



Centre for Analysis of
Youth Transitions

EVIDENCE FOR *WOLF* REVIEW

DECEMBER 2010

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1. Executive Summary

We undertook four distinct pieces of analysis to help us better understand young people's early interactions with the labour market.

These analyses are necessarily preliminary given the short time period over which the work has been carried out. We do however have longer term research projects in some of these areas. Specifically we have an ongoing project entitled "Labour Market Outcomes for Young People aged 16-19" which is continuing to look at the different labour market transitions made by young people at 16-19. The results from this project will be presented to the department in Spring 2011. We have also suggested ways to carry forward the analyses further.

1.1 Occupation and Job Changes in Early Career

We first looked at the extent of any churning between jobs, occupations and sectors for young workers. Churn is defined here as movement into or out of a specific job, sector or occupation. The idea was to determine whether there was considerable movement across jobs, occupations and sectors, requiring individuals to gain training and skills that are portable.

Those who have spells of unemployment are much more likely to churn between jobs though they are less likely to change their occupation or sector. In other words, they tended to stay in low level jobs in retail or manufacturing but were a great deal more likely to change jobs than those who did not have spells of unemployment. This phenomenon of churning between low skill jobs has been previously documented and we find evidence to support the view that it is an ongoing problem. Those who have a spell of unemployment are most at risk of job churn, unsurprisingly since the characteristics that determine unemployment are also likely to determine job churn.

Those with initial vocational education are also more likely to have a spell of unemployment over the period compared to their academically qualified counterparts.

In general amongst young people as a whole we found **substantial** job churn, **significant** occupation churn and **moderate** sector churn. The occupation churn in particular suggests that young people require education and training that enables them to move between occupations. We found that in the first few years after leaving school, nearly 40% of those in work changed their occupation and two thirds changed sectors. Our longer run analysis suggested the average individual changes occupation 2.5 times over a period of 11 years, hence the need for portability should not be understated.

We have found that those with vocational qualifications are more at risk of unemployment. However, those with initial vocational education are less likely to change jobs if they are in work. Hence one might hypothesise that vocational qualifications are often more firm specific and this reduces job churn (assuming the person avoids the higher risk of unemployment that comes with having a vocational qualification), though this analysis is not causal. However, equally importantly if vocationally qualified workers do change jobs they are no less likely to change occupation/sector than those without vocational qualifications. Hence those with vocational qualifications do require portability in their qualifications in a similar manner as without vocational qualifications.

1.2 Young People and Unemployment

We then investigated the group of young people who are unemployed or NEET in early life and compare them to other groups¹. We hoped to be able to understand why there has been a steady decline in employment rates among young people.

From our limited analyses we cannot explain the fall in employment rates amongst young people though we can show how dramatic this has been and highlight the

¹ This work was not explicitly commissioned but emerged from our other analyses.

cyclical nature of NEET rates in particular. We also illustrate that employment (and indeed NEET rates) vary substantially across different regions of England.

What is also obvious is that the fall in employment rates has not been fully compensated by an increase in enrollment rates in full time study and there has been a genuine increase in the proportion of young people who are not working and are not in education or training.

NEET rates are higher for males than for females. Females are more likely to report caring responsibilities as a key reason why they are NEET. The majority of those who are unemployed do claim to be unable to get a job and a significant minority feel they are under qualified to get a job. However, it would appear that a small minority of both males and females who are classified as unemployed claim, when asked, to actually not be seeking to work.

We also focused on an important group, namely those who remain in full time education for an additional year (12% of the cohort). These young people largely remained in full time education in an attempt to upskill to level 3 or indeed improve their GCSEs and obtain a level 2. This group had a disproportionately high NEET rate however at age 18/19 as they attempted to enter the labour market and only a tiny minority (1%) went back into full time education beyond that point.

We also considered the aspirations of young people and noted that in their early teens a very high proportion of young people from all social backgrounds expected to go to university. However, only a small proportion of young people from more deprived backgrounds actually achieve this. It is interesting to reflect that in the early teen years (age 14) there is no shortage of ambition and aspiration but this does not translate into high achievement at age 16 and hence these young people who once had such aspirations then go on to leave school at age 16.

In general therefore, the proportion of young people in work has declined over time (regardless of study status) and increasingly students just do full time study (nearly 4 in ten). We also found however, that nearly one in five of our sample combines FT education with work and these young people tend to be somewhat better qualified

than the full time education group who don't work. This group is considered further below.

1.3 Young People in Full-time Education and Work

Around one in five young people combine full time education and work. The majority of those combining FT education and work are in the retail and catering sector (77%) – compared with only around 50% overall for those in work. Hence these jobs tend to be cyclical and we can indeed see that the proportion combining work and full time study varies with the economic cycle. Here we attempted to determine whether work at an early age (with or without studying) is beneficial in the short and long term.

Those who combine full time education and work have somewhat better labour market outcomes in the short run (over a 1-2 year period), though of course the relationships here are not necessarily causal. In particular, individuals who combine full time study and work are less likely to be NEET a year later for example. Further we find that individuals who combine work and study also have higher wages in the short term.

The long run relationship (over a 10 year period) between undertaking work early in life and subsequent labour market success is less clear – see forthcoming work from CAYT on this issue for full details. Certainly being NEET at any point is associated with negative long run outcomes, even after controlling for other factors such as educational attainment. Since being in any kind of work (whether with training or not) at an early age reduces the probability of being NEET, combining work and study is likely to have indirect positive effects. We certainly found direct positive medium term effects (3-5 years later) from undertaking work whilst also doing full time study, i.e. higher wages and lower probability of unemployment, but only for females. We did not however, find a direct relationship between combining work and study and subsequent labour market outcomes some ten years later for males or females.

Hence we conclude that combining full time education and work appears to protect young people from becoming NEET in the short run and since being NEET is itself associated with worse outcomes in the *long* run, we can deduce that undertaking

work with full time education has some indirect long run protective effect. However, we also find that combining full-time education with work at ages 16-19 has no direct relationship with wages or employment a decade later.

1.4 The Use of Vocational Qualifications in the Labour Market

We find that traditional vocational qualifications, such as HNC/HND, BTEC and some City and Guilds, are used across a more diverse set of sectors than vocational qualifications such as NVQ3, NVQ4 and HE diplomas. This would suggest that traditional vocational qualifications appear to be more portable or at least have wider currency across a greater range of sectors.

However, the subject area of the qualification makes a great deal of difference and different types of qualifications within the same subject area tend to be used in similarly diverse ways across sectors. For example, most qualifications in arts subjects are used in a very diverse range of sectors regardless of the particular type of qualification acquired.

We also considered whether qualifications that are more portable and used across a wider range of sectors have higher wage returns. We find that indeed qualifications that are used across a more diverse set of sectors have higher wage returns. However, this result holds largely at lower levels of qualification. As one might expect, at higher levels, most qualifications are more specialized and hence used across fewer sectors.

In summary our findings suggest at lower levels of qualification, those vocational qualifications that are portable across sectors, or at least used widely across sectors, have greater value. Some more traditional vocational qualifications are used across a more diverse set of sectors. This suggests consideration of portability is needed when designing sector specific lower level qualifications.

2. Occupation and job changes in early career

2.1 Overview

This piece of analysis asks whether young people early in their career change jobs, occupations and sectors frequently. The research will help us understand how portable we require qualifications and initial vocational education to be.

We present some basic findings and descriptive statistics on young people's job, occupational and sector movements in the early stages of their career. The analysis uses the Longitudinal Study for Young People (LSYPE) to examine this labour market churn in the earliest years of an individual's working life and the British Household Panel Study to model labour market churn in the longer run (over a decade).

2.2 Data

We use a sample from the Longitudinal Study of Young People in England (LSYPE) from waves 5 (age 17/18 in 2008) and wave 6 (age 18/19 in 2009). The LSYPE analysis focuses specifically on the extent to which individuals change occupation or sector in the early years of their working life. Sample sizes permit us to undertake analyses using both 1 digit and 2 digit SOC and SIC codes, and we have a usable sample of 5,802 young people for the occupational analyses and 5,616 for analyses of sector movement.

The initial sample that we use from the British Household Panel Study are those aged 20-25 in 1998 through to those aged 30-35 in 2008. This gives us a sample of 1,111 unique individuals. We then need to restrict our sample to those who are present in the survey in each wave of the BHPS over a 10 year period to 2008. This gives us a sample of 479 unique individuals. We then require that the individual needs to be in work for all years 1998-2008. This gives us a reduced sample of 240

unique individuals. It is essential that we have data on individuals' occupation and industry in all years and this further reduces the sample to 237 individuals. We are therefore conscious that our final BHPS sample is highly selected. Some of the sample selection criteria mean that we end up with an unrepresentative sample, that a priori we believe are likely to be at the upper end of the ability/productivity distribution. Another key point is that due to the restricted sample size we measure occupations at the 1 digit level and sectors using SIC92 at the 1 digit level.

2.3 Key findings – LSYPE

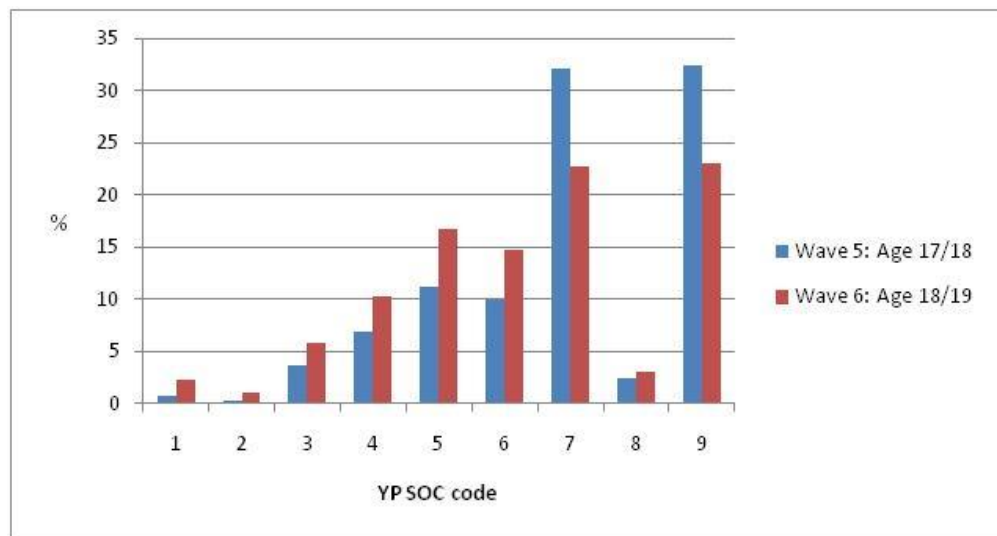
We start by examining occupational and sector churn amongst young people age 17-19 in LSYPE.

We initially identify the occupation of individuals using one digit SOC codes as below:

1. Managers and senior officials
2. Professional occupations
3. Associate professional and technical occupations
4. Administrative and secretarial occupations
5. Skilled trade occupations
6. Personal service occupations
7. Sales and customer service occupations
8. Process, plant and machine operatives
9. Elementary occupations

The distribution of LSYPE respondents across these different broad occupational groupings are given below. The majority of young people work in sales and elementary occupations.

Figure 2.1: LSYPE distribution of one digit SOC codes at age 17/18-18/19



2,293 individuals have SOC codes at both waves and 38% of the individuals in this sample have different 1 digit SOC codes at age 17/18 as compared to age 18/19. Using a more stringent definition using the 2-digit SOC code, 42% of the individuals in this sample have different SOC codes. Hence even over a very short period of time (one year) we see considerable occupational churn amongst young people.

2,227 individuals have industry (SIC) codes at both waves. Using the 1 digit SIC codes, 62% of young people have changed sectors between age 17/18 and age 18/19.

2.4 Key findings - BHPS

We then moved onto the BHPS data to consider job, occupation and sector churn for individuals in their 20s and 30s over a longer period, namely 11 years.

a. We first asked which individuals are working and not working over the period?

- Of the 479 individuals aged 20-25 in 1998 who are present in the survey for the next ten waves, about 50% are working in every period, with the

remaining 50% spending some time in unemployment or education (given the age of the sample, it is largely unemployment).

- Those who are highly educated, and those who are older, are more likely to be working in all 11 periods (1998 to 2008 inclusive).
- Those with a vocational qualification are less likely to be working in all 11 periods, and are more likely to experience periods of unemployment.

b. Who changes job, occupation and sector² over the 11 year period?

- Looking at the 237 individuals who are in work (and for whom we observe sector and occupation information) for all periods between 1998 and 2008 we find the following:
 - 9% never change their job
 - 45% change their job 1-2 times
 - 37% change jobs 3-4 times
 - 22% change jobs 5-6 times
 - 8% change jobs more than 7 times.
 - The average number of job changes for an individual who works in all 11 periods is 3.5 (median 3.5).
- Individuals are less likely to change their occupation than their job (again looking at those in work for all periods): the average individual changes occupation 2.5 times (median 2) and 20% of individuals never change occupation.
- Individuals are even less likely to change their sector than their job or occupation. Individuals change sectors 1.8 times over 11 periods of work and 35% of individuals never change sector. The majority of individuals are

² We use the same definitions of occupation in this section as in the previous section (1 digit SOC codes). We consider the following sectors: 0 "agriculture, forestry and fishing", 1 "mining, quarrying" 2 "manufacturing" 3 "electricity, gas, water" 4 "construction" 5 "wholesale & retail trade" 6 "hotels & restaurants" 7 "transport & communication" 8 "finance" 9 "real estate & business" 10 "public admin" 11 "education" 12 "health & social wk" 13 "other community & social" 14 "private households" 15 "Extra terrestrial"

employed in either retail or manufacturing, meaning much churn is between these two sectors.

- Looking at the characteristics of churners: likeliness to change job, occupation or sector does not appear to be related to age, prior academic achievement or gender. However, those with a vocational qualification are less likely to change jobs (though they are not less likely to change occupation or sector if they do change jobs) than those without a vocational qualification. It is of course not clear whether this finding reflects the fact that those with vocational qualifications cannot change jobs as easily or whether they actually don't want to/have to change jobs as often.
- Those who are not in work in every period are clearly less likely to change jobs, since they are working for a smaller number of periods. However, as a proportion of years working, those with an unemployment spell have a higher number of job changes than those who do not experience any unemployment. The number of job changes an individual has as a proportion of years in work increases with unemployment spells - e.g. those with no unemployment spells experience 3 job changes in 10 years; those with 5 unemployment spells experience 5 job changes in 10 years. Those with unemployment spells are less likely to change occupation and sector however.

2.5 Conclusions

This analysis is limited and purely descriptive.

Those who have spells of unemployment are much more likely to churn between jobs though they are less likely to change their occupation or sector. It has been previously documented that some workers churn between similar low quality jobs and we find evidence to support this view.

Those with initial vocational education are also more likely to have a spell of unemployment over the period.

We also found substantial job churn, significant occupation churn and moderate sector churn. The occupation churn in particular suggests that young people require education and training that enables them to move between occupations.

Those with initial vocational education are less likely to change jobs if they are in work but if they do change jobs they are no less likely to change occupation/sector than those without vocational qualifications. Hence those with vocational qualifications do require portability in their qualifications in a similar manner as without vocational qualifications.

A key point here is however, that having a vocational qualification is not strongly linked to how much sector churn is experienced by individuals.

2.6 What next

This analysis is quite basic, simply focusing on describing the patterns of changing job, sector and occupation in early career, rather than attempting to assess causes of these patterns. If desired, this analysis could be extended to look at a wider range of variables that might explain these patterns, such as socio-economic status, income, ethnicity, gender, etc. Furthermore, the analysis could be extended to look at the types of sectors and occupations that individuals move in and out of in more detail (with the caveat that sample sizes are limited). We could focus on the trajectories of individuals with vocational qualifications specifically. We could also use the LFS to look at this issue, giving us larger sample sizes but over a very short run period (1 year).

3. Young people and unemployment

3.1 Overview

There has been a noticeable fall in employment rates amongst young people (age 16-18). This analysis reports the early activity status of young people and investigates the reasons young people give for being NEET early in their career. The research aims to improve our understanding of why employment rates have fallen.

3.2 Data

The data used for this analysis is the Longitudinal Study for Young People in England (LSYPE), and specifically waves 5 and 6 of that data which were collected in 2008 and 2009, when the cohort was age 17/18 and 18/19 respectively. The LSYPE ask individuals about their current activity and, if they are NEET, their reason for being NEET. Hence it provides us with a snapshot of individuals' activity status at one point in time.

3.3 Key findings

The LSYPE data suggests that at the age of 17/18, around 9.5% of the sample were unemployed and actively looking for work. However, using the definitions adopted for our other CAYT *Jobs without training* project, we find that around 16% of the sample are not in work or training at this age. This 16% includes those who are not recorded as unemployed but who are not in work or studying. Specifically the NEET category includes those who say their main economic activity is one of the following:

- Waiting for a job to start
- Looking after family and home
- Unemployed and looking for work
- Waiting for exam results

- Waiting for the result of a job application
- Doing voluntary work

This NEET category remains sizeable at around 15% even at age 18/19 (Figure 3.1 below and Figure 3.1a for males and females separately).

Figure 3.1: LSYPE respondents' economic status in 2009 (age 18/19)

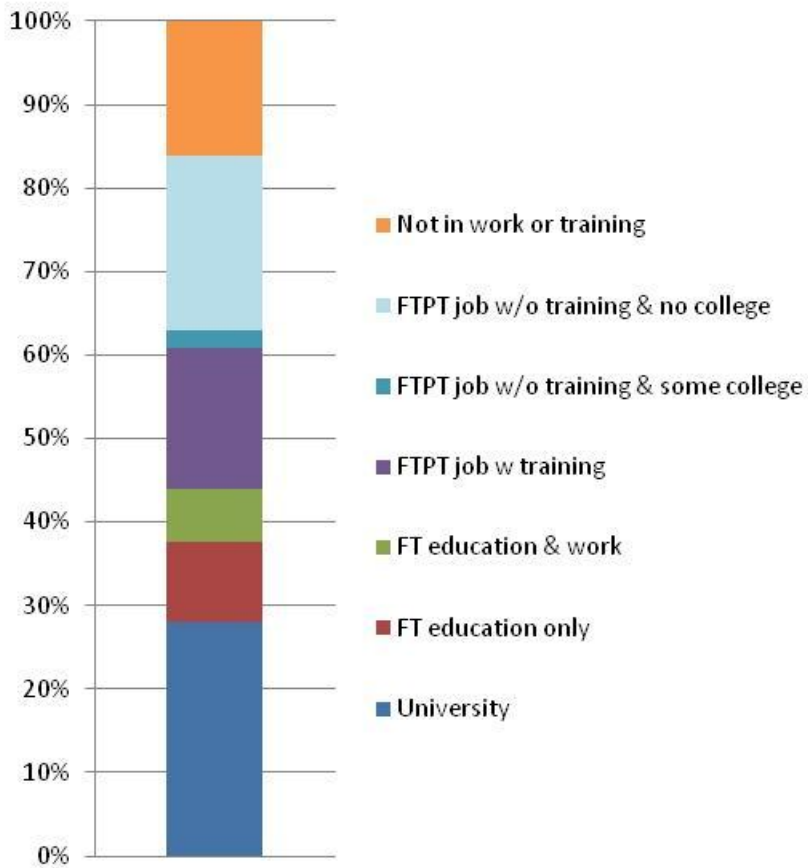
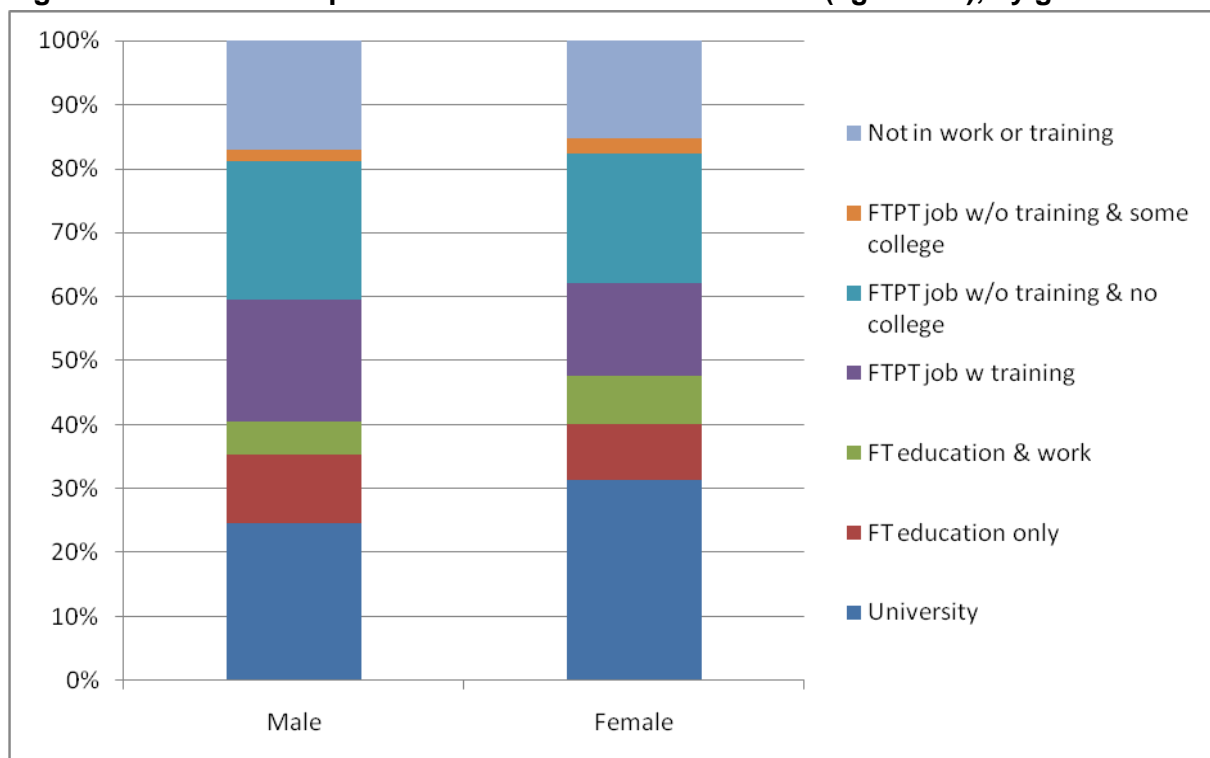


Figure 3.1a: LSYPE respondents' economic status in 2009 (age 18/19), by gender



The NEET category is slightly larger for males than females (17% male; 15.2% female). Similar proportions of males and females are in jobs without training. The main gender differences are found in the higher proportion of females at university (31.4% female; 24.7% male) and in jobs with training, where males outnumber females by roughly 4:3.

As is evident from Table 3.1 below, when we compare the activity status of young people age 18 in 1976, 1988 and 2009, the proportion of 18 year olds who are NEET or out of the labour force has risen sharply across recent cohorts. Further the proportion of young people in employment has fallen dramatically from around three quarters of 18 year olds in 1976 down to just 40% in 2009. Much but by no means all of this can be explained by the rise in the proportion of young people undertaking full time study (which increased from 17% to 44% over the same period). Clearly a significant proportion of young people who would previously have been employed are now not in education nor in work. Note this is not due to early family formation.

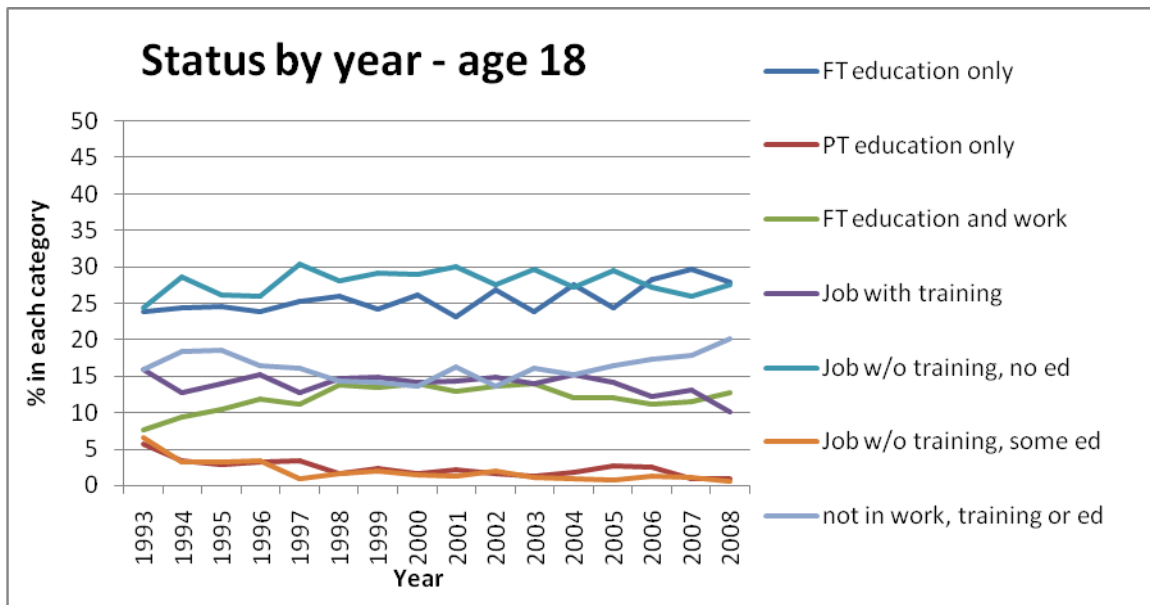
Table 3.1: Comparison of economic activity at age 18 across cohorts

Looking ahead: UK cohorts at age 18

	NCDS (1976)	BCS (1988)	LSYPE (2009)
Lives away from parental home	13.5	26.3	22.8
Has a partner	10.6	9.7	8.0
Has a child	5.1	5.5	2.9
Employment			
Out of the Labour Force	9.1	6.7	16.1
FT education or training	16.9	25.4	44.0
Employed	74.0	68.0	39.9
Education			
No qualifications / Below Level 2	50	43.3	38.9
Level 2: Five good GCSEs (and equivalent)	34.0	35.3	33.0
Level 3: A-levels (and equivalent)	16.0	21.4	28.1

Although the proportion of 18 year olds that is out of the labour force increased markedly across the 1976, 1988 and 2009 cohorts, this variability is consistent with the NEET rate for this age group being highly cyclical. As is evident from Figure 3.2 below which uses Labour Force Survey (LFS) data, the NEET rate for 18 year olds varies substantially with the economic cycle (it ranges from 14% to 21% even over an 8 year period below). Note that the employment and NEET rates also vary hugely by geographical region (see Annex A for full details). Employment rates are particularly low in Inner London (for ages 16-19), whilst NEET rates are particularly high in Inner London, Merseyside, West Midlands and Strathclyde.

Figure 3.2 Employment status of 18 year olds, over time



Source: Labour Force Survey

In the most recent wave of the LSYPE data when the cohort was age 18/19, just over 16% of young people are classified as NEET. Table 3.2 describes the activities these young people are doing (highlighted yellow). The majority of NEET young people (one in ten of the cohort) are unemployed whilst 2% of the entire cohort is looking after family and 3-4% appears to be waiting for work. Examination of these descriptive statistics by gender shows that young women are more likely to be NEET because they are looking after the family and home (3.6% of females compared to 0.6% of males) and correspondingly less likely to be looking for work.

Table 3.2: LSYPE activity status age 18/19

	Full sample	Male	Female
Doing a course at a university	28.2	24.8	31.7
In education	16.1	16.0	16.3
In paid work	32.6	33.1	32.1
On a training course or scheme	1.0	1.2	0.8
Doing an apprenticeship	5.7	7.8	3.5
Waiting for a course or job to start	3.2	3.6	2.9
Looking after the family and home	2.1	0.6	3.6
Unemployed and looking for work	9.5	11.6	7.3
Waiting for exam results or result of job application	0.1	0.1	0.2
Spending part of the week with an employer	0.8	0.6	1.1
Doing voluntary work	0.5	0.5	0.5
N	9,690	4,877	4,813

Table 3.3 shows the characteristics of the NEET group at age 18/19 in the LSYPE again highlighting that boys are more likely to be NEET than girls. Interestingly, NEET young people are equally likely to come from high as middle SES families, but are more likely to be from low SES homes. The ethnic split roughly approximates the overall ethnic makeup of the wave 6 sweep³ (shown in brackets) but suggest that those from White, mixed, Pakistani and Bangladeshi backgrounds may be slightly more likely and those from Indian and Black African ones less likely to become NEET.

Table 3.3: Characteristics of the NEET group at age 18/19

Gender	SES	Ethnicity
Male	53.7	Low 44.4
Female	46.3	Medium 27.8
		High 27.8
		White 87.1 (86.6)
		Mixed 3.3 (2.7)
		Indian 1.4 (2.5)
		Pakistani 2.9 (2.3)
		Bangladeshi 1.3 (1.0)
		Black Caribbean 1.2 (1.2)
		Black African 1.0 (1.6)
		Other 1.8 (2.1)

Those in the NEET category who said they were “unemployed and looking for work” were asked a set of statements about why they were currently NEET. There are

³ All analysis are weighted.

responses for 728 individuals set out in Table 3.4. Individuals can choose a number of categories simultaneously and so only the percentages of those “mentioning” each reason are included in the table below. The most common reason given for being NEET is being unable to find a job. This is consistent with labour market weakness being a major factor causing a high incidence of NEET in some regions (see Annex A). A significant minority of young people however, (22%) appear to be content to be NEET and do not appear to be actively seeking work. One third of the category which claims to be unemployed and seeking work cites lack of qualifications as a factor explaining why they are not in work.

Table 3.4: Reasons for being NEET at age 18/19

	% Mentioned by:	<i>Gender</i>		<i>SES*</i>		
		Male	Female	Low	Med	High
I am currently having a break from study	15.9	14.1	17.9	14.0	11.8	26.0
I need more qualifications and skills before I can get a job	34.2	38.0	29.4	38.2	33.4	25.8
I've been looking for a job/course but haven't found one yet	57.3	66.9	46.7	56.5	64.5	45.2
I am happy not to be in education, employment or training	21.7	19.1	24.5	27.9	14.4	20.5
I am currently looking after children	25.2	8.1	43.9	30.4	19.2	20.6
I am currently looking after someone else	4.8	5.0	4.5	4.2	3.5	7.1
I found school work difficult so didn't want to stay	22.3	24.8	19.4	22.6	23.8	17.9
N	728	388	340	309	214	148

* 57 cases are missing data on the SES variable

The gender split in Table 3.4 again shows that young women are frequently NEET because they have childcare responsibilities (2% of the wave 6 sample has children and a further 1% was pregnant at the time of the data collection). Females are also more likely to report being NEET because they are having a break from studying or are happy to not be in education, employment or training. Males on the other hand report being unemployed because they need more qualifications before getting a job or found school difficult and didn't want to stay on in full time education.

There is also an interesting social pattern in these data. Young people from low SES backgrounds cite needing more qualifications, looking after children and being content with being NEET as reasons for being unemployed while those from high SES families are particularly likely to cite “having a break from study” and “looking after someone else” as reasons for their NEET status and highlights that this group of young people are unlikely to be a homogenous one.

The same young people were also asked about their difficulties in finding work (Table 3.5).

Table 3.5: Difficulties finding work for those who are NEET at age 18/19 (%)

Difficulty working statements:	% Mentioned by:	<i>Gender</i>		<i>SES</i>		
		Male	Female	Low	Medium	High
There aren't any jobs available that I am qualified for	42.3	49.98	33.8	44.8	44.5	32.3
There aren't any jobs available that I'd be prepared to do	18.5	22.6	14	19.2	19.3	17.6
I'm unlikely to get a job because of my age	14.1	18.3	9.6	13.1	20.2	10
I'm unlikely to get a job because of my health problems/disability	3.1	3.2	3.1	3.9	2.2	3.3
I'm unlikely to get a job because I lack relevant experience	43.7	51.5	35.1	42.2	47.1	42.5
Applying for jobs/starting a job makes me anxious or nervous	29.2	22.8	36.3	31.1	27.3	27.6
I think I would be worse off financially if I started to work	17.1	14.4	20.2	20.7	15	13.9
Travelling to work would be difficult for me	23.2	20	26.7	24.6	22.8	22.7
I need to be very flexible with the hours I work	35	23.7	47.4	44.2	26	27.4
N	728	388	340	309	214	148

The main difficulties cited are lack of qualifications and relevant work experience, but a significant minority report travelling to work as barrier to employment (23%) and that the thought of work makes them anxious (29%). Interestingly, 17% of young people think they would be worse off financially if they started work, particularly for females, and 19% say there aren't any jobs available that they'd be prepared to do. Again males and those from low SES families highlight lack of appropriate qualifications as a barrier to work and females are more likely to report flexible hours, reflecting their caring responsibilities.

With the LSYPE data we can drill down further into the transitions made by young people entering the labour market, and particularly those who choose to stay on in full time education and then leave one year later. This is an interesting group since they appear to have the necessary skills and attitudes to remain in full time education but nonetheless enter the labour market relatively early.

Data from young people’s activity histories⁴ give an overview of the ages individuals leave full-time education.⁵

Table 3.6: Leaving full-time education by age

Left by / before 16 (May '07)	20.8
In full-time education at 16/17 (May '07), but not at 17/18 (May '08)	12.0
In full-time education at 17/18 (May '08), but not at 18 (May '09) 18/19	22.9
Still in full-time education at 18/19	44.4
Total	9,772

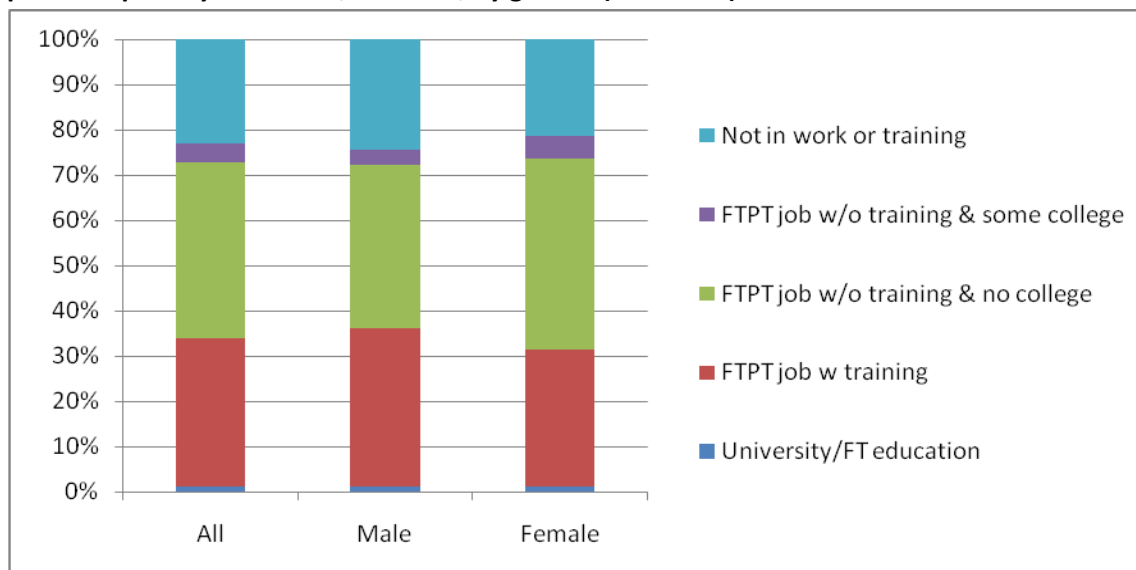
Those who are in full-time education at 17/18 but not in full time education a year later are predominantly likely to be those who pursue level 3 qualifications, i.e. A-levels, but who do not want to continue on into higher education. Those who have left education by or before May '07 are those who simply leave at the end of compulsory education. The remainder, i.e. those who stay on in post-compulsory education for a year and then leave, are a comparatively small group (12%) but within the current context are interesting to examine in more detail.

This group of young people who remain in full time education for an additional year are relatively equally distributed by family SES, 35% coming from low SES families, 37% from middle SES backgrounds and 28% from high SES groups. In wave 6 at age 18/19, the majority of these young people are in work. 33% are in a job with training and a further 43% are in a job without training. Nearly a quarter of this group however, are not in education, employment or training and a very small proportion, 1%, of this group have returned to education by age 18/19. Analyses by gender show that, as in the full sample, females are less likely to be NEET. Young women are also more likely to be in jobs without training, possibly reflecting the kinds of employment options available.

⁴ These figures are based on the young person’s main activity in May of that year and are the same as those reported in the Department’s own figures.

⁵ There is some movement between these groups, for example a small proportion of those who left at 16 have returned to education and make up the percentage in full-time education at 18/19.

Figure 3.3: LSYPE respondents' economic status in 2009 (age 18/19) for those who did one year of post-compulsory education, then left, by gender (52% male)



Of the group that remains in full time education for an additional year, less than 10% had no qualifications at the end of compulsory schooling, but half achieved below level 2 qualifications (less than five GCSEs at grades A* to C). This group was therefore low qualified but nonetheless 91% at least achieved five GCSEs at grades A* to G at the end of compulsory schooling.

Table 3.7 Qualification achievement of those who remain in full time education for an additional year after the end of compulsory schooling (age 16)

	%
No qualifications	9
Below level 2	49
Level 2: 5 good GCSEs & equiv	41

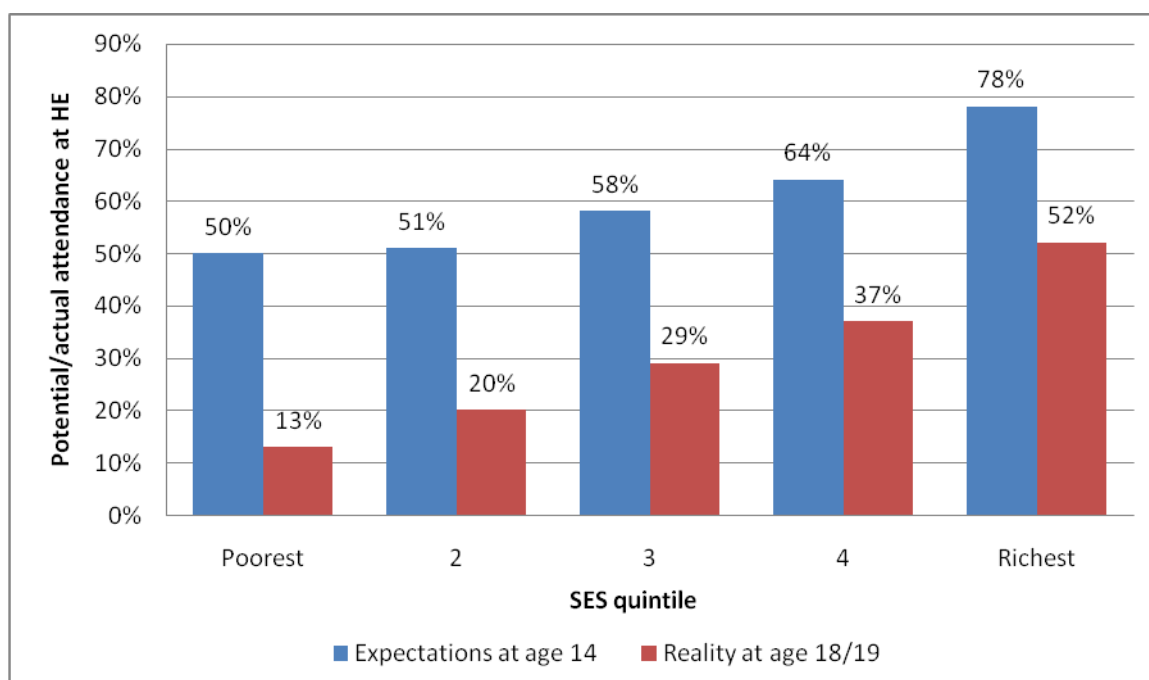
Analysis of the wave 4 (age 16/17) sweep, reveals that 54% of these young people reported they were studying for some kind of academic qualifications (80% of them studying A-levels, 2% for vocational A-levels, and 26% for GCSEs) suggesting that the majority of this group started out intending to either complete a level 3 qualification or to a lesser extent improve their GCSEs to achieve a level 2 qualification. Almost 60% of this group reported studying⁶ for vocational qualifications, the majority of whom were taking key skills (31%), edexcel (35%) or

⁶ Academic and vocational options here are not mutually exclusive.

vocational GCSE (16%) options. Approximately 12% of young people are studying for both academic and vocational qualifications during this period. It is also interesting that over 70% of this group had parents who had previously claimed they wanted their child to stay on in post 16 education, confirming that these young people and their parents do not lack aspirations to achieve educationally.

Indeed throughout this analysis of young people's early transitions into the labour market, it has been noted that aspirations (particularly of parents) are correlated with young people's choices and outcomes. It is of particular note therefore to consider the expectations of young people prior to their decisions about whether to leave school at age 16 or not and relate these expectations to their eventual choices. In Figure 3.4 below we compare the percentage of young people who say they expect to go on to higher education with the proportion that actually do enroll in HE, and we show this by family (SES) background. Whilst half of young people from the lowest SES group expect to go to university nearly 80% of those from the richest SES group do. Nonetheless it is perhaps of greatest interest that whilst at age 14 half of young people from relatively deprived backgrounds still expect to go to university, only 13% actually do. By contrast whilst 80% of those from the richest backgrounds expect to go to university more than half actually do.

Figure 3.4 Comparing HE expectations at age 14 with HE participation at age 18/19



Notes: we do not observe actual HE participation among the LSYPE cohort yet; the comparison instead use figures on HE participation derived from linked administrative data combining individuals' school, further and higher education records for two cohorts who sat their GCSEs in 2001–02 and 2002–03. This means that they are slightly older than the LSYPE cohort, who sat their GCSEs in 2005–06. It should also be noted that the deprivation quintiles are also defined in a slightly different way in the two datasets. The graph comes from working paper - <http://www.ifs.org.uk/wps/wp1015.pdf> - which is due to be published in Longview (the journal of the Society for Longitudinal and Lifecourse Studies) in January.

3.4 Conclusions

From our limited analyses we cannot explain the fall in employment rates amongst young people though we can show how dramatic this has been and highlight the cyclical nature of NEET rates in particular. We also illustrate that employment (and indeed NEET rates) vary substantially across different regions of England.

What is also obvious is that the fall in employment rates has not been fully compensated by an increase in enrollment rates in full time study and there has been a genuine increase in the proportion of young people who are not working and are not in education or training.

NEET rates are higher for males than for females. Females are more likely to report caring responsibilities as a key reason why they are NEET. However, the majority of those who are unemployed do claim to be unable to get a job and a significant minority feel they are under qualified to get a job. However, it would appear that a small minority of both males and females who claim to be unemployed are actually content not to work.

We also focused on an important group, namely those who remain in full time education for an additional year (12% of the cohort). These young people largely remained in full time education in an attempt to upskill to level 3 or indeed improve their GCSEs and obtain a level 2. This group had a disproportionately high NEET rate however at age 18/19 as they attempted to enter the labour market and only a tiny minority (1%) went back into full time education.

We also considered the aspirations of young people and noted that a very high proportion of young people from all social backgrounds expected to go to university. However, only a small proportion of young people from more deprived backgrounds actually achieve this. It is interesting to reflect that in the early teen years (age 14) there is no shortage of ambition and aspiration but this does not translate into high achievement at age 16 and hence these young people who once had such aspirations then go on to leave school at age 16.

3.5 What next

This analysis provides only a snapshot of the NEET group. We could do further multivariate modeling of the NEET group, to determine their qualifications; local area; school experiences; whether they had received career advice, and what their aspirations were prior to becoming NEET.

4. Young People in Full-time Education and Work

4.1 Overview

The analysis that follows asks whether undertaking work whilst in full time education is associated with positive benefits for individuals in terms of both their short run and longer term labour market outcomes.

4.2 Data

The analysis focuses on the group of young people that combine full-time education and work. We use two survey datasets which provide a snapshot of whether an individual is combining work and full time study at a point in time and then relate it to their subsequent labour market activity. The analysis is in two stages.

Stage 1 sets the scene by using the Labour Force Survey (LFS) to look at the proportions of young people (aged 16-18) who are combining full-time education and work as well as providing some simple descriptive information on these youths. We use the LFS for this analysis since it has relatively large numbers of youths.

We pool 16 years of the Labour Force Survey (1993 – 2008). Although the LFS has a longitudinal element, in that individuals are followed for a year within the sample, we only make use of the cross-sectional element of the survey⁷, by observing each individual in their first wave (i.e. their first interview). In this way all individuals are only observed once in our sample. We observe individuals of academic age 16-18 in the tables that follow; i.e. the individuals' age at the preceding August 31st. In this way we can be sure, for example, that all our 16 year olds are of school-leaving age.

⁷ Longitudinal analyses are conducted using LSYPE. Longitudinal analysis of the LFS is being conducted as part of the "Jobs without training" project that has been commissioned by DfE and that will be reporting in the New Year.

We have a total sample size of 65,320 youths, or approximately 4,000 youths per year. Note, that while we can show our statistics by age and year, due to limited sample sizes, it is preferable to show statistics by age or year (there are only approximately 1,500 youths per age per year).

Stage 2 then looks at the long-term outcomes of individuals who combined full-time education and work when they were aged 16-19⁸. We use the British Household Panel Survey, since unlike the LFS this allows us to follow the same individuals over a long period of time. We focus on labour market outcomes, such as employment status after 10 years, and wages after 10 years. The analysis does not attempt to assess causes of these outcomes, but rather describes how spending time in full-time education and work aged 16-19 correlates with these longer run outcomes.

Bearing in mind the longitudinal nature of the BHPS survey (i.e. that individuals who are 16 in 1991 will appear as 17 year olds in 1992 etc), the number of unique individuals is small. Table 4.1 shows the number of unique individuals aged 16-19 in the BHPS, by year. In other words, the panel of youths aged 16-19 consists of original sample members (who joined the panel when it began in 1991) at age 16-19, plus those who turn 16 each year. Note, there are a very small number of additional unique individuals who join the panel each year due for various reasons (e.g. marrying a panel member, moving in with a panel member).

As table 4.1 shows, there is a potential sample size of 4652 BHPS panel members – though as we are interested in long-term outcomes, we must reduce this sample size to all those who can be observed for at least 10 years (i.e. those in the panel up to 1998, who can be followed to 2008, the latest year of the survey). This reduces the potential panel size to 1799. However, many of these individuals leave the survey over time, meaning the final sample size of all unique individuals who remain in the panel for at least 10 years is 1,002, as described in Table 4.2.

⁸ We use those aged 16-19 in the BHPS in order to increase sample sizes; this is not necessary in the LFS

Table 4.1: Unique youths in the BHPS, by age

Year of entry	Age				can follow for at least:
	16	17	18	19	
1991	163	180	165	172	17 yrs
1992	155				16 yrs
1993	156				15 yrs
1994	144				14 yrs
1995	144				13 yrs
1996	179				12 yrs
1997	179				11 yrs
1998	162				10 yrs
1999	267				9 yrs
2000	265				8 yrs
2001	341				7 yrs
2002	290				6 yrs
2003	290				5 yrs
2004	273				4 yrs
2005	287				3 yrs
2006	291				2 yrs
2007	301				1 yrs
2008	248				0 yrs
Total	4,652				
Total (follow for 10 yrs)	1,799				

Table 4.2: Unique youths, in BHPS for at least 10 years, by age

Year of entry	age			
	16	17	18	19
1991	109	115	105	102
1992	84	1	2	7
1993	83	0	3	1
1994	82	1	5	3
1995	77	5	1	1
1996	82	1	1	3
1997	59	1	2	3
1998	56	2	1	4
	632	126	120	124
Total	1,002			

Note that Table 4.2 implies, for example, that simply selecting those who are aged 16-19 in 1998 (i.e. the most recent cohort that could be followed for 10 years) would yield only 285 unique individuals. Therefore it is necessary to pool all individuals going back to 1991.

A further issue with the sample is that some youths are not observed in every age category, though 63% (632/1002) enter at aged 16 and are present for 10 consecutive years. There are also some youths who are not present in every sample year. We do not exclude any of these youths from our panel. Therefore the final sample is 1,002 youths.

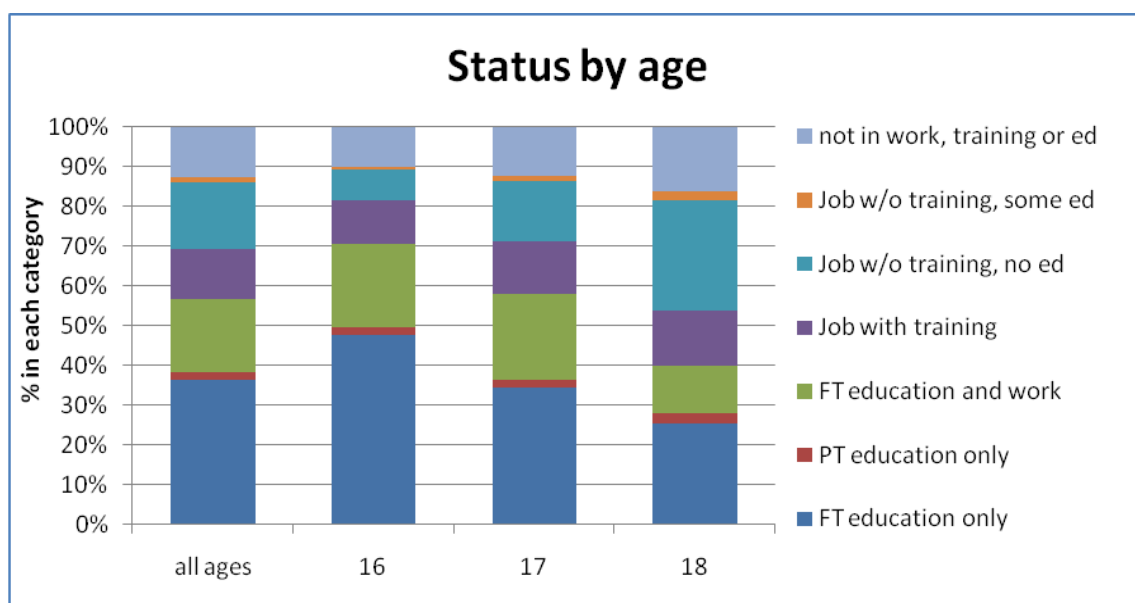
4.3 Key findings: descriptive statistics on youths combining full-time education and work

We have defined the following categories of economic activity:

1. Young people in full time study, and not in any kind of work
2. Young people in part-time study, and not in any kind of work
3. Young people in full time study, who also undertake some work
4. Young people in full or part time work with some training
5. Young people in full or part time work without training or any study
6. Young people in full or part time work without training but with some study
7. NEET

Figure 4.1 shows our seven status groups, split by age:

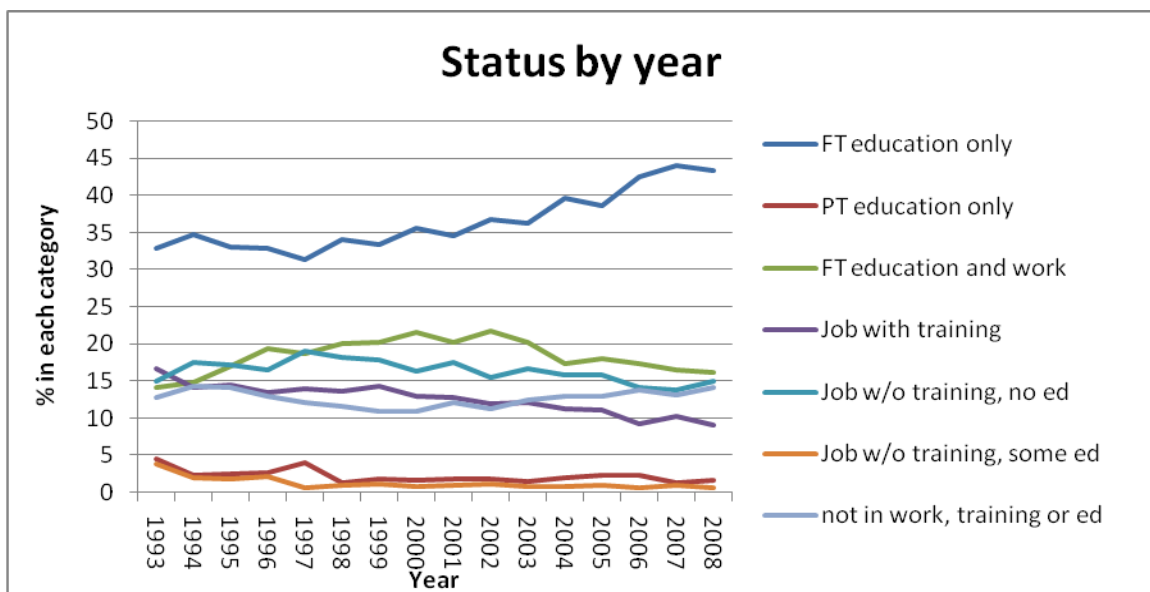
(1993 – 2008, 16-18, n=65,320)



- This chart shows that across all ages around 18% of individuals in our sample are combining full-time (FT) education with work. This compares with 36% who are in FT education, but not working.
- The proportion combining education and work decreases with age, reducing to around 12% by age 18 as people move into full time work and out of education.

Figure 4.2 shows how the activity status of young people has changed over time since 1993.

Figure 4.2: status by year (1993 – 2008, 16-18, n=65,320)



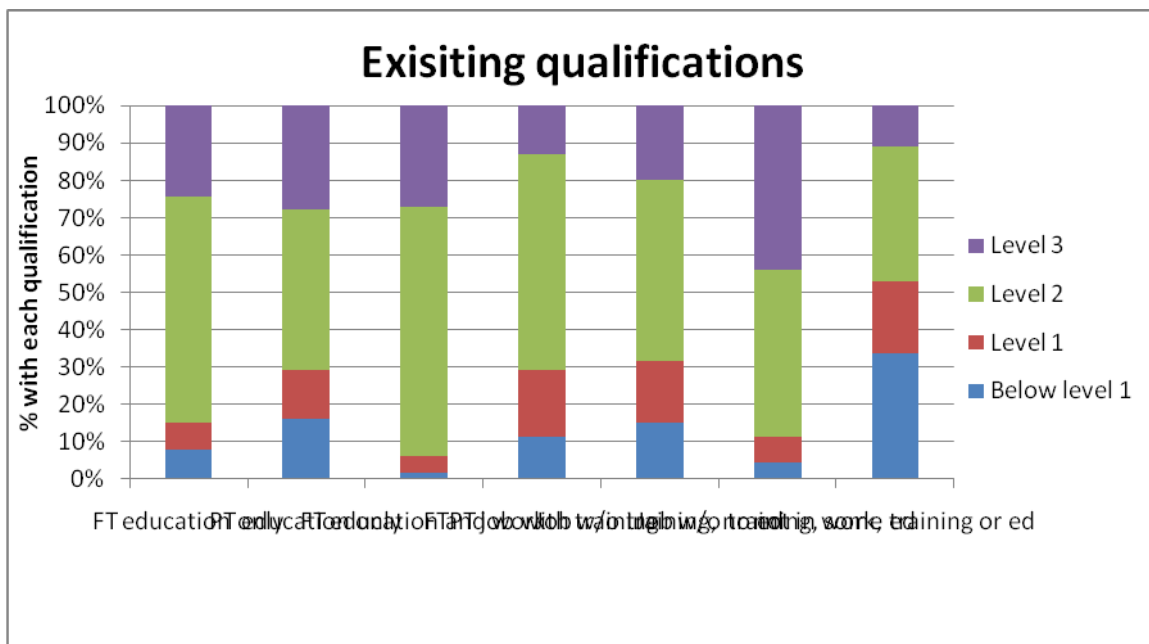
- This chart indicates a dramatic increase in participation in full-time education participation since the early 1990s.
- The dramatic rise in the proportion in FT education only is driven largely by 16 & 17 year olds (particularly 16 year olds).
- In turn, the proportion in work (with or without training alongside it) has been decreasing over time from around 2000.
- The proportion combining full time education and work is lower in both the early 1990s and in the last few years – potentially indicating some recessionary effects.
- Further analysis by region (Annex A) also indicates that the proportion of young people combining full time education with work is particularly high in

the South East and the South West, presumably reflecting the buoyancy of the labour market in these regions.

- The proportion of NEETs was higher in the early 1990s and in the last few years, again suggesting cyclical effects.

For completeness, Figure 4.3 shows the qualification rates of young people in different activity status groups, combining all years and age-groups.

Figure 4.3: Existing qualifications (1993 – 2008, 16-18, n=65,320)



- Those combining FT education and work are slightly better qualified than those in FT education only.
- The NEET group is the least qualified, unsurprisingly.

We also investigated the sectors that young people in full time education worked in. The majority of those combining FT education and work are in the retail and catering sector (77%) – compared with only around 50% overall for those in work.

4.4 Key findings: longer term outcomes

In this stage our aim was to examine the relationship between combining full-time education with work at ages 16-19 and longer-term outcomes some 2-10 years later. These longer run outcomes are a) having a job, b) being NEET, c) wages and d) educational attainment.

We carried out a number of simple regressions of 2-10 year labour market outcomes on the individual's year 1 activity status, focusing on those in full-time education and work, but also controlling for a range of other characteristics. In other words we considered the relationship between the activity status of the individual at 16-19 and their later labour market outcomes, allowing for other factors that vary across individuals.

We find that:

- Being NEET has an apparent long run persistent effect. Being in any kind of work (whether with training or not) is better than being NEET in terms of individuals' long run decade long outcomes.
- There is a positive medium term (2-5 years later) relationship between undertaking work whilst also doing full time study and labour market outcomes.
- We do not find any *direct* relationship between combining full-time education with work at ages 16-19 on employment, quality of employment (measured as whether in a job with or without training), wages (hourly rate) or educational attainment (degree) after 10 years.

However, as Tables 4.3 and 4.4 both show, there does appear to be a short-run relationship between combining full-time education with work at age 16-19 and the probability of being NEET 3-5 years later (though not beyond this time-scale) and

combining work and study is positively related to being employed 3-5 years later (again, not beyond this time-scale). Hence combining full time education and work may have short run effects that protect people from becoming NEET and since being NEET is itself associated with worse outcomes we can deduce that undertaking work with full time education has some indirect protective effect. The inclusion of socio-economic background (parents' SEG) and parents' work status does not alter these results substantially, although the impact of combining full time education and work only holds for 4 years into the future as opposed to five years when we do this⁹. When we examine these trends by gender however, we find the results are driven by females. Hence the protective effect of combining full time education and work against the likelihood of being NEET some year later appears to be significant for females specifically.

Table 4.3: Impact of combining full-time education and work at age 16-18 on being NEET in 2-10 years time (probit, marginal effects shown)

Year 1 status	(1) NEET in 2 yrs	(2) NEET in 3 yrs	(3) NEET in 4 yrs	(4) NEET in 5 yrs	(5) NEET in 10 yrs
FTed+work	0.0146 (0.0260)	-0.0577*** (0.0191)	-0.0665*** (0.0232)	-0.0486** (0.0246)	-0.0347 (0.0262)
Job with training	0.119** (0.0512)	0.0792** (0.0380)	0.00591 (0.0341)	-0.0122 (0.0325)	0.0207 (0.0388)
Job w/o training	0.123** (0.0518)	0.0309 (0.0324)	0.00746 (0.0350)	0.0616 (0.0413)	0.0432 (0.0423)
NEET	0.601*** (0.0853)	0.424*** (0.0706)	0.344*** (0.0672)	0.359*** (0.0682)	0.242*** (0.0633)
Observations	1002	1002	1002	1002	1002

Omitted category: FT education . Also control for: gender, ethnicity, qualifications,, age and year dummies. *** indicates significance at 1% level; ** 5%; * 10%. Standard errors in parentheses. NEET in 6-9 years not shown, but FTed+work category insignificant.

Table 4.4: Impact of combining full-time education and work at age 16-18 on being in work vs NEET in 2-10 years time (probit, marginal effects shown)

VARIABLES	(1) In work in 2 yrs	(2) In work in 3 yrs	(3) In work in 4 yrs	(4) In work in 5 yrs	(5) In work in 10 yrs
FTed+work	-0.0624 (0.123)	0.140*** (0.0313)	0.121*** (0.0343)	0.0762** (0.0350)	0.0369 (0.0271)
Job with training	-0.0858 (0.0907)	0.0153 (0.0464)	0.0828** (0.0405)	0.0682* (0.0385)	-0.0223 (0.0403)

⁹⁹Tables available on request.

Job w/o training	-0.0957 (0.0927)	0.0698* (0.0414)	0.0744* (0.0423)	-0.00783 (0.0461)	-0.0389 (0.0430)
NEET	-0.612*** (0.105)	-0.358*** (0.0813)	-0.304*** (0.0755)	-0.325*** (0.0724)	-0.241*** (0.0638)
Observations	455	590	669	732	974

Omitted category: FT education . Also control for: gender, ethnicity, qualifications, age, year and quarter dummies. *** indicates significance at 1% level; ** 5%; * 10%. Standard errors in parentheses.

NEET in 6-9 years not shown, but FTed+work category insignificant.

4.5 Conclusions

Nearly one in five of our sample combines FT education with work and these young people tend to be somewhat better qualified than the full time education group. The proportion combining work with full time study varies cyclically and this is unsurprising given that most of these young people work in sectors such as retail. In general however, the proportion of young people in work has declined over time and increasingly students just do full time study (nearly 4 in ten).

Our analysis suggests that combining full time education and work is likely to have some benefits in the short run for females, in terms of better labour market outcomes. Individuals who combine full time study and work are less likely to be NEET. Since being NEET is itself associated with worse outcomes we can deduce that undertaking work with full time education has some protective but indirect effect.

4.6 What next

Further work on this issue is being completed under the auspices of CAYT's *Jobs Without Training* project. We are investigating the above relationships in more detail.

5. The use of vocational qualifications in the labour market

5.1 Overview

Whilst there is an extensive literature on the impact of vocational qualifications on wages, less is known about the way in which vocational qualifications are used in the labour market. In particular, we do not know much about the portability of vocational qualifications i.e. whether they are inherently more specialised (in the sense of being used in a limited range of jobs) than academic qualifications and hence people taking them are more likely to be locked into one particular sector. Equally we do not fully understand why some vocational qualifications have high economic value in some sectors but not in others, and whether this is due to the fact that some are better aligned to the needs of a particular sector whilst others are very general.

5.2 Data

We used the Wave 1 Labour Force Survey data for this analysis. We used data for England and Wales and there were no restrictions on the sample. The data used covered the period 2001-2010.

The LFS data is extremely detailed in terms of qualifications and hence we can consider the following vocational qualifications (though some have too small a sample size to be useful).

NVQ/SVQ level 5

NVQ/SVQ level 4

Diploma in higher education

HNC/HND

Higher level of BTEC, BEC or TEC

RSA higher diploma

Higher education, below degree qualification

NVQ/SVQ level 3
 Advanced GNVQ/GSVQ
 RSA advanced diploma/certificate
 BTEC, BEC, TEC National
 certificate/diploma
 ONC/OND
 City & Guilds craft/part 3
 NVQ/SVQ level 2
 Intermediate GNVQ/GSVQ
 RSA diploma
 City & Guilds craft/part 2
 BTEC, BEC, TEC First certificate/diploma

The data on subject area comes in both very fine grained form, e.g. earth sciences, wholesale and retail sales etc., and broader groupings, e.g. physical sciences, manufacturing etc. We would ideally like to have used the fine grain measure however, we found that the broader measures were more appropriate due to the limitations of sample sizes.

The industry sectors we use are quite broadly grouped, again due to sample sizes. They are as follows:

1	A-B: Agriculture & fishing
2	C,E: Energy & water
3	D: Manufacturing
4	F: Construction
5	G-H: Distribution, hotels & restaurants
6	I: Transport & communication
7	J-K: Banking, finance & insurance etc
8	L-N: Public admin, educ & health
9	O-Q: Other services

5.3 Key findings

We started by looking for each qualification type at the diversity of industry sectors across which the qualification is used. This research attempts to get at the question: are some vocational qualifications narrow in the sense of only enabling individuals to work in a limited range of sectors. This work tells us for example, that diplomas in higher education are concentrated in *fewer* sectors as compared to say HNC/HND qualifications. This is true both when we consider the qualification regardless of specific subject area, but also within individual subject areas.

To undertake this analysis we first constructed two measures of the concentration of sectors across which the qualification is used. The first is simply the proportion of individuals with a given qualification who are working in the most common sector for that qualification. A value towards 1 therefore indicates high concentration in one sector. The second measure is an indicator of the sector concentration for each qualification, adapted from Simpson's diversity index¹⁰. Again the measure is given a value towards 0 if the qualification is equally likely to be used across all sectors and a value towards 1 if its use is more concentrated in a limited range of industries.

Figure 5.1 and Table 5.1 below show sector diversity by qualification type for a sample of males and females combined.

The results indicate:

- Overall, City and Guilds qualifications, ONC/OND and HNC/HND, as well as BTEC and Advanced GNVQs are used in a relatively diverse set of sectors.
- By contrast, the use of NVQ level 3 and 4, sub degree level qualifications, HE diplomas and RSA qualifications is somewhat more concentrated by sector.

¹⁰ Edward H. Simpson (1949) Measurement of diversity. *Nature* **163**:688 see <http://www.wku.edu/~smithch/biogeog/SIMP1949.htm>

These results do not necessarily indicate causal relationships but they can potentially be interpreted as indicating the strength of traditional vocational qualifications (City and Guilds, ONC/OND, HNC/HND, BTEC) as they are held by workers across a wide range of sectors. Further this may imply some degree of portability of these core vocational qualifications, though we investigate that further below by considering sector concentration by subject area.

Figure 5.1. Sector Diversity By Qualification Type

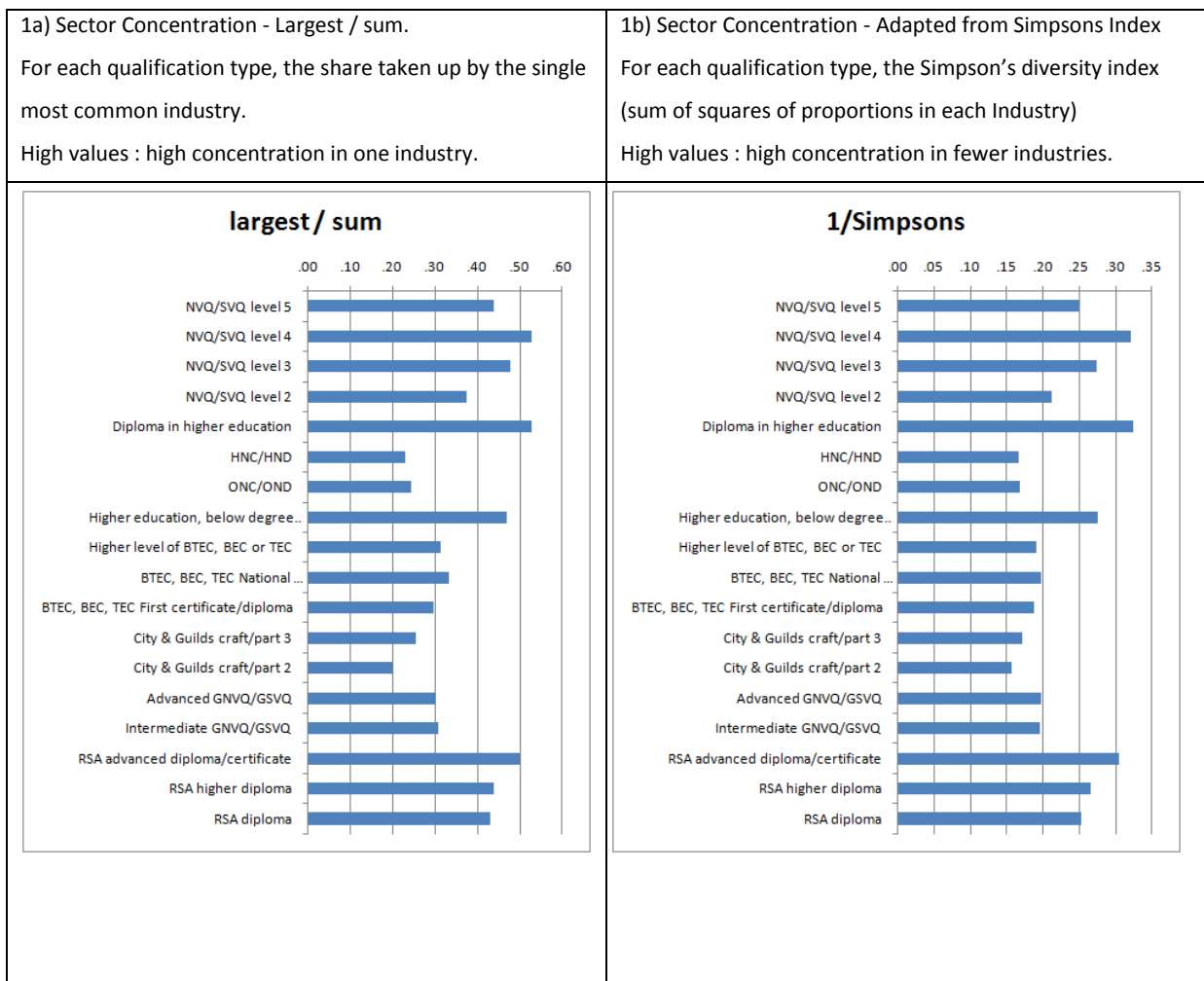


Table 5.1. Sector Diversity By Qualification Type

Males and Females Combined	Sector concentration scores		N †
	largest / sum	1 / Simpsons	
NVQ/SVQ level 5	.44	.25	555
NVQ/SVQ level 4	.53	.32	2,188
NVQ/SVQ level 3	.48	.27	11,029
NVQ/SVQ level 2	.37	.21	12,341
Diploma in higher education	.53	.32	6,107
HNC/HND	.23	.17	11,448
ONC/OND	.24	.17	5,111
Higher education, below degree qualification	.47	.28	2,876
Higher level of BTEC, BEC or TEC	.31	.19	1,112
BTEC, BEC, TEC National certificate/diploma	.33	.20	5,140
BTEC, BEC, TEC First certificate/diploma	.30	.19	1,093
City & Guilds craft/part 3	.25	.17	9,290
City & Guilds craft/part 2	.20	.16	5,949
Advanced GNVQ/GSVQ	.30	.20	2,176
Intermediate GNVQ/GSVQ	.31	.20	1,786
RSA advanced diploma/certificate	.50	.31	383
RSA higher diploma	.44	.27	221
RSA diploma	.43	.25	682

Data: Labour Force Survey data.

† sample sizes are totals across sectors 1-9

We then examined the diversity of sectors across which qualifications in each broad subject area are used¹¹ *(Figure 5.2 and Table 5.2). This gets at the question: are qualifications in some subject areas so general that they are used across a very diverse range of sectors. This tells us for example, that qualifications in the subject area of social services are used in a far more limited range of sectors than qualifications in the subject area of arts. The results indicate the following:

- As might be expected qualifications in subject areas such as teacher training, health and social services are used in a limited range of sectors.
- Qualifications in subject areas such as Arts, Computing, Agriculture forestry and fishery, Personal services and Environment are the most diversely

¹¹ We also examined this pattern by fine subject area. Results are at Annex A but must be interpreted cautiously due to small sample sizes. Examples of sample sizes by qualification type are at Annex B.

represented across sectors, although a number of other subjects have fairly similar levels of diversity.

Figure 5.2. Sector Diversity by Broad Subject Area

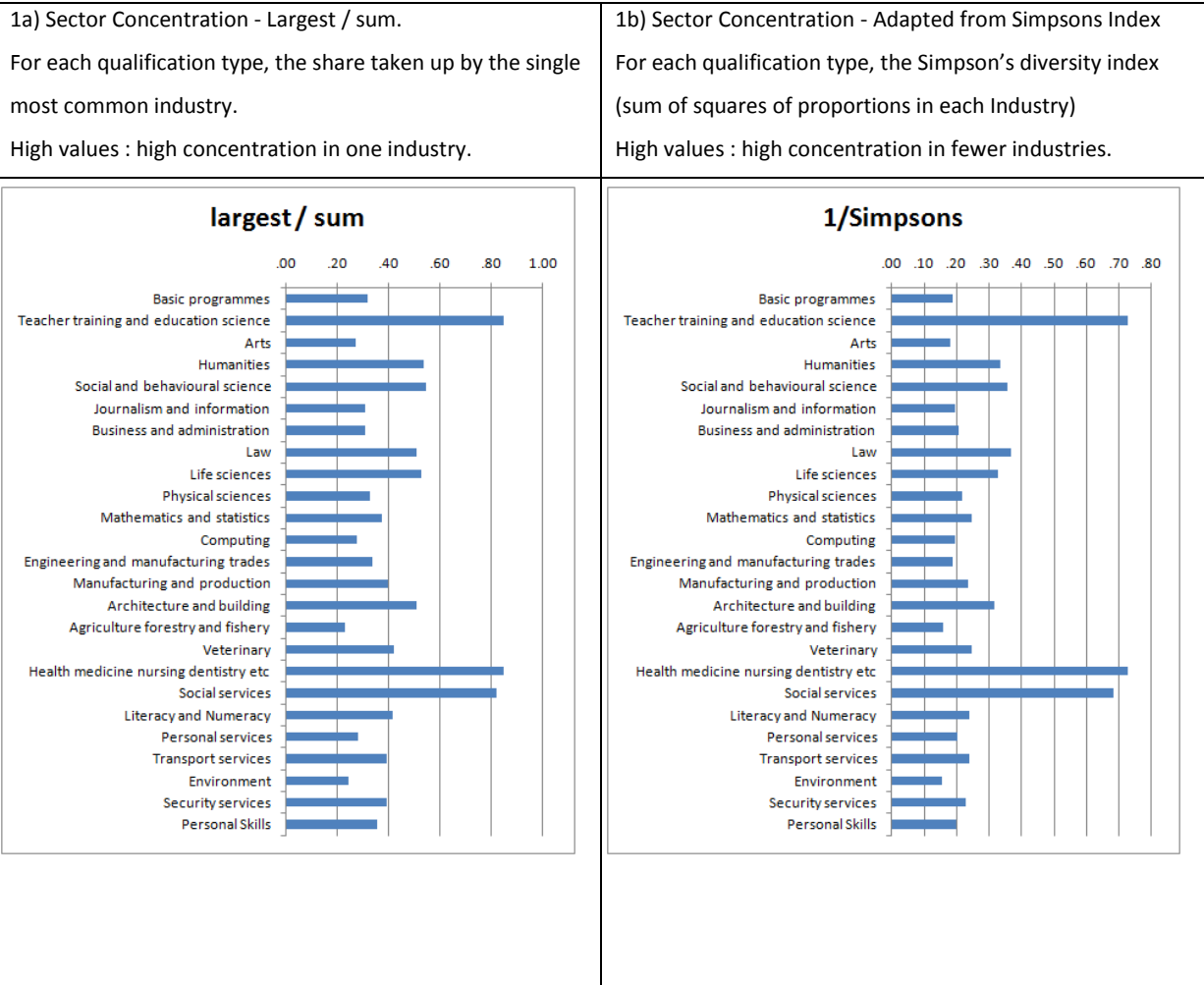


Table 5.2. Sector Diversity by Broad Subject Area

Males and Females Combined	Sector concentration scores		N †
	largest / sum	1/Simpsons	
Basic programmes	.32	.19	594
Teacher training and education science	.85	.73	2,810
Arts	.27	.18	4,322
Humanities	.53	.33	661
Social and behavioural science	.54	.36	819
Journalism and information	.31	.20	368
Business and administration	.31	.21	17,121
Law	.51	.37	216
Life sciences	.53	.33	423
Physical sciences	.32	.22	897
Mathematics and statistics	.37	.25	286
Computing	.28	.20	2,942
Engineering and manufacturing trades	.33	.19	16,740
Manufacturing and production	.39	.23	1,722
Architecture and building	.51	.32	6,961
Agriculture forestry and fishery	.23	.16	1,339
Veterinary	.42	.25	235
Health medicine nursing dentistry etc	.85	.73	6,224
Social services	.82	.68	4,249
Literacy and Numeracy	.42	.24	489
Personal services	.28	.20	7,350
Transport services	.39	.24	779
Environment	.24	.15	259
Security services	.39	.23	909
Personal Skills	.35	.20	439

Data: Labour Force Survey data.

† sample sizes are totals across sectors 1-9

We then analysed the diversity of sectors across which each subject / qualification type combination is used. This tells us for example, that NVQ4 qualifications in the subject area of social and behavioural science are concentrated in a more limited range of sectors than HNC/HND qualifications in the equivalent subject area. This gives us an indication of the portability and specificity of particular qualification and subject combinations. This work is however more tentative due to sample size issues and where sample sizes are below 10 the result is suppressed (see Annex C for an idea of sample sizes across qualifications).

Table 5.3 below indicates the sector diversity of different qualification subject combinations. The red highlighted areas indicate a great deal of sector concentration i.e. the subject/qualification combination is used in a limited range of sectors. The green highlighted areas indicate lots of sector diversity i.e. that the subject/qualification combination is used in a diverse range of sectors.

The results indicate that different types of qualification within the same broad subject area are similarly diverse in terms of their use across sectors. For example, qualifications in health and social services are used in a limited range of sectors regardless of the particular type of qualification acquired. Equally, qualifications in arts subjects are used in a very diverse range of sectors regardless of the particular type of qualification acquired. There are some exceptions to this general pattern. For example in architecture and building, NVQ3/SVQ3 qualifications are concentrated more heavily in a limited range of sectors, whilst BTEC national certificates are used in a diverse range of sectors.

Table 5.3. Sector Diversity (Industry concentration scores – adapted from Simpsons) by Qualification Type and Broad Subject Area

	Qualification/ Subject	NVQ/SVQ level 5	NVQ/SVQ level 4	NVQ/SVQ level 3	NVQ/SVQ level 2	Diploma in higher education	HNC/HND	ONC/OND	Higher education, below degree qualification	Higher level of BTEC, BEC or TEC	BTEC, BEC, TEC National certificate/diploma	BTEC, BEC, TEC First certificate/diploma	City & Guilds craft/part 3	City & Guilds craft/part 2	Advanced GNVQ/GSVQ	Intermediate GNVQ/GSVQ	RSA advanced diploma/certificate	RSA higher diploma	RSA diploma	First degree
1	Basic programmes			.24	.22	.21	.18	.24	.29	.17	.28	.30	.21	.17	.15	.19			.28	
				85	152	74	69	31	42	13	33	16	61	52	28	40			11	
14	Teacher training and education science	.54	.69	.70	.63	.67	.55	.70	.66	.62	.73	.63	.53	.54	.66	.41	.71	.62	.62	.78
		40	153	801	429	686	81	22	304	30	169	28	203	175	38	33	13	13	26	+
21	Arts		.21	.17	.19	.19	.18	.17	.19	.21	.19	.18	.20	.18	.20	.23			.24	.21
			26	178	250	738	891	188	392	158	972	214	593	395	244	193			20	+
22	Humanities			.28	.24	.34	.24		.33				.64	.38		.21	.22		.26	.35
				46	94	315	37		186				18	37		18	21		40	+
31	Social and behavioural science		.41	.67	.46	.52	.24	.26	.47	.44	.32	.52		.45	.55	.34				.35
			29	110	81	286	92	31	163	11	67	15		22	42	35				+
32	Journalism and information		.20	.31	.19	.19	.21		.26		.24		.27	.25	.27	.24				.20
			22	44	58	72	49		30		28		24	40	28	37				+
34	Business and administration	.30	.29	.22	.21	.23	.20	.22	.21	.22	.22	.19	.20	.19	.19	.22	.29	.25	.25	.23
		276	+	+	+	+	+	+	855	348	+	417	180	256	783	578	355	191	602	+
38	Law		1.0	.39		.36	.27		.34											.38
			15	13		92	27		63											+
42	Life sciences					.33	.27	.34	.30		.19				.27					.34
						80	196	54	44		33				20					+
44	Physical sciences			.27	.22	.23	.25	.23	.21	.22	.21	.18	.22		.23	.27				.23

				14	12	89	458	278	55	24	71	16	22		29	23				+
46	Mathematics and statistics			.34	.17	.44	.22	.27	.52				.26	.22						.25
				12	35	61	75	30	29				28	54						+
48	Computing	.32	.27	.20	.20	.23	.22	.18	.22	.25	.20	.20	.21	.18	.22	.22	.46	.46	.28	
		16	32	324	571	213	690	91	120	61	344	98	208	296	171	348	55	23	96	
52	Engineering and manufacturing trades	.22	.23	.20	.22	.16	.22	.21	.18	.20	.19	.18	.19	.19	.16	.18				.20
		53	139	+	+	235	+	+	168	246	720	146	+	+	164	156				+
54	Manufacturing and production		.24	.27	.30	.20	.24	.23	.25	.17	.21	.29	.23	.19	.23	.20				
			32	203	614	63	198	78	35	14	55	14	399	277	19	35				
58	Architecture and building	.32	.32	.51	.50	.29	.31	.28	.23	.25	.21	.26	.45	.36	.26	.35				.34
		23	48	658	930	228	+	751	79	80	188	43	+	987	62	63				+
62	Agriculture forestry and fishery		.17	.20	.18	.15	.20	.16	.26		.17	.18	.17	.16	.26					.21
			17	146	277	142	269	114	74		68	27	184	210	10					745
64	Veterinary			.33	.21	.17	.29		.26		.33	.31								
				49	68	21	34		18		34	14								
72	Health medicine nursing dentistry etc	.66	.77	.75	.72	.79	.63	.48	.62	.69	.51	.72	.53	.59	.59	.37				.86
		41	205	+	+	+	293	141	290	60	359	74	94	82	238	226				+
76	Social services	.54	.82	.79	.59	.74	.71	.50	.71	.68	.57	.57	.67	.53	.45	.34				
		27	210	+	+	620	118	27	289	47	332	82	42	80	116	144				
8	Literacy and Numeracy		.39	.24	.25	.35	.19	.22	.34		.22		.20	.27	.26	.27				
			13	84	151	37	30	13	27		22		68	102	13	24				
81	Personal services	.22	.20	.22	.22	.19	.20	.24	.23	.18	.19	.21	.22	.22	.18	.20				.27
		44	116	+	+	285	521	166	135	100	538	148	+	+	423	329				14
84	Transport services			.27	.33	.33	.23	.24	.41	.28	.19	.21	.26	.20		.28				
				119	279	20	64	26	17	11	34	17	133	96		13				
85	Environment		.19	.23	.22	.27	.17	.15	.22		.25			.24						
			15	22	73	36	52	16	10		23			12						
86	Security services	.21	.26	.30	.19	.21	.36		.34		.28	.27	.17	.20	.47	.29				
		20	63	214	354	67	21		35		68	29	25	42	42	62				
9	Personal Skills		.36	.29	.17	.32	.17		.30				.17	.20	.22	.22				
			26	114	129	40	20		25				49	38	12	17				

"+"

indicates

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Lastly, we then investigated the relationship between the sector diversity of qualifications and differences in the economic value of qualifications (i.e. the wage premia associated with a particular qualification). This could help us understand whether vocational qualifications used in a narrower range of sectors (and hence less portable/ less ubiquitous) have lower returns.

Table 5.4 below shows, for each qualification type, columns with:

- 1) a sector concentration score (repeated from Table 5.1);
- 2) a weighted average of sector concentration scores across subject areas;
- 3) the National Qualification Framework level of the qualification (to allow for differences in specificity of qualifications at different levels);
- 4) the wage-rate premium associated with each qualification (from Jenkins et al. 2007).

The key rows at the bottom of the table provide information on the correlations between sector concentration scores and wage premia. These relationships are measured simply by weighted correlations. Specifically the table shows in column 1:

- A) The correlation between the sector concentration scores and NQF level¹², i.e. indicating whether on average higher level qualifications are used in a narrower range of sectors.
- B) The correlation between the sector concentration scores and the average wage return, indicating whether overall qualifications that are used in a narrower range of sectors have less economic value.
- C) The correlation between the sector concentration scores and wage returns, after allowing for differences in the NQF level of qualifications. This is our correlation coefficient of interest since it should measure whether, allowing for the level of a qualification, qualifications used in a narrower range of sectors have lower returns.

¹² Significance levels not given because correlation is with aggregate score for returns, so variance is reduced.

Tables D1 and D2 at Annex D give equivalent data for men and women respectively.

The key findings are:

- Higher level qualifications are used in a narrower range of sectors, as one might expect perhaps (Table 5.4 – correlation A1).
- There is no clear overall relationship between the diversity of sectors across which a particular type of qualification is used and the economic return to that qualification (Table 5.4 – correlation B1). Simply looking at the overall correlation between sector diversity and wage returns may however, hide the fact that the relationship between these two variables may vary for lower and higher level qualifications.
- Once we look within levels of qualification (i.e. take account of the fact that higher level qualifications by their nature tend to be more specialized) we actually see a negative correlation between sector concentration and the return to qualifications (Table 5.4 – correlation C1). This implies that on average, across the different levels, vocational qualifications that are used across a more diverse range of sectors have greater economic value.
- This may be either because such qualifications are more portable (they impart more transferable skill) or because there is a reputational effect with some brands of qualification providers having strong economic value across a large part of the labour market.

Column 2 of Table 5.4 then shows the sample analysis but allowing for differences by subject area. A similar pattern emerges.

We undertook a number of robustness checks. Firstly we assessed how the relationship between sector diversity and wage return varied by level of qualification and found that the negative relationship between sector concentration and wage return was stronger for lower level qualifications. This is important as it suggests portability might be more strongly valued for lower level qualifications.

There are also some difficulties with the analysis. In particular since the “return” to some level 2 qualifications, particularly for men, is apparently negative in the data, and because there is relatively little variation in their sector concentration, the relationship between economic value and sector diversity is hard to assess for these qualifications. Further, our analysis is based on the average wage premium for each qualification i.e. across all individuals who hold that qualification. For a subset of these individuals the qualification will be their highest. When we re-estimated the analysis based just on highest qualification held, the results were weaker, even for lower level qualifications, and for higher qualifications the relationship between sector concentration and returns became positive. This too is suggestive that portability is most clearly an advantage at the lower levels of vocational qualification.

Table 5.4. Links Between Industry Sector Concentration and Returns.

	1) sector concentration (qualification)	2) sector concentration (subject level)	3) NQF level of qualification	4) Wage premium (all qualifications)	N †
Males and Females Combined					
NVQ/SVQ level 5	.25	.34	5	14.5	555
NVQ/SVQ level 4	.32	.40	4	11.7	2,188
NVQ/SVQ level 3	.27	.43	3	0.2	11,029
NVQ/SVQ level 2	.21	.35	2	-7.2	12,341
Diploma in higher education	.32	.42	4	8.76	6,107
HNC/HND	.17	.24	4	12.9	11,448
ONC/OND	.17	.23	3	9.42	5,111
Higher education, below degree qualification	.28	.36	4	5.97	2,876
Higher level of BTEC, BEC or TEC	.19	.27	4	6.82	1,112
BTEC, BEC, TEC National certificate/diploma	.20	.26	3	7.68	5,140
BTEC, BEC, TEC First certificate/diploma	.19	.26	2	4.29	1,093
City & Guilds craft/part 3	.17	.26	3	3.56	9,290
City & Guilds craft/part 2	.16	.24	2	-0.6	5,949
Advanced GNVQ/GSVQ	.20	.26	3	2.84	2,176
Intermediate GNVQ/GSVQ	.20	.25	2	-1.2	1,786
RSA advanced diploma/certificate	.31	.32	3	5.87	383
RSA higher diploma	.27	.29	4	2.12	221
RSA diploma	.25	.27	2	1.41	682
A) bivariate correlation (weighted) with NQF level of qualification*	.29	.06			
B) bivariate correlation (weighted) with returns (highest quals specification)*	.04	-.34			
C) partial correlation (weighted) with returns (highest quals specification), controlling for level (3 dummies)*	-.60	-.77			

* significance levels not given because correlation is with aggregate score for returns, so variance is reduced

† sample sizes are totals across sectors 1-9

5.4 Conclusions

We find that traditional vocational qualifications, such as HNC/HND, BTEC and some City and Guilds, are used across a more diverse set of sectors than vocational qualifications such as NVQ3, NVQ4 and HE diplomas. However, the subject area of the qualification makes a great deal of difference and different types of qualifications within the same subject area tend to be used in similarly diverse ways across sectors. For example, most qualifications in arts subjects are used in a very diverse range of sectors regardless of the particular type of qualification acquired.

Further, we find that if anything qualifications that are used across a more diverse set of sectors have higher wage returns.

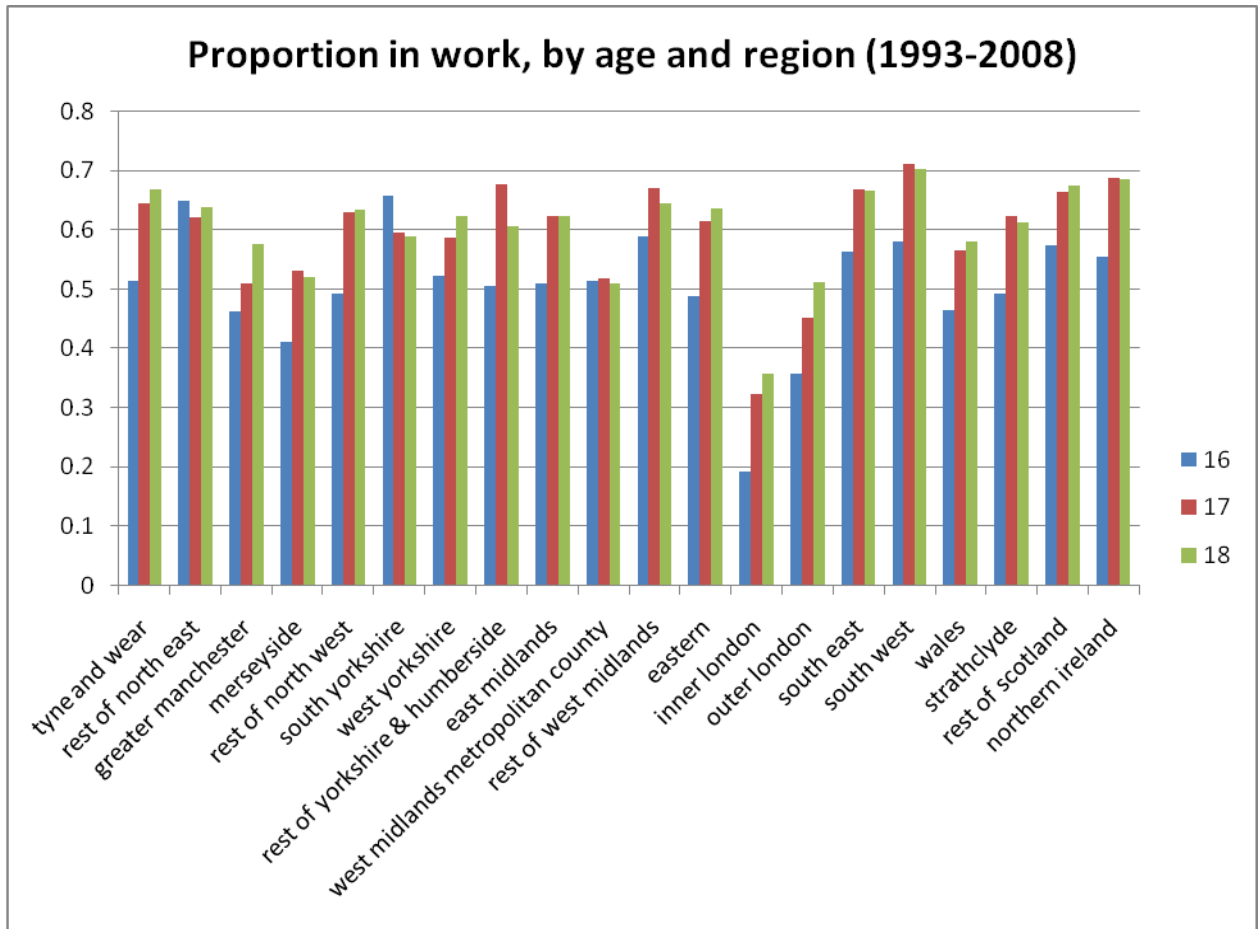
Our findings suggest that in particular for lower levels of qualification, those qualifications that are portable across sectors, or used widely across sectors, have greater economic value. It also seems plausible given our results that sector specialisation is good for higher qualifications whilst portability is usually an advantage for lower qualifications. This may have implications for those designing sector-specific lower level qualifications, although further investigation is needed to confirm this in detail for individual qualification types.

5.5 What next

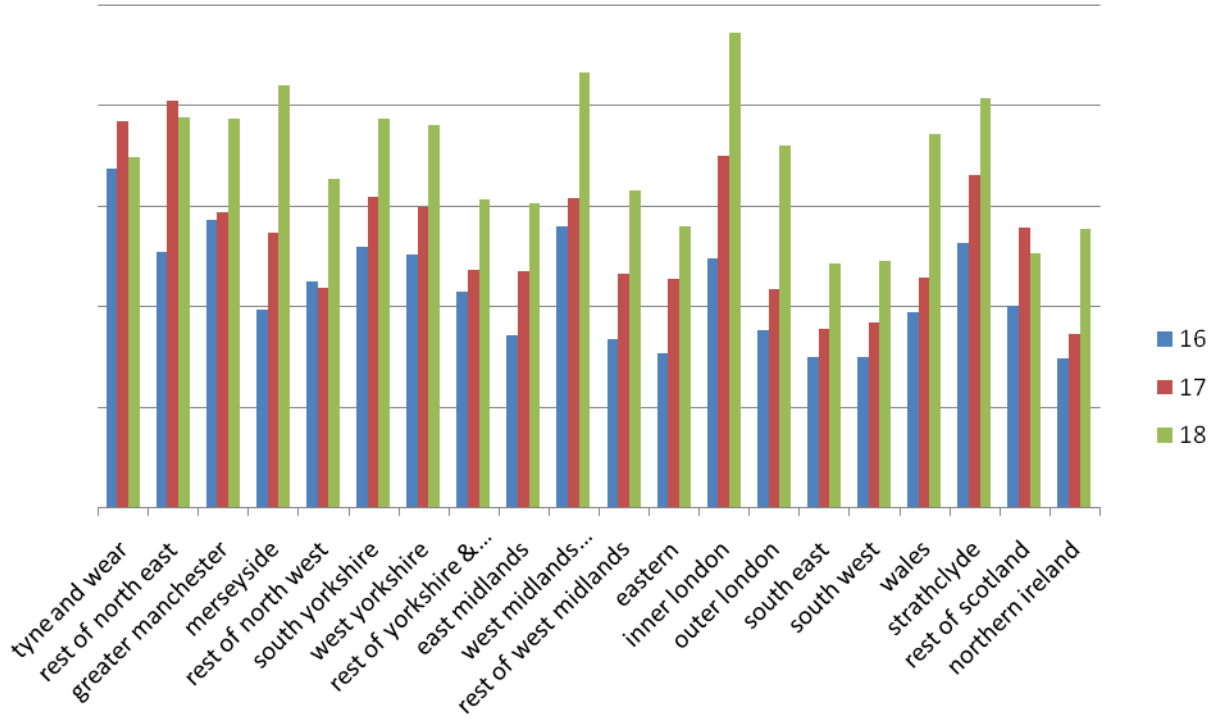
These are preliminary indicators of the importance of sector concentration and further work would be merited on the relationship between sector concentration and the economic return to qualifications in a regression framework, integrating the various factors.

This work could be developed in a number of directions. Firstly we could use the panel element of BHPS or LSYPE to explore in more detail which qualifications are used in particular sectors. Small sample sizes are problematic however. Another fruitful way forward is to select some of the more common vocational qualifications (e.g. in engineering) and examine the sectors individuals are working in and consider this by age.

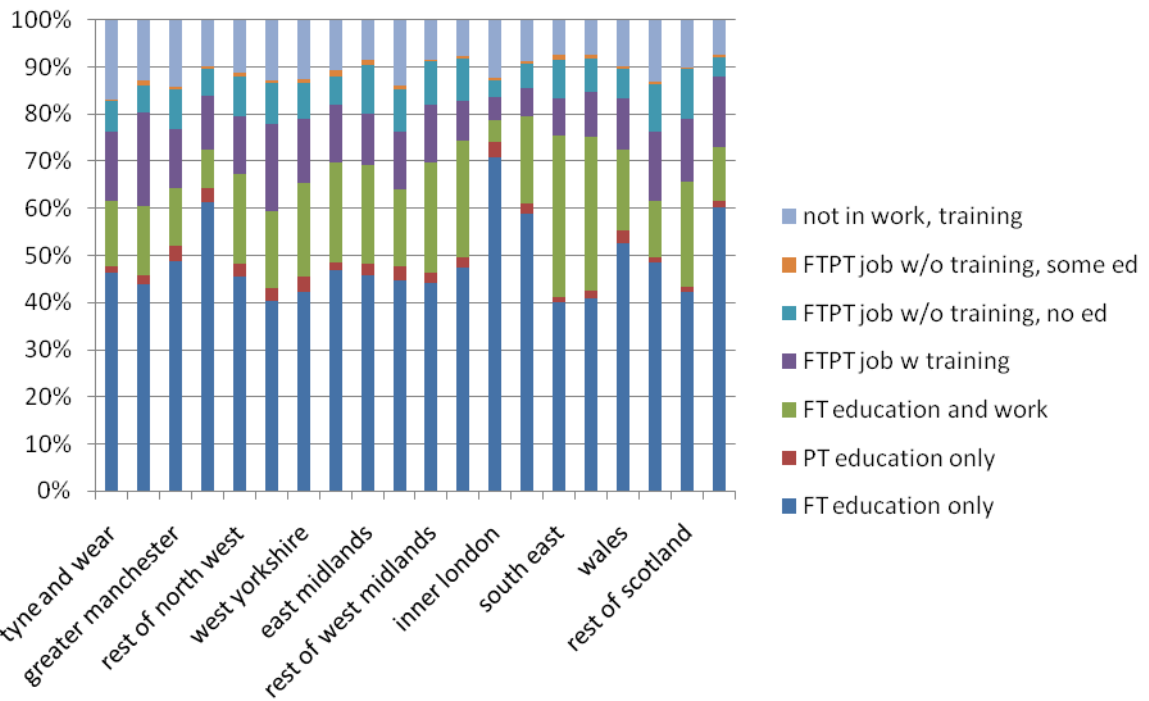
ANNEX A – Activity status by age and region



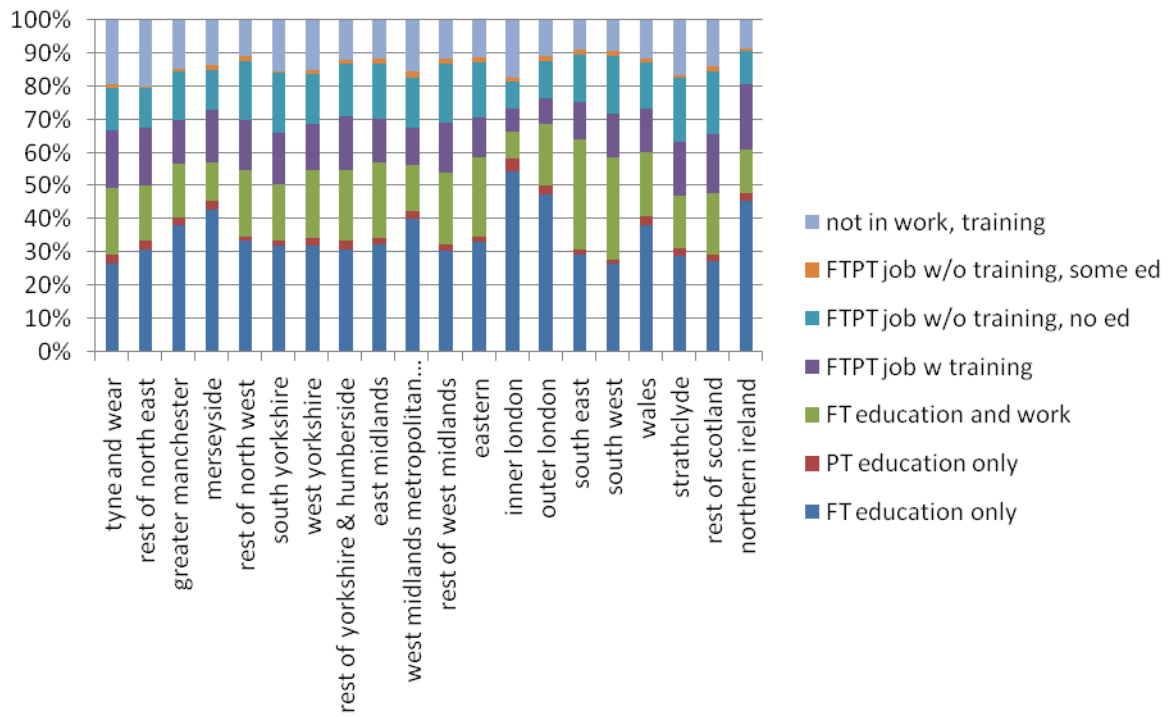
Proportion NEET, by age and region (1993 - 2008)



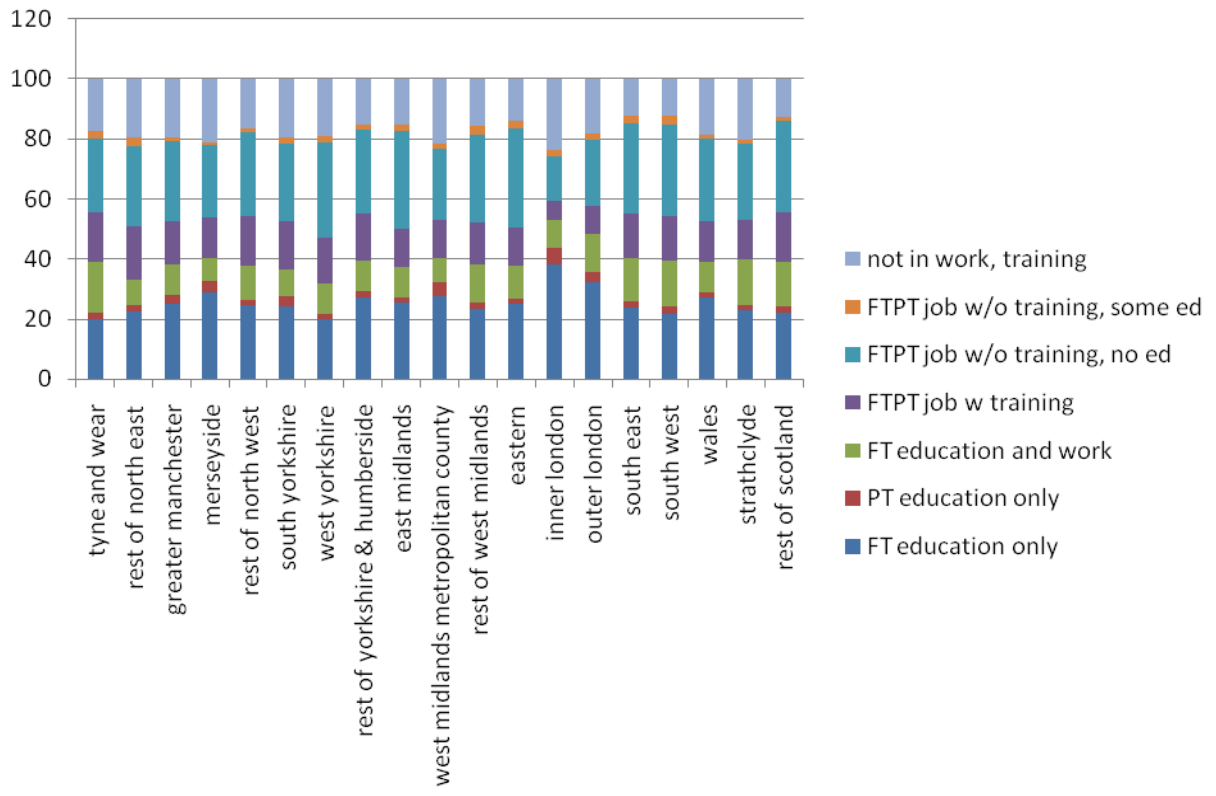
Status by region - 16 year olds (1993-2008)



Status by region - 17 year olds (1993-2008)

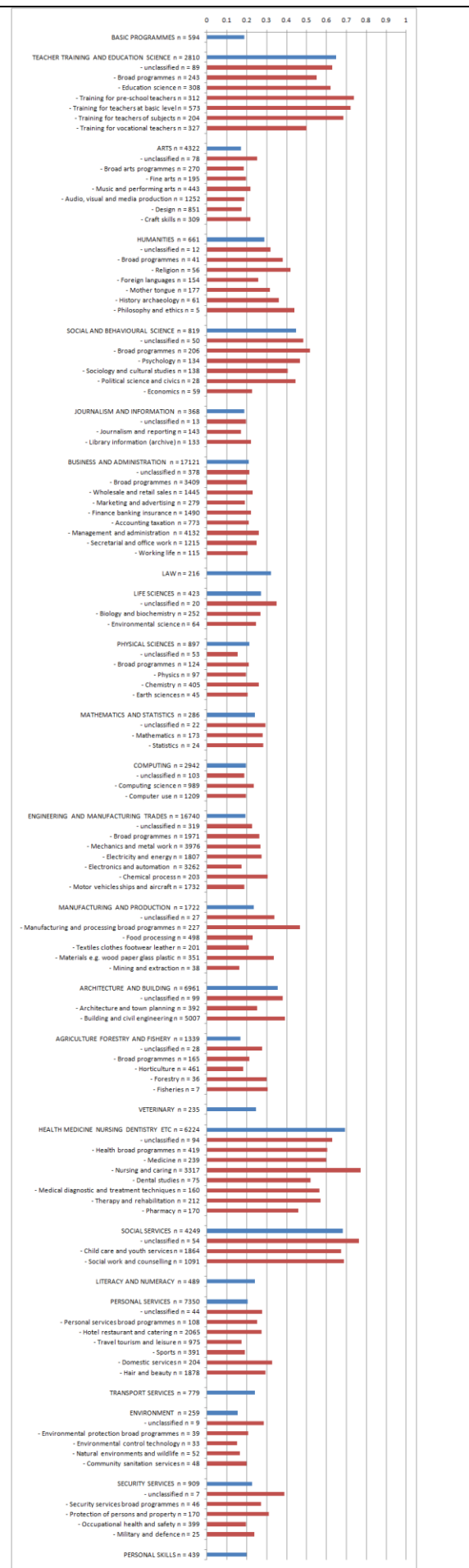
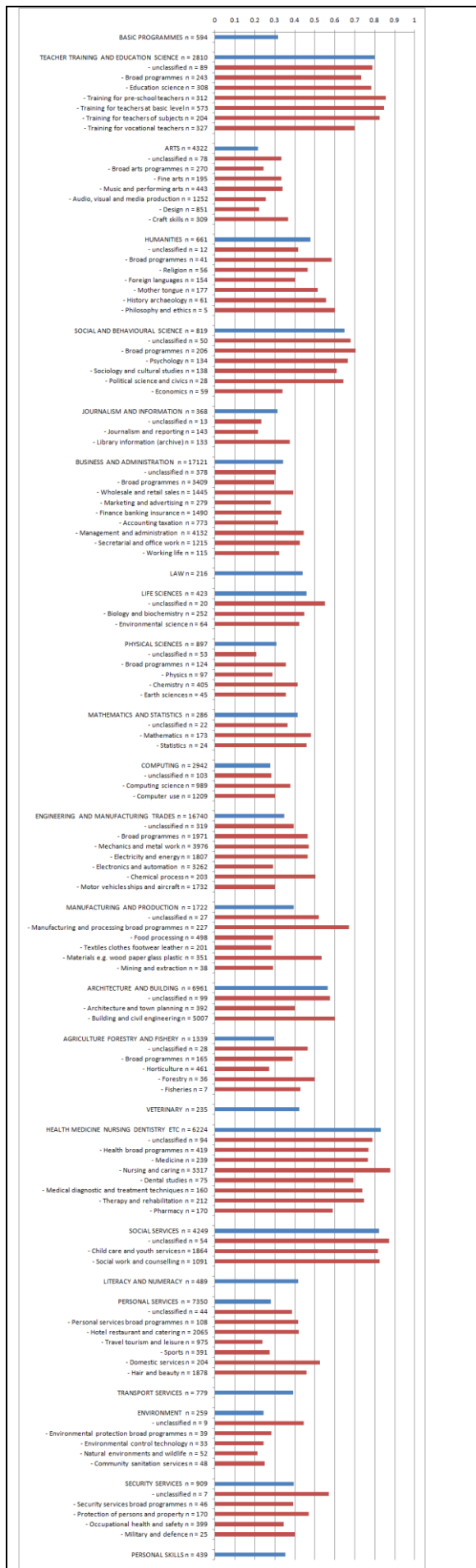


Status by region - 18 year olds (1993-2008)



Annex B: Sector diversity score indices by subject (fine grouping).

1a) Largest / sum.	1b) Simpsons Index
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Annex c: Example of Sample Sizes

qualification type	NQF level	N - qualifications (all)			N (when highest qual)		
		all	women	men	all	women	men
NVQ/SVQ level 5	5	555	270	285	555	270	285
NVQ/SVQ level 4	4	2,188	1,296	892	2,188	1,296	892
NVQ/SVQ level 3	3	11,029	6,901	4,128	9,971	6,329	3,642
NVQ/SVQ level 2	2	12,341	7,567	4,774	10,988	6,897	4,091
Diploma in higher education	4	6,107	3,690	2,417	5,971	3,598	2,373
HNC/HND	4	11,448	2,905	8,543	10,871	2,718	8,153
ONC/OND	3	5,111	1,038	4,073	2,406	598	1,808
Higher education, below degree qualification	4	2,876	1,670	1,206	2,467	1,447	1,020
Higher level of BTEC, BEC or TEC	4	1,112	474	638	790	358	432
BTEC, BEC, TEC National certificate/diploma	3	5,140	2,736	2,404	3,958	2,132	1,826
BTEC, BEC, TEC First certificate/diploma	2	1,093	600	493	702	382	320
City & Guilds craft/part 3	3	9,290	1,329	7,961	7,064	948	6,116
City & Guilds craft/part 2	2	5,949	1,585	4,364	4,310	1,064	3,246
Advanced GNVQ/GSVQ	3	2,176	1,176	1,000	1,595	856	739
Intermediate GNVQ/GSVQ	2	1,786	939	847	1,106	577	529
RSA advanced diploma/certificate	3	383	349	34	296	275	21
RSA higher diploma	4	221	203	18	183	168	15
RSA diploma	2	682	594	88	488	436	52

	1) A-B: Agric/ fish	2) C,E: Energy / water	3) D: Manuf	4) F: Constr uction	5) G-H: Distr/ hotel/ rest	6) I: Transp / comm s	7) J-K: Bank / finan/ insur	8) L-N: Pub Admin / edu/ health	9) O-Q: Other service s	Total †
NVQ/SVQ level 5	3	7	68	32	60	29	76	244	36	555
NVQ/SVQ level 4	7	22	232	122	191	81	298	1,152	83	2,188
NVQ/SVQ level 3	83	160	1,076	906	1,408	533	918	5,256	689	11,029
NVQ/SVQ level 2	101	146	1,406	996	2,306	732	1,160	4,612	882	12,341
Diploma in higher education	60	36	401	162	567	270	965	3,223	423	6,107
HNC/HND	151	284	2,385	1,177	1,164	828	2,345	2,612	502	11,448
ONC/OND	65	156	1,249	609	482	352	898	1,120	180	5,111
Higher education, below degree qualification	51	17	238	92	295	147	500	1,350	186	2,876
Higher level of BTEC, BEC or TEC	6	18	154	68	146	84	236	347	53	1,112
BTEC, BEC, TEC National certificate/diploma	38	67	605	251	877	379	935	1,704	284	5,140
BTEC, BEC, TEC First certificate/diploma	13	11	125	69	232	80	185	325	53	1,093
City & Guilds craft/part 3	110	187	2,054	2,363	1,245	618	776	1,461	476	9,290
City & Guilds craft/part 2	91	96	1,150	1,081	1,008	485	528	1,185	325	5,949
Advanced GNVQ/GSVQ	11	27	199	115	456	154	446	659	109	2,176
Intermediate GNVQ/GSVQ	16	16	165	126	547	126	244	443	103	1,786
RSA advanced diploma/certificate	1	2	28	16	38	16	72	191	19	383
RSA higher diploma	4	0	14	13	33	6	44	97	10	221
RSA diploma	4	13	58	23	103	30	119	294	38	682

† sample sizes are totals across sectors 1-9

Annex D – Table D1. Links Between Industry Sector Concentration and Returns. *Women*

Males and Females Combined	1) sector concentration (qualification)	2) sector concentration (subject level)	3) NQF level of qualification	4) Wage premium (all qualifications)	N †
NVQ/SVQ level 5	.42	.48	5	20.44	270
NVQ/SVQ level 4	.45	.50	4	14.8	1,296
NVQ/SVQ level 3	.43	.52	3	1.41	6,901
NVQ/SVQ level 2	.32	.41	2	-5.82	7,567
Diploma in higher education	.45	.52	4	10.96	3,690
HNC/HND	.26	.31	4	8.98	2,905
ONC/OND	.30	.32	3	7.14	1,038
Higher education, below degree qualification	.38	.44	4	7.25	1,670
Higher level of BTEC, BEC or TEC	.29	.36	4	7.68	474
BTEC, BEC, TEC National certificate/diploma	.28	.34	3	7.57	2,736
BTEC, BEC, TEC First certificate/diploma	.25	.32	2	2.94	600
City & Guilds craft/part 3	.27	.33	3	-1.78	1,329
City & Guilds craft/part 2	.26	.30	2	-3.25	1,585
Advanced GNVQ/GSVQ	.26	.33	3	2.74	1,176
Intermediate GNVQ/GSVQ	.26	.30	2	-2.47	939
RSA advanced diploma/certificate	.32	.33	3	9.97	349
RSA higher diploma	.28	.30	4	5.23	203
RSA diploma	.28	.28	2	4.5	594
A) bivariate correlation (weighted) with NQF level of qualification*	.39	.26			
B) bivariate correlation (weighted) with returns (highest quals specification)*	.29	.13			
C) partial correlation (weighted) with returns (highest quals specification), controlling for level (3 dummies)*	-.14	-.26			

* significance levels not given because correlation is with aggregate score for returns, so variance is reduced

† sample sizes are totals across sectors 1-9

Annex D – Table D2. Links Between Industry Sector Concentration and Returns. *Men*

Males and Females Combined	1) sector concentration (qualification)	2) sector concentration (subject level)	3) NQF level of qualification	4) Wage premium (all qualifications)	N †
NVQ/SVQ level 5	.17	.23	5	9.75	285
NVQ/SVQ level 4	.21	.29	4	9.31	892
NVQ/SVQ level 3	.16	.30	3	-0.1	4,128
NVQ/SVQ level 2	.15	.29	2	-8.7	4,774
Diploma in higher education	.20	.29	4	6.08	2,417
HNC/HND	.16	.23	4	12.98	8,543
ONC/OND	.17	.22	3	8.44	4,073
Higher education, below degree qualification	.19	.28	4	4.6	1,206
Higher level of BTEC, BEC or TEC	.16	.21	4	7.04	638
BTEC, BEC, TEC National certificate/diploma	.15	.20	3	7.57	2,404
BTEC, BEC, TEC First certificate/diploma	.16	.20	2	5.65	493
City & Guilds craft/part 3	.19	.26	3	2.63	7,961
City & Guilds craft/part 2	.17	.23	2	-0.8	4,364
Advanced GNVQ/GSVQ	.17	.20	3	2.63	1,000
Intermediate GNVQ/GSVQ	.17	.21	2	0.5	847
RSA advanced diploma/certificate	.22	.32	3	-4.88	34
RSA higher diploma	.19	††	4	-5.45	18
RSA diploma	.15	.18	2	-6.85	88
A) bivariate correlation (weighted) with NQF level of qualification*	.30	-.05			
B) bivariate correlation (weighted) with returns (highest quals specification)*	.16	-.52			
C) partial correlation (weighted) with returns (highest quals specification), controlling for level (3 dummies)*	-.19	-.87			

* significance levels not given because correlation is with aggregate score for returns, so variance is reduced

† sample sizes are totals across sectors 1-9

†† no cells of minimum size