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**The Impact Of Skills And Training Interventions On The
Unemployed: Phase II Report**

Bibby, D., Cerqua, A., Thomson, D. and Urwin, P.

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Impact of Skills and Training Interventions on the Unemployed: Phase II Report

December 2015



David Bibby, Augusto Cerqua, Dave Thomson and Peter Urwin

The views expressed in this report are the authors' and do not necessarily reflect those of the Department for Business, Innovation and Skills or the Department for Work and Pensions

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Glossary

Term	Meaning
Active Benefit Claimants	Active Benefit Claimants are individuals claiming a DWP benefit that requires job-seeking. For instance, Jobseekers Allowance (JSA), Job Training Allowance (JTA) and [in the post-2011 policy context] ESA-WRAG
JSA	Jobseeker's Allowance
ESA WRAG	Employment and Support Allowance, Work-Related Activity Group
Learning Aims	A Learning Aim is the term used for a course an FE learner is studying, whether it is achieved or not. Examples of aims include BTECs, NVQs and individual GCSEs and A levels. Many learners will be studying for several aims at once or in sequence, sometimes as part of a programme of study
FE	Further Education
Full Level 2	A Full Level 2 category of learning aims includes those that are equivalent to 5 GCSEs at grade A* to C or an NVQ2
Full Level 3	A Full Level 3 category of learning aims includes those that are equivalent to two A levels
'Thin' Level 2 or 3	The 'thin' Level category includes aims at the relevant level of study, but which falls below the equivalence required to be considered 'Full'
Preparation for Work at Level 1 or Below	Courses that are aimed at improving basic employability skills, such as the Entry to Employment (E2E) pre-apprenticeship offer, at Level 1 or Entry Level
ALMP	Active Labour Market Programme, e.g. Work Programme, New Deal or Flexible New Deal
CIA	Conditional Independence Assumption states that, conditional on a set of variables [X], the observed outcome from a particular training intervention is independent of the propensity to participate in the different interventions, as long as there are comparable participants in the other options (or non-participants) with similar characteristics X. This assumption is

Term	Meaning
	critical to Propensity Score Matching and Coarsened Exact Matching (see below)
FND	Flexible New Deal
NDYP	New Deal for Young People
ND25+	New Deal 25+
WP	Work Programme
NPD	National Pupil Database, a longitudinal history of school enrolments and achievements in public examinations and statutory assessments in the schools sector
HESA	Higher Education Statistics Authority, the HESA student record is an administrative record of enrolments and courses in the HE sector
ILR	Individualised Learner Record, an administrative record of training undertaken by learners in the FE sector
NBD	National Benefits Database
WPLS	Work and Pensions Longitudinal Study, an administrative data resource produced by DWP/HMRC linking employment (P45), earnings from employment (P14) and benefits histories.
LMS	Jobcentre Plus Labour Market System, used to record interactions between Jobcentre staff and clients.
LSC	Learning and Skills Council, forerunner of the Skills Funding Agency (SFA)
'X'	We define 'X' as the expected date of referral to an Active Labour Market Programme (such as ND, WP, FND). For instance in the period prior to 2011, unemployed individuals aged 18 to 24 would be referred to the ND after six months of unemployment. Here X is 6 months.
STU	We observe Short Term Unemployed individuals during the period prior to X (i.e. the period between benefit start date and their expected date of referral to an ALMP, such as the WP or ND).
LTU	We observe Long Term Unemployed individuals if they are unemployed during the

Term	Meaning
	period after X (i.e. the period after their expected date of referral to an ALMP)
Propensity Score Matching (PS Match)	A method used to ensure that individuals receiving a treatment (e.g. training intervention) are matched to a control group, conditional on their observed characteristics. In situations where numbers of treated and control are more limited, one tends to use PS Match, as it reduces the criteria for matching to one indicator for each individual (their propensity to be in the treatment group). See also CIA, above
Coarsened Exact Matching (CEM)	A method used to ensure that individuals receiving a treatment (e.g. training intervention) are matched to a control group, conditional on their observed characteristics. We use CEM in this study because we have a sufficient volume of data. CEM temporarily 'coarsens' each conditioning variable into categories; matches exactly on these 'coarsened' data, and then retains only the original (uncoarsened) values of the matched data. See also CIA.
Multiple Treatment Framework	Most studies that use CEM or PS Match, compare outcomes between a treatment and a control group – i.e. those receiving training and those not receiving training. However, we can also compare outcomes across those taking alternative treatments – i.e. those undertaking training and those undertaking work placement. This analysis can be incorporated in, what is termed, a multiple treatment framework.
SFA	Skills Funding Agency, source of publicly funded qualifications in the FE sector replacing LSC
WBLA	Work-Based Learning for Adults
The 'No ILR' or 'No FE' group	Individuals not observed to have received publicly funded FE education and training recorded in ILR, during the relevant period of analysis (i.e. either in the STU or LTU periods of analysis).
HE flag	Indicator of HE participation

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Executive Summary

This report is the latest in a series of studies that analyse the returns to FE learning using matched ILR-WPLS administrative data. A recent study in this series (Bibby et. al. 2014) uses the matched data to produce robust estimates of the labour market returns to achievement of learning aims whilst studying in English Further Education (FE), relative to those who have the same highest learning aim, but do not achieve. Whilst survey-based studies had suggested that some vocational qualifications (for instance, NVQ2) were associated with negligible, or even negative, earnings returns; Bibby et. al find that FE qualifications are associated with good labour market returns. The authors provide compelling evidence that the previous less favourable findings at Level 2 were a result of data limitations, rather than truly insignificant value added.

Individuals who hold a Level 2 vocational qualification as their highest form of learning are a unique group, with relatively limited labour market prospects, and it is therefore particularly hard to identify an appropriate control group to estimate valid counterfactual¹ outcomes. One way of overcoming this is to compare the labour market outcomes of those who achieve vocational Level 2 as their highest qualification, with a group that have similar labour market opportunities (i.e. they select into the same vocational Level 2 qualification as their highest aim, but do not achieve and/or drop out). The main potential weakness of this approach is that there may be unobservable characteristics or events driving selection into achievement, that are also correlated with subsequent labour market outcomes. Bibby et. al. apply Coarsened Exact Matching (CEM) with difference-in-differences to re-enforce the robustness of findings using an achiever V non-achiever approach; and in this study we provide evidence that further ensures the validity of this approach to estimation using administrative data.

This report investigates labour market returns for a specific subgroup within the wider populations that form the focus of study within this ongoing programme of research. **We identify the returns to FE Learning for the unemployed in England.** For this study it is essential to use an approach to estimation of value added that is appropriate for learning at Level 2 and below, as many of the interventions targeted at the unemployed are at this level.

This is one of the few times (in the UK or elsewhere) that a study has been able to differentiate the returns to training, according to whether the unemployed individual achieves the learning outcomes of the course. In our consideration of individuals in the pre-2011 period, as well as being able to track returns 60 months on from claim start date, we can match on up to 8 years of prior labour market history and up to six years of prior ILR learning/training information. Furthermore, our ability to use a variety of control groups who do, and do not, select into FE, allows us to produce

¹ To capture the value added of a qualification, we need an estimate of an individual's employment outcomes in the absence of FE learning - this is called the 'counterfactual' because it is 'counter' to the 'factual' state of the world (we can't observe the outcomes from the same individual undertaking FE learning, and then also observe the outcomes from them not doing so). We need to create a comparison group that does not undertake training, but provides a credible estimate of what the individual undergoing training would have experienced, if they had not done so.

results that are robust to the highest academic standards. Taken together, this represents a significant contribution to policy, practice and academic literatures.

The study (i) considers a population of individuals who we observe in unemployment, (ii) records relevant training interventions across a number of administrative datasets and (iii) uses econometric analysis to identify *what works and for whom*. The analysis focuses on unemployed individuals in the following two population cohorts:

- *Pre-2011 Population (Cohort 1)*: 2.33 million Individuals with a first or only 'Active' (job-seeking) benefit claim start date between April 2006 and April 2008. A period covering the New Deal policy context.
- *Post-2011 Population (Cohort 2)*: 2.34 million Individuals with a first or only 'Active' (job-seeking) benefit claim start date between August 2011 and July 2012. A period covering the Work Programme [WP] policy context.

We consider separately the impact of FE learning interventions undertaken by (i) the Short-Term Unemployed (STU) from those aimed at (ii) the Long-Term Unemployed (LTU). Therefore, we consider FE learning undertaken by those in the pre-Work Programme phase (STU), separately to that delivered as part of the Work Programme (LTU), post-2011. Similarly, pre-2011 we differentiate between (STU) individuals undertaking training prior to, as opposed to during, any New Deal programmes (LTU). The differentiation of STU and LTU is a particularly important cut-off point, as this is the point where we observe (predominantly) voluntary interventions becoming mandatory.

To give an idea of scale, our analysis of Cohort 1 during the Short Term Unemployed (STU) phase identifies 0.35 million individuals (15% of the total 2.33m inflow) with some form of FE learning aim within the ILR (that could be either achieved or not achieved); and 0.48 million FE learners amongst the unemployed individuals of Cohort 2 during the STU phase (20% of the total 2.34m inflow). The accompanying Phase I report sets out a variety of descriptive statistics and it is worth considering one of these as a starting point (Fig. 1).

FE engages with unemployed who have poorer labour market histories

Fig. 1 underlines the extent to which, **those engaged in FE have poorer labour market histories**. For instance, amongst the entire Cohort 1 population, Fig. 1 shows that 44% of unemployed individuals aged 18 to 24 who do not undertake FE learning during the period of analysis, have at least one day in employment in the tax year three years before their claim start date; compared to only 37% amongst 18 to 24 year olds who we see being referred (or self-referring) to FE learning.

Fig. 1: Proportion of unemployed individuals with at least one day in employment, in years before and after claim start date: Cohort 1

	Three years before claim start date	Year before claim start date	Two years after claim start date	'Distance travelled', 1 year before to 2 years after claim
18-24 with No FE learning aim	44%	61%	70%	9 ppts
18-24 with at least one FE Learning aim	37%	58%	72%	14 ppts
25+ with No FE learning aim	60%	64%	66%	2 ppts
25+ with at least one FE Learning aim	58%	62%	69%	7 ppts

However, those who engage in FE experience a greater improvement in the likelihood of being in employment than those who don't engage in FE. From Fig. 1 we can see that, those with '*At least one ILR learning spell aim*' are more likely to be observed in employment in the tax years after claim start date, when compared to those with '*No in-scope ILR learning aim*' – for instance amongst 18 to 24 year olds, 72% of the former group have at least one day in employment in the second tax year after claim start date, compared to 70% in the latter. The employment rate of 18 to 24 year olds who engage with some form of FE learning increases from 58% in the year before claim start date to 72% two years after – an improvement of 14 ppts. In contrast, the improvement for those who do not take up FE learning is only 9 ppts (from 61% to 70%). The same pattern holds for those aged 25+.

It is important to remember that these figures do not account for a variety of other potential differences between those observed in FE learning and those with no ILR record. However, when we consider the employment histories of these two groups, the suggestion is that, if anything, those observed in FE are (on average) starting from a more disadvantaged position than those who we see outside of FE learning. In this Phase II study, we account for such differential selection into FE learning using a variety of econometric techniques²; otherwise we would under-estimate any value added of FE – because, on average, those moving into FE learning face

² We use Coarsened Exact Matching (CEM) to estimate labour market returns using both an achiever V non-achiever comparison, but also comparing Achievers to a wider control group, who we do not see in FE learning. This provides additional validation of the achiever V non-achiever approach developed during this programme of research.

greater challenges to secure employment, as reflected in their less favourable employment histories.

In the Phase I report we find that unemployed individuals with no evidence of employment in the 60 months prior to claim start date (i.e. those who are hardest to help into employment) have the highest proportion (14%) in FE learning. **Even when we identify a particularly disadvantaged group, we still see the more disadvantaged from this group, selecting into FE learning.** The central role of FE in helping the most disadvantaged, is also central to the methodological problems that led to previous underestimates of the value of learning at Level 2 and below.

We estimate the value added of FE learning, as captured by the proportions in (i) employment (ii) sustained employment (i.e. lasting continuously for 6 months or more) and (iii) on active benefits, during each of the 60 months after claim start date. Most of our estimates are created using a cohort of individuals who enter unemployment prior to 2011 (Cohort 1) and therefore we also analyse the impact of FE learning for a 'Cohort 2' who enter unemployment after 2011. Whilst we can only look at labour market returns over the first 18 months after claim start date for this more recent cohort, there is strong evidence that the value added estimates for FE learners prior to 2011 amongst Cohort 1 are emerging in a similar way amongst FE learners in Cohort 2. This leaves us confident that the following findings and policy implications are relevant for current and future policy contexts.

Overall Estimates of Value Added, Cohort 1 (2006-2008)

In *Fig. 2* to *Fig. 8* estimates of (percentage point or 'ppt') value added are highlighted in bold if we consider the estimate to be highly robust (i.e. statistically significant in the 2nd, 3rd and 4th years after the start of learning); highlighted in bold and italics if less reliable (i.e. only statistically significant in 2 of these 3 years) and not highlighted in bold or italics, when there are concerns over the robustness of the findings, but we have some evidence of at least one significant impact.

For each of our value added estimates, percentage point (ppt) **Employment impacts** are associated with overall employment rates of around 30 per cent to 40 per cent in the years after learning (that is, an approximate 35% employment rate on average). A 3.5 ppt employment return is therefore equivalent to a 10% employment return in this context. **Sustained Employment** rates and **Active Benefit** rates are on average approximately 30% (varying between 25% and 35%) in the years after learning. Percentage point estimates should be considered within these contexts.

We group FE learning aims into the following categories (to enable comparison with previous results, to allow sufficient numbers for analysis and to reflect the predominance of lower level FE learning amongst our unemployed cohorts):

- a) **Level 1/Level 2 Maths and/or English.** All learners who have a highest, or only, learning aim of Level 1/Level 2 Maths; or Level 1/Level 2 English; or both.

- b) Preparation for Work at Level 1 or Below:** All learners with a learning aim of 'Preparation for Life and Work' and/or 'Entry to Employment (E2E) pre-apprenticeship offer' and/or 'Aims at Level 1 or Below'; and who do not have any higher FE learning aims. This is the most common form of FE learning amongst our unemployed cohorts.
- c) Level 2/Full Level 2, and above:** Those with learning aims at Level 2 (that are not English or Maths) are split into two groups, one with '**Thin**' **Level 2** and one '**Full**' **Level 2**. The Full Level 2 category includes learning aims that are equivalent to 5 GCSEs at grade A* to C or an NVQ2; and Thin Level 2 is learning at the same level, but falling short of the criteria to be considered as 'full'. One category for analysis contains those with highest learning aims of **Full Level 2 or above** (Full level 2+); and the other includes learners who we see with a highest learning aim of Thin **Level 2**.

Employment and sustained employment: *We find evidence of positive and statistically significant employment and sustained employment premiums for all FE qualification categories when taken by the unemployed.* These significant impacts are evident for both the STU and LTU in all qualification categories, apart from Level 2 learning where we find significant impacts amongst the STU, but not the LTU. As Fig. 2 suggests, there are particularly high employment and sustained employment returns to FE learning at FL2+ for individuals who undertake these interventions during the LTU phase - figures of 5.2 and 5.4 ppts, respectively, translate into approximate percentage impacts of 15% and 18%. It is particularly interesting to note that returns to *L1/L2 Maths and/or English* achievement and *Preparation for Work at Level 1 or Below*, are higher for the LTU, when compared to the STU. This is particularly pronounced for *Preparation for Work*, where returns for the LTU are 3.3 and 3.9 ppts respectively, compared to 2.1 and 2.3 ppts amongst the STU.

We must be careful in making direct comparisons between the findings here, and those of Bibby et. al. (2014), as they consider the entire FE population (not just the unemployed) and there are some differences in the categorisation of learning aims. For instance, the highest learning aim categories of *Below Level 2* and *Thin Level 2* in Bibby et. al. both include English and Maths. However, the low employment impacts (of zero and one ppt respectively) estimated for these two categories of learner in the 2014 study, clearly hide much more favourable impacts amongst the sub-population of unemployed learners considered here – as our categories of *Preparation for Work*, *L1/L2 Maths and/or English* and *Thin Level 2* are associated with much more substantial and statistically significant employment impacts.

'Active' (job-seeking) Benefits: *In all qualification categories we have some evidence that achievers have a (statistically) significantly lower probability of being on active benefits than non-achievers.* However, whilst we find that the LTU achieving *L1/L2 Maths and/or English* are 2.7 ppts (or approximately 9%) less likely to be on benefits 2 to 4 years from the start of learning, there is no apparent impact

for the STU. Similarly, we find no significant active benefit impact for *Preparation for Work* achievers amongst the LTU, but a -1.3 ppt impact amongst the STU. Once again, we find that the impacts arising from achievement of FL2+ are the most pronounced, with the proportion of STU achievers on benefits 3.3 ppts less than the proportion of STU non-achievers on benefits; and amongst the LTU the gap is -5 ppts.

Fig. 2: Summary of two to four year averages for STU and LTU (aged 18-55)

		Employment (ppt difference)	Sustained Employment (ppt difference)	Benefit Probability Gaps (ppt difference)
L1/L2 Maths and/or English	STU	2.4	2.7	0.0
	LTU	2.6	2.8	-2.7
Preparation for Work at L1 or Below	STU	2.1	2.3	-1.3
	LTU	3.3	3.9	0.0
Level 2	STU	2.6	3.2	-2.1
	LTU	0.0	0.0	-3.3
Full Level 2 and Above	STU	2.4	3.1	-3.3
	LTU	5.2	5.4	-5.0

In the main body of the report we present estimates of impact for ESOL qualifications (English for Speakers of Other Languages) in the STU period, but do not present them here as there are no significant employment or sustained employment impacts identified. Our finding, that those aged 25+ who achieve ESOL qualifications in the STU Phase are more likely to be on benefits 2 to 4 years after the start of learning, are also not detailed here, as there are concerns over estimates associated with this unique group of unemployed learners. There are two key points to take on board:

- Individuals undertaking ESOL courses are much more likely to be recent migrants and we are therefore less likely to have extensive prior labour market history data for them (we might also conjecture that data matching from ILR to WPLS; and from DWP to HMRC, may be of a lower quality). The ESOL group are very different to the other groups we analyse as part of this investigation and this likely reduces the

robustness of our findings for this specific group. Results should therefore be considered with caution and more research is needed, specifically focusing on this group of unemployed learners.

- Cerqua and Urwin analysing the full FE population (2015) identify a statistically significant earnings premium of 6.1% for ESOL achievers over non-achievers; but virtually no impact on employment probability (0.2 of a ppt) and a similarly negligible impact on benefit probability (-0.1 of a ppt). The authors use an alternative approach to estimation, but the same limitations may apply to the employment and benefit impact estimates.

Value Added by Age

18 to 24 year olds in STU and LTU Phases

For unemployed individuals aged 18 to 24, we find evidence of good employment, sustained employment and active benefit returns to FE learning, with a tendency for returns to be higher amongst the STU, when compared to the LTU. The one exception to this (in Fig. 3) are the returns to learning at FL2+ where we see the LTU and STU secure very similar returns of between 7 and 8 ppts, whether we consider employment or sustained employment outcomes. Employment and sustained employment returns seem particularly high for the STU undertaking *Preparation for Work at L1 or Below*, with estimated returns of 4.2 and 4.3 ppts respectively. This translates into returns of around 12% and 14%, which is perhaps not surprising as the duration of learning varies between three months and twelve months for these courses. Active benefit impacts are particularly pronounced for learning at L2 and FL2+, where the proportion of achievers on benefits is between 4 and 6 ppts lower than non-achievers in the years after the start of learning.

Fig. 3: Summary of two to four year averages for STU and LTU: aged 18-24

		Employment (ppt difference)	Sustained Employment (ppt difference)	Benefit Probability Gaps (ppt difference)
L1/L2 Maths and/or English	STU	3.5	3.9	-1.7
	LTU	3.3	3.6	-2.9
Preparation for Work at L1 or Below	STU	4.2	4.3	-1.7
	LTU	2.8	3.5	0.0
	STU	2.7	3.6	-3.6

		Employment (ppt difference)	Sustained Employment (ppt difference)	Benefit Probability Gaps (ppt difference)
Level 2	LTU	0.0	2.1	-4.5
Full Level 2 and Above	STU	6.8	7.4	-5.7
	LTU	7.0	7.8	-6.2

25+ year olds in STU and LTU Phases

For unemployed individuals aged 25+, we find evidence of statistically significant employment and sustained employment returns to FE achievement in all categories of learning – but there is some variation by STU and LTU. For instance, Fig. 4 presents a statistically significant employment return of 2 ppts (6%) and sustained employment return of 2.2 ppts (7%) for achievement of *L1/L2 Maths and/or English* in the STU phase; but the estimates of impact for the LTU are significant in only one year between 2 and 4 years after the start of learning (hence we have 1.9 and 2.0 ppt figures that are not in bold). Similarly, whilst there are good employment (3.6 ppts) and sustained employment (4.1 ppts) returns to *Preparation for Work* amongst those aged 25+ in the LTU phase; returns amongst the STU are lower and have a less convincing level of statistical significance. These findings emphasise the potential variability in the different types of individuals undertaking FE learning in the STU and LTU phases, possibly for different reasons.

Fig. 4: Summary of two to four year averages for STU and LTU: aged 25+

		Employment (ppt difference)	Sustained Employment (ppt difference)	Benefit Probability Gaps (ppt difference)
L1/L2 Maths and/or English	STU	2.0	2.2	0.3
	LTU	1.9	2.0	-2.4
Preparation for Work at L1 or Below	STU	1.2	1.5	-1.0
	LTU	3.6	4.1	0.0

		Employment (ppt difference)	Sustained Employment (ppt difference)	Benefit Probability Gaps (ppt difference)
Level 2	STU	2.5	3.0	-1.4
	LTU	0.0	1.1	-2.1
Full Level 2 and Above	STU	0.6	0.7	-2.2
	LTU	3.8	3.6	-4.1

Fig. 3 and Fig. 4 suggest that, overall, the returns to FE learning for 18 to 24 year olds are higher than for unemployed individuals aged 25+, whether in the LTU or STU phases. This seems to suggest that the older age group face higher barriers to employment. In a supplementary analysis as part of this report, we have some support for a policy that ensures any *Preparation for Work* aims are accompanied by more substantial learning aims, for those in the 25+ age group; and this may be something that applies more generally for those aged 25+.

Value Added by Sex, STU

The analysis of individuals in the LTU phase pushes the data to its limits and we are not able to disaggregate our findings separately for men and women. However, we can do so for the STU and Fig. 4 suggests that, **men aged 18 to 24 tend to secure higher returns than women of the same age, for most categories of FE learning, but as we consider higher level qualifications (at L2 and FL2+) returns start to converge**. We actually see slightly higher returns for women, for instance, when considering sustained employment returns for L2 learning. For women and men aged 18 to 24 there is little difference in active benefit gaps at lower levels of learning; but for L2 and FL2+, we see estimated benefit impacts that are more pronounced for men.

Fig. 5: Summary two to four year averages for STU: **women and men 18-24**

		Employment (ppt difference)	Sustained Employment (ppt difference)	Benefit Probability Gaps (ppt difference)
L1/L2 Maths and/or	Women	2.5	3.3	-2.2
	Men	4.0	4.1	-1.7

		Employment (ppt difference)	Sustained Employment (ppt difference)	Benefit Probability Gaps (ppt difference)
English				
Preparation for Work at L1 or Below	Women	3.2	3.3	-1.9
	Men	4.6	4.8	-1.8
Level 2	Women	2.9	4.4	-2.5
	Men	2.8	3.2	-4.6
Full Level 2 and Above	Women	6.1	6.9	-5.1
	Men	6.8	7.3	-6.3

The less favourable findings on FE impacts for the 25+ age group seem to be driven by the experiences of both men and women. Fig. 6 suggests some differences in the returns for men and women aged 25+, but nowhere is the difference greater than 1 to 2 ppts. However, in most cases we are able to uncover slightly more substantial employment and sustained employment returns for men, when compared to women (though this situation is somewhat reversed when considering FL2+). Benefit impacts are similarly less evident for both men and women in the 25+ age group, and those achieving FL2+ from both sexes are significantly more likely to be on benefits in the 2 to 4 years from the start of learning.

Fig. 6: Summary two to four year averages for STU: women and men 25+

		Employment (ppt difference)	Sustained Employment (ppt difference)	Benefit Probability Gaps (ppt difference)
L1/L2 Maths and/or English	Women	1.2	1.7	-1.2
	Men	2.4	2.4	0.9

		Employment (ppt difference)	Sustained Employment (ppt difference)	Benefit Probability Gaps (ppt difference)
Preparation for Work at L1 or Below	Women	0.0	0.0	-0.9
	Men	2.1	2.4	-1.2
Level 2	Women	2.2	2.4	-1.1
	Men	2.8	3.4	-1.8
Full Level 2 and Above	Women	2.2	2.0	3.0
	Men	0.0	0.0	1.9

Comparison of FE learning impacts, to the 'No FE' population

Our analysis of the returns to FE learning amongst the unemployed using achiever V non-achiever comparisons uncovers good returns across all qualification categories; but with some variability in returns for both men and women aged 25+. **Estimates of value added for 18 to 24 year olds, based on a comparison of outcomes between FE achievers and a matched control group who we do not see in FE learning [during either the STU or LTU periods], confirm our findings of good returns to FE learning³.** Fig. 7 suggests very little difference between estimates created using an achiever v No ILR comparison, with those from an achiever V non-achiever comparison. For instance, the largest gap between two estimates of employment or sustained employment impact is for the LTU, and even this is only 2.1 ppts (though we do have a maximum 2.4 ppt gap between two of our benefit impacts, estimated using the two different controls).

Fig. 7: Summary of two to four year averages for STU and LTU, using a control group outside of FE: aged 18-24

		Employment (ppt difference)	Sustained Employment (ppt difference)	Benefit Probability Gaps (ppt difference)
L1/L2	STU	2.7 (-0.8)	2.5 (-1.4)	0.0 (+1.7)

³ Following Lechner et. al. (2011) we impute learning start dates for the control group created from amongst unemployed individuals who are not observed in FE learning during the relevant period.

		Employment (ppt difference)	Sustained Employment (ppt difference)	Benefit Probability Gaps (ppt difference)
Maths and/or English	LTU	3.5 (+0.2)	3.5 (-0.1)	-0.5 (+2.4)
Full Level 2 and Above	STU	8.3 (+1.5)	8.2 (+0.8)	-4.6 (+1.1)
	LTU	9.1 (+2.1)	8.7 (+0.9)	-6.1 (+0.1)

Figures in brackets show the deviation from estimates presented in Fig. 2 previously

Estimates of value added for those aged 25+, based on a comparison of outcomes between FE achievers and a matched control group who we do not see in FE learning [during either the STU or LTU periods], suggest even higher returns to FE learning. Fig. 8 suggests that, estimates gained using an achiever V non-achiever comparison are lower than those when we use an achiever V No ILR comparison (apart from the situation of *L1/L2 Maths and English* in the LTU period, where both sets of estimates produce low and [at best] weakly significant results). For those aged 25+ we also see the estimates of benefit impact change substantially – with a suggestion that achievers are significantly more likely to be on benefits 2 to 4 years after learning, when compared to those who do not engage with FE during the period for analysis. At Full Level 2 and above, comparison of achievers and those with No ILR increases estimates substantially – possibly because of different behaviours in the no ILR group.

Fig. 8: Summary of two to four year averages for STU and LTU, using a control group outside of FE: aged 25+

		Employment	Sustained Employment	Benefit Probability Gaps
L1/L2 Maths and/or English	STU	4.8 (+2.8)	4.6 (+2.4)	3.8 (+3.5)
	LTU	0.2 (0)	0.3 (0.1)	4.4 (+6.8)
Full Level 2 and Above	STU	9.2 (+8.6)	9.0 (+8.3)	-1.7 (+0.5)
	LTU	7.6 (+3.8)	7.5 (+3.9)	-4.1 (0)

Figures in brackets show the deviation from estimates presented in Fig. 3 previously

It is important to note that our analysis of benefit impacts for other categories of learning, using the Achiever V No ILR group, suggest that the findings for *L1/L2 Maths and/or English* (where we see achievers having significantly higher benefit proportions) are something of an anomaly. For other categories of learner, our achiever V No ILR comparison results in benefit impacts that have the same (negative) sign to those from the achiever V non-achiever estimates.

Further variations in treatment and control groups

In the majority of this report, we use CEM to compare outcomes between a treatment and a control group – i.e. those achieving FE aims and those not achieving FE learning aims. However, we can also compare outcomes across those taking alternative treatments (within a multiple treatment framework). For instance:

- We are able to compare labour market outcomes between those achieving FE learning aims, and non-achievers – with the population under consideration limited to only those who start a New Deal Training Option.
- Similarly, we are able to compare labour market outcomes between those achieving the same FE learning aims, and non-achievers – with the population under consideration limited to only those who start a New Deal Work Experience Option.
- Within a multiple treatment framework we can then compare the outcomes of, for instance, (i) FE achievers who start a ND Training Option and (ii) FE achievers who start a ND Work Experience Option. We can also compare non-achievers across the two ND Option groups. In this report we present the results of 8 key combinations that arise from the potential comparisons that are possible with the ND and ILR data.

As suggested in the Conclusions, this study produces robust evidence on the returns to FE learning, but it is very much a first step and opens up the potential for many other projects. The use of a multiple treatment approach is one such area where more work is required, as the current analysis pushes the data to its limits. Any findings therefore need to be considered with care. However, with this in mind, we find some evidence for selection of unemployed individuals who find it harder to secure employment, into ND *Training* interventions (when compared to *Work Experience* interventions); but returns are much more apparent for FE achievers amongst this ND *Training* group.

Overall ND *Work Experience* is correlated with better results in the labour market than ND *Training* interventions (because those people attending *Work Experience* tend to have more favourable labour market histories), but FE learners in the ND Training group secure good labour market returns.

Conclusions

In this report we have taken a different approach to econometric estimation than that seen in previous reports, matching on more than 60 months of labour market history using CEM; varying the control group used to create our estimate of counterfactual outcomes; and also concentrating specifically on the unemployed. We continue to

identify good labour market returns to FE learning – even when this is at or below L2, where previous survey based studies have found insignificant returns.

The fact that we are able to compare estimates obtained using an achiever V non-achiever approach, with those obtained by comparing achievers and individuals who do not undertake FE learning, allows us to refute one of the main previous challenges to this programme of work. Using an achiever V non-achiever approach it was possible (though highly unlikely given the evidence already amassed) that higher estimated impacts were a result of non-achievers experiencing one-off negative impacts that over-inflated estimated returns. This is clearly not the case, as our results for 18 to 24 year olds using a *No FE* control group, are almost identical to those secured using the achiever V non-achiever comparison; and for those aged 25+ they are actually higher.

We are able to identify a group of individuals with the No-FE population, who can be matched to those who undertake FE learning aims and we find that FE learners have significantly improved outcomes, when compared to this No FE control group. This suggests that there are individuals who are not currently engaged in FE learning, who are very similar to those engaged in FE learning and therefore have the potential to benefit from such learning.

Clearly when we consider the difference in findings from an (i) achiever V non-achiever and (ii) achiever V No ILR comparison, especially for those aged 25+, a complicated picture emerges. However, this may provide some insight into what is happening in the survey-based studies. When considering those aged 18 to 24 who have an unemployment spell, whom we match on employment history, and also on the extent to which we see flags of need in the LMS, we find that the non-achiever group and the No ILR group provide good counterfactual outcomes; because we don't have such (potentially unobservable) heterogeneity amongst the two groups. We have individuals at similar stages of their career and we are able to capture differences between treatment and control that might influence outcomes – as a result our matching using two different control groups leads to very similar counterfactual estimates.

In contrast, those who we see engaged in FE learning from the group of unemployed aged 25+, are a selection of individuals from a much more heterogeneous group, who can be at very different stages of their careers, having very different reasons for being unemployed and therefore widely varying labour market opportunities. When we match on labour market histories and other variables, we remove a lot of this heterogeneity, but we still see some difference in counterfactual outcomes when estimated using a No ILR group, as compared to the non-achiever group.

It is clear that the strength of our approach is not just based on the comparison of achievers and non-achievers, as we get similarly positive findings when comparing achievers and those with No ILR. The strength is also in the ability of administrative data to control for much of the negative selection into FE that survey-based studies are not able to observe. This is especially true amongst older age groups where even the selection of those with no qualifications in survey-based studies as a control group, leaves a group of individuals with varied labour market prospects, that are generally better than those who select into FE, in ways that cannot be observed.

The ILR-WPLS-ND-LMS administrative data used in this study, allows us to capture and control for much of these problems, but even with the admin data, selecting unemployed individuals and using an analysis that matches on 60 months of labour market history, we can see that unobservable impacts for the 25+ age group can still alter our findings if we do not compare to a group who similarly select into FE. This study represents a significant contribution to both the policy and academic literatures, and confirms that FE learning produces good labour market outcomes for some of the most disadvantaged groups in the English labour market.

Key Policy Implications:

- This study shows that FE Learning provides good labour market returns for unemployed individuals, and adds further to the evidence that previous low estimated FE returns at Level 2 and below were due to data limitations.
- This suggests that there are individuals who are not currently engaged in FE learning, who are very similar to those engaged in FE learning and therefore have the potential to benefit from such learning.
- The evidence presented here implies that an expansion of FE learning for the unemployed (including at Level 2 and below) would be beneficial, which should be taken into consideration in any decisions about changes in funding for this provision, as a result of the forthcoming spending review.

1. Introduction

This study is the latest in a series that analyse the returns to FE learning using matched ILR-WPLS administrative data (for instance, Patrignani and Conlon (2011); Buscha and Urwin, 2013; Cerqua and Urwin, forthcoming). In a recently completed study, Bibby et. al. (2014)⁴ use this data to produce robust estimates of the labour market returns to achievement of learning aims whilst studying in English Further Education (FE), relative to those who have the same highest learning aim, but do not achieve [and/or drop out]. Survey-based studies had suggested that some vocational qualifications at Level 2 were associated with negligible, or even negative, earnings returns⁵. Bibby et. al. (2014) find that FE qualifications are associated with good labour market returns and provide compelling evidence that the previous less favourable findings at Level 2 were a result of data limitations, rather than truly insignificant value added.

This report investigates the labour markets returns for a specific subgroup within the wider populations that have formed the focus of study in this programme of research - **identifying the returns to FE Learning for the unemployed in England**⁶. For this study it is essential we use an approach to estimation of value added that is appropriate for learning at Level 2 and below (i.e. the achiever v non-achiever approach), as many of the interventions targeted at the unemployed are at this level.

Individuals who hold a Level 2 vocational qualification as their highest form of learning are a unique group, with relatively limited labour market prospects, and it is therefore particularly hard to identify an appropriate control group to estimate valid counterfactual⁷ outcomes. Those who select into FE learning at this level of study tend to face more challenges in the labour market, than the population as a whole – there is a general tendency for more disadvantaged individuals to be seen in FE learning. For instance, in the Phase I report we find that unemployed individuals with no evidence of employment in the 60 months prior to claim start date (i.e. those who are hardest to help into employment) have the highest proportion (14%) in FE learning.

Even when we identify a particularly disadvantaged group (the unemployed), we see the more disadvantaged from this group, selecting into FE learning. However, the Phase I report also underlines that those who engage in FE, experience a greater improvement in the likelihood of being in employment than those who don't engage in

⁴ Bibby, D., Buscha, F., Cerqua, A., Thomson, D. and Urwin, P. (2014), "Estimation of the labour market returns to qualifications gained in English Further Education", Department for Business, Innovation and Skills, Research Paper No. 195.

⁵ See for instance, Dearden et al. (2004); Greenwood et al. (2007); Dickerson and Vignoles (2007); McIntosh and Garrett (2009).

⁶ Following a feasibility study authored by; Bibby, Speckesser, Thomson and Urwin, (2014), "Feasibility study to look at an impact analysis of training and skills for the unemployed", Department for Business, Innovation and Skills and Department for Work and Pensions.

⁷ To capture the value added of a qualification, we need an estimate of the individual's employment outcomes in the absence of FE learning - this is called the 'counterfactual' because it is 'counter' to the 'factual' state of the world (we can't observe the outcomes from the same individual undertaking FE learning, and then also observe the outcomes from them not doing so). We need to create a comparison group that does not undertake training, but provides a credible estimate of what the individual undergoing training would have experienced, if they had not done so.

FE. Those who engage in FE start from a more disadvantaged position, but we see them securing higher ‘post-learning’ returns than those who do not engage in FE. The central role of FE in helping the most disadvantaged, is also central to the methodological problems that led to previous underestimates of the value of learning at Level 2 and below; because a lot of this selection of the most disadvantaged into FE could not be adequately identified in existing survey data.

It is important to remember that the Phase I figures do not account for a variety of other potential differences between those observed in FE learning and those with no ILR record. In this Phase II study, we account for differential selection into FE learning using a variety of econometric techniques⁸; otherwise we would also underestimate any value added of FE.

We use ILR-WPLS admin data to compare the labour market outcomes of unemployed individuals who achieve (for instance) Level 2 as their highest qualification, with a group that have similar labour market opportunities (i.e. they select into the same Level 2 qualification as their highest aim, but do not achieve and/or drop out⁹). The main potential weakness of this approach is that there may be unobservable characteristics or events driving selection into achievement, that are also correlated with subsequent labour market outcomes. Bibby et. al. (2014) use Coarsened Exact Matching with difference-in-differences, together with additional dissections of the data, to allay concerns over truly ‘one-off’ unobservable impacts on non-achievers, further re-enforcing the robustness of these findings. In this report we are able to compare the estimates of value added from this achiever V non-achiever approach; with those from comparison of achievers and a more general control group (outside of FE learning), and this provides further evidence validating our findings.

The study (i) considers a population of individuals¹⁰ who we observe in unemployment, (ii) records relevant training and other interventions across a number of administrative datasets and (iii) uses econometric analysis to identify *what works and for whom*. The analysis in Section 3 and Section 7 focuses on unemployed individuals in the following two population cohorts:

- *Pre-2011 Population* (Cohort 1): 2.3 million Individuals with a First or Only ‘Active Benefits’¹¹ claim start date between 6th April 2006 and 5th April 2008 (period covering the New Deal [ND] policy context).

⁸ We use Coarsened Exact Matching (CEM) to estimate labour market returns using both an achiever V non-achiever comparison, but also comparing Achievers to a wider control group, who we do not see in FE learning. This provides additional validation of the achiever V non-achiever approach developed during this programme of research.

⁹ See the following paper for another example of this approach to estimation: Jepsen, C., Troske, K. and Coomes, P. (2014), “The Labor-Market Returns to Community College Degrees, Diplomas, and Certificates”, *Journal of Labor Economics*, 32 (1): pp. 95-121.

¹⁰ When dealing with administrative data we observe populations, so there is less consideration of whether individuals are representative, in a ‘sampling methods’ sense. Our populations cover both the pre-recession and post-recession periods; with individuals engaged in training across the New Deal, Flexible New Deal and Work Programme policy regimes. We would suggest that this renders them representative of various policy contexts.

¹¹ JSA and JTA [and ESA-WRAG in the post-2011 population].

- *Post-2011 Population (Cohort 2):* 2.3 million Individuals with a First or Only 'Active Benefits' claim start date between 1st August 2011 and 31st July 2012 (period covering the Work Programme [WP] policy context).

These cohorts of unemployed individuals are identified using information contained within the National Benefits Database (NBD). This data is then matched to the Labour Market System (LMS), New Deal (ND) and Individualised Learner Record (ILR) to identify relevant education, training and non-training interventions. Those wishing to consider the process of data creation in more detail should refer to Section 2 of this study, and the accompanying Phase I report¹².

We consider separately the impact of FE learning interventions undertaken by (i) the Short-Term Unemployed (STU) from those aimed at (ii) the Long-Term Unemployed (LTU). We are likely to observe differences in estimated returns to training delivered early in an unemployment spell, compared to that delivered much later in a spell. Also to accommodate the policy context, we need to consider training undertaken by those in the pre-Work Programme phase (STU), separately to that delivered as part of the Work Programme (LTU), post-2011. Similarly, pre-2011 we differentiate between (STU) individuals undertaking training prior to, as opposed to during, any New Deal programmes (LTU). The differentiation of STU/LTU is a particularly important cut-off point, as this is the point where we observe (predominantly) voluntary interventions becoming mandatory.

In June 2011, the *Work Programme* replaced existing standard provision of Active Labour Market Policy (ALMP) for the LTU, most notably the *New Deals* led by Jobcentres. The transition from New Deals, to Flexible New Deals increasingly involved delivery of modules by providers, similar to the Work Programme today. ALMP is now delivered through a network of *prime providers* and subcontractors, operating under a payment-by-results regime. Our main focus in this report is on adult Further Education (FE) and other training funded by the Skills Funding Agency (SFA) as captured in the ILR. For instance, young people may be eligible for FE funding such as Apprenticeships or Level 3 qualifications, whilst adult jobseekers can access FE programmes under entitlements for Basic Skills, including English as a Second or Other Language (ESOL) and basic vocational training up to NQF level 2. Similarly, programmes such as Basic Skills or Work-Based Learning for Adults (WBLA) previously existed as mechanisms for the Jobcentres to refer short- and medium-term unemployed individuals to labour market training programmes. The current offer of work-experience interventions (such as the 'Youth Contract') or labour market training ('Skills Conditionality') is similar to programmes operating pre-2011.

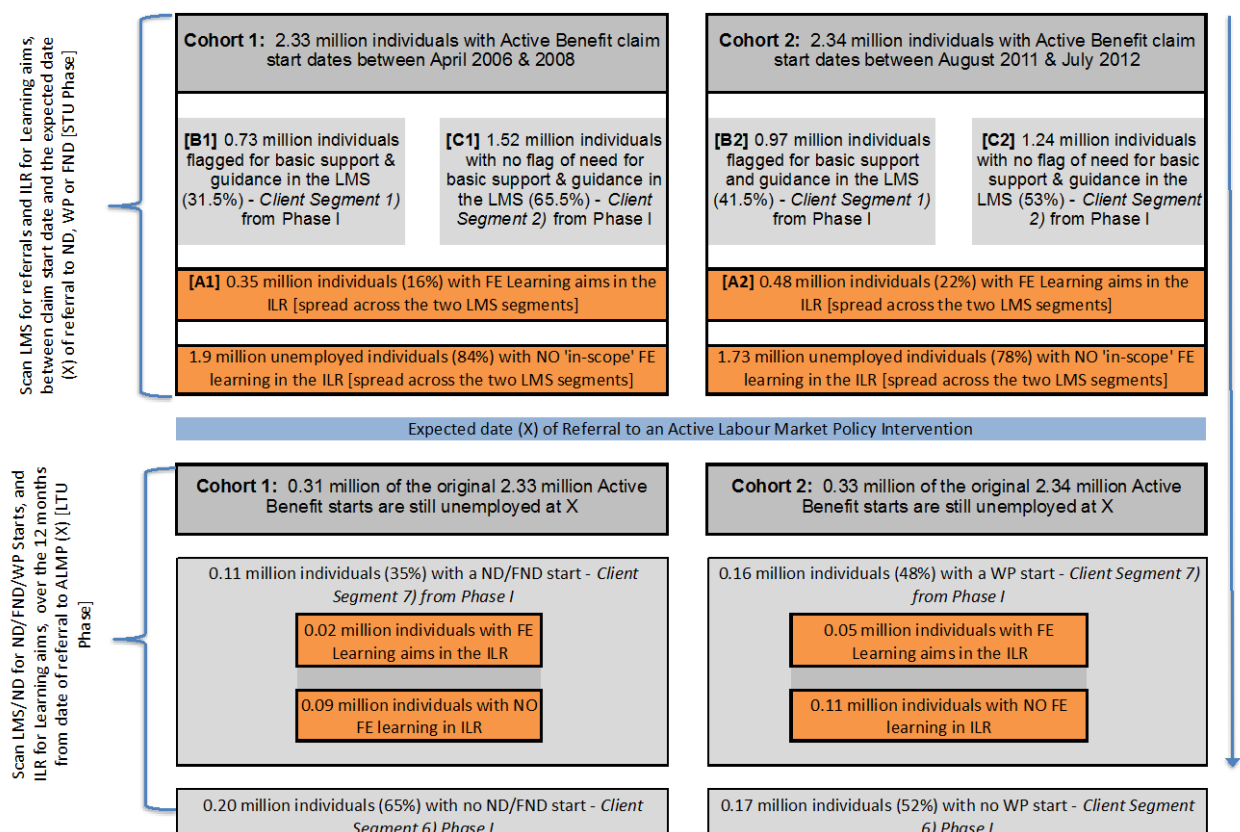
Figure 1 shows that, amongst the 2.33 million individuals we observe with a claim start date between April 2006 and 2008, 0.73 million (31.5%) are flagged by a Jobcentre Plus advisor for some form of basic support and guidance (covering sessions on CV writing, interview technique and other basic skills) between claim start date and their expected date of referral to an Active Labour Market Programme (in this case the New Deal or Flexible New Deal is the 'ALMP' in question). In this

¹² The Phase I report includes a detailed explanation of the 3% of Cohort 1 and 5% of Cohort 2 who are not considered in this report, as they are (exceptional) early referrals to the ND, FND or WP.

report we dig no further into these LMS ‘referrals’¹³, but use the information to identify individuals who may have similarly limited labour market prospects to those selecting into FE learning at L2 or Below (even if they do not have an ILR record). Readers will note that our two LMS segments (B1 and C1) cover 97% of the original 2.33 million inflow (31.5% and 65.5%) – the other 3% are unemployed individuals who we see starting a ND intervention much earlier than expected and these are potentially unique individuals who are not considered in this analysis.

Across the 2.25 million individuals who we see in either B1 or C1, during the same Short Term Unemployed (STU) phase we identify 0.35 million individuals with some form of FE learning aim within the ILR (which could be either achieved or not achieved). The same process applies to those in Cohort 2, where we see a higher proportion of LMS referrals (41.5%) and number of ILR learning aims (0.48 million) during the STU phase.

Figure 1: Overview of analysis of training impacts for two cohorts of short term (STU) and long term unemployed (LTU), 2006-2008 and 2011-2012



As already suggested, each individual has a date on which we would expect them to be referred to a mandatory ALMP (ND, FND or WP). For instance, we would

¹³ These 0.73 million individuals are flagged as needing some basic support and guidance, but they do not necessarily attend the interventions they are flagged for. The LMS data on attendance seems less reliable, as there are apparent variations in administrative practices both between Jobcentre Districts and possibly through time. More detailed analysis of this resource is a potential topic for future investigation, but here we simply use the LMS flag as a way of identifying unemployed individuals with an apparent need for basic support and guidance.

ordinarily expect an individual aged 18 to 24 (at the point where they are considered for an ALMP), with a claim start date falling within our pre-2011 inflow window, to be referred to the New Deal for Young People (NDYP)¹⁴ at a point 6 months on from their claim start date – we refer to this point in time as ‘X’, and this is the point at which an individual moves from being STU to LTU for the purposes of our analysis.

Figure 1 gives some idea of the proportions of individuals we see becoming LTU from our original cohort inflow and the proportion amongst these LTU individuals who undertake FE learning. Individuals included in the analysis of interventions during the LTU phase can be seen as representing a subset of STU individuals, but this is not strictly correct. To ensure that we have large enough numbers to carry out a useful analysis of the LTU, we are forced to expand our inflow window. We select all individuals with a First Active Benefit Claim Start Date between April 2005 and 2009 (rather than 2006-2008) for Cohort 1 and between August 2010 and July 2012 (rather than 2011-2012) for Cohort 2, to ensure we have enough individuals selecting into our population of LTU who undertake ILR learning aims. However, in terms of the criteria for selection, the LTU are a subset of the STU, and the details of these larger cohorts used for analysis of the LTU are set out in Figure 2.

Figure 2: Overview of analysis of training impacts for two cohorts of long term unemployed (LTU), 2005-2009 and 2010-2012

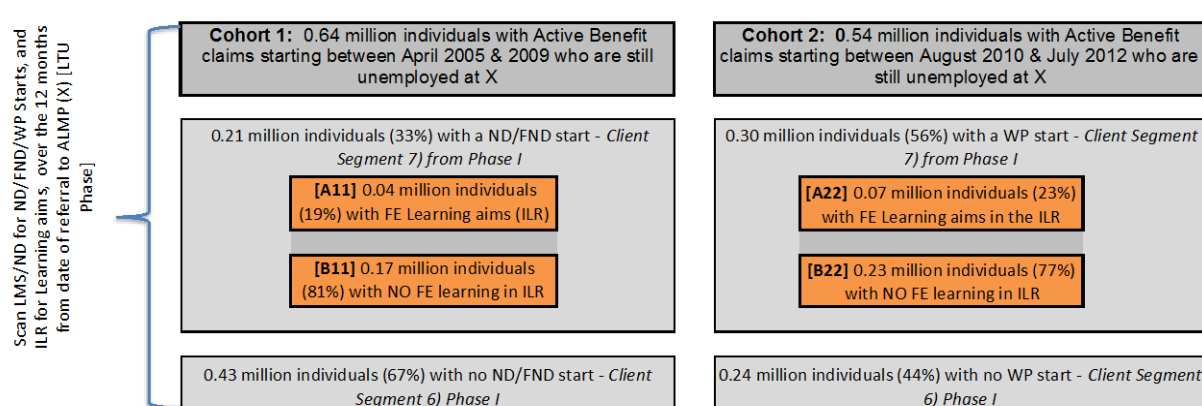


Figure 2 shows that, of all the unemployed individuals in Cohort 1 who have a claim start date between April 2005 and 2009, 0.64 million in Cohort 1 and 0.54 million in Cohort 2 are individuals who we would typically consider as being LTU (see Figure 6 of Phase I for more details), in that we observe these individuals still being unemployed at X¹⁵. For Cohort 1 our analysis of the ND datasets allows us to identify 0.21 million individuals amongst this group who start a ND Option (the majority of the remaining 0.43 million exiting benefits soon after X). Within this group of ND/FND starters, we identify 0.04 million individuals who have an ILR learning aim that starts within 12 months of the date of referral to an ALMP (that is, 12 months from ‘X’). The

¹⁴ An ALMP aimed at the LTU aged 18 to 24.

¹⁵ As readers will note from Figure 6 of Phase I, these 0.64 and 0.54 million are a subset of a wider group of 1.14 million and 1.24 million who have an unemployment spell that overlaps X (i.e. a wider group that includes those who we see ‘back in unemployment’ at X).

same process applies to those in Cohort 2, where we see a higher proportion (and absolute number) of WP starts and ILR learning aims during the LTU phase.

The analysis in this report takes a number of approaches to estimate the value added of FE learning for unemployed individuals in Figure 1 and Figure 2. We use Coarsened Exact Matching (CEM) to estimate the labour market returns to achievement in various forms of learning recorded within the ILR. The majority of analysis uses similar achiever V non-achiever treatment and control groups, as those used by Bibby et. al. (2014). In Section 3 we capture the value added of FE learning for Cohort 1 by comparing achievers and non-achievers in the STU phase [unemployed individuals within the cell marked [A1], Figure 1). In Section 4 we are able to expand this analysis and compare the outcomes for those Achieving FE learning aims in [A1] with those individuals (in [B1] and [C1]) who are not observed undertaking any FE learning during the STU phase.

In Section 5 we capture the value added of FE learning for the LTU amongst those of Cohort 1 who we observe starting a New Deal or Flexible New Deal Option, by comparing achievers and non-achievers in the cell marked [A11], Figure 2. In Section 6 we are again able to expand our analysis and compare the outcomes for those Achieving FE learning aims in cell [A11] with the outcomes of those who we do not observe undertaking any FE learning [B11], but who start the same ND Options. In this last set of analysis there is some potential for a multiple treatment approach similar to that of Lechner et. al. (2011), where we are able to differentiate FE learning outcomes according to the ND Option that individuals Start; but this is pushing the LTU data to its limits¹⁶.

Finally, in Section 7 we capture the value added of FE learning for Cohort 2 by comparing achievers and non-achievers in the STU phase (unemployed individuals within the cell marked [A2], Figure 1). We do not have a long enough timeline to carry out econometric analysis of achievers V non-achievers in [A22] and [B22] of Figure 2, but the framework developed here represents a foundation for future evaluation studies in this area.

Evaluation is therefore focused on the sort of learning that unemployed individuals undertake in English Further Education. As Table 2 in the Data and Method section suggests, much of this is at Level 1 (L1) and Level 2 (L2); such as Level 1 Literacy/Numeracy, Level 2 Numeracy/Literacy (which could be a GCSE), a variety of 'preparation for work' course (such as the Entry to Employment (E2E) Pre-apprenticeship offer), focused on those who are not yet able to access apprenticeships because of a lack of skills and qualifications); but also there are some who we see undertaking more substantial (or 'full') learning aims at Level 2 or above. We group FE learning aims into the following categories (to enable comparison with previous results, to allow sufficient numbers for analysis and to reflect the predominance of lower level FE learning amongst our unemployed cohorts):

¹⁶ In the majority of this report, we use CEM to compare outcomes between a treatment and a control group – i.e. those achieving FE aims and those not achieving FE learning aims. However, we can also compare outcomes across those taking alternative treatments (within a multiple treatment framework). For instance, we can compare outcomes of FE achievers who start a ND Training Option; with FE achievers who start a ND Work Experience Option; and then compare non-achievers in these two groups as well.

- d) **Level 1/Level 2 Maths and/or English.** All learners who have a highest, or only, learning aim of Level 1/Level 2 Maths; or Level 1/Level 2 English; or both.
- e) **Preparation for Work at Level 1 or Below:** All learners with a learning aim of 'Preparation for Life and Work' and/or 'Entry to Employment (E2E) pre-apprenticeship offer' and/or 'Aims at Level 1 or Below'; and who do not have any higher FE learning aims. This is the most common form of FE learning amongst our unemployed cohorts.
- f) **Level 2/Full Level 2, and above:** Those with learning aims at Level 2 (that are not English or Maths) are split into two groups, one with '**Thin**' **Level 2** and one '**Full**' **Level 2**. The Full Level 2 category includes learning aims that are equivalent to 5 GCSEs at grade A* to C or an NVQ2; and Thin Level 2 is learning at the same level, but falling short of the criteria to be considered as 'full'. One category for analysis contains those with highest learning aims of **Full Level 2 or above** (Full level 2+); and the other includes learners who we see with a highest learning aim of Thin **Level 2**.

In addition to the NBD, ND, LMS and ILR datasets already mentioned, we match to HMRC earnings and employment records within the WPLS to create a dataset that allows estimation of the returns to learning, as captured by the proportions in (i) employment (ii) sustained employment (i.e. lasting continuously for 6 months or more) and (iii) on active benefits, during each of the 60 months after claim start date¹⁷.

This is one of the few times (in the UK or elsewhere) that a study has been able to differentiate the returns to training, according to whether the unemployed individual achieves the learning outcomes of the course. Furthermore, in our consideration of Cohort 1, as well as being able to track returns 60 months on from claim start date, we can match on up to 8 years of prior labour market history and up to six years of prior ILR learning/training information. This represents a significant contribution to policy, practice and academic literatures.

The approach to data creation set out in Phase I (across the LMS, ILR, WPLS and ND datasets) is 'inclusive', in that we attempt to capture all training undertaken by those observed with a relevant unemployment start date; whether or not this training is undertaken whilst the individual is still unemployed. For instance, any training that takes place between an individual's claim start date and the expected date of referral to an Active Labour Market Programme (ND or WP) is captured in the data; even if it commences when the individual is no longer unemployed (i.e. they exit before the date of referral to an ALMP and begin FE learning after the point of exit from benefits).

This inclusive approach provides DWP and BIS with a dataset that will allow analysis of a variety of client segments who experience periods of unemployment and

¹⁷ It is important to note that the WPLS data require imputation of, for instance, a number of employment start and end dates; we do not capture earnings data below the lower tax threshold; we have no information on earnings/dividends of the self-employed and no information on those who move abroad after learning.

undertake ILR training, but who would not necessarily be captured in typical studies of the returns to training for the unemployed. However, in this Phase II report, we use this dataset to focus on more typical groups of STU, as we limit the analysis to consideration of only those who start their (ILR) training whilst still on active benefits. Similarly, when considering the LTU, we analyse all training that takes place in the 12 months following referral to the ND, but limit the analysis to only those who start such training whilst still on unemployment benefits.

2. Data and Method

Discussion of the data creation process in this Section is a shortened version of a more extensive outline in the accompanying Phase I report. Readers who wish to gain a deeper insight into the process of data creation should therefore refer to this accompanying publication.

2.1 Defining the unemployed and in-scope training

We adopt a broad interpretation of ‘training for the unemployed’. This includes training delivered as part of Active Labour Market Programmes (ALMP), such as the New Deal (ND), Flexible New Deal (FND) or Work Programme (WP); training mandated as an intervention during a short spell of unemployment (for instance, under *Skills Conditionality*), together with training taken up by individuals who self-refer within unemployment spells. This is in line with much of the ALMP literature, and we also capture training by individuals who experience unemployment spells, but who do not necessarily start this training whilst still on benefits. We observe these training interventions across the Labour Market System (LMS), the Individualised Learner Record (ILR) and New Deal (ND) evaluation datasets¹⁸.

However, the focus of our analysis is on the evaluation of FE learning interventions undertaken by unemployed individuals in our two cohorts, and any training/non-training interventions identified in other datasets inform the process of matching - that is, **we isolate the impacts of FE learning, having controlled for any differences in outcomes that arise as a result of other (non-FE) interventions.**

Within both population cohorts detailed in the introduction, we focus only on unemployed individuals in the NBD who are resident in England, and the ILR data cover only FE institutions in England¹⁹. We consider separately the impact of training interventions aimed at (i) the Short-Term Unemployed (STU) from those aimed at (ii) the Long-Term Unemployed (LTU). Differential consideration of the STU and LTU is driven by methodological considerations and also the policy context.

Methodologically, we are likely to observe differences in estimated returns to training delivered early in an unemployment spell, compared to that delivered much later in a spell (for those who experience longer spells). Also to accommodate the policy context, we need to consider training undertaken by those in the pre-Work Programme phase (STU), separately to that delivered as part of the Work Programme (LTU), post-2011. Similarly, pre-2011 we differentiate between (STU) individuals undertaking training prior to, as opposed to during, any New Deal programmes (LTU).

¹⁸ We capture training and non-training interventions in the LMS via ‘otptype’ and this also includes a field for referral to the Work Programme (WP). For those who join the WP, we can then only observe information on interventions for a subset of learners who also appear in the ILR.

¹⁹ The ILR records training in all English FE Institutions, whilst the WPLS covers unemployed individuals resident in England, Scotland and Wales (not Northern Ireland). Clearly we could have individuals living in Wales/Scotland, close to the border with England, and attending an English FE – and vice versa. However, the numbers are likely to be relatively small and we therefore limit ourselves to the unemployed resident in England and training that takes place in English FE institutions. The population of England is approximately 86% of the population of England, Scotland and Wales.

Across the pre-2011 and post-2011 policy regimes, there is a distinct point in an individual's unemployment spell when we expect them to be referred to some form of ALMP intervention. For the purposes of policy, the individual moves from being considered as STU to LTU. This point in time varies according to the age of the individual, the specific policy regime and other relevant factors. In our general discussions we refer to the point where an individual is expected to become LTU, as the 'X month' of their unemployment duration. For instance, we expect an individual aged 18 to 24 (at the point where they are considered for an ALMP), with a claim start date falling within our pre-2011 inflow window, to be referred to the New Deal for Young People (NDYP)²⁰ at a point 6 months on from their claim start date – X will be equal to 6 months. More specifically,

Cohort 1 (pre-2011)	X
18- to 24 year-olds	6 months
Aged 25+	18 months

[Flexible New Deal 18-24 & 25+] 6 months

Cohort 2 (post-2011)

18- to 24 year-olds	9 months
Aged 25+	12 months

In addition, we need to consider an intervening period overlapping these two policy regimes when the Flexible New Deal (FND) was introduced. Phase I details the approach to differentiation of STU and LTU during this period. **It is important to understand why this approach to differentiation of the LTU and STU is most effective in producing results that remain relevant for future policy and practice contexts.**

In the Phase I report we present a number of descriptive statistics that consider the outcomes of individuals who are still unemployed at a point (i) 6 months on from claim start date and (ii) 12 months on from claim start date. This is useful information, as it shows how increasingly hard it becomes to help the unemployed back into employment, as their unemployment spell lengthens. However, in creating the data and carrying out the econometric analysis, we do not wish to choose these cut-off points to define what we mean by STU and LTU, because they are relatively arbitrary and therefore less likely to be valid moving forward.

More specifically, we wish to analyse the returns to training for the unemployed, but as suggested above, the returns are likely to differ [for the same training treatment], depending on whether it is undertaken by an individual in the STU or LTU phases of unemployment. Some of this difference is driven by the fact that earlier interventions

²⁰ An ALMP aimed at the LTU aged 18 to 24.

(no matter what the characteristics of the individual) will likely be more effective (as unemployment ‘scars’²¹). Therefore we would likely see differences between the effectiveness of training delivered to individuals who are still unemployed at 6 months and 12 months (irrespective of whether this falls before or after the point of referral to an ALMP).

However, it is also the case that those who remain in unemployment beyond the point of referral to an ALMP and who start a mandated New Deal or Work Programme intervention, are likely to be very different to those who leave before referral (or soon after receiving notification of referral). At the point where we see individuals join a mandated ALMP, we are concentrating on a subsection who have particularly limited labour market prospects²² – all those who exit before interventions become mandatory, or soon after referral, potentially have better labour market prospects. Using the dates of ND/WP Referral and ND/WP Start to differentiate our consideration of the STU and LTU, means we have a cut-off point that is potentially more enduring than the sort of duration ‘cut off’ points in Section 3.2 of the Phase I report – it is not based on a specific time period, but rather the point at which we observe (predominantly) voluntary interventions becoming mandatory. This is a characteristic of the WP, and future DWP programmes that is unlikely to change (even though the exact duration before mandation may vary). The population we observe at 12 months unemployment duration is different to that at 6 months, but the most important dividing line is the change from voluntary to mandatory intervention; and what this implies for the (potentially unobservable) differences between the populations of unemployed who sit either side of this line.

2.2 Econometric Approach

We first select *active benefits*²³ spells if the claim start date falls within the inflow window. These spells are then used to create a dataset containing a record for each individual²⁴, with the individual’s claim start date marking the first reference point for analysis (or the claim start date of the first relevant unemployment spell, for those with multiple spells over the period). For each individual, the initial claim start date is considered as time (t) equal to zero, and then X (their expected date of referral to an ALMP) is calculated from this. We scan the Labour Market System (LMS), Individualised Learner Record (ILR) and New Deal (ND) datasets²⁵ for all interventions/referrals (training or otherwise) that occur between time zero and X²⁶.

²¹ See for instance, Royal Economic Society Special Session (Nov. 2001), “The ‘Scars’ Of Unemployment: Lower Earnings And A Higher Chance Of Being Jobless Again In The Future”. Three papers by Wiji Arulampalam, Paul Gregg, and Mary Gregory and Robert Jukes.

²² One can think of the argument that we would observe poorer returns to training for this group, even for training delivered during the initial (STU) period of their unemployment spell, because they are particularly hard to place and when they are in the STU phase, it may be hard to observe this difference from others amongst the STU population.

²³ JSA and JTA [and ESA-WRAG in the post-2011 population].

²⁴ Clearly some spells outside the window need to be brought in for those with multiple spells, but with a relevant first claim start date towards the end of our inflow window. For instance, an individual with a first claim start date of Jan 28th 2008 and claim end date of March 28th 2008 would qualify for analysis, but a subsequent spell that started on April 15th 2008 would not qualify as a relevant spell [if selecting only on spells] but is a relevant spell as it is within the period between claim start date and X for this individual.

²⁵ We observe referral to the Work Programme in the LMS, but then only observe information on interventions for a subset of learners who appear in the ILR.

²⁶ In recognition of the potential margin for error around the expected claim start date of X, a ‘fuzzy’ X is created covering the period between X – 2 weeks and X + 2 weeks. Some scans of the data run to the start of

These data form the focus of our analysis of returns to FE learning during the STU phase. For analysis of the LTU, we record all referrals/interventions (training or otherwise) taking place in the 12 months following an individual's expected date of referral to an ALMP programme (X), for all individuals who have an unemployment spell that overlaps X

Using these populations of unemployed, we estimate the value added for different forms of FE learning, by comparing returns over the 60 months from claim start date, between (i) 'ILR achievers' and 'ILR non-achievers' [in Sections 3, 5 and 7] and (ii) 'ILR achievers' and those with 'no-ILR record' [Sections 4 and 6]. Capturing value added by comparing the returns of those who achieve a certain learning aim, relative to those who have the same/similar learning aim(s), but do not achieve [and/or drop out], is a relatively new approach to evaluation (see for instance, Jepsen et. al., 2014). However, recent work has confirmed its robustness as an approach to the estimation of value-added, particularly for lower-level qualifications (see Bibby, et. al., 2014), where survey-based estimates may suffer from negative selection on unobservables. Sections 4, 6 and 8 consider the wider methodological implications of findings from the present study.

In observational (non-experimental) studies the treatment group (for instance, achievers) usually have different characteristics to those of the control group (non-achievers and the No ILR group). To create robust estimates of any treatment effects, we require estimators capable of controlling for such differences and datasets containing all the variables that affect both treatment participation and labour market outcomes. Standard regression-based approaches, that do not utilise data discontinuities or instruments, simply control for differences in characteristics by adding regressors. Matching methods account for any differences in observable characteristics between treated and control by matching each treated individual (achiever) to one or more controls ('non-achievers/dropouts' or 'No ILR'); who are as similar as possible with respect to a given set of pre-treatment variables.

Matching methods mainly rely on two crucial assumptions. First, the conditional independence assumption (CIA), which assumes that all the relevant differences between treatment and control are captured in their observable attributes. Second, the common support assumption, i.e. every achiever is assumed to have at least one counterpart in the control group. In recent years, a number of papers have highlighted the misapplication of matching methods by some researchers; thus, a new class of matching methods has emerged - dubbed "monotonic imbalance bounding (MIB)" (see Iacus et al., 2011) - that curtails the misuse of these techniques.

We implement one of these MIB methods, using coarsened exact matching (CEM). The idea of CEM is to temporarily 'coarsen' each conditioning variable into meaningful categories; match exactly on these 'coarsened' data, and then retain only the original (uncoarsened) values of the matched data. If different numbers of treated

this period ($X - 2$ weeks) and some run to X . Discussion in the Appendix to Phase I provides more detail on the exact approach to identification of in-scope referrals, training and other interventions in each instance. As suggested in Section 1, 'intervention' is an all-encompassing term, which reflects any 'optype' referral in the LMS (training or otherwise), any recorded ILR aim at an FE Institution, as well as any 'referral' to ND/WP/FND.

and control units appear in different strata, the econometric model must weight or adjust for the different stratum sizes. This is why a weighted regression of the dependent variable on the covariates is adopted at the end of the matching procedure²⁷. Iacus et al. (2011) show that the CEM dominates commonly used existing matching methods in its ability to reduce imbalance, model dependence, estimation error, bias, variance, mean square error, and other criteria.

It is important to remember that the inherent trade-off of matching remains. With the CEM approach, larger bins (more coarsening) will result in fewer strata; fewer strata will result in more diverse observations within the same strata and, thus, higher imbalance (Blackwell et al., 2009). As recognised by Ho et al. (2007), matching methods are data-preprocessing techniques and analysts must still apply statistical estimators to the data after matching. In order to control for any remaining mismatch between treated and comparison individuals we combine the CEM with a weighted regression to calculate the estimated value added of various forms of ILR learning interventions by comparing the differences in outcomes for the following matched populations.

- i. Learning aim observed in ILR and achieved;
- ii. Learning aim observed in ILR, but not achieved
- iii. Individuals with no aim observed in ILR. For the STU analysis, we have an indication of those amongst this population who receive a caseworker [LMS] referral and for the LTU analyses, an indication of whether the individual has a ND Start).

Our analysis plots the difference in proportions of achievers and non-achievers (or those with No ILR) in employment before and after claim start date, having:

- Matched (exactly²⁸) on whether the individual was in Employment Month (t-1); in Employment Month (t-2); in Employment Month(t-6); Number of months in Employment between Month (t-7) and Month(t-24); Number of months in Employment between Month (t-25) and Month (t-42); Number of months in Employment between Month (t-43) and Month (t-60); Gender; and initial White/Non-White match for ethnicity.
- Then we estimate a standard regression equation, using these matched (or re-weighted) achiever and non-achiever groups, controlling additionally for whether an unemployed individual has Children; a finer distinction of Ethnicity; whether individual is a Previous Offender; Age; ever Lone Parent; Number of prior LMS opportunities; and Number of prior ILR aims started.

²⁷ Selecting matched samples reduces bias due to covariate differences, and regression analysis on those matched samples can adjust for small remaining differences and increase efficiency of our estimates (Stuart and Rubin, 2007).

²⁸ That is, using Coarsened Exact Matching (CEM).

Table 1 lists all the variables that we use to produce control groups [of (i) non-achievers or (ii) those with no-ILR record] that ‘match’ the treatment group of achievers, on observable characteristics. A key test of whether we achieve such balance in the characteristics of our treatment and control groups, as Heckman and Smith (1998) suggest, is the achievement of no significant difference in employment rates of the two groups [in this case] over the previous 5 years. In the initial outputs of our report, we present findings in a way that evidences the robustness of our match, but later revert to tabular presentation for reasons of brevity.

Table 1: Variables and Approach used in Matching

(Coarsened) Exact Matching wrt:

Number of months in Employment between Month(t) and Month(t-60)
Number of months in Employment between Month(t-61) and Month(t-96)
Number of months on Active Benefits between Month(t) and Month(t-60)
Gender
Dummy white ethnicity
Dummy disability
Dummy previous LMS referral
Local employment rate
Age
Number of months between 0 and ILR start
Population segment

Other variables used in the matching specification (depending on the numbers)

Daily earnings in Year t-1
Number of prior ilr aims achieved
Categorical monthly start
Dummy attendance e-learning (only Ach V Non-Ach)

Regression variables:

Ethnicity
Dummy previous Offender history
Dummy ever Lone Parent
Number of prior LMS opportunities
Dummy has children
Age
Dependency Flag (alcohol or drugs)
Refugee Status
Number of languages (spoken)
Number of languages (written)
Disability status
Ever received DLA or SDA prior to benefit claim
Government Office code
Ever recorded as an asylum seeker
Number of prior ILR aims achieved
Number of prior learnings aims undertaken with the Offenders service (OLASS)
Number of prior ALMP expected starts
IMDScore (Average at Local Authority level, 2009)
Employment IDscore (Average at Local Authority level, 2009)
Unemployment rate (Local Authority level, 2004)
Employment rate (Local Authority level, 2004)
Attendance mode (only Ach V Non-Ach)
Daily earnings in the tax year before 0

Extra control variables (Only for post-X employment variable)

Number of months on Employment between Year t0 and Year t-1
Number of months on Employment between Year t-1 and Year t-2
Number of months on Employment between Year t-2 and Year t-3
Number of months on Employment between Year t-3 and Year t-4
Number of months on Employment between Year t-4 and Year t-5
Number of months on Employment between Year t-5 and Year t-6
Number of months on Employment between Year t-6 and Year t-7
Number of months on Employment between Year t-7 and Year t-8
Number of months on Active Benefits between Year t0 and Year t-1
Number of months on Active Benefits between Year t-1 and Year t-2
Number of months on Active Benefits between Year t-2 and Year t-3
Number of months on Active Benefits between Year t-3 and Year t-4
Number of months on Active Benefits between Year t-4 and Year t-5
Number of months on Active Benefits between Year t-5 and Year t-6
Number of months on Active Benefits between Year t-6 and Year t-7
Number of months on Active Benefits between Year t-7 and Year t-8
Number of FL2 or more achievements in the 5 years before X
Number of L1 or L2 achievements in the 5 years before X
Number of Entry Level Qualification achievements in the 5 years before X
Number of months between 0 and ILR start

Our estimates of value added cover three broad categories:

- In each month following the start of training, an individual is counted as being in **Employment**²⁹ if they spend a majority of the month in employment.
- In each month following the start of training, an individual is counted as being in **Sustained Employment** if we observe them in a particular month, employed for a majority of that month as part of a period of continuous employment of at least 6 months with no overlapping active benefit spells.
- In each month following the start of training, an individual is counted as being on **Active Benefits** if they spend a majority of the month on active benefits.

Ideally we would also capture earnings returns, but the nature of our earnings data precludes this. In Bibby et. al. (2014) we estimate average daily earnings in each of the financial years following the end of learning (in line with the education economics literature), but in this report outcomes are measured on a monthly basis and the earnings data do not support this level of disaggregation (we only have tax-year data for earnings). Furthermore, as with much of the ALMP literature, we are focused on evaluating the efficacy of interventions as pathways to employment and sustained employment; as well as their ability to reduce benefit dependency.

It is important to note that, taking the example of the STU, any ILR training initiated between claim start date and X defines whether somebody is in the treatment or control group (and the type of treatment/control group), but then all 'outcomes' are modelled from training start date. Therefore, the actual training undertaken, which defines whether somebody is in the treatment, will 'implicitly'³⁰ be modelled as an 'outcome'— modelling lock-in effects of training.

As we suggest in the discussions above, there are two possible control groups that we can utilise for the STU and the LTU. In the Phase I report (Section 2.2 and the Technical Appendix), we describe how the LMS and ND data provides information that allows us to split the STU unemployed into different population segments. Detailing of this process of segmentation of different client groups is an important outcome of the Phase I report and represents a good starting point for further investigation of the impact of training for individuals in the STU phase. In this Phase II report we do not focus on this process of segmentation, as the aim is to provide impact estimates relevant to our overall populations of unemployed. Rather, we use information from the LMS in the process of matching Achiever and No ILR control

²⁹ As suggested in the Phase I report, HMRC employment records that overlap with an active benefit claim are discounted (though this is a simplification of the actual business rules that cover this aspect); as DWP benefit data is considered to be more reliable. This may result in a small number of employment spells being wrongly recorded as benefit spells, but the impact is likely to be limited, and there is no reason to assume that any one of our treatment or control groups is any more or less likely to be impacted by this business rule. The use of various control groups of non-achievers and those without an ILR record, goes some way to counter any potential confounding impacts from this and other business rules. Interested readers should refer to the online technical Appendix and the Data and Method Section of Bibby et. al. (2014).

³⁰ If we are measuring employment status (as our outcome) in the first month, second month etc. after either claim start date or training start date; then being in training lessens the probability that we observe a 'treated' individual in employment during these months. In this case we are implicitly modeling within-scope learning as an 'outcome'.

groups for the STU³¹; and use information on ND Starts in the process of matching achiever and No ILR control groups for the LTU³².

In Sections 3, 5 and 7 we calculate estimates of value added by comparing (i) the employment/sustained employment/active benefit performance up to 60 months on from claim start date, for unemployed individuals who have an ILR literacy learning aim that they achieve; relative to (ii) the employment performance of matched individuals who have the same ILR learning aim, but drop-out and/or do not achieve. In Sections 4 and 6, we present additional estimates obtained by comparing (i) the employment outcomes for individuals who have an ILR literacy learning aim that they achieve; with (iii) the employment performance of a matched group of individuals who have no learning aim identified in the ILR (ensuring that we match achievers with those in the 'No ILR' group, according to whether we observe a flag [in the LMS] of need).

A similar approach is taken when analysing the LTU – we segment according to whether individuals have/have not Started ND (or FND) and then use the ILR to determine treatment and control groups within the ND population segment. However, because the ND data is more complete than LMS (as it is likely that a better audit trail is captured by Jobcentre Plus staff for those on ND, compared to the STU) and ND treatments potentially more substantial, we carry out an additional (multiple treatment) approach. The specifics of this approach are described in more detail at the start of Section 6, where findings are presented (but the econometric underpinnings are the same as those described above).

The majority of analysis uses CEM to compare outcomes between a treatment and a control group – i.e. those achieving FE aims and those not achieving FE learning aims. However, we can also compare outcomes across those taking alternative treatments (within a multiple treatment framework). For instance:

- We are able to compare labour market outcomes between those achieving FE learning aims, and non-achievers – with the population under consideration limited to only those who start a New Deal Training Option.
- Similarly, we are able to compare labour market outcomes between those achieving the same FE learning aims, and non-achievers – with the population under consideration limited to only those who start a New Deal Work Experience Option.
- Within a multiple treatment framework we can then compare the outcomes of, for instance, (i) FE achievers who start a ND Training Option and (ii) FE achievers who start a ND Work Experience Option. We can also compare non-achievers across the two ND Option groups. In this report we present the results of 8 key combinations that arise from the potential comparisons that are possible with the ND and ILR data.

³¹ Generally, when estimating the labour market returns to any training interventions identified amongst individuals in *Client Segment 1*), our control group of individuals must also come from *Client Segment 1*). Similarly, any analysis of the returns to training for those in *Client Segment 2*) must be estimated relative to a control group of individuals taken from *Client Segment 2*); and our matching approaches that estimate impacts across these segments take account of this.

³² When estimating the labour market returns to any training interventions identified amongst individuals who have a *ND Start*, our control group of individuals should also come from *those with a ND Start*.

The first part of Table 2 sets out the learning aims we have identified from a scan of the ILR between claim start date and X, for all unemployed (i.e. those for whom we analyse treatments in the STU period) under the ND (pre-2011) and WP (post-2011) policy regimes. The second part sets out the learning aims identified from a scan of the ILR between X and X+12 months, for the LTU who have a spell overlapping X. These are the ‘in-scope’ ILR aims that define whether somebody is in treatment or control - Achiever V Non-achiever/No ILR.

This is the starting point for creation of our overall categories of learning set out in the introduction (and repeated below after Table 2). It is important to note that, in the interests of transparency and to aid comparison with other studies, we show how this basic information on learning aims in Table 2 feeds into our categories of learning. For instance, as already mentioned, we have to be careful in comparing to the December 2014 study of Bibby et. al. because our categories of learning do not correspond one-to-one – presentation of basic learning aims in Table 2 better ensures that such comparisons can be made with full understanding of any differences in the future.

As suggested in Figure 1, of the total 2.33 million individuals who we observe with a claim start date between 2006 and 2008, 0.35 million individuals are observed with some form of learning aim in Further Education (as identified from the ILR). The first part of Table 2 sets out the specific learning aims that we observe amongst these 350,000 individuals. For instance, 84,688 individuals have a Level 1/Level 2 Literacy aim and 74,345 have a L1/L2 Numeracy learning aim. A quick glance at Table 2 shows that many of these 350,000 individuals have multiple ‘in-scope’ learning aims and there is a lot of overlap. In creating our categories of FE learning aim (from which achievers and non-achievers can be identified) we group according to highest learning aim.

For instance, in the discussions just after Table 2, we describe the creation of a category of ‘*L1/L2 Maths and/or English*’. This focuses on the 51,739 individuals who have a highest learning aim that is either (i) a Level 1 or Level 2 literacy aim, or (ii) a Level 1 or Level 2 numeracy learning aim or (iii) both of these. This group is therefore made up of all those amongst the 84,688 and 74,345 individuals in the first two rows of Table 2, for whom these aims are the highest learning aims undertaken during the period between claim start and X (i.e. they are ‘in-scope’).

In the subsequent analysis, we can see Figure 3 suggests that 15,702 (9,207 achievers and 6,495 non-achievers) of these 51,739 individuals are aged 18 to 24; and Figure 6 focuses analysis on the 36,037 (23,104 achievers and 12,933 non-achievers) of these individuals who are aged 25+ (or more specifically 25 to 55³³). The remainder of Table 2 describes the specific learning aims in the other cohorts of learners, both in the STU and LTU phases.

³³ Above the age of 55 we have very few unemployed individuals, and their labour market trajectories are likely to be very different to those under the age of 55.

Table 2: Learning aims undertaken during the STU and LTU phases

STU phase (2006-2008 and 2011-2012 cohort inflows)

Cohort	Aim Type	Duration (days)		% Achieved	Numbers	
		Mean	St. Dev		Aims	Learners
Pre-2011	L1/L2- literacy	57	105	65%	180501	84688
	L1/L2- numeracy	55	104	66%	172728	74345
	L1/L2- ESOL	124	95	60%	40207	25581
	Preparation for life and work	112	136	62%	65668	50730
	Entry to Employment (E2E) pre-apprenticeship offer	308	260	56%	31879	15368
	Aims at level 2 or above of 480 GLH or more	415	269	41%	7902	7260
	Aims at level 2 or above of 120 GLH or more	242	156	57%	55157	45796
	ICT Aims at level 2 or above less than 120 GLH/ unknown GLH	92	111	59%	55304	26660
	Other aims at level 2 or above less than 120 GLH/ unknown GLH	141	138	71%	126591	97560
	Aims at level 1 or below	90	100	61%	75866	54600
	Other aims (non-accredited, enrichment etc.)	58	86	81%	57135	40336
Post-2011	L1/L2- literacy	99	108	56%	111277	96963
	L1/L2- numeracy	98	106	57%	111525	95658
	L1/L2- ESOL	101	79	74%	47644	31262
	Preparation for life and work	35	64	84%	354503	231030
	Entry to Employment (E2E) pre-apprenticeship offer	176	140	33%	149546	51905
	Aims at level 2 or above of 480 GLH or more	252	214	22%	5734	5614
	Aims at level 2 or above of 120 GLH or more	188	117	62%	56485	50441
	ICT Aims at level 2 or above less than 120 GLH/ unknown GLH	54	65	71%	31117	25005
	Other aims at level 2 or above less than 120 GLH/ unknown GLH	60	82	78%	153650	102593
	Aims at level 1 or below	42	61	80%	169691	116321
	Other aims (non-accredited, enrichment etc.)	50	79	85%	146881	119577

LTU phase (2005-2009 and 2010-2012 cohort inflows)

Cohort	Aim Type	Duration (days)		% Achieved	Numbers	
		Mean	St. Dev		Aims	Learners
Pre-2011	L1/L2- literacy	74	118	61%	90640	53288
	L1/L2- numeracy	71	115	62%	90494	50618
	L1/L2- ESOL	125	94	56%	18031	13019
	Preparation for life and work	78	116	74%	72032	56938
	Entry to Employment (E2E) pre-apprenticeship offer	291	134	57%	30179	11984
	Aims at level 2 or above of 480 GLH or more	429	265	45%	5002	4708
	Aims at level 2 or above of 120 GLH or more	231	147	53%	30108	25761
	ICT Aims at level 2 or above less than 120 GLH/ unknown GLH	86	101	57%	20310	11863
	Other aims at level 2 or above less than 120 GLH/ unknown GLH	120	129	69%	62054	47945
	Aims at level 1 or below	91	104	60%	34958	26092
	Other aims (non-accredited, enrichment etc.)	53	101	81%	17647	13444
Post-2011	L1/L2- literacy	89	101	54%	47974	41929
	L1/L2- numeracy	86	98	54%	48513	41765
	L1/L2- ESOL	103	79	71%	15410	10895
	Preparation for life and work	28	53	84%	210646	128927
	Entry to Employment (E2E) pre-apprenticeship offer	158	136	23%	52215	18117
	Aims at level 2 or above of 480 GLH or more	242	211	20%	2041	1998
	Aims at level 2 or above of 120 GLH or more	174	117	59%	22440	20429
	ICT Aims at level 2 or above less than 120 GLH/ unknown GLH	49	61	68%	12756	10513
	Other aims at level 2 or above less than 120 GLH/ unknown GLH	48	70	78%	77159	50147
	Aims at level 1 or below	37	54	79%	99868	67285
	Other aims (non-accredited, enrichment etc.)	43	73	85%	61122	50559

In Sections 3 to 7, analysis is carried out for the following amalgamated groups of highest learning aims taken from the total volume of learning aims in Table 2³⁴. We group FE learning aims into the following categories:

- a) **Level 1/Level 2 Maths and/or English.** All learners who have a highest, or only, learning aim of Level 1/Level 2 Maths; or Level 1/Level 2 English; or both, as described in the discussions prior to Table 2.
- b) **Preparation for Work at Level 1 or Below:** All learners with a learning aim of 'Preparation for Life and Work' and/or 'Entry to Employment (E2E) pre-apprenticeship offer'³⁵ and/or 'Aims at Level 1 or Below'; and who do not have any higher FE learning aims. This is the most common form of FE learning amongst our unemployed, particularly amongst cohort 2.
- c) **Level 2/Full Level 2, and above:** Those with learning aims at Level 2 (that are not English or Maths) are split into two groups, one with '**Thin**' **Level 2** and one '**Full**' **Level 2**. The Full Level 2 category includes learning aims that are equivalent to 5 GCSEs at grade A* to C or an NVQ2; and Thin Level 2 is learning at the same level, but falling short of the criteria to be considered as 'full'. One category for analysis contains those with highest learning aims of **Full Level 2 or above** (Full level 2+); and the other includes learners who we see with a highest learning aim of Thin **Level 2**.
- d) **L1/L2 ESOL:** Descriptive statistics are not presented separately for this category of learner in Phase I, but here we do present estimated employment returns here.

As suggested in the introduction, our categorisation of learning into five groups is driven by consideration of (i) numbers (which must be sufficient to allow sensible econometric investigation), (ii) the detail of information available in the ILR and (iii) the need for this first exploratory study to provide extensive headline findings, with less opportunity for detailed investigation of disaggregated categories – setting a benchmark for future investigation and allowing comparison with existing studies (for instance, Bibby et. al., 2014)

As is implied by our list of control/matching variables at the start of this Method section, the econometric models we use produce estimates of value added for these highest learning aim categories, controlling for any additional (lower-level) aims (and whether they are achieved or not) both when these additional aims are (i) within scope and (ii) prior to claim start date.

³⁴ The analysis covers all ILR learning included in Table 2, other than 'Other aims (non-accredited, enrichment etc.)' which are dropped from the analysis.

³⁵ E2E is a pre-apprenticeship 'offer' for those with few/no-qualifications and little experience. It covers basic reading, writing and communication skills; together with career planning and other basic employability skills.

3. The impact of FE Learning on Labour Market Outcomes: STU

In this section of the report we set out a range of estimates of the value added from FE learning for the unemployed, when that FE learning is delivered during the initial [STU] stage of the unemployment spell – after claim start date and before an individual is referred to a compulsory ALMP (achievers and non-achievers in cell [A1] of Figure 1).

We begin with a number of ‘headline’ findings, for instance producing estimates of the labour market returns to L1/L2 Maths and/or English learning, for all those aged 18 to 24 in the pre-2011 policy context. We also carry out this analysis for those aged 25+, and provide a weighted average of these two figures to provide some indication of overall impacts across the two age groups³⁶. This provides us with an overall estimate of impact and we produce these headline estimates across the categories of FE learning described in the discussions around Table 2.

For the first set of headline findings relating to *L1/L2 Maths and/or English*, we show the full set of results in graphical form to aid exposition and evidence the accuracy of our match. However, following this initial analysis, the number of results dictates that we present in table format – providing estimates in the form of 2 to 4 year averages. Whilst we do measure returns up to 5 years from claim start date, our analysis focuses on returns from the start of learning. Therefore, whilst we have a full 5 years of results from claim start date, we only have between 4 and 5 years of information from the date that FE learning commences. In the remainder of the report, any findings presented have achieved a similarly effective match to that evidenced in Figures 3 to 8.

3.1 Headline Estimates for Pre-2011 STU Cohort

Figure 3 presents the estimated employment premium for all unemployed individuals aged 18 to 24 who we observe achieving a *L1/L2 Literacy and/or Numeracy* aim, relative to those with the same aims, who do not achieve³⁷. The findings suggest that there is a relatively persistent employment premium for achievers over non-achievers, of around 4 percentage points [ppts]. We have a high level of confidence in these results because the premium prior to claim start date - to the left of the thicker dashed black line - suggests that [between 60 months prior to claim start and claim start], there is no statistically significant difference between the employment rate of achievers and non-achievers³⁸. In addition we are more confident that any

³⁶ We do not estimate one equation for all age groups as this is methodologically questionable (given that they have such very different expected dates of referral to ALMPs), but the overall weighted average of impacts from the two age groups is a measure that is appropriate for cost-benefit and policy analysis; and we provide an indication of its overall statistical significance.

³⁷ For those with both Literacy and Numeracy learning aims, the non-achieving group includes those who do not achieve either learning aim; whilst the achiever group contains those who achieve at least one of these aims and those who achieve both aims.

³⁸ When we speak of a ‘statistically insignificant’ impact, we refer to the situation where we are unable to reject the null hypothesis of parameter insignificance. When we suggest a ‘statistically significant’ impact, we refer to the situation where we are able to reject the null hypothesis of parameter insignificance – in both cases we use language that is more accessible to non-technical readers.

unobservable differences between treated and control are accommodated, as we are comparing treatment and control who both select into the same form of basic literacy/numeracy learning.

The dark blue line measures the percentage point difference between (i) the proportion within the achieving group who are in employment, compared to (ii) the proportion in the non-achieving group who are in employment - within any particular month. This line represents the employment 'gap' between our matched achiever and non-achiever populations, and this remains close to zero for the entire period up to claim start date and well within our 99% confidence interval (the light blue dashed lines either side)³⁹. This gives us an idea of the quality of the match – there should be no significant difference between the proportion of achievers in employment and the proportion of matched non-achievers, in any month before claim start date. If there was a significant difference, then our re-weighting (matching) of the achievers and non-achievers, so that they are 'otherwise identical' on observable characteristics, would have failed. We then have a gap between claim start date (thick dashed black line to the left) and the start of learning (thinner dashed black line to the right).

At the first point in time from the start of learning, the thick blue line is located at zero, because we are restricting our analysis to all those who are on unemployment benefits when learning starts. In the first two or three months after the start of learning, we see a relatively insignificant lock-in effect (because both achievers and non-achievers will be engaged in the 'in-scope' ILR learning that defines them as the treatment and control groups). At around 4 months we begin to see some divergence, as the average employment rate amongst achievers becomes significantly higher than that for non-achievers (or drop-outs). This employment premium remains statistically significant for the remainder of our period of analysis at around 4 percentage points (ppts); dropping to around 3 ppts after 40 months.

The second half of Figure 3 shows how this employment premium translates into actual employment rates amongst achievers and non-achievers. For both groups, the suggestion is that employment rates before and after learning are on an upward trajectory (as we would expect for individuals at the start of their labour market experiences), but that the path of increase for achievers is a step above that for non-achievers⁴⁰. As suggested in the introduction, absolute employment rates climb from around 30% just after claim start date, to around 40% at the end of our period of analysis. Therefore, our impact of around 3.5 ppts over the period of analysis translates into a 10% impact (a 3.5 ppt premium on an approximate 35% employment rate).

³⁹ In much of the academic literature a 95% confidence interval is used, but we are able to hold ourselves to a more exacting statistical standard (a 99% confidence interval) when gauging the accuracy of our match.

⁴⁰ It is worth noting that at t=60 months employment rates are around 10% and this reflects the fact that we have very little labour market history for 18 to 24 year olds going back 5 years. However, we have limited our analysis to an older group within this age category (aged 20 to 24) and our findings of positive and statistically significant impacts remain.

Figure 3: Percentage point employment probability premium for L1/L2 Literacy and/or Numeracy Achievers, compared to Non-achievers: STU aged 18 to 24, in the pre-2011 cohort⁴¹

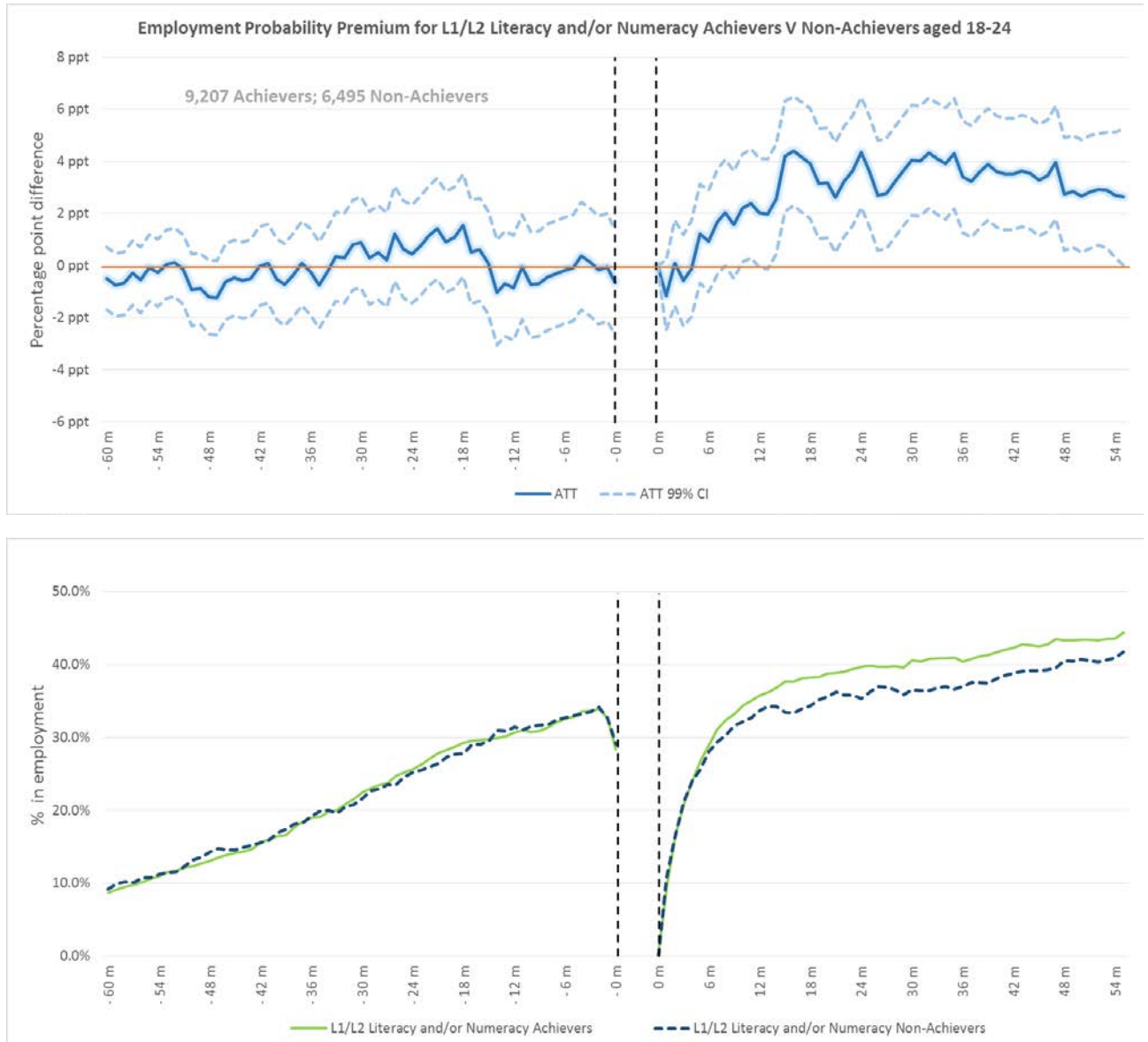
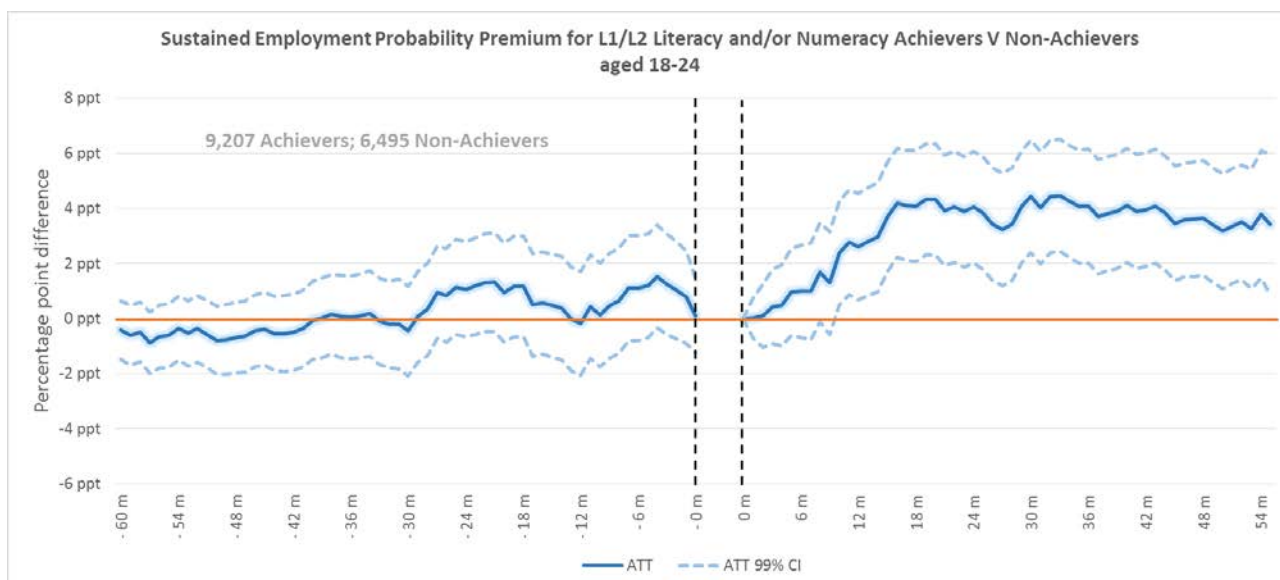


Figure 4 implies that the premium secured by those who achieve *L1/L2 Numeracy and/or Literacy* is not simply driven by differences in employment that is of a less substantial or temporary nature, as the difference in proportions of achievers and non-achievers in sustained employment remains around 4 ppts (or 13%). More specifically, in each month from a point 9 months on from the start of ILR learning,

⁴¹ We select all those unemployed who have L1/L2 Literacy &/or Numeracy learning aim in the ILR between claim start date and X; and focus on those for whom this is (i) their only aim or (ii) their highest learning aim (i.e. accompanied by an aim at L1 or below). We exactly match on whether individuals are non-attenders, non-achievers or achievers of any 'accompanying' lower L1 aims. As suggested in the introduction, we also drop from the analysis, individuals who were already working when they commenced the L1/L2 Literacy &/or Numeracy aim. We also control for whether the achiever / Non-achievers are observed in LMS Segments 1) or 2).

there is a statistically significant 4 ppt gap between the proportion of achievers in a particular month who are in a contiguous employment spell lasting 6 months or more; compared to non-achievers.

Figure 4: Percentage point SUSTAINED employment probability premium for L1/L2 Literacy and/or Numeracy Achievers, compared to Non-achievers: STU aged 18 to 24, in the pre-2011 cohort



In Figure 5 we have evidence that, in addition to the employment (and sustained employment) returns for achievers, those achieving *L1/L2 Maths and/or English* are also significantly less likely to be observed on active benefits from around 14 months after the start of learning. Achievers are around 2 ppts less likely to be on unemployment benefits than comparable non-achievers and this statistically significant gap is particularly pronounced up to 44 months from the end of learning.

Figure 5: Percentage point Active Benefit probability gap for L1/L2 Literacy and/or Numeracy Achievers, compared to Non-achievers: STU aged 18 to 24, in the pre-2011 cohort

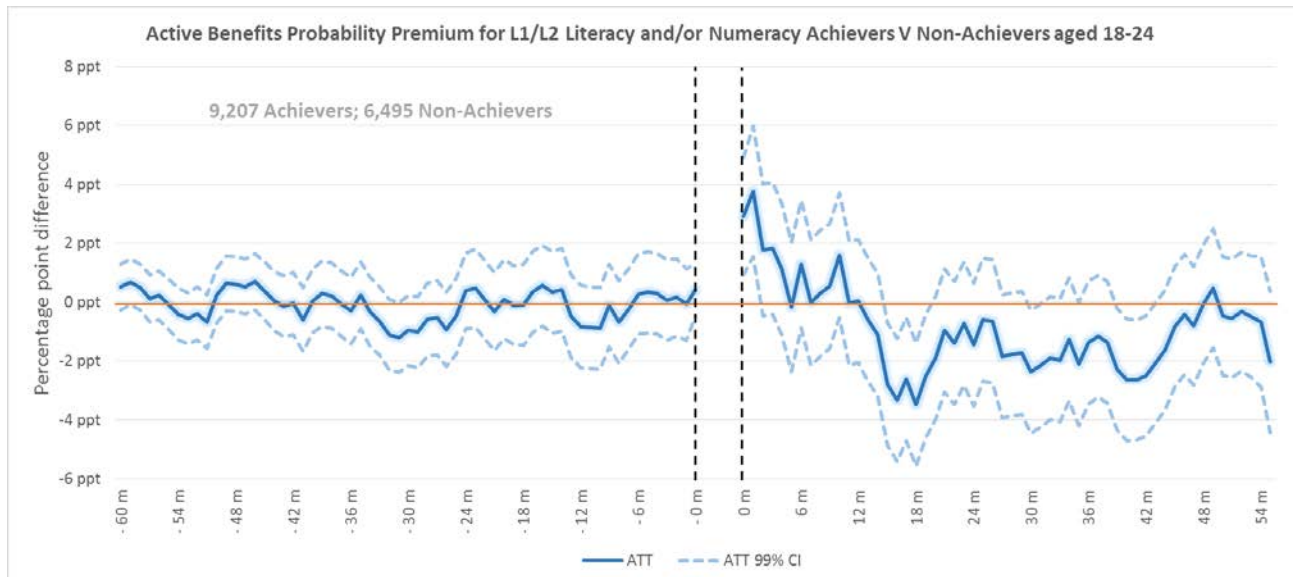


Figure 6 presents the estimated employment premium for all unemployed individuals aged 25+ who we observe achieving a L1/L2 literacy and/or numeracy aim, relative to those with the same aims, who do not achieve. Here we identify an employment premium for achievers over non-achievers, that becomes significant at points 12 and 18 months from learning start, and then between 25 and 30 months remains statistically significant at around 2 to 3 ppt until the end of our period of analysis (or between approximately 6% and 9%). Again, we have confidence in these results because the premium prior to claim start date is not significantly different to zero in any month and we are comparing two groups who have selected into the same relatively basic level of literacy and/or numeracy support.

The second half of Figure 6 shows a trajectory of employment rates that is relatively flat prior to claim start date (with some slight incline) and we may perhaps characterise the employment premium secured by achievers as arresting some of the apparent decline in labour market prospects for this group. Employment rates for achievers 48 months on from the start of learning, begin to climb above the rates we see prior to claim start date, whilst for non-achievers they are still lower.

Figure 6: Percentage point employment probability premium for L1/L2 Literacy and/or Numeracy Achievers, compared to Non-achievers: STU aged 25+, in the pre-2011 cohort

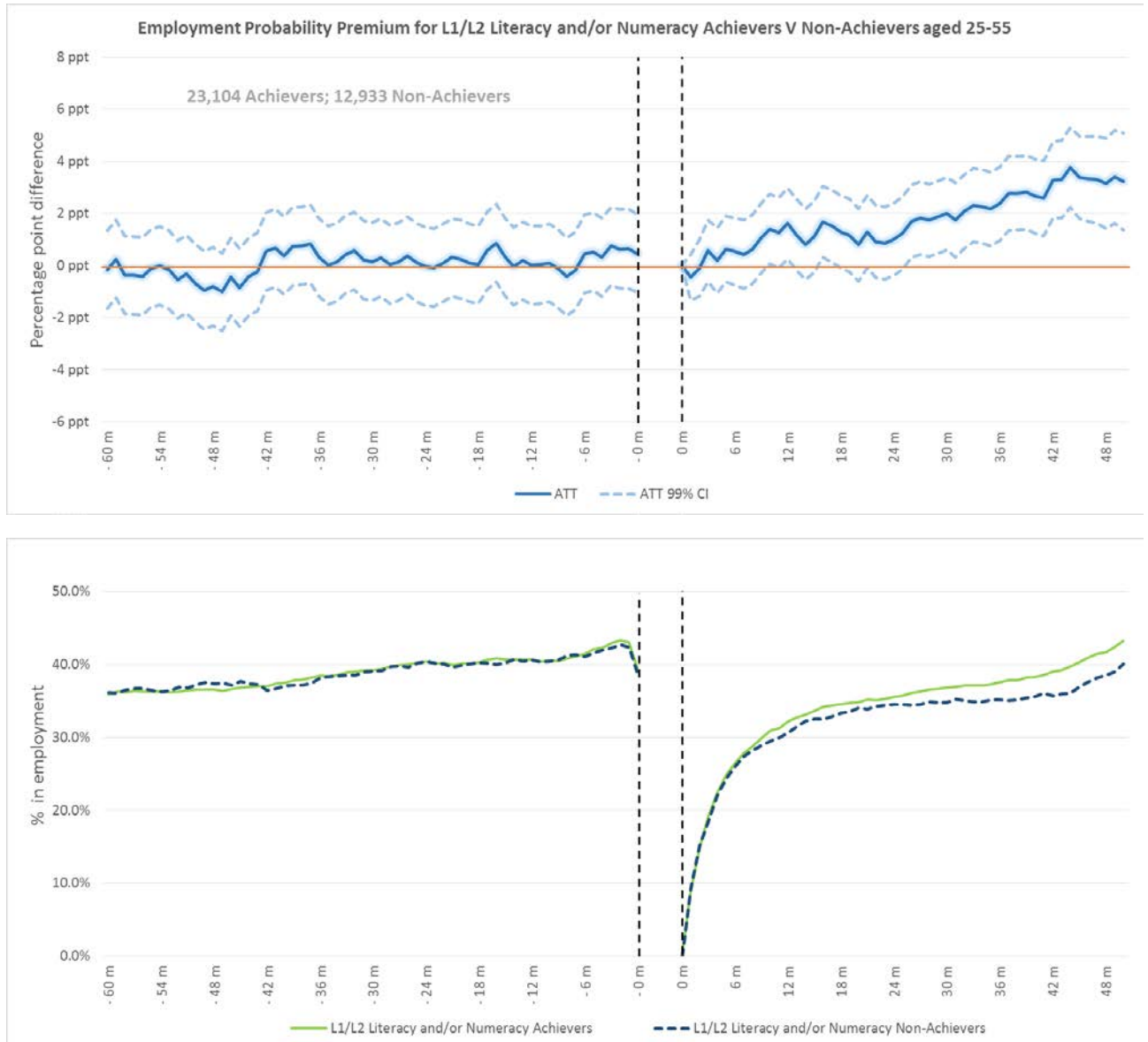


Figure 7 shows a very similar pattern to that of Figure 6 and this once again suggests that the employment premium secured by those who achieve *L1/L2 Numeracy and/or Literacy* is not simply driven by differences in employment that is of a less substantial or temporary nature. If anything, we observe a slightly more substantial impact, as the difference in proportions of achievers and non-achievers becomes significant before 18 months (though it takes a little longer than Figure 6 to reach 3 ppt). In each month from a point around 18 months on from the start of ILR learning, there is a statistically significant 2 ppt gap between the proportion of achievers in a particular month who are in a contiguous employment spell lasting 6 months or more; compared to non-achievers.

Figure 7: Percentage point SUSTAINED employment probability premium for L1/L2 Literacy and/or Numeracy Achievers, compared to Non-achievers: STU aged 25+, in the pre-2011 cohort

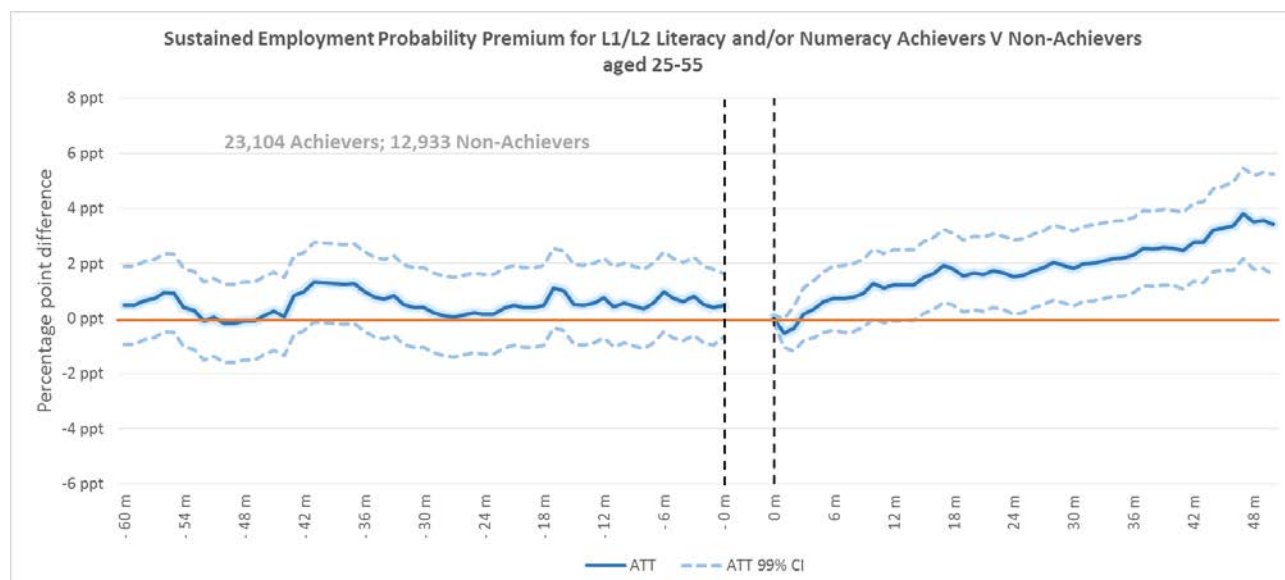


Figure 8 suggests that achievers of L1/L2 Literacy and/or Numeracy aged 25+ secure no significant return to learning in the form of reduced proportions on active benefits. There is a similar lock-in effect over the first 12 months, where we see achievers significantly more likely to be on benefits than non-achievers – the impact is more pronounced than for those aged 18-24, perhaps suggesting that many more of our non-achievers aged 25+ are drop-outs⁴². From a point around 12 to 14 months on from the start of learning, there is no statistically significant difference between the proportion of achievers and non-achievers who are on active benefits. As we shall see at various points in our investigation, this hints at a more general finding, that those aged 25+ amongst our unemployed tend to present more of a challenge to policymakers.

⁴² If all non-achievers complete their course but do not secure award, there is no lock-in effect estimated, as both achievers and non-achievers remain in learning for the same period. We observe a lock in effect for those aged 18 to 24, suggesting that many non-achievers are drop-outs and for those aged 25+ this lock in effect is larger and the implication is that more non-achievers are dropping out of their studies early.

Figure 8: Percentage point Active Benefit probability gap for L1/L2 Literacy and/or Numeracy Achievers, compared to Non-achievers: STU aged 25+, in the pre-2011 cohort

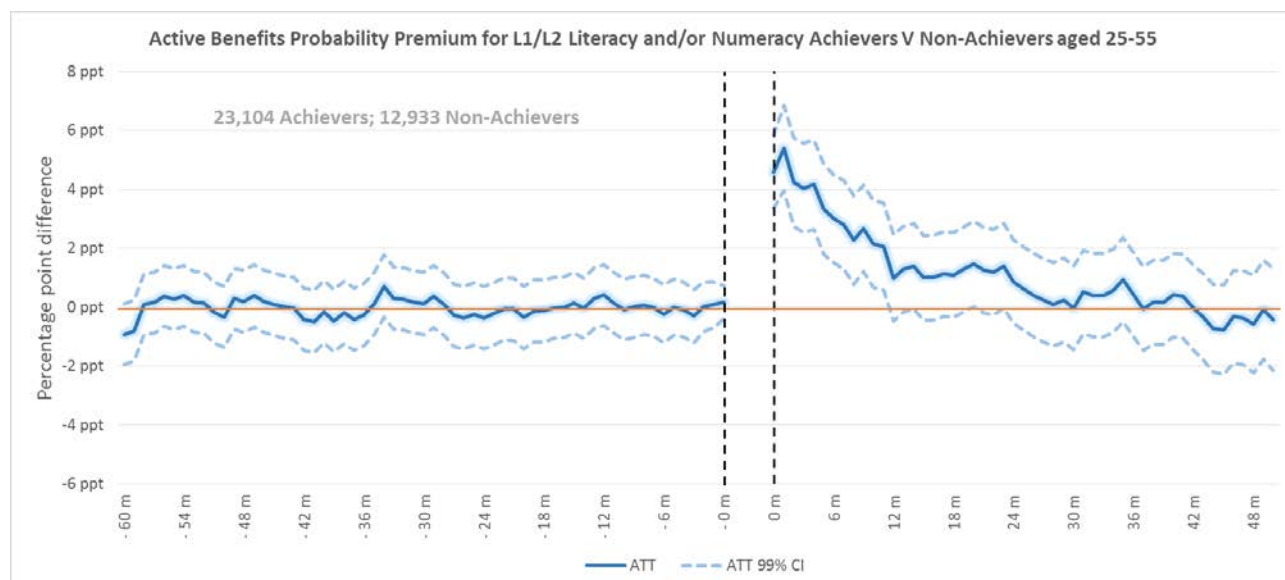


Table 3 presents summary measures that capture the outcomes from Figures 3 to 8. As suggested previously, the number of estimates dictates that we present the remainder of results in table format. In Bibby et. al. (2014), we investigate the persistence of earnings and employment probability premiums over the years after the end of learning; adopting a 3 to 5 year average as it balances a number of competing issues. In this report, whilst we do measure returns up to 5 years from claim start date, our analysis focuses on returns from the start of learning. Therefore, whilst we have a full 5 years of results from claim start date, we only have between 4 and 5 years of information from the date that FE learning commences. Our 2 to 4 year average measure captures the extent to which returns persist into the future, in the same way as the 3 to 5 measure previously adopted⁴³.

Table 3 confirms the findings from Figures 3 to 8. For instance, we observe a statistically significant employment premium for achievers over non-achievers aged 18 to 24 of around 3.5 ppts (or approximately 10%); and around 2 ppts for those aged 25+ (approximately 6%). Overall this translates into a statistically significant employment premium of 2.4 ppts; as the 25+ age group undertake many more interventions than those aged 18 to 24, and therefore they 'weigh' more heavily in our weighted estimate. These premiums are slightly higher for sustained employment outcomes, with the overall estimate of impact rising to 2.7 ppts. However, we are only able to identify significant impacts (that average around -1.7 ppts) for those aged 18 to 24 when considering the gap between proportions of achievers and non-achievers on active benefits.

⁴³ In summary Tables, such as Table 3, the results presented for the first year, second year etc, are yearly averages of the monthly effects within that year – for Table 3 these are the yearly averages of the monthly impacts previously presented in Figures 3 to 8.

Table 3: Summary Labour Market Outcomes for *L1/L2 Literacy and/or Numeracy* Achievers, compared to Non-achievers: STU in the pre-2011 cohort

		Percentage Point Employment/Sustained Employment and Benefit Premium/gap in Years after Learning Spell Start				
		1st Year	2nd Year	3rd Year	4th Year	2 to 4 year average
Percentage Point Employment Premium	Aged 18-24:	0.010	0.034***	0.037***	0.035***	0.035
	S. E.	(0.007)	(0.008)	(0.008)	(0.008)	
	Aged 25+:	0.006	0.011**	0.019***	0.031***	0.020
	S.E.	(0.005)	(0.005)	(0.005)	(0.006)	
	All ages (weighted average)	0.007*	0.016***	0.024***	0.032***	0.024
		(0.004)	(0.004)	(0.004)	(0.005)	
Percentage Point Sustained Employment Premium	Aged 18-24:	0.012**	0.039***	0.040***	0.038***	0.039
	S. E.	(0.006)	(0.008)	(0.008)	(0.008)	
	Aged 25+:	0.006	0.016***	0.020***	0.030***	0.022
	S.E.	(0.004)	(0.005)	(0.005)	(0.006)	
	All ages (weighted average)	0.008**	0.023***	0.026***	0.032***	0.027
		(0.004)	(0.004)	(0.004)	(0.005)	
Percentage Point Active Benefit Gap	Aged 18-24:	0.010	-0.019**	-0.016**	-0.015**	-0.017
	S. E.	(0.008)	(0.008)	(0.008)	(0.007)	

Percentage Point Employment/Sustained Employment and Benefit Premium/gap in Years after Learning Spell Start					
	1st Year	2nd Year	3rd Year	4th Year	2 to 4 year average
Aged 25+:	0.031***	0.012***	0.004	-0.002	0.003
S.E.	(0.006)	(0.006)	(0.006)	(0.006)	
All ages (weighted average)	0.025***	0.003	-0.002	-0.006	-0.000
	(0.005)	(0.005)	(0.005)	(0.005)	

NB/ In all tables, the 2 to 4 year average is,

- Highlighted in **Bold** if we consider it to be a robust estimate, with both (i) statistically significant impacts across the two to four year period that are relatively stable⁴⁴ and (ii) a sufficient number of learners to provide a sizeable control group of non-achievers (exactly what constitutes a 'sufficient' number of learners varies for each set of analysis and we return to this later in the report, when it becomes more of an issue)
- Highlighted in ***Bold Italics*** if we consider the finding to be relatively robust, with (i) statistical significance across the majority of estimated impacts between two and four years and (ii) a control group that is on the margins of our considerations of size.
- Not highlighted in bold or italics, when there are concerns over the robustness of the findings, but we have some evidence of at least one significant impact, with sufficient numbers.
- Not Available (N/A) when we have results that are not robust enough to produce a two to four year average.
- When there is no suggestion of statistical significance, but numbers are sufficient, the 2 to 4 year average is set to zero.

Table 4 sets out the estimated returns for those achieving courses in our category of '*Preparation for Work at Level 1 or Below*'. It is important to note that each estimate provided in Table 4 is underpinned by the same econometric approach presented in Figures 3 to 8 for *L1/L2 Maths and/or English* aims; where we ensure that the achiever and non-achiever groups are matched to ensure that the achiever group

⁴⁴ One can have a set of return estimates between two and four years that are statistically significant, but vary from negative to positive: these are not findings we would consider particularly robust.

does not have a significantly higher employment rate at any point in the 60 month employment history⁴⁵. Also, as Table 2 suggests, the *Entry to Employment pre-Apprenticeship offer* included in this category of learning aims lasts an average of just under a year (308 days) and even the shortest duration of aims within this learning category (*Aims at Level 1 or Below*) last an average of 90 days – these are not insubstantial courses.

It is therefore encouraging that those aged 18 to 24 secure a 4.2 ppt (or 12%) return [averaged over 2 to 4 years from learning start date], but unfortunate that those aged 25+ seem to secure a return [of 1.9 ppts] that is only significant in the fourth year after learning. The results are similar when we consider the impact of achievement on sustained employment outcomes, with some improvement in the level of significance associated with those aged 25+; and across both age groups, we find that achievers are 1.3 ppts less likely to be on benefits between two and four years after the start of learning.

Table 4: Summary Labour Market Outcomes for ‘Preparation for Work at Level 1 or Below’ Achievers, compared to Non-achievers: STU in the pre-2011 cohort

		Percentage Point Employment/Sustained Employment and Benefit Premium/gap in Years after Learning Spell Start				
		1st Year	2nd Year	3rd Year	4th Year	2 to 4 year average
Percentage Point Employment Premium	Aged 18-24:	0.025***	0.042***	0.048***	0.035***	0.042
	S. E.	(0.008)	(0.009)	(0.009)	(0.009)	
	Aged 25+:	0.006	0.009	0.009	0.019***	0.012
	S.E.	(0.005)	(0.006)	(0.006)	(0.007)	
	All ages (weighted average)	0.012**	0.019***	0.021***	0.024***	0.021
		(0.005)	(0.005)	(0.006)	(0.006)	
Sustained Employment	Aged 18-	0.024***	0.042***	0.047***	0.040***	0.043

⁴⁵ As we shall see later, there are some examples where achievers have one or two months of significantly lower levels of employment during the 60 months prior to learning, but this is very rare and if anything will result in a very slight downward bias to our estimated returns.

Percentage Point Employment/Sustained Employment and Benefit Premium/gap in Years after Learning Spell Start						
		1st Year	2nd Year	3rd Year	4th Year	2 to 4 year average
Percentage Point Active Benefit Gap	24:					
	S. E.	(0.007)	(0.008)	(0.009)	(0.009)	
	Aged 25+:	0.007	0.011*	0.010*	0.024***	0.015
	S.E.	(0.005)	(0.006)	(0.006)	(0.006)	
	All ages (weighted average)	0.012**	0.020***	0.021***	0.029***	0.023
		(0.005)	(0.005)	(0.006)	(0.006)	
Percentage Point Active Benefit Gap	Aged 18-24:	-0.014	-0.021**	-0.021**	-0.009	-0.017
	S. E.	(0.009)	(0.009)	(0.009)	(0.008)	
	Aged 25+:	-0.012**	-0.007	-0.006	-0.017***	-0.010
	S.E.	(0.006)	(0.006)	(0.005)	(0.005)	
	All ages (weighted average)	-0.013***	-0.011**	-0.011**	-0.015***	-0.013
		(0.005)	(0.005)	(0.005)	(0.005)	

Table 5 sets out the results for those who achieve a 'thin' *Level 2* qualification and Table 6 captures the returns to learning for the short term unemployed who achieve a qualification at *Full Level 2 or above (FL2+)* - in the FL2+ category we include all highest aims that are equivalent to, for instance, 5 GCSEs or an NVQ2; the 'thin' *Level 2* category includes learners with highest aims at this level of study, but which falls below the equivalence required to be considered 'Full'.

From Table 5, L2 achievers in both the 18 to 24 and 25+ age groups secure employment returns that deviate very little from the average 2.6 ppt (or approximate 7%) return for both age groups; and measuring returns in terms of sustained employment outcomes we uncover an even larger ppt premium for achievers, of 3.6

and 3.0 for those aged 18 to 24 and 25+, respectively. In Table 6, returns to achievement of FL2+ qualifications amongst those aged 18 to 24 are even more pronounced; with 6.8 and 7.4 ppt premiums (approximately 19% and 21%) estimated for employment and sustained employment outcomes respectively.

However, when considering FL2+ returns for those aged 25+ we find it harder to uncover employment and sustained employment returns. The findings in the rest of this report tend to support a policy approach that targets more substantial learning at groups that are harder to help back into employment (for instance, we tend to see lower returns for those aged 25+ who undertake learning at L1). The results in Table 6 for those aged 25+ would seem to challenge this view, but as we shall see later, estimated returns for the 25+ age group achieving FL2+ jump considerably when we create counterfactual outcomes from a group outside of FE. For harder-to-help groups, such as those aged 25+ who we see selecting into FE learning, more work is required to ensure we fully capture the impact of FL2+ learning.

Table 5: Summary Labour Market Outcomes for *Level 2* Achievers (not including Maths/English), compared to Non-achievers: STU in the pre-2011 cohort

		Percentage Point Employment/Sustained Employment and Benefit Premium/gap in Years after Learning Spell Start				
		1st Year	2nd Year	3rd Year	4th Year	2 to 4 year average
Percentage Point Employment Premium	Aged 18-24:	0.005	0.027***	0.025***	0.029***	0.027
	S. E.	(0.007)	(0.008)	(0.008)	(0.008)	
	Aged 25+:	0.000	0.023***	0.026***	0.027***	0.025
	S.E.	(0.005)	(0.005)	(0.005)	(0.006)	
	All ages (weighted average)	0.002	0.026***	0.026***	0.027***	0.026
		(0.004)	(0.005)	(0.005)	(0.005)	
Percentage Point Sustained Employment Premium	Aged 18-24:	0.014**	0.036***	0.034***	0.037***	0.036
	S. E.	(0.006)	(0.008)	(0.008)	(0.008)	

		Percentage Point Employment/Sustained Employment and Benefit Premium/gap in Years after Learning Spell Start				
		1st Year	2nd Year	3rd Year	4th Year	2 to 4 year average
Percentage Point Active Benefit Gap	Aged 25+:	0.005	0.028***	0.031***	0.031***	0.030
	S.E.	(0.004)	(0.005)	(0.005)	(0.006)	
	All ages (weighted average)	0.008**	0.030***	0.032***	0.033***	0.032
		(0.004)	(0.004)	(0.004)	(0.005)	
	Aged 18-24:	-0.030***	-0.042***	-0.041***	-0.026***	-0.036
	S. E.	(0.007)	(0.006)	(0.006)	(0.006)	
	Aged 25+:	-0.009*	-0.011***	-0.017***	-0.015***	-0.014
	S.E.	(0.005)	(0.004)	(0.004)	(0.004)	
	All ages (weighted average)	-0.015***	-0.020***	-0.024***	-0.018***	-0.021
		(0.004)	(0.004)	(0.004)	(0.004)	

In Tables 5 and 6 we observe a particularly large ppt gap between the proportions of achievers and non-achievers on benefits, when considering those aged 18 to 24 (figures of -3.6 and -5.7 ppts, translate into -12% and -19% respectively); but again the impact for those aged 25+ is much smaller (though still significant).

Before moving on, it is worth reminding readers that in the analysis of FE learning we are always controlling for any differences between achievers and non-achievers, according to whether they fall within *LMS Client Segment 1 or 2* – this ensures that our estimated returns to FE learning are independent of any additional impacts that arise from interventions unemployed individuals may be undertaking outside of FE (see the start of Section 4 for a more detailed discussion).

Also, as already mentioned:

- When capturing the returns to *L1/L2 Maths and/or English*, this group contains those for whom English and/or Maths is their only, or highest, learning aim (with our approach to estimation, matching this group of achievers and non-achievers according to whether any additional L1 learning aims are achieved or not).
- When estimating the impacts of *Preparation for work at L1 or Below*, we consider individuals who are only doing these courses (see the next section for an extension of these estimates, presented previously in Table 4). This is also the approach we take for ESOL qualifications.
- Finally, when estimating returns to *Level 2* and *Full Level 2+*, we adopt an approach similar to that for *Maths and/or English* - including individuals for whom these are the only, or highest, learning aim (with the analysis again matching on whether any accompanying learning aims identified in the ILR at a lower level are achieved, or not).

This approach better ensures that our estimated returns to specific forms of FE learning are independent of any additional impacts that may arise from accompanying interventions unemployed individuals may be undertaking within FE.

Table 6: Summary Labour Market Outcomes for *FL2 or Above* Achievers, compared to Non-achievers: STU in the pre-2011 cohort

		Percentage Point Employment/Sustained Employment and Benefit Premium/gap in Years after Learning Spell Start				
		1st Year	2nd Year	3rd Year	4th Year	2 to 4 year average
Percentage Point Employment Premium	Aged 18-24:	0.000	0.053***	0.073***	0.077***	0.068
	S. E.	(0.010)	(0.011)	(0.011)	(0.011)	
	Aged 25+:	-0.032***	-0.004	0.005	0.016*	0.006
	S.E.	(0.007)	(0.008)	(0.008)	(0.009)	
	All ages (weighted average)	-0.022***	0.013*	0.025***	0.034***	0.024
		(0.005)	(0.007)	(0.007)	(0.007)	

		Percentage Point Employment/Sustained Employment and Benefit Premium/gap in Years after Learning Spell Start				
		1st Year	2nd Year	3rd Year	4th Year	2 to 4 year average
Percentage Point Sustained Employment Premium	Aged 18-24:	0.022**	0.061***	0.079***	0.082***	0.074
	S. E.	(0.009)	(0.011)	(0.011)	(0.011)	
	Aged 25+:	-0.021***	-0.002	0.004	0.019**	0.007
	S.E.	(0.006)	(0.008)	(0.008)	(0.009)	
	All ages (weighted average)	-0.008*	0.017***	0.037***	0.038***	0.031
		(0.005)	(0.006)	(0.007)	(0.007)	
Percentage Point Active Benefit Gap	Aged 18-24:	-0.068***	-0.055***	-0.057***	-0.060***	-0.057
	S. E.	(0.006)	(0.005)	(0.005)	(0.005)	
	Aged 25+:	-0.033***	-0.022***	-0.017***	-0.027***	-0.022
	S.E.	(0.008)	(0.007)	(0.007)	(0.007)	
	All ages (weighted average)	-0.044***	-0.032***	-0.029***	-0.037***	-0.033
		(0.005)	(0.004)	(0.004)	(0.004)	

Table 7 presents estimates of impact for ESOL qualifications (English for Speakers of Other Languages) in the STU period. The results tend to confirm the findings of Cerqua and Urwin, who analyse the full FE population (2015). They identify a statistically significant earnings premium of 6.1% for ESOL achievers over non-achievers; but virtually no impact on employment probability (0.2 of a ppt) and a similarly negligible impact on benefit probability (-0.1 of a ppt).

Furthermore, Table 7 suggests that those aged 25+ who achieve ESOL qualifications in the STU Phase are 3.8 ppts more likely to be on benefits 2 to 4 years after the start of learning. When we disaggregate these findings by gender, estimates suggest that both sexes secure no employment or sustained employment returns to ESOL learning; and that the higher probability of achievers being on benefits in the years after the start of learning, applies to both men and women.

However, we need to consider these findings with care. Individuals undertaking ESOL courses are much more likely to be recent migrants and we are therefore less likely to have extensive prior labour market history data for them (we might also conjecture that data matching from ILR to WPLS; and from DWP to HMRC, may be of a lower quality). The ESOL group are unique and very different to the other groups analysed, and this likely reduces the robustness of our findings for this specific group. Results should therefore be considered with caution and more research is needed, specifically focusing on this group of unemployed learners.

It is also worth noting that if learning in FE generally increases the probability of being 'economically activity', then we may be encouraging many individuals who were previously prone to economic inactivity or informal working, to become officially unemployed and register as searching for employment on completion of learning. If achievement of FE learning reduces the probability of being inactive, some of this could manifest as an increased probability of being on benefits⁴⁶.

Table 7: Summary Labour Market Outcomes for *ESOL Achievers*, compared to Non-achievers: STU in the pre-2011 cohort

		Percentage Point Employment/Sustained Employment and Benefit Premium/gap in Years after Learning Spell Start				
		1st Year	2nd Year	3rd Year	4th Year	2 to 4 year average
Percentage Point Employment Premium	Aged 18-24:	-0.026	-0.004	0.015	0.009	0.000
	S. E.	(0.019)	(0.024)	(0.025)	(0.025)	
	Aged 25+:	-0.033***	-0.019	-0.009	-0.008	0.000
	S.E.	(0.010)	(0.012)	(0.013)	(0.013)	

⁴⁶ Unfortunately inactivity is not something we are able to specifically model, as we have a more amorphous 'missing' group who may include the self-employed, those working overseas, those working below the tax threshold and the economically inactive.

Percentage Point Employment/Sustained Employment and Benefit Premium/gap in Years after Learning Spell Start						
		1st Year	2nd Year	3rd Year	4th Year	2 to 4 year average
Percentage Point Sustained Employment Premium	All ages (weighted average)	-0.031*** (0.008)	-0.015* (0.009)	-0.002 (0.010)	-0.003 (0.010)	-0.007
	Aged 18-24:	-0.011	0.002	0.025	0.012	0.000
	S. E.	(0.016)	(0.023)	(0.024)	(0.024)	
	Aged 25+:	-0.027***	-0.020*	-0.010	-0.009	-0.013
	S.E.	(0.009)	(0.012)	(0.012)	(0.013)	
	All ages (weighted average)	-0.022*** (0.007)	-0.013 (0.009)	0.000 (0.009)	-0.003 (0.009)	0.000
	Aged 18-24:	0.051**	0.011	0.006	-0.003	0.000
	S. E.	(0.025)	(0.024)	(0.023)	(0.022)	
	Aged 25+:	0.089***	0.053***	0.033***	0.029**	0.038
	S.E.	(0.013)	(0.012)	(0.012)	(0.012)	
	All ages (weighted average)	0.078*** (0.007)	0.040*** (0.006)	0.025*** (0.006)	0.019*** (0.006)	0.028

Analysis of Complementary Learning Aims

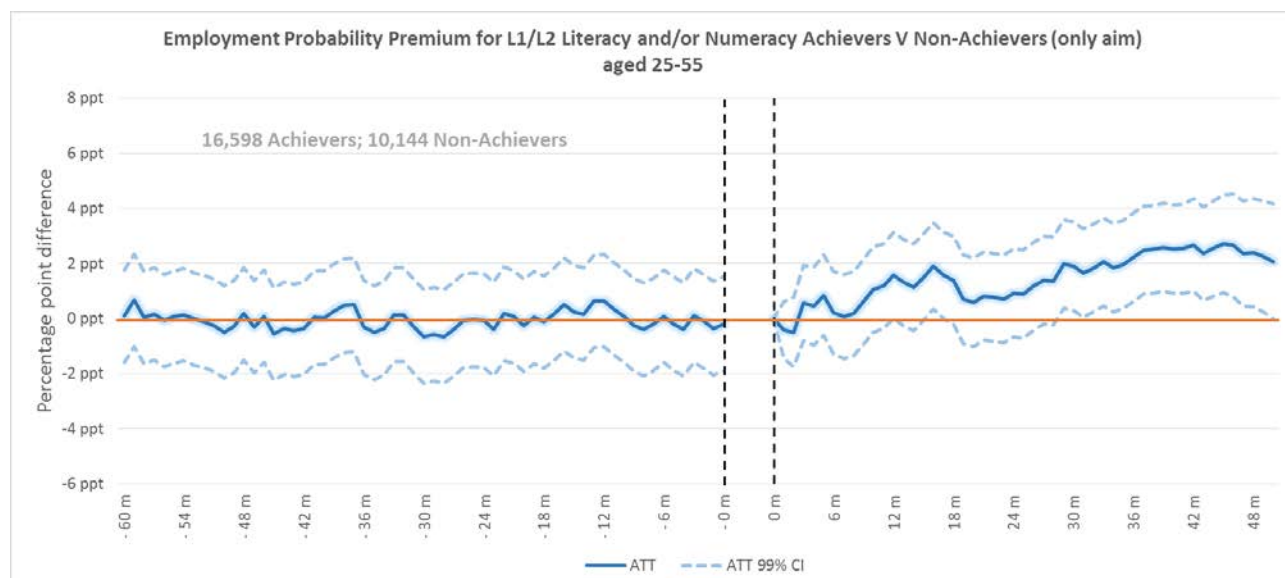
In the analysis above, we have incorporated the fact that unemployed individuals are often observed with more than one in-scope learning aim, by focusing on analysis of returns to the highest, or only, learning aim (e.g. L1/L2 Maths and/or English) and matching on the extent to which achievers and non-achievers have additional learning aims that they achieve or do not achieve (see page 42 for more detail). As we suggest, our approach to estimation better ensures that findings are not influenced by other forms of learning, whether undertaken within, or outside FE.

Here we briefly consider whether there are differing returns to some key learning aims, depending on whether they are taken in conjunction with others within FE, or on their own. More specifically, we ask whether individuals achieving (i) *L1/L2 Maths and/or English* alongside *Preparation for Work*, secure more of a return than those securing either (ii) *L1/L2 Maths and/or English* achievement or (iii) *Preparation for Work* achievement on their own.

Previously in Table 3 we have estimated the return to Maths and/or English achievement, for all learners for whom this is the highest, or only, learning aim (with the approach ensuring that this impact is independent of that from any additional learning aims). Figure 9 describes the estimated premium observed when we select all those aged 25+⁴⁷ who [between claim start date and X] have a *L1/L2 Literacy and/or Numeracy* aim: but no other within-scope ILR learning aim that is either (i) at a higher level or (ii) taken alongside these literacy/numeracy learning aims (such as 'preparation for work'). The findings from Figure 9 are therefore produced for a subset of those achievers in Table 3. Figure 9 suggests an estimated return of around two percentage points that is significant at 16 months, and then between 28 months and the end of our period of analysis.

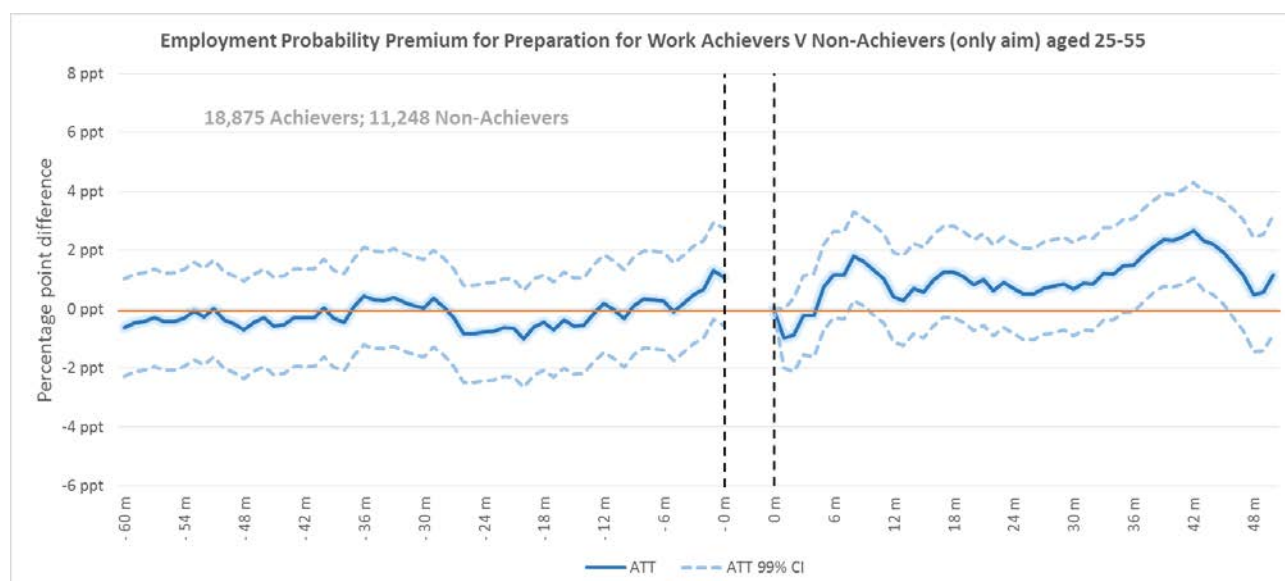
⁴⁷ We concentrate our analysis on the 25+ age group, as the number of 18 to 24 year olds drop to a level that is not large enough to support an analysis of the three subgroups of learners in this section.

Figure 9: Percentage point employment probability premium for L1/L2 Literacy and/or Numeracy Achievers, compared to Non-achievers (No accompanying 'preparation for work' aims): STU aged 25+



Previously in Table 4 we have estimated the return to *Preparation for Work* achievement, for all learners for whom this is the only learning aim. Figure 10 presents the detailed findings underpinning this analysis, and confirms that we may have a 1 ppt employment premium for those who are only taking *Preparation for Work at L1 or Below* - but this is not a particularly reliable estimate as a statistically significant impact is only discernable at a point 9 months, and between 37 and 45, from the start of learning.

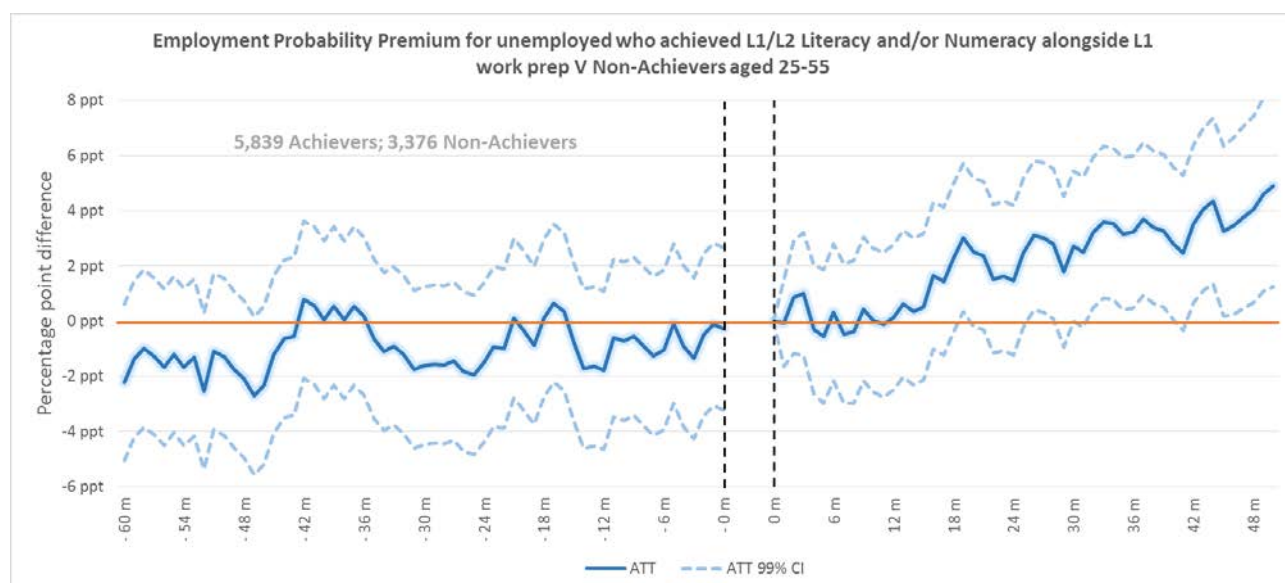
Figure 10: Percentage point employment probability premium for 'Preparation for Work at Level 1 or Below' Achievers, compared to Non-achievers (No accompanying aims): STU aged 25+ from Population Segment



Having presented estimates of value added for unemployed individuals aged 25+ who undertake only *L1/L2 Literacy and/or Numeracy* in Figure 9 and only *Preparation for Work at L1 or Below* in Figure 10; Figure 11 presents the estimated employment premium for all unemployed individuals aged 25+ who we observe achieving a *L1/L2 literacy and/or numeracy aim AND a Preparation for Work Aim*, relative to those with the same aims, who do not achieve⁴⁸. Figure 11 seems to suggest a more substantial return for this group (when compared to those achieving either aims on their own), with significant impacts identified at 18 months, 26 months and then from 30 months onwards - with the 2 to 4 year average approximately 3.5 ppts (given the lower numbers in this group, our confidence intervals are wider and it is therefore harder to identify significant impacts).

We must be careful in interpretation, as each of our achieving groups in Figures 9 to 11 may contain different types of individual, and it is not necessarily the case that impacts would transfer seamlessly between treatment groups. However, these findings do provide support for a policy that ensures any *Preparation for Work* aims are accompanied by more substantial learning aims, for those in the 25+ age group.

Figure 11: Percentage point employment probability premium for those achieving L1/L2 Literacy and/or Numeracy AND Preparation for work, relative to non-achievers: STU aged 25+



To conclude we present an overview of the impacts of FE for the STU, aggregated across all the categories of FE learning analysed in this section of the report. The figures in this summary overview are weighted averages across the estimates for (i) L1/L2 Maths and/or English (ii) Preparation for Work at Level 1 and Below (iii) Level 2

⁴⁸ There is a question of which non-achieving group is used to create counterfactual estimates here. We clearly wish to include the group who do not achieve both *L1/L2 Maths and/or English AND Preparation for Work*, but if we only include this group in our control, the numbers are too small to facilitate estimation. However, we have clear evidence that, for those who achieve preparation for work on its own, there is virtually no significant impact and therefore we also include in our control those who do not achieve *Maths and/or English*, but do achieve *Preparation for Work*. This approach has the potential to lead to a slight underestimate of any impacts arising from achievement of both learning aims.

and (iv) Full Level 2+. We do not include ESOL as there is no significant impact identified for these learning aims.

Summary overview of Aggregated STU Impacts across All FE Learning Aims

	Percentage Point Employment/Sustained Employment and Benefit Premium/gap in Years after Learning Spell Start (weighted average of all learning aims analysed)				
	1st Year	2nd Year	3rd Year	4th Year	2 to 4 year average
Percentage Point Employment Premium	0.000	0.017	0.022	0.026	0.022
Percentage Point Sustained Employment Premium	0.004	0.021	0.026	0.030	0.026
Percentage Point Active Benefit Gap	-0.001	-0.009	-0.013	-0.014	-0.012

3.2 Disaggregation by Gender

Table 8 suggests that when we disaggregate the employment returns to L1/L2 Literacy and/or Numeracy achievement by gender, we uncover a stronger picture for men. Aggregating across both age groups of women, there is some suggestion of an impact around 1.5 ppts that is significant in the second and fourth years after learning, but it is clear that the overall impacts identified in the previous section are primarily driven by the experiences of male achievers aged 18 to 24 [who secure a 4 ppt employment premium] and those aged 25+ [who secure a 2.4 ppt premium]. However, whilst the return secured by women achievers is still lower than that for men, we can see the value of sustained employment outcomes as an additional measure, as it uncovers a more substantial premium for women aged 18 to 24 (3.3. ppts); and to a lesser extent those aged 25+ (1.7 ppts). Table 8 also suggests that the negligible benefit impacts identified in Table 3 are driven by less significant findings amongst both men and women.

Table 8: Summary Labour Market Outcomes for L1/L2 Literacy and/or Numeracy Achievers, compared to Non-achievers by GENDER: STU in the pre-2011 cohort

Percentage Point Employment/Sustained Employment and Benefit Premium/gap in Years after Learning Spell Start by GENDER						
		1st Year	2nd Year	3rd Year	4th Year	2 to 4 year average
Percentage Point Employment Premium	Aged 18-24:					
	Women	0.011	0.033**	0.019	0.023	0.025
	Men	0.011	0.036***	0.044***	0.040***	0.040
	Aged 25+					
	Women	-0.018*	-0.002	0.014	0.025**	0.012
	Men	0.013**	0.016***	0.022***	0.034***	0.024
Percentage Point Sustained Employment Premium	Aged 18-24:					
	Women	0.018	0.038***	0.035**	0.027*	0.033
	Men	0.011	0.040***	0.041***	0.042***	0.041
	Aged 25+					
	Women	-0.012	0.004	0.019*	0.027**	0.017
	Men	0.011**	0.020***	0.021***	0.031***	0.024
Percentage Point Active Benefit Gap	Aged 18-24:					
	Women	0.015	-0.031**	-0.019	-0.016	-0.022
	Men	0.017*	-0.017*	-0.017*	-0.016*	-0.017
	Aged 25+					
	Women	0.031***	0.002	-0.017*	-0.021**	-0.012
	Men	0.031***	0.014**	0.009	0.003	0.009

Table 9 suggests a very similar pattern of employment returns for achievers of *Preparation for Work at L1 or Below*, considering the returns to men and women separately. The employment returns for achievers are around 1.5 ppts lower for women aged 18 to 24, when compared to those secured by men of the same age. However, with a return of 3.2 ppts, women aged 18 to 24 are still securing a good employment return. This is not the case for women aged 25+, for whom there is no significant return and unfortunately the picture is the same for sustained employment outcomes and benefits, for women of the same age. Again, there are relatively weak benefit impacts amongst both men and women when we consider achievement of *Preparation for Work*.

Table 9: Summary Labour Market Outcomes for *Preparation for Work at L1 or Below* Achievers, compared to Non-achievers by GENDER: STU in the pre-2011 cohort

		Percentage Point Employment/Sustained Employment and Benefit Premium/gap in Years after Learning Spell Start by GENDER				
		1st Year	2nd Year	3rd Year	4th Year	2 to 4 year average
Percentage Point Employment Premium	Aged 18-24:					
	Women	0.017	0.026*	0.040***	0.029**	0.032
	Men	0.028***	0.051***	0.052***	0.036***	0.046
	Aged 25+					
	Women	-0.007	-0.008	-0.003	0.006	0.000
	Men	0.013*	0.018**	0.017**	0.028***	0.021
Percentage Point Sustained Employment Premium	Aged 18-24:					
	Women	0.011	0.028	0.038***	0.032**	0.033
	Men	0.030***	0.054***	0.050***	0.041***	0.048
	Aged 25+					
	Women	-0.006	-0.007	-0.005	0.010	0.000
	Men	0.014**	0.022***	0.019***	0.032***	0.024

		Percentage Point Employment/Sustained Employment and Benefit Premium/gap in Years after Learning Spell Start by GENDER				
Percentage Point Active Benefit Gap		1st Year	2nd Year	3rd Year	4th Year	2 to 4 year average
	Aged 18-24:					
	Women	-0.016	-0.017	-0.027**	-0.014	-0.019
	Men	-0.013	-0.026**	-0.019*	-0.009	-0.018
	Aged 25+					
	Women	0.002	-0.008	-0.007	-0.013*	-0.009
	Men	-0.021***	-0.008	-0.007	-0.020***	-0.012

Considering achievement of Level 2 qualifications (in Table 10) we begin to see some convergence between the employment returns for men and women. Women aged 18 to 24 secure employment returns that are almost identical to those for men (2.9 and 2.8 ppts respectively); and the proportion of women achievers in sustained employment 2 to 4 years from the start of learning is 4.4 ppts higher than the proportion of women non-achievers – a differential that is actually higher than the equivalent figure of 3.2 ppts for men. Whilst the gap between achievers and non-achievers on benefits in the years after the start of learning is still greater for men, the impact for women aged 18 to 24 (-2.5 ppts) is statistically significant for the entire 2 to 4 year period and close to being so for women aged 25+.

Table 10: Summary Labour Market Outcomes for *Level 2* Achievers, compared to Non-achievers by GENDER: STU in the pre-2011 cohort

		Percentage Point Employment/Sustained Employment and Benefit Premium/gap in Years after Learning Spell Start by GENDER				
nt Em plo men +		1st Year	2nd Year	3rd Year	4th Year	2 to 4 year average
	Aged 18-24:					
	Women	0.004	0.024**	0.026***	0.038***	0.029

Percentage Point Employment/Sustained Employment and Benefit Premium/gap in Years after Learning Spell Start by GENDER						
		1st Year	2nd Year	3rd Year	4th Year	2 to 4 year average
Percentage Point Sustained Employment Premium	Men	0.007	0.032***	0.027**	0.024**	0.028
	Aged 25+					
	Women	-0.011	0.016*	0.021**	0.028***	0.022
	Men	0.007	0.028***	0.029***	0.028***	0.028
	Aged 18-24:					
	Women	0.014	0.044***	0.038***	0.049***	0.044
	Men	0.016*	0.033***	0.032***	0.030***	0.032
	Aged 25+					
	Women	-0.001	0.020**	0.024***	0.028***	0.024
	Men	0.010*	0.033***	0.035***	0.034***	0.034
Percentage Point Active Benefit Gap	Aged 18-24:					
	Women	-0.031***	-0.029***	-0.029***	-0.018**	-0.025
	Men	-0.031***	-0.054***	-0.052***	-0.033***	-0.046
	Aged 25+					
	Women	0.011	-0.007	-0.014**	-0.011*	-0.011
	Men	0.009	-0.016***	-0.020***	-0.018***	-0.018

Consideration of the returns to achievement of FL2+ for men and women separately, suggests very strong returns for both genders aged 18 to 24, whether we consider employment, sustained employment or benefit outcomes. For both men and women

aged 25+ we still uncover lower estimated returns, but women aged 25+ secure slightly better labour market returns to learning at this level.

Table 11: Summary Labour Market Outcomes for achievers of *FL2 or above*, compared to Non-achievers by GENDER: STU in the pre-2011 cohort

		Percentage Point Employment/Sustained Employment and Benefit Premium/gap in Years after Learning Spell Start by GENDER				
		1st Year	2nd Year	3rd Year	4th Year	2 to 4 year average
Percentage Point Employment Premium	Aged 18-24:					
	Women	-0.007	0.048**	0.069***	0.067***	0.061
	Men	0.003	0.053***	0.071***	0.079***	0.068
	Aged 25+					
	Women	-0.044***	0.000	0.022	0.043***	0.022
	Men	-0.028***	-0.006	-0.002	0.005	0.000
Percentage Point Sustained Employment Premium	Aged 18-24:					
	Women	0.023	0.057***	0.077***	0.072***	0.069
	Men	0.021*	0.059***	0.076***	0.083***	0.073
	Aged 25+					
	Women	-0.031**	-0.002	0.018	0.044***	0.020
	Men	-0.017**	-0.002	-0.001	0.008	0.000
Percentage Point Active Benefit Gap	Aged 18-24:					
	Women	-0.083***	-0.053***	-0.052***	-0.048***	-0.051
	Men	-0.061***	-0.059***	-0.060***	-0.069***	-0.063
	Aged 25+					

Percentage Point Employment/Sustained Employment and Benefit Premium/gap in Years after Learning Spell Start by GENDER					
	1st Year	2nd Year	3rd Year	4th Year	2 to 4 year average
Women	-0.020	-0.014	-0.030***	-0.045***	-0.030
Men	0.038***	-0.025***	-0.013	-0.019**	-0.019

Table 12 suggests that the statistically insignificant effects identified previously in Table 7 do not hide any more significant findings for either men or women – Table 12 suggests that both sexes secure no employment, sustained employment or benefit returns to ESOL learning; and that the higher probability of achievers being on benefits in the years after the start of learning, applies to both men and women.

Table 12: Summary Labour Market Outcomes for L1/L2 ESOL Achievers, compared to Non-achievers by GENDER: STU in the pre-2011 cohort

Percentage Point Employment/Sustained Employment and Benefit Premium/gap in Years after Learning Spell Start by GENDER						
		1st Year	2nd Year	3rd Year	4th Year	2 to 4 year average
Percentage Point Employment Premium	Aged 18-24:					
	Women	-0.056**	-0.035	-0.016	-0.022	0.000
	Men	-0.003	0.026	0.050	0.037	0.000
	Aged 25+					
	Women	-0.011	-0.009	0.008	0.016	0.000
	Men	-0.033***	-0.019	-0.009	-0.008	0.000
Percentage Point Sustained Employment Premium	Aged 18-24:					
	Women	-0.051**	-0.035	-0.006	-0.026	0.000

Men	0.018	0.029	0.059*	0.052	0.047
Aged 25+					
Women	-0.012	-0.006	0.010	0.019	0.000
Men	-0.027***	-0.020*	-0.010	-0.009	-0.013

Percentage Point Active Benefit Gap	Aged 18-24:				
	Women	0.070*	0.044	0.035	0.019
	Men	0.033	-0.025	-0.028	-0.017
	Aged 25+				
	Women	0.073***	0.039***	0.031**	0.038***
	Men	0.089***	0.053***	0.033***	0.029**

4. Comparison of FE outcomes, to those with ‘No FE’: STU

As suggested in the Data and Method section, when comparing outcomes for achievers and non-achievers in Section 3 [and then again in Section 5] we are building on an extensive programme of research that has analysed ILR-WPLS data to capture the returns to FE learning. In each case, we are using the outcomes of a non-achieving [or ‘drop-out’] group to estimate the outcomes that we would expect to see, had the achieving group not undertaken FE learning (i.e. we are attempting to estimate the counterfactual). At various points in this programme of work (see for instance, Section 6 of Bibby et. al., 2014) we have subjected these estimates to rigorous investigation (for instance, using matching with difference-in-differences) and all the evidence suggests that the non-achieving group provide good estimates of counterfactual outcomes.

However, up to now there has been no opportunity to compare the returns of FE achievers, with the outcomes of a similar group who do not select into FE. This section presents estimates of the returns to FE learning for two of the groups of achievers analysed in the previous section (*L1/L2 Numeracy and/or Literacy achievers* and those achieving *FL2+*), but this time with counterfactual outcomes created using a group who we do not see undertaking any FE learning during the STU Phase.

In terms of method, when estimating value added using these alternative control groups, we are simply looking within different sub-populations to (i) see if there are individuals who we can match to the achiever group; and if we find individuals who ‘match’ the achiever (treatment) group (ii) we should identify similar returns. If our process of matching achievers, with either non-achievers or those without ILR learning, is able to capture all relevant differences between treatment and control, we should obtain the same outcomes, as in both cases we are attempting to measure the same thing – the counterfactual outcomes for achievers. As we shall see in the Conclusion, any deviation or variation in the estimated return as we alter our control groups, provides us with some very interesting additional evidence on the validity of our Achiever V Non-achiever approach to estimation.

In addition, during the process of matching and analysis of returns using alternative (non-FE or ‘No ILR’) control groups in this section, we gain a number of insights that are important for policy. For instance,

1. During the process of matching achievers to the ‘No ILR’ control group, we might find that the characteristics of the FE and no-FE groups are so different that it is not possible to create a robust control group who ‘match’ the achievers. If this was the case, it would imply that a wider roll-out of FE (to the *No ILR* group) would possibly not create impacts similar to those we see when comparing achievers and non-achievers – as those in FE are securing good returns, but the individuals securing those returns are very different to those outside of FE. When we ask the question of, *what works and for whom*, the suggestion would be that FE works, but it might not work so well if rolled out to the non-FE group.

2. In contrast, if we are able to create a matched group of individuals amongst the unemployed who do not go on to FE, and we still uncover statistically significant labour market returns when comparing achievers with those who do not undertake FE learning, the implication is that there are individuals amongst the control group who do not currently experience FE, who would likely benefit from FE learning. It is important to note that this evidence is ‘necessary’ to support such a proposition, but it is not ‘sufficient’ – there are possible alternative implications, but this is the most likely.

Before considering the first set of outcomes presented in Table 13 it is important to understand how we have created the estimates in this section, taking into account the extent to which individuals have received some flag of need in the LMS. In Section 3.1 we have estimated overall impacts for the STU population, controlling for whether achievers/non-achievers are in either of our two LMS population segments as part of the supplementary regression applied to the re-weighted achiever and non-achiever groups. We only ‘control’ for (rather than ‘match on’) segment, as we are more confident that the potential for negative selection into FE [on unobservables] has been overcome, because the comparison is between achievers and non-achievers.

The simple diagram in Figure 12 shows how, in this Section of the study, we estimate impacts for STU unemployed by exactly matching on segment. That is exactly matching individuals in the [Achiever 1] category to those in the [No ILR 1] category; and those in [Achiever 2] with those in [No ILR 2]. In section 3 when estimating returns, we are matching more generally the [Achiever 1 + Achiever 2] groups with the [Non-achiever 1 + Non-achiever 2] group, and then controlling for differences in segment. We will refer back to Figure 12 when describing the results in this section.

Figure 12: ‘Client Segment 1)’ and ‘Client Segment 2)’ Treatment and Control Groups

Client Segment_1 (LMS Flag of Need) (Cell [B1] in Figure 1)		Client Segment_2 (No LMS Flag of Need) (Cell [C1] in Figure 1)	
Achiever_1	Non-achiever_1	Achiever_2	Non-achiever_2
No ILR_1		No ILR_2	

Table 13 broadly confirms the findings on employment and sustained employment outcomes in Table 3 (which uses an achiever V non-achiever approach), in that we identify statistically significant premiums for achievers. For instance, we observe a statistically significant employment premium for achievers over the ‘No-FE group’ aged 18 to 24 of around 2.7 pts (approximately 8%); and around 4.8 pts (approximately 14%) for those aged 25+. Overall this translates into a statistically significant employment premium of 3.9 pts; as the 25+ age group undertake many more interventions than those aged 18 to 24, and therefore they ‘weigh’ more heavily

in our weighted estimate. These employment premiums are almost identical to those uncovered for sustained employment outcomes in Table 13.

Table 13 suggests that those aged 25+ are securing much better employment and sustained employment returns, when compared to those aged 18 to 24. In contrast, when using an achiever V non-achiever approach in Table 3, it was the 18 to 24 year olds who secured a relatively higher return (for instance a 3.5 ppt employment return, compared to only 2.0 ppts for those aged 25+). This is something that we will return to in the Conclusion, as it provides some insight, when combined with our findings for the LTU, into the validity of achiever V non-achiever comparisons. However, for the present discussion, the main finding is of good employment and sustained employment returns to *L1/L2 Maths and/or English* learning in FE, when compared to a matched control group who do not undertake FE learning – flagging the potential for improved outcomes if those who do not currently undertake FE, were encouraged to do so.

However, when considering the active benefit gap between achievers and the ‘No-FE group’ for those aged 25+, the former group are 3.8 ppts more likely to be on benefits between 2 and 4 years from the start of learning. This is in contrast to the weakly positive figure of 0.3 of a ppt in Table 3 for those aged 25+ and a [statistically significant] figure of -1.7 ppts for those aged 18 to 24 in the same table. Again these are findings to which we return in the Conclusion, having taken an overview from the entire report.

Table 13: Summary Labour Market Outcomes for *L1/L2 Literacy and/or Numeracy* Achievers, compared to *No ILR* groups [in Figure 12]: STU in the pre-2011 cohort

		Percentage Point Employment/Sustained Employment and Benefit Premium/gap in Years after Learning Spell Start ALTERNATIVE CONTROL				
		1st Year	2nd Year	3rd Year	4th Year	2 to 4 year average
Percentage Point Employment Premium	Aged 18-24:	0.015***	0.028***	0.028***	0.024***	0.027
	S. E.	(0.004)	(0.005)	(0.005)	(0.005)	
	Aged 25+:	0.050***	0.046***	0.046***	0.051***	0.048
	S.E.	(0.003)	(0.003)	(0.003)	(0.003)	

Percentage Point Employment/Sustained Employment and Benefit Premium/gap in Years after Learning Spell Start ALTERNATIVE CONTROL						
		1st Year	2nd Year	3rd Year	4th Year	2 to 4 year average
All ages (weighted average)		0.036*** (0.003)	0.039*** (0.003)	0.039*** (0.003)	0.040*** (0.003)	0.039
Percentage Point Sustained Employment Premium	Aged 18-24:	0.011***	0.027***	0.026***	0.022***	0.025
	S. E.	(0.004)	(0.005)	(0.005)	(0.005)	
	Aged 25+:	0.041***	0.045***	0.044***	0.049***	0.046
	S.E.	(0.002)	(0.003)	(0.003)	(0.003)	
	All ages (weighted average)	0.029*** (0.002)	0.038*** (0.002)	0.037*** (0.002)	0.038*** (0.003)	0.038
Percentage Point Active Benefit Gap	Aged 18-24:	0.011**	0.004	0.004	0.005	0.000
	S. E.	(0.005)	(0.005)	(0.005)	(0.005)	
	Aged 25+:	0.069***	0.048***	0.035***	0.032***	0.038
	S.E.	(0.003)	(0.003)	(0.003)	(0.003)	
	All ages	0.046***	0.030***	0.023***	0.021***	0.025

Percentage Point Employment/Sustained Employment and Benefit Premium/gap in Years after Learning Spell Start ALTERNATIVE CONTROL					
	1st Year	2nd Year	3rd Year	4th Year	2 to 4 year average
(weighted average)	(0.003)	(0.003)	(0.003)	(0.003)	

Once again, when considering the results in Table 14, we have broad confirmation of the findings on employment, sustained employment and (in this instance) active benefit outcomes from Table 6, which used an achiever V non-achiever approach to capture the returns to learning at FL2+. For instance, we observe a statistically significant employment premium for FL2+ achievers over the 'No FE group' aged 18 to 24 of around 8.3 ppts; and around 9.2 ppts for those aged 25+ in Table 14. Overall this translates into a statistically significant employment premium of 8.9 ppts. Again, these employment premiums are almost identical to those for sustained employment outcomes.

However, when we compare the estimates of employment and sustained employment impact that result from the use of a matched achiever V No ILR comparison (Table 14), with the estimates we get from an achiever V non-achiever comparison (Table 6); estimates for those aged 25+ again become higher than those for 18 to 24 year olds. In contrast, when using an achiever V non-achiever approach in Table 6, it was the 18 to 24 year olds who secured a relatively higher return. This is particularly pronounced in the case of FL2+, where Table 14 identifies good employment and sustained employment returns of around 9 ppts for those aged 25+. Interestingly, the benefit impacts identified in Table 14 are very close to those identified in Table 6, and if anything they are a little lower in the former table.

We need to return to this discussion, but again we would suggest that the main finding is of good employment, sustained employment and *Active Benefits* returns to learning at FL2+ in FE, when compared to a matched control group who do not undertake FE learning – there again seems to be some potential for improved outcomes if those who do not currently undertake FE, were encouraged to do so.

Table 14: Summary Labour Market Outcomes for FL2+ Achievers, compared to the No ILR groups [in Figure 12]: STU in the pre-2011 cohort

Percentage Point Employment/Sustained Employment and Benefit Premium/gap in Years after Learning Spell Start ALTERNATIVE CONTROL					
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		1st Year	2nd Year	3rd Year	4th Year	2 to 4 year average
Percentage Point Employment Premium	Aged 18-24:	0.009**	0.075***	0.087***	0.086***	0.083
	S. E.	(0.004)	(0.005)	(0.005)	(0.005)	
	Aged 25+:	0.037***	0.085***	0.094***	0.098***	0.092
	S.E.	(0.003)	(0.003)	(0.003)	(0.004)	
	All ages (weighted average)	0.029***	0.082***	0.092***	0.094***	0.089
		(0.003)	(0.003)	(0.003)	(0.003)	
Percentage Point Sustained Employment Premium	Aged 18-24:	0.018***	0.070***	0.088***	0.089***	0.082
	S. E.	(0.004)	(0.005)	(0.005)	(0.005)	
	Aged 25+:	0.036***	0.082***	0.090***	0.098***	0.090
	S.E.	(0.002)	(0.003)	(0.003)	(0.004)	
	All ages (weighted average)	0.031***	0.078***	0.089***	0.095***	0.087
		(0.002)	(0.002)	(0.003)	(0.003)	
Percentage Point Active Benefit Gap	Aged 18-24:	-0.082***	-0.044***	-0.043***	-0.051***	-0.046
	S. E.	(0.005)	(0.005)	(0.004)	(0.004)	
	Aged	0.011***	-0.006**	-0.020***	-0.026***	-0.017

Percentage Point Employment/Sustained Employment and Benefit Premium/gap in Years after Learning Spell Start ALTERNATIVE CONTROL					
	1st Year	2nd Year	3rd Year	4th Year	2 to 4 year average
25+:					
S.E.	(0.003)	(0.003)	(0.003)	(0.003)	
All ages (weighted average)	-0.017*** (0.003)	-0.017*** (0.003)	-0.027*** (0.003)	-0.035*** (0.003)	-0.026

5. The impact of FE Learning on Labour Market Outcomes: LTU

In this section of the report we set out a range of estimates of the value added from FE learning for the unemployed, when that FE learning is delivered at a point after the individual Starts a compulsory ALMP. Referring back to the overview provided in Figure 2, this section of the study compares the returns to learning for achievers and non-achievers within cell [A11]. Individuals who have an unemployment spell lasting beyond the point of referral to an ALMP, who then take up the opportunity of a mandated ALMP start (in this case the ND) may be expected to have different labour market returns to the same FE learning considered in the previous section.

As in Section 3, we begin with a number of ‘headline’ findings detailing the outcomes associated with *L1/L2 Maths and/or English* achievement, and for these we show the full set of results in graphical form to aid exposition and present evidence on the robustness of our match. Following this initial analysis the number of results again dictates that we present the remainder in table format – providing estimates in the form of 2 to 4 year averages.

5.1 Headline Estimates for Pre-2011 LTU

Figure 13 presents the estimated employment premium for all unemployed individuals aged 18 to 24 who we observe achieving a *L1/L2 Literacy and/or Numeracy* aim, relative to those with the same aims, who do not achieve. The findings suggest some evidence of an employment premium for achievers over non-achievers that is significant between 12 and 22 months from the start of learning, and again at a point 45 months after learning – with the estimated impact varying between 2 and 4 ppts. We believe that these results are robust because the premium prior to claim start date - to the left of the thicker dashed black line - suggests that (between 60 months prior to claim start and claim start), there is no significant difference between the employment rate of achievers and non-achievers. In addition we are more confident that any unobservable differences between treated and control are accommodated, as we are comparing treatment and control who both select into the same form of basic literacy/numeracy learning.

Again, as with the results presented at the start of Section 3.1, the dark blue line measures the percentage point difference between (i) the proportion within the achieving group who are in employment, compared to (ii) the proportion in the non-achieving group who are in employment - within any particular month. This line represents the employment ‘gap’ between our matched achiever and non-achiever populations, and this remains close to zero for the entire period up to t-6 and well within our 99% confidence interval (the light blue dashed lines either side). For the LTU aged 18 to 24, ‘t-6’ is the point of claim start date and ‘t’ is the point six months later, when they are expected to be referred to the ND (‘X’ in the previous discussions). We then have a gap between ‘t’ (thick dashed black line to the left) and

the start of learning⁴⁹ (thinner dashed black line to the right). All outcomes are measured from the start of learning and we control for differences in the gap between X and the start of learning across achievers and non-achievers. At the first point in time from the start of learning, the thick blue line is again located at zero, because we are restricting our analysis to all those who are on unemployment benefits when learning starts.

Figure 13: Percentage point employment probability premium for *L1/L2 Literacy and/or Numeracy Achievers*, compared to Non-achievers: LTU with ND Start, aged 18-24, in the pre-2011 cohort

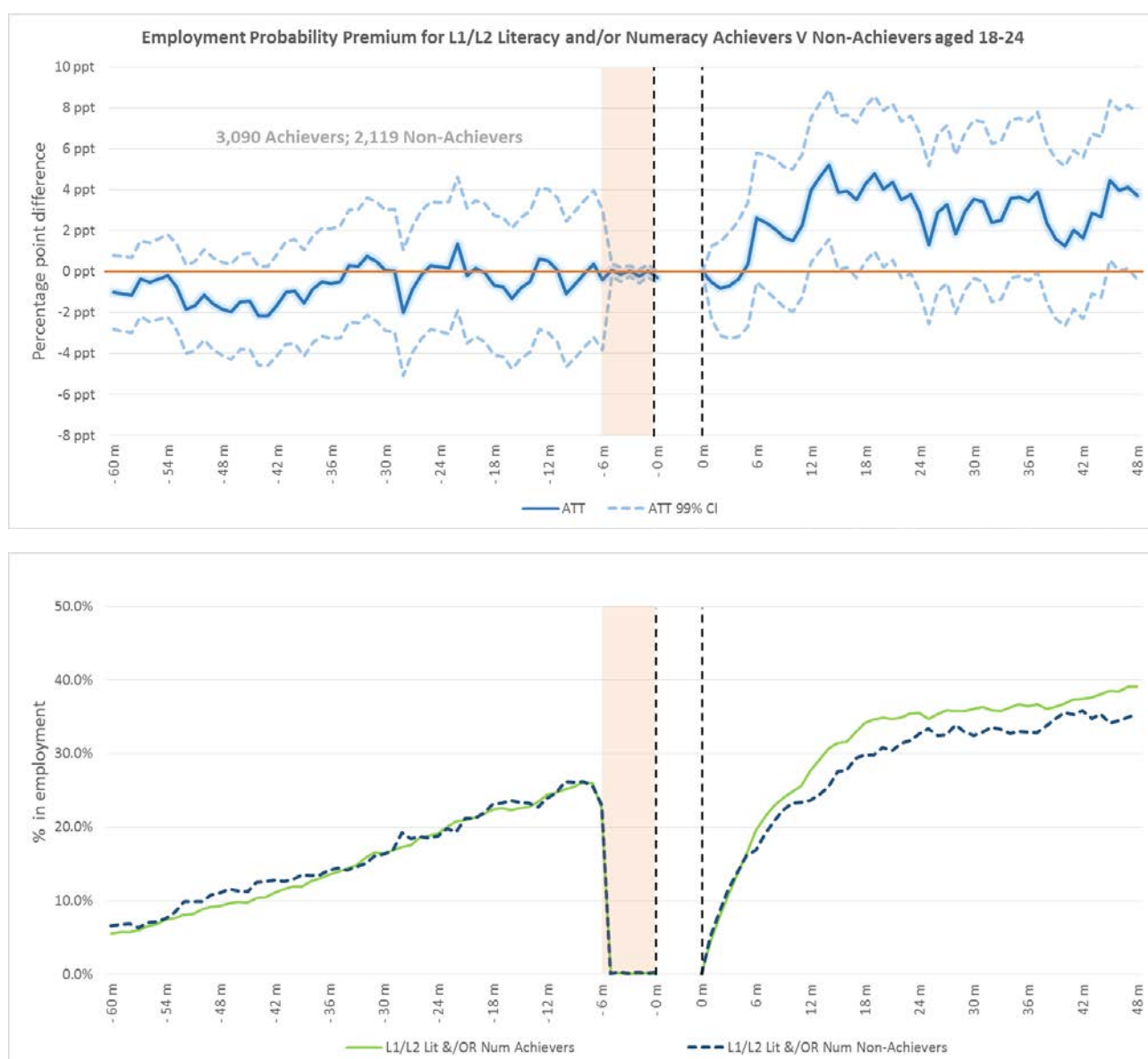


Figure 14 suggests that consideration of the differences between achievers and non-achievers according to sustained employment outcomes, identifies an impact that

⁴⁹ The actual date of start of learning spell for achievers and non-achievers; and the imputed learning spell start date for those with no ILR record.

seems a little more significant than that for employment outcomes. Impacts are statistically significant between 12 and 27 months from the start of learning; again between 32 and 36 months; and again at 48 months. Whilst the estimated return still varies between 2 and 4 ppts, it is more clearly located at 4 ppts for much of the time after the start of learning.

Figure 14: Percentage point SUSTAINED employment probability premium for L1/L2 Literacy and/or Numeracy Achievers, compared to Non-achievers: LTU aged 18-24 with ND Start, in the pre-2011 cohort

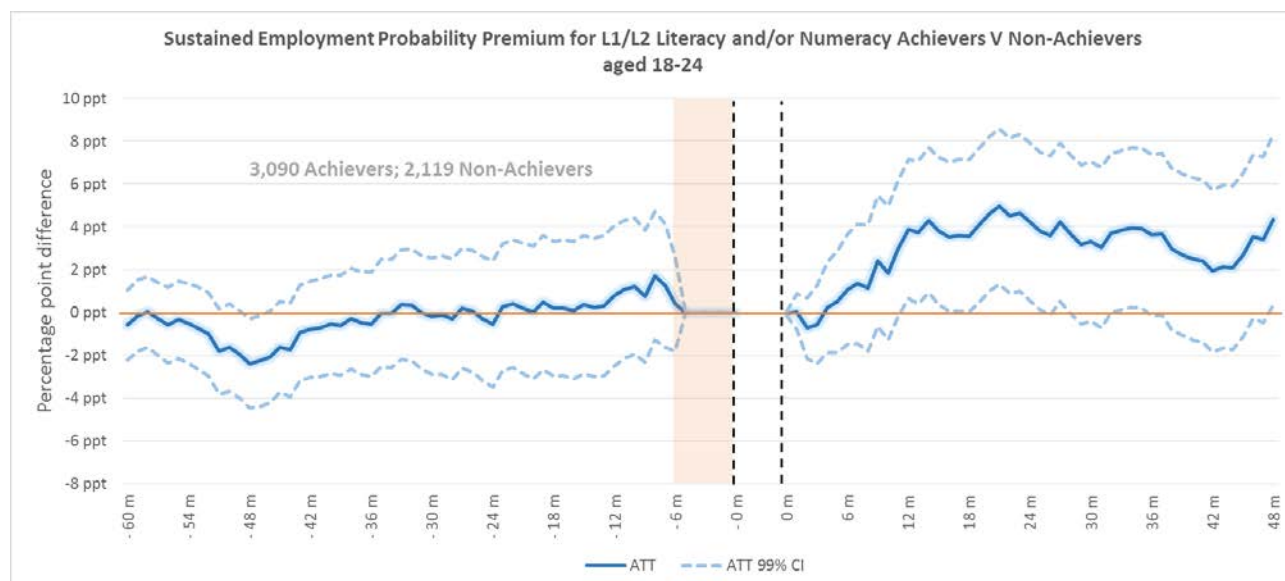
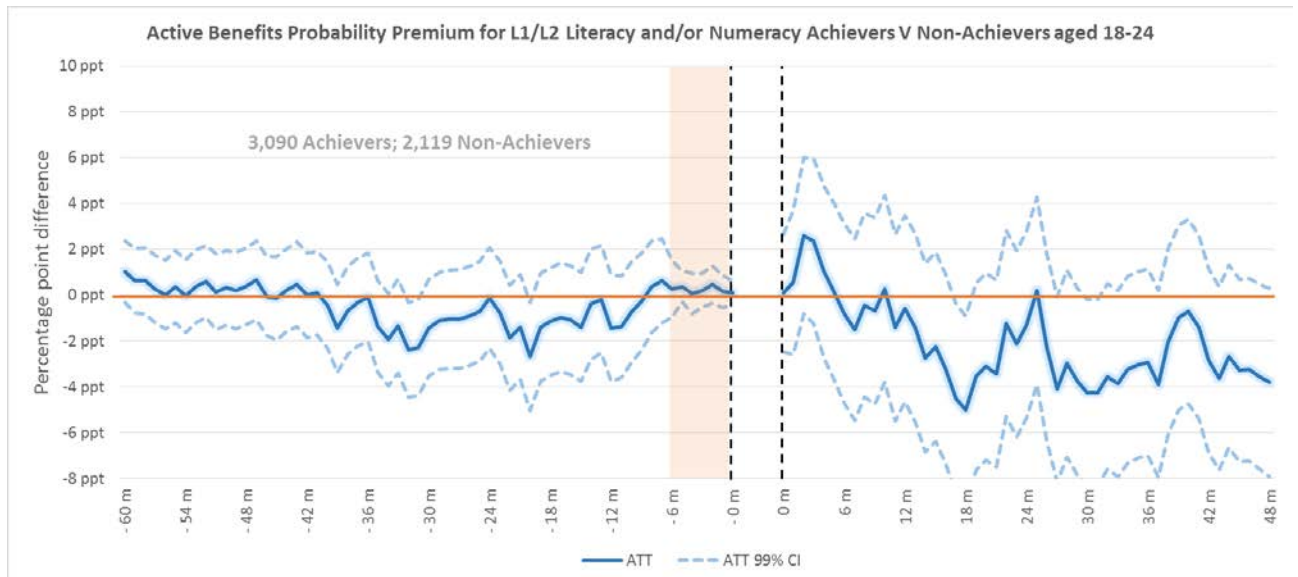


Figure 15 sets out estimates of the ppt gap between the proportion of achievers and non-achievers who are on active benefits in the years before and after the start of learning. The findings suggest that we have a statistically significant gap at points around 18, 27 and 30 months from the end of learning; and that for much of this time the estimated ppt difference is between -2 and -4 ppts.

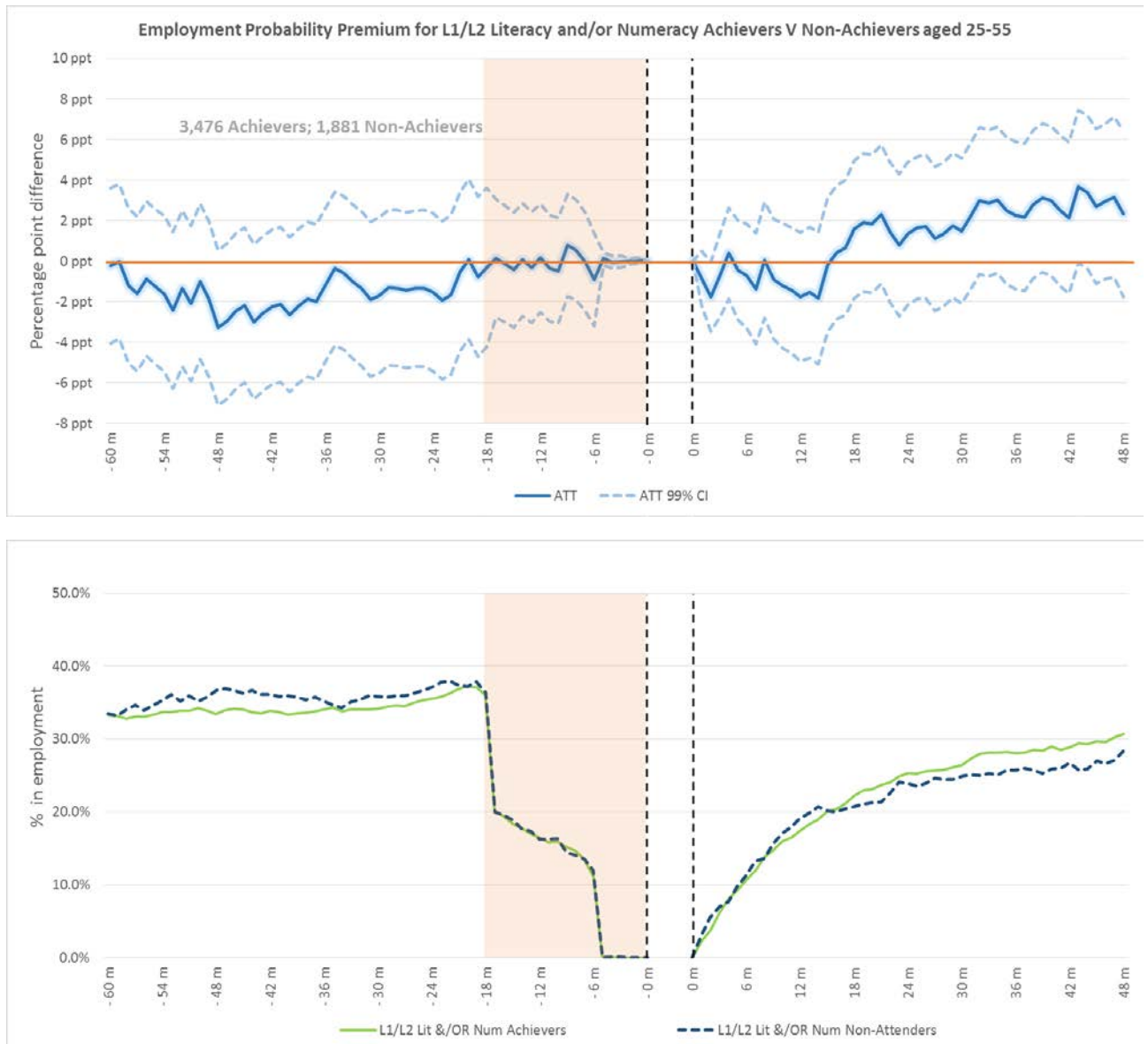
In Figures 13, 14 and 15 we can clearly see the impact on our estimates of having smaller numbers in both achiever and non-achiever groups when considering the LTU – our confidence intervals become much wider and it becomes harder to identify impacts that raise the lower bound of the confidence interval above zero. In addition, at a point 48 months before the start of learning in Figure 14 and -33 and -20 months in Figure 15, we breach the confidence interval prior to the start of learning. This is not ideal, but if anything this has the potential to deflate our impact estimates, as in these years achievers have significantly lower levels of employment than non-achievers. In addition we are utilising a 99% confidence interval, when in much of the academic literature a 95% interval is used (see for instance, Lechner etc. al. 2011).

Figure 15: Percentage point Active Benefit probability 'gap' for *L1/L2 Literacy and/or Numeracy* Achievers, compared to Non-achievers: LTU aged 18-24 with ND Start, in the pre-2011 cohort



In Figures 16, 17 and 18 we identify some potential impacts from *L1/L2 Maths and/or English* achievement on employment, sustained employment and benefits outcomes, but in all instances we only see impacts becoming slightly significant at the very end of our period for analysis. This is likely as result of genuinely lower impacts amongst the older (25+) age groups, as we find in our analysis of the STU and the fact that it has become even harder to uncover any impacts, because of a fall off in numbers. Whilst numbers of achievers and non-achievers do not drop much below 2,000, CEM is a computationally intensive process and requires substantial numbers for implementation.

Figure 16: Percentage point employment probability premium for L1/L2 Literacy and/or Numeracy Achievers, compared to Non-achievers: LTU aged 25+ with ND Start, in the pre-2011 cohort



It is also worth noting that whilst impacts for the LTU aged 25+ rarely become significant, we have a slightly more pronounced return when considering sustained employment outcomes (Figure 17); as opposed to employment outcomes (Figure 16). Also, the pattern of returns is very similar to those uncovered for the STU aged 25+; as there is the same sort of steady improvement in the situation of achievers as we consider the years after the start of learning – but in the case of the LTU, this only becomes significant in Figure 17 at a point 44 to 48 months on from the start of learning.

Figure 17: Percentage point SUSTAINED employment probability premium for L1/L2 Literacy and/or Numeracy Achievers, compared to Non-achievers: LTU aged 25+ with ND Start, in the pre-2011 cohort

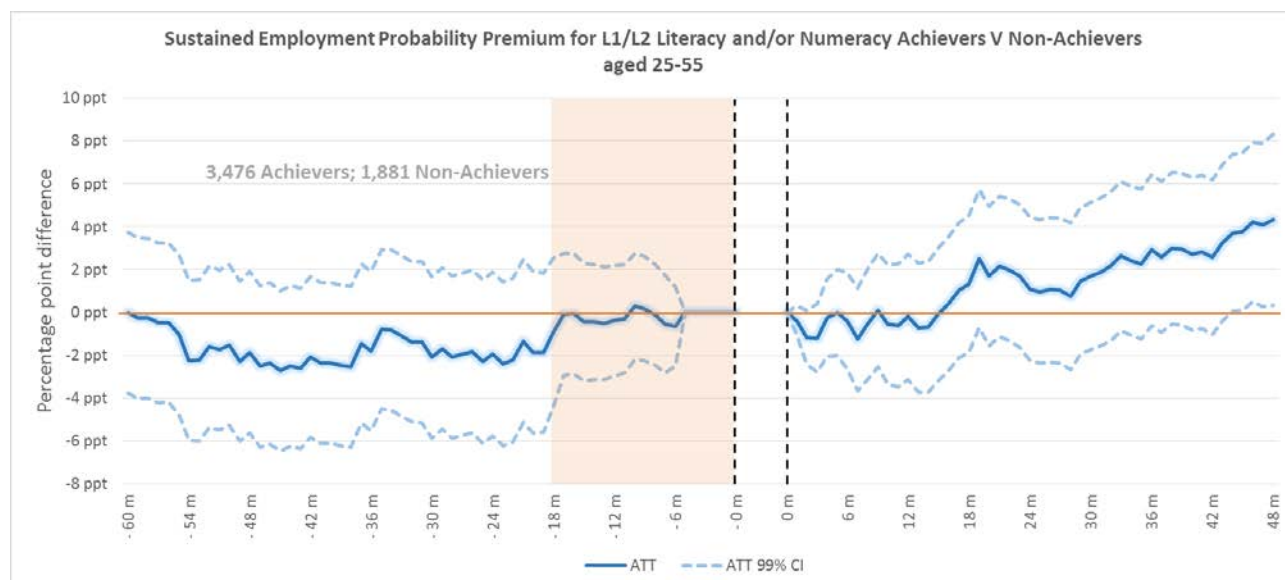


Figure 18: Percentage point Active Benefit probability 'gap' for L1/L2 Literacy and/or Numeracy Achievers, compared to Non-achievers: LTU aged 25+ with ND Start, in the pre-2011 cohort

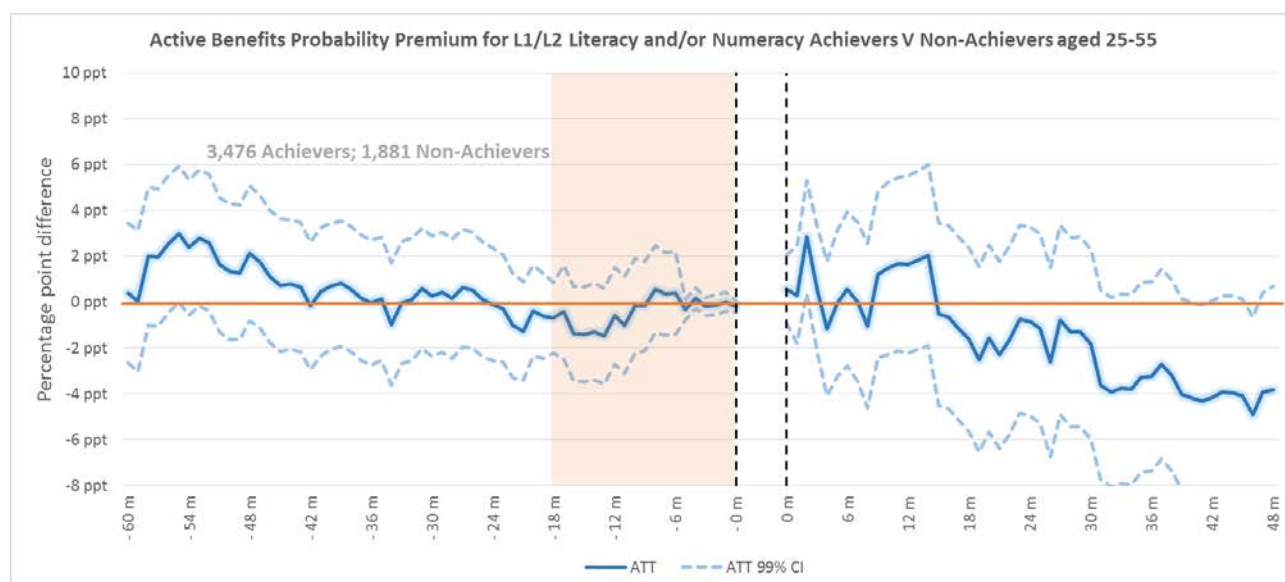


Table 15 confirms the findings from Figures 13 to 18. For instance, we observe a statistically significant employment premium for achievers over non-achievers aged 18 to 24 of around 3.3 ppts (very similar to that uncovered for the STU undertaking these FE learning aims); and around 1.9 ppts for those aged 25+ (though this later figure cannot be relied upon). Overall this translates into a statistically significant employment premium of 2.6 ppts; again very close to the impacts identified for the STU. These premiums are slightly higher for sustained employment outcomes, with the overall estimate of impact rising to 2.8 ppts. We are also able to identify

significant impacts (that average around -2.7 pts), when considering the gap between proportions of achievers and non-achievers on active benefits. These findings are encouraging, as they suggest that this form of FE learning (when appropriately targeted) is able to help those who start the ND, who we may reasonably assume face higher barriers to employment.

Table 15: Summary Labour Market Outcomes for *L1/L2 Literacy and/or Numeracy* Achievers, compared to Non-achievers: LTU with ND Start in the pre-2011 cohort

		Percentage Point Employment/Sustained Employment and Benefit Premium/gap in Years after Learning Spell Start				
		1st Year	2nd Year	3rd Year	4th Year	2 to 4 year average
Percentage Point Employment Premium	Aged 18-24:	0.012	0.041***	0.029*	0.029*	0.033
	S. E.	(0.012)	(0.015)	(0.015)	(0.015)	
	Aged 25+:	-0.009	0.007	0.021	0.028*	0.019
	S.E.	(0.010)	(0.013)	(0.014)	(0.015)	
	All ages (weighted average)	0.001	0.024**	0.025**	0.029**	0.026
		(0.009)	(0.011)	(0.012)	(0.013)	
Percentage Point Sustained Employment Premium	Aged 18-24:	0.012	0.041***	0.037**	0.029*	0.036
	S. E.	(0.010)	(0.014)	(0.014)	(0.015)	
	Aged 25+:	-0.005	0.010	0.018	0.033**	0.020
	S.E.	(0.008)	(0.012)	(0.013)	(0.014)	
	All ages	0.003	0.025**	0.028***	0.031***	0.028

		Percentage Point Employment/Sustained Employment and Benefit Premium/gap in Years after Learning Spell Start				
		1st Year	2nd Year	3rd Year	4th Year	2 to 4 year average
	(weighted average)	(0.007)	(0.010)	(0.010)	(0.011)	
Percentage Point Active Benefit Gap	Aged 18-24:	0.001	-0.028*	-0.032**	-0.027*	-0.029
	S. E.	(0.015)	(0.016)	(0.016)	(0.016)	
	Aged 25+:	0.007	-0.008	-0.026	-0.039**	-0.024
	S.E.	(0.013)	(0.016)	(0.016)	(0.016)	
	All ages (weighted average)	0.004	-0.018	-0.029**	-0.033**	-0.027
		(0.011)	(0.013)	(0.013)	(0.013)	

Table 16 sets out the estimated returns for those achieving courses in our category of '*Preparation for Work at Level 1 or Below*'. It is particularly encouraging that those aged 25+ secure an estimated 3.6 ppt employment return, compared to the figure of 1.9 ppts when we considered impacts for the same type of courses amongst the STU aged 25+ in Table 4. Here it would seem that the situation is reversed – amongst the STU of Table 4, the 18 to 24 age group secured higher [4.2 ppt] employment returns, but in Table 16 the figure is only 2.8% and is statistically significant in only the third and fourth years after learning. This turnaround in results is similar to the impact of achievement on sustained employment outcomes, with some improvement in the level of significance associated with both age groups; but we find no statistically significant impacts for this form of FE learning on active benefit proportions.

Table 16: Summary Labour Market Outcomes for *Preparation for Work at Level 1 or Below* Achievers, compared to Non-achievers: LTU with ND Start in the pre-2011 cohort

		Percentage Point Employment/Sustained Employment and Benefit Premium/gap in Years after Learning Spell Start				
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		1st Year	2nd Year	3rd Year	4th Year	2 to 4 year average
Percentage Point Employment Premium	Aged 18-24:	0.017	0.019	0.030*	0.036*	0.028
	S. E.	(0.014)	(0.018)	(0.018)	(0.019)	
	Aged 25+:	0.012	0.039***	0.039**	0.029*	0.036
	S.E.	(0.012)	(0.015)	(0.015)	(0.016)	
	All ages (weighted average)	0.014	0.031***	0.036***	0.032**	0.033
		(0.010)	(0.012)	(0.012)	(0.013)	
Percentage Point Sustained Employment Premium	Aged 18-24:	0.012	0.023	0.038**	0.043**	0.035
	S. E.	(0.012)	(0.017)	(0.017)	(0.018)	
	Aged 25+:	0.010	0.042***	0.041***	0.041***	0.041
	S.E.	(0.010)	(0.014)	(0.015)	(0.016)	
	All ages (weighted average)	0.011	0.034***	0.040***	0.042***	0.039
		(0.008)	(0.011)	(0.011)	(0.013)	
Percentage Point Active Benefit Gap	Aged 18-24:	0.003	-0.001	-0.025	-0.024	0.000
	S. E.	(0.017)	(0.019)	(0.018)	(0.018)	
	Aged 25+:	0.007	-0.013	-0.022	-0.013	0.000
	S.E.	(0.014)	(0.016)	(0.016)	(0.016)	

		Percentage Point Employment/Sustained Employment and Benefit Premium/gap in Years after Learning Spell Start				
		1st Year	2nd Year	3rd Year	4th Year	2 to 4 year average
	All ages	0.006	-0.008	-0.023	-0.017	0.000
	(weighted average)	(0.012)	(0.014)	(0.014)	(0.014)	

Table 17 sets out the results for LTU achievers of ‘thin’ *Level 2* qualifications and Table 18 captures the returns to learning for the long term unemployed who achieve a qualification at *Full Level 2 or above (FL2+)*. From Table 17, we are unable to identify a consistent statistically significant impact of L2 achievement on either employment or sustained employment outcomes. Whilst we cannot be completely certain, this would seem to be driven by a genuine lack of impact rather than low numbers and wider confidence intervals. More encouraging are the statistically significant benefit impacts, particularly for those aged 18 to 24 where the proportion of achievers on benefits is 4.5 ppts lower than non-achievers, 2 to 4 years from the start of learning.

Table 17: Summary Labour Market Outcomes for *Level 2* Achievers, compared to Non-achievers: LTU with ND Start in the pre-2011 cohort

		Percentage Point Employment/Sustained Employment and Benefit Premium/gap in Years after Learning Spell Start				
		1st Year	2nd Year	3rd Year	4th Year	2 to 4 year average
Percentage Point Employment Premium	Aged 18-24:	0.009	0.025	0.013	0.013	0.000
	S. E.	(0.013)	(0.017)	(0.017)	(0.017)	
	Aged 25+:	-0.005	-0.008	-0.004	0.021	0.000
	S.E.	(0.012)	(0.016)	(0.017)	(0.017)	
	All ages	0.001	0.007	0.003	0.018	0.000

Percentage Point Employment/Sustained Employment and Benefit Premium/gap in Years after Learning Spell Start						
		1st Year	2nd Year	3rd Year	4th Year	2 to 4 year average
	(weighted average)	(0.010)	(0.013)	(0.014)	(0.014)	
Percentage Point Sustained Employment Premium	Aged 18-24:	0.005	0.027*	0.023	0.014	0.021
	S. E.	(0.011)	(0.016)	(0.017)	(0.017)	
	Aged 25+:	-0.007	-0.001	0.005	0.029*	0.011
	S.E.	(0.011)	(0.016)	(0.016)	(0.017)	
	All ages (weighted average)	-0.001	0.013	0.014	0.021	0.000
		(0.009)	(0.013)	(0.014)	(0.014)	
Percentage Point Active Benefit Gap	Aged 18-24:	-0.036**	-0.057***	-0.041**	-0.036**	-0.045
	S. E.	(0.017)	(0.017)	(0.017)	(0.016)	
	Aged 25+:	0.001	-0.004	-0.012	-0.048***	-0.021
	S.E.	(0.015)	(0.017)	(0.017)	(0.017)	
	All ages (weighted average)	-0.017	-0.030**	-0.026*	-0.043***	-0.033
		(0.013)	(0.014)	(0.014)	(0.014)	

In Table 18, we estimate employment and sustained employment returns to achievement of FL2+ qualifications amongst those aged 18 to 24 that are almost identical to those for the STU in Table 6. In Table 6 we estimate that the proportion of achievers in employment and sustained employment is 6.8 and 7.4 ppts higher amongst achievers of these FE qualifications, respectively; whilst in Table 18 the

figures are 7.0 and 7.8 ppts. When considering FL2+ returns for those aged 25+, by the third and fourth years after the start of learning we have statistically significant impacts that suggest an estimated 2 to 4 year average return of 3.8 ppts for employment and 3.6 ppts for sustained employment outcomes. Table 18 also identifies clear evidence of statistically significant impacts on benefit outcomes, with achievers 5 ppts less likely to be on benefits 2 to 4 years after the start of learning.

Table 18: Summary Labour Market Outcomes for achievers at *Full Level 2 or above*, compared to Non-achievers: LTU with ND Start in the pre-2011 cohort

		Percentage Point Employment/Sustained Employment and Benefit Premium/gap in Years after Learning Spell Start				
		1st Year	2nd Year	3rd Year	4th Year	2 to 4 year average
Percentage Point Employment Premium	Aged 18-24:	0.029	0.053**	0.085***	0.071***	0.070
	S. E.	(0.019)	(0.024)	(0.024)	(0.025)	
	Aged 25+:	-0.033**	0.028	0.045**	0.042*	0.038
	S.E.	(0.016)	(0.021)	(0.021)	(0.022)	
	All ages (weighted average)	-0.004	0.039**	0.063***	0.055***	0.052
		(0.013)	(0.017)	(0.017)	(0.018)	
Percentage Point Sustained Employment Premium	Aged 18-24:	0.043***	0.069***	0.087***	0.078***	0.078
	S. E.	(0.016)	(0.022)	(0.023)	(0.024)	
	Aged 25+:	-0.028**	0.022	0.041*	0.044**	0.036
	S.E.	(0.014)	(0.020)	(0.021)	(0.022)	
	All ages	0.005	0.042**	0.061***	0.059***	0.054

		Percentage Point Employment/Sustained Employment and Benefit Premium/gap in Years after Learning Spell Start				
		1st Year	2nd Year	3rd Year	4th Year	2 to 4 year average
	(weighted average)	(0.012)	(0.019)	(0.019)	(0.020)	
Percentage Point Active Benefit Gap	Aged 18-24:	-0.070***	-0.056**	-0.074***	-0.055**	-0.062
	S. E.	(0.024)	(0.025)	(0.024)	(0.022)	
	Aged 25+:	0.028	-0.028	-0.045**	-0.049**	-0.041
	S.E.	(0.019)	(0.022)	(0.022)	(0.022)	
	All ages (weighted average)	-0.018	-0.040**	-0.058***	-0.052***	-0.050
		(0.015)	(0.019)	(0.019)	(0.018)	

Unfortunately we do not have enough learners of ESOL within our population of LTU to estimate impacts, but the findings from analysis of STU are not encouraging (thought they should be considered with care). Similarly, as we have already suggested, the analysis of returns to achievement amongst LTU individuals in this section push the data to its limits in a number of areas, and therefore we are unable to present returns separately for men and women. However, we have clear evidence on this from Section 3 which considers interventions during the STU phase.

Across our analysis of the STU in Section 3.1 and the LTU in this Section we uncover a general picture of good returns in most areas of FE learning; with higher employment and sustained employment returns for 18 to 24 year old achievers over non-achievers across all categories of learning in the STU phase (outside ESOL where returns are insignificant). In our analysis of the LTU we similarly identify higher returns to achievement of L1/L2 Maths and/or English amongst the 18 to 24 year olds. However, for *Preparation for Work* achievers, those aged 25+ amongst the LTU secure a greater return than those aged 18 to 24 (we only identify significant benefit impacts amongst L2 achievers in the LTU phase).

To conclude we present an overview of the impacts of FE for the LTU who start a ND intervention, aggregated across all the categories of FE learning analysed in this

section of the report. The figures in this summary overview are weighted averages across the estimates for (i) L1/L2 Maths and/or English (ii) Preparation for Work at Level 1 and Below (iii) Level 2 and (iv) Full Level 2+. Again, we do not include ESOL.

Summary overview of Aggregated LTU Impacts across All FE Learning Aims, for those who start ND Option

	Percentage Point Employment/Sustained Employment and Benefit Premium/gap in Years after Learning Spell Start (weighted average of all learning aims analysed)				
	1st Year	2nd Year	3rd Year	4th Year	2 to 4 year average
Percentage Point Employment Premium	0.005	0.024	0.028	0.031	0.028
Percentage Point Sustained Employment Premium	0.005	0.027	0.033	0.036	0.032
Percentage Point Active Benefit Gap	-0.004	-0.021	-0.030	-0.033	-0.028

6. Comparison of FE outcomes, to those with ‘No FE’: LTU

As already suggested, when comparing outcomes for achievers and non-achievers in Section 3, and then again in Section 5, we are building on an extensive programme of research that has analysed ILR-WPLS data to capture the returns to FE learning. In each case, we are using the outcomes of a non-achieving [or ‘drop-out’] group to estimate the outcomes that we would expect to see, had the achieving group not undertaken FE learning (i.e. we are attempting to estimate the counterfactual). This section presents estimated returns to FE learning, with counterfactual outcomes created using a variety of groups who have not undertaken any FE learning during the LTU Phase.

Readers should refer to the introduction of Section 4 for a more detailed discussion of what this additional comparison might imply for policymakers and those concerned with econometric method. Section 6.1 begins by comparing achievers in [A11] with

the No ILR group of [B11] in Figure 2 of the Introduction, following a similar approach to that of Section 4, but this time for the LTU who Start a ND option⁵⁰. This latter [B11] group are seen to start a ND intervention, but in the 12 months from the expected date ('X') of referral to an ALMP we do not see them undertake any FE learning. As in Section 4, we perform this analysis separately for two categories of FE aim, (i) those achieving *L1/L2 Maths and/or English* and (ii) those achieving *FL2+*.

Section 6.2 presents the outcome of a multiple treatment analysis, where we combine information on our FE interventions with those in the ND datasets to consider a number of treatment and control comparisons. This is pushing the data to its limits, so we have to carry out our analysis for an amalgamated group of FE learners, who achieve at *L2 or Below* (including Maths and/or English) – essentially amalgamating all categories other than *FL2+*. We are also forced to limit our analysis to the 25+ age group, for similar considerations of numbers. For instance, we are able to compare the returns of those aged 25+ who achieve a *L2 or Below* in FE [and Start a *Work placement/Work experience* ND Option]; with those who achieve a *L2 or Below* in FE [and Start a *ND Training* Option]. Section 6.2 presents the results of 8 key combinations that arise from the potential comparisons that are possible with the ND and ILR data.

6.1 Comparison of FE achievers to those with No ILR (No FE)

Table 19 presents estimates of impact arising from a comparison of *L1/L2 Maths and/or English* achievers, with a matched group of unemployed individuals, who we do not see in the ILR for the 12 months following their expected date of referral (X) to the ND. Both the treatment and control groups of 18 to 24 and 25+ year olds are seen to start a ND Option during the period 12 months from X.

Table 19 broadly confirms the findings on employment and sustained employment outcomes from Table 15 (which uses an achiever V non-achiever approach), in that we identify statistically significant premiums for achievers aged 18 to 24, but the findings for those aged 25+ are less obvious. We estimate a statistically significant employment premium for achievers aged 18 to 24, over those of the same age with no in-scope ILR learning aim, of around 3.5 ppts. This is almost identical to the sustained employment premium estimate that we obtain using an achiever V non-achiever approach in Table 15, where the figures are 3.3 and 3.6 ppts respectively.

For those aged 25+, the use of an achiever V No ILR group renders the weaker employment and sustained employment findings of Table 15 (where we identify statistically significant impacts in the fourth year from the start of learning), wholly insignificant. In addition, our active benefit gap, which is -2.9 ppts in Table 15 for those aged 18 to 24, is rendered insignificant (but still negative) in Table 19 when we compare achievers and those with no ILR. For those aged 25+ the negative impact with limited significance that we identify in Table 15, becomes a statistically significant positive impact. This implies that achievers aged 25+ have a higher proportion on benefits in the years after the start of learning, when compared to those

⁵⁰ Some individuals have multiple ND Option starts, and we take the first ND Option start between X and X + 12. This determines which category of New Deal intervention an individual is allocated to in Figure 19.

of the same age with No ILR – even when we match extensively. As we shall see in our discussions in the Conclusion, this is in line with what we would perhaps expect when making this wider comparison, and may be driven by factors we are not able to fully capture.

Table 19: Summary Labour Market Outcomes for *L1/L2 Literacy and/or Numeracy Achievers*, compared to *No ILR* groups: LTU with ND Start in the pre-2011 cohort

		Percentage Point Employment/Sustained Employment and Benefit Premium/gap in Years after Learning Spell Start ALTERNATIVE CONTROL				
		1st Year	2nd Year	3rd Year	4th Year	2 to 4 year average
Percentage Point Employment Premium	Aged 18-24:	0.014**	0.039***	0.036***	0.031***	0.035
	S. E.	(0.007)	(0.008)	(0.008)	(0.008)	
	Aged 25+:	-0.008	-0.004	0.005	0.005	0.002
	S.E.	(0.005)	(0.007)	(0.007)	(0.008)	
	All ages (weighted average)	0.001	0.015**	0.019***	0.016**	0.017
		(0.004)	(0.006)	(0.006)	(0.007)	
Percentage Point Sustained Employment Premium	Aged 18-24:	0.008	0.038***	0.038***	0.029***	0.035
	S. E.	(0.005)	(0.008)	(0.008)	(0.008)	
	Aged 25+:	-0.006	-0.003	0.005	0.008	0.003
	S.E.	(0.004)	(0.007)	(0.007)	(0.007)	

		Percentage Point Employment/Sustained Employment and Benefit Premium/gap in Years after Learning Spell Start ALTERNATIVE CONTROL				
		1st Year	2nd Year	3rd Year	4th Year	2 to 4 year average
All ages (weighted average)		0.000 (0.004)	0.015** (0.006)	0.019*** (0.006)	0.016*** (0.006)	0.017
Percentage Point Active Benefit Gap	Aged 18-24:	0.016*	-0.004	-0.010	-0.002	-0.005
	S. E.	(0.009)	(0.009)	(0.009)	(0.009)	
	Aged 25+:	0.040***	0.047***	0.043***	0.043***	0.044
	S.E.	(0.007)	(0.008)	(0.008)	(0.008)	
	All ages (weighted average)	0.030*** (0.006)	0.025*** (0.006)	0.019*** (0.007)	0.022*** (0.007)	0.022

The findings of Table 20, when compared to those in Table 18 which uses an achiever V non-achiever comparison, shows the same magnitude of impacts for those aged 18 to 24 when considering employment and sustained employment outcomes. In Table 18 we estimate an employment impact of 7 ppts and a sustained employment return of 7.8 ppts – the estimates obtained in Table 20 from comparison with the wider group who we do not see in FE learning, produce estimates that are even higher, at 9.1 and 8.7 ppts respectively. For those aged 18 to 24, the estimated ppt benefit gap in Table 20 is almost identical to that in Table 18.

For those aged 25+ who we see undertaking FL2+ qualifications, a comparison of returns between achievers and those who have No in-scope FE learning aims increases our estimated returns by a factor of two. Using an achiever V non-achiever comparison, Table 18 suggested that employment and sustained employment returns are 3.8 and 3.6 ppts respectively. In Table 20 the estimates are 7.6 and 7.5 ppts respectively – interestingly the benefit impact remains the same, we just observe a more significant impact across all years from the start of learning.

Table 20: Summary Labour Market Outcomes for *FL2+* Achievers, compared to the *No ILR* groups: LTU with ND Start in the pre-2011 cohort

		Percentage Point Employment/Sustained Employment and Benefit Premium/gap in Years after Learning Spell Start ALTERNATIVE CONTROL				
		1st Year	2nd Year	3rd Year	4th Year	2 to 4 year average
Percentage Point Employment Premium	Aged 18-24:	0.013	0.064***	0.102***	0.108***	0.091
	S. E.	(0.011)	(0.013)	(0.014)	(0.014)	
	Aged 25+:	0.003	0.065***	0.078***	0.084***	0.076
	S.E.	(0.008)	(0.011)	(0.011)	(0.012)	
	All ages (weighted average)	0.007	0.065***	0.088***	0.094***	0.082
		(0.007)	(0.009)	(0.010)	(0.010)	
Percentage Point Sustained Employment Premium	Aged 18-24:	0.016*	0.058***	0.097***	0.105***	0.087
	S. E.	(0.009)	(0.013)	(0.014)	(0.014)	
	Aged 25+:	0.003	0.062***	0.077***	0.086***	0.075
	S.E.	(0.007)	(0.010)	(0.011)	(0.012)	
	All ages (weighted average)	0.008	0.060***	0.085***	0.094***	0.080
		(0.006)	(0.009)	(0.010)	(0.010)	

		Percentage Point Employment/Sustained Employment and Benefit Premium/gap in Years after Learning Spell Start ALTERNATIVE CONTROL				
		1st Year	2nd Year	3rd Year	4th Year	2 to 4 year average
Percentage Point Active Benefit Gap	Aged 18-24:	-0.036**	-0.036**	-0.072***	-0.076***	-0.061
	S. E.	(0.015)	(0.015)	(0.015)	(0.014)	
	Aged 25+:	0.031***	-0.030**	-0.038***	-0.054***	-0.041
	S.E.	(0.011)	(0.012)	(0.012)	(0.013)	
	All ages (weighted average)	0.000	-0.032***	-0.052***	-0.063***	-0.049
		(0.009)	(0.010)	(0.010)	(0.010)	

As with the outcomes from Section 4, the main finding here is of good employment, sustained employment and (to a lesser extent) *Active Benefits* returns to achievement of both *L1/L2 Maths and English* and *FL2+* in FE, when compared to a matched control group who do not undertake FE learning – there again seems to be some potential for improved outcomes if those who do not currently undertake FE, were encouraged to do so.

6.2 Multiple Treatment Analysis

This section considers a number of comparisons between categories of LTU treatment and control that combine FE learner information within the ILR, with that included on ND Options in the ND datasets. A future analysis may be able to create more specific treatment and control groups from the LMS that can then be combined with information from the ILR. However, our initial exploratory investigation of the LMS data identify (i) large variations between Jobcentre Plus districts in administrative approaches to recording information in the LMS and (ii) similar variations through time. We therefore utilise the LMS data only at its most aggregated level, as a flag of need, to support the econometric analysis of Section 3, Section 4 and Section 7. However, when considering the LTU, we have ND datasets that contain much more reliable administrative information and during the LTU phase there is the potential for these ND interventions (that are more substantial than those in the LMS) to influence the returns we observe to FE learning.

For instance, in Section 5.1 we have estimated the returns to *L1/L2 Maths and/or English* achievement, using an achiever V non-achiever comparison. The suggestion is that those aged 18 to 24 secure a 3.3 ppt employment return over non-achievers, but for those aged 25+ the figure is only 1.9 ppts. This figure of 1.9 ppts is in addition to any impacts that we might see from an individual's engagement with a specific ND Option, but within this 1.9 ppt estimate it is possible that we might observe (for instance) achievers who also start **Work Experience**⁵¹ interventions securing more of a return; compared to those achieving the same learning aim, but who we observe starting **ND Training**⁵² interventions. In Figure 19 this is represented as an analysis that would first compare outcomes of [FE Achiever 1] with those of [FE Non-achiever 1]; and then see how these differ from an analysis of the comparisons from [FE Achiever 2] with those of [FE Non-achiever 2] - although, as suggested above, we have to work with a more amalgamated ILR achiever group.

In addition, in Section 6.1 we have set out [for *L1/L2 Maths and/or English* aims] how our estimates of value added change when we compare labour market outcomes for achievers to those who we do not see undertaking ILR interventions in the 12 months following X. In this section we consider how the findings from this analysis change if we compare achievers and those with No-ILR, within specific categories of ND Option. For instance, comparing outcomes for our *L2 and Below* achievers with those for the *No ILR* group, but restricting the comparison to those who are on the same ND Option. In Figure 19 this is represented as an analysis that would first compare outcomes of [FE Achiever 1] with those of [No ILR 1]; and then see how these differ from an analysis of the comparisons from [FE Achiever 2] with those of [No ILR 2]. This allows us some comparison of the outcomes from a ND intervention with no ILR element; to the outcomes that arise when we have ILR training accompanying (or as part of) a ND Option.

Finally, we attempt a number of additional combinations from Figure 19 below, to gain further insight into the interactions between our ND and FE treatments. For instance, we compare outcomes of the [FE achiever 1] category with outcomes from the [FE achiever 2] group; and attempt to do the same for non-achievers in the two categories of ND Option (with more limited success). Finally, we finish this section by presenting the findings from a comparison of outcomes between [FE Achiever 1] and a matched [FE Non-achiever 2]; and then between [FE Achiever 2] and a matched [FE Non-achiever 1] group.

It is worth noting that the split of individuals into ND Training and ND Work Experience Options is based on the 'first' ND Option that we see individuals engage with in the 12 months from X. There are a small number of learners who start more than one ND Option during our period of analysis, but the numbers are very small (less than 10%) – they are allocated according to the first ND Option we see them

⁵¹ Within the ND Evaluation datasets we combine the categories of (i) Work experience and (ii) Work placement to create the *ND Work Experience* intervention. It is important to note that this does not include the subsidised employment option, where we see strong selection effects - those on the subsidized Employment Option have much better prior labour market histories, reflecting the strong (advisor) selection effects into this category of NF Option.

⁵² Within the ND Evaluation datasets we combine the categories of (i) FTE/Training, (ii) WBLA (Work Based Learning for Adults), (iii) BET/BS option (Basic employability training/ Basic skills) and (iv) IAP training (Intensive Activity Period) to create the *ND Training* intervention category.

starting. Furthermore, it is quite possible that FE learning takes place when the individual is not necessarily on the ND Training Option - there is no specific sequencing here between ND and FE interventions, rather we are simply capturing the extent to which an individual is seen to engage in both FE and ND Options between X and X+12 months.

Figure 19: Combinations of ND intervention and FE learning, Treatment and Control Groups

ND Work Experience interventions		ND Training interventions	
FE Achiever 1	FE Non-achiever 1	FE Achiever 2	FE Non-achiever 2
No ILR 1 (No in-scope FE intervention)		No ILR 2 (No in-scope FE intervention)	

Table 27 of the Appendix presents findings from the first stage of this analysis, comparing labour market outcomes for Achievers at *L2 or Below*, with those of Non-achievers – with analysis limited to achievers and non-achievers who we see starting a *ND Work Experience* intervention. The analysis in Section 5.1 identifies good returns to learning for those aged 25+ when we consider *Preparation for Work* and some significance of returns when considering achievement in *L1/L2 Maths and/or English*. However, when we disaggregate returns for a wider category of learner (*L2 or Below*) and focus only on those who start a *ND Work Experience* Option we do not identify any significant impacts. The fact that our non-achieving control group drops to only 869 individuals is likely responsible for this (we have 2,615 achievers), but this also provides some indication that FE achievers who have a *ND Work Experience* Start may not secure good returns.

Table 21 limits the analysis of *L2 or Below* achievers and non-achievers to those who we see starting a *ND Training* intervention. Again, when we disaggregate returns for a wider category of learner (*L2 or Below*) and focus only on those who start a *ND Training* Option our non-achieving control group drops to only 1,260 individuals and this may be partially responsible for a lack of statistical significance in Table 21. However, there is some indication that FE achievers amongst the group who have a *ND Training* Start may be securing some return, as we start to see a statistically significant sustained employment impact by the fourth year. The suggestion from this analysis is that the good returns to FE learning for the LTU aged 25+ in the previous section do not seem to be driven by those on the *ND Work Experience* Option; but there is some evidence of a contribution from those on the *ND Training* Option who achieve their FE learning aim at L2 or Below (with the implication being that those on other ND interventions who achieve FE are also securing good FE returns). However, these are very preliminary findings and more work is needed in this area.

Table 21: Summary Labour Market Outcomes for Achievers at *L2 or Below*, compared to Non-achievers: LTU aged 25+ in the pre-2011 cohort who Start a *ND Training* intervention

[2,772 Achievers with ND Training Start V 1,260 Non-Achievers with ND Training Start]

		Percentage Point Employment/Sustained Employment and Benefit Premium/gap in Years after Learning Spell Start (Aged 25+)				
		1st Year	2nd Year	3rd Year	4th Year	2 to 4 year average
Percentage Point Employment Premium	ATT	0.005	0.011	0.018	0.021	0.017
	S. E.	(0.011)	(0.014)	(0.016)	(0.017)	
Percentage Point Sustained Employment Premium	ATT	0.003	0.011	0.015	0.027*	0.018
	S. E.	(0.010)	(0.014)	(0.015)	(0.016)	
Percentage Point Active Benefit Gap	ATT	0.006	0.012	0.000	-0.010	0.001
	S. E.	(0.015)	(0.018)	(0.018)	(0.019)	

Table 22 starts the process of comparing outcomes between those who achieve *FE L2 or Below* and those who do not have an in-scope FE learning aim (i.e. the No ILR group) – but with both groups starting a ND *Work Experience* intervention. This is a variation on our achiever V No ILR analysis in Section 6.1, but this time focused on more specific populations of ND intervention. Table 22 identifies some evidence of employment and sustained employment returns by the fourth year after learning, but as in our analysis of FE achievers and non-achievers who are on ND *Work Experience*, returns to FE learners who have a ND Work Experience intervention do not seem particularly pronounced.

Table 22: Summary Labour Market Outcomes for Achievers at *L2 or Below*, compared to *No ILR* Group: LTU aged 25+ in the pre-2011 cohort who Start a ND *Work Experience* intervention

[2,615 Achievers with ND Work Exp. Start V 22,031 *No ILR* with ND Work Exp. Start]

		Percentage Point Employment/Sustained Employment and Benefit Premium/gap in Years after Learning Spell Start (Aged 25+)				
		1st Year	2nd Year	3rd Year	4th Year	2 to 4 year average

		1st Year	2nd Year	3rd Year	4th Year	2 to 4 year average
Percentage Point Employment Premium	ATT	-0.007	0.006	0.014	0.020**	0.013
	S. E.	(0.007)	(0.008)	(0.009)	(0.009)	
Percentage Point Sustained Employment Premium	ATT	-0.003	0.005	0.012	0.022**	0.013
	S. E.	(0.006)	(0.008)	(0.008)	(0.009)	
Percentage Point Active Benefit Gap	ATT	0.041***	0.013	0.011	-0.001	0.008
	S. E.	(0.009)	(0.010)	(0.010)	(0.011)	

In contrast Table 23 identifies significant returns when comparing outcomes between those who achieve *FE L2 or Below* and the *No ILR* group, when both have a *ND Training* intervention. As suggested in previous discussions, in a scenario where we achieve a similarly perfect match, we would expect the findings in Table 23 to replicate those of Table 21, where we compare achievers and non-achievers. However, as suggested in the introduction to Section 4, there are additional implications. Firstly, we have uncovered individuals within the *No ILR* group who are similar (i.e. can be matched to) those who we see achieving an FE Learning aim at *Level 2 or Below*; and furthermore, these similar individuals have less favourable employment and sustained employment outcomes. This is consistent with a suggestion that extension of the FE learning interventions to the wider *No ILR* group (who also experience a *ND Training* intervention) might be expected to improve outcomes.

Table 23: Summary Labour Market Outcomes for Achievers at *L2 or Below*, compared to the *No ILR* group: LTU aged 25+ in the pre-2011 cohort who Start a *ND Training* intervention

[2,772 Achievers with ND Training Start V 22,361 *No ILR* with ND Training Start]

Percentage Point Employment/Sustained Employment and Benefit Premium/gap in Years after Learning Spell Start (Aged 25+)

		1st Year	2nd Year	3rd Year	4th Year	2 to 4 year average
Percentage Point Employment Premium	ATT	-0.004	0.016**	0.032***	0.033***	0.027
	S. E.	(0.006)	(0.008)	(0.008)	(0.009)	
Percentage Point Sustained Employment Premium	ATT	-0.003	0.015**	0.029***	0.033***	0.026
	S. E.	(0.000)	(0.000)	(0.000)	(0.000)	
Percentage Point Active Benefit Gap	ATT	0.039***	0.016*	0.010	0.010	0.012
	S. E.	(0.009)	(0.010)	(0.010)	(0.011)	

Table 24 provides some insight into the extent of selection into our two ND intervention categories, which results in achievers across our two categories exhibiting some evidence of significant differences in their outcomes. More specifically:

- For those starting ND *Work Experience* interventions, we uncover no evidence of achiever V non-achiever returns for those with FE aims (Appendix Table 27); and some limited evidence of significant employment differences when we compare achievers and the No ILR group (Table 22).
- For those starting ND *Training* interventions, we uncover slightly stronger evidence of achiever V non-achiever returns for those with FE aims (Table 21); and strong evidence of significant employment and sustained employment returns when we compare achievers and the No ILR group (Table 23).

This suggests that returns to FE learning are more evident for those who start a ND Training intervention, than for those who start a ND Work Experience option; but Table 24 suggests that FE achievers with *Work Experience* starts have slightly better outcomes than achievers of FE who have a ND *Training* Start. This is consistent with the suggestion that there is some selection of unemployed individuals who find it harder to secure employment, into ND *Training* interventions (when compared to *Work Experience* interventions); but that returns are much more apparent for FE achievers amongst this ND *Training* group.

Table 24: Summary Labour Market Outcomes for Achievers at L2 or Below [Starting a ND *Work Experience* intervention] compared to Achievers at L2 or

Below [Starting a *ND Training* intervention]: LTU aged 25+ in the pre-2011 cohort

[2,615 Achievers with Work Experience Start V 2,772 Achievers with ND Training Start]

		Percentage Point Employment/Sustained Employment and Benefit Premium/gap in Years after Learning Spell Start (Aged 25+)				
		1st Year	2nd Year	3rd Year	4th Year	2 to 4 year average
Percentage Point Employment Premium	ATT	0.014	0.014	0.010	0.016	0.013
	S. E.	(0.010)	(0.013)	(0.013)	(0.015)	
Percentage Point Sustained Employment Premium	ATT	0.012	0.019	0.017	0.024*	0.020
	S. E.	(0.009)	(0.012)	(0.013)	(0.014)	
Percentage Point Active Benefit Gap	ATT	-0.010	-0.018	-0.012	-0.027*	-0.019
	S. E.	(0.013)	(0.015)	(0.015)	(0.016)	

We attempt a comparison of FE [*Level 2 or Below*] Non-achievers who have a ND Work Experience start, with FE [*Level 2 or Below*] Non-achievers who have a ND *Training* start, but there are too few observations to allow analysis. We are able to carry out a comparison of FE [*Level 2 or Below*] Non-achievers who have a ND *Work Experience* start and the group who have *No in-scope ILR* record, amongst those who have a ND *Training* start, but do not present findings as there are no statistically significant differences.

Our final two sets of analyses in Tables 25 and 26 show how the estimated returns vary when we compare FE achievers who start a particular ND intervention, with non-achievers who start an alternative ND intervention. Table 25 shows that FE achievers with *Work Experience* have better labour market outcomes than those with *Training Experience* who dropped out of a *L2 or Below* learning aim. Conversely, Table 26 shows how FE achievers with *Training Experience* do not have better employment outcomes than people with *Work Experience*, who dropped out of a *L2 or Below* learning aim. This is consistent with our findings in Table 24 (and additional supplementary analysis available on request), and reflects the fact that FE achievers

in the Work experience intervention are correlated with better results in the labour market than FE achievers in the ND training intervention. This is not surprising because people attending *Work Experience* on average live in areas with lower unemployment rates, are much less likely to be part of an ethnic minority, are slightly older and are less likely to be disabled. In our main analysis in Section 5 and Section 6 these effects are controlled for, so that our estimate of impact captures the difference between achievers and non-achievers, independent of these additional ND selection effects.

Table 25: Summary Labour Market Outcomes for Achievers at L2 or Below [Starting a ND Work Experience intervention] compared to Non-Achievers at L2 or Below [Starting a ND Training intervention]: LTU aged 25+ in the pre-2011 cohort

[2,615 Achievers with Work Experience Start V 1,260 Non-Achievers with ND Training Start]

		Percentage Point Employment/Sustained Employment and Benefit Premium/gap in Years after Learning Spell Start (Aged 25-55)				
		1st Year	2nd Year	3rd Year	4th Year	2 to 4 year average
Percentage Point Employment Premium	ATT	0.015	0.039**	0.058***	0.048**	0.048
	S. E.	(0.014)	(0.017)	(0.018)	(0.019)	
Percentage Point Sustained Employment Premium	ATT	0.015	0.031**	0.054***	0.052***	0.046
	S. E.	(0.012)	(0.016)	(0.017)	(0.018)	
Percentage Point Active Benefit Gap	ATT	-0.012	-0.026	-0.059***	-0.060***	-0.048
	S. E.	(0.018)	(0.020)	(0.021)	(0.022)	

Table 26: Summary Labour Market Outcomes for Achievers at L2 or Below [Starting a ND Training intervention] compared to Non-Achievers at L2 or Below [Starting a ND Work Experience intervention]: LTU aged 25+ in the pre-2011 cohort

[2,772 Achievers with Work Experience Start V 869 Non-Achievers with ND Training Start]

		Percentage Point Employment/Sustained Employment and Benefit Premium/gap in Years after Learning Spell Start (Aged 25-55)				
		1st Year	2nd Year	3rd Year	4th Year	2 to 4 year average
Percentage Point Employment Premium	ATT	-0.015	-0.003	-0.011	0.003	-0.004
	S. E.	(0.015)	(0.019)	(0.020)	(0.021)	
Percentage Point Sustained Employment Premium	ATT	-0.008	-0.001	-0.012	0.005	-0.003
	S. E.	(0.012)	(0.018)	(0.019)	(0.020)	
Percentage Point Active Benefit Gap	ATT	0.017	0.005	0.034	0.022	-0.020
	S. E.	(0.019)	(0.022)	(0.023)	(0.024)	

As suggested in the Conclusions, this study produces robust evidence on the returns to FE learning, but it is very much a first step and opens up the potential for many other projects. The use of a multiple treatment approach is one such area where more work is required, as the current analysis pushes the data to its limits. Any findings therefore need to be considered with care. However, with this in mind, we find some evidence for selection of unemployed individuals who find it harder to secure employment, into ND *Training* interventions (when compared to *Work Experience* interventions); but returns are much more apparent for FE achievers amongst this ND *Training* group.

Overall ND *Work Experience* is correlated with better results in the labour market than ND *Training* interventions (because those people attending *Work Experience* tend to have more favourable labour market histories), but FE learners in the ND *Training* group secure good labour market returns.

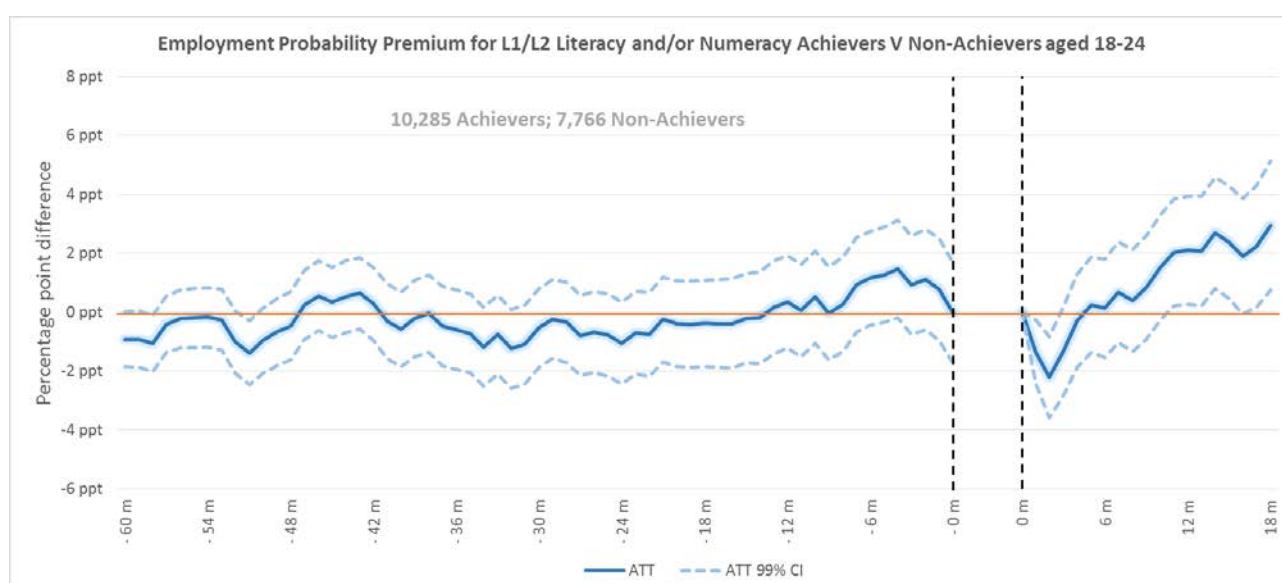
7. Estimates for Post-2011 Cohort: STU

The analysis in this section of the report sets out a range of estimates of the value added from FE learning for the unemployed, when that FE learning is delivered during the initial STU phase of the unemployment spell, but this time for individuals in Cohort 2 – comparing achievers and non-achievers in cell [A2] of Figure 1. We consider employment, outcomes for two key categories of FE learner, (i) *L1/L2 Maths and/or English* and (ii) *FL2+*. For these categories we are able to compare the emerging evidence on returns for Cohort 2, to those uncovered in Section 3.1. If we find no evidence of statistically significant returns emerging in the early months after the start of learning in this section, there would be some question over the relevance of estimates produced from the 2006-2008 cohort.

As we shall see, there is extensive evidence that similarly good returns to FE learning are emerging in the current environment and therefore, that the policy conclusions arising from our analysis of the ND period remain relevant going forward.

Figure 20 presents the estimated employment premium for all unemployed individuals aged 18 to 24 who we observe achieving a *L1/L2 Literacy and/or Numeracy aim*, relative to those with the same aims, who do not achieve; amongst those of Cohort 2. The findings suggest that there is a rising percentage point employment premium for achievers which is rising above 2 ppts by the 18th month and statistically significant from a point around 10 months after the start of learning. Clearly we must be careful in coming to any strong conclusions with only 18 months of employment returns, but it is encouraging that the first 18 months of Figure 20 are almost identical to those during the first 18 months of Figure 3 in Section 3.1.

Figure 20: Percentage point employment probability premium for L1/L2 Literacy and/or Numeracy Achievers, compared to Non-achievers: STU aged 18 to 24, in the post-2011 cohort (Cohort 2)



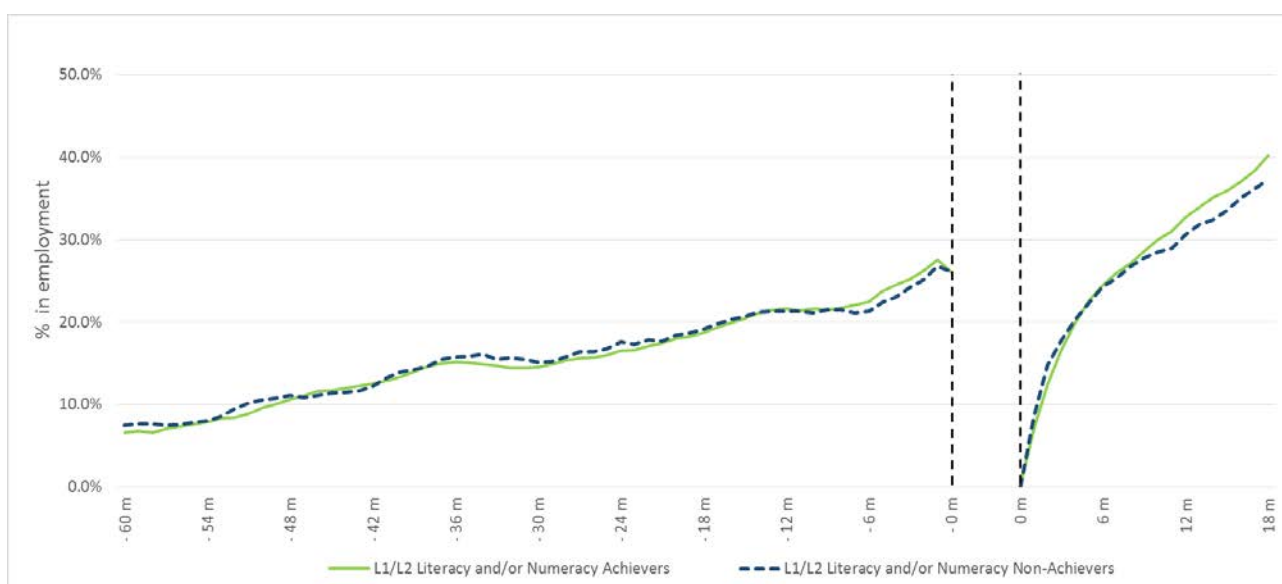
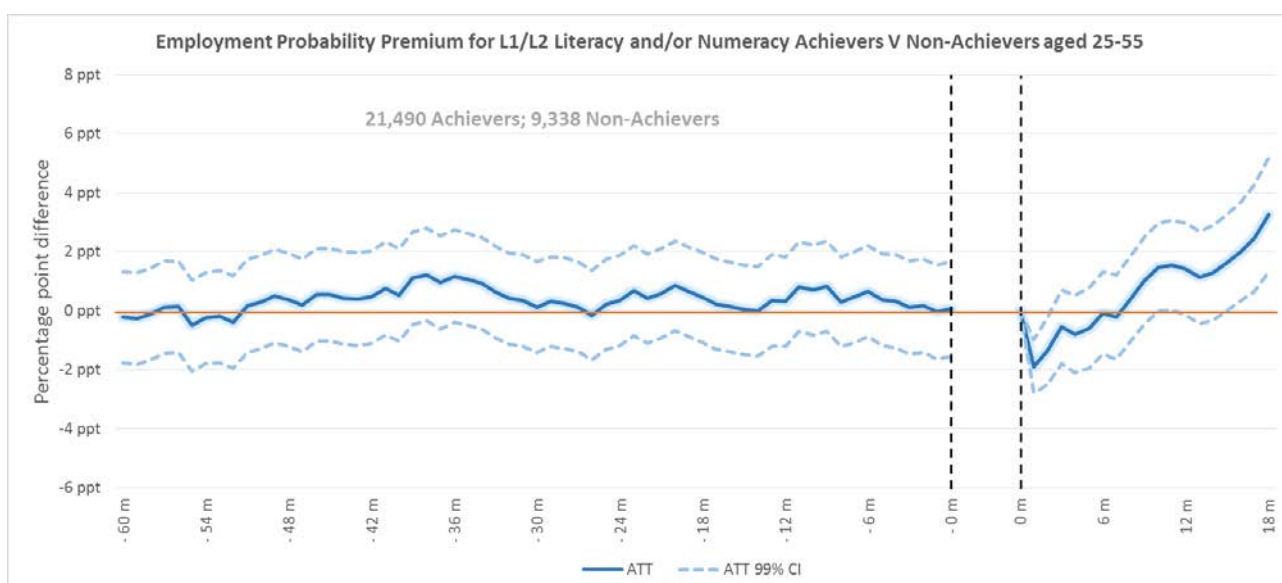
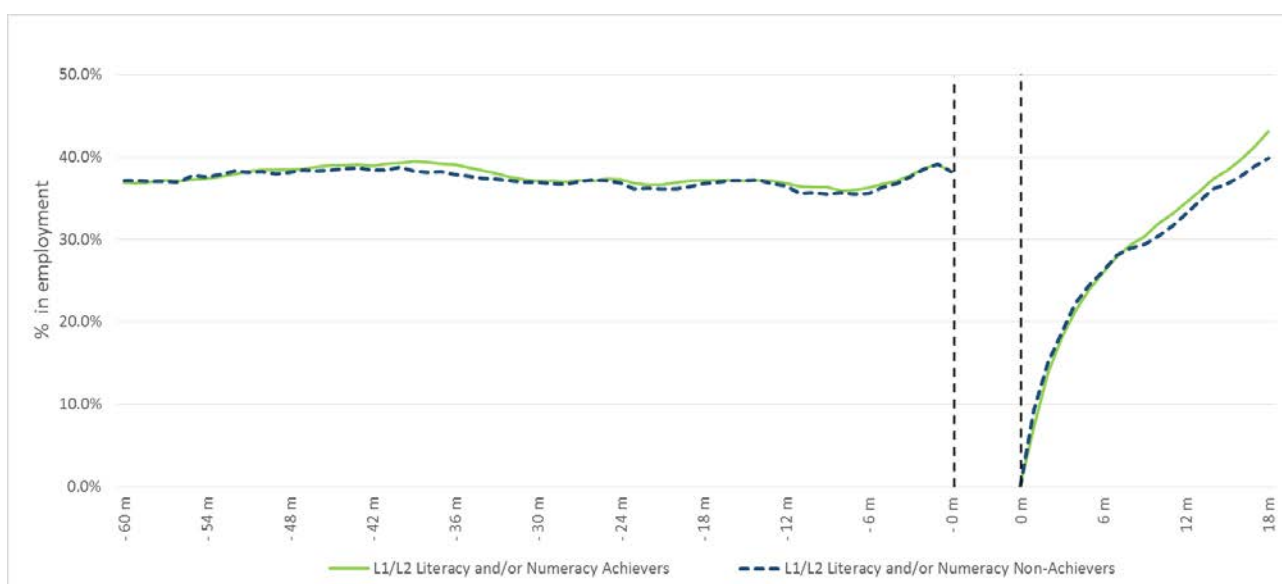


Figure 21 provides similarly encouraging initial evidence that the statistically significant impacts from achievement of *L1/L2 Maths and/or English* identified in Figure 6 for those aged 25+ in Cohort 1, are also emerging for the first 18 months from the start of learning for Cohort 2 achievers of the same age. If anything the emergence of a significant premium occurs a little earlier in Figure 21, although there is a lightly more pronounced lock-in effect, which likely results from drop-outs amongst the non-achievers securing employment whilst achievers are still training. This may be more pronounced in cohort 2, because we have a greater proportion of individuals undertaking additional learning aims at L1 alongside their L1/L2 Maths and/or English learning – our estimates of value added control for these additional aims (and whether they are achieved or not), but we would still see more of a lock-in effect amongst those of cohort 2 if achievers are learning for longer.

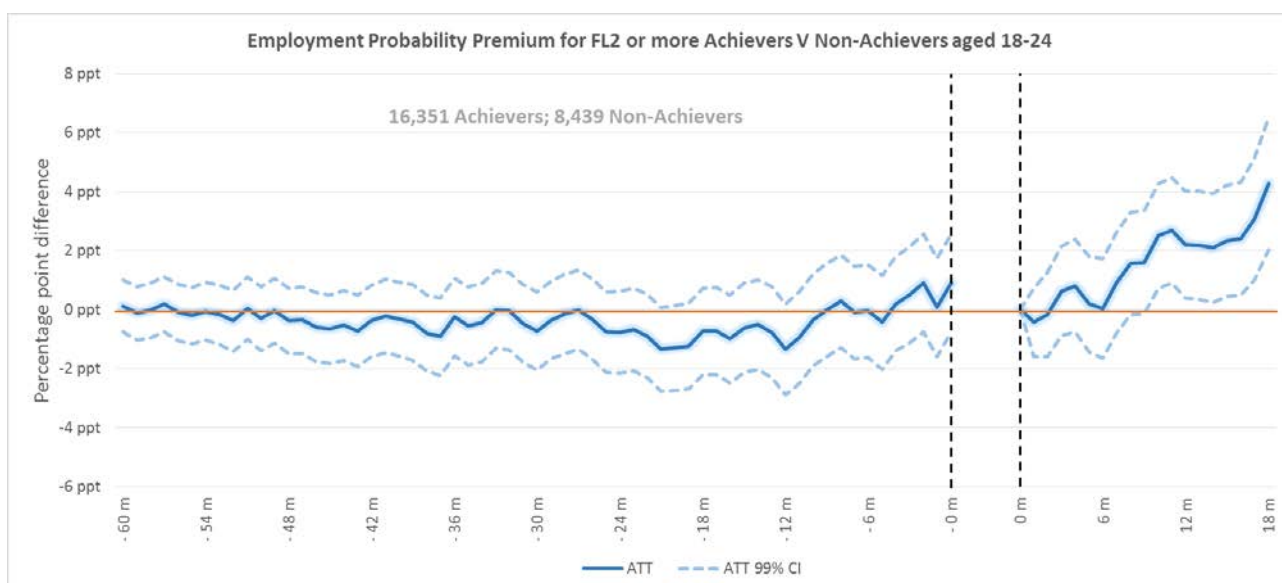
Figure 21: Percentage point employment probability premium for L1/L2 Literacy and/or Numeracy Achievers, compared to Non-achievers: STU aged 25+, in the post-2011 cohort

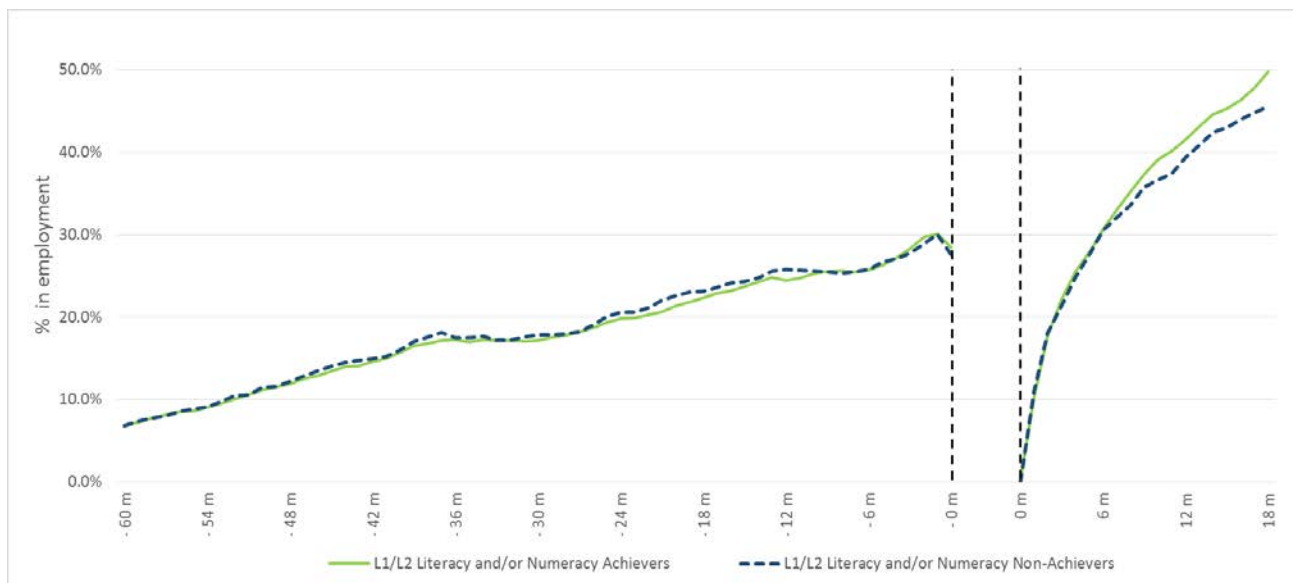




In Section 3.1, Table 6 we have evidence that those aged 18 to 24 secure very good returns of around 6.8 ppts between the second and fourth year after the start of learning, and Figure 22 suggests the emergence of a similarly favourable estimated return during the first 18 months after learning for individuals of the same age in Cohort 2. From a point 9 months on from the end of learning we observe a statistically significant impact, which has risen above 4 ppts by the end of 18 months (with the lower bound of the 99% confidence interval around this estimate, hitting 2 ppts at the same time).

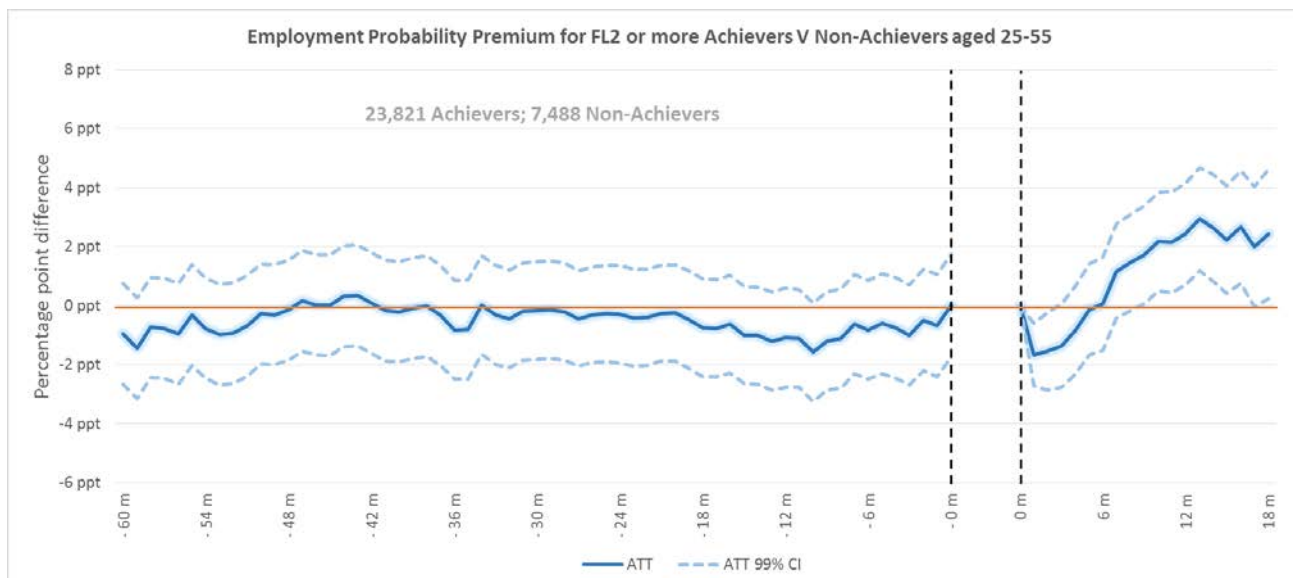
Figure 22: Percentage point employment probability premium for FL2 or more Achievers, compared to Non-achievers: STU aged 18 to 24, in the post-2011 cohort

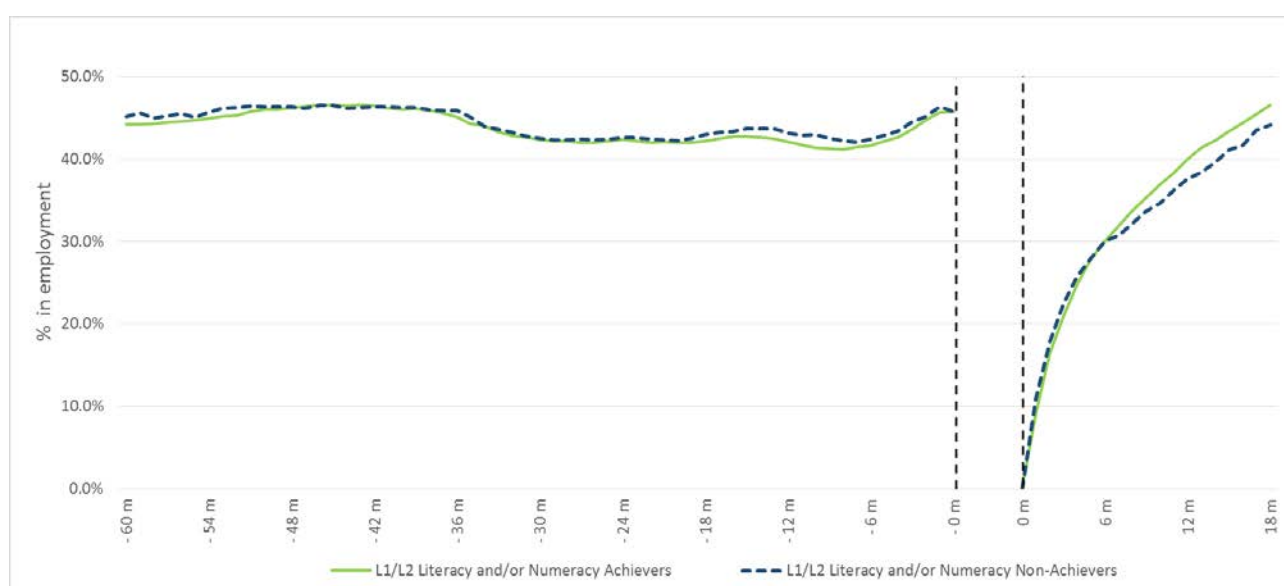




Finally, Figure 23 identifies statistically significant returns to learning at FL2+ for those aged 25+ in cohort 2, from a point around 8 months on from the start of learning. This contrasts to the statistically significant estimates for cohort 1 achievers identified in Table 6, which do not emerge until much later. Once again we have evidence that the significant impacts of FE learning identified for our earlier cohort of learners, are emerging in a similar way amongst more recent cohorts of FE learners.

Figure 23: Percentage point employment probability premium for achievement of learning at FL2 or more, compared to Non-achievers: STU aged 25+, in the post-2011 cohort





Clearly we must be careful in the conclusions we reach with only 18 months of employment returns to consider. However, on the flip side, this 18 months only seems like a short time period because we have such an extended period over which to consider returns in Section 3.1. All the evidence suggests that the positive and significant employment returns to FE learning that we identify amongst those of Cohort 1, are also evident in the outcomes of Cohort 2. This provides strong support for the suggestion that, conclusions and recommendations from our analysis of the 2006-2008 cohort of individuals remain relevant for the current policy context.

8. Conclusion

This report is the latest in a series of studies that analyse the returns to FE learning using matched ILR-WPLS administrative data (for instance, Patrignani and Conlon (2011); Buscha and Urwin, 2013; Cerqua and Urwin, forthcoming). The investigating here identifies the labour markets returns for a specific subgroup within the wider populations that have formed the focus of study in this programme of research - identifying the returns to FE Learning for the unemployed in England.

We estimate the value added of FE learning, as captured by the proportions in (i) employment (ii) sustained employment (i.e. lasting continuously for 6 months or more) and (iii) on active benefits, during each of the 60 months after the start of FE learning. Most of our estimates are created using a cohort of individuals who enter unemployment prior to 2010 (Cohort 1) and therefore we undertake an analysis of FE learning aims in Cohort 2. Whilst we can only look at returns over the first 18 months for this more recent cohort, there is strong evidence that the value added estimates for FE learners prior to 2011 amongst Cohort 1; are emerging in a similar way amongst FE learners in Cohort 2. This leaves us confident that the following findings and policy implications are relevant for current and future policy contexts.

As with other studies in this series that have used ILR-WPLS data, we find that FE learning provides good returns for unemployed individuals, whether we consider those in the STU or LTU phases of unemployment. We utilise an achiever V non-achiever comparison to overcome concerns that those in FE have more disadvantaged labour market profiles (compared to those outside of FE); and argue that the inability to adequately control for this in survey-based studies, may be responsible for previous low estimated returns. We are also able to compare outcomes for achievers against a more general control group who do not undertake FE learning during our period of analysis. The findings provide further support for the use of this approach to estimation, particularly considering the sort of FE learning that unemployed individuals in our cohorts undertake - much of which is at L2 and below.

From the evidence presented in this study, what type of learning works best and for whom?

L1/L2 Maths and/or English when held as highest learning aim:

For both STU and LTU we find statistically significant employment and sustained employment returns for achievers of *L1/L2 Maths and/or English*; ranging between 2.4 and 2.8 ppts. The lower estimates of overall benefit impact in the STU period are driven by the experiences of those aged 25+, for whom we find no impact on active benefit rates in either the STU or LTU periods – whilst for those aged 18 to 24 we find that achievers are significantly less likely to be on benefits in the years after learning start (between -1.7 and -2.9 ppts in the STU and LTU periods respectively). Similarly, much of the employment and sustained employment impact is driven by those aged 18 to 24, but with some evidence of impact for those aged 25+, especially in the STU period. Furthermore, the impacts are slightly more pronounced for men than for women.

Preparation for work at L1 or Below:

For both STU and LTU we find statistically significant employment and sustained employment returns for achievers of *Preparation for Work*: ranging between 2.1 and 3.9 ppts. In the STU period, achievement of these aims provides higher returns for those aged 18 to 24 (though they also have good returns in the LTU period); but for those aged 25+ the opposite is true, with employment and sustained employment returns in the LTU period ranging from 3.6 to 4.1 ppts (though again, we also uncover some significance of returns during the STU phase). Benefit impacts are much less pronounced for this group of achievers and this picture of returns seems to hold for both men and women (though men again have slightly higher returns in the STU period).

Level 2 when held as highest learning aim:

For the STU we find statistically significant employment and sustained employment returns for achievers of *Level 2*: ranging between 2.6 and 3.2 ppts. However, for both age groups we find no impact of this form of FE learning during the LTU phase – it is possible that this may be a result of limitations in our ability to identify transitions from FE to HE, but it would be unusual that this impacted for the LTU and not the STU. Interestingly, we do identify significantly better active benefit outcomes for achievers of these FE learning aims in both the STU and LTU phases, - 2.1 ppts and -3.3 ppts respectively. However, this is predominantly driven by the experiences of 18 to 24 year olds. At Level 2 we find that women secure slightly higher employment and sustained employment premiums; but men secure much more of a benefit impact, with male achievers being 4.6 ppts less likely to be on benefits between 2 and 4 years after the start of learning (compared to a figure of - 2.5 ppts for women).

Full Level 2+, held as highest FE qualification aim:

For the STU and LTU we find statistically significant employment, sustained employment and active benefit returns for achievers of *Full Level 2+*: but with some evidence that our estimates are under-stated in areas due to the lack of a wholly accurate HE flag. Overall employment and sustained employment returns range from 2.4 to 5.4 ppts and STU achievers are 3.3 ppts less likely to be on benefits 2 to 4 years after the start of learning, and the gap for LTU achievers is -5 ppts. For 18 to 24 year olds in both the STU and LTU periods, we estimate employment and sustained employment impacts that range from 6.8 to 7.8 ppts and the benefit gap is between -5.7 and -6.2 ppts. Therefore, it is returns for the 25+ age group that are much lower - though employment and sustained employment returns for the 25+ age group are still 3.6 and 3.8 ppts and we identify benefit impacts of -4.1 ppts. For men and women aged 18 to 24 in the STU period, returns deviate very little from the overall estimates according to gender – both men and women in this age group are securing good returns to FE learning.

However, the evidence is that achievement of ESOL (English for Speakers of Other Languages) learning produces no significant impacts. In contrast, we find that those aged 25+ who achieve ESOL qualifications in the STU Phase are 3.8 ppts more likely to be on benefits 2 to 4 years after the start of learning. When we disaggregate

these findings by gender, we can see that both sexes secure no employment or sustained employment returns to ESOL learning; and that the higher probability of achievers being on benefits in the years after the start of learning, applies to both men and women. Though as our discussion suggests, one should consider these findings with caution.

Similarly, we must be careful in interpretation, as each of our achieving groups may contain different types of individual, and it is not necessarily the case that impacts would transfer seamlessly between treatment groups. However, we have additional findings that provide support for a policy that ensures any *Preparation for Work* aims are accompanied by more substantial learning aims, for those in the 25+ age group.

Most of our estimates are created using a cohort of individuals who enter unemployment prior to 2010 (Cohort 1) and therefore we undertake an analysis of FE learning aims in Cohort 2. Whilst we can only look at returns over the first 18 months for this more recent cohort, there is strong evidence that the value added estimates for FE learners prior to 2011 amongst Cohort 1; are emerging in a similar way amongst FE learners in Cohort 2. Leaving us confident that the following findings and policy implications are relevant for the current and future policy contexts.

How Robust are our Estimated Returns?

The fact that we are able to compare estimates obtained using an achiever V non-achiever approach, with those obtained by comparing achievers with those who do not undertake FE learning, allows us to refute one of the main previous challenges to this programme of work. Using an achiever V non-achiever approach it was possible (though highly unlikely given the evidence already amassed) that higher estimated impacts were a result of non-achievers experiencing one-off negative impacts (such as illness or family breakdown) that over-inflated estimated returns. This is clearly not the case, as our results for 18 to 24 year olds using a *No FE* control group, support those secured using the achiever V non-achiever comparison; and for those aged 25+ they are actually higher.

More technically,

- Coarsened Exact Matching ensures treated & control groups are exactly matched extensively on **observable** characteristics.
- We ensure that there are no statistically significant differences in employment outcomes between treated and control for 5 years prior to benefit claim start date (using a 99% confidence interval). This better ensures that treated & control groups do not differ on **time-invariant unobservable characteristics** (like motivation).
- We use two control groups to create counterfactual outcomes. Learning start dates for the No-FE control group are imputed and it seems inconceivable that this No-FE group suffer one-off unobservable impacts at this 'imputed' learning start date. These estimates support the generally positive findings from the Achiever V Non-achiever estimates, providing strong evidence that our positive findings are not being driven by one-off **time-varying unobservables** (like sudden illness or family breakdown).

Furthermore, the findings have wider policy implications:

- We are able to identify a group of individuals within the No-FE population, who can be matched to those who undertake FE learning aims,
- and we find that FE learners have significantly improved outcomes, when compared to this No FE control group.

This suggests that there are individuals who are not currently engaged in FE learning, who are very similar to those engaged in FE learning, and therefore have the potential to benefit from such learning.

Clearly the differences in findings between an (i) achiever V non-achiever and (ii) achiever V No ILR comparison for those aged 25+ paints a complicated picture. However, the estimated returns actually rise when we compare to a No ILR group. This provides some insight into what may have happened in the survey-based studies. When considering those aged 18 to 24 who have an unemployment spell, whom we match on employment history, and also on the extent to which we see flags of need in the LMS, we find that the non-achiever group and the No ILR group provide similar counterfactual outcomes; because we don't have such (potentially unobservable) heterogeneity amongst the two groups. We have individuals at similar stages of their career and we are able to capture differences between treatment and control that might influence outcomes – as a result our matching using two different control groups leads to very similar counterfactual estimates.

In contrast, those who we see engaged in FE learning from the group of unemployed aged 25+, are a selection of individuals from a much more heterogeneous group, who can be at very different stages of their careers, having very different reasons for being unemployed and therefore widely varying labour market opportunities. When we match on labour market histories and other variables, we remove a lot of this heterogeneity, but we still see some difference in counterfactual outcomes when estimated using a No ILR group, as compared to the non-achiever group.

It is clear that the strength of our approach is not just based on the comparison of achievers and non-achievers, as we get similarly positive findings when comparing achievers and those with No ILR. The strength is also in the ability of administrative data to control for much of the negative selection into FE that survey-based studies are not able to observe. This is especially amongst older age groups where even the selection of those with no qualifications in survey-based studies as a control group, leaves a group of individuals with varied labour market prospects, that are generally better than those who select into FE, in ways that cannot be observed.

In contrast, the ILR-WPLS-ND-LMS admin data allows us to capture and control for much of these problems, but even with the admin data, selecting unemployed individuals and using an analysis that matches on 60 months of labour market history, we can see that unobservable impacts for the 25+ age group can still alter our findings if we do not compare to a group who similarly select into FE.

Finally, it is worth noting that one of the previous challenges to the achiever V non-achiever approach, was that achiever V non-achiever differences could be driven by

those who achieve being more likely to be in employment when ILR learning starts; compared to non-achievers. i.e. those who start training as part of a new job are more likely to achieve, and therefore subsequently more likely to be in employment and/or earning higher wages (the argument on wages is that, as training is part of the new job, compared to non-achievers who may be more likely to start jobs that do not include training, this selection possibly explains achiever V non-achiever earnings premiums). The analysis here is limited to those who are not in employment at the start of training and significant impacts remain, refuting this challenge.

This study represents a significant contribution to both the policy and academic literatures, and confirms that FE learning produces good labour market outcomes for some of the most disadvantaged groups in the English labour market.

Technical Appendix

Readers who wish to gain a more detailed understanding of the business rules used to create the data, and technical detail on aspects of the approach to estimation, should refer to the accompanying Phase I report (including Technical Appendix) and the online Technical Appendix.

Table 27: Summary Labour Market Outcomes for Achievers at L2 or Below, compared to Non-achievers: LTU aged 25+ in the pre-2011 cohort who Start a ND Work Experience intervention

[2,615 Achievers with ND Work Exp. Start V 869 Non-Achievers with ND Work Exp. Start]

		Percentage Point Employment/Sustained Employment and Benefit Premium/gap in Years after Learning Spell Start (Aged 25-55)				
		1st Year	2nd Year	3rd Year	4th Year	2 to 4 year average
Percentage Point Employment Premium	ATT	-0.012	-0.020	-0.007	0.019	-0.003
	S. E.	(0.014)	(0.018)	(0.019)	(0.020)	
Percentage Point Sustained Employment Premium	ATT	-0.005	-0.009	-0.002	0.025	0.005
	S. E.	(0.012)	(0.017)	(0.018)	(0.019)	
Percentage Point Active Benefit Gap	ATT	0.011	0.011	0.007	-0.020	-0.001
	S. E.	(0.018)	(0.021)	(0.021)	(0.022)	



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