st year apprentice	2nd year apprentice
All industries	24,784	27.3%	31.0%
Extractive industries	30,856	22.0%	24.9%
Manufacturing	27,039	25.1%	28.4%
Supply of electricity, gas, steam and air conditioning	53,074	12.8%	14.5%
Water supply, sanitation activities and waste management	27,157	24.9%	28.3%
Construction	23,884	28.4%	32.2%
Vehicle trade and repair	20,671	32.8%	37.1%
Transport and storage	25,002	27.1%	30.7%
Accommodation and hotel	15,910	42.6%	48.3%
Information and communication technologies	35,263	19.2%	21.8%
Finance and insurance	45,282	15.0%	17.0%
Real estate activities	21,619	31.3%	35.5%
Professional activities, technical and scientific	27,765	24.4%	27.7%
Administrative services	17,055	39.7%	45.0%
Public administration	30,452	22.3%	25.2%
Education	23,655	28.6%	32.5%
Health activities and social services	28,635	23.7%	26.8%
Artistic activities	19,624	34.5%	39.1%
Other services	17,992	37.7%	42.7%

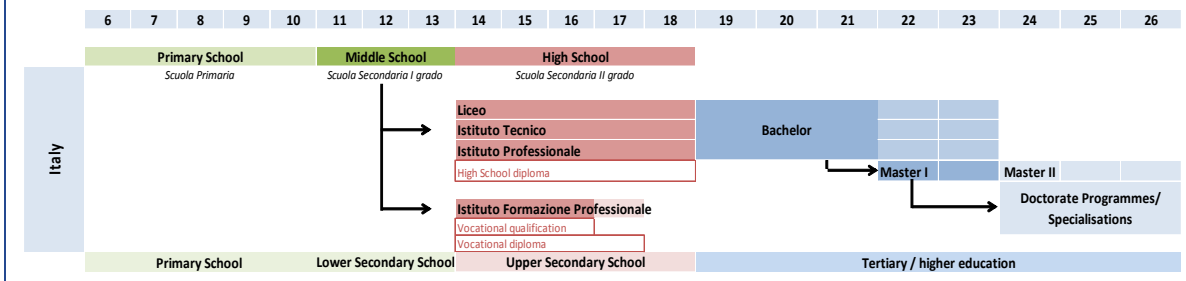
Note: the wages are from 2010 but have been corrected for the inflation in price such that they are comparable to the 2013 apprentice wage. ***Source: Instituto nacional de Estadistica, 2013***

14 Apprenticeships and apprentice pay in Italy

14.1 Overview of the education system in Italy

The Italian education system requires compulsory schooling for all children from the age of 6 to 16. As can be inferred from Figure 65 below, the first eight years of education are homogenous in terms of teaching curriculum, and entirely classroom-based. Pupils progress through 5 years of elementary school (when 6 to 10 years old) and 3 years of lower secondary school (from 11 to 14 years of age).

Figure 65: The education system in Italy



Source: London Economics

After completion of lower-secondary school, pupils still have two years of compulsory schooling to complete, and at this point, the education system splits across the different types of upper-secondary schools, namely, *Scuola Secondaria di II grado* (academic orientated upper-secondary) and *Istituti di Formazione Professionale (IFP - vocational training schools)*. The two systems are interrelated in that transfer between the two pathways has been recently made possible.

In the first pathway, students choose between three different upper-secondary level curricula: *Liceo*, *Tecnico* and *Professionale*[162], through which they undertake 5 years of high school education and obtain a diploma upon graduation. Access to university is permitted following completion of any of these pathways; however, while the former pathway (*Liceo*) consists of traditional academic courses, the latter two programmes encompass technical and vocational components that generally enable direct access to the labour market.

In the case of learners pursuing the IFP pathway, students undertake courses of vocational education and training within schools that last for 3 to 4 years, which are funded by the Italian Regions and autonomous provinces[163]. A vocational qualification is obtained upon completion of the 3 year curriculum, while those who pursue a fourth year of specialisation are awarded a vocational diploma. These VET courses have witnessed significant changes since 2004, whereby the State and Regions established a set of training requirements for "basic skills", which are a set

[162] Note that these three are macro-categories which include several sub-types. For example, the "Liceo" can provide with either one of the following course programmes: "classico" (grammar school), "scientific" (predominantly mathematics and science-based), "artistico" (arts), "linguistico" (languages), etc.
[163] There are 20 administrative regions and two autonomous provinces in Italy.

of minimum skill standards related to the *Repertorio Nazionale delle Qualifiche*[164] (i.e. an official list of professional profiles), as well as official certificates[165].

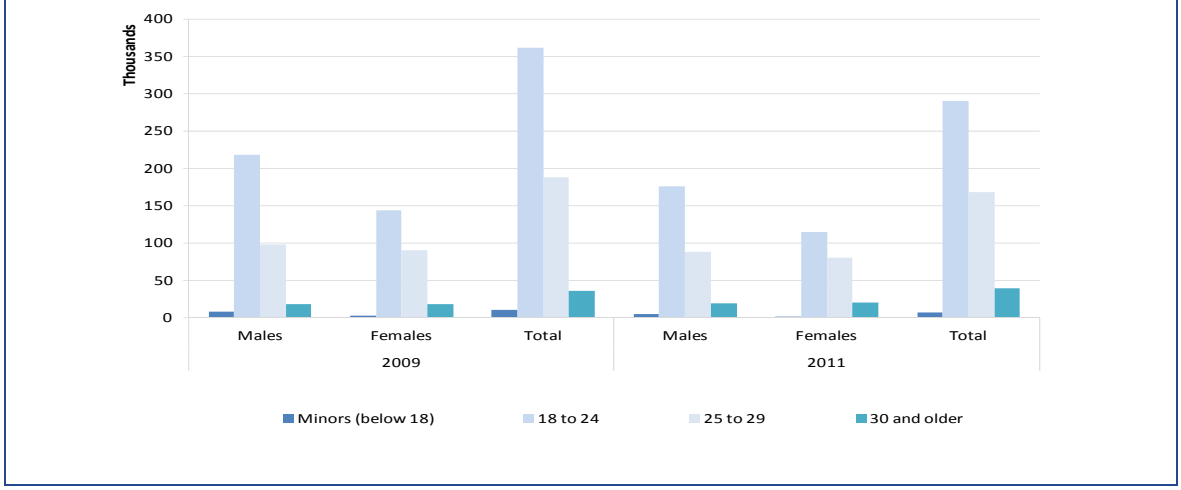
Table 75 provides further information on the distribution of pupils in school year 2010/2011. Even taking into account the fact that upper secondary schools consist of a larger number of year groups (5 years as opposed to 3 or 4 along the vocational route), the proportion of students choosing a general upper-secondary school education stands at approximately **94%** compared to **6%** engaged in training schools (IFP). This is substantially higher than average, and the lack of integration of workplace-based vocational qualifications undoubtedly contributes to the rleatively high rates of youth unemployment in Italy (see Figure 9).

Table 83: Italian Student population by school level, academic year 2010/2011

	Primary school	Lower secondary	General upper secondary	IFP (private training institutions)	IFP (schools)
North	1,243,892	763,318	1,048,397	88,517	22,822
Centre	523,365	326,380	501,073	11,879	19,328
South and Islands	1,060,307	697,769	1,113,481	14,817	21,691
Total	2,827,564	1,787,467	2,662,951	115,213	63,841

Source: for primary school, lower and upper secondary school, MIUR MInistero della Pubblica Istruzione e della Ricerca, as elaborated by Istat; for IFP figures, ISFOL.

Figure 66: Distribution of Italian apprenticeships, by age and gender



Source: ISFOL

[164] In accordance with the Agreement of July 2011 the areas in which the 22 3-year operator qualifications can be awarded are: clothing, footwear, chemical production, building, electric systems, electronic systems, graphics, thermal-hydraulic systems, artworks, woodworking, pleasure craft building and maintenance, motor vehicle repair, mechanic systems, wellness, catering, tourism and hospitality, administration, retailing, logistics, agri-food processing, agriculture and maritime services. Under the same Agreement, the trades in which the 21 4-year technician diplomas can be obtained are: building, electric systems, electronic systems, graphics, arts, woodworking, motor vehicle repair, automation systems operation and maintenance, industrial automation, beauty treatments, waiting and bar services, business services, commercial sales, retailing, agriculture, tourism, sports and leisure entertainment, clothing, hairdressing, cookery, thermal systems, tourism and hospitality and agri-food processing.

[165] Italy VET in Europe – Country report. CEDEFOP- European Centre for the Development of Vocational Training

14.2 The Italian apprenticeship system: general characteristics

An apprenticeship within the Italian system is defined as an open-ended work contract with a training component. In exchange for work, the employer commits to guarantee remuneration as well as professional training to the apprentice. This contract type has been subject to several reforms, the latest one as recently as 2011[166], and due to its broad definition, it incorporates different categories of apprenticeships.

In particular, the current legislation encompasses three main types of apprenticeships:

- *Apprendistato per la qualifica e per il diploma professionale:* "Training apprenticeship";
- *Apprendistato professionalizzante o di mestiere:* "Professional apprenticeship"; and
- *Apprendistato di alta formazione e di ricerca: "*Advanced training and research*".*

The *Training apprenticeship* covers students aged 15 to 25, and aside from enabling students to complete their compulsory schooling, it also allows the acquisition of a formal professional qualifications (after 3 years) or a regional diploma (after 4 years)[167]. The training curriculum is established by the Regions, in collaboration with the Ministry of Labour and the Ministry of Education. The minimum length of training activities (both in the classroom and within an enterprise) is 400 hours per year, although further on-the-job training is agreed on through collective bargaining.

The *Professional Apprenticeship* leads to the receipt of a specific professional qualification that is regulated through national collective contracts, and is aimed at individuals aged between 18 and 29. This is the most common form of apprenticeship[168], covering about 95% of the total number of apprenticeships. This type of arrangement is promoted by the Italian Regions, and can last from a minimum of 6 months to approximately 3 years in general (although some apprenticeship in the crafts trades last up to 5 years). Apart from these specific parameters, most aspects of this contract are open to collective bargaining between the social partners. Collective and inter-sectoral agreements regulate the duration of the contract and the type of training provided, thus generating a great deal of variation across industries and regions. This apprenticeship also includes 120 hours[169] of "basic training" per year provided by public professional training institutions.

The *Advanced training and research apprenticeship* serves a fundamentally different purpose, specifically enabling the placement of learners within firms while allowing them to continue tertiary education courses and research (including doctorates and post-docs). The Regions and autonomous provinces co-ordinate all aspects of this contract in co-operation with training institutions and trade unions, although there is scope for ad-hoc regulation between enterprises and training institutions, in absence of regional legislation.

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[166] 'Consolidated Act on Apprenticeships' (Legislative Decree n. 167/2011), that was approved on October 25th 2011 and entered into force on April 25th 2012.

[167] There are 22 professional qualifications (3 years path) and 21 technical qualifications (4 years path); the regions can model/choose to provide specific qualifications according to their economic profile.

[168] "The Italian apprenticeships through a continuous reforming process" Sandra D'Agostino.
ISFOL, Institute for the Development of vocational training Corso Italia 33, 00198 Rome, Italy

[169] This is the number of hours of basic training for individuals with lower secondary diploma or no diploma; 80 hours are granted instead for those who have a professional qualification, a professional diploma (both acquired through a "Training apprenticeship") or an upper secondary diploma; 40 hours are those provided to individuals who possess a tertiary education degree.

The latest legislation on apprenticeships has been part of a broader labour market reform (L. 92/2012), which have ensured stronger protection of the apprentice by enacting the following changes to the pre-existing system[170]:

- Minimum contract duration (6 months)[171];
- In case of withdrawal, apprentices remain employed for the duration of the notice period;
- Cap on the number of apprentices that can be hired: a ratio of 2 apprentices to 3 fully qualified workers[172];
- Hiring of new apprentices subject to retention[173] of at least 30%[174] of apprentices in the previous 3 years;
- Work Insurance[175]; and
- Fiscal incentives.

Data from ISFOL[176] suggests that in 2011, out of approximately 500,000 apprentices, about 95% were *Professional apprentices*, 1.3% were *Training apprentices*, and only 0.2% were *Advanced training and research apprentices*[177]. Due to the limited scope of the *Advanced training and research apprenticeship*, the remainder of this chapter will focus on the first two types of apprenticeships.

Apprenticeship duration

Data regarding the duration of apprenticeship contracts is only available up to 2009, and is presented below. The analysis indicates that the approximately **35%** of apprentices are undertaking apprenticeships of less than 6 months with a further **15%** engaged in apprenticeships lasting between 6 months and 12 months. Almost one-in-five apprentices are undertaking apprenticeships lasting between 1 and 2 years, with the remaining **31.5%** of apprenticeships lasting in excess of 2 years. The average duration of apprenticeships in Italy is comparable with Spain, but these two countries have the shortest apprenticeship durations of any of the countries considered in this analysis.

[170] Regulated by Legislative Decree n. 276/03
[171] The sole exception being the work provided by seasonal workers
[172] For micro firms (up to 9 employees), the proportion is 100%; for firms with 2 qualified workers, a maximum of 3 apprentices is allowed. National Contracts have also imposed stricter limits: for example, in the trade sector, employers cannot hire apprentices if they have not retained at least 80% of the fully qualified employees in the prior 24 months. In the craftsmanship trade, apprentices are only available to employers who have promoted to a full time post at least 60% of the employees whose contracts have expired in the latest 12 months.
[173] This does not apply to micro firms
[174] 50% starting from July 19th, 2015
[175] *ASPI: Assicurazione Sociale Per l'Impiego:* unemployment benefits (12 months)
[176] *Istituto per lo Sviluppo della Formazione Professionale dei Lavoratori*. "Institute for the Development of vocational training" is the official research centre of the Italian Ministry of Labour and Social Policies.
[177] Note that the first type of apprenticeship covers different age brackets thus proportions are not directly comparable.

Table 84: Duration of Italian apprenticeship contracts by sex, age groups, sector and area, 2009					
	< 6 months	7 to 12 months	13 to 24 months	>24 months	Total
Males	34.5%	15.5%	18.7%	31.3%	100.0%
Females	35.4%	14.9%	17.9%	31.7%	100.0%
<19 years	46.6%	14.3%	14.4%	24.7%	100.0%
20 years up	30.8%	15.6%	19.7%	33.9%	100.0%
North	36.2%	15.0%	18.2%	30.6%	100.0%
North West	32.4%	15.3%	19.6%	32.8%	100.0%
North East	40.0%	14.8%	16.8%	28.4%	100.0%
Centre	32.0%	15.7%	19.0%	33.3%	100.0%
South/Islands	34.9%	15.3%	18.0%	31.8%	100.0%
Total	**34.9%**	**15.3%**	**18.3%**	**31.5%**	**100.0%**

Source: ISFOL

Apprentices can take up employment in a variety of sectors, and the number of apprenticeships in absolute terms has witnessed large declines in recent years in all but a few sectors (Table 85). Sectors accounting for the largest number of apprenticeships are manufacturing, trade and repairs, followed by construction.

Table 85: Average number of apprenticeship contracts in Italy, by trade, 2009-2011					
Sector	2009	2010	2011*	2009-2010 % change	2010-2011 % change
Manufacturing	146,721	126,001	117,481	-14.1%	-6.8%
Food, drinks and tobacco	22,805	22,547	21,922	-1.1%	-2.8%
Textile, clothing, leather	16,471	14,443	14,629	-12.3%	1.3%
Carpentry	6,556	5,573	5,052	-15.0%	-9.4%
Paper, print and publishing	7,846	6,584	6,019	-16.1%	-8.6%
Chemicals, rubber, plastic	7,433	6,492	6,411	-12.7%	-1.3%
Metalwork, transport	52,788	42,489	38,379	-19.5%	-9.7%
Electricals and electronics	17,919	15,271	13,975	-14.8%	-8.5%
Other	14,904	12,601	11,095	-15.5%	-12.0%
Construction	96,049	84,868	74,360	-11.6%	-12.4%
Vehicle trade and repair	141,718	131,625	122,950	-7.1%	-6.6%
Hotels and restaurants	57,166	56,270	55,680	-1.6%	-1.0%
Transport and Comms.	16,507	13,738	12,197	-16.8%	-11.2
Finance	15,255	14,308	12,169	-6.2%	-14.9%
Real estate, rent, IT	65,792	61,291	57,874	-6.8%	-5.6%
Health and social work	6,654	6,353	6,035	-4.5%	-5.0%
Other public social services	43,539	42,467	41,165	-2.5%	-3.1%
Other activities	5,268	4,863	4,646	-7.7%	-4.5%
Total	**594,668**	**541,785**	**504,558**	**-8.9%**	**-6.9%**

Source: ISFOL Note: *Preliminary data

14.3 Funding of apprenticeships in Italy

While the legislation and main features of the apprenticeship contract are coordinated at the national level, the 20 Italian regions and 2 autonomous provinces are the bodies responsible for

local regulation of the system, training objectives, supply (and length) of vocational training courses. These entities then interact with trade bodies and labour unions to agree on the length of the apprenticeship contract, the length and content of the professional vocational training, and the content of on-the-job training[178].

Regions draw funding from a variety of sources, but they rely most heavily on central government resources, as can be noted in the table below.

Table 86: Italian regional income by funding source, 2010-2011

	2010			2011		
	Regional funding	National funding	Operational Programmes (ERDF)[(a)]	Regional funding	National funding	Operational Programmes (ERDF)[(a)]
North	23.4%	62.3%	14.4%	21.5%	65.5%	13.1%
North West	*0%*	*71.5%*	*28.5%*	*0%*	*76.8%*	*23.2%*
North East	*38.5%*	*56.3%*	*5.2%*	*39.9%*	*55.7%*	*4.4%*
Centre	17.2%	81.0%	1.8%	8.8%	85.6%	5.6%
South	2.4%	38.2%	59.4%	28.8%	70.2%	1.0%
Total	18.4%	59.1%	22.5%	21.5%	68.9%	9.6%

Source: ISFOL

In terms of the expenditure of Italian regions in apprenticeships, regions have recently planned to increment their commitments towards the funding of apprenticeship schemes, as presented below.

Table 87: Budgeted regional spending in Italy 2010-2011

	2010	2011	2010-2011
	Billion €	Billion €	% change
North	113.2	125.2	10.7%
North West	*44.4*	*57.8*	*30.0%*
North East	*68.7*	*67.5*	*-1.9%*
Centre	20.3	23.8	17.7%
South and Islands	34.4	42.3	22.9%
Italy	167.9	191.4	14.0%

Source: ISFOL

In an effort to promote the supply of VET, a number of fiscal incentives have been introduced. In particular, with regards to each specific tax:

- *IRAP* (Regional tax on productive activities): all expenses incurred by the employer for apprentices can be deducted from this tax;

[178] By April 2012, the period of entry into force of the new decree, labour unions and employer associations drafted a total of about 50 national agreements. The majority of these agreements delegate the regulation of apprenticeship contracts to individual national collective contracts.

- Stamp duty: all formal documentation regarding the apprenticeship programme are exempt from stamp duties.

Further incentives have been granted to specific categories of employers. For example, after the *Legge di Stabilita' 2012* (a 2012 financial bill), micro enterprises (those employing up to 9 employees) are exempt, for a maximum of three years, from paying contributions for apprentices whose contract was signed no earlier than January 1st 2012 and no later than December 31st 2016.

14.4 Apprentice pay in Italy

In order to fully understand the computation of wages of apprentices, it is worthwhile to provide a brief description on the remuneration system in Italy. Employees are classified according to four general classifications: *Dirigente* (*"*Director"), *Quadro (*"Manager"), *Impiegato* ("Employee") and *Operaio* ("Worker"). For each of these categories, and within each trade, collective bargaining establishes a wage schedule. Within each category, the wage schedule has a number of "levels" (*livelli di inquadramento*) that correspond to degrees of qualification/specialisation and seniority. For example, the *Operaio* category is based on productive activities, and can be either "generic", "qualified" or "specialised", with salaries determined according to these classes.

Apprentices receive a salary that is "**no lower than two levels below that of a fully qualified worker**", thus the wage schedule of an apprentice with a specific level of qualification in a trade is modelled based on the schedule received by the corresponding fully qualified worker (as in Australia). For instance, if a fully qualified carpenter is considered to be a 'specialised' Level 3 employee within the *Operaio* category, an apprentice must be paid at least the corresponding rate for a Level 1 employee within the *Operaio* category.

Alternatively, the stakeholders to the contract can choose to structure the wage schedule according to percentage shares of the fully qualified rate. The salary can then evolve throughout the duration of the contract and can reach a maximum proportion of **95%** of the fully qualified rate. Table 79 below provides an example of remuneration parameters for apprenticeship contracts in the construction trade.

Table 88: Italian construction sector apprenticeship pay schedule

Period	I	II	III	IV	V	VI	VII	VIII	IX	X	Reference Level
Apprentice											
1 (Craftsmanship)	74%	76%	79%	79%	86%	86%	91%	91%	96%	96%	Specialised (3rd)
2 (e.g. Carpenter)	70%	74%	76%	79%	81%	86%	86%	91%	96%		Specialised (3rd)
3 (e.g. Painter)	74%	76%	79%	79%	86%	86%	91%	96%			Qualified (2nd)
4 (e.g. Plasterer)	74%	76%	79%	84%	91%	96%					Qualified (2nd)

Source: CCNL DEL 23/07/2008 Contratto collettivo nazionale di lavoro 23-07-2008 Dipendenti delle imprese artigiane edili ed affini. Note that Apprentices are entitled to health insurance, national insurance and maternity leave.

Taking the example above, collective bargaining in the construction sector has led to a wide range of contracts, according to the type of enterprise and subsector (e.g. SMEs, co-operatives). The

tables below provide an example of wage schedules for apprentices in the "construction craftsmanship"[179] sector.

There are 4 levels in the "worker" category, with different apprentice trades assigned to either the second level or third level in the computation of their remuneration (which determines the fully qualified rate). An apprentice in the first grouping (craft related activities) will commence in the first period of their apprenticeship with **74%** of the salary of a fully qualified Level 3 worker (i.e. a "specialised worker"), which stands at **€8.92** per hour (**£7.50**) and will reach **96%** of the minimum fully qualified rate by the end of the training. In contrast, an apprentice painter will earn the same proportions of the relevant fully qualified rate within the Level 2 *Operaio* category **€8.23** per hour (**£6.92**). Note that each step in the scale corresponds to a semester, so that an apprentice craftsman (or painter) will earn **74%** of the relevant fully qualified rate in their first year, rising to **79%** in their second year, **86%** in their third year and **91%** in their fourth year.

Table 89: Italian construction sector apprenticeship pay compared to fully qualified rate

Period	Minimum Fully Qualified rate	Year 1	Year 2	Year 3	Year 4	Year 5
4th level worker	€9.36	-	-	-	-	-
Specialised worker	€8.92	74%	79%	86%	91%	96%
Qualified worker	€8.23	74%	79%	86%	91%	-
Generic worker	€7.56	-	-	-	-	-

Source: CCNL DEL 23/07/2008 Contratto collettivo nazionale di lavoro 23-07-2008 Dipendenti delle imprese artigiane edili ed affini. Note that Apprentices are entitled to health insurance, national insurance and maternity leave.

We have taken the minimum sectoral wage to be the minimum hourly wage achieved by a Level 1 'generic' employee, which stands at **€7.56** per hour (**£6.36**). This implies that construction trade apprentices at Level 2 earn approximately **87%** of the minimum wage in thefir first year, **93%** in their second year, **101%** in their third year and **113%** in their fourth year. However, again it should be noted that this is just one example of a collectively bargained agreement, and there may be some considerable variation by sector and by autonomous region.

Table 90: Italian construction sector apprenticeship pay compared to minimum wage

Period	Minimum sectoral wage	Year 1	Year 2	Year 3	Year 5	Year 5
4th level worker	€7.56	-	-	-	-	-
Specialised worker	€7.56	87%	93%	101%	107%	113%
Qualified worker	€7.56	87%	93%	101%	107%	-
Generic worker	€7.56	-	-	-	-	-

Source: CCNL DEL 23/07/2008 Contratto collettivo nazionale di lavoro 23-07-2008 Dipendenti delle imprese artigiane edili ed affini. Note that Apprentices are entitled to health insurance, national insurance and maternity leave.

[179] Data from "Contratto collettivo nazionale di lavoro 23-07-2008 Dipendenti delle imprese artigiane edili ed affini". Expired: December 31st 2011, renewed in december 2010 with "Accordo di rinnovo 16-12-2010 Lavoratori dipendenti dalle aziende artigiane edili ed affini"; parties to the contract are: ANAEPA-CONFARTIGIANATO CNA-COSTRUZIONI FIAE-CASARTIGIANI CLAAI FENEAL-UIL FILCA-CISL FILLEA-CGIL

15 Apprenticeships and apprentice pay in Denmark

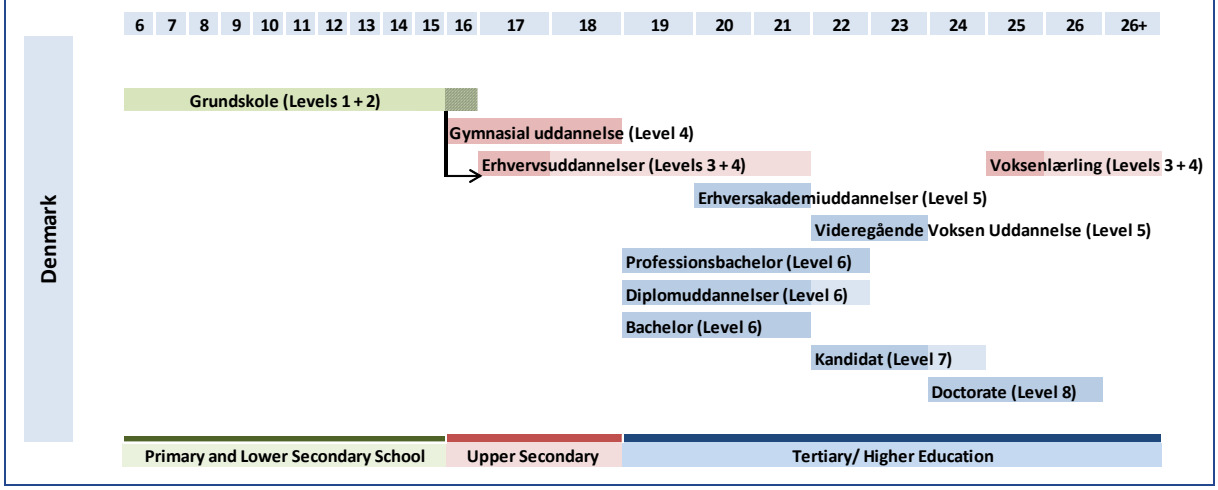
15.1 Overview of educational system in Denmark

The combination of a large welfare state and a relatively unconventional labour market makes Denmark an interesting country to include in this cross-country comparison of apprentice pay.

15.1.1 Primary education

Figure 67 shows the educational path[180] open to Danish children. As a general rule, Danish children start receiving education in August in the calendar year in which they turn six. They enter ***Grundskole*** (Primary school) in Grade 0. The most common path is to stay in the same school until Grade 9, where they sit *Folkeskolens Afgangsprøve* (*State school Leaving certificate*). The test is also available in *Efterskoler* or *Friskoler (*Boarding Schools and 'Free Schools'[181] respectively*)*. In 2012, 80% of pupils in the Danish primary school system were enrolled in *Folkeskoler* (regular State schools), 14% in *Friskoler (*Free Schools*)*, 3% in *Efterskoler* (although, as these only cater for Grades 8 to 10, the share of a cohort is considerably greater). The remaining 3% attended special needs schools.[182]

Figure 67: The education system in Denmark



Source: London Economics based on www.ug.dk

Tenth Grade, when pupils are generally aged 16 or 17 and acts as a type of 'transition' year is available to all pupils, but enrolling is voluntary. Just over half of pupils (57% in 2011) choose to

[180] Unlike many other countries, Denmark does not have a compulsory schooling law, but merely compulsory education. The implication of this difference is that parents are free to teach their children themselves, if they so choose, as long as the children reach similar levels of education as is provided in the state school system. A further implication of this approach is that there are a number of *Friskoler* (Free schools), which may choose to teach in different ways. In addition, there are a number of *Efterskoler* (boarding schools) for children aged between 15 and 17, where they live on the school's premises, and often have a chance to do extra-curricular activities such as sports, music, or drama.

[181] Independent fee-paying schools.

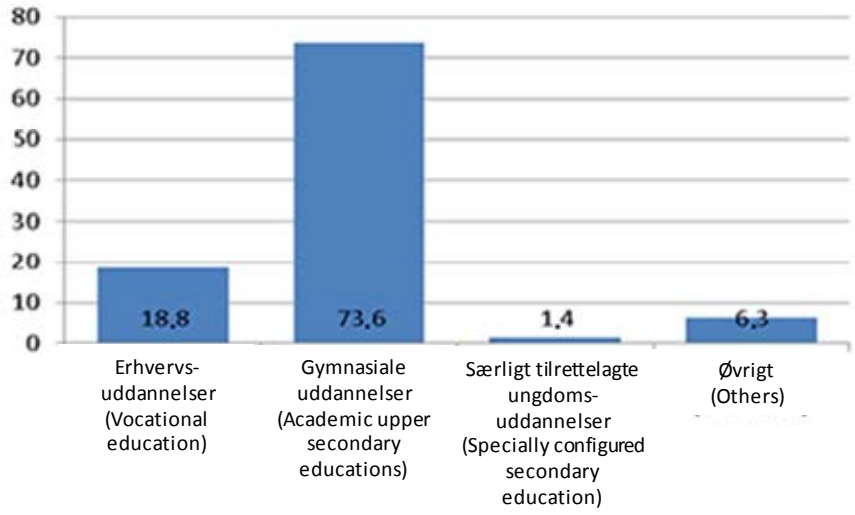
[182] The numbers in this section all come from http://www.uvm.dk/Service/Statistik/Statistik-om-folkeskolen-og-frie-skoler/Statistik-om-elever-i-folkeskolen-og-frie-skoler/Elevtal-i-folkeskolen-og-frie-skoler [accessed 12/6/13]

enrol in 10th Grade, and of these 41% choose to go to an *Efterskole (Boarding School).*[183] After 10th Grade, pupils sit the *Folkeskolens Udvidede Afgangsprøve* (State school Extended leaving certificate).

15.1.2 Secondary education

As Figure 67 illustrates, there are two primary paths for obtaining secondary education in Denmark. One way is through *Gymnasiale Uddannelser*[184] (equivalent to academic upper-secondary education), which is the first step on a path to university. The alternative secondary education route in Denmark is through *Erhvervsuddannelser* (vocational education). For the study of apprenticeships, this specific field of education is of particular interest.

Figure 68: Proportion of Danish pupils selecting different types of secondary education in 2013



Note: *Særligt tilrettelagte ungdomsuddannelser* and *Øvrigt* contain non-standard eduations.
Source:* *http://www.uvm.dk/Service/Statistik/Statistik-om-folkeskolen-og-frie-skoler/Statistik-om-elever-i-folkeskolen-og-frie-skoler/Statistik-over-tilmelding-til-ungdomsuddannelserne-for-9,-d-,-og-10,-d-,-klasse-(FTU)
[accessed 12/6/13]

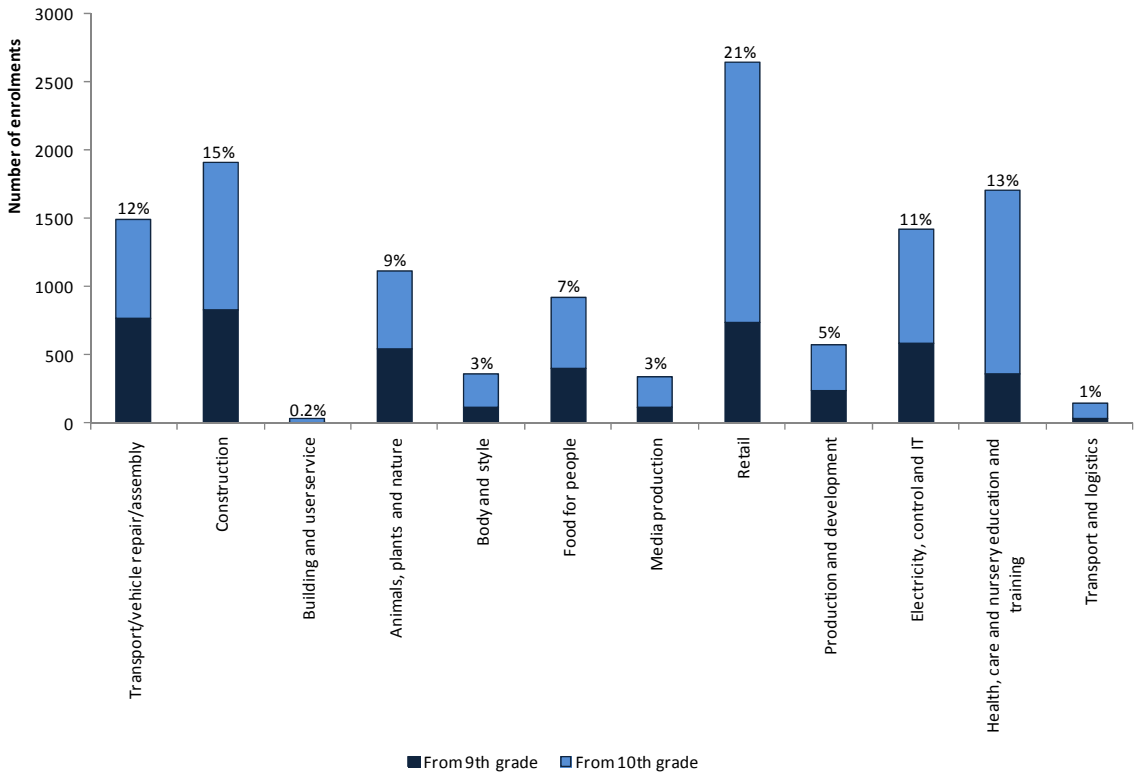
Figure 68 shows the proportion of pupils who selected different types of education following completion of 9th/10th grade. In 2013, **18.8%** of pupils selected the vocational pathway of *Erhversuddannelser,* corresponding to **12,675** pupils. Of these, 63% applied from 10th Grade and 37% applied straight from 9th Grade.[185]

[183] See http://www.dst.dk/pukora/epub/Nyt/2011/NR632.pdf for detailed statistics on *Grundskolen* in Denmark in 2011 (in Danish). [Accessed 12/6/13]
[184] *Gymnasiale Uddannelser* comprises *Højere Handelseksamen (HHX)* which focuses on language, business and social sciences, *Højere Teknisk Eksamen (HTX)* which focuses on technical and natural sciences, and *Studentereksamen (STX)* and *Højere Forberedelseseksamen (HF)* which cover humanities, languages, natural sciences and social sciences. (see http://www.ug.dk/flereomraader/maalgrupper/6til10_klasse/i_gang_med_en_gymnasial_uddannelse.aspx for more details (in Danish)) [accessed 12/6/13]
[185] See http://www.uvm.dk/Service/Statistik/Statistik-om-folkeskolen-og-frie-skoler/Statistik-om-elever-i-folkeskolen-og-frie-skoler/~/media/UVM/Filer/Stat/PDF13/130409%20FTU%20notat%202013.ashx for further details on 9th and 10th graders. [12/6/13]

In Denmark, vocational qualifications are divided into 12 different *Tier 1* ***sectors*** or ***classes*** of qualifications organised along industry lines (i.e. "Transport/vehicle repair/assembly", "Construction", "Electricity control and IT" etc.), each of which consists of between 3 and 26 further specialisms (for instance, within Construction, further specialisms include 'bricklaying', 'carpentry' etc). This amounts to 109 mid-tier vocational qualification groups. Some of these specialisms are further categorised into sub-specialisms with the result that there are 326 vocational sectors across the Danish vocational education system.

Figure 69 shows the number of enrolees in *Erhvervsuddannelser* in the 12 different *Tier 1* sectors. The figure shows that the largest sector of vocational qualifications is the Retail sector (21%) followed by Construction (15%), Transport/vehicle repair/assembly (15%), and Health, care and nursery education and training (11%). In 105 out of the 109 mid-tier groups of vocational qualifications, it is possible to obtain the relevant qualification through an apprenticeship. In general, these vocational qualifications require between 1½ and 5½ years to complete.

Figure 69: Number of enrolments to vocational qualifications in Denmark



Note: Author's translation of qualifications

Source: ***http://www.uvm.dk/Service/Statistik/Statistik-om-folkeskolen-og-frie-skoler/Statistik-om-elever-i-folkeskolen-og-frie-skoler/~/media/UVM/Filer/Stat/PDF13/130409%20FTU%20notat%202013.ashx***

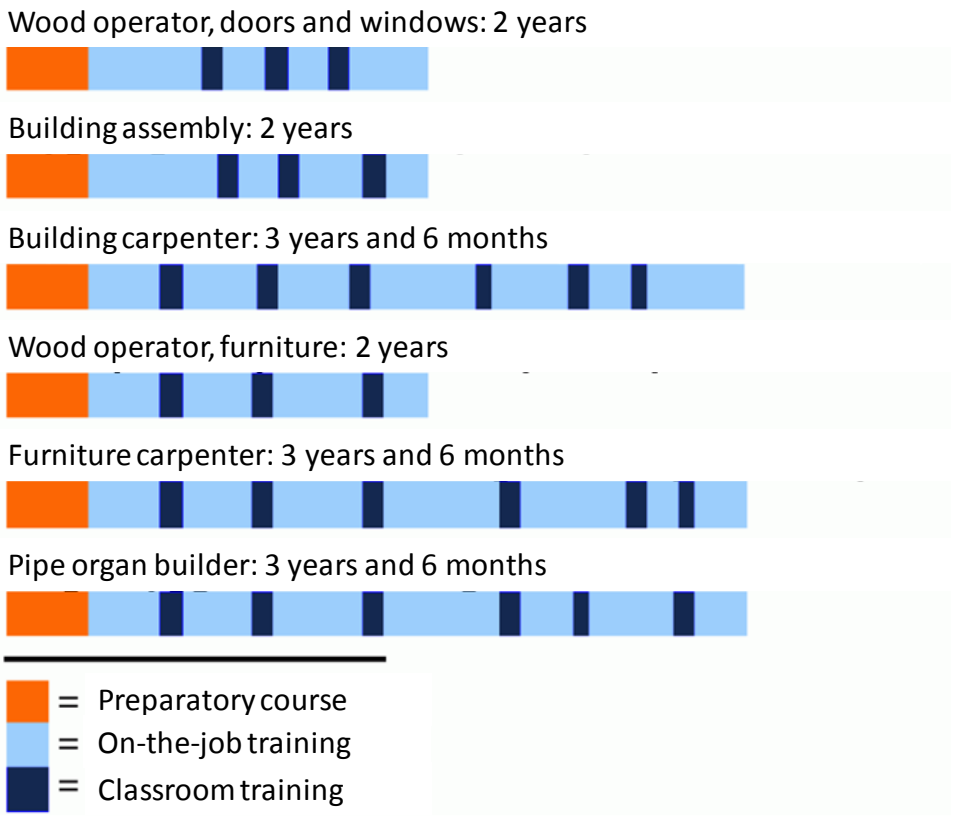
15.2 The Danish apprenticeship system: general characteristics

Obtaining a vocational qualification involves three different phases in Denmark. The first phase is a preparatory course, which serves to assess the pupil's suitability for the training, and helps identify weaknesses that need to be addressed. The duration of the preparatory course is 10 to 60 weeks,

with **20 weeks** being the most common duration[186]. This phase can be undertaken either before or after entering employment, and following the completion of the preparatory course, the individual either returns to their employer (if they have found one), or seek a position with a potential employer and commence their formal apprenticeship[187].

After completion of the preparatory course, the apprentice will receive training in a work setting interspersed with periods of classroom training. Figure 70 shows the typical profile of studying for the six possible ***carpentry*** apprenticeships available in the Danish education system. These durations are comparable with many of the central/northern European countries including Austria, Switzerland, Germany and the Netherlands).

Figure 70: Phases involved in qualifying within the Danish *Snedker* (Carpenter) (mid-tier) group



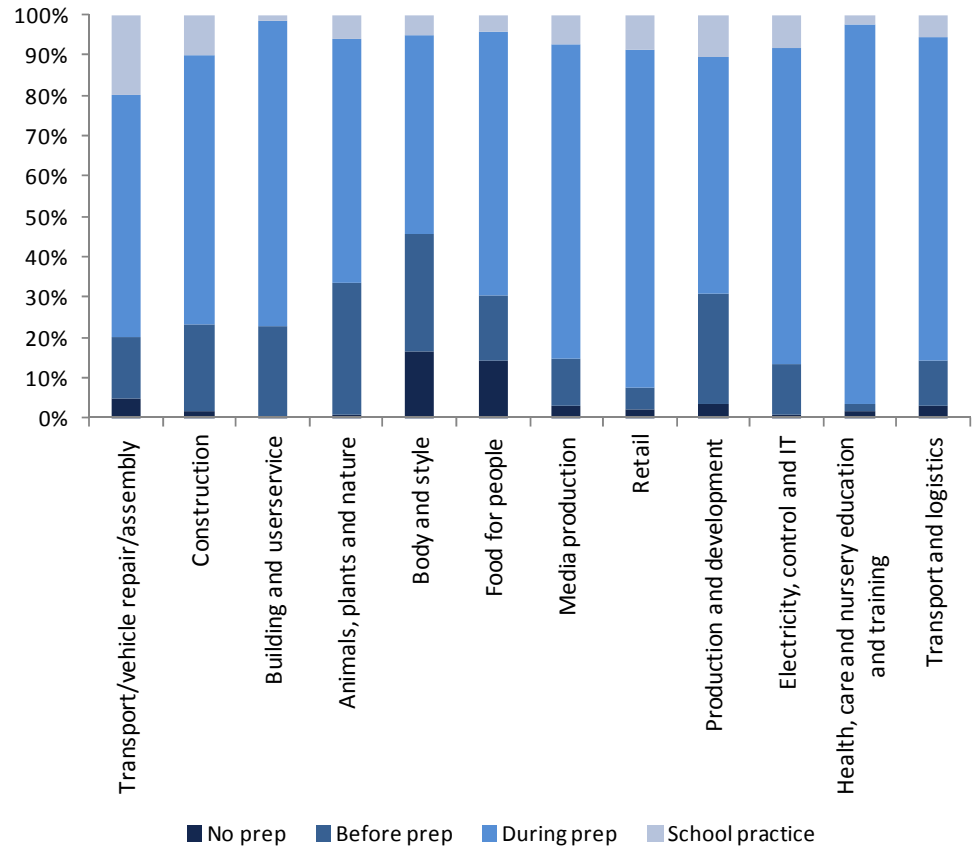
Note: 6 different specialisations as a carpenter with duration of 2 years to 3 years and 6 months (author's translation).
Source: ***http://www.ug.dk/Uddannelser/erhvervsuddannelsereudveud/byggeoganlaeg/snedker.aspx*** ***[accessed 10/6/13]***

[186] For more information on the preparatory course, please see http://www.ug.dk/flereomraader/maalgrupper/guide_til_foraeldre/vigtige_valg_6_10kl_eudgym/starten_paa_en_erhvervsuddannelse.aspx (in Danish) [accessed 13/6/13]

[187] Note that it is possible to undertake an apprenticeship in Denmark without undertaking the preparatory class in the Further Education College. In this set of circumstances, the apprentice receives their training from firm *journeymen*. In Danish, *svende* translates as fully qualified workers who possess a *Svendebrev* (Journeyman certificate).

In order to receive apprenticeship training in Denmark, the trainee needs to secure an apprenticeship contract. The timing and properties of the apprenticeship contract determine the educational path for the trainee.

Figure 71: Distribution of vocational qualification routes in Denmark (2012)



Note: *No prep* indicates that preparatory courses are replaced by training on-the-job. *Before prep* indicates that the trainee secured their apprenticeship contract before preparatory courses. *During prep* signifies that the trainee secured an apprenticeship contract during preparatory classes and *School practice* covers the trainees that did not secure an apprenticeship contract.

Source: ***http://www.statistikbanken.dk/statbank5a/default.asp?w=1600***

Figure 71 shows the timing and properties of apprenticeship contracts for trainees in the vocational education system in Denmark in 2012. It illustrates that there are large differences between the groups of qualifications in terms of how the on-the-job training is conducted.

Within the ***Body and style*** and ***Food for people*** groups[188] around **15%** of trainees secure an apprenticeship contract in advance of commencing training and undertake this training – not in the preparatory classroom environment - but rather learn the equivalent skills directly from the employer on-the-job. In contrast, in the ***Animals, plants and nature*** group[189], **33%** of all trainees

[188] Includes trades such as hairdressers, fitness instructors, and beauticians and retail butchers, waiters, and bakers, respectively.
[189] Includes trades such as farming, landscaping, and animal keeping.

secure the apprenticeship contract prior to commencing preparatory classes, which are delivered in the vocational college. For the majority of trainees, however, apprenticeship contracts are secured during the preparatory coursework phase that takes place in the vocational college. For instance, within ***Health, care and nursery education and training***, 94% of trainees sign their apprenticeship contract during this period.

Overall, Figure 71 shows that approximately **15%** of all trainees have an apprenticeship contract in place prior to receiving on-the-job training or college based training. A further **78.5%** of apprentices gain an apprenticeship position after they have enrolled in the preparatory classes at the vocational college. However, a number of would-be apprentices never succeed in gaining a formal apprenticeship contract (approximately **6.5%** (and up to **20%** of trainees in the ***Transport/vehicle repair/assembly*** group)). In general, Danish vocational colleges offer practical experience to trainees who have not been able to secure an apprenticeship contract, which is known as *Skolepraktik* (School practice).

Outside of these individuals who enrolled in an apprenticeship or *School practice*, in just over half of the 105 Tier 2 apprenticeship qualifications, at least one person failed to secure an apprenticeship contract, and did not get the offer of an apprenticeship or *School practice* in the most recent 6 month period for which information exists[190].

In the following sections, we will focus on the **93.5%** who receive on-the-job apprenticeship training in a work place.

15.3 Funding of apprenticeships in Denmark

The 2013 budget for Denmark saw funds for secondary education increase from **DKK16.6bn (£1.36bn)** to approximately **DKK17.1bn (£1.4bn)**. Vocational education as a whole cost **DKK6.266bn (£510m)**, which is broadly equivalent to the expenditure on universities. On top of the direct expenditure to the vocational colleges, state funded grants worth approximately **DKK18.3bn (£1.50bn)** were given out to all eligible students aged 18 or over. A small proportion of this grant sum is likely to go to trainees during their preparatory course[191]. The total cost of vocational education was approximately 0.3% of GDP[192].

On top of the public spending on vocational qualification in Denmark, all employers pay a fixed amount of **DKK743.25 (£61)** per quarter to *Arbejdsgivernes Uddannelsesbidrag* (Employers' Education Contribution fund). In 2012, the total amount paid into the fund was DKK5.3bn **(£430m)** equivalent to 85% of public expenditure on vocational education.

Total Danish expenditure on vocational education is thus **DKK11.4bn (£0.93bn)** or about **DKK2,000 (£163)** per inhabitant (which is equivalent to 0.6% of GDP).

[190] For detailed information on placements of apprentices, see www.praktikpladsen.dk [accessed 10/6/13]
[191] See e.g. http://www.fm.dk/temaer/finanslov-2013/~/media/Files/Nyheder/Pressemeddelelser/2012/11/finanslov%202013/presseresumer_finansloven%20for%202013.pdf for the exact numbers.
[192] Using the 2012 GDP reported by Statistics Denmark at DKK1,824bn (http://www.statistikbanken.dk/statbank5a/default.asp?w=1600) [accessed 28/06/13]

15.4 Apprentice pay in Denmark

15.4.1 Minimum apprentice pay as a proportion of 'minimum' fully qualified wage

The Danish labour market is characterised by strong unions and employer organisations that negotiate terms, conditions, and wage rates between themselves with limited political involvement[193]. This also means that there is no such thing as a national minimum wage in Denmark, but a wide range of wage levels for unskilled workers that have been agreed between a number of unions and employer organisations. Apprentice pay is negotiated in the same way as wages for adult and/or qualified workers.

However, as the state offers (paid) *School practice*, the state does *de facto* set a minimum wage. As we shall see, though, the pay offered to trainees in *School practice* is well below that of apprentices, at around **DKK 2,500** per month **(£204)** for trainees under 18 and around **DKK 6,000** per month **(£490)** for trainees aged 18 or older (**DKK37.50 per hour (£3.06)**)[194].

By law, employers who agree an apprenticeship contract with a trainee must adhere to the **collective agreement** between employer organisations and trade unions[195]. This means that there is an agreed minimum wage for each apprenticeship and each year of education. Note that trainees who have an apprenticeship contract in place when they start the preparatory course are eligible for the collectively agreed wage from the first day of training (i.e. during the preparatory course), whereas trainees who secure their apprenticeship contract after they begin training are eligible for *SU* (the state's education grant) during the preparatory course if they are 18 or older[196] (which may explain the relatively small proportion of individuals accessing an apprenticeship agreement prior to the commencement of their preparatory course).

For a few vocational courses, there is no collective agreement in place. In these instances, apprentice pay is determined by a tribunal comprising two members selected by employers, two members selected by employees and the chairman who is appointed by *Arbejdsretten* (the Labour Court)[197].

In the vast majority of agreements, apprentices under the age of 25[198] are treated identically; however for hairdressers, there is a substantial pay rise following the apprentice's 18th birthday (in the region of **10%-14%**)[199]. Similar gains are found among nursery school teachers and service

[193] See http://bm.dk/da/Beskaeftigelsesomraadet/Arbejdsret/Det%20arbejdsretlige%20omraade/Den%20danske%20model.aspx for more information on the Danish Model. [accessed 13/6/13]
[194] These wages work out to about DKK15.63 per hour and DKK37.50 per hour, respectively. The current exchange rate is about 8.79 DKK/GBP, so the wages work out around £1.78/hour and £4.26/hour. See http://www.ug.dk/flereomraader/maalgrupper/6til10_klasse/oekonomi_paa_eud.aspx for more info on wages and e.g. http://nationalbanken.dk/ for exchange rate. [both accessed 13/6/13]
[195] See Law on Vocational Education §55,2 (here: https://www.retsinformation.dk/Forms/R0710.aspx?id=146491) [accessed 26/6/13]
[196] *SU* is offered to all individuals in secondary or tertiary education. The level of the grant depends on whether the individual lives with their parents or not, and, for grants given to individuals in secondary education, also parental income. The grant to individuals in secondary education ranges from DKK1,274/month to DKK5,753/month. Trainees who do not manage to secure an apprenticeship contract (and do *Skolepraktik*) are also eligible for *SU* during the preparatory course. (see http://www.su.dk/SU/satserSU/ungdomsuddannelse/Sider/default.aspx for more information) [accessed 13/6/13]
[197] See the Law on Vocational Education §55,3 (available here: https://www.retsinformation.dk/Forms/R0710.aspx?id=146491) and http://www.arbejdsretten.dk/generelt.aspx for information on the Labour Court [both accessed 26/6/13]
[198] Special rules apply to apprentices aged 25 and above. This will be dealt with in a separate box. (See Box 1 on page 98)
[199] See www.dfkf.dk/ansaettelsesforhold/elever.html for the exact figures. (in Danish) [Accessed 11/6/13]

technicians, although for the latter, the gain is realised if the trainee is older than 21 at the point of enrolment.

As a result of the fact that apprentice pay is negotiated between trade unions and employer organisations for many different trades, there is a vast amount of data on apprentice pay available in Denmark. On top of this, the collective agreement between unions and employer organisations may be applied differently in different industries. For instance, for apprentices training to become office workers (*kontoruddannelsen),* who are members of *HK* (*Commerce and Office Workers' Union*), the agreed minimum apprentice wage in the first year ranges from **DKK 62.88** per hour **(£5.14)** for office staff in the commercial sector to **DKK 65.79** per hour **(£5.38)** for office staff within construction sector[200].

More generally, Table 91 shows the minimum apprentice wage in each sector agreed between the trade union and the relevant employer organisation (gathered directly from the unions/employers in each sector). The minimum apprentice wage as a proportion of the **fully qualified minimum hourly wage** is presented in italics. The table shows that first year minimum apprentice pay ranges from **48%** of the qualified agreed minimum wage in ***Health, care and nursery education and training*** to **64%** in ***Media production***. In year 4, the proportion ranges from a low of **59%** in ***Food for people*** to a high of **88%** in ***Media production***. For apprentices who are in their 5th and subsequent years, the minimum apprentice pay is **96%-100%** of the fully qualified minimum wage.

Table 91: Agreed minimum wage and share of fully qualified minimum wage in sector in Denmark

Industry	Year 1	Year 2	Year 3	Year 4	Year 4+	Source
Transport/vehicle repair/assembly	63.00 *(57%)*	71.45 *(64%)*	76.75 *(69%)*	88.80 *(80%)*	108.70 *(98%)*	Dansk Metal
Construction	62.95 *(55%)*	74.45 *(65%)*	89.80 *(78%)*	104.15 *(90%)*	-	3F
Building and userservice	65.46 *(50%)*	65.46 *(50%)*	-	-	-	Dansk Industri
Animals, plants and nature	63.97 *(60%)*	74.06 *(69%)*	88.35 *(83%)*	104.61 *(98%)*	-	3F
Body and style*	77.04 *(61%)*	84.81 *(67%)*	90.80 *(72%)*	-	-	Dansk Frisør & Kosmetiker Forbund
Food for people‡	76.64 *(60%)*	78.68 *(62%)*	80.21 *(63%)*	82.24 *(65%)*	-	3F
Media production	69.64 *(64%)*	76.76 *(71%)*	87.24 *(80%)*	95.59 *(88%)*	-	HK Privat
Retail	62.88 *(54%)*	70.16 *(60%)*	77.19 *(66%)*	83.62 *(72%)*	-	HK Handel
Production and development †	63.00 *(58%)*	71.45 *(66%)*	76.75 *(71%)*	88.80 *(82%)*	108.70 *(100%)*	Dansk Metal
Electricity, control and IT	63.00 *(56%)*	71.45 *(63%)*	76.75 *(68%)*	88.80 *(78%)*	108.70 *(96%)*	Dansk Metal
Healthcare and nursery education**	66.02 *(48%)*	67.71 *(49%)*	-	-	-	FOA
Transport and logistics	68.76 *(53%)*	77.58 *(60%)*	87.43 *(68%)*	-	-	3F

Source: London Economics and cited labour market organisations. Notes: *: The apprentice pay given in the table is for apprentices aged between 18 and 25. †: There is no separate minimum wage for qualified workers in Production and Development. **: The apprentice pay given in the table is for apprentices aged between 18 and 25 in Region 2 (larger provincial cities). ‡: The agreed minimum wage does not include tips/gratuity. Under Danish tax laws; tips/gratuities are liable for B-taxation, but are to be reported directly by the employee to the tax authorities.[201] See e.g. http://nationalbanken.dk [accessed 13/6/13]

[200] See www.hk.dk/privat/dit_servicecenter/elevmedlem_i_hk/elevloen_dansk_erhverv for the collective agreement in commerce and www.hk.dk/privat/dit_servicecenter/elevmedlem_i_hk/elevloen_dansk_byggeri for construction. [Both accessed 11/6/13]
[201] See http://www.skat.dk/SKAT.aspx?oID=1976777&chk=205783 for the specific tax laws governing tips/gratuity. [accessed 27/06/13]

15.4.2 Apprentice pay as a proportion of fully qualified wage

The previous section compared *minimum* apprentice pay to *minimum* fully qualified pay in Denmark. This section compares average *actual* apprentice pay (where available) to average *actual* fully qualified pay (where that is available).

To compare apprentice pay and the minimum fully qualified rate, for some of the *Tier 1* classes, information on average pay has been gathered from Statistics Denmark *(DST)*, who report average income for apprentices and fully qualified workers (represented by asterisks(*)). The data is available through the *Education guide* website (www.ug.dk), and serves to inform youths of subsequent income levels after finishing education. Where this information is unavailable, we present minimum apprentice pay as a proportion of fully qualified actual average rate (†) or as a proportion of the newly fully qualified actual average rate (‡).

Table 92: Danish apprentice pay and share of fully qualified *average* pay

Industry	Year 1	Year 2	Year 3	Year 4	Year 4+	Source
Transport/vehicle repair/assembly*	63.59 *(35%)*	71.71 *(39%)*	77.58 *(42%)*	90.29 *(49%)*	108.01 *(59%)***	Dansk Metal
Construction†	62.95 *(38%)*	74.45 *(45%)*	89.80*(55%)*	104.15 *(64%)*		3F
Building and user service‡	65.46 *(43%)*	65.46 *(43%)*				DST
Animals, plants and nature‡	63.97 *(41%)*	74.06 *(47%)*	88.35 *(56%)*	104.61 *(67%)*		DST
Body and style†	77.04 *(43%)*	84.81 *(47%)*	90.80 *(50%)*			Dansk Frisør & Kosmetiker Forbund
Food for people‡	76.64 *(55%)*	78.68 *(57%)*	80.21 *(58%)*	82.24 *(59%)*		DST
Media production†	69.64 *(32%)*	76.76 *(36%)*	87.24 *(41%)*	95.59 *(44%)*		Dansk Metal
Retail†	62.88 *(45%)*	70.16 *(51%)*	77.19 *(56%)*	83.62 *(60%)*		HK
Production and development*	66.37 *(36%)*	77.85 *(43%)*	81.36 *(45%)*	94.41 *(52%)*	133.86 *(74%)*	Dansk Metal
Electricity, control and IT*	65.14 *(33%)*	76.15 *(39%)*	85.50 *(43%)*	94.79 *(48%)*	109.28 *(56%)*	Dansk Metal
Health, care and nursery education ‡	66.02 *(42%)*	67.71 *(43%)*				DST
Transport and logistics‡	68.76 *(43%)*	77.58 *(48%)*	87.43 *(54%)*			DST

Source: London Economics, cited labour market organisations, and Statistics Denmark

Notes: *: **The average actual apprentice pay and average actual income among qualified workers** (deflated using monthly consumer price index) †: Agreed minimum wage for apprentices and average actual wage among qualified workers (deflated using monthly consumer price index) ‡: Agreed minimum wage for apprentices and average wage for **newly qualified workers** (deflated using monthly consumer price index). **: Notice that Year 4+ apprentices in Transport/vehicle repair/assembly appear to receive less than minimum wage when comparing with Table 91; this is not the case, as the wage information in Table 92 was gathered before the minimum wage in Table 91 came into force.

Table 92 shows apprentice pay and the average income for a fully qualified worker. Because of the different timing for some of the statistics, the values have all been deflated to March of 2013 using the monthly consumer price index published by *Statistics Denmark.*[202]

Because of varying definitions of the fully qualified wage, the estimates are for information only and should be interpreted with some caution. As previously indicated, there are two definitions of the fully qualified wage, namely one from *DST*, which is the wage earned by a newly qualified worker on the one hand, and the average wage across all members reported by the trade unions on the other. Given this discrepancy, it is reasonable to assume that apprentice pay represents a

[202] Available here: http://dst.dk/da/Statistik/emner/forbrugerpriser/forbrugerprisindeks.aspx [accessed 27/6/13]

larger share of the fully qualified wage in the sectors relying on *DST* data than if the same data had been made available by the relevant unions.

The lowest shares reported in Table 92 are indeed in sectors where average income across all members of trade unions are available[203], where minimum apprentice pay in the first year is less than **40%** of the average actual pay of a qualified worker.

15.4.3 Apprentice pay as a proportion of 'minimum' unskilled wage

Finally in this section on apprentice pay, we consider the minimum apprentice rate as a proportion of the collectively agreed minimum wage rate associated with an unskilled profession. The minimum unskilled wage is again agreed between unions and employer organizations and can therefore differ by industry. As an example, the minimum unskilled wage in the construction industry is **DKK 109.63 (£8.96)**. Unsurprisingly, the analysis demonstrates that an apprentice in their 1st year can expect to achieve anywhere between **56%** (Healthcare and nursery education) to **67%** (Catering), which increases to between **72%** (Catering) and **95%** (Construction) in apprentices' 4th year.

Table 93: Agreed minimum wage and share of minimum unskilled wage in Denmark

Industry	Year 1	Year 2	Year 3	Year 4	Year 4+	Source
Transport/vehicle repair/assembly	63.00 *(58%)*	71.45 *(66%)*	76.75 *(71%)*	88.80 *(82%)*	108.70 *(100%)*	Dansk Metal
Construction	62.95 *(57%)*	74.45 *(68%)*	89.80 *(82%)*	104.15 *(95%)*	-	3F
Building and user service†	65.46 *(50%)*	65.46 *(50%)*	-	-	-	Dansk Industri
Animals, plants and nature	63.97 *(60%)*	74.06 *(69%)*	88.35 *(83%)*	104.61 *(98%)*	-	3F
Body and style*	77.04 *(61%)*	84.81 *(68%)*	90.80 *(72%)*	-	-	Dansk Frisør & Kosmetiker Forbund
Catering	76.64 *(67%)*	78.68 *(69%)*	80.21 *(70%)*	82.24 *(72%)*	-	3F
Media production	69.64 *(64%)*	76.76 *(71%)*	87.24 *(80%)*	95.59 *(88%)*	-	HK Privat
Retail	62.88 *(59%)*	70.16 *(65%)*	77.19 *(72%)*	83.62 *(78%)*	-	HK Handel
Production and development	63.00 *(58%)*	71.45 *(66%)*	76.75 *(71%)*	88.80 *(82%)*	108.70 *(100%)*	Dansk Metal
Electricity, control and IT	63.00 *(58%)*	71.45 *(66%)*	76.75 *(71%)*	88.80 *(82%)*	108.70 *(100%)*	Dansk Metal
Healthcare and nursery education**	66.02 *(56%)*	67.71 *(57%)*	-	-	-	FOA
Transport and logistics	68.76 *(60%)*	77.58 *(68%)*	87.43 *(76%)*	-	-	3F

Source: London Economics and cited labour market organisations

Notes: †: Unskilled minimum wage not available. *: The apprentice pay given in the table is for apprentices aged between 18 and 25. **: The apprentice pay given in the table is for apprentices aged between 18 and 25 in Region 2 (larger provincial cities).The current exchange rate is about 8.79 DKK/GBP. See e.g. http://nationalbanken.dk [accessed 13/6/13]

15.4.4 Further information on adult apprentices

Special regulations govern the instances in which adults (aged 25 or over) want to enrol into vocational qualification with a view of securing an apprenticeship contract. Box 1 lists the specific criteria that have to be fulfilled in order for the trainee to be eligible for adult apprenticeship. Businesses that employ adult apprentices are entitled to compensation towards paying the wage of the apprentice. The compensation amounts to **DKK30** per hour **(£2.45)**, but the business is obliged to pay the apprentice minimum wage for an unskilled worker in the sector.

[203] *Transport/vehicle repair/assembly*, *Construction*, *Media production*, *Production and development*, and *Electricity, control and IT*

Box 1: Danish *Voksenlærlingeordningen* (adult apprentice scheme)

Individuals are entitled to enrol in the adult apprentice scheme if they are at least 25 years old and fulfil either of the following criteria:

1. They do not have any qualifications
2. They have not used their vocational qualification for at least 5 years
3. They have been unemployed for at least 6 months (9 months if older than 30)
4. If they are employed, they are still eligible if the selected education involves "good job prospects"[204]

Businesses that employ an adult apprentice are entitled to compensation of DKK30/hour provided the above criteria are fulfilled. If the apprentice is between 25 and 29 years old, the business is entitled to compensation for 4 years and if the apprentice is 30 or older, the business is entitled to compensation for 2 years. An adult apprentice is entitled to income equivalent to the minimum wage for an unskilled worker in their sector. If no minimum wage has been set by collective agreement, the apprentice is entitled to an amount equivalent to what is earned in similar sectors.

Adult apprentices are entitled to the same amount during classroom training time and on-the-job work time. The business is entitled to compensation worth up to DKK4,290 per week when the apprentice receives classroom training. Adult apprentices (like other apprentices) may have relevant labour market experience. If so, that may work towards them qualifying faster than prescribed time.

In the first quarter of 2013 there were **2,618** adult apprentices in Denmark whose employer was compensated.

Source: London Economics, http://www.fremtidenerfaglaert.dk/sub/fakta_betingelser.html and http://www.voksenlaerling.nu/voksenlaerling/sporgsmal-og-svar

15.4.5 Additional income/compensation

The previous section dealt with apprentice wage on a gross basis excluding pension and any other income or compensation. However, apprentices are *entitled* to additional compensation, and some are *eligible* for further benefits.

The Danish holiday system is different from that in other countries. All workers have an account with *Arbejdsmarkedets Tillægspension* (Labour Market Supplementary Pension), where 12.5% of their wages are paid in every month. The holiday year runs from 1st of May, when people can receive the funds they saved in the previous year provided they take holiday. Savings in the holiday account are posted by the employer, and apprentices are entitled to these monies like every other worker[205]. Beyond to the mandatory holiday pay, some unions have negotiated an additional amount of 1% which is paid to employees who are employed under certain conditions. Some apprentices fall under those conditions. The money is paid with the 1st of May pay check.

In addition, apprentices need work clothes or tools in many trades. Apprentices have access to clothes and tools under the same conditions as fully qualified workers.

[204] Job prospects vary across the country so each of the four employment regions post a list of approved educations twice a year. See http://brmidtjylland.dk/~/media/AmsRegionSite/MidtJylland/6%20Voksenlaerlinge/2013/Voksenlaerlingelisten-2-halvaar-2013.ashx for an example of a list [accessed 27/06/13]

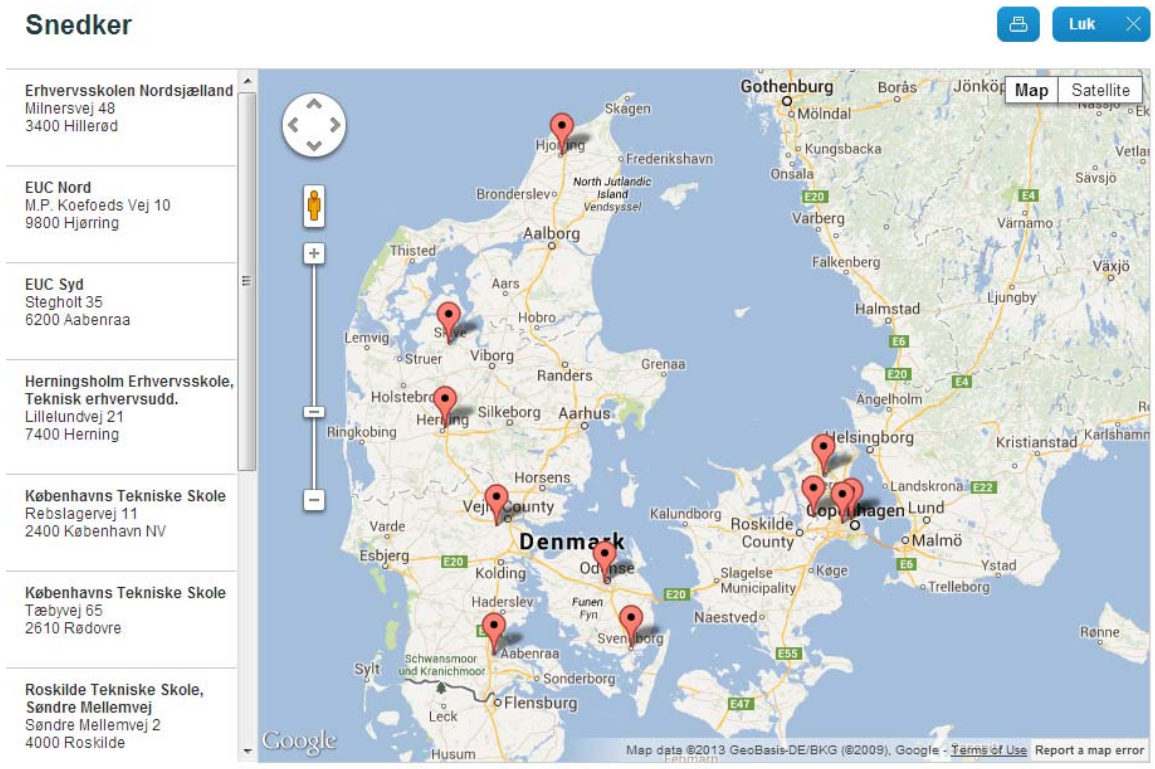
[205] See e.g. http://www.atp.dk/wps/wcm/connect/atp/atp.dk/privat/sik/Feriekonto for more information

All costs related to the last exam for the apprentice (*Svendeprøven*) are paid by the employer.[206]

In Denmark, classroom training of apprentices is heavily centralised. Figure 72 shows the locations in Denmark where it is possible to receive the classroom training necessary to become a *Snedker* (carpenter). As Figure 70 shows, trainee carpenters require 3 to 6 classroom training sessions. Many vocational colleges offer boarding facilities to apprentices whose commute exceeds 75 minutes. The fee is fixed by the Danish Ministry of Finance and amounts to DKK485 per week (about **£40**) for trainees who have an apprenticeship contract (i.e. not in *School practice*) or are aged 18 or over. The fee is payable by the trainee. Trainees under the age of 18 and trainees who have dependents live free of charge. The fee is for a shared room with en-suite bathroom and full boarding. [207]

Under certain conditions apprentices are entitled to a contribution towards transportation costs. The contribution is DKK1.07/km after 24km per day and up to 576km per day.

Figure 72: Locations where classroom training in *carpentry* is available in Denmark



Source: ***http://www.ug.dk/Uddannelser/erhvervsuddannelsereudveud/byggeoganlaeg/snedker.aspx***

[206] See http://forsiden.3f.dk/assets/pdf/SD1942889425.PDF for the details for 3F apprentices in construction on all three points.
[207] See http://www.kts.dk/erhvervs-uddannelse/bopaaskolehjem.asp for more information on trainee accommodation

15.4.6 Non-compliance

One of the services provided by Danish unions is the opportunity for members to get help in cases where they are not treated within the law.

One Danish union, 3F, has investigated cases for their apprentices within the *Agriculture and Horticulture sector* ***("Animals, plants and nature")*** between 2010 and 2013. A total of 62 cases known to the union were adjudicated by an independent arbitrator leading to compensation in the order of **DKK2.5m (£204,000)**. The majority of cases relate to wage discrepancies, but unlawful termination of apprenticeship contracts also feature prominently. The majority of cases tried are for *Farming* apprentices although *Animal attendance* and *Landscaping* also feature.[208]

The individual cases listed on the website mention compensation amounts between **DKK20,000** and **DKK45,000** (**£1,634** and **£3,677**).

The Danish Ministry of Children and Education have formed the *Tvistighedsnævnet* (Dispute Resolution Council) with the purpose of settling disputes between apprentices and their employers. The council handled 90 cases in 2011 relating to apprentices, of which 7 were specifically related to wage disputes. Of the 6 cases where a determination was reached, in 5 of the cases the council found in favour of the apprentice with the remaining case finding in favour of the employer.[209]

[208] See http://forsiden.3f.dk/article/20130628/NYHEDER/130629890/2140/NYHEDER for the summary of cases [accessed 28/6/13]

[209] See http://www.uvm.dk/Uddannelser-og-dagtilbud/Erhvervsuddannelser/Fakta-om-erhvervsuddannelserne/Raad-og-naevn-paa-erhvervsuddannelsesomraadet/~/media/UVM/Filer/Udd/Erhverv/PDF13/130218%20Tvistighedsnaevnets_Beretning_Netversion.ashx for the 2011 annual report from the Dispute Resolution Council (most recent) [accessed 28/06/13]

16 Apprenticeships and apprentice pay in Sweden

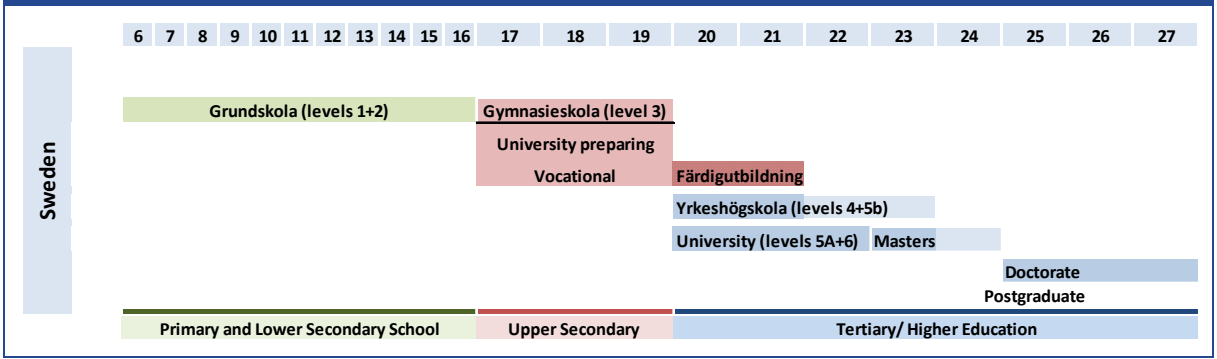
16.1 Overview of the education system in Sweden

Sweden's entire education system has been undergoing extensive review in recent years with the secondary education system reformed as part of 2010 *School Law* legislation. This implies that the information presented in this section of the report is a mix of the current legislative framework and semi-historic statistics relating to the previous education system. Fundamentally, the Swedish education system is quite different from education systems in the other countries covered in this cross-country comparison of apprentice pay. The Swedish education system is presented in Figure 73.

16.1.1 Primary education

Primary and lower secondary education in Sweden is combined into one unit called ***Grundskola*** (basic school). It is compulsory for children in Sweden to go to Grundskola for nine school years from the autumn of the calendar year in which a child turns seven. However, a *pre-school class* is open to children from the autumn in the calendar year they turn six and 95%-96% of children are enrolled in these pre-schools[210]. After *Grundskola,* Swedish pupils have the option of continuing their education in the ***Gymnasieskolan***, an option which 98% of pupils adopt[211].

Figure 73: The education system in Sweden



Note: The classification of levels of education follows the *International Standard Classification of Education*.
Source: London Economics based on Svensk författningssamling, Skollag (SFS2010:800), 23 June 2010 and Yrkesutbildning i Europa, Översikt över den svenska yrkesytbildningen, 2012http://www.ug.dk/

16.1.2 Secondary education

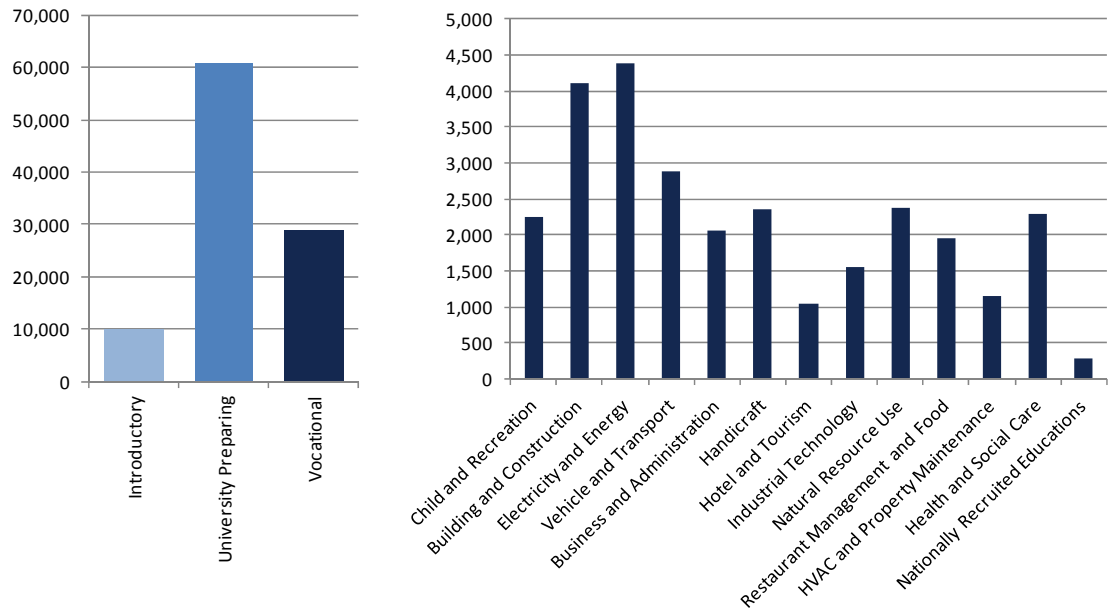
Broadly, there are 18 different programmes available within the *Gymnasieskola* setting, 12 of these are ***Yrkesprogrammer***[212] (Vocational programmes) and 6 are ***Högskoleförberedande***

[210] See http://www.skolverket.se/statistik-och-utvardering/statistik/forskoleklass/2.4289/fortsatt-okning-av-elever-i-forskoleklass-1.194543 for more statistics on the *pre-school class*. [accessed 2/7/13]
[211] See e.g. Steedman, H. (2010)
[212] The programmes on offer comprise: Child and recreation, Building and Construction, Electricity and Energy, Vehicles and transport, Business and Administration, Handicraft, Hotel and Tourism, Industrial Technology, Natural Resource Use, Restaurant Management and Food, HVAC and Property Management, and Health and Social Care. A thirteenth programme is included in statistics, namely Nationally Recruited educations, which are only taught in very few places (this included e.g. the Royal Ballet Dancer education)

programmer[213] (University preparation programmes). Pupils whose *Grundskola* results are deemed to be lacking, are able to enrol in ***Introduktionsprogrammer*** (Introductory Programmes), where they get a chance to improve their qualifications in certain subjects.

Figure 74 shows the selection of upper secondary education chosen by the pupils who started in the autumn semester of 2012. About 30% of pupils enrol in vocational training (compared to approximately 19% in Denmark), with *Electricity and Energy* and *Building and Construction* being the most popular.

Figure 74: Distribution of Swedish pupils choosing different paths of secondary education



Source: Statistiske Centralbyrån (Gymnasieskolan – Elever – Riksnivå, Tabell 3A). Note: The left panel provides informaiton on the aggregate numbers and proportions of student following different paths of qualification attainment, while the right panel illustrates the proprotions with the vocational pathway undertaking education and training by sector of study.

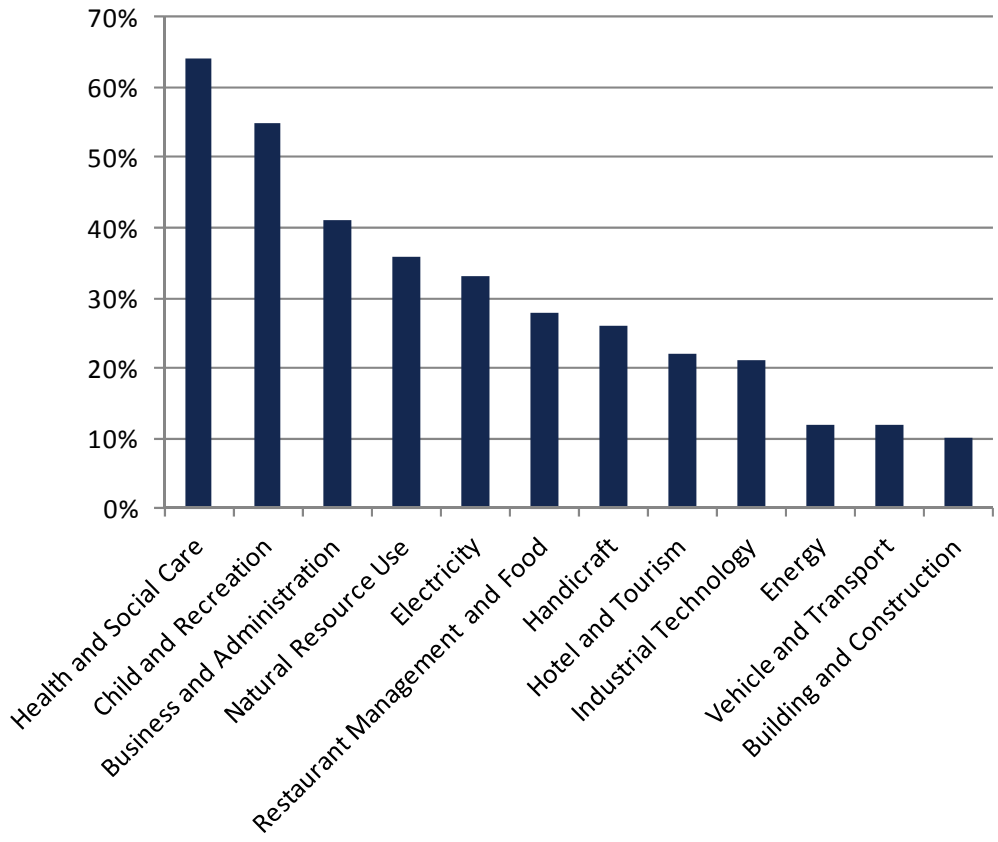
In Sweden, graduates from a vocational study programme are also deemed qualified to attend university if their qualification includes Swedish (as second language) at Levels 2 & 3[214] and English at Level 6[215], as well as specific requirements for some designated courses in higher education[216].

Movement between the different pathways of educational attainment is a reality rather than an aspiration. Figure 75 shows the share of 2012 graduates from vocational training who stated their

[213] This group comprises Economics, Aesthetics, Humanities, Natural Sciences, Social Sciences, and Technical programmes. Sweden also offers its students the International Baccalaureate, which is a separate education.
[214] 2-3 year curriculum at *Gymnasieskola,* see http://www.studentum.se/Allmaen_kurs_gymnasiet_svenska_som_andraspraak_238269.htm [accessed 10/7/13]
[215] 2 year curriculum at *Gymnasieskola*, see http://www.skolverket.se/laroplaner-amnen-och-kurser/gymnasieutbildning/gymnasieskola/eng?subjectCode=ENG&lang=SV bearing in mind total secondary education is 2500 points [accessed 10/7/13]
[216] See http://www.yrkesprogram.se/Hoegskolebehoerighet__d6067.html for specific requirement for each education programmes. [accessed 2/7/13]

intention to study at university within three years of completing vocational training. Considering the actual behaviour of the entire cohort graduating from *Gymnasieskolan* in 2009, in aggregate, the total share of graduates who enrolled at university within 3 years of graduating was 45%. The share of graduates from University-preparation Programmes was **68%** compared to **23% from** vocational programmes.[217]

Figure 75: Intentions of Swedish graduates from vocational education in 2012



Source:** http://www.scb.se/Pages/TableAndChart____24157.aspx **[accessed 2/7/13]

16.2 The Swedish apprenticeship system: general characteristics

Following a revision to *Skollagen* (the Swedish School Laws) that took effect from 2011, there are two ways of obtaining vocational qualifications in the Swedish *Gymnasieskola.*

The first approach is to undertake a three-year classroom-based programme of learning, where at least 15 weeks are to be spent undertaking practical work on-the-job[218]. Students are free to design their own on-the-job period. For example, if the student is unsure about their employment

[217] See Statistiske Centralbyrån (Studerande som avslutat ett program i gymnasieskolan 2008/09 och som påbörjat högskolestudier inom tre år, fördelade efter program i gymnasieskolan, betygspoäng och kön. Procent, Tabell5)
[218] See http://www.yrkesprogram.se/APL_arbetsplatsfoerlagt_laerande__d6083.html for more information on the practical elements of the classroom-based vocational programmes. [accessed 1/7/13]

preferences, they can separate the practical period across different companies to gain an insight into the workings of different work places. If the student is sure about their job path, they can choose to spend the whole period with one company in a bid to secure employment after education[219].

The second approach is called ***Gymnasial lärlingsutbildning*** (Upper secondary apprenticeship education), and is a three-year education in *Gymnasieskolan* (as before), which requires at least **half** the study time to be spent on-the-job[220]. *Gymnasial lärlingsutbildning* was introduced in 2011 following a successful pilot running from 2008 to 2010[221]. Initially enrolment was high, and the main group of schools offering tailored apprenticeship education quickly expanded to more than 50 schools and about 5,400 students. However, SVT (the Swedish national broadcaster) recently[222] revealed that only around half the students actually received at least half their education with an employer. Furthermore, many of the students who did receive an apprenticeship did so in specialisms distant from their chosen branch of study. A change in the legislation, which meant that schools would only get paid for students in apprenticeship training, has had the effect that many of these schools face closure[223].

Given that *Gymnasial lärlingsutbildning* is still a new scheme in Sweden, *Skolinspectionen* (the School Inspectorate) conducted a thorough review of 35 schools that offer apprentice education and found room for improvement in many different areas and in many different schools.[224]

16.2.1 Education following *Gymnasieskolan*

Following secondary education, irrespective of educational route, Swedish youths are qualified for higher education if their grades suffice (i.e. all programmes in *Gymnasieskolan* including all the elements that are necessary for higher education).

Once again, as seen in Figure 73, individuals have a choice between higher education through University and an academic route, and a vocational route through ***Yrkeshögskola*** (Higher Vocational Education School)[225]. The law governing ***Yrkeshögskolan*** prescribes that higher vocational education should be tailored to the needs of the labour market. As a result, local labour market representatives are involved in the decision to approve vocational education programmes.

Programmes in ***Yrkeshögskolan*** involve ***lärande i arbete***, which is a period of practical training similar to the practical periods associated with vocational programmes in secondary education[226]. For some of the qualifications, in some sectors, it is also possible to obtain "trade and journeyman's" examination through an apprenticeship, which is exclusively based at an

[219] See http://www.yrkesprogram.se/Vad_vill_du_faa_ut_av_din_praktik__d7018.html for more information on the specifics of on-the-job training. [accessed 3/7/13]
[220] See Svensk författningssamling, Skollag (SFS2010:800), 23 June 2010 for the specific details.
[221] See Skolverket. Redovisning av uppdraget att redovisa omfattningen av försöksverksamheten med gymnasial lärlingsutbildning och hur statsbidraget har använts, 2010-10-01 for the audit of the pilot project.
[222] 16-05-13
[223] See http://www.svt.se/nyheter/sverige/bara-halften-larlingar-hos-ledande-larlingsgymnasiekoncern-1 for more information. [accessed 3/7/13]
[224] See http://www.skolinspektionen.se/sv/Tillsyn--granskning/Kvalitetsgranskning/Genomforda-kvalitetsgranskningar/Gymnasial-larlingsutbildning/ for a summary of the main findings of the review. [accessed 3/7/13]
[225] Known as ***kvalificerat yrkesutbildning*** up to 2013. See Yrkesutbildning i Europa, Översikt över den svenska yrkesytbildningen, 2012
[226] According to Yrkesutbildning i Europa, Översikt över den svenska yrkesytbildningen, 2012, the practical period must cover at least a quarter of the period of education.

employer's premises, called ***Färdigutbildning*** (*Ready-Education Period*). The duration of the ***Färdigutbildning*** period ranges from 1½ years and 3 years[227].

16.3 Funding of apprenticeships in Sweden

16.3.1 Expenditure on vocational education in Sweden

According to Swedish Education Law, secondary education (including books) must be free of charge at the point of entry. For tertiary education, there are no tuition fees, but books may have to be bought at the expense of the student[228]. This implies that the Swedish public sector bears the vast majority of the cost of education, including vocational education.

Gymnasieskolan

Because of the close integration of vocational and academic programmes in Swedish secondary education, there is no breakdown available indicating the cost of vocational secondary education. As a whole, the Swedish state spent **SEK37.700bn (£2.85bn)** on *Gymnasieskolan* in 2011. Based on the statistics above (about 30% of students in vocational education, see Figure 74), a rough measure of cost of vocational secondary education in Sweden is **SEK11,310m (£0.854bn)** in 2011. This works out to about **SEK100,100 (£7,561)** per student.[229]

Gymnasial lärlingsutbildning

In order to boost the take-up of apprenticeship education in Sweden, the government subsidises each apprentice with **SEK25,000 (£1,888)**, of which at least **SEK15,000 (£1,133)** goes to the employer who hires the apprentice.[230]

Yrkeshögskolan

In 2011, the Swedish state spent about **SEK1.510bn (£110m)** on *Yrkeshögskolan*. This amount translates to **SEK58,500 (£4,419)** for each of the 25,800 full-time equivalent students. About 65% of the resource was spent on programmes with duration of 2-2½ years.[231]

Färdigutbildning

Unlike the fully classroom based phases of Swedish schooling, *Färdigutbildning* comes at a cost to the student. For an apprentice in hairdressing, for example, the total cost to the apprentice is **SEK149,000 (£11,255)**. All books and tools are included in the fee, and the apprentice keeps them after completion[232]. Unlike many other apprenticeship systems, Swedish apprentices are

[227] See http://www.arbetsformedlingen.se/Globalmeny/Sokresultat.html?sortBy=RELEVANCE&page=1&query=F%C3%A4rdigutbildning&filterTime=ANY_TIME&maxHits=10&filterDocType=ANY_DOC_TYPE&filterCategory=ANY_CATEGORY&sv.url=12.5aafe79611f3cb4b46c800015314#portletGenerellsokSokresultat for more details on ***Färdigutbildning***. [accessed 4/7/13]

[228] Svensk författningssamling, Skollag (SFS2010:800), 23 June 2010 and Svensk författningssamling, Lag (2009:128) om yrkeshögskolan, 5th March 2009

[229] See http://www.skolverket.se/statistik-och-utvardering/statistik/snabbfakta-1.120821 for more information on cost of education.

[230] See Förslag till statens budget för 2013, Utbildning och universitetsforskning, 20th September 2012, chapter 16 section 5

[231] See Förslag till statens budget för 2013, Utbildning och universitetsforskning, 20th September 2012, chapter 16 section 7

[232] See http://frisorakademin.dinstudio.se/empty_11.html for more information on apprenticeships in hairdressing. [accessed 5/7/13]

employed indefinitely with the company, i.e. they are secured a job upon completion of the apprenticeship.[233]

Financial aid for students

In Sweden, students are universally entitled to financial aid during education. They receive financial aid from the first quarter after they turn 16. Before they turn 16, they receive child benefit from another public entity. Financial aid is paid out every month for 10 months per year across the school year (September-June).

Between the ages of 16 and 20, students receive **SEK1,050** per month **(£79)** as a base rate with potential supplements depending on a) parental income (the supplement ranges from **SEK285 (£21.50)** to **SEK855 (£64.60)**) and b) distance from parental home to school (the supplement ranges from **SEK1,190 (£89.89)** to **SEK2,350 (£177.52**) and is meant to cover the cost of boarding).

When the student enrols in higher education (such as university or *Yrkeshögskola*), they become eligible for a different financial aid scheme. Grant support is now paid every 4 weeks, and a full-time student receives **SEK2,828** per 4 weeks **(£213.63)**.

In addition to the grant, they are offered repayable loans amounting to **SEK6,196** per 4 weeks **(£468)**. Repayment of the loan starts six months after the last loan amount was received and is repayable over a maximum period of 25 years, but the loan must be paid off by the time the student turns 60. The interest rate is fixed every year by the government and is equivalent to the average borrowing costs to the Swedish government. In 2013, the interest rate is fixed at 1.3%.

16.4 Apprenticeship pay in Sweden

16.4.1 Apprentice pay as a proportion of 'minimum' wage

The Swedish labour market is highly decentralised. As such, there is no national minimum wage, but rather individually negotiated minimum wages in most industrial sectors. Apprenticeships (and information) are equally decentralised, and there is no single comprehensive source of information that would be relevant for potential apprentices. In determining apprenticeship pay, a further complication of the Swedish case is that for some sectors, there are different systems depending on the age, education and experience of the apprentice. In Sweden, the 'operative' age is 20, which is also the age at which students are expected to finish secondary education.

Given this, paid apprenticeships broadly exist in three different categories:

1. *Gymnasieutbildning*, which denotes apprentices who have graduated from secondary education and are undertaking *Färdigutbildning* with an employer.
2. *Företagsutbildning*, literally "company education", which represents apprentices who receive all their apprenticeship training in the workplace (the classic apprenticeship).
3. *Vuxenutbildning*, literally "adult education", where the apprentice is 20 or older, and receives relatively higher pay rates as a result.

[233] See http://www.byggnads.se/Documents/Verksamhet/Avtal%20och%20lagar/Ykesutbildningsavtalet_sammanfattning.pdf for more information. [accessed 10/7/13]

Table 94 below shows apprentice pay and the proportion of minimum wage accounted for by apprentices at different levels of education, experience, or age (whichever applies for particular occupations). **The minimum wage in Sweden is not a universal figure**. Instead it is the result of individual negotiations between the major labour market stakeholders – unions and employers. In many sectors, the minimum wage is differentiated by the age of the employee, their experience and their apprenticeship route. For the purposes of comparison, however, the minimum wage used as base in Table 94 is from the *Svenskt Näringsliv* (Swedish Trade and Industry Association) and defined as the wage applicable to a worker who is at least 20 years old and has no experience **(SEK135.00 (£10.20))** per hour [234].

Apprenticeship structure and pay in Sweden varies significantly according to the length of experience and educational 'steps' or point in the apprenticeship, from apprenticeships within Nautical/maritime and Wine and Spirits industries having a single step to ten different educational steps for apprenticeships in the Heating, ventilation and air conditioning (HVAC) sector.

Taking an example, for apprenticeships within *Building and Construction*, educational steps are primarily based on experience as measured in **hours** (with time spent in secondary education counting towards this experience measure). A full-time position in Sweden is considered to consist of 40 hours per week, so educational 'steps' range from 15 weeks (e.g. 600 hours in the second step of training to be a *Machine Operator* in possession of secondary level education) to 57.5 weeks (e.g. 2,300 hours in the first step of training as a *Builder* for those in possession of secondary education). **Secondary education counts towards experience**, and *"an apprentice who finished 3 years of secondary education [in building and construction] (...) is normally employed at step 3 because they have 2,800 hours credited from secondary education."*[235]

In contrast, pay for apprenticeships in HVAC and Hairdressing are defined by educational steps. The ten steps in HVAC are 850 hours each[236]. The educational steps in Hairdressing depend on the type of training that lead to the interim exam[237] in step 1, and 1,000 hours for steps 2, 3, and 4.

The minimum wages at stage 1 reported in Table 94 range from **27%** of minimum wage in carpentry work to **85%** for apprentices in the Wine and Spirits industry. At the high end, it is not unusual that Swedish apprentices who are well advanced in their apprenticeships to earn more than the minimum wage, with apprentices in Glazing, Construction Sheet Metal, Sheet Metal Processing, Ventilation and HVAC industry earning more than minimum wage. Apprentices across all the vocations experience steady increase in pay, and reach high levels. Carpenters achieve **65%** of minimum wage, which is the lowest proportion on completion.

For older apprentices, apprentice rates are lower than relative apprentice pay in the United Kingdom; however, for younger apprentices (less than 20 years old), the minimum rates are substantially higher.

[234] See Svenskt Näringsliv, Hur höga minimilöner omintetgjorde arbetsgivaravgiftssänkningen för ungdomar (2012) for more information.
[235] See http://www.bygglosen.se/media/3688/enkel%20beskrivning%20av%20f%C3%B6rdelningstal.pdf for more information. [accessed 9/7/13]
[236] See http://www.byggnads.se/Documents/Verksamhet/Avtal%20och%20lagar/Teknikinstallationsavtalet%202013-16.pdf [accessed 9/7/13]
[237] Within Hairdressing, the apprentices have several options for qualifying for the interim exam which is after the first step. The interim exam could be obtained through secondary education. See www.frisor.se/utbildning_1/bli-frisor for more information.

Table 94: Swedish apprentice pay (as a proportion of minimum wage) in 2009 (unless otherwise stated)							
Industry	**Union**	**Apprentice education step and wage**					
Building and Construction							
Builders	***EXP. (Hours)*** →	**1-2,299**	**2,300-2,799**	**2,800-4,300**	**4,301-5,500**	**5,501-YTP**	
Gymnasieutbildning ((< 20 y.o.))	Byggnads, SEKO	70.40 (*55%*)	76.80 (*60%*)	83.20 (*65%*)	96.00 (*75%*)	112.64 (*88%*)	-
Builders	***EXP. (Hours)*** →	**1-1,700**	**1,701-3,400**	**3,401-4,600**	**4,601-6,000**	**6,001-YTP**	
Företagsutbildning (< 20 y.o.)	Byggnads, SEKO	55.04 (*43%*)	67.84 (*53%*)	80.64 (*63%*)	96.00 (*75%*)	112.64 (*88%*)	-
Builders	***EXP. (Hours)*** →	**1-1,600**	**1,601-2,350**	**2,351-3,100**	**3,101-YTP**		
Vuxenutbildning (> 20 y.o.)	Byggnads, SEKO	83.20 (*65%*)	89.60 (*70%*)	96.00 (*75%*)	112.64 (*88%*)	-	-
Machine operators	***EXP. (Hours)*** →	**2,801-3,500**	**3,501-4,100**	**4,101-YTP**			
Gymnasieutbildning (< 20 y.o.)	Byggnads, SEKO	96.37 (*75%*)	99.12 (*80%*)	113.07 (*88%*)	-	-	-
Machine operators	***EXP. (Hours)*** →	**1-1,600**	**1,601-2,350**	**2,351-3,100**	**3,101-YTP**		
Vuxenutbildning (> 20 y.o.)	Byggnads, SEKO	83.52 (*65%*)	89.94 (*78%*)	96.37 (*83%*)	113.07 (*90%*)	-	-
	Educ. level →	**1**	**2**	**3**	**4**	**5**	**6**
Glazers (All apprentices)	Byggnads	81.92 (*73%*)	89.60 (*80%*)	97.28 (*86%*)	104.96 (*93%*)	112.64(*100%*)	119.04 (*106%*)
Construction sheet metal	***EXP. (Hours)*** →	**0-850**	**851-1,700**	**1,701-2,550**	**2,551-3,400**	**3,401-4,250**	**4,251-5,100**
All apprentices	Byggnads	70.30 (*65%*)	76.70 (*71%*)	83.09 (*77%*)	89.48 (*83%*)	95.87 (*89%*)	102.26 (*95%*)
Sheet metal processing	***EXP. (Hours)*** →	**0-850**	**851-1,700**	**1,701-2,550**	**2,551-3,400**	**3,401-4,250**	**4,251-5,100**
All apprentices	*Byggnads*	67.29 (*62%*)	73.40 (*68%*)	79.52 (*74%*)	85.63 (*79%*)	91.75 (*85%*)	97.87(*91%*)
Ventilation	***EXP. (Hours)*** →	**0-850**	**851-1,700**	**1,701-2,550**	**2,551-3,400**	**3,401-4,250**	**4,251-5,100**
All apprentices	*Byggnads*	70.30 (*65%*)	76.70 (*71%*)	83.09 (*77%*)	89.48 (*83%*)	95.87 (*89%*)	102.26 (*95%*)
Painters	***EXP. (Hours)*** →	**0-1,700**	**1,701-3,400**	**3,401-4,250**	**4,251-5,100**	**5,101-5,950**	**5,951-YTP**
All apprentices	*Målareförbund*	42.66 (*45%*)	46.93 (*49%*)	60.84 (*64%*)	65.77(*69%*)	69.17(*73%*)	72.66 (*76%*)
Electricity and Energy	***EXP. (Hours)*** →	**1-720**	**721-YTP**				
Electricians (All apprentices)	Byggnads	68.16 (*72%*)	78.93 (*83%*)	-	-	-	-
HVAC and industry* (2013)	***Educ. period*** →	**1**	**2**	**3**	**4**	**5**	**6**
All apprentices	Byggnads	49.90 (*48%*)	57.00 (*55%*)	64.10 (*61%*)	71.30 (*68%*)	78.40 (*75%*)	85.50 (*82%*)
HVAC and industry* (continued)	***Educ. period*** →		**7**	**8**	**9**	**10**	
All apprentices	Byggnads	-	92.60 (*89%*)	106.90 (*103%*)	114.00(*109%*)	128.20 (*123%*)	-
Vehicle and transport	***Educ. ½ years*** →	**1**	**2**	**3**	**4**	**5**	**6**
Car and tractor mechanics	Metall	37.29 (*39%*)	38.13 (*40%*)	39.82 (*42%*)	42.36 (*45%*)	87.66 (*92%*)	88.50 (*93%*)
Vehicle painters	*Målareförbund*	52.28 (*40%*)	56.19 (*43%*)	60.08 (*46%*)	63.97 (*48%*)	71.77 (*54%*)	99.95 (*76%*)
Handicraft	***Educ. level*** →	**1**	**2**	**3**	**4**		
Hairdressers (2013)	*Frisörföretag.*	35.81 (*30%*)	53.71 (*45%*)	77.58 (*65%*)	83.56 (*70%*)	-	-
Hotel and Restaurant	***Apprent. age*** →	**<17**	**17**	**18**	**>18**		
All apprentices	*HARF*	66.01 (*65%*)	73.81 (*73%*)	77.70 (*77%*)	85.49 (*85%*)	-	-
Industrial	***Educ. ½ years*** →	**1**	**2**	**3**	**4**	**5**	**6**
Steel and metal workers (<21)	*Metall*	38.40 (*40%*)	40.14 (*42%*)	42.04 (*44%*)	51.59 (*54%*)	60.73 (*64%*)	75.16 (*79%*)

Table 94: Swedish apprentice pay (as a proportion of minimum wage) in 2009 (unless otherwise stated)							
Industry	**Union**	**Apprentice education step and wage**					
Carpenter (All apprentices)	*(A)*	30.34 (*27%*)	36.07 (*32%*)	41.07 (*36%*)	50.38 (*45%*)	59.31 (*53%*)	73.39 (*65%*)
Welders (All (2000)*)	*Metall*	29.94 (*43%*)	31.28 (*45%*)	32.88 (*48%*)	34.79 (*50%*)	47.32 (*69%*)	58.56 (*85%*)
Graphics workers	***Apprent. age →***	**<18**	**18-19**	**20-21**	**22+**		
All apprentices	*(B)*	52.30 (*55%*)	64.97 (*68%*)	66.45 (*70%*)	73.83 (*78%*)	-	-
Food Industry	***Educ. year →***	**1**	**2**	**3**			
Food workers (All apprentices)	*(C)*	94.80 (*85%*)	100.38 (*90%*)	105.95 (*95%*)	-	-	-
Bakers (All apprentices)	*(C)*	81.42 (*73%*)	89.22 (*80%*)	97.03 (*87%*)	-	-	-
Wine and spirit industry (All)	*(C)*	93.13 (*85%*)	-	-	-	-	-
Nationally Recruited Vocations	***Educ. year →***	**1**					
Sailor† All apprentices (2013)	SUI	60.77 (*34%*)	-	-	-	-	-
Naval technician† (All (2013))	SUI	72.96 (*63%*)	-	-	-	-	-

Source: London Economics and Statens Offentlige Utredninger, Lärling – en bro mellan skola och arbetsliv, 2010:19 (2010), Svenskt Näringsliv, Hur höga minimilöner omintetgjorde arbetsgivaravgiftssänkningen för ungdomar (2012), *www.sjofart.org/Studerande_Elevlöner.skolor.aspx, http://www.byggnads.se/Documents/Verksamhet/Avtal%20och%20lagar/Teknikinstallationsavtalet%202013-16.pdf, http://www.sef.se/Ung/L%C3%B6nsamtyrkesval.aspx, and http://www.frisor.se/utbildning_1/bli-frisor [all accessed 8/7/13]*

Notes: EXP. (hours) is the apprentice's experience in hours, a full-time position in Sweden is 40 hours/week. YTP denotes the theory exam of the vocation. †: Because of special tax rules for workers on the sea, the reported wage figure is the amount that would yield the same net wage on land. Compared with Lowest Wage found here: http://allastudier.se/jobb-o-l%C3%B6n/3273-nautiker/ [accessed 5/7/13] *: Minimum wage (i.e. the denominator) has been estimated using linear regression of data from 2003-2011.

Note that for Construction sheet metal apprentices and Ventilation apprentices, apprentice pay per hour increases further beyond 5,101 hours experience to SEK 108.65 (101%) and SEK 115.04 (107%) beyond 5,951 hours experience. For Sheet metal processing apprentices, apprentice pay per hour increases further beyond 5,101 hours experience to SEK 103.98 (95%) and SEK 110.10 (102%) beyond 5,951 hours experience. For Hairdressers at Level 3/4, +10% commission

(A) *Träindustriar-beterförbundet (B) Grafiska Fackförbund (C) Livsmedelarbeterförbundet*

16.4.2 Apprentice pay as a proportion of average wage

The previous section provided detailed information about apprentice pay as a proportion of sector level minimum wage. In this section, we analyse the relationship between apprentice pay and average wage instead.

Table 95 shows apprentice pay as a proportion of average wage in the occupation. Apprentice pay is the same as in Table 94, but has been inflated to April 2013 using the monthly Consumer Price Index from the Swedish Statistics Office. Average wage information has been sourced indirectly from the Swedish Statistics Office.

Again, there is significant variation in the uplift between the minimum wage and the average wage. The *difference* between the *minimum and average wage* ranges from **14%** for food workers to **67%** for workers in the wine and spirits industry. The average wage in graphics, HVAC, and electricians is at least **50%** above the minimum wage whereas naval workers, glazers, hotel and restaurant, food workers and bakers have average wages less than **30%** greater than the minimum. Meanwhile, for the *Building and Construction* industry, which is the vocational

programme with the greatest enrolment at secondary education level, the average wage is **35%** greater than the minimum wage.

Given the extreme variation, it is difficult to estimate the average apprentice wage as a proportion of the average industrial (fully qualified) wage. However, again using *Building and Construction* as an example attracting a large number of apprentices, for an apprentice (younger than 20 years of age undertaking their apprenticeship solely in the workplace), they would be expected to earn **36%** of the average wage in their 1st step (where the average wage stands at **SEK160.84 (£12.15)**); **45%** of the average wage in their 2nd step; **53%** of the average wage in their 3rd step; **63%** of the average wage in their 4th step; and **74%** of the average wage in their final step.

Amongst older apprentices, apprentice rates as a proportion of the fully qualified rate are broadly comparable with those achieved in the United Kingdom; however, again, apprentice rates for those younger apprentices are significantly higher - both in terms of the starting proportion and the stepped increases - compared to the United Kingdom.

Table 95: Swedish apprentice pay (as a proportion of average wage) in 2013 (unless otherwise stated)

Industry	Union	Apprentice education step and wage					
Building and Construction							
Builders	***EXP. (Hours)*** →	**1-2299**	**2300-2799**	**2800-4300**	**4301-5500**	**5501-YTP**	
Gymnasieutbildning ((< 20 y.o.))	Byggnads, SEKO	73.99 (*46%*)	80.72 (*51%*)	87.45 (*55%*)	100.90 (*63%*)	118.39 (*74%*)	-
Builders	***EXP. (Hours)*** →	**1-1700**	**1701-3400**	**3401-4600**	**4601-6000**	**6001-YTP**	
Företagsutbildning (< 20 y.o.)	Byggnads, SEKO	57.85 (*36%*)	71.30 (*45%*)	84.76 (*53%*)	100.90 (*63%*)	118.39 (*74%*)	-
Builders	***EXP. (Hours)*** →	**1-1600**	**1601-2350**	**2351-3100**	**3101-YTP**		
Vuxenutbildning (> 20 y.o.)	Byggnads, SEKO	87.45 (*55%*)	94.17 (*59%*)	100.90 (*63%*)	118.39 (*74%*)	-	-
Machine operators	***EXP. (Hours)*** →	**2801-3500**	**3501-4100**	**4101-YTP**			
Gymnasieutbildning (< 20 y.o.)	Byggnads, SEKO	101.29 (*65%*)	104.18 (*67%*)	118.84 (*76%*)	-	-	-
Machine operators	***EXP. (Hours)*** →	**1-1600**	**1601-2350**	**2351-3100**	**3101-YTP**		
Vuxenutbildning (> 20 y.o.)	Byggnads, SEKO	87.79 (*56%*)	94.53 (*61%*)	101.29 (*65%*)	118.84 (*76%*)	-	-
	Educ. level →	**1**	**2**	**3**	**4**	**5**	**6**
Glazers (All apprentices)	Byggnads	86.10 (*59%*)	94.17 (*65%*)	102.25 (*70%*)	110.32 (*76%*)	118.39 (*81%*)	125.12 (*86%*)
Construction sheet metal	***EXP. (Hours)*** →	**0-850**	**851-1700**	**1701-2550**	**2551-3400**	**3401-4250**	**4251-5100**
All apprentices	Byggnads	73.89 (*50%*)	80.61 (*55%*)	87.33 (*59%*)	94.05 (*64%*)	100.77 (*68%*)	107.48 (*73%*)
Sheet metal processing	***EXP. (Hours)*** →	**0-850**	**851-1,700**	**1,701-2,550**	**2,551-3,400**	**3,401-4,250**	**4,251-5,100**
All apprentices	*Byggnads*	70.72 (*48%*)	77.15 (*52%*)	83.58 (*57%*)	90.01 (*61%*)	96.44 (*66%*)	102.87 (*70%*)
Ventilation	***EXP. (Hours)*** →	**0-850**	**851-1,700**	**1,701-2,550**	**2,551-3,400**	**3,401-4,250**	**4,251-5,100**
All apprentices	*Byggnads*	73.89 (*50%*)	80.61 (*55%*)	87.33 (*59%*)	94.05 (*64%*)	100.77 (*68%*)	107.48 (*73%*)
Painters	***EXP. (Hours)*** →	**0-1,700**	**1,701-3,400**	**3,401-4,250**	**4,251-5,100**	**5,101-5,950**	**5,951-YTP**
All apprentices	*Målareförbund*	44.84 (*31%*)	49.33 (*34%*)	63.94 (*45%*)	69.13 (*48%*)	72.71(*51%*)	76.37 (*53%*)
Electricity and Energy							
Electrician	***EXP. (Hours)*** →	**1-720**	**721-YTP**				
All apprentices	Byggnads	71.64 (*45%*)	82.96 (*52%*)	-	-	-	-

Table 95: Swedish apprentice pay (as a proportion of average wage) in 2013 (unless otherwise stated)							
Industry	**Union**	**Apprentice education step and wage**					
HVAC and industry* (2013)	***Educ. period →***	**1**	**2**	**3**	**4**	**5**	**6**
All apprentices	Byggnads	49.90 (*30%*)	57.00 (*34%*)	64.10 (*38%*)	71.30 (*43%*)	78.40 (*47%*)	85.50 (*51%*)
HVAC and industry* (continued)	***Educ. period →***		**7**	**8**	**9**	**10**	
All apprentices	Byggnads	-	92.60 (*56%*)	106.90 (*64%*)	114.00 (*68%*)	128.20 (*77%*)	-
Vehicle and transport	***Educ. ½ years→***	**1**	**2**	**3**	**4**	**5**	**6**
Car and tractor mechanics	Metall	39.19 (*27%*)	40.08 (*28%*)	41.85 (*29%*)	44.52 (*31%*)	92.14 (*64%*)	93.02 (*65%*)
Vehicle painters	*Målareförbund*	54.95 (*39%*)	59.06 (*42%*)	63.15 (*45%*)	67.24 (*48%*)	75.43 (*54%*)	105.05 (*75%*)
Handicraft	***Educ. level →***	**1**	**2**	**3**	**4**		
Hairdressers (2013)	*Frisörföretag.*	35.81(*27%*)	53.71 (*41%*)	77.58 (*59%*)	83.56 (*64%*)	-	-
Hotel and Restaurant	***Apprent. age →***	**<17**	**17**	**18**	**>18**		
All apprentices	*HARF*	69.38 (*53%*)	77.57 (*60%*)	81.67 (*63%*)	89.85 (*69%*)	-	-
Industrial	***Educ. ½ years→***	**1**	**2**	**3**	**4**	**5**	**6**
Steel and metal workers (<21)	*Metall*	40.36 (*28%*)	42.19 (*29%*)	44.19 (*30%*)	54.22 (*37%*)	63.83 (*40%*)	77.14 (*49%*)
Carpenter (All apprentices)	*(A)*	31.89 (*20%*)	37.91 (*24%*)	43.17 (*27%*)	52.95 (*34%*)	62.34 (*40%*)	77.14 (*49%*)
Welders (All (2000)*)	*Metall*	36.22 (*25%*)	37.84 (*26%*)	39.78 (*27%*)	42.09 (*29%*)	57.25 (*39%*)	70.84 (*48%*)
Graphics workers	***Apprent. age →***	**<18**	**18-19**	**20-21**	**22+**		
All apprentices	*(B)*	54.97 (*36%*)	68.29 (*45%*)	69.84 (*46%*)	77.60 (*51%*)	-	-
Food Industry	***Educ. year →***	**1**	**2**	**3**			
Food workers (All apprentices)	*(C)*	99.64 (*75%*)	105.50 (*79%*)	111.36 (*84%*)	-	-	-
Bakers (All apprentices)	*(C)*	85.57 (*59%*)	93.78 (*65%*)	101.99 (*70%*)	-	-	-
Wine and spirit industry (All)	*(C)*	97.88 (*51%*)	-	-	-	-	-
Nationally Recruited Vocations	***Educ. year →***	**1**					
Sailor† All apprentices (2013)	SUI	60.77 (*28%*)	-	-	-	-	-
Naval technician† (All (2013))	SUI	72.96 (*49%*)	-	-	-	-	-

Source: London Economics and Statens Offentlige Utredninger, Lärling – en bro mellan skola och arbetsliv, 2010:19 (2010), http://allastudier.se/jobb-o-l%C3%B6n/yrken/, www.sjofart.org/Studerande_Elevlöner.skolor.aspx, http://www.sef.se/Ung/L%C3%B6nsamtyrkesval.aspx, and http://www.frisor.se/utbildning_1/bli-frisor [all accessed 8/7/13]

Notes: All figures have been inflated to 2013 values using the Consumer Price Index made available by SCB. EXP. (hours) is the apprentice's experience in hours, a full-time position in Sweden is 40 hours/week. YTP denotes the theory exam of the vocation. †: Because of special tax rules for workers on the sea, the reported wage figure is the amount that would yield the same net wage on land.

(A) *Träindustriar-beterförbundet (B) Grafiska Fackförbund (C) Livsmedelarbeterförbundet*

16.4.3 Non-compliance

Swedish apprentices are basically entitled to pay based on two parameters: their experience, and the agreed wage among qualified workers at the work place. We have been unable to determine the extent of non-compliance or access information from any central government source. However, according to the publication *Byggnadsarbeteren* (*The Builder*), it often occurs that

apprentices receive the incorrect wages. Specifically, apprentices are either placed at the wrong step of the pay ladder because they do not get credited for their time in secondary education, and thus receive the wrong remuneration, or they receive the correct share of the incorrect wage base (i.e. in some cases, the base for calculating apprentice pay is not the fully qualified wage but instead the average wage in the work place (i.e. including that of unskilled workers)).

Byggnadsarbeteren mentions that there have been hundreds of cases over 5 years in Stockholm alone, and that other regions have told them about a similar number of cases. *Byggnadsarbeteren* quote specific cases with compensations ranging from **SEK20,035** to **SEK111,175 (£1,513 to £8,398)**

17 Summary and Conclusions

17.1 Apprentice pay in the United Kingdom

- Apprentices across the United Kingdom earn **£6.05** per hour on average with some degree of variation by Home Nation, year of training, and field of training. Information from the UK Labour Force Survey suggests that the average hourly rate for an individual whose highest qualification is an apprenticeship (the 'fully qualified rate') stands at **£11.92** across the United Kingdom. Combining this information on wage rates suggests that apprentices in the UK earn approximately **50%** of the fully qualified rate over the course of their apprenticeships. There is some variation across the Home Nations given the differences in the estimates of the fully qualified rates and apprentice pay, but these differences are not large.
- However, as a result of the composition of the apprentice cohort, and in particular the very large numbers of apprentices aged 25 or above, there is substantial variation in apprentice pay by age. Specifically, although the average apprentice pay across the UK stands at approximately **£6.05** per hour; for those apprentices aged less than 19, average pay rate is approximately **£3.88** per hour, and compares to an average apprentice pay rate of **£8.15** for those aged 25 or above. This implies that younger apprentices earn approximately **32%** of the fully qualified rate on average over the course of their apprenticeship. **Average pay rate amongst apprentices reflects the large and increasing proportion of older learners undertaking apprenticeships.** Simply considering average pay rates reduces the comparability of findings internationally, especially in relation to those countries where apprenticeship training is predominantly the preserve of younger learners. In other words, a simple assessment of average apprentice pay rates may be misleading.
- Similar concerns emerge when assessing apprentice pay as a proportion of the adult minimum wage. Given the UK National (adult) Minimum Wage was up-rated to **£6.19** per hour in October 2012, the analysis undertaken suggests that apprentices across the United Kingdom earn between **90%** and **110%** of the adult NMW, again with variation by Home Nation. However, again focusing on younger apprentices only, the findings indicate younger apprentices earn approximately **63%** of the full adult minimum wage on average over the course of their apprenticeship.

17.2 Minimum Wage non-compliance

Comparing the hourly pay rate of apprentices to the minimum wage that they should be expected to receive based on their personal characteristics (age and the year of study), there are some estimates of the extent of non-compliance with the minimum wage in the United Kingdom[238]. The analysis indicates that

- **9%** of apprentices were paid less than **£2.50** per hour (the apprenticeship minimum wage at the time of the *Apprentice Pay Survey* report), with a further **8%** paid between **£2.51** and **£4.91** per hour (i.e. the minimum apprentice rate and the Development rate), which was estimated to be below their minimum wage based on their age and year of training. A further **2%** of apprentices were paid between **£4.92** and **£5.92** (the Development rate and the Adult rate), again less than the statutory minimum based on their age and training year. In total, the analysis found that non-compliance with minimum wage rates stood at **19%**.

[238] However, the source of the information is the Department for Business, Innovation and Skills *Apprentice Pay Survey* and it is important to note that the timing of the apprentice pay survey is in the final quarter of the year, which is around the same time that the relevant national minimum wage is up-rated. Therefore, there is some degree of uncertainty in relation to whether pay rates have been reported pre or post the annual up-rating.

- There was significant variation in the rate of non-compliance, with **48%** of individuals in the hairdressing sector suggesting they were paid below the relevant national minimum wage compared to **4-5%** in the Retail, Health and Social care and Customer Service sectors.

17.3 How does this compare with other jurisdictions?

- **Across *all* apprentices, the analysis suggests that the level of apprentice pay[239] is higher in the United Kingdom than in those countries operating an established (Dual) apprenticeship system** (for example Austria, Germany, Switzerland). Apprentice pay in the United Kingdom is also significantly higher than in France and Belgium. UK apprentice pay is at generally comparable levels with apprentices in Denmark and Sweden (although there are more structured pay increments as training progresses in these countries), and substantially less than in Ireland.

- **Even considering apprentice pay amongst *younger* apprentices only, the levels of UK apprentice pay is still marginally higher than in those Northern/Central European counties operating the Dual Apprenticeship system**. For instance, for young apprentices, compared to apprentice pay standing at **32%** of the fully qualified rate in UK, the 'corresponding' estimate in Switzerland is approximately **10-20%**, while apprentices in Germany, France and Belgium earn approximately **20-30%** of the fully qualified rate over the course of their training. In contrast, apprentices in Denmark, Sweden, Austria and the Netherlands earn **30-60%** of the fully qualified rate over the course of their apprenticeship.

- The characteristics of apprenticeships (and apprentices) in the United Kingdom are fundamentally different from apprenticeships offered on a number of other countries. Firstly, both the duration and the quality of the training provided in the United Kingdom is lower than that provided in many of the other countries - especially those countries offering long- established and highly popular 3-4 year Dual apprenticeship training. In many senses, the level of compensation for apprentices in these Dual apprenticeships countries is understandably low, given

    - the quality of the training
    - the strong and stable returns post apprenticeship completion, and
    - the commitment of these countries to vocational training more generally and its integration with work-based training, evidenced by relatively low unemployment rates amongst young people.

[239] controlling for differential price levels across country – either as a proportion of the relevant minimum wage or fully qualified rate.

Annex 1 Original Terms of Reference

The Low Pay Commission (LPC) commissioned London Economics to undertake an information gathering exercise in order to gain a better understanding of how apprentice pay levels in the UK compare to those of other countries which have apprenticeship schemes, and to understand how much of any difference is due to different apprenticeship structures, hours worked or characteristics of the apprentices themselves. This included:

- Information on the proportion of people taking apprenticeships compared to other education and employment routes;
- Information on the level and duration of different types of apprenticeship, and how this differs by age, gender, prior employment status and sector or apprenticeship framework;
- Information on the typical number of hours an apprentice works across different countries, and how this is split between working time, overtime, on-the-job training and off-the-job training;
- Information on the minimum rates of apprentice pay relative to average (or median) apprentice pay;
- Information on apprentice pay levels relative to fully qualified/trained rates of pay in each sector and for each age group; and
- Information on the proportion of apprentices paid below their legal entitlement (where it exists), and how this differs by age, gender, prior employment status and sector or apprenticeship framework

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