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The value of progression in further education

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Research Discussion Paper 022

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Abstract

In this study, we investigate the **value of progression** associated with different vocational qualifications disaggregated by subject area of study. Previous analyses of labour market outcomes by **subject of study** demonstrated that estimates of labour market outcomes **vary considerably** by subject area, but this is in part as a result of the choice of counterfactual. In particular, the choice of the **adjacent level** of qualification (not controlling for subject of study) captures an 'average' return using learners with qualifications at the level below in any subject area in the counterfactual group. This approach does not take into account that learners tend to **self-select in specific subject areas** depending on their (observed and unobserved) characteristics and that **transitions** between **completely different subject areas are unlikely** to happen due to **admissions criteria**.

The analysis of the value of progression confirms that in the majority of subject areas, the **degree of specialisation increases as we move up in the qualifications framework**, and that as such, comparing outcomes of individuals on particular subject pathways against *anyone* in possession of the adjacent level of qualification may not may not fully reflect the options concretely available to students and the associated expected gain from progressing to further study.

If we consider earnings trajectories within the same subject areas, earnings differentials associated with *'Construction'*, *'Engineering'* and *'Business and Law'* are strong and positive (but lower in magnitude compared to analyses using the counterfactual of all learners with qualifications at the level below), while subject areas with typically zero earnings differential in previous analysis (such as *'Arts & Media'*) are associated with positive earnings differentials when considering progression within the same subject area.

Keywords: Vocational education, Administrative data, Returns to education

JEL codes: I26, J21, J31, J64

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Executive summary

In this paper we expand on our previous analysis of vocational qualification achievement and labour market outcomes by subject area (Battiston *et al* (2019) using the Longitudinal Education Outcomes data by looking in detail at the **value of progression** associated with vocational qualifications in different **subject areas of study**.

By considering the **value of progressing** within the RQF **along particular subject pathways**, this analysis addresses **three key methodological issues**:

- There is a significant degree of endogeneity in the choice **of subject area** (depending on learners' **aspirations, ability, and inclination**).
- When assessing labour market outcomes associated with specific qualification aims (e.g. NVQs or BTECs), different aims tend to be offered (and undertaken) in different subject areas. Aggregate - averaged - estimates will obscure this **compositional effect**.
- **Different aims have different admissions criteria reflecting prior attainment** and (possibly) relevant labour market experience.

When we restrict the counterfactual student as one who studies for a qualification in the same subject area, we see:

- Strongly positive earnings differentials associated with ***'Construction', 'Business & Law'*** and ***'Engineering'*** related subjects, (although these are lower compared to analyses where the counterfactual is the average student).
- There is also a positive earnings differential associated with progression in ***'Arts & Media'***, ***'Health'*** and ***'Retail'*** subject areas. In particular, the analysis indicates positive earnings differentials associated with BTEC qualifications (Level 2 and Level 3) in *'Arts & Media'* for men, as opposed to nil or negative differentials in previous analyses (those using as counterfactual the average level below student).

In general, the analysis indicates that, for the **majority of subject areas and RQF Levels**, **earnings differentials** associated with progression from a given level of qualification to the next are **positive**. Conversely, the impact on **employment probability and benefits dependency** is typically **not statistically significant** when considering progression from Level 3 to Level 4 qualification aims for most of the subject areas under consideration, while it is positive when looking at progression between lower levels of qualification. The implication is that all of the employment gains from achieving these qualifications are achieved at low levels of qualifications – and so the higher level qualification returns reflect the 'intensive' margin (i.e. wages or hours of work).

1. Introduction

In this study, we investigate the **value of progression** associated with different vocational qualifications disaggregated by subject area of study.

In a recent analysis (CVER Discussion Paper 021), we assessed the **labour market outcomes** associated with vocational qualifications in different subject areas compared to individuals in possession of vocational qualifications at the adjacent level below in ***any*** subject (as their highest level of achievement). That investigation of labour market outcomes by **subject of study** suggested that labour market outcomes **vary considerably** across different subject

areas, for different qualification aims and levels within the Regulated Qualification Framework (RQF). In particular:

- the earnings differentials accruing to individuals in possession of vocational qualifications in subjects related to *'Engineering'*, *'Construction'* and *'Business and Law'* are typically **very high and consistently above the average differential for each RQF level**. This was found to be **consistent across almost all qualification aims** irrespective of RQF level and was **particularly the case for women** (although there were only a small proportion of women undertaking *'Engineering'* and *'Construction'* learning aims); and
- at the other end of the spectrum, qualifications in *'Arts & Media'* tend to be associated with **negative earnings differentials when compared with a counterfactual of learners holding qualifications at the level below** in the RQF[1].

However, a number of effects need be considered when interpreting the results. First, learners often **choose the subject area of study depending on their aspirations, ability, and inclination** etc. This means that learners are not equally likely to choose any subject area but are likely to have a **higher propensity** to choose particular subject area(s) depending on their personal characteristics. The choice of the subject area of study is therefore **endogenous**.

Secondly, when assessing labour market outcomes associated with specific qualification aims (e.g. NVQs or BTECs), different aims tend to be offered (and undertaken) in different subject areas. For example, most NVQs are undertaken in '*Engineering'* and '*Construction'*, while NVQs are not offered in *'Arts & Media'*. Therefore, estimates for more aggregated subject-level learning aims (i.e. '*Engineering'*) will reflect this **compositional effect**. Finally, **different learning aims have different admissions criteria reflecting prior attainment** and (possibly) relevant labour market experience.

This study considers these issues and analyses the outcomes associated with the most likely trajectory undertaken by learners self-selecting into a particular education path. This constitutes an exploration of **progression** (i.e. the expected labour market differentials associated with progressing from a given level of the RQF to the level immediately above **in a specific subject area** (e.g. Level 2 in *'Engineering'* to Level 3 in *'Engineering'*)).

Clearly, it should be noticed that the baseline category varies for each group when using this approach and that some educational trajectories are associated with lower levels of earnings at any level of the RQF.

2. Data sources

As with the recent CVER Discussion Paper 021 on earnings differentials associated with vocational qualification in different subject areas, this analysis makes use of the Longitudinal Educational Outcomes (LEO) dataset, which combines information on educational achievement in England with labour market data[2]. Again, we include additional HMRC and DWP data which has become available since the original analysis presented in Discussion Paper 007, namely **HM Revenue and Customs P14** (annual earnings achieved through PAYE employment) and **P45 records** (employment spells), as well as the **National Benefits Database** from the DWP for the tax years 2015/16 and 2016/17. Moreover, information was

[1] This means that, at level N, the average earnings for these subject areas is below the average earnings that they are less than the average earnings for Level N-1 (controlling for individual and other characteristics)

[2] For a detailed description of the different data sources used in LEO, refer to CVER DP007.

available for the first time from the **HMRC self-assessment file**, providing information on self-employment. We were additionally able to supplement the Further Education data with qualifications achieved in the academic years 2015/16 and 2016/17[3].

Cleaning the data

To maintain comparability with previous research, this analysis focuses on the same cohorts of students used in the previous two studies: **Key Stage 4 leavers** attending English secondary schools in the academic years 2001/02, 2002/03 and 2003/04. In total, there were approximately **605,000** pupils in the 2001/02 cohort, **622,000** in the 2002/03 cohort and **645,000** in the 2003/04 cohort. However, approximately **15,760** pupils in the 2001/02 cohort were assigned an incorrect Pupil Matching Reference (PMR) number and, being unable to link them to records in the other datasets, we have removed them from the sample.

In addition, we removed those pupils with no records at age 28 in the HMRC and DWP datasets or with inconsistencies in the identifier (e.g. multiple HMRC/DWP identifiers linked to the same PMR), for which it was not possible to identify the labour market outcome at the age under consideration. Finally, in order to allow for sufficient job search time and to avoid any overlap between study years and tax years, we limit the final dataset to learners achieving their highest qualification by age 26[4]. As a result of this additional cleaning, the final sample comprises **474,000** pupils for the 2001/02 cohort, **518,000** pupils for the 2002/03 cohort and **545,000** pupils for the 2003/04 cohort.

Identifying the highest qualification

The Regulatory Qualification Framework (RQF) nine-point scale was used to identify the highest qualification aim undertaken and achieved by each learner at age 26 (and the corresponding subject area of study). Given the presence of multiple qualification aims within the same RQF Level, and following our previous approach, we **ranked** aims at the same RQF Level such that Apprenticeships were given highest ranking, followed by a full-level vocational qualification, a full-level academic qualification and, finally, other qualifications at that level that do not constitute a full qualification.

For instance, a learner who achieved both an Intermediate Apprenticeship and 5 or more GCSEs A*-C (and no qualifications at Level 3 or above) would be included in the treatment group for Intermediate Apprenticeships. Analogously, someone who holds both an NVQ Level 3 qualification and 2 or more GCE A-Levels (and no qualifications at Level 4 or above) would be retained in the treatment group for NVQ Level 3. A complete description of the qualification aims ranking used can be found in Table 2, whilst a summary of the sample by highest qualification is provided in Table 3[5].

Counterfactual groups

While the classification of qualification aims and the identification of the highest qualification are identical to the approach adopted in the previous research, there is a fundamental difference in the approach to the selection of the counterfactual group.

[3] Individuals in the relevant cohorts were aged between 28 and 30 in the tax year 2016/17. In the analysis, we pool the three cohorts together and focus on outcomes at the age of 28.

[4] Around 93% of learners in the relevant cohorts, who have a vocational qualification at Level 4 or below as their highest level of achievement, achieved their highest qualification by the age of 26.

[5] Controls for academic qualifications held are included in the econometric analysis. Consequently, the estimates show very little variation when changing the ranking so that academic qualifications are ranked above Apprenticeships. This is showed explicitly in Table 14 of CVER DP007.

To estimate the **value of progression** associated with each vocational qualification under consideration, ***rather*** than specify the counterfactual group as individuals in possession of a vocational qualification in **any subject** area at the RQF level immediately below as learners' highest level of achieved qualification, **we select individuals in possession of the adjacent level of qualification in the same subject area** (e.g. Level 3 in '*Engineering*' compared to Level 2 in '*Engineering*')**.**

Classification of subject areas

In order to assign vocational qualifications to specific subject areas, as with previous analysis, we follow the Tier 1 Sector Subject Areas as defined in the ILR framework[6]. In total, we assign **eleven categories**, **though it must be noted that some subject areas have little relevance for vocational qualifications** (i.e. *'History, Philosophy and Theology'*, *'Social Sciences'* and *'Languages, Literature and Culture'*); **and that others** (e.g. aims in the *'Preparation for Life and Work'* arena) are mostly taken at Level 1 and Entry Level. Learners with aims in **unknown subject areas were excluded** from the sample.

3. Methodological approach

Outcome variables

As in previous analyses, this study considers the impact of vocational qualification attainment on three labour market outcomes:

a. **Earnings, expressed as daily earnings** (i.e. total annual gross pay divided by total number of days in employment in the tax year).

b. **Employment**, **expressed as proportion of the year in employment** (number of days in employment in the tax year divided by 365 or 366).

c. **Benefit dependency, expressed as proportion of the year in receipt of at least one** of the following **active labour market benefits**: Jobseekers' Allowance (and Job Training Allowance), Income Support, and Employment and Support Allowance.

Model Specification

In order to assess the value of progression associated with different vocational qualifications by subject area, we estimate a model of the form:

$$y_{i,28} = \delta ach_{i,26} + \beta x_{i,t} + \epsilon_{i,t}$$

where:

- $y_{i,28}$ represents the dependent variable measured at age 28 (log daily earnings, proportion of the year in employment, or proportion of the year in receipt of benefits).
- $ach_{i,26}$ represents the highest qualification level attained by the individual at age 26.
- $x_{i,t}$ is a vector of control variables including information on the **ethnic background** of the individual, **time elapsed since the learner left education**, previous **eligibility for Free School Meals (FSM)**, **Special Education Needs (SEN)** status, **IDACI** (income deprivation index) score (all measured at Key Stage 4), **Key Stage 2 Maths and English test score**, whether achieved **2 or more A-Levels**, whether achieved **5 or more A*-C GCSEs**, whether achieved **5 or more A*-G GCSEs**, **Key Stage 4 establishment controls**,

[6] See https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/624339/Appendix_H_ILR_2017_to_2018_v1_Published_July17.pdf

a **cohort dummy** and (limited to the earnings regression) **postcode area of residence**[7] in the tax year and **source of income** (PAYE only, self-assessment only, or both)[8].

- All regressions were estimated separately for males and females.
- All regressions were estimated separately for each subject area.
- The earnings regressions were estimated using Ordinary Least Squares (OLS), whilst both the employment and the benefits regression were estimated using a fractional logit (Generalised Linear Model)[9].

Additionally, it should be noted that the analysis was undertaken **in two stages**. Initially, we focused on the value associated with progressing from a given RQF level **into the RQF level just above it** (**irrespective of the specific qualification aim undertaken**) **for each subject area separately** (i.e. we consider the value of progressing from a Level 2 qualification in *'Engineering'* into a Level 3 qualification in *'Engineering'*, irrespective of the specific qualification aim undertaken (e.g. NVQ Level 3 as opposed to BTEC Level 3)).

Subsequently, **for each RQF level separately**, we considered the value of **progressing into specific qualification aims within each subject area**. For instance, we considered the value of progressing from any Level 2 qualification in *'Engineering'* to an NVQ Level 3 in *'Engineering'* or BTEC Level 3 in *'Engineering'* separately. It is noteworthy that, at both stages, the counterfactual group comprises of **all individuals holding a vocational qualification at the RQF Level just below** (in the same subject area) **as highest**, irrespective of the specific qualification aim achieved. Due to limited sample sizes, it was not possible to restrict the counterfactual group in the second specification to learners achieving the same aim as that under consideration (e.g. BTECs Level 3 in *'Engineering'* vs BTECs Level 2 in *'Engineering'*).

4. Descriptive statistics

Qualification attainment

In Figure 1, for each level of **highest qualification attainment**[10], we present the **subject composition** of vocational qualifications at Level 4 or below of the RQF – by qualification aim and gender. As expected, there is wide variation across both gender and qualification type.

The analysis illustrates both the gender split across different subject areas, but also the compositional effect of the qualifications offered and undertaken in different subject areas.

In particular, a **large majority of men** with an **Advanced or Intermediate Apprenticeship** hold a qualification in *'Engineering'* or *'Construction'* (which comprise **78%** of Advanced Apprenticeships and **55%** of Intermediate Apprenticeships). The corresponding figure for men in possession of Level 4 qualifications is **53%** (while **23%** have a qualification in *'Business and Law'*). For men in possession of NVQs at Level 3 and Level 2, the proportion holding qualifications in '*Engineering'* and '*Construction'* are **38%** and **52%** respectively.

In contrast, BTEC qualifications are predominantly undertaken in *'Arts & Media'* related subject areas (**31%** and **22%** of BTECs at Level 3 and Level 2 (respectively)*), 'Leisure and*

[7] Postcode information is provided through the HM Revenue and Custom P14 file containing information on annual earnings and therefore is not available for the other outcome variables.

[8] Due to the assumptions used for self-employment, all individuals with positive income from self-employment (either from sole trading or partnership) are considered to be in employment for 100% of the tax year (see Annex 1).

[9] Since the dependent variable is expressed as a proportion varying between 0 and 1.

[10] One important point to remember is that these figures refer only to men and women holding a given **vocational qualification as their highest achieved qualification** (i.e. learners who did not achieve qualifications at higher level).

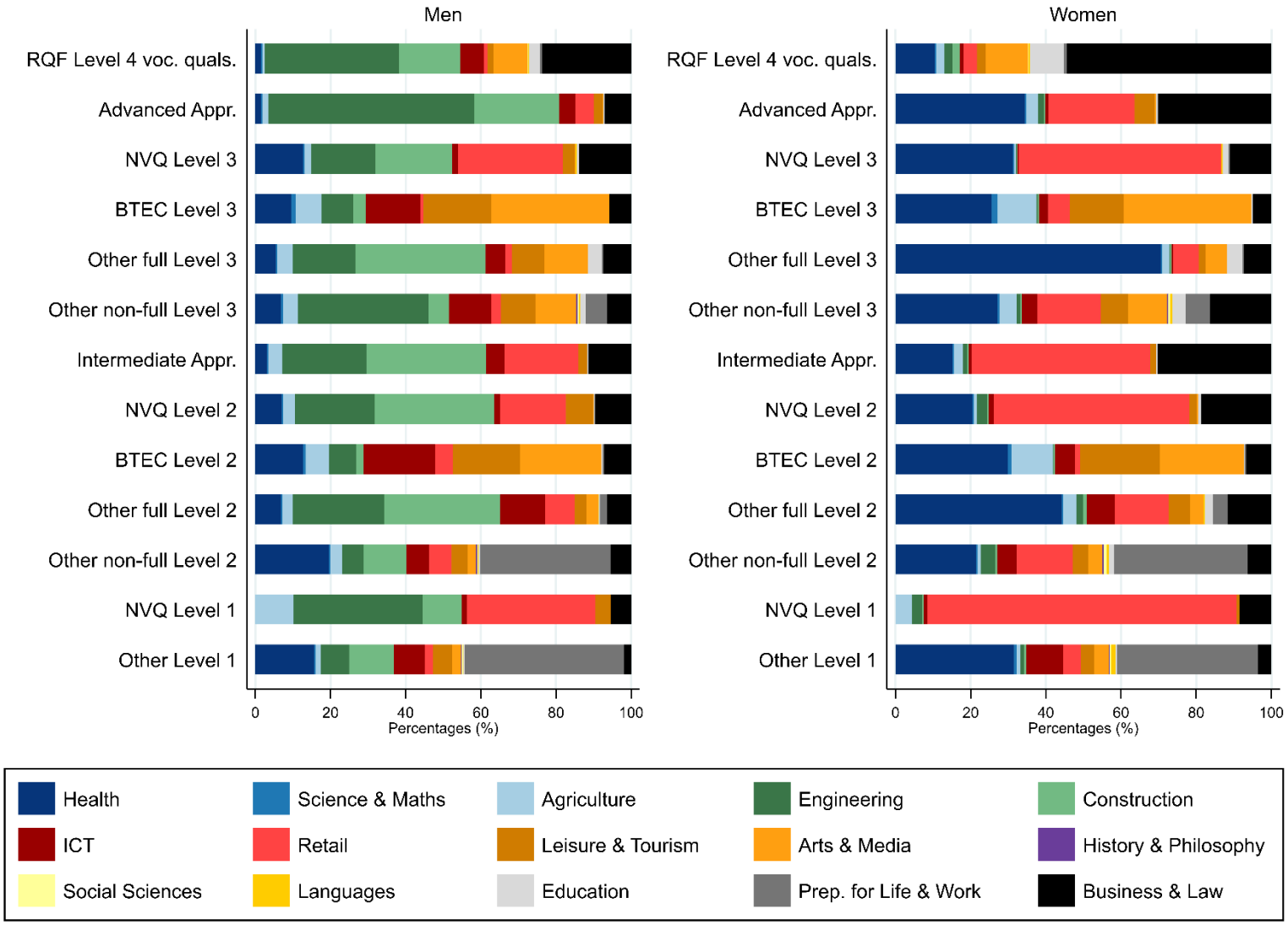
Tourism' (**18%** of BTECs at Level 3 and Level 2), and *'ICT'* (**15%** and **19%** at BTEC Level 3 and Level 2 respectively). Qualifications in *'Engineering'* and *'Construction'* represent only **12%** of the total of BTEC Level 3 male learners and **9%** of BTEC Level 2 male learners.

For **women**, a very different pattern emerges: '*Health'* is relatively popular across most qualification aims and is undertaken by more than **35%** of female learners whose highest achieved qualification is at Level 3, and by more than **25%** of those with their highest qualification at Level 2. '*Health'* related learning aims are particularly prevalent amongst females in possession of Advanced Apprenticeships (**35%**), NVQs at Level 3 (**30%**), BTECs at Level 3 and Level 2 (**26%** and **30%** respectively) and Other full vocational qualifications at Level 3 and Level 2 (**64%** and **43%** respectively).

The subject area *'Business and Law'* is also particularly prevalent amongst female Level 4 learners (**56%** of the total), Advanced Apprenticeships and Intermediate Apprenticeships (about **30%**) and for females with NVQs at Level 2 (**18%**). On the other hand, the subject category *'Retail'* represents around **55%** of NVQs at Level 3 and Level 2, as well as **48%** of Intermediate Apprenticeships and **23%** of Advanced Apprenticeships.

Similar to the pattern for men, *'Arts & Media'* and *'Leisure and Tourism'* are relatively popular subjects for women holding BTECs at Level 3 and Level 2 as highest qualification (**34%** and **14%** at Level 3, and **22%** and **20%** at Level 2 respectively).

Figure 1 Subject composition, by highest qualification and gender

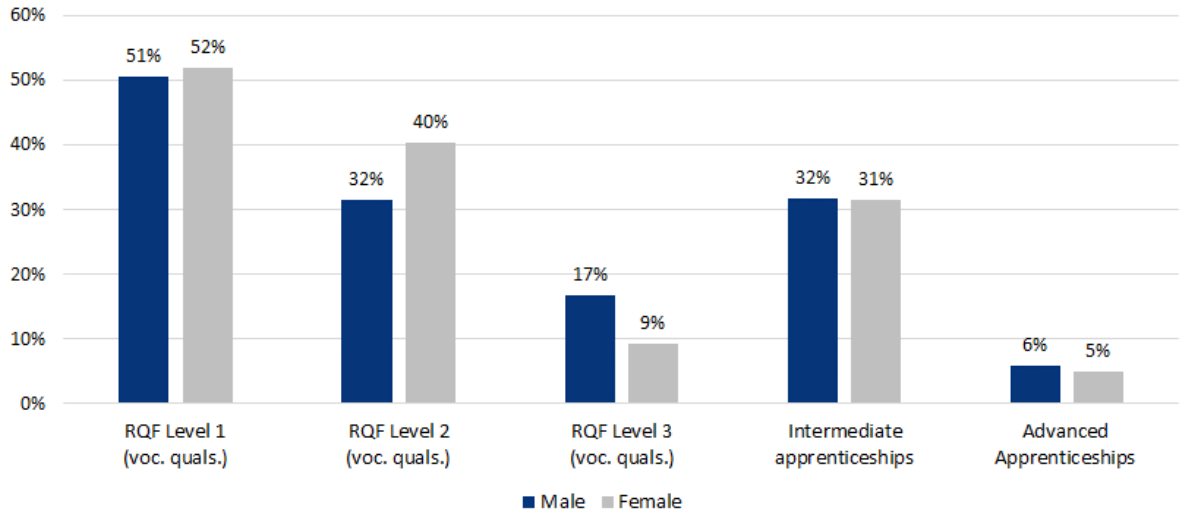


Source: London Economics' analysis of Longitudinal Education Outcome (LEO) data

Progression into higher RQF Levels

Whilst in the previous section we focused on highest educational attainment, in this section we explore **progression within the Regulatory Qualification Framework**. Specifically, Figure *2* displays, for **each qualification level and gender**, **the proportion of achievers** progressing to and **achieving at higher RQF Levels**. The same information disaggregated by subject area is presented in Figure 13 in the Annex. It should be noted that we focus here on progression **from vocational qualifications** at a given RQF Level to either vocational or academic qualifications at **higher RQF Levels** (in **any subject area**). To take an example, the analysis indicates that only 49% of man holding a Level 1 vocational qualification in an *'Health'* related subject progress to achieve qualifications at a higher RQF Level (in *'Health'* or any other subject).

Figure 2 Proportion of individuals progressing to and achieving at higher RQF Level, by qualification level and gender



Note: The figures refer to the 2001/02, 2002/03 and 2003/04 cohort of KS4 students who attained their highest qualification at the age of 26 or before and who are in employment at age 28. Descriptive statistics are only shown for treatment groups of at least 50 individuals. **Source: London Economics' analysis of Longitudinal Educational Outcome (LEO) data**

The proportion of individuals progressing from one qualification level to the next is generally quite low. For instance, only **about half** of RQF Level 1 achievers progress into higher RQF Levels; however, this is in part accounted for by the fact that we **restrict the analysis to progression from vocational qualifications** only. As expected, the analysis also illustrates that the proportion of learners progressing from one level of qualification to the next declines as we move up the qualifications ladder (in all subject areas), for both men and women.

Considering progression in greater detail, the proportion of **male Level 1 achievers attaining higher RQF Levels** ranges between **40%** and **64%** depending on the subject area - with **progression** being typically **more common in the field of *'Engineering'* and *'Construction'*** compared to other subject areas.

At the intermediate and upper end of the qualification spectrum, more than **97%** of learners completing Advanced Apprenticeships achieved these qualifications as their highest qualification (although there are some notable subject outliers in the sense that approximately **7%** of learners in the field of *'Engineering'* and **17%** in the field of '*Business & Law'* progress to qualifications at higher RQF Levels respectively).

The patterns for **women** in general are very similar, though **progression from Level 1** and **Level 2** into higher RQF Levels is **marginally more likely** compared to men (in all subject areas with the exception of *'Social Sciences'* and *'Languages'*).[11]

Transitions across subject areas

We also investigate **transitions across subject areas** for learners **progressing from one level of qualification to the next**[12]. In

[11] With respect to these subject areas, less than 40% of female Level 1 achievers progress into higher RQF Levels. However, it is important to note that *'Social Sciences'* and *'Languages'* are fields of study typically associated with more academic orientated qualifications and relatively few female learners undertake vocational qualifications in these fields.

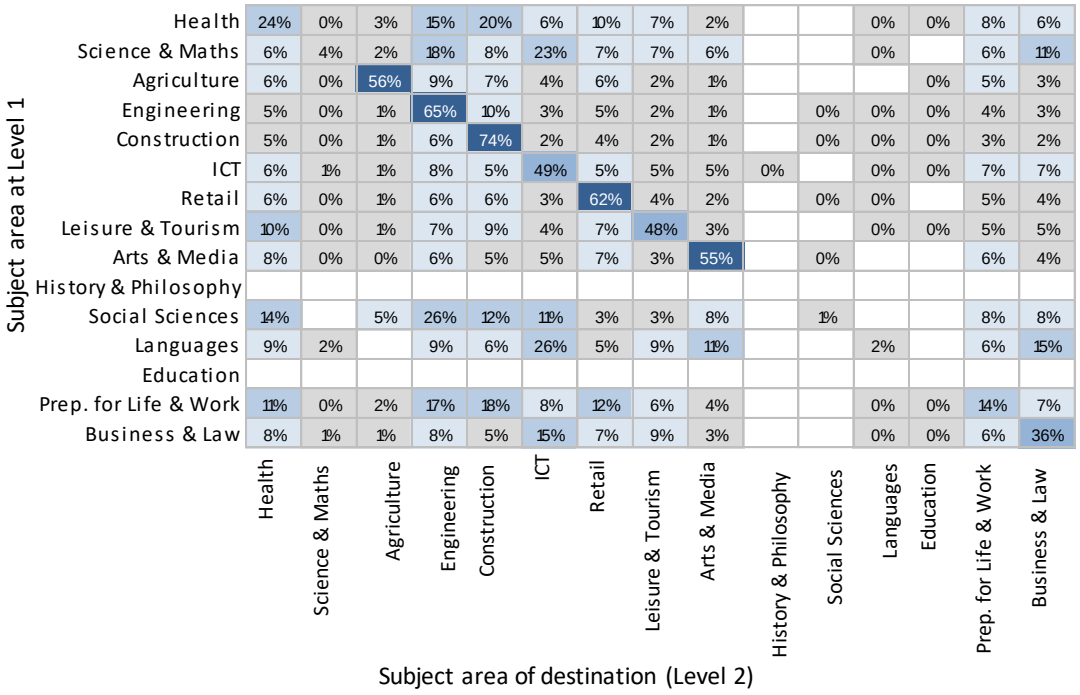
[12] The following methodological caveats apply:

- Unlike the other descriptive statistics presented, we do not limit the statistics on transitions across subjects to individual achieving a given RQF Level as their highest qualification. Instead, in order to provide a more complete picture of transitions across subjects, we include all individuals progressing from a given RQF Level to the next, irrespective of further achievements.
- The statistics here presented only include individuals holding vocational qualifications at a given Level and vocational qualifications at the Level below. In particular, this means that individuals holding a vocational qualification at Level 2 and no vocational qualifications at Level 1 were excluded from the sample.
- It is possible that an individual could achieve two qualifications at the same RQF Level in different subject areas. In such cases, we only consider the subject area of study associated with the qualification achieved at the later date.

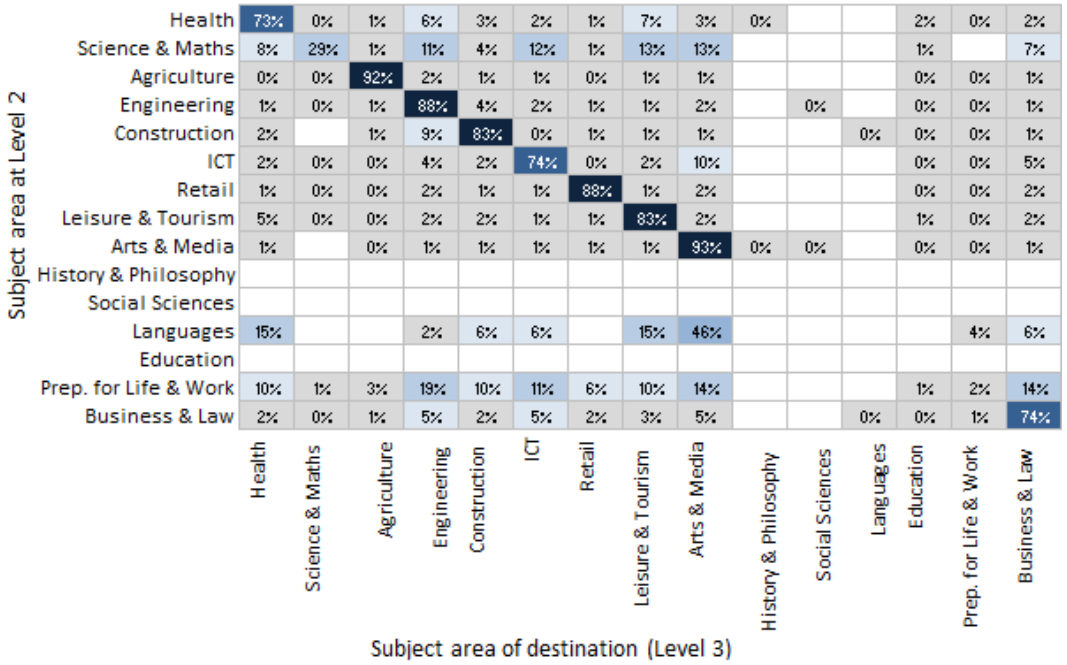
Figure **3**, we display for each qualification level and subject area (rows), the **destination subject area** of individuals progressing to qualification aims at the **RQF Level just above that under consideration** (columns).

Figure 3a Subject area of destination by subject area of origin and RQF Level (1) – Men

Progression from RQF Level 1 to RQF Level 2

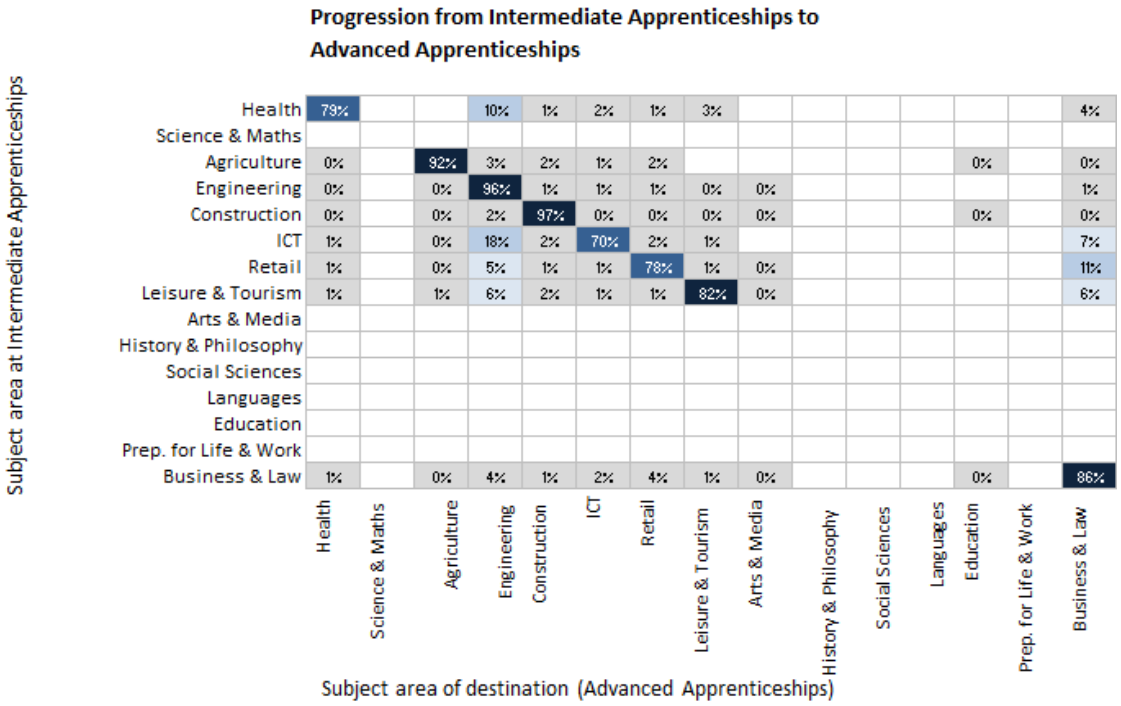


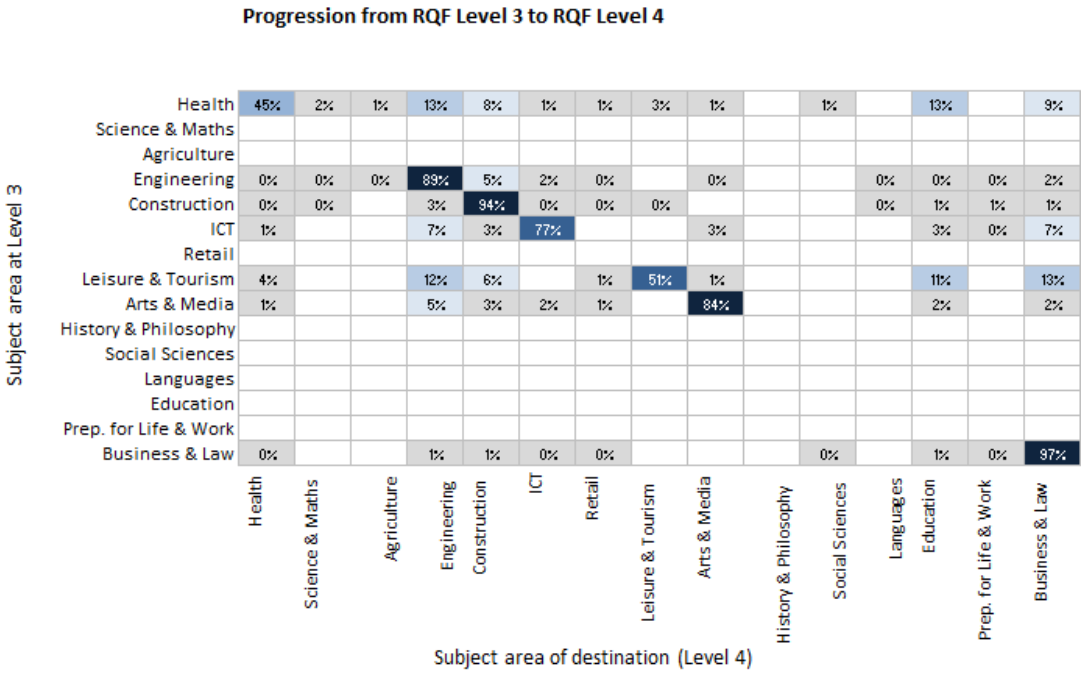
Progression from RQF Level 2 to RQF Level 3



Note: The heat maps present the subject of destination by subject of origin for learners progressing (and achieving) at two consecutive RQF Levels. The figures refer to the 2001/02, 2002/03 and 2003/04 cohort of KS4 male students who attained their highest qualification at the age of 26 or before and who are in employment at age 28. Descriptive statistics are only shown for treatment groups of at least 50 individuals.
Source: London Economics' analysis of Longitudinal Educational Outcome (LEO) data

Figure 4a Subject area of destination by subject area of origin and RQF Level (2) – Men





Note: The heat maps present the subject of destination by subject of origin for learners progressing (and achieving) at two consecutive RQF Levels. The figures refer to the 2001/02, 2002/03 and 2003/04 cohort of KS4 male students who attained their highest qualification at the age of 26 or before and who are in employment at age 28. Descriptive statistics are only shown for treatment groups of at least 50 individuals. ***Source: London Economics' analysis of Longitudinal Educational Outcome (LEO) data***

For example, the top matrix of

Figure **3**a presents the subject destination of Level 1 male achievers who went on to achieve a Level 2 vocational qualification (with the subject area of the original learning aim displayed along the rows). To take a specific example, of those men achieving a Level 1 qualification in *'Health'* related subject areas and progressing to achieve a Level 2 vocational qualification, approximately **24%** achieved a Level 2 qualification in a *'Health'* related subject area, while **15%** achieved a qualification at Level 2 in *'Engineering'*, **20%** in *'Construction'*, **10%** in *'Retail'* and the remaining **31%** achieving learning aims in other subject areas.

As expected, in the majority of subject areas, the **degree of subject specialisation increases as we move up on the qualifications framework**. This is illustrated clearly in the transition matrices: the cell shading along the main diagonal (reporting the percentage of learners achieving qualifications at adjacent RQF Levels in the **same** subject area) becomes darker (i.e. illustrating that transitions become more homogenous or concentrated within the same subject area) as we move from transitions at the bottom of the qualification framework to transitions at the top of the framework.

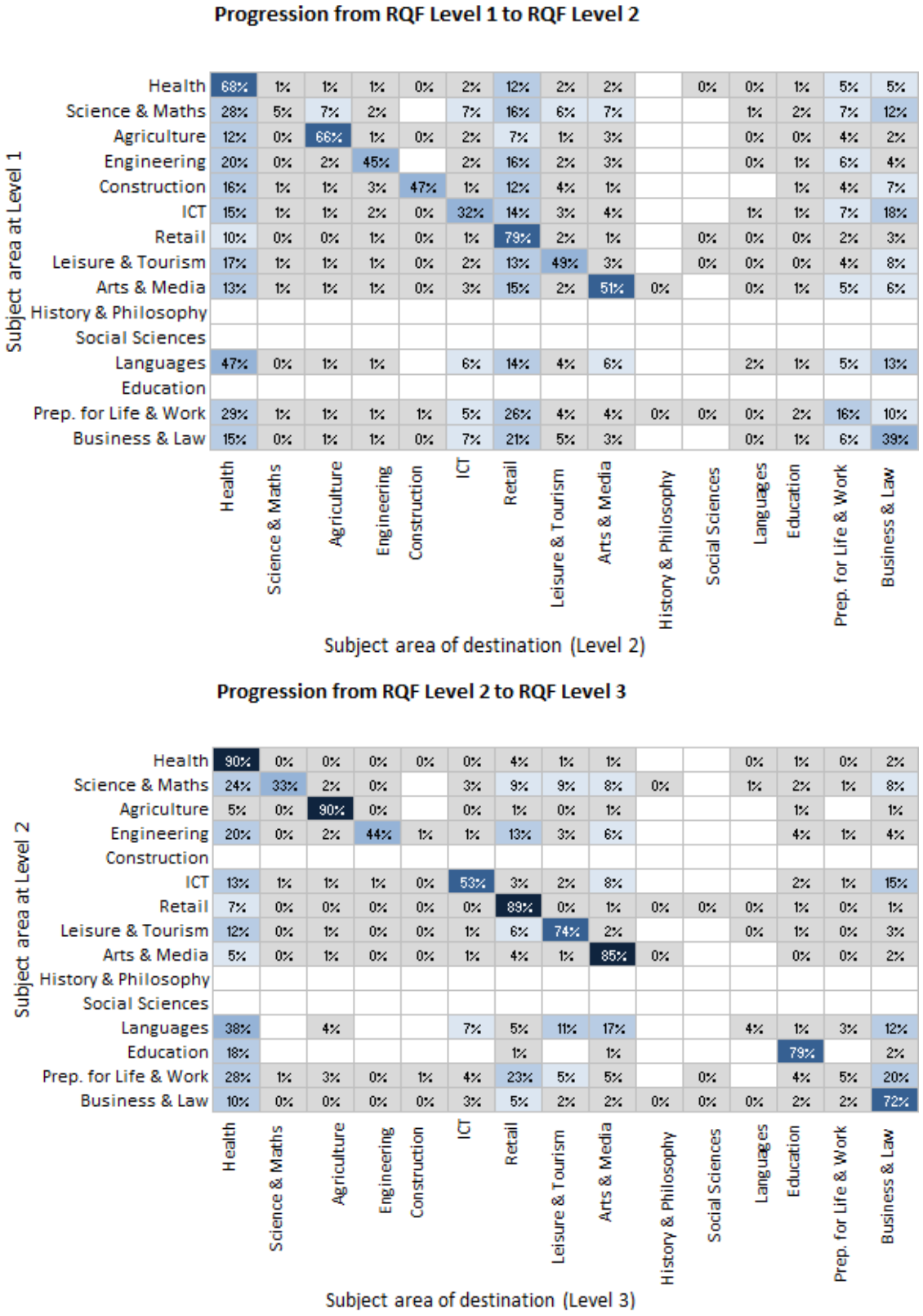
In more detail, for all learners, progressing from Level 1 to Level 2 is often associated with a change in the subject area of study, which is not particularly surprising as Level 2 vocational qualifications typically do not have entry requirements in terms of the specific subject area of study at Level 1.

Illustrating the subject dispersion of subsequent attainment, **transitions to different subject areas** are particularly **common** for **men** with a **Level 1 qualifications** in ***'Health'*** (with **less than a quarter** of learners completing a Level 2 qualification in *'Health'*). Similarly, in ***'Leisure & Tourism'***, only **half** of learners progressing to Level 2 achieve in the same field of study), while in ***'Business & Law'***, less than **40%** of learners progressing to Level 2 remained in the same field of study. Similarly, for **women** achieving **Level 1 qualifications** in ***'ICT'***, ***'Engineering'***, ***'Construction', 'Leisure & Tourism'*** and ***'Business & Law'*****, less than half** of learners achieving a Level 2 qualification did so in the same subject area as that at Level 1.

Considering the subject area of destination of learners progressing from Level 3 to Level 4, **learners typically remain in the same field of study**, with the exception of male learners achieving Level 3 qualifications in the field of *'Health'* and *'Leisure & Tourism'* (where there are relatively frequent transitions into *'Engineering'*, *'Business & Law'* and *'Education'* related subjects). A similar outcome is for female learners achieving Level 3 qualifications in the fields of *'Retail'* and *'Leisure & Tourism'*, where a significant proportion of transitions to '*Education', 'Health'* and *'Business & Law'* related subjects occur).

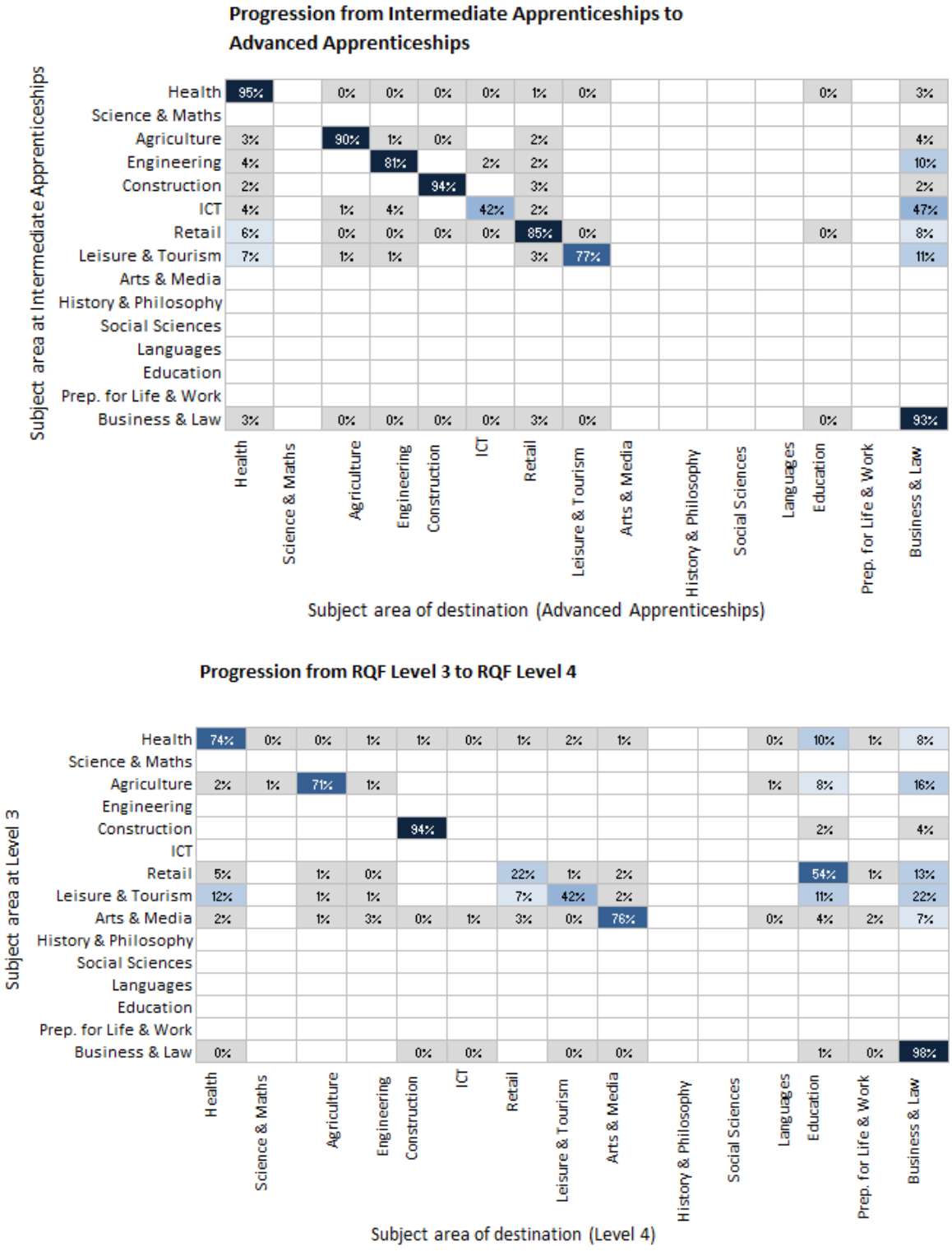
Male and female learners progressing from **Intermediate Apprenticeships to Advanced Apprenticeships** tend to stay in the **same field of study**. To take an example, more than **95%** of men achieving an Intermediate Apprenticeships in '*Engineering*' and progressing to an Advanced Apprenticeship remained in the same field of study. The corresponding percentage for women stands at **81%**. The main **exception** are **women** with **Intermediate Apprenticeships in *'ICT'***. Amongst these learners who progressed to an Advanced Apprenticeship, only around **42%** remained in the same field whilst **47%** moved into the *'Business & Law'* area.

Figure 4b Subject area of destination by subject area of origin and RQF Level (1)- Women



Note: The heat maps present the subject of destination by subject of origin for learners progressing (and achieving) at two consecutive RQF Levels. The figures refer to the 2001/02, 2002/03 and 2003/04 cohort of KS4 female students who attained their highest qualification at the age of 26 or before and who are in employment at age 28. Descriptive statistics are only shown for treatment groups of at least 50 individuals.
Source: London Economics' analysis of Longitudinal Educational Outcome (LEO) data

Figure 4b Subject area of destination by subject area of origin and RQF Level (2)- Women



Note: The heat maps present the subject of destination by subject of origin for learners progressing (and achieving) at two consecutive RQF Levels. The figures refer to the 2001/02, 2002/03 and 2003/04 cohort of KS4 female students who attained their highest qualification at the age of 26 or before and who are in employment at age 28. Descriptive statistics are only shown for treatment groups of at least 50 individuals.
Source: London Economics' analysis of Longitudinal Educational Outcome (LEO) data

Labour market outcomes

In this section, we present a some **descriptive statistics** on **labour market outcomes** (mean and median annual salary, average proportion of the year spent in employment and average proportion of the year spent in receipt of active labour market benefits), by highest qualification attained, subject area of study and gender.

Average annual earnings

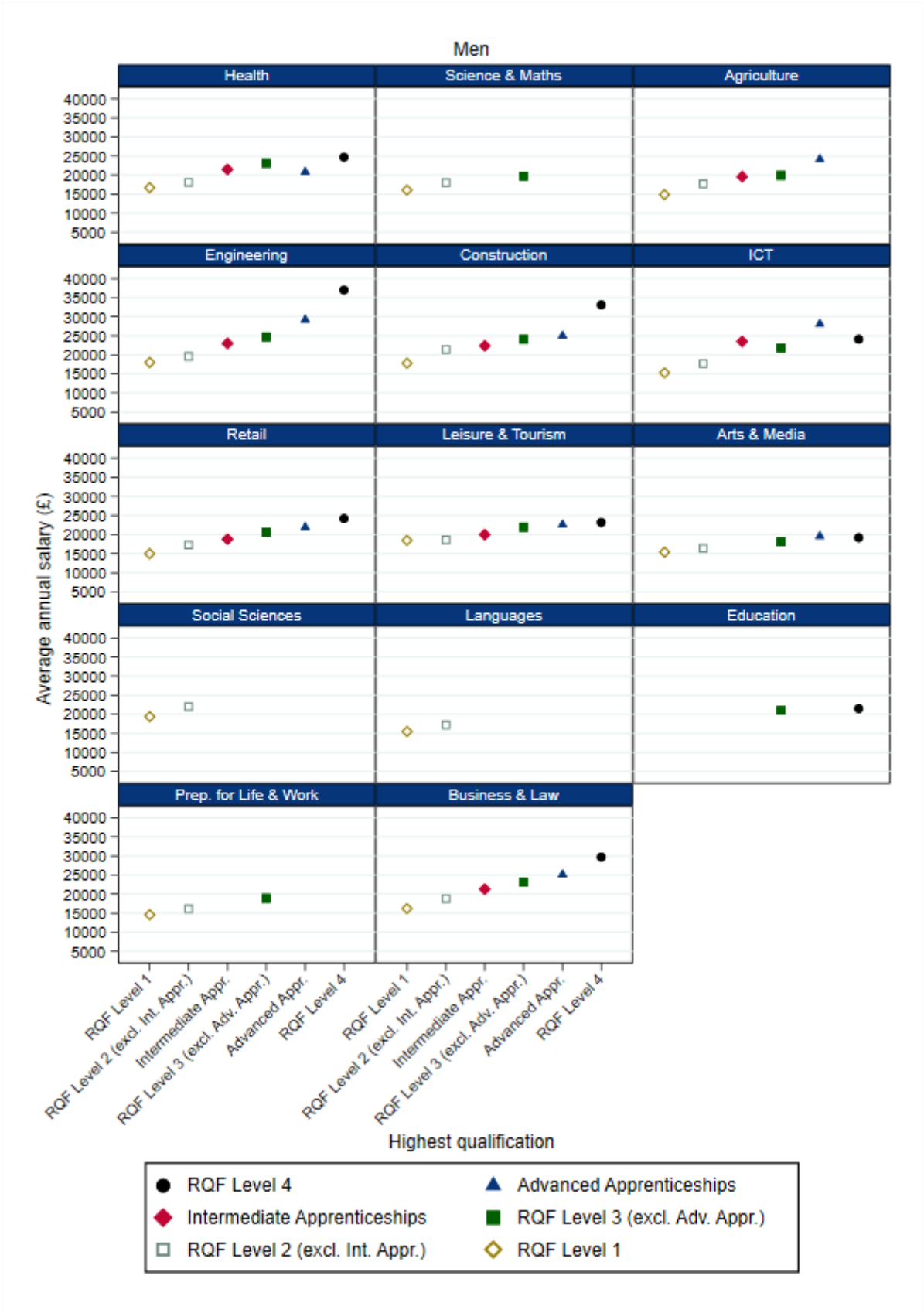
Figure 5 presents average annual salary, by highest qualification (level and type), by subject area of study and gender. For most subject areas, the **average annual earnings increase as we move up on the qualifications spectrum**[13]. For both men and women, *'Engineering'* and *'Construction'* are the subject areas with the largest **increase** in average annual earnings associated with progressing from the bottom to the top of the Regulatory Qualification Framework.

In addition, for **men** in particular, the analysis identifies **substantial subject-level variation** in the average annual earnings associated with qualifications at the same RQF level, with some subject areas being associated with consistently higher average annual earnings than others. For example, average annual earnings for men in possession of a qualification in ***'Engineering'*** are consistently **higher than the overall average** for that (aggregate) qualification level. In stark contrast, raw annual earnings for males in possession of qualifications in ***'Arts & Media'*** are **significantly lower** than the average. Indeed, men in possession of Level 4 qualifications in *'Arts & Media'* and *'Engineering'* achieve earnings of **£19,200** and **£37,000** per annum respectively, while for men in possession of Level 3 qualifications, the corresponding estimates stand at **£18,100** and **£24,700** respectively. Often the raw annual earnings for males with Level 3 qualifications in *'Arts & Media'* are lower than the raw annual earnings achieved by men in possession of Level 2 qualifications in *'Engineering'* or *'Construction'* (although estimates are not corrected for the number of days in employment during the tax year).

For **women**, there is also **some variation** (albeit more limited) **in raw annual earnings** by subject area. Women in possession of their highest qualification in ***'Engineering'*** **or** ***'Construction'*** **earn substantially more than the average**, however, they represent a very small proportion of those in possession of qualifications at that level. Looking at the other subject areas, women with qualifications in ***'Business and Law'***, ***'Agriculture'*** **and** ***'Retail'*** related subjects tend to have raw annual earnings that are **above average** (although with some exceptions), while women in possession of qualifications in ***'Health'*** **and** ***'Education'*** related subject areas tend to have **below-average** annual earnings.

[13] Although there are some exceptions: for both men and women, Advanced Apprenticeships in the field of *'ICT'* are associated with higher annual earnings than Level 4 qualifications in the same field.

Figure 5a Average annual salary, by highest qualification level and subject area - Men



Note: The figures refer to the 2001/02, 2002/03 and 2003/04 cohort of KS4 male students who attained their highest qualification at the age of 26 or before and who are in employment at age 28. Descriptive statistics are only shown for treatment groups of at least 50 individuals. Figures are rounded to the nearest 100. Observations belonging to the top and bottom 1% of the earnings distribution have not been included. ***Source: London Economics' analysis of Longitudinal Educational Outcome (LEO) data***

Figure 5b Average annual salary, by highest qualification level and subject area - Women

Note: The figures refer to the 2001/02, 2002/03 and 2003/04 cohort of KS4 male students who attained their highest qualification at the age of 26 or before and who are in employment at age 28. Descriptive statistics are only shown for treatment groups of at least 50 individuals. Figures are rounded to the nearest 100. Observations belonging to the top and bottom 1% of the earnings distribution have not been included. ***Source: London Economics' analysis of Longitudinal Educational Outcome (LEO) data***

Proportion of year in employment

As with annual earnings, the **average proportion of the year spent in employment increases as we move up the qualification spectrum** for both men and women (**Error! Reference source not found.**). In fact, while the proportion of the year in employment for males and females holding vocational qualifications at Level 4 is around **83%**, the corresponding figure is **68%** for men with NVQs at Level 1 and **47%** for women in possession of qualifications at NVQ Level 1[14]. The proportion of the year spent in employment is **comparatively similar across genders** when considering **qualifications at Level 3 and above**, while for **qualifications at Level 2, the gender gap is more marked**. Furthermore, the analysis indicates that there is significant variation in the proportion of the year spent in employment between individuals holding qualifications in different subject areas. Individuals in possession of qualifications in ***'Health'***, ***'Business** and **Law'*** and ***'Leisure and Tourism'*** **typically spend a higher proportion of the year in employment on average**, although estimates for employment do vary across gender, qualification type and level.

Proportion of year in receipt of active labour market benefits

As expected, the proportion of the year spent in receipt of **active labour market benefits** (Table 7) **is higher for individuals holding highest qualifications towards the bottom end of the RQF spectrum** and decreases on moving to higher-level qualifications (for both men and women). In general, **women** appear to spend a **slightly smaller proportion of the year in receipt of active labour market benefits** compared to men, with gender differences are more marked for qualifications at the bottom of the RQF (compared to higher levels). **Subject-level differences are more pronounced for women** than for men, but these difference decline on moving up the qualification spectrum.

The individual characteristics of learners

Error! Reference source not found. and Figure 15 (in the Annex) provide an illustration of the **individual characteristics** of our cohorts of interest, by level of highest qualification and subject area, for men and women separately. The individual characteristics here considered were : **Key Stage 2 test score in English and Maths**[15]; Registration for **Free School Meals**; and **Special Educational Needs (these last two measured at KS4)**.

Considering Key Stage 2 attainment, unsurprisingly average KS2 test score increases as we climb up the qualifications spectrum from Level 1 to Level 4, for all subject areas (for both men and women). Individuals in possession of **Level 1 qualifications** (in any subject) are associated with particularly **low KS2 test scores** (ranging between **30** and **47**, depending on the subject area of highest achievement), which compares to KS2 test scores ranging between **50** and **65** at higher RQF levels (e.g. RQF Level 4, RQF Level 3 and Advanced Apprenticeships).

The analysis also illustrates the **subject-level variation for both genders**: achievers in the field of ***'Business & Law'***, ***'Construction'*** **and** ***'Engineering'*** have typically **higher KS2 test score in both Maths and English** compared to achievers at the same level in the other subject areas.

With respect to **registration for Free School Meals**, the analysis indicates that a **larger proportion of achievers at the lower RQF levels** were eligible for Free School Meals compared

[14] Proportion of the year in employment is computed as number of days in employment in the tax year divided by 365 or 366.

[15] For both English and Maths, for each pupil, the total score is obtained summing over marks obtained in three different assessment tests (with maximum scores of 40, 40 and 20 respectively). Therefore, KS2 scores in English and Maths range between 0-100.

to achievers of qualifications at higher levels. Amongst **men**, ***'Agriculture', 'Engineering'*** **and** ***'Construction'*** were identified as the subject areas with the **lowest proportion of FSM** eligible achievers (at all levels). Amongst women, ***'Agriculture'*** related subject areas were associated with relatively **low proportions of FSM** compared to other subject areas.

Similarly, the proportion of individuals with **Special Educational Needs** (SEN) **decreases as qualification levels** increase. The analysis also suggests that there is substantial **subject-level variation**: to take an example, more than **65%** of men in possession of Level 1 vocational qualification in *'Agriculture'* (as highest) had special education needs (SEN) compared to less than **45%** of achievers in *'Engineering'* and *'Construction'.*

6. Econometric findings

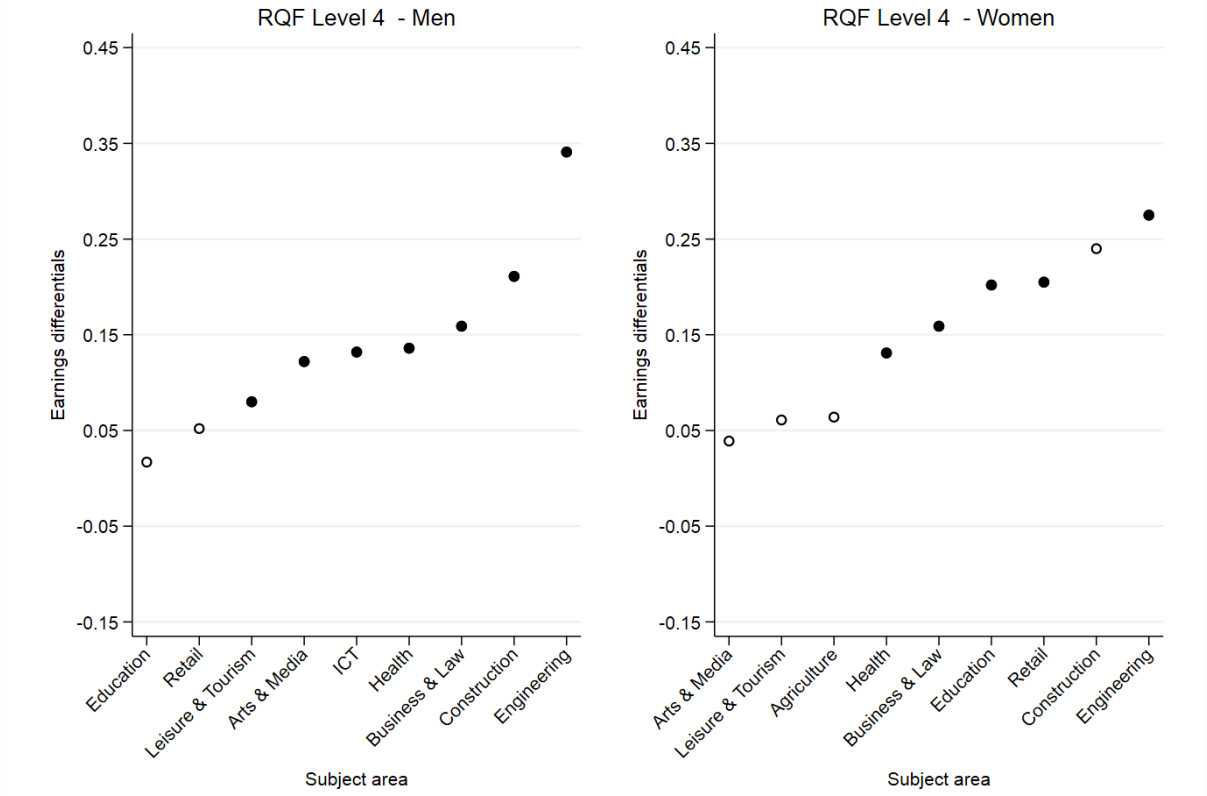
6.1 Labour market outcomes by RQF level

Earnings

Figure 6 reports the marginal effect on **daily earnings** of **progressing from** possession of **vocational qualifications at Level 3 to vocational qualifications at Level 4** for the different subject areas of study, by gender. Whilst the figure displays raw coefficients, in the text we refer to percentage effects[16].

Amongst men, **earnings differentials are generally positive** for all subject areas under consideration, with the exception of ***'Education'*** and ***'Retail'***, where despite the positive point estimates, there is no statistical significance. For other subject areas, the **estimates of the earnings differentials typically range between 14% and 24%**; however, progression in the field of ***'Engineering'*** **leads to a larger premium** (in excess of **40%**).

Figure 6 Earnings differentials associated with progressing from RQF Level 3 to RQF Level 4, by subject area and gender



Note: The charts display raw (unexponentiated) coefficients. Coefficients not statistically significant at the 10% level are shown as hollow circles. The figures refer to the 2001/02, 2002/03 and 2003/04 cohort of Key Stage 4 students who attained their highest qualification at the age of 26 or before. Results are only shown for treatment groups of at least 50. **Source: London Economics' analysis of Longitudinal Education Outcome (LEO) data**

For women, the analysis indicates that **positive earnings differentials** are associated with progression in the field of ***'Retail'*** (**23%**), ***'Education'*** (**22%**), ***'Business & Law'*** (**17%**) and ***'Health'*** (14%). **A large earnings differential** (in excess of **30%**) is estimated in relation to progression from Level 3 to Level 4 in the field of ***'Engineering'***, however this subject area is

[16] Computed as exp(β)-1.

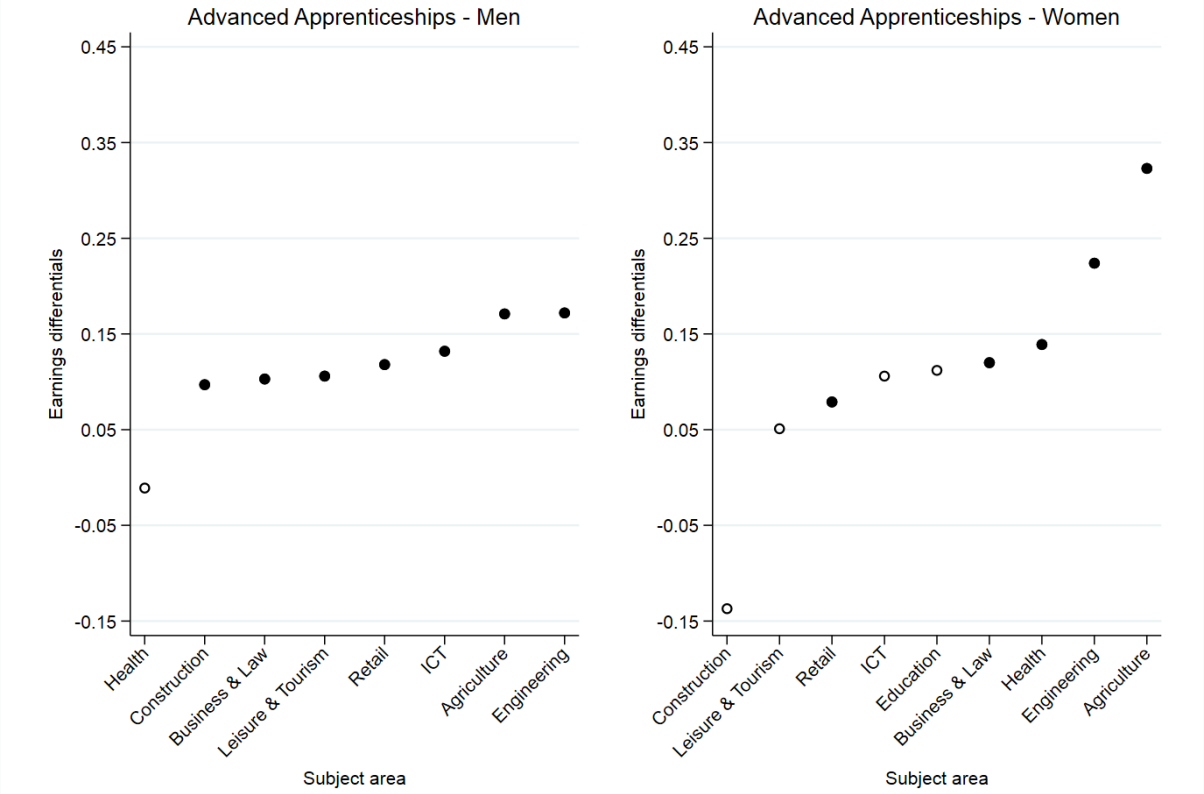
typically chosen by a relatively **small proportion of female learners**. For the remaining subject areas (***'Arts & Media'***, ***'Leisure and Tourism'***), the analysis doesn't identify statistically significant effects associated with progression between Level 3 and Level 4.

Progression from Intermediate Apprenticeships to Advanced Apprenticeships

The earnings differentials associated with **progression from Intermediate Apprenticeships to Advanced Apprenticeships** by subject area and gender are presented in Figure 7. As previously, the figure displays raw coefficients, while in the text we refer to percentage effects.

Considering **men** in the first instance, the analysis indicates the existence of **positive earnings differentials** associated with progression from Intermediate Apprenticeships to Advanced Apprenticeships for all subject areas, with the exception of ***'Health'***. **Estimated premia range between 10%** (for ***'Construction'***) **and 19%** (for ***'Agriculture'*** and ***'Engineering'***).

Figure 7 Earnings differentials associated with progressing from Intermediate Apprenticeships to Advanced Apprenticeships, by subject area and gender



Note: The charts display raw (unexponentiated) coefficients. Coefficients not statistically significant at the 10% level are shown as hollow circles. The figures refer to the 2001/02, 2002/03 and 2003/04 cohort of Key Stage 4 students who attained their highest qualification at the age of 26 or before. Results are only shown for treatment groups of at least 50

Source: London Economics' analysis of Longitudinal Education Outcome (LEO) data

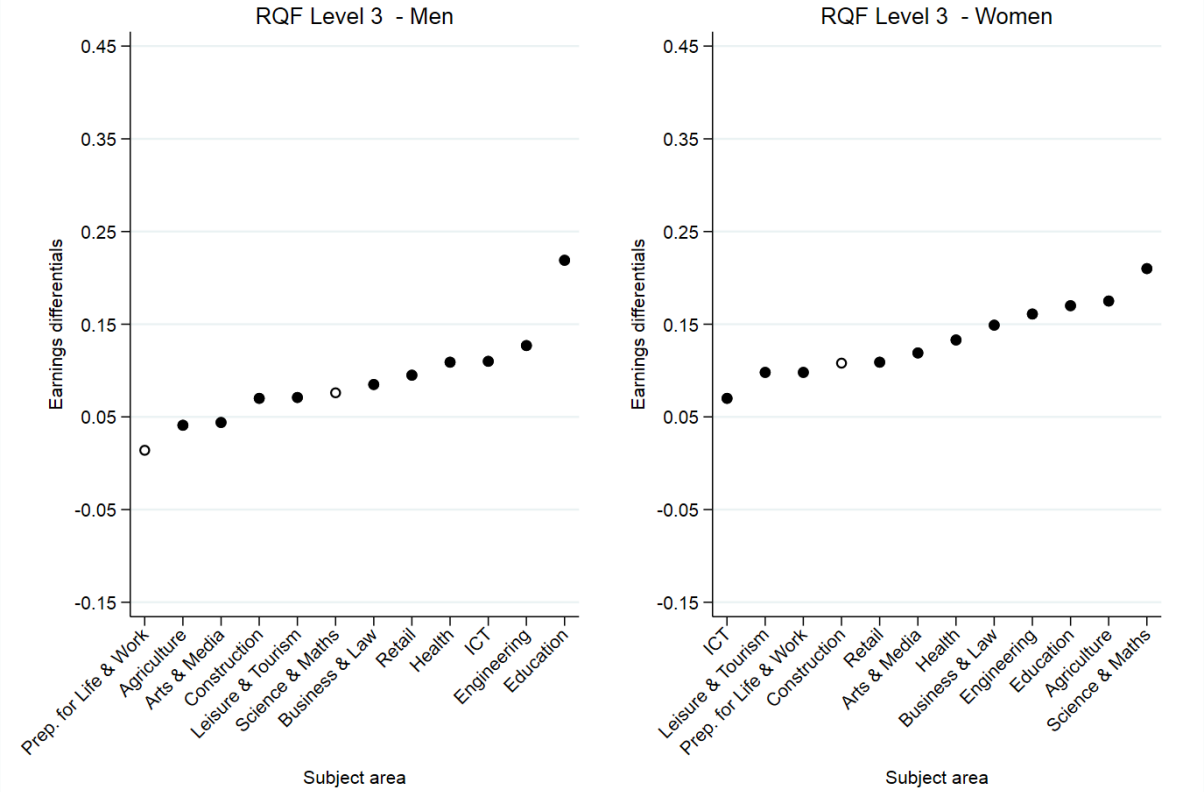
Similarly, amongst women, the **highest earnings differentials** are achieved by women progressing from Intermediate Apprenticeships to Advanced Apprenticeships **in the field of *'Agriculture'*** (**38%**) and ***'Engineering'*** (**25%**). However, only a small proportion of women specialise in these subject areas (around **1%** and **2%** of total Level 3 achievers respectively, as highest qualification). **Positive earnings differentials** are also found for progression in the field of ***'Health'*** (**15%**), ***'Business & Law'*** (**13%**) and ***'Retail'*** (**8%**)

Progression from RQF Level 2 to RQF Level 3

For men, the analysis (presented in Figure 8) indicates the existence of **positive earnings differentials associated with progressing from Level 2 vocational qualifications to Level 3 vocational qualifications for all subject areas** (except for qualifications in the field of *'Preparation for Life & Work'* and *'Science & Maths'*). However, **the magnitude of the premium is typically lower compared to progression from Level 3 to Level 4**: for instance, progression from Level 3 to Level 4 in the field of ***'Engineering'*** is associated with an earnings differential in excess of **40%** compared to a **14%** premium for progression from Level 2 to Level 3.

The main **exceptions** are **qualifications in the field of *'Retail'* and *'Education'***, with earnings differentials associated with progression from Level 2 to Level 3 estimated to be **10%** and **25%** respectively (whilst there is **no premium** when considering progression from Level 3 to Level 4).

Figure 8 Earnings differentials associated with progressing from RQF Level 2 to RQF Level 3, by subject area and gender



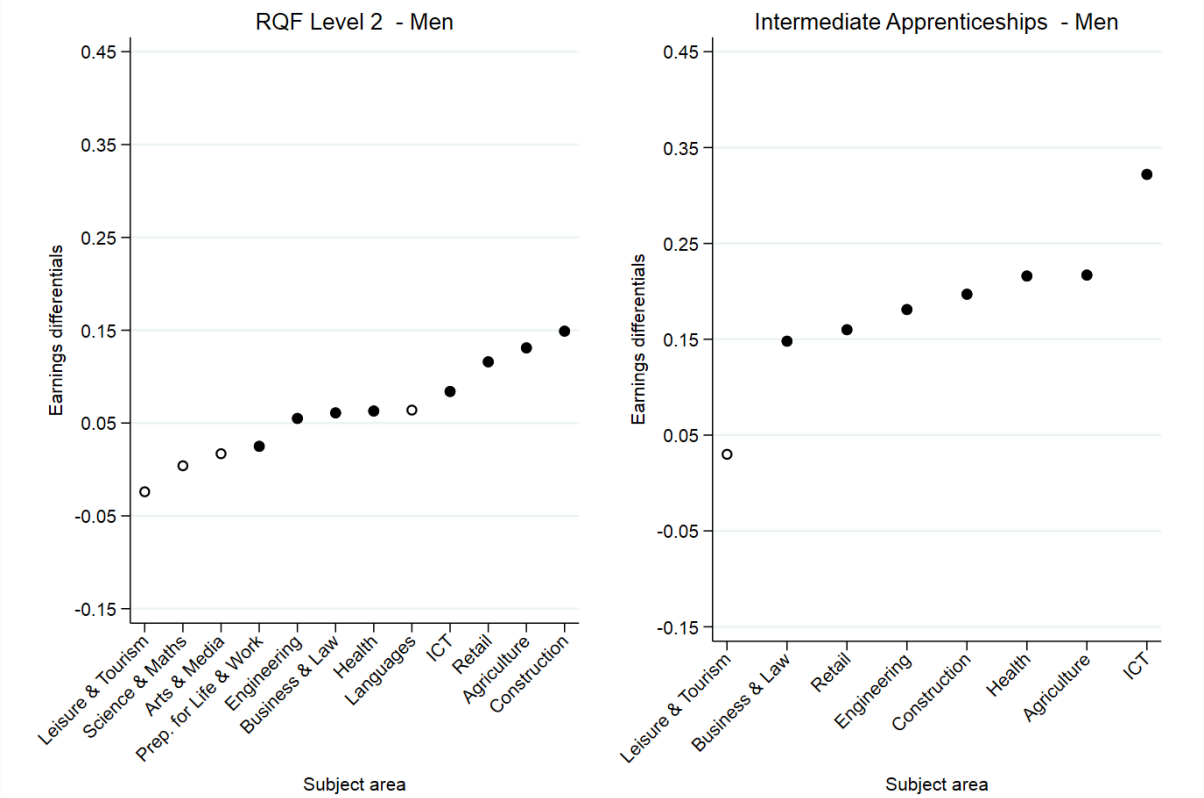
Note: The charts display raw (unexponentiated) coefficients. Coefficients not statistically significant at the 10% level are shown as hollow circles. The figures refer to the 2001/02, 2002/03 and 2003/04 cohort of Key Stage 4 students who attained their highest qualification at the age of 26 or before. Results are only shown for treatment groups of at least 50. **Source: London Economics' analysis of Longitudinal Education Outcome (LEO) data**

Amongst **women**, earnings differentials associated with **progression from Level 2 to Level 3 are comparable in size to those associated with progression from Level 3 to Level 4** and range between **7%** and **23%** depending on the subject area under consideration. In particular, the analysis indicates a **19%** premium for qualifications in the field of ***'Agriculture'*** and ***'Education'***, a **14%** premium for ***'Health'*** and a **13%** premium for ***'Arts & Media'***.

Progression from RQF Level 1 into RQF Level 2 or Intermediate Apprenticeships

In this study, **progression from Level 1 to Intermediate Apprenticeships and from Level 1 to other Level 2 qualifications are considered separately**[17]. However, it should be noted that Intermediate Apprenticeships in specific subject areas may be chosen by relatively few learners or may not be offered at all (i.e. in the case for ***'Science & Maths'*** or ***'Arts & Media'***). For this reason, it is not possible to directly compare the labour market outcome associated with progression to Intermediate Apprenticeships or other Level 2 qualifications for all subject areas. In Figure 9, we present the marginal effects on daily earnings associated with progression from Level 1 qualifications to either Intermediate Apprenticeships or other Level 2 qualifications for men, by subject area[18].

Figure 9 Earnings differentials associated with progressing from RQF Level 1 to RQF Level 2 or Intermediate Apprenticeships, by subject area - Men



Note: The charts display raw (unexponentiated) coefficients. Coefficients not statistically significant at the 10% level are shown as hollow circles. The figures refer to the 2001/02, 2002/03 and 2003/04 cohort of Key Stage 4 students who attained their highest qualification at the age of 26 or before. Results are only shown for treatment groups of at least 50. **Source: London Economics' analysis of Longitudinal Education Outcome (LEO) data**

The analysis indicates larger earnings differentials associated with progression to Intermediate Apprenticeships (compared to Level 1) than progression to other Level 2 qualifications. To take an example, progressing from Level 1 to an Intermediate Apprenticeships in the field of ***'Engineering'*** is associated with a **20%** premium as opposed to a **6%** premium for progression from Level 1 to other Level 2 qualifications in the same subject

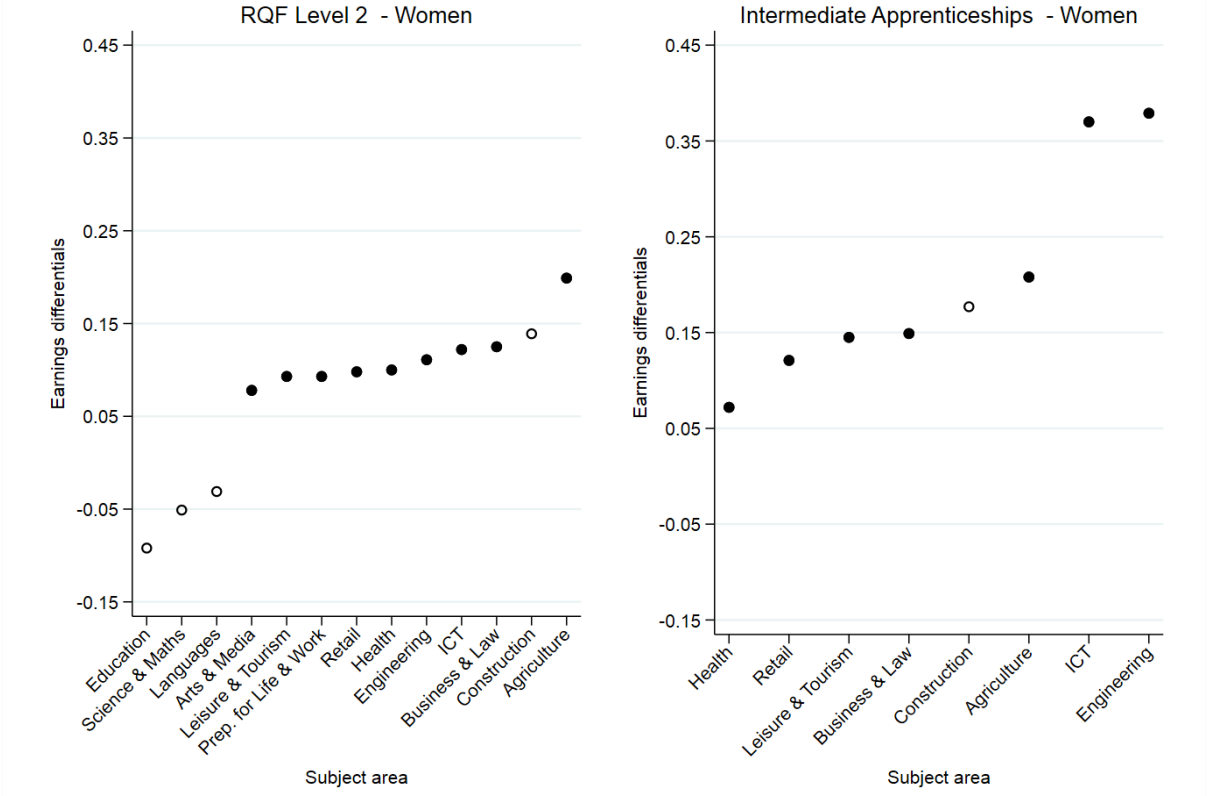
[17]It should be noted that the marginal effects associated with progression from Level 1 to Intermediate Apprenticeships and from Level 1 to other Level 2 qualifications are estimated in the same regression – using interaction terms for qualification Level (Intermediate Apprenticeships vs other Level 2 qualifications) and subject areas.

[18] As in the previous sections, the figure displays raw coefficients, while in the text we refer to percentage effects.

area. Similarly, the estimate associated with progression for men to Intermediate Apprenticeships in ***'Health'*** is **17 percentage points** (p.p.) larger than progression to other vocational Level 2 qualifications (**24%** vs **7%**), while the gap stands at **10 p.p.** for qualifications in the field of ***'Agriculture'*** (**24%** vs **14%**), **6 p.p.** for qualifications in the field of ***'Construction'*** (**22%** vs **16%**), **29 p.p.** for qualifications in the field of *'ICT'* (**38%** vs **9%**), **5 p.p.** for qualifications in the field of ***'Retail'*** (**17%** vs **12%**), and **10 p.p.** for qualifications in the field of ***'Business & Law'*** (**16%** vs **6%**).

Amongst **women**, we observe earnings differentials in excess of **40%** associated with progression from Level 1 into Intermediate Apprenticeships for ***'Engineering'*** and ***'ICT'***. At the same time, earnings differentials associated with progression from Level 1 into other Level 2 qualifications in the same subject areas stand at **12%** and **13%** respectively. No similar gaps in the earning differentials are observed for the **other subject areas**, with **estimated premia in the range 8%-20%** for both Intermediate Apprenticeships and other Level 2 vocational qualifications.

Figure 10 Earnings differentials associated with progressing from RQF Level 1 to RQF Level 2 or Intermediate Apprenticeships, by subject area - Women



Note: The charts display raw (unexponentiated) coefficients. Coefficients not statistically significant at the 10% level are shown as hollow circles. The figures refer to the 2001/02, 2002/03 and 2003/04 cohort of Key Stage 4 students who attained their highest qualification at the age of 26 or before. Results are only shown for treatment groups of at least 50. **Source: London Economics' analysis of Longitudinal Education Outcome (LEO) data**

Employment

Table 8 in the Annex presents the **marginal effects** on the proportion of the year spent in employment associated with progressing from vocational qualifications at a given RQF Level into the above one, by subject area and gender. The key-findings of the analysis are:

- **<u>Progression from RQF Level 3 to RQF Level 4</u> -** Across most subject areas, there is **no evidence of a positive impact of progression from Level 3 to Level 4** on the proportion of the year spent in employment, for either men or women. Some exceptions do occur: qualifications in the field of ***'Health'*** and ***'Construction'*** for men (with employment differentials standing at **7 p.p.** and **3 p.p.** respectively) and ***'Business & Law'*** for women (**2 p.p.**).

- **<u>Progression from Intermediate Apprenticeships to Advanced Apprenticeships</u> -** For **men**, the analysis indicates **positive employment differentials** for progression in the fields of ***'Engineering'*** (**1 p.p.**) **and *'Construction'*** (**2 p.p.**). Unexpectedly, there is a negative employment differential for men with Advanced Apprenticeships in the field of ***'ICT'*** (**8 p.p.**).

  Amongst **women**, a **strong positive employment differential** of **9 p.p.** was estimated associated with progression within the field of ***'Agriculture'***. Additionally, **positive but smaller differentials** (in the order of **1-2 p.p.** were estimated for ***'Health'*** and ***'Retail'***).

- **<u>Progression from RQF Level 2 to RQF Level 3</u>** – For men, progressing from Level 2 to Level 3 is typically associated **with enhanced employment probabilities of 2-4 p.p. for most subject areas** (the main exception is ***'Agriculture'***, where there is evidence of statistically significant employment differentials). Amongst **women**, positive employment differentials ranging between **2** and **5 p.p.** are estimated for **qualifications in the field of *'Health'*, *'Agriculture'*, *'Engineering'*, *'Retail'*** and ***'Business & Law'***. Conversely, for qualifications in the field of ***'Arts & Media'*** and ***'Education'***, positive employment differentials are only found at a 10% significance level.

- **<u>Progression from RQF Level 1 to either Intermediate Apprenticeships or other RQF Level 2 vocational qualifications</u>** – Considering **men**, for most subject areas under consideration, **both progression to Intermediate Apprenticeships and other RQF Level 2 vocational qualifications** appear to be associated with **positive employment differentials** (ranging between **2 p.p.** and **4 p.p.**). Conversely, among **women**, the analysis indicates **positive employment differentials** for qualifications in the fields of ***'Health'*** and ***'Retail'*** only.

Active labour market benefits

The marginal effect of progression from vocational qualifications at a given RQF Level to the next on the proportion of the year spent in receipt of active labour market benefits are presented in Table 9 in the Annex. For most subject areas, the analysis does not identify statistically significant differentials associated with progression, although there are some exceptions:

- **<u>Progression from RQF Level 3 to RQF Level 4</u>**: Negative differentials (meaning that a smaller proportion of the year is spent in receipt of active labour market benefits for individuals achieving a Level 4 qualification compared to a Level 3 qualification) are estimated for qualifications in the field of ***'Education'*** for women (**-4 p.p.** respectively). However, **positive differentials** (meaning that a larger proportion of the year is spent in receipt of active labour market benefits for individuals achieving a Level 4 qualification compared to a Level 3 qualification) are estimated for qualifications in the fields of ***'Education'*** for **men** (**2 p.p.**) and ***'Engineering'*** for women (**1 p.p.**) .

- **<u>Progression from Intermediate Apprenticeships to Advanced Apprenticeships</u>**: For men, the analysis identifies that negative differentials (i.e. better outcomes) are associated with progression in the fields of ***'Retail'*** (**-0.3 p.p.**) and ***'Business & Law'*** (**-1 p.p.**). Statistically significant negative differentials are only estimated in association to progression in the field of ***'Health'*** for women (**-1 p.p.**).
- **<u>Progression from RQF Level 2 to RQF Level 3</u>**: The analysis identifies negative differentials for qualifications in the fields of ***'Health'*** **(-1 p.p.**), ***'Leisure & Tourism'*** **(-1 p.p.**) and ***'Education'*** **(-2 p.p.**) for men, and in the fields of ***'Engineering'*** **(-2 p.p.**), ***'Construction'*** **(-2 p.p.**) and ***'Business & Law'*** (**-1 p.p.**) for women.
- **<u>Progression from RQF Level 1 to either Intermediate Apprenticeships or other RQF Level 2 vocational qualifications</u>**: Progression to either Intermediate Apprenticeships or other RQF Level 2 vocational qualifications in the field of ***'Construction'*** is associated to negative differentials (of the order of -**1 p.p.**) for men. Analogously, among women, progression into either Intermediate Apprenticeships or other RQF Level 2 vocational qualifications in the field of ***'Health'*** leads to differentials of **-1 p.p.** Negative differentials are also found for women progressing from Level 1 vocational qualifications into Intermediate Apprenticeships in the field of ***'Construction'*** (-**3 p.p.**) and *'**Business & La**w'* **(-1 p.p.**).

6.2 Labour market returns by RQF level and qualification type

Looking in more detail at the qualification aims within each RQF level, the aggregate returns discussed in the previous section **potentially mask a large amount of underlying variation between NVQs, BTECs, and other vocational qualifications**. In this section, we investigate this underlying variation by considering progression into each aim at RQF Level 2 and RQF Level 3 separately[19].

Earnings

<u>Progression from RQF Level 2 to RQF Level 3</u>

Earnings differentials associated with progression from Level 2 vocational qualifications to Level 3 qualifications by **subject area, qualification aim** and **gender** are displayed in Figure 11**Error! Reference source not found.**. For all qualification aims, the comparison group are individuals in possession of (any) Level 2 vocational qualification in the **same subject area** as the qualification under consideration.

Across all subject areas, the analysis identifies **strong and positive earnings differentials** for **men with NVQ Level 3 qualifications**, ranging between **9%** (for a qualification in the field of *'Leisure & Tourism'*) and **25%** (*'ICT'*). On the other hand, **although positive**, earnings differentials associated with progression to **BTEC Level 3 qualifications** are **typically lower**.

To take an example, although the analysis identifies earning differentials of **21%** for progression to NVQs Level 3 in the field of ***'Engineering'*** (and **15%** in ***'Construction'***), the estimated premium stands at approximately **8%** for BTEC Level 3 qualifications in the same subject areas. In the previous section where the specific learning aim was ignored,

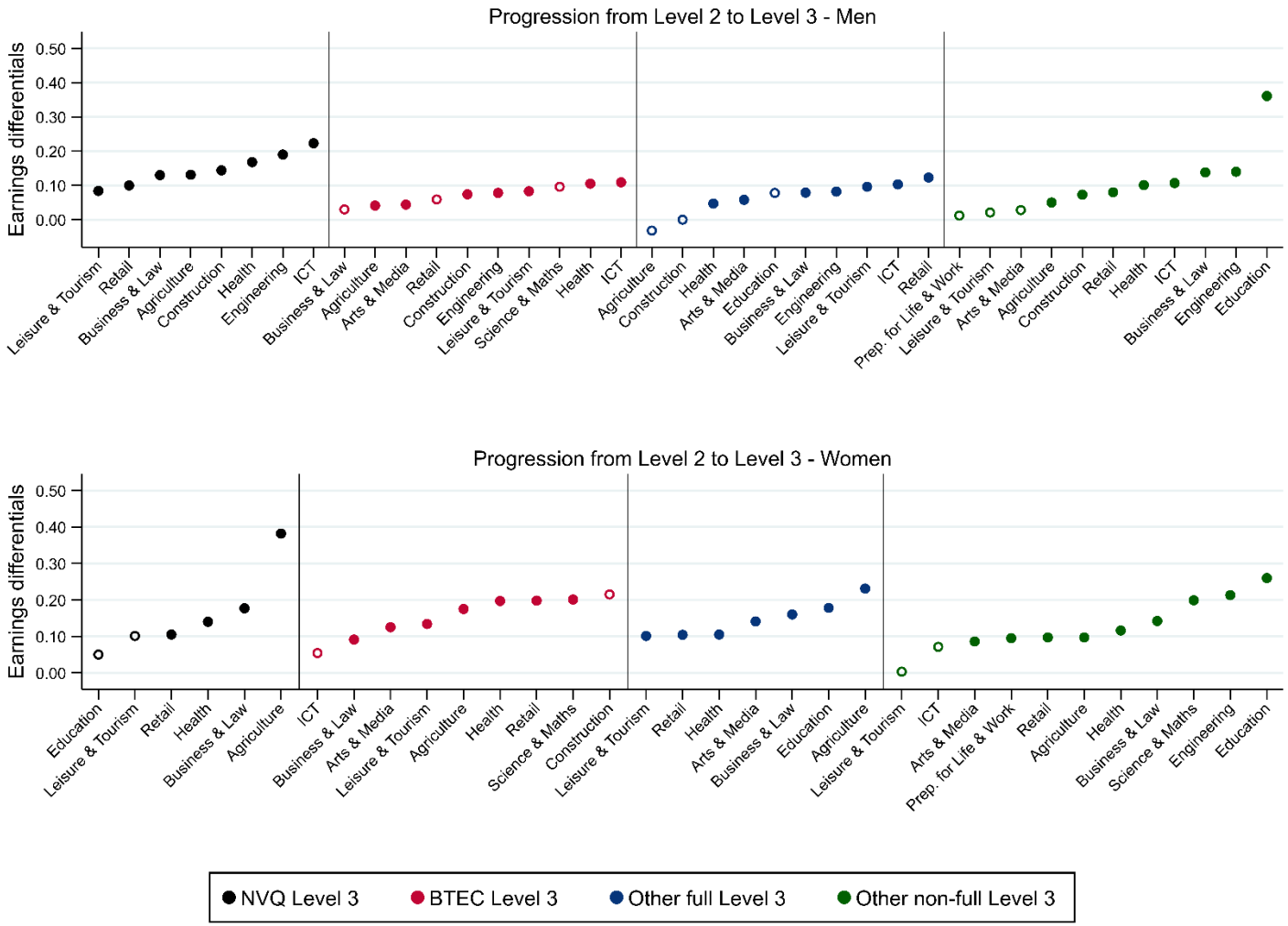
[19] Marginal effects associated with each aim at a given RQF Level are estimated simultaneously by adding to the previous specification dummy variables for each qualification aim.

progression from Level 2 to Level 3 in '*Engineering*' and '*Construction*' was associated with earnings differentials of **13%** and approximately **7%** respectively.

Progression from Level 2 to **other** full and non-full Level 3 qualifications leads to earnings premia of the same order of magnitude as those associated with BTEC Level 3 qualifications, with the exception of non-full Level 3 vocational qualifications in ***'Education'*** (where earnings differentials are in excess of **40%**, however, it should be noted that only a small proportion of male learners undertake this type of qualification).

For women, **progression into NVQ Level 3 qualification doesn't appear to be associated with larger earnings differentials** compared to progression into other vocational qualifications at the same Level (with the exception of ***'Agriculture'***, where a premium of more than **40%** is posted for women with a NVQ Level 3 qualification in this subject area). For instance, considering qualifications in the field of ***'Health'***, the earnings premium associated with progression to NVQ Level 3 stands at **15%** as opposed to **21%** from progression to BTECs at Level 3. The **highest earnings differentials** are associated with **progression into non-full level 3 qualifications** in ***'Education'*** (**30%**) and ***'Engineering'*** (**24%**) and **progression into NVQ Level 3 or other full Level 3 qualifications in *'Agriculture'*** (**47%** and **26%** respectively). However, again it should be noted that only small proportions of female learners enrol into qualifications in ***'Engineering'*** and ***'Agriculture'***.

Figure 11 Earnings differentials associated with progression from Level 2 to Level 3 by subject area, aim and gender



Note: The charts display raw (unexponentiated) coefficients. Coefficients not statistically significant at the 10% level are shown as hollow circles. The figures refer to the 2001/02, 2002/03 and 2003/04 cohort of Key Stage 4 students who attained their highest qualification at the age of 26 or before. Results are only shown for treatment groups of at least 50. **Source: London Economics' analysis of Longitudinal Education Outcome (LEO) data**

Progression from RQF Level 1 into RQF Level 2 or Intermediate Apprenticeships

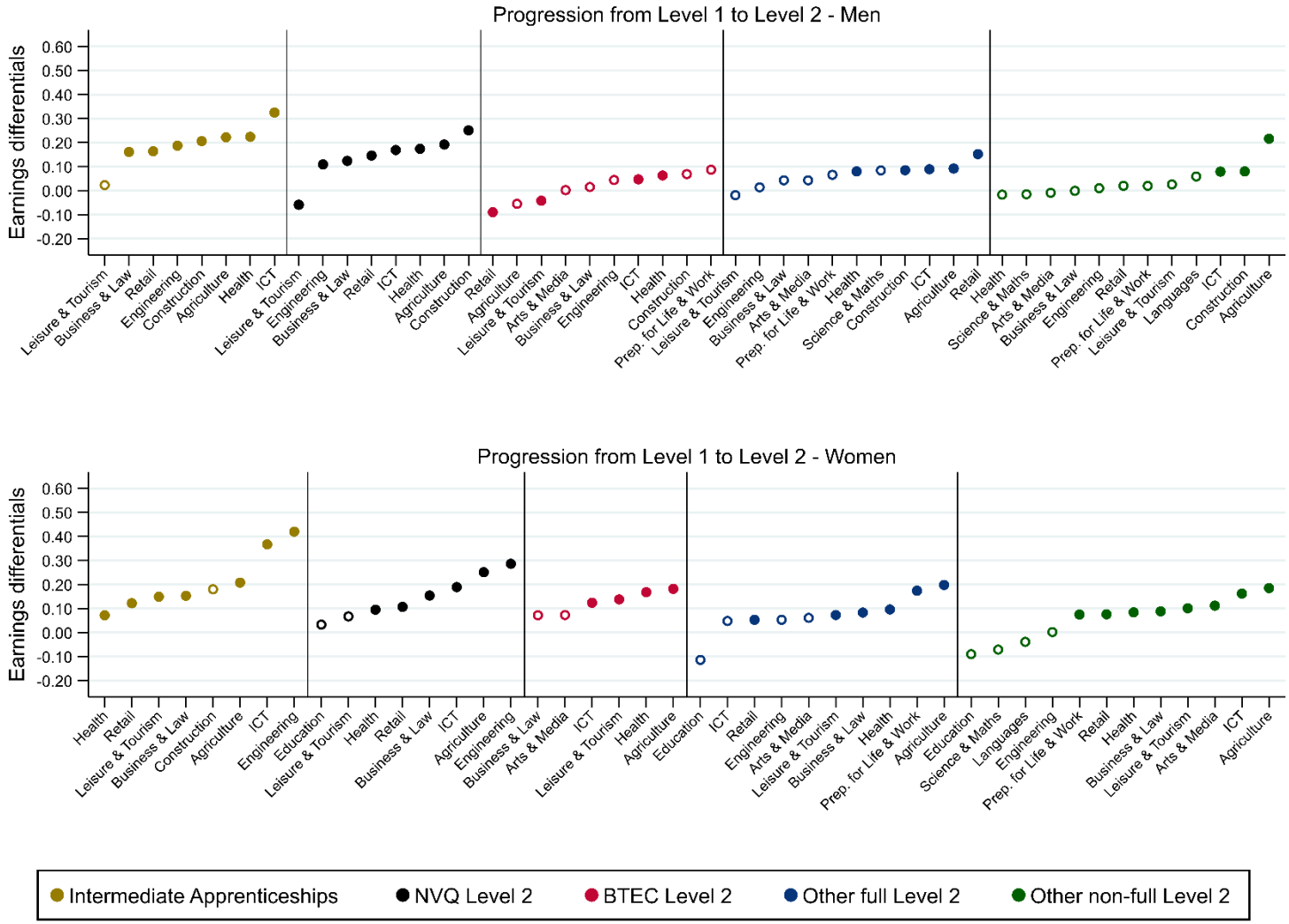
Considering progression from vocational qualifications at Level 1 to different aims at Level 2, the analysis identifies **positive and strong earnings differentials for both men and women who progressed into Intermediate Apprenticeships** or **NVQ Level 2 qualifications**, across most subject areas (as shown in Figure 11[20]).

Considering men in greater detail, the **highest earnings differentials** were estimated in relation to progression in the field of ***'Construction'*** (**18%** for progression to NVQs Level 2, **9%** for other full Level 2 qualifications and **8%** for other non-full level 2 qualifications); ***'Agriculture'*** (**21%** for NVQs Level 2, **10%** for other full Level 2 and **24%** for other non-full Level 2); ***'Health'*** (**19%** for NVQs Level 2, **8%** for other full and non-full Level 2); and ***'ICT'*** (**18%** for NVQs Level 2, **9%** for other full Level 2 and **8%** for other non-full Level 2).

As for other qualification levels, for women, the highest earnings differentials are observed for ***'Engineering'*** (in excess of **50%** for Intermediate Apprenticeships and **33%** for NVQs at Level 2) and ***'Agriculture'*** (**23%** for Intermediate Apprenticeships, **28%** for NVQs Level 2, **20%** for BTEC Level 2, **22%** for other full Level 2 and **20%** for other non-full Level 2). However, positive earnings differentials are identified for progression into NVQ at Level 2, BTECs at Level 2 and Intermediate Apprenticeships for almost all subject areas. These differentials range between **8%** ('**Health**') and **44%** ('ICT').

[20] As in the previous sections, the figure displays raw coefficients, while in the text we refer to percentage effects.

Figure 12 Earnings differentials associated with progression from Level 1 to Level 2, by subject area, aim and gender



Note: The charts display raw (unexponentiated) coefficients. Coefficients not statistically significant at the 10% level are shown as hollow circles. The figures refer to the 2001/02, 2002/03 and 2003/04 cohort of Key Stage 4 students who attained their highest qualification at the age of 26 or before. Results are only shown for treatment groups of at least 50

Source: London Economics' analysis of Longitudinal Education Outcome (LEO) data

Employment

We investigated **aim-level variation in the employment differentials** associated with progression from a given RQF Level to the next in each subject area. The relevant estimates are presented in Table 11 in the Annex.

Considering progression from vocational qualifications at **Level 2** to vocational qualifications at **Level 3**, for **men**, the analysis identifies **large differentials** for progression in the field of ***'Health'*** (**3 p.p.** for NVQs, **4 p.p.** for BTECs and other full Level 3 qualifications and **5 p.p.** for other non-full Level 3).

Additionally, positive employment differentials are estimated for progression from **Level 2** to **BTEC Level 3** in the fields of ***'Engineering', 'Construction', 'ICT', 'Leisure & Tourism'*** and ***'Arts & Media'*** (all in the order of **3 p.p.**). Similarly, among **women**, positive differentials at about **2 p.p.** are estimated for progression from **Level 2** into **Level 3 aims** (**NVQs Level 3, BTEC Level 3 and other full Level 3**) in the field of ***'Health'***.

Additionally, positive differentials are found for progression to NVQs Level 3 in the field of ***'Retail'*** and ***'Business & Law'*** (**2 p.p.**) and to BTEC Level 3 in the field of ***'Agriculture'*** (**4 p.p.**) and ***'Arts & Media'*** (**2 p.p.**). A large differential in excess of **7 p.p.** is estimated for progression into other full Level 3 vocational qualifications in the field of ***'Agriculture'***.

With respect to progression from **Level 1** to **Level 2** instead, **progression to Intermediate Apprenticeships and NVQs Level 2 for men** is associated with positive employment differentials in the range of **2-5 p.p.** for the **majority of subject areas** under consideration. Conversely, **progression to BTEC Level 2** only leads to statistically significant employment differentials when considering subject areas of ***'ICT'*** (in excess of **5 p.p.**), ***'Leisure & Tourism'*** (**2 p.p.**) and ***'Business & Law'*** (**4 p.p.**).

Progression from **Level 1** to **other full Level 2 vocational qualifications** is associated with positive employment when undertaken in the fields of ***'Health'*** (**3 p.p.**), ***'Engineering'*** (**2 p.p.**), ***'Construction'*** (**2 p.p.**), ***'ICT'*** (**3 p.p.**) and ***'Retail'*** (**5 p.p.**). Turning to **women** instead, the analysis identifies positive employment differentials for progression from Level 1 to Level 2 in the field of ***'Health'*** (**3 p.p.** for Intermediate Apprenticeships, **4 p.p.** for NVQs Level 2, **3 p.p.** for BTEC Level 2 and other full Level 2 vocational qualifications) and in the fields of ***'Engineering', 'Retail'*** and ***'Business and Law'*** limited to progression into Intermediate Apprenticeships (**7 p.p., 5 p.p. and 3 p.p.** respectively).

Active labour market benefits

Marginal effects associated with progression from Level 1 to Level 2 and from Level 2 to Level 3 on the proportion of the year spent in receipt of active labour market benefits, by qualification aim, gender and subject area of study are reported in Table 12 in the Annex. For both men and women, the analysis suggests that **benefit dependency differentials are generally not statistically significant for most subject areas and aims**, when considering either progression from Level 1 to Level 2 or from Level 2 to Level 3.

However, with respect to **qualifications in the field of *'Health'* only**, we found significant effects (in the range **-1 to -2 p.p. (i.e.** (positive labour market outcomes)) in respect to progression from Level 2 into all of the different Level 3 aims **for both men and women** and for progression from Level 1 to all Level 2 aims **for women only**.

7. Conclusions

This study investigated the **value of progression** associated with different vocational qualifications disaggregated by subject area of study. Previous analyses of labour market outcomes (CVER Discussion Paper 021) by **subject of study** demonstrated that labour market outcomes **vary considerably** by subject area and are very high for *'Engineering'* and *'Construction'* and typically low for *'Arts & Media'* for men. However, this variation does not reflect that progression to further study typically depends on the type of qualifications already held. By considering the value of progressing within the RQF along particular subject pathways, this analysis addressed the following methodological issues:

- There is a significant degree of endogeneity in the choice **of subject area (**depending on learners' **aspirations, ability, and inclination**).
- When assessing labour market outcomes associated with specific qualification aims (e.g. NVQs or BTECs), different aims tend to be offered (and undertaken) in different subject areas. Aggregate estimates will obscure this **compositional effect**.
- **Different aims have different admissions criteria reflecting prior attainment** and (possibly) relevant labour market experience.

Our analysis confirms that in the majority of subject areas, the **degree of specialisation increases on moving up the qualifications framework** and that as such, comparing outcomes of individuals on particular subject pathways against *anyone* in possession of the adjacent level of qualification may not fully reflect the options concretely available to students and the associated expected gain from progressing to further study. The findings of positive gross labour market premiums (i.e. not taking into account direct and indirect costs) to progressing to higher level vocational qualifications may be a useful piece of information to learners (and policy makers) when deciding whether to progress to further study in the same subject area.

The findings illustrate that once we consider progression within a given subject pathway:

- We observe strongly positive earnings differentials associated with ***'Construction', 'Business & Law'*** and ***'Engineering'*** related subjects, although these figures are lower compared to analyses using all students in possession of qualifications at the RQF level below as counterfactual (as learners with qualifications in these subject areas tend to have higher levels of earnings at any level).
- There is a positive earnings differential associated with progression in ***'Arts & Media'***, ***'Health'*** and ***'Retail'*** subject areas. In particular, the analysis indicates positive earnings differentials associated with BTEC qualifications (Level 2 and Level 3) in *'Arts & Media'* for men, as opposed to nil or negative differentials when using the alternative approach (when the counterfactual is the average level below student as opposed to the average level below student in the same subject area).

References

Battiston, A., Patrignani, P., Hedges, S., and Conlon, G. (2019), *Labour market outcomes disaggregated by subject area using the Longitudinal Education Outcomes (LEO) data,* CVER Research Discussion Paper 021.

Conlon, G., Hedges, S. McIntosh, S., Morris, D. and Patrignani, P. (2017) *The Payoff to Vocational Qualifications: Reconciling Estimates from Survey and Administrative Data*, CVER Research Discussion Paper 009.

Conlon, G., Hedges, and Patrignani, P. (2018a) *Further analysis of the earnings differentials associated with BTECs*, CVER Briefing Note 006.

Conlon, G., Hedges, and Patrignani, P. (2018b) *Settling the counterfactual debate: Is there a preferable counterfactual when estimating the returns to vocational qualifications?*, CVER Discussion Paper 013.

Patrignani, P., Conlon, G. and Hedges, S. (2017) *The earnings differentials associated with vocational education and training using the Longitudinal Education Outcomes data*, CVER Discussion Paper 007.

Annex 1

Approach used to define earnings and employment spells for individuals in the HMRC self-assessment file

When incorporating the information in the self-assessment files we have tried to follow a similar approach to that employed by the Department for Education in their Experimental statistics series on graduate outcomes using the Longitudinal Education Outcomes (LEO) data[21]. With respect to data included in the HMRC self-assessment file we have:

- Calculated total income from self-employment as the sum of income from a Partnership or Sole-Trader enterprise[22].
- Generated a variable for total income, including any earnings from PAYE recorded in the P14 file.
- Considered individuals with income from self-employment greater than £0 to be in employment for the entire tax year.

[21] See for example SFR 76/2017 "Experimental statistics: Graduate outcomes using the Longitudinal Education Outcomes (LEO) data – inclusion of self-employment earnings" available at https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/669747/SFR76_2017_SelfEmployment_earnings.pdf and SFR 15/2018 and SFR 15/2018 available at https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/690859/SFR15_2018_Main_text.pdf

[22] For a limited number of self-employed individuals there were multiple records for income from a Partnership or Sole-Trader enterprise in the same tax year. In these cases we have kept the highest value for each source of income.

Tables and Figures

Table 1: Glossary: Sector Subject Areas Tier 1

Subject area short name	Subject area full name
Health	Health, Public Services and Care
Science and Maths	Science and Mathematics
Agriculture	Agriculture, Horticulture and Animal Care
Engineering	Engineering and Manufacturing Technologies
Construction	Construction, Planning and the Built Environment
ICT	Information and Communication Technology
Retail	Retail and Commercial Enterprise
Leisure and Tourism	Leisure, Travel and Tourism
Arts	Arts, Media and Publishing
Education	Education and Training
Business and Law	Business, Administration and Law

Source: London Economics based on information from the ILR
https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/624339/Appendix_H_ILR_2017_to_2018_v1_Published_July17.pdf

Table 2: Classification of highest qualifications used

Level of RQF	Highest Qualification	Examples
RQF Level 7/8	Postgraduate education	PhD, Masters, PGCE
RQF Level 5/6	First and foundation degrees, other Higher education, professional qualifications at level 5	BA, BSc, Foundation degrees, Teaching and Nursing qualifications
RQF Level4	Level 4 vocational (including Higher Apprenticeships)	NVQ at Level 4 and 5, HNC/HND, Higher Apprenticeships
RQF Full Level 3	Advanced Apprenticeship	
RQF Full Level 3	NVQ Level 3	NVQ diplomas at Level 3
RQF Full Level 3	BTEC Level 3	BTEC Level 3 Certificates and Diplomas
RQF Full Level 3	Other full Level 3 vocational	Certificates and Diplomas at Level 3
RQF Full Level 3	GCE A/AS/A2 level (Full Level 3 achieved)	At least 2 A-levels or 4 AS-levels (including Vocational A-Levels)
RQF Not-full Level 3	Level 3 other vocational qualifications	Awards and certificates at Level 3 (not constituting a full level)
RQF Not-full Level 3	1 GCE A level or equivalent	Single A-level or equivalent
RQF Full Level 2	Intermediate Apprenticeship	
RQF Full Level 2	NVQ Level 2	NVQ diplomas at Level 2
RQF Full Level 2	BTEC Level 2	BTEC Level 2 Certificates and Diplomas
RQF Full Level 2	Other full Level 2 vocational	GNVQ Level 2, Certificates and Diplomas at Level 2
RQF Full Level 2	5 GCSEs A*-C (full Level 2 achieved)	GCSEs, applied GCSEs, short course GCSEs, double award GCSEs
RQF Not-full Level 2	Level 2 other vocational	Key skills aims, awards and certificates at Level 2 (not constituting a full level)
RQF Level 1	NVQ Level 1	NVQ qualifications at Level 1
RQF Level 1	Other Level 1 vocational	BTEC Level 1, GNVQ Level 1, Key skills aims, award and certificates at Level 1
RQF Level 1	Level 1 academic (5 GCSEs A*-G)	GCSEs, applied GCSEs, short course GCSEs, double award GCSEs
Entry level	Entry/Other Level	Basic Award/Certificate; Entry to Employment; Functional Skills; Key Skills at entry level;
No formal achievement	KS4 record but no formal achievement	Less than 5 GCSEs at grades A*-G

Source: London Economics

Table 3: Highest qualification attained at age 26 by gender

	Men	Women	All
Postgraduate education	5.1%	8.2%	6.5%
First degree/Other HE/Level 5 professional qualifications	27.2%	34.8%	30.8%
Level 4 (full) vocational (including Higher Apprenticeships)	1.3%	1.0%	1.2%
RQF Level 3			
Advanced Apprenticeship	7.2%	4.6%	6.0%
NVQ level 3	0.9%	3.0%	1.9%
BTEC level 3	3.6%	3.0%	3.3%
Other full level 3 vocational	0.9%	1.8%	1.3%
GCE A/AS/A2 level (Full level 3 achieved)	8.2%	8.8%	8.5%
Level 3 other vocational	2.1%	2.1%	2.1%
1 GCE A level or equivalent	1.6%	1.4%	1.5%
RQF Level 2			
Intermediate Apprenticeship	6.4%	5.5%	6.0%
NVQ level 2	3.7%	3.1%	3.4%
BTEC level 2	0.9%	0.6%	0.8%
Other full Level 2 vocational	2.7%	1.9%	2.3%
5 GCSEs A-C (full level 2 achieved)	4.0%	3.8%	3.9%
Other RQF Level 2 (not full) vocational	3.2%	2.0%	2.6%
Below RQF Level 2			
NVQ level 1	0.5%	0.5%	0.5%
Other RQF level 1 (not full) vocational	4.4%	2.7%	3.6%
Level 1 academic (5 GCSEs A-G)*	10.7%	7.6%	9.3%
Entry/Other Level	1.6%	1.0%	1.3%
KS4 record but no formal achievement	3.8%	2.5%	3.2%
Total	**100.0%**	**100.0%**	**100.0%**

Source: London Economics' analysis of Longitudinal Educational Outcome (LEO) data

Descriptive statistics

Table 4a: Subject composition by highest qualification and gender - Men

	Health	Science & Maths	Agriculture	Engineering	Construction	ICT	Retail	Leisure & Tourism	Arts & Media	History & Philosophy	Social Sciences	Languages	Education	Prep. For life & Work	Business & Law	Total
RQF Level 4	1.35%	0.46%	0.52%	36.14%	16.53%	6.38%	1.00%	1.82%	9.24%		0.05%	0.07%	2.73%	0.46%	23.25%	100.00%
Advanced Apprenticeships	1.85%	0.01%	1.63%	54.87%	22.66%	4.26%	4.83%	2.70%	0.10%				0.07%	0.00%	7.02%	100.00%
RQF Level 3	9.76%	0.75%	5.38%	16.39%	8.35%	11.11%	4.89%	13.72%	21.54%	0.04%	0.02%	0.06%	0.75%	0.62%	6.62%	100.00%
NVQ Level 3	12.73%	0.07%	1.73%	17.24%	20.38%	1.71%	27.97%	3.19%	0.37%			0.08%	0.70%	0.01%	13.81%	100.00%
BTEC Level 3	9.63%	1.12%	6.84%	8.55%	3.16%	14.66%	0.81%	18.08%	31.25%					0.02%	5.87%	100.00%
Other full level 3	9.37%	0.23%	4.24%	13.95%	20.85%	9.12%	1.37%	13.56%	19.98%				2.16%	0.01%	5.14%	100.00%
Other RQF Level 3 (not full) vocational	8.54%	0.62%	4.82%	35.39%	5.82%	9.61%	2.91%	9.93%	12.48%	0.18%	0.09%	0.22%	1.67%	2.71%	5.01%	100.00%
Intermediate Apprenticeships	3.50%		3.76%	22.73%	32.00%	4.69%	19.47%	2.67%	0.08%				0.01%	0.02%	11.07%	100.00%
RQF Level 2	11.10%	0.93%	3.52%	17.02%	20.06%	9.08%	10.12%	8.24%	5.14%	0.02%	0.08%	0.22%	0.07%	7.13%	7.28%	100.00%
NVQ Level 2	8.36%	0.03%	3.03%	22.31%	29.54%	1.61%	18.36%	7.42%	0.20%				0.06%	0.09%	8.98%	100.00%
BTEC Level 2	12.75%	0.59%	6.29%	7.29%	2.06%	18.75%	4.66%	17.58%	21.57%					1.33%	7.12%	100.00%
Other full Level 2 vocational	8.09%	0.74%	3.38%	19.79%	20.55%	16.42%	5.13%	8.25%	7.98%		0.01%	0.01%	0.06%	1.73%	7.86%	100.00%
Other RQF Level 2 (not full) vocational	16.56%	2.28%	3.44%	11.01%	13.39%	8.81%	6.19%	6.52%	3.86%	0.06%	0.25%	0.74%	0.10%	21.99%	4.78%	100.00%

RQF Level 1	12.37%	1.54%	2.37%	14.80%	16.21%	9.40%	5.76%	5.83%	2.99%	0.05%	0.33%	0.53%	0.06%	24.89%	2.86%	100.00%
NVQ Level 1	0.66%	0.63%	8.19%	31.88%	15.42%	2.69%	26.33%	5.85%	0.22%		0.05%	0.27%	0.05%	3.63%	4.12%	100.00%
Other level 1 vocational	13.58%	1.63%	1.77%	13.03%	16.29%	10.10%	3.63%	5.83%	3.27%	0.06%	0.36%	0.56%	0.06%	27.09%	2.73%	100.00%

Source: London Economics' analysis of Longitudinal Educational Outcome (LEO) data

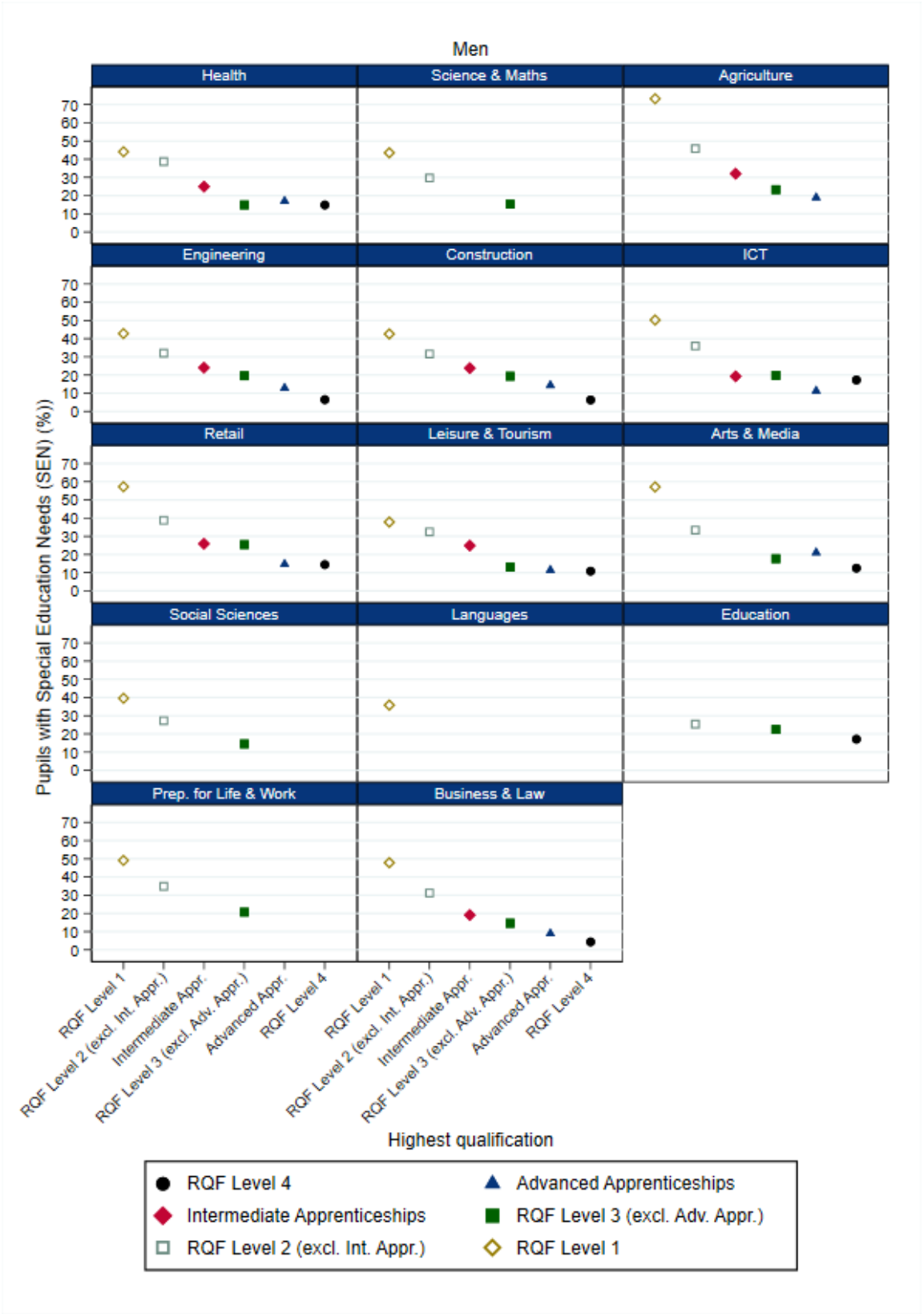
Table 4b: Subject composition by highest qualification and gender - Women

	Health	Science & Maths	Agriculture	Engineering	Construction	ICT	Retail	Leisure & Tourism	Arts & Media	History & Philosophy	Social Sciences	Languages	Education	Prep. For life & Work	Business & Law	Total
RQF Level 4	10.15%	0.43%	2.00%	2.15%	1.96%	1.16%	3.67%	2.48%	10.91%		0.07%	0.12%	8.39%	0.76%	55.73%	100.00%
Advanced Apprenticeships	34.72%	0.01%	3.19%	1.56%	0.35%	0.86%	23.08%	5.61%	0.14%				0.54%		29.94%	100.00%
RQF Level 3	35.24%	0.64%	4.96%	0.40%	0.23%	1.69%	24.03%	6.33%	15.35%	0.04%	0.04%	0.08%	1.78%	0.64%	8.55%	100.00%
NVQ Level 3	30.12%		0.68%	0.20%	0.08%	0.18%	55.57%	0.36%	0.05%			0.06%	1.72%	0.02%	10.98%	100.00%
BTEC Level 3	25.55%	1.52%	10.44%	0.30%	0.39%	2.37%	5.76%	14.31%	34.17%				0.06%	0.13%	4.99%	100.00%
Other full level 3	64.04%	0.09%	3.64%	0.32%	0.25%	0.54%	6.17%	3.13%	12.82%				3.26%	0.05%	5.68%	100.00%
Other RQF Level 3 (not full) vocational	30.42%	0.79%	4.13%	1.10%	0.18%	4.63%	19.31%	6.12%	11.40%	0.21%	0.24%	0.39%	3.51%	3.50%	14.05%	100.00%
Intermediate Apprenticeships	16.00%	0.01%	2.44%	1.31%	0.25%	0.79%	47.65%	1.89%	0.11%		0.00%	0.00%	0.08%	0.02%	29.46%	100.00%
RQF Level 2	27.12%	0.91%	3.30%	2.96%	0.34%	4.45%	29.08%	6.84%	5.60%	0.03%	0.08%	0.44%	0.84%	5.97%	12.04%	100.00%
NVQ Level 2	19.19%	0.07%	1.11%	2.59%	0.16%	1.35%	54.18%	2.51%	0.21%	0.00%			0.66%	0.25%	17.70%	100.00%
BTEC Level 2	30.10%	0.94%	11.42%	0.20%	0.09%	5.23%	1.50%	20.30%	21.94%				0.13%	1.21%	6.93%	100.00%
Other full Level 2 vocational	43.03%	0.61%	5.82%	1.08%	0.58%	6.61%	8.37%	10.83%	9.46%		0.01%	0.05%	1.19%	2.74%	9.62%	100.00%
Other RQF Level 2 (not full) vocational	23.34%	2.51%	1.72%	6.20%	0.46%	6.99%	18.39%	5.52%	5.11%	0.11%	0.31%	1.64%	1.00%	19.58%	7.10%	100.00%

RQF Level 1	29.11%	1.76%	2.28%	1.55%	0.57%	8.43%	20.79%	3.99%	3.72%	0.08%	0.31%	1.46%	0.20%	20.06%	5.71%	100.00%
NVQ Level 1	1.47%	0.32%	4.95%	2.85%	0.12%	1.04%	73.84%	1.12%	0.46%		0.03%	0.46%		4.83%	8.52%	100.00%
Other level 1 vocational	34.26%	2.03%	1.79%	1.30%	0.65%	9.80%	10.91%	4.53%	4.32%	0.09%	0.36%	1.65%	0.24%	22.89%	5.19%	100.00%

Source: London Economics' analysis of Longitudinal Educational Outcome (LEO) data

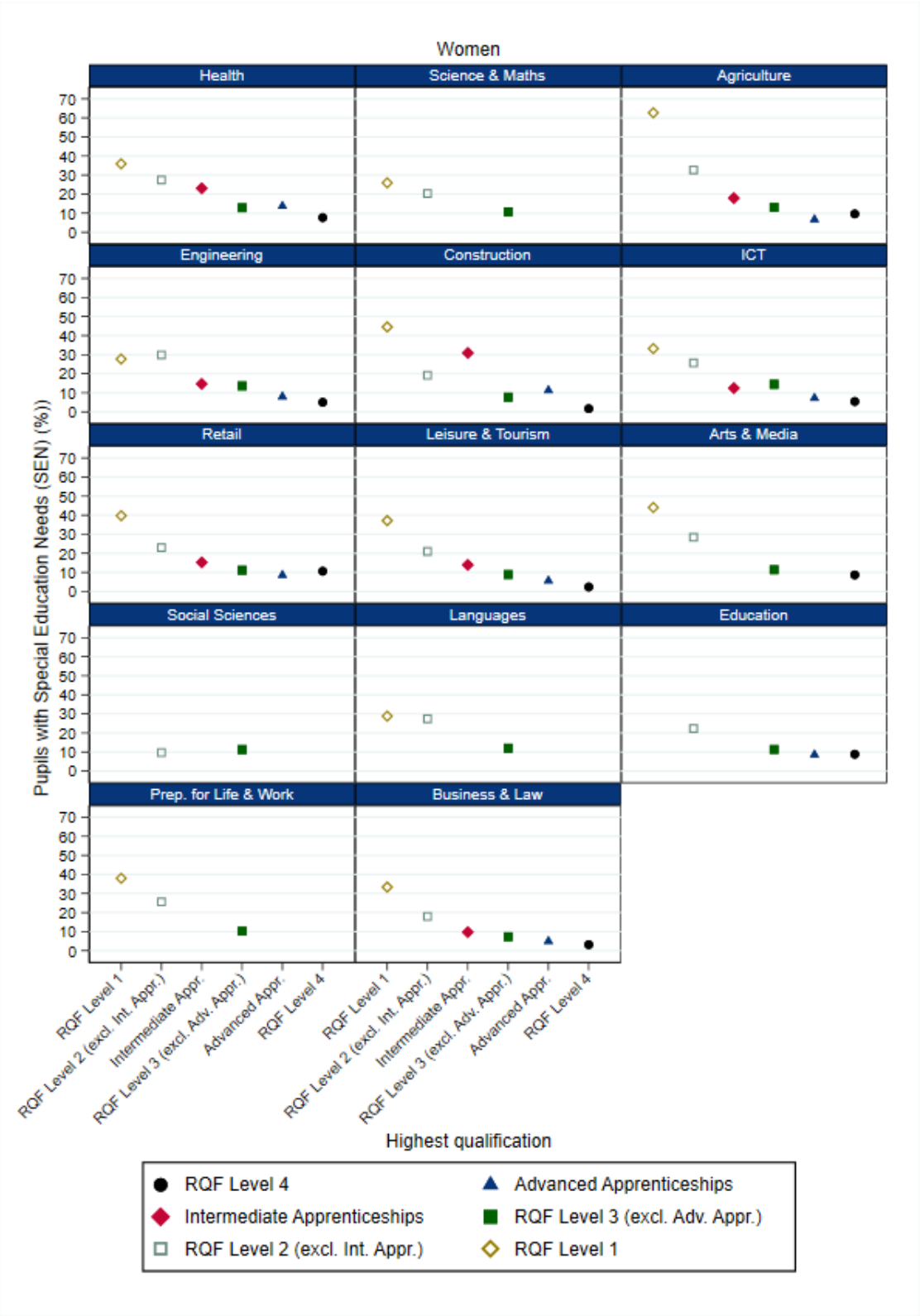
***Figure 13 Progression into higher RQF Level, by RQF Level, subject area of study and gender*Figure 14a Proportion of pupils with special education needs, by highest qualification, subject area - Men**



Note: The figures refer to the 2001/02, 2002/03 and 2003/04 cohort of KS4 students who attained their highest qualification at the age of 26 or before and who are in employment at age 28. Descriptive statistics are only shown for treatment groups of at least 50 individuals.

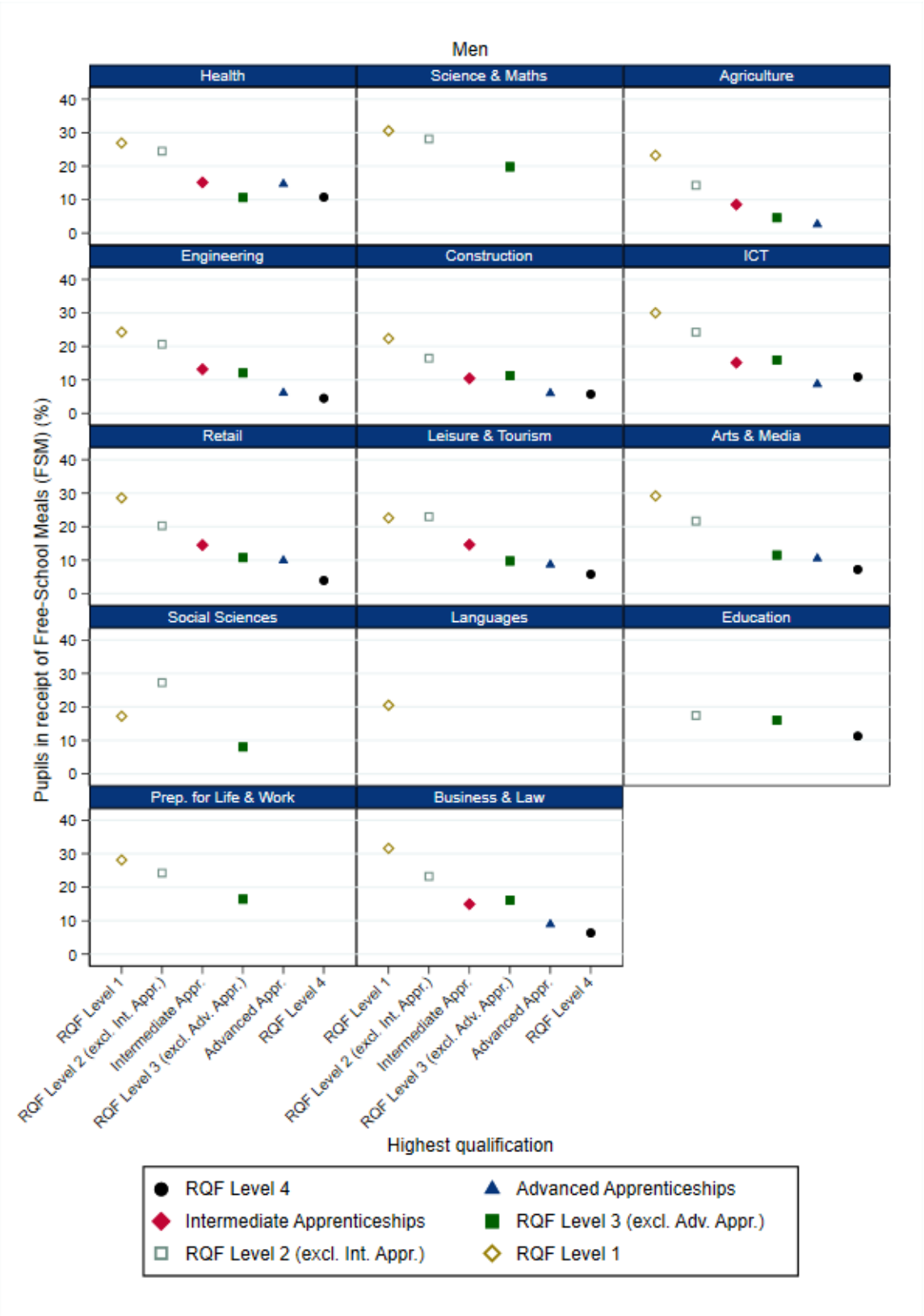
Source: London Economics' analysis of Longitudinal Educational Outcome (LEO) data

Figure 14b Proportion of pupils with special education needs, by highest qualification, subject area - Women



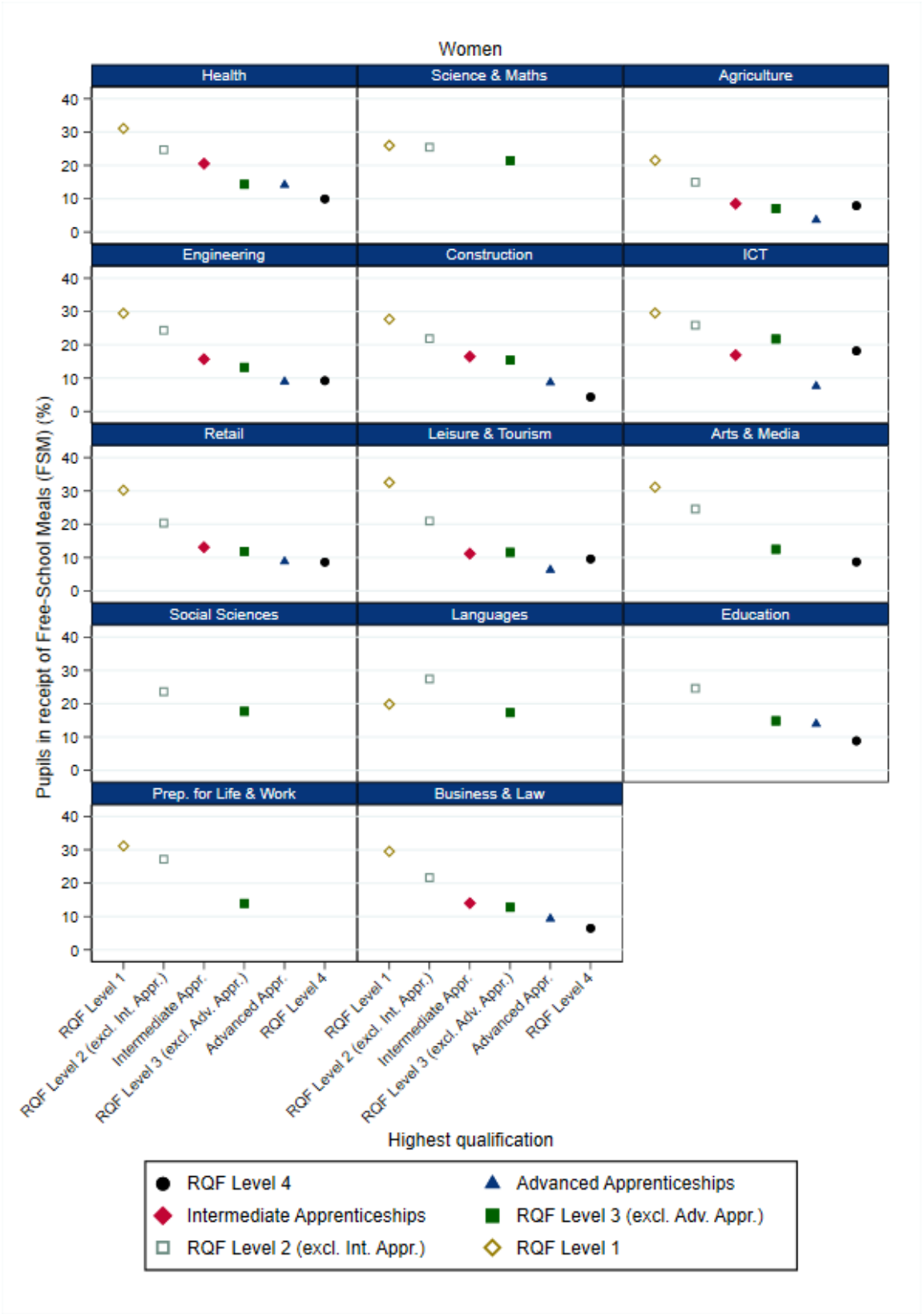
Note: The figures refer to the 2001/02, 2002/03 and 2003/04 cohort of KS4 students who attained their highest qualification at the age of 26 or before and who are in employment at age 28. Descriptive statistics are only shown for treatment groups of at least 50 individuals.
Source: London Economics' analysis of Longitudinal Educational Outcome (LEO) data

Figure 15a Proportion of pupils in receipt of free-school meals, by highest qualification, subject area - Men



Note: The figures refer to the 2001/02, 2002/03 and 2003/04 cohort of KS4 students who attained their highest qualification at the age of 26 or before and who are in employment at age 28. Descriptive statistics are only shown for treatment groups of at least 50 individuals.
Source: London Economics' analysis of Longitudinal Educational Outcome (LEO) data

Figure 15b Proportion of pupils in receipt of free-school meals, by highest qualification, subject area - Women



Note: The figures refer to the 2001/02, 2002/03 and 2003/04 cohort of KS4 students who attained their highest qualification at the age of 26 or before and who are in employment at age 28. Descriptive statistics are only shown for treatment groups of at least 50 individuals.
Source: London Economics' analysis of Longitudinal Educational Outcome (LEO) data

Table 5: Average Key-Stage 2 test score in Maths, by highest qualification, subject area of study and gender

		Health	Science & Maths	Agriculture & Animal Care	Engineering	Construction	ICT	Retail	Leisure &Tourism	Arts & Media	History & Philosophy	Social sciences	Languages	Education	Prep. For Life & Work	Business & Law	All
RQF Level 4 vocational	Men	54.50			65.30	64.10	54.70	49.40	52.20	55.10				57.80		69.60	63.60
	Women	52.00		55.80	67.10	63.40	57.20	51.50	52.40	51.90				55.60		64.90	60.20
Advanced Apprenticeships	Men	54.30		53.30	57.40	55.30	61.60	56.50	57.80	56.00						61.50	57.20
	Women	47.30		55.10	59.90	56.90	57.70	51.60	53.40					53.70		57.40	52.30
RQF Level 3 vocational	Men	53.50	57.30	51.50	53.80	53.50	54.20	49.30	56.50	54.00				51.10	47.20	58.00	54.10
	Women	48.00	53.10	49.80	55.80	59.20	46.40	48.90	53.10	51.60			52.50	50.80	47.80	55.60	50.00
NVQ level 3	Men	53.30		46.90	50.10	50.70	52.90	48.20	50.50							60.90	51.60
	Women	45.20		53.30				48.30	45.50					51.10		56.50	48.40
BTEC level 3	Men	56.60	58.90	53.60	59.20	62.50	56.00	59.00	58.80	55.30						55.50	56.70
	Women	53.60	55.00	50.70	62.30	61.40	48.50	58.20	54.90	53.10						54.70	53.60
Other full level 3	Men	47.70		50.60	49.30	51.60	50.90	51.30	51.50	50.20				54.10		65.40	51.30
	Women	47.40		48.20			44.30	48.00	50.00	48.50				52.70		59.10	48.60
Other RQF Level 3 (not full) vocational	Men	49.60	51.90	46.00	53.10	52.30	49.90	48.80	51.70	50.30				48.30	46.90	55.20	51.30
	Women	46.00	48.00	46.20	54.10		44.60	47.00	48.00	47.40				48.40	47.50	53.40	47.80
Intermediate Apprenticeship	Men	48.60		44.60	49.50	49.80	50.80	48.10	50.00							52.40	49.50
	Women	42.10		44.50	47.70	43.90	52.60	45.50	48.90							50.60	46.60
RQF Level 2 vocational	Men	42.70	46.50	39.80	45.20	46.80	44.10	42.40	45.00	44.30		42.10	43.20	48.00	46.80	46.20	44.80
	Women	39.20	44.40	38.40	38.00	46.90	41.40	42.00	42.90	40.50			39.70	43.50	42.30	45.50	41.40
NVQ level 2	Men	43.50		39.20	44.60	46.90	45.30	42.60	43.00	45.60						47.10	44.80
	Women	38.50		37.60	41.20		45.10	42.50	42.70					42.80	47.80	46.00	42.30
BTEC level 2	Men	48.80		39.30	49.60	48.80	44.30	42.10	48.70	45.80					48.30	46.20	46.30
	Women	42.40		39.30			39.10	42.70	46.70	41.90					45.50	42.70	42.80
Other full Level 2 vocational	Men	42.60	47.30	39.60	46.80	49.70	44.00	41.30	45.20	42.70					44.30	46.90	45.60
	Women	39.40	42.60	38.80	42.30	51.40	41.20	41.90	41.10	40.00				45.20	40.70	46.50	40.80
Other RQF Level 2 (not full) vocational	Men	40.90	45.90	40.80	43.40	42.50	44.00	42.30	44.70	44.90		42.40	43.10		46.90	43.20	43.70
	Women	38.30	44.80	36.00	35.00	39.70	41.00	39.70	41.90	39.00			39.60	42.00	42.40	43.10	40.10
RQF Level 1 vocational	Men	39.20	39.90	31.20	39.50	41.30	36.10	35.30	42.20	36.50		36.70	40.00		37.50	38.00	38.60
	Women	35.20	38.10	30.90	33.60	35.60	35.40	35.40	37.00	35.80		30.10	38.00		34.70	37.90	35.40
NVQ level 1	Men			25.60	38.40	39.10	32.70	31.10	37.90						39.60	32.80	35.20
	Women	32.00		24.20	30.50			33.60							37.10	32.20	33.10
Other level 1 vocational	Men	39.20	40.00	33.90	39.80	41.60	36.20	38.50	42.60	36.50		36.70	40.10		37.40	38.80	38.90
	Women	35.20	38.40	34.30	34.90	35.40	35.50	37.60	37.00	35.80		29.70	38.30		34.60	39.70	35.80

Note: The figures refer to the 2001/02, 2002/03 and 2003/04 cohort of KS4 male students who attained their highest qualification at the age of 26 or before and who are in employment at age 28. Descriptive statistics are only shown for treatment groups of at least 50 individuals.

Source: London Economics' analysis of Longitudinal Educational Outcome (LEO) data

Table 6: Average Key-Stage 2 test score in English, by highest qualification, subject area of study and gender

		Health	Science & Maths	Agriculture & Animal Care	Engineering	Construction	ICT	Retail	Leisure &Tourism	Arts & Media	History & Philosophy	Social sciences	Languages	Education	Prep. For Life & Work	Business & Law	All
RQF Level 4 vocational	Men	53.80			58.60	58.30	53.00	51.00	53.70	56.50				55.40		61.90	58.40
	Women	57.00		59.40	63.40	64.20	61.30	57.00	57.50	58.60				59.40		64.70	62.10
Advanced Apprenticeships	Men	52.10		50.60	53.20	51.10	56.60	53.30	54.10	54.70						57.50	53.10
	Women	52.80		60.00	59.50	55.20	60.50	55.80	58.90					56.90		60.60	56.60
RQF Level 3 vocational	Men	52.50	52.00	50.40	50.00	50.20	51.20	47.40	53.20	54.30				51.00	46.70	53.00	51.80
	Women	53.80	55.90	55.60	56.70	59.30	53.40	54.10	55.40	57.30			57.40	56.40	53.70	58.90	55.10
NVQ level 3	Men	53.10		47.90	48.00	48.50	52.10	46.60	46.90							55.40	49.50
	Women	51.80		59.30				53.50	51.10					56.10		60.20	53.80
BTEC level 3	Men	52.90	51.80	51.00	52.80	56.50	51.10	53.20	53.40	54.20						50.60	53.00
	Women	56.10	55.80	55.10	60.70	62.30	51.70	60.70	55.40	57.00						55.20	56.40
Other full level 3	Men	53.30		53.90	48.70	48.20	55.60	50.60	56.20	57.50				54.10		58.20	53.30
	Women	54.00		59.00			51.70	54.80	58.10	60.90				56.40		60.80	55.70
Other RQF Level 3 (not full) vocational	Men	50.20	51.50	46.90	49.30	50.50	48.80	47.50	51.00	51.80				47.80	46.60	51.90	49.80
	Women	53.30	55.70	53.50	56.00		55.30	53.40	54.20	55.00				56.70	53.50	58.30	54.60
Intermediate Apprenticeship	Men	47.60		44.00	47.10	47.00	49.50	47.00	48.40							51.20	47.60
	Women	48.10		51.20	52.40	48.30	56.20	51.10	53.30							55.70	52.10
RQF Level 2 vocational	Men	43.10	47.40	40.80	44.10	44.50	44.80	42.40	45.20	46.70		42.30	45.40	44.20	45.20	45.70	44.30
	Women	46.20	51.60	46.60	45.30	49.90	49.00	48.20	49.20	48.30			49.30	50.00	48.10	51.80	48.10
NVQ level 2	Men	44.70		40.00	43.90	45.00	45.80	42.80	42.70	47.50						46.40	44.20
	Women	46.20		46.20	47.70		51.50	48.40	47.60					50.70	54.20	52.30	48.70
BTEC level 2	Men	44.80		38.90	44.90	44.80	42.00	41.00	44.90	45.50					46.30	43.20	43.80
	Women	44.90		44.30			44.00	47.20	48.50	46.30					49.00	45.50	46.10
Other full Level 2 vocational	Men	44.30	49.00	41.90	44.60	45.00	45.80	41.50	47.50	47.50					44.40	46.90	45.30
	Women	46.50	49.60	48.50	45.20	49.00	48.60	48.30	50.40	50.00				50.10	48.70	52.50	48.40
Other RQF Level 2 (not full) vocational	Men	41.10	47.20	41.60	43.70	42.80	44.70	41.90	46.10	46.90		42.60	45.40		45.20	43.40	43.70
	Women	46.30	51.90	46.00	43.70	48.30	49.70	47.20	48.80	47.60			49.20	49.00	47.90	50.60	47.60
RQF Level 1 vocational	Men	39.70	40.70	33.90	39.60	41.00	38.50	37.70	42.80	39.50		37.20	43.10		38.00	40.80	39.40
	Women	42.30	45.40	38.40	41.00	41.60	43.60	42.30	43.90	42.70		40.20	45.90		41.30	46.30	42.50
NVQ level 1	Men			29.20	38.70	41.60	37.00	34.70	40.20						39.90	37.90	37.50
	Women	41.40		32.90	39.50			40.30							45.20	42.70	40.50
Other level 1 vocational	Men	39.70	40.60	36.10	39.90	40.90	38.60	39.90	43.00	39.50		37.20	42.80		38.00	41.30	39.60
	Women	42.30	45.40	41.20	41.60	41.60	43.60	44.80	43.90	42.60		40.10	46.10		41.20	47.40	42.90

Note: The figures refer to the 2001/02, 2002/03 and 2003/04 cohort of KS4 male students who attained their highest qualification at the age of 26 or before and who are in employment at age 28. Descriptive statistics are only shown for treatment groups of at least 50 individuals.

Source: London Economics' analysis of Longitudinal Educational Outcome (LEO) data

Table 7a: Earnings regressions, by RQF Level and subject area - Men

		Health	Science & Maths	Agriculture	Engineering	Construction	ICT	Retail	Leisure & Tourism	Arts & Media	Languages	Education	Prep. For life & Work	Business & Law
							MEN							
RQF Level 4	**Coeff.**	0.136***			0.341***	0.211***	0.132***	0.052	0.080*	0.122***		0.017		0.159***
	Std. Err.	(0.046)			(0.014)	(0.021)	(0.029)	(0.063)	(0.048)	(0.025)		(0.063)		(0.019)
	Obs.	4,327			8,828	3,955	4,868	2,124	5,636	8,672		456		4,093
Advanced Apprenticeships	**Coeff.**	-0.011		0.171***	0.172***	0.097***	0.132***	0.118***	0.106***					0.103***
	Std. Err.	(0.025)		(0.030)	(0.006)	(0.009)	(0.024)	(0.012)	(0.027)					(0.013)
	Obs.	2,179		1,753	32,308	16,857	3,448	9,891	2,177					7,710
RQF Level 3	**Coeff.**	0.109***	0.076	0.041**	0.127***	0.070***	0.110***	0.095***	0.071***	0.044***		0.219**	0.014	0.085***
	Std. Err.	(0.012)	(0.067)	(0.019)	(0.009)	(0.013)	(0.014)	(0.014)	(0.013)	(0.015)		(0.103)	(0.042)	(0.016)
	Obs.	10,313	748	3,620	16,094	12,432	9,191	8,011	10,130	10,757		332	3,719	6,672
Intermediate Apprenticeships	**Coeff.**	0.216***		0.217***	0.181***	0.197***	0.322***	0.160***	0.030					0.148***
	Std. Err.	(0.020)		(0.032)	(0.012)	(0.012)	(0.021)	(0.018)	(0.025)					(0.024)
	Obs.	10,031		3,478	21,829	22,179	8,268	14,942	6,969					9,193
RQF Level 2	**Coeff.**	0.063***	0.004	0.131***	0.055***	0.149***	0.084***	0.116***	-0.024	0.017	0.064		0.025*	0.061**
	Std. Err.	(0.014)	(0.049)	(0.030)	(0.011)	(0.012)	(0.017)	(0.018)	(0.018)	(0.028)	(0.116)		(0.014)	(0.024)
	Obs.	10,031	762	3,478	21,829	22,179	8,268	14,942	6,969	3,197	217		8,365	9,193

Note: Significance levels: *** p<0.01, ** p<0.05, * p<0.1. The figures refer to the 2001/02, 2002/03 and 2003/04 cohort of Key Stage 4 male students who attained their highest qualification at the age of 26 or before. Results are only shown for treatment groups of at least 50. "History & Philosophy" and "Social Sciences" have been omitted due to small sample sizes for all RQF Levels.

Source: London Economics' analysis of Longitudinal Educational Outcome (LEO) data

Table 7b: Earnings regressions, by RQF Level and subject area - Women

		Health	Science & Maths	Agriculture	Engineering	Construction	ICT	Retail	Leisure & Tourism	Arts & Media	Languages	Education	Prep. For life & Work	Business & Law
							MEN							
RQF Level 4	**Coeff.**	0.131***		0.064	0.275**	0.240		0.205***	0.061	0.039		0.202***		0.159***
	Std. Err.	(0.030)		(0.065)	(0.127)	(0.157)		(0.051)	(0.060)	(0.032)		(0.046)		(0.016)
	Obs.	17,403		2,410	286	194		10,588	3,215	7,308		1,189		6,743
Advanced Apprenticeships	**Coeff.**	0.139***		0.323***	0.224***	-0.137	0.106	0.079***	0.051			0.112		0.120***
	Std. Err.	(0.014)		(0.052)	(0.060)	(0.361)	(0.092)	(0.013)	(0.034)			(0.265)		(0.011)
	Obs.	12,340		1,376	729	129	398	16,413	1,951			166		16,002
RQF Level 3	**Coeff.**	0.133***	0.210**	0.175***	0.161**	0.108	0.070**	0.109***	0.098***	0.119***		0.170***	0.098*	0.149***
	Std. Err.	(0.009)	(0.093)	(0.030)	(0.068)	(0.160)	(0.035)	(0.010)	(0.023)	(0.021)		(0.047)	(0.052)	(0.015)
	Obs.	25,120	516	3,301	1,030	216	1,980	19,502	5,431	8,463		1,134	1,768	8,287
Intermediate Apprenticeships	**Coeff.**	0.072***		0.208***	0.379***	0.177	0.370***	0.121***	0.145***					0.149***
	Std. Err.	(0.018)		(0.057)	(0.076)	(0.224)	(0.053)	(0.017)	(0.047)					(0.028)
	Obs.	14,662		1,746	1,335	219	2,305	22,685	3,276					13,124
RQF Level 2	**Coeff.**	0.100***	-0.051	0.199***	0.111*	0.139	0.122***	0.098***	0.093**	0.078*	-0.031	-0.092	0.093***	0.125***
	Std. Err.	(0.015)	(0.085)	(0.051)	(0.067)	(0.212)	(0.032)	(0.017)	(0.037)	(0.046)	(0.105)	(0.171)	(0.025)	(0.029)
	Obs.	14,662	430	1,746	1,335	219	2,305	22,685	3,276	1,912	293	292	3,063	13,124

Note: Significance levels: *** p<0.01, ** p<0.05, * p<0.1. The figures refer to the 2001/02, 2002/03 and 2003/04 cohort of Key Stage 4 male students who attained their highest qualification at the age of 26 or before. Results are only shown for treatment groups of at least 50. "History & Philosophy" and "Social Sciences" have been omitted due to small sample sizes for all RQF Levels.

Source: London Economics' analysis of Longitudinal Educational Outcome (LEO) data

Table 8a: Employment regressions, by RQF Level and subject area - Men

		Health	Science & Maths	Agriculture	Engineering	Construction	ICT	Retail	Leisure & Tourism	Arts & Media	Social Sciences	Languages	Education	Prep. For life & Work	Business & Law
							MEN								
RQF Level 4	**Coeff.**	0.069***			CNA	0.032***	-0.003	0.027	0.083	0.008			0.005		CNA
	Std. Err.	(0.017)			CNA	(0.010)	(0.016)	(0.027)	(1.731)	(0.013)			(0.028)		CNA
	Obs.	4,721			CNA	4,232	5,251	2,231	6,056	9,222			497		CNA
Advanced Apprenticeships	**Coeff.**	0.051		0.028	0.008**	0.015***	-0.080***	0.016**	0.019						0.008
	Std. Err.	(0.070)		(0.018)	(0.004)	(0.005)	(0.016)	(0.008)	(0.013)						(0.008)
	Obs.	2,373		1,909	34,957	18,135	3,961	10,526	2,364						8,391
RQF Level 3	**Coeff.**	0.040***	0.062	0.011	0.023***	0.018***	0.034***	0.034***	0.018***	0.019***			-0.008	0.001	0.018**
	Std. Err.	(0.007)	(0.173)	(0.011)	(0.005)	(0.006)	(0.007)	(0.008)	(0.007)	(0.007)			(0.050)	(0.025)	(0.009)
	Obs.	11,175	794	3,883	17,262	13,279	9,953	8,509	10,899	11,473			360	3,966	7,168
Intermediate Apprenticeships	**Coeff.**	0.027**		0.033	0.034***	0.017***	0.039***	0.045***	0.007						0.036***
	Std. Err.	(0.011)		(0.000)	(0.007)	(0.006)	(0.011)	(0.010)	(0.013)						(0.013)
	Obs.	10,880		3,763	23,442	23,743	9,012	15,943	7,506						9,910
RQF Level 2	**Coeff.**	0.021***	0.017	0.044	0.016**	0.020***	0.023***	0.025**	0.013	CNA	0.341***	-0.098		0.018**	0.017
	Std. Err.	(0.008)	(0.026)	(0.000)	(0.006)	(0.006)	(0.009)	(0.010)	(0.009)	CNA	(0.000)	(0.190)		(0.007)	(0.013)
	Obs.	10,880	827	3,763	23,442	23,743	9,012	15,943	7,506	CNA	102	231		8,978	9,910

Note: Significance levels: *** p<0.01, ** p<0.05, * p<0.1. The figures refer to the 2001/02, 2002/03 and 2003/04 cohort of Key Stage 4 male students who attained their highest qualification at the age of 26 or before. Results are only shown for treatment groups of at least 50. "History & Philosophy" has been omitted due to small sample sizes for all RQF Levels. CNA: Convergence not achieved.

Source: London Economics' analysis of Longitudinal Educational Outcome (LEO) data

Table 8b: Employment regressions, by RQF Level and subject area - Women

		Health	Science & Maths	Agriculture	Engineering	Construction	ICT	Retail	Leisure & Tourism	Arts & Media	Social Sciences	Languages	Education	Prep. For life & Work	Business & Law
							WOMEN								
RQF Level 4	**Coeff.**	-0.000		0.026	-0.124	-0.018	-0.043	-0.013	0.029	0.015			0.001		0.017**
	Std. Err.	(0.014)		(0.029)	(0.109)	(0.068)	(0.058)	(0.024)	(0.094)	(0.015)			(0.021)		(0.008)
	Obs.	19,198		2,615	315	214	810	11,485	3,516	7,916			1,288		7,397
Advanced Apprenticeships	**Coeff.**	0.015**		0.090***	-0.004	0.468***	-0.131***	0.013**	0.014				0.500***		0.003
	Std. Err.	(0.007)		(0.022)	(0.025)	(0.001)	(0.042)	(0.006)	(0.016)				(0.026)		(0.006)
	Obs.	13,500		1,472	796	142	456	17,707	2,147				177		17,574
RQF Level 3	**Coeff.**	0.017***	0.061	0.048***	0.063**	-0.037	0.018	0.020***	0.009	0.018*			0.040*	0.038	0.016**
	Std. Err.	(0.005)	(0.256)	(0.014)	(0.026)	(0.063)	(0.028)	(0.005)	(0.054)	(0.009)			(0.024)	(0.025)	(0.007)
	Obs.	27,607	562	3,615	1,136	229	2,171	21,237	5,924	9,169			1,237	1,958	9,094
Intermediate Apprenticeships	**Coeff.**	0.029***		0.044*	0.060*	0.039	0.050	0.048***	0.034						0.033***
	Std. Err.	(0.009)		(0.027)	(0.032)	(0.051)	(0.000)	(0.008)	(0.056)						(0.013)
	Obs.	16,082		1,938	1,480	240	2,527	24,715	3,575						14,336
RQF Level 2	**Coeff.**	0.030***	0.023	0.028	0.005	0.217***	0.020	0.031***	0.041	0.028		-0.008	0.049	0.020	0.021
	Std. Err.	(0.007)	(0.033)	(0.025)	(0.029)	(0.039)	(0.000)	(0.008)	(0.066)	(0.019)		(0.033)	(0.110)	(0.012)	(0.013)
	Obs.	16,082	480	1,938	1,480	240	2,527	24,715	3,575	2,078		317	322	3,401	14,336

Note: Significance levels: *** p<0.01, ** p<0.05, * p<0.1. The figures refer to the 2001/02, 2002/03 and 2003/04 cohort of Key Stage 4 male students who attained their highest qualification at the age of 26 or before. Results are only shown for treatment groups of at least 50. "History & Philosophy" has been omitted due to small sample sizes for all RQF Levels. CNA: Convergence not achieved.

Source: London Economics' analysis of Longitudinal Educational Outcome (LEO) data

Table 9a: Benefits regressions, by RQF Level and subject area - Men

		Health	Science & Maths	Agriculture	Engineering	Construction	ICT	Retail	Leisure & Tourism	Arts & Media	Social Sciences	Languages	Education	Prep. For life & Work	Business & Law
							MEN								
RQF Level 4	**Coeff.**	0.005			-0.005	-0.005	CNA	-0.000	-0.008	CNA			0.018***		-0.006
	Std. Err.	(0.010)			(0.003)	(0.005)	CNA	(0.004)	(0.087)	CNA			(0.000)		(0.016)
	Obs.	4,732			9,581	4,249	CNA	2,236	6,084	CNA			506		4,437
Advanced Apprenticeships	**Coeff.**	-0.006		CNA	-0.003*	CNA	-0.009	-0.003**	CNA						-0.007***
	Std. Err.	(0.005)		CNA	(0.002)	CNA	(0.007)	(0.002)	CNA						(0.002)
	Obs.	2,394		CNA	35,178	CNA	4,022	10,560	CNA	71					8,417
RQF Level 3	**Coeff.**	-0.013***	CNA	-0.000	CNA	CNA	CNA	CNA	-0.010***	-0.004			-0.022***	0.015	CNA
	Std. Err.	(0.002)	CNA	(0.003)	CNA	CNA	CNA	CNA	(0.003)	(0.011)			(0.000)	(0.022)	CNA
	Obs.	11,215	CNA	3,927	CNA	CNA	CNA	CNA	10,948	11,584			367	4,018	CNA
Intermediate Apprenticeships	**Coeff.**	-0.024		-0.014	-0.015	-0.011***	-0.017	-0.015	-0.008*						-0.012
	Std. Err.	(0.000)		(0.000)	(0.016)	(0.002)	(0.012)	(0.075)	(0.004)						(0.000)
	Obs.	10,963		3,836	23,594	23,829	9,216	16,044	7,571						9,971
RQF Level 2	**Coeff.**	-0.010	CNA	-0.012	-0.005	-0.009***	-0.004	-0.007	-0.002	0.000	-0.005***	0.041***		-0.005	-0.003
	Std. Err.	(0.000)	CNA	(0.000)	(0.006)	(0.002)	(0.004)	(0.034)	(0.003)	(0.006)	(0.002)	(0.000)		(0.000)	(0.000)
	Obs.	10,963	CNA	3,836	23,594	23,829	9,216	16,044	7,571	3,563	111	236	61	9,246	9,971

Note: Significance levels: *** p<0.01, ** p<0.05, * p<0.1. The figures refer to the 2001/02, 2002/03 and 2003/04 cohort of Key Stage 4 male students who attained their highest qualification at the age of 26 or before. Results are only shown for treatment groups of at least 50. "History & Philosophy" has been omitted due to small sample sizes for all RQF Levels. CNA: Convergence not achieved.

Source: London Economics' analysis of Longitudinal Educational Outcome (LEO) data

Table 9b: Benefits regressions, by RQF Level and subject area - Women

		Health	Science & Maths	Agriculture	Engineering	Construction	ICT	Retail	Leisure & Tourism	Arts & Media	Social Sciences	Languages	Education	Prep. For life & Work	Business & Law
							WOMEN								
RQF Level 4	**Coeff.**	0.003		CNA	0.005***	-0.001***	CNA	CNA	CNA	-0.005			-0.037***		0.000
	Std. Err.	(0.002)		CNA	(0.001)	(0.000)	CNA	CNA	CNA	(0.018)			(0.001)		(0.001)
	Obs.	19,210		CNA	317	216	CNA	CNA	CNA	7,952			1,290		7,433
Advanced Apprenticeships	**Coeff.**	-0.007***		-0.006	-0.003	-0.001	CNA	CNA	-0.002				0.001***		CNA
	Std. Err.	(0.002)		(0.004)	(0.005)	(0.001)	CNA	CNA	(0.002)				(0.000)		CNA
	Obs.	13,536		1,474	801	142	CNA	CNA	2,162				177		CNA
RQF Level 3	**Coeff.**	-0.007	0.005	-0.009	-0.016**	-0.021***	-0.000	CNA	CNA	-0.004			CNA	CNA	-0.006***
	Std. Err.	(0.019)	(0.010)	(0.029)	(0.006)	(0.000)	(0.005)	CNA	CNA	(0.016)			CNA	CNA	(0.002)
	Obs.	27,732	564	3,654	1,146	231	2,193	CNA	CNA	9,239			CNA	CNA	9,141
Intermediate Apprenticeships	**Coeff.**	-0.013***		-0.020	-0.012	0.029***	-0.013	-0.012	CNA						-0.009***
	Std. Err.	(0.003)		(0.049)	(0.010)	(0.002)	(0.000)	(0.015)	CNA						(0.003)
	Obs.	16,218		1,978	1,498	243	2,580	24,862	CNA						14,414
RQF Level 2	**Coeff.**	-0.009***	-0.007	-0.011	-0.003	0.002	-0.010	-0.007	0.000	-0.013*		0.020	0.032***	-0.017	-0.005
	Std. Err.	(0.003)	(0.010)	(0.027)	(0.010)	(0.002)	(0.000)	(0.009)	(0.005)	(0.007)		(0.045)	(0.005)	(0.000)	(0.003)
	Obs.	16,218	485	1,978	1,498	243	2,580	24,862	3,601	2,156		325	322	3,576	14,414

Note: Significance levels: *** p<0.01, ** p<0.05, * p<0.1. The figures refer to the 2001/02, 2002/03 and 2003/04 cohort of Key Stage 4 male students who attained their highest qualification at the age of 26 or before. Results are only shown for treatment groups of at least 50. "History & Philosophy" has been omitted due to small sample sizes for all RQF Levels. CNA: Convergence not achieved.

Source: London Economics' analysis of Longitudinal Educational Outcome (LEO) data

Table 10a: Earnings regressions, by qualification aim and subject area - Men

			Health	Science & Maths	Agriculture	Engineering	Construction	ICT	Retail	Leisure & Tourism	Arts & Media	Languages	Education	Prep. For life & Work	Business & Law
RQF Level 4		**Coeff.**	0.136***			0.341***	0.211***	0.132***	0.052	0.080*	0.122***		0.017		0.159***
		Std. Err.	(0.046)			(0.014)	(0.021)	(0.029)	(0.063)	(0.048)	(0.025)		(0.063)		(0.019)
		Obs.	4,327			8,828	3,955	4,868	2,124	5,636	8,672		456		4,093
Advanced Apprenticeships		**Coeff.**	-0.011		0.171***	0.172***	0.097***	0.132***	0.118***	0.106***					0.103***
		Std. Err.	(0.025)		(0.030)	(0.006)	(0.009)	(0.024)	(0.012)	(0.027)					(0.013)
		Obs.	2,179		1,753	32,308	16,857	3,448	9,891	2,177					7,710
RQF Level 3	**NVQ Level 3**	**Coeff.**	0.168***		0.131***	0.190***	0.144***	0.223***	0.100***	0.084*					0.130***
		Std. Err.	(0.020)		(0.045)	(0.019)	(0.019)	(0.058)	(0.015)	(0.045)					(0.022)
		Obs.	10,313		3,620	16,094	12,432	9,191	8,011	10,130					6,672
	BTEC Level 3	**Coeff.**	0.105***	0.096	0.041*	0.078***	0.074***	0.109***	0.059	0.083***	0.044***				0.030
		Std. Err.	(0.015)	(0.074)	(0.023)	(0.015)	(0.024)	(0.016)	(0.041)	(0.015)	(0.016)				(0.022)
		Obs.	10,313	748	3,620	16,094	12,432	9,191	8,011	10,130	10,757				6,672
	Other full Level 3	**Coeff.**	0.047*		-0.032	0.082***	-0.000	0.103***	0.123**	0.096***	0.058**		0.078		0.079**
		Std. Err.	(0.024)		(0.041)	(0.021)	(0.020)	(0.027)	(0.051)	(0.024)	(0.025)		(0.116)		(0.032)
		Obs.	10,313		3,620	16,094	12,432	9,191	8,011	10,130	10,757		332		6,672
	Level 3 other voc	**Coeff.**	0.101***		0.050*	0.140***	0.073***	0.107***	0.080***	0.021	0.028		0.361***	0.012	0.138***
		Std. Err.	(0.020)		(0.030)	(0.011)	(0.025)	(0.021)	(0.031)	(0.021)	(0.022)		(0.102)	(0.043)	(0.028)
		Obs.	10,313		3,620	16,094	12,432	9,191	8,011	10,130	10,757		332	3,719	6,672
Intermediate Apprenticeships		**Coeff.**	0.224***		0.222***	0.187***	0.206***	0.325***	0.164***	0.023					0.161***
		Std. Err.	(0.020)		(0.031)	(0.012)	(0.012)	(0.021)	(0.018)	(0.025)					(0.024)
		Obs.	10,031		3,478	21,829	22,179	8,268	14,942	6,969					9,193
RQF Level 2	**NVQ Level 2**	**Coeff.**	0.174***		0.192***	0.109***	0.251***	0.169***	0.146***	-0.059**					0.124***
		Std. Err.	(0.018)		(0.035)	(0.013)	(0.014)	(0.038)	(0.019)	(0.023)					(0.026)
		Obs.	10,031		3,478	21,829	22,179	8,268	14,942	6,969					9,193
	BTEC Level 2	**Coeff.**	0.063***		-0.055	0.044	0.069	0.047*	-0.090**	-0.042*	0.002			0.087	0.015
		Std. Err.	(0.024)		(0.045)	(0.029)	(0.045)	(0.026)	(0.045)	(0.024)	(0.033)			(0.071)	(0.040)
		Obs.	10,031		3,478	21,829	22,179	8,268	14,942	6,969	3,197			8,365	9,193
	Other full Level 2	**Coeff.**	0.080***	0.084	0.092**	0.014	0.085***	0.089***	0.152***	-0.019	0.043			0.066	0.043
		Std. Err.	(0.019)	(0.079)	(0.037)	(0.014)	(0.015)	(0.019)	(0.025)	(0.022)	(0.032)			(0.044)	(0.028)
		Obs.	10,031	762	3,478	21,829	22,179	8,268	14,942	6,969	3,197			8,365	9,193
	Level 2 other voc	**Coeff.**	-0.017	-0.015	0.216***	0.010	0.080***	0.079***	0.020	0.026	-0.009	0.059		0.020	-0.001
		Std. Err.	(0.017)	(0.055)	(0.036)	(0.016)	(0.015)	(0.022)	(0.025)	(0.023)	(0.036)	(0.118)		(0.014)	(0.033)
		Obs.	10,031	762	3,478	21,829	22,179	8,268	14,942	6,969	3,197	217		8,365	9,193

Note: Significance levels: *** p<0.01, ** p<0.05, * p<0.1. The figures refer to the 2001/02, 2002/03 and 2003/04 cohort of Key Stage 4 male students who attained their highest qualification at the age of 26 or before. Results are only shown for treatment groups of at least 50. "History & Philosophy" and "Social Sciences" have been omitted due to small sample sizes for all RQF Levels. **Source: London Economics' analysis of Longitudinal Educational Outcome (LEO) data**

Table 10b: Earnings regressions, by qualification aim and subject area - Women

			Health	Science & Maths	Agriculture	Engineering	Construction	ICT	Retail	Leisure & Tourism	Arts & Media	Languages	Education	Prep. For life & Work	Business & Law
RQF Level 4		**Coeff.**	0.131***		0.064	0.275**	0.240		0.205***	0.061	0.039		0.202***		0.159***
		Std. Err.	(0.030)		(0.065)	(0.127)	(0.157)		(0.051)	(0.060)	(0.032)		(0.046)		(0.016)
		Obs.	17,403		2,410	286	194		10,588	3,215	7,308		1,189		6,743
Advanced Apprenticeships		**Coeff.**	0.139***		0.323***	0.224***	-0.137	0.106	0.079***	0.051			0.112		0.120***
		Std. Err.	(0.014)		(0.052)	(0.060)	(0.361)	(0.092)	(0.013)	(0.034)			(0.265)		(0.011)
		Obs.	12,340		1,376	729	129	398	16,413	1,951			166		16,002
RQF Level 3	**NVQ Level 3**	**Coeff.**	0.140***		0.382***				0.105***	0.101			0.050		0.177***
		Std. Err.	(0.012)		(0.062)				(0.011)	(0.093)			(0.059)		(0.019)
		Obs.	25,120		3,301				19,502	5,431			1,134		8,287
	BTEC Level 3	**Coeff.**	0.197***	0.201*	0.175***		0.215	0.054	0.198***	0.134***	0.125***				0.091***
		Std. Err.	(0.014)	(0.104)	(0.032)		(0.181)	(0.048)	(0.024)	(0.025)	(0.022)				(0.027)
		Obs.	25,120	516	3,301		216	1,980	19,502	5,431	8,463				8,287
	Other full Level 3	**Coeff.**	0.105***		0.231***				0.104***	0.101**	0.141***		0.178***		0.160***
		Std. Err.	(0.011)		(0.044)				(0.030)	(0.044)	(0.030)		(0.056)		(0.030)
		Obs.	25,120		3,301				19,502	5,431	8,463		1,134		8,287
	Level 3 other voc	**Coeff.**	0.116***	0.199*	0.097**	0.213**		0.071	0.097***	0.003	0.086***		0.260***	0.095*	0.142***
		Std. Err.	(0.016)	(0.119)	(0.044)	(0.086)		(0.045)	(0.020)	(0.035)	(0.028)		(0.061)	(0.052)	(0.021)
		Obs.	25,120	516	3,301	1,030		1,980	19,502	5,431	8,463		1,134	1,768	8,287
Intermediate Apprenticeships		**Coeff.**	0.072***		0.208***	0.420***	0.180	0.367***	0.122***	0.149***					0.153***
		Std. Err.	(0.018)		(0.057)	(0.077)	(0.231)	(0.053)	(0.017)	(0.048)					(0.028)
		Obs.	14,662		1,746	1,335	219	2,305	22,685	3,276					13,124
	NVQ Level 2	**Coeff.**	0.095***		0.251***	0.286***		0.189***	0.107***	0.067			0.033		0.154***
		Std. Err.	(0.020)		(0.075)	(0.077)		(0.060)	(0.017)	(0.051)			(0.192)		(0.030)
		Obs.	14,662		1,746	1,335		2,305	22,685	3,276			292		13,124
	BTEC Level 2	**Coeff.**	0.168***		0.182***			0.124**		0.138***	0.073				0.072
		Std. Err.	(0.026)		(0.062)			(0.061)		(0.046)	(0.053)				(0.061)
		Obs.	14,662		1,746			2,305		3,276	1,912				13,124
	Other full Level 2	**Coeff.**	0.096***		0.198***	0.053		0.048	0.053*	0.073*	0.061		-0.114	0.174***	0.083**
		Std. Err.	(0.017)		(0.057)	(0.098)		(0.042)	(0.029)	(0.041)	(0.051)		(0.195)	(0.054)	(0.036)
		Obs.	14,662		1,746	1,335		2,305	22,685	3,276	1,912		292	3,063	13,124
	Level 2 other voc	**Coeff.**	0.084***	-0.071	0.185**	0.002		0.162***	0.076***	0.101**	0.112**	-0.039	-0.090	0.075***	0.088**
		Std. Err.	(0.022)	(0.091)	(0.078)	(0.073)		(0.040)	(0.024)	(0.046)	(0.056)	(0.105)	(0.183)	(0.026)	(0.040)
		Obs.	14,662	430	1,746	1,335		2,305	22,685	3,276	1,912	293	292	3,063	13,124

Note: Significance levels: *** p<0.01, ** p<0.05, * p<0.1. The figures refer to the 2001/02, 2002/03 and 2003/04 cohort of Key Stage 4 male students who attained their highest qualification at the age of 26 or before. Results are only shown for treatment groups of at least 50. "History & Philosophy" and "Social Sciences" have been omitted due to small sample sizes for all RQF Levels. **Source: London Economics' analysis of Longitudinal Educational Outcome (LEO) data**

Table 11a: Employment regressions, by qualification aim and subject area - Men

			Health	Science & Maths	Agriculture	Engineering	Construction	ICT	Retail	Leisure & Tourism	Arts & Media	Languages	Education	Prep. For life & Work	Business & Law
RQF Level 4		**Coeff.**	0.070***			CNA	0.032***	-0.003	0.027	0.083	0.008		0.005		CNA
		Std. Err.	(0.017)			CNA	(0.010)	(0.016)	(0.027)	(1.731)	(0.013)		(0.028)		CNA
		Obs.	4,714			CNA	4,232	5,251	2,231	6,056	9,222		497		CNA
Advanced Apprenticeships		**Coeff.**	0.051		0.028	0.008**	0.015***	-0.080***	0.016**	0.019					0.008
		Std. Err.	(0.070)		(0.018)	(0.004)	(0.005)	(0.016)	(0.008)	(0.013)					(0.008)
		Obs.	2,373		1,909	34,957	18,135	3,961	10,526	2,364					8,391
RQF Level 3	**NVQ Level 3**	**Coeff.**	0.027**		0.016	0.018*	0.011	0.039	0.034***	0.025					0.022*
		Std. Err.	(0.012)		(0.031)	(0.010)	(0.011)	(0.027)	(0.009)	(0.021)					(0.013)
		Obs.	11,153		3,883	17,262	13,279	9,953	8,509	10,899					7,168
	BTEC Level 3	**Coeff.**	0.042***	0.076	0.014	0.027***	0.028**	0.031***	0.023	0.027***	0.026***				0.011
		Std. Err.	(0.009)	(0.000)	(0.012)	(0.008)	(0.011)	(0.008)	(0.022)	(0.007)	(0.008)				(0.011)
		Obs.	11,153	794	3,883	17,262	13,279	9,953	8,509	10,899	11,473				7,168
	Other full Level 3	**Coeff.**	0.040***		0.011	0.014	0.013	0.043***	-0.022	0.002	0.004		0.001		0.019
		Std. Err.	(0.014)		(0.022)	(0.011)	(0.010)	(0.014)	(0.037)	(0.013)	(0.012)		(0.054)		(0.021)
		Obs.	11,153		3,883	17,262	13,279	9,953	8,509	10,899	11,473		360		7,168
	Level 3 other voc	**Coeff.**	0.050***	0.009	0.006	0.025***	0.027**	0.037***	0.054***	0.001	0.004		-0.015	-0.002	0.027*
		Std. Err.	(0.011)	(0.000)	(0.016)	(0.006)	(0.012)	(0.011)	(0.015)	(0.011)	(0.011)		(0.055)	(0.025)	(0.014)
		Obs.	11,153	794	3,883	17,262	13,279	9,953	8,509	10,899	11,473		360	3,966	7,168
Intermediate Apprenticeships		**Coeff.**	0.028**		0.032	0.036***	0.017***	0.039***	0.046***	0.006					0.039***
		Std. Err.	(0.011)		(0.456)	(0.007)	(0.006)	(0.011)	(0.010)	(0.013)					(0.013)
		Obs.	10,838		3,763	23,442	23,743	9,012	15,943	7,506					9,910
	NVQ Level 2	**Coeff.**	0.029***		0.061	0.021***	0.026***	0.011	0.030***	0.011	-0.050				0.028**
		Std. Err.	(0.010)		(0.907)	(0.007)	(0.007)	(0.019)	(0.010)	(0.011)	(0.000)				(0.014)
		Obs.	10,838		3,763	23,442	23,743	9,012	15,943	7,506	3,448				9,910
	BTEC Level 2	**Coeff.**	0.027*		0.057	0.020	-0.002	0.058***	-0.004	0.024**	-0.026			0.079**	0.040**
		Std. Err.	(0.014)		(0.848)	(0.016)	(0.032)	(0.012)	(0.021)	(0.012)	(0.000)			(0.036)	(0.019)
		Obs.	10,838		3,763	23,442	23,743	9,012	15,943	7,506	3,448			8,978	9,910
	Other full Level 2	**Coeff.**	0.028**	0.002	0.034	0.019**	0.017**	0.027***	0.049***	0.019*	-0.020			-0.001	0.012
		Std. Err.	(0.011)	(0.039)	(0.474)	(0.008)	(0.008)	(0.010)	(0.013)	(0.011)	(0.000)			(0.022)	(0.015)
		Obs.	10,838	827	3,763	23,442	23,743	9,012	15,943	7,506	3,448			8,978	9,910
	Level 2 other voc	**Coeff.**	0.011	0.016	0.021	0.002	0.014*	-0.003	-0.004	0.001	-0.022	-0.095		0.018**	-0.004
		Std. Err.	(0.009)	(0.019)	(0.286)	(0.009)	(0.008)	(0.012)	(0.013)	(0.012)	(0.000)	(0.000)		(0.007)	(0.016)
		Obs.	10,838	827	3,763	23,442	23,743	9,012	15,943	7,506	3,448	231		8,978	9,910

Note: Significance levels: *** p<0.01, ** p<0.05, * p<0.1. The figures refer to the 2001/02, 2002/03 and 2003/04 cohort of Key Stage 4 male students who attained their highest qualification at the age of 26 or before. Results are only shown for treatment groups of at least 50. "History & Philosophy" and "Social Sciences" have been omitted due to small sample sizes for all RQF Levels. CNA: Convergence not achieved. **Source: London Economics' analysis of Longitudinal Educational Outcome (LEO) data**

Table 11b: Employment regressions, by qualification aim and subject area - Women

			Health	Science & Maths	Agriculture	Engineering	Construction	ICT	Retail	Leisure & Tourism	Arts & Media	Languages	Education	Prep. For life & Work	Business & Law
RQF Level 4		**Coeff.**	-0.000		0.026	-0.124	-0.018	-0.043	-0.013	0.029	0.015		0.001		0.017**
		Std. Err.	(0.014)		(0.029)	(0.109)	(0.068)	(0.058)	(0.024)	(0.094)	(0.015)		(0.021)		(0.008)
		Obs.	19,143		2,615	315	214	810	11,485	3,516	7,916		1,288		7,397
Advanced Apprenticeships		**Coeff.**	0.015**		0.090***	-0.004	0.468***	-0.131***	0.013**	0.014			0.500***		0.003
		Std. Err.	(0.007)		(0.022)	(0.025)	(0.001)	(0.042)	(0.006)	(0.016)			(0.026)		(0.006)
		Obs.	13,500		1,472	796	142	456	17,707	2,147			177		17,574
RQF Level 3	**NVQ Level 3**	**Coeff.**	0.018***		0.048				0.024***	0.039			0.050*		0.019**
		Std. Err.	(0.006)		(0.032)				(0.005)	(0.200)			(0.028)		(0.010)
		Obs.	27,607		3,615				21,237	5,924			1,237		9,094
	BTEC Level 3	**Coeff.**	0.021***	0.059	0.038**	0.066	0.084	0.042	0.007	0.006	0.021**				0.006
		Std. Err.	(0.007)	(0.240)	(0.016)	(0.054)	(0.095)	(0.163)	(0.012)	(0.028)	(0.010)				(0.014)
		Obs.	27,607	562	3,615	1,136	229	2,171	21,237	5,924	9,169				9,094
	Other full Level 3	**Coeff.**	0.019***		0.071***			0.040	0.018	0.022	0.010		0.049*		0.033**
		Std. Err.	(0.006)		(0.019)			(0.160)	(0.013)	(0.107)	(0.014)		(0.028)		(0.015)
		Obs.	27,607		3,615			2,171	21,237	5,924	9,169		1,237		9,094
	Level 3 other voc	**Coeff.**	0.009	0.060	0.063***	0.054		0.004	0.004	0.011	0.011		0.016	0.044*	0.014
		Std. Err.	(0.007)	(0.245)	(0.018)	(0.034)		(0.026)	(0.009)	(0.054)	(0.013)		(0.030)	(0.025)	(0.011)
		Obs.	27,607	562	3,615	1,136		2,171	21,237	5,924	9,169		1,237	1,958	9,094
Intermediate Apprenticeships		**Coeff.**	0.031***		0.045*	0.065**	0.043	0.047	0.049***	0.034					0.034***
		Std. Err.	(0.009)		(0.027)	(0.032)	(0.049)	(0.200)	(0.008)	(0.000)					(0.013)
		Obs.	16,082		1,938	1,480	240	2,527	24,715	3,575					14,336
RQF Level 2	**NVQ Level 2**	**Coeff.**	0.040***		0.101***	0.023		0.011	0.036***	0.032			-0.011	-0.005	0.026*
		Std. Err.	(0.009)		(0.033)	(0.034)		(0.054)	(0.008)	(0.000)			(0.115)	(0.072)	(0.014)
		Obs.	16,082		1,938	1,480		2,527	24,715	3,575			322	3,401	14,336
	BTEC Level 2	**Coeff.**	0.032**		0.027			0.051	0.023	0.044	0.025				0.044*
		Std. Err.	(0.013)		(0.031)			(0.221)	(0.047)	(0.000)	(0.022)				(0.023)
		Obs.	16,082		1,938			2,527	24,715	3,575	2,078				14,336
	Other full Level 2	**Coeff.**	0.034***	-0.031	0.019	0.018	0.245***	-0.001	0.016	0.034	0.023		0.070	0.041	0.030*
		Std. Err.	(0.008)	(0.066)	(0.028)	(0.047)	(0.048)	(0.021)	(0.014)	(0.000)	(0.022)		(0.113)	(0.026)	(0.016)
		Obs.	16,082	480	1,938	1,480	240	2,527	24,715	3,575	2,078		322	3,401	14,336
	Level 2 other voc	**Coeff.**	0.012	0.036	-0.012	-0.007	0.219***	0.030	0.014	0.058	0.038	-0.013	0.063	0.017	-0.012
		Std. Err.	(0.010)	(0.047)	(0.040)	(0.031)	(0.049)	(0.126)	(0.011)	(0.000)	(0.024)	(0.000)	(0.107)	(0.013)	(0.018)
		Obs.	16,082	480	1,938	1,480	240	2,527	24,715	3,575	2,078	317	322	3,401	14,336

Note: Significance levels: *** p<0.01, ** p<0.05, * p<0.1. The figures refer to the 2001/02, 2002/03 and 2003/04 cohort of Key Stage 4 male students who attained their highest qualification at the age of 26 or before. Results are only shown for treatment groups of at least 50. "History & Philosophy" and "Social Sciences" have been omitted due to small sample sizes for all RQF Levels. CNA: Convergence not achieved. **Source: London Economics' analysis of Longitudinal Educational Outcome (LEO) data**

Table 12a: Benefits regressions, by qualification aim and subject area - Men

			Health	Science & Maths	Agriculture	Engineering	Construction	ICT	Retail	Leisure & Tourism	Arts & Media	Languages	Education	Prep. For life & Work	Business & Law
RQF Level 4		**Coeff.**	0.005			-0.005	-0.005	CNA	-0.000	-0.008	CNA		0.018***		-0.006
		Std. Err.	(0.010)			(0.003)	(0.005)	CNA	(0.004)	(0.087)	CNA		(0.000)		(0.016)
		Obs.	4,732			9,581	4,249	CNA	2,236	6,084	CNA		506		4,437
Advanced Apprenticeships		**Coeff.**	-0.006		CNA	-0.003*	CNA	-0.009	-0.003**	CNA					-0.007***
		Std. Err.	(0.005)		CNA	(0.002)	CNA	(0.007)	(0.002)	CNA					(0.002)
		Obs.	2,394		CNA	35,178	CNA	4,022	10,560	CNA	71				8,417
RQF Level 3	**NVQ Level 3**	**Coeff.**	-0.015***		-0.002	-0.011**	-0.008	-0.017	-0.014	-0.006					-0.010
		Std. Err.	(0.003)		(0.007)	(0.005)	(0.000)	(0.000)	(0.053)	(0.006)					(0.055)
		Obs.	11,215		3,927	17,347	13,318	10,068	8,545	10,948					7,205
	BTEC Level 3	**Coeff.**	-0.015***	-0.019	0.001	-0.004	-0.003	-0.015	-0.007	-0.013***	-0.007				-0.010
		Std. Err.	(0.002)	(0.000)	(0.004)	(0.003)	(0.000)	(0.000)	(0.029)	(0.004)	(0.000)				(0.055)
		Obs.	11,215	800	3,927	17,347	13,318	10,068	8,545	10,948	11,584				7,205
	Other full Level 3	**Coeff.**	-0.012***		0.006	-0.008*	0.003	-0.020	-0.009	-0.009**	0.001		-0.016***		0.001
		Std. Err.	(0.004)		(0.008)	(0.004)	(0.000)	(0.000)	(0.037)	(0.004)	(0.000)		(0.000)		(0.012)
		Obs.	11,215		3,927	17,347	13,318	10,068	8,545	10,948	11,584		367		7,205
	Level 3 other voc	**Coeff.**	-0.008***	0.019	-0.005	-0.009**	-0.004	-0.007	-0.005	-0.006*	0.000		-0.026***	0.016	-0.012
		Std. Err.	(0.003)	(0.000)	(0.005)	(0.004)	(0.000)	(0.000)	(0.021)	(0.004)	(0.000)		(0.000)	(0.000)	(0.067)
		Obs.	11,215	800	3,927	17,347	13,318	10,068	8,545	10,948	11,584		367	4,018	7,205
Intermediate Apprenticeships		**Coeff.**	-0.025		-0.014	-0.016	-0.012***	-0.017	-0.015	-0.008*					-0.014
		Std. Err.	(0.060)		(0.000)	(0.000)	(0.002)	(0.012)	(0.114)	(0.004)					(0.000)
		Obs.	10,963		3,836	23,594	23,829	9,216	16,044	7,571					9,971
	NVQ Level 2	**Coeff.**	-0.020		-0.015	-0.010	-0.014***	-0.006	-0.012	0.002	-0.020				-0.011
		Std. Err.	(0.049)		(0.000)	(0.000)	(0.002)	(0.008)	(0.087)	(0.004)	(0.048)				(0.000)
		Obs.	10,963		3,836	23,594	23,829	9,216	16,044	7,571	3,563				9,971
	BTEC Level 2	**Coeff.**	-0.017		-0.005	-0.005	0.006	-0.013	0.034	-0.010**	0.002			-0.029	-0.011
		Std. Err.	(0.042)		(0.000)	(0.000)	(0.013)	(0.009)	(0.227)	(0.005)	(0.009)			(0.031)	(0.000)
		Obs.	10,963		3,836	23,594	23,829	9,216	16,044	7,571	3,563			9,246	9,971
	Other full Level 2	**Coeff.**	-0.011	-0.001	-0.013	-0.003	-0.006**	-0.002	-0.013	-0.003	0.001			-0.013	0.001
		Std. Err.	(0.026)	(0.012)	(0.000)	(0.000)	(0.002)	(0.004)	(0.097)	(0.004)	(0.007)			(0.015)	(0.000)
		Obs.	10,963	845	3,836	23,594	23,829	9,216	16,044	7,571	3,563			9,246	9,971
	Level 2 other voc	**Coeff.**	-0.003	-0.004	-0.010	0.000	-0.005*	-0.003	0.003	-0.001	-0.002	0.041***		-0.004	0.005
		Std. Err.	(0.008)	(0.014)	(0.000)	(0.000)	(0.003)	(0.005)	(0.022)	(0.004)	(0.008)	(0.000)		(0.005)	(0.000)
		Obs.	10,963	845	3,836	23,594	23,829	9,216	16,044	7,571	3,563	236		9,246	9,971

Note: Significance levels: *** p<0.01, ** p<0.05, * p<0.1. The figures refer to the 2001/02, 2002/03 and 2003/04 cohort of Key Stage 4 male students who attained their highest qualification at the age of 26 or before. Results are only shown for treatment groups of at least 50. "History & Philosophy" and "Social Sciences" have been omitted due to small sample sizes for all RQF Levels. CNA: Convergence not achieved. **Source: London Economics' analysis of Longitudinal Educational Outcome (LEO) data**

Table 12b: Benefits regressions, by qualification aim and subject area - Women

			Health	Science & Maths	Agriculture	Engineering	Construction	ICT	Retail	Leisure & Tourism	Arts & Media	Languages	Education	Prep. For life & Work	Business & Law
RQF Level 4		**Coeff.**	0.003		CNA	0.005***	-0.001***	CNA	CNA	CNA	-0.005		-0.037***		0.000
		Std. Err.	(0.002)		CNA	(0.001)	(0.000)	CNA	CNA	CNA	(0.018)		(0.001)		(0.001)
		Obs.	19,210		CNA	317	216	CNA	CNA	CNA	7,952		1,290		7,433
Advanced Apprenticeships		**Coeff.**	-0.007***		-0.006	-0.003	-0.001	CNA	CNA	-0.002			0.001***		CNA
		Std. Err.	(0.002)		(0.004)	(0.005)	(0.001)	CNA	CNA	(0.002)			(0.000)		CNA
		Obs.	13,536		1,474	801	142	CNA	CNA	2,162			177		CNA
RQF Level 3	**NVQ Level 3**	**Coeff.**	CNA		-0.013				-0.006	0.020			-0.018		-0.007***
		Std. Err.	CNA		(0.033)				(0.013)	(0.000)			(0.000)		(0.002)
		Obs.	CNA		3,654				21,320	5,950			1,238		9,141
	BTEC Level 3	**Coeff.**	-0.007***	0.015	-0.009	0.058	-0.012***	-0.005	-0.007	-0.007	-0.004				-0.009***
		Std. Err.	(0.001)	(0.000)	(0.022)	(0.083)	(0.000)	(0.000)	(0.017)	(0.000)	(0.000)				(0.002)
		Obs.	27,732	564	3,654	1,146	231	2,193	21,320	5,950	9,239				9,141
	Other full Level 3	**Coeff.**	-0.007***		-0.010			0.008	-0.005	-0.005	-0.006		-0.004		-0.004
		Std. Err.	(0.001)		(0.023)			(0.000)	(0.011)	(0.000)	(0.000)		(0.000)		(0.004)
		Obs.	27,732		3,654			2,193	21,320	5,950	9,239		1,238		9,141
	Level 3 other voc	**Coeff.**	-0.005***	-0.004	-0.006	-0.016*		0.002	-0.003	-0.002	-0.004		-0.018	-0.010	-0.006***
		Std. Err.	(0.002)	(0.000)	(0.014)	(0.008)		(0.000)	(0.007)	(0.000)	(0.000)		(0.000)	(0.000)	(0.002)
		Obs.	27,732	564	3,654	1,146		2,193	21,320	5,950	9,239		1,238	2,002	9,141
Intermediate Apprenticeships		**Coeff.**	-0.014***		-0.020	-0.013	0.021***	-0.013	-0.013	-0.008					-0.009***
		Std. Err.	(0.003)		(0.047)	(0.010)	(0.003)	(0.092)	(0.000)	(0.052)					(0.003)
		Obs.	16,218		1,978	1,498	243	2,580	24,862	3,601					14,414
RQF Level 2	**NVQ Level 2**	**Coeff.**	-0.016***		-0.021	-0.009		-0.028	-0.010	0.002			CNA	-0.011	-0.005
		Std. Err.	(0.003)		(0.049)	(0.011)		(0.218)	(0.000)	(0.013)			CNA	(0.030)	(0.003)
		Obs.	16,218		1,978	1,498		2,580	24,862	3,601			CNA	3,576	14,414
	BTEC Level 2	**Coeff.**	-0.018***		-0.006			-0.023	0.005	-0.003	-0.013				0.005
		Std. Err.	(0.004)		(0.018)			(0.176)	(0.000)	(0.022)	(0.008)				(0.008)
		Obs.	16,218		1,978			2,580	24,862	3,601	2,156				14,414
	Other full Level 2	**Coeff.**	-0.010***	-0.020	-0.011	-0.007	-0.008***	0.001	-0.001	0.003	-0.012		CNA	-0.019	-0.004
		Std. Err.	(0.003)	(0.040)	(0.027)	(0.013)	(0.002)	(0.013)	(0.000)	(0.018)	(0.008)		CNA	(0.034)	(0.004)
		Obs.	16,218	485	1,978	1,498	243	2,580	24,862	3,601	2,156		CNA	3,576	14,414
	Level 2 other voc	**Coeff.**	0.001	-0.005	-0.007	0.000	0.005*	-0.010	-0.003	-0.003	-0.014	0.019	CNA	-0.017	-0.007*
		Std. Err.	(0.004)	(0.013)	(0.018)	(0.011)	(0.003)	(0.071)	(0.000)	(0.021)	(0.009)	(0.047)	CNA	(0.028)	(0.004)
		Obs.	16,218	485	1,978	1,498	243	2,580	24,862	3,601	2,156	325	CNA	3,576	14,414

Note: Significance levels: *** p<0.01, ** p<0.05, * p<0.1. The figures refer to the 2001/02, 2002/03 and 2003/04 cohort of Key Stage 4 male students who attained their highest qualification at the age of 26 or before. Results are only shown for treatment groups of at least 50. "History & Philosophy" and "Social Sciences" have been omitted due to small sample sizes for all RQF Levels. CNA: Convergence not achieved. **Source: London Economics' analysis of Longitudinal Educational Outcome (LEO) data**