

The economic and social impact of Leeds Trinity University

Final Report for Leeds Trinity University



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Foreword

Great universities shape and are shaped by the places in which they are rooted.

Here at Leeds Trinity University, we are committed to and proud of our relationship with the city of Leeds and the wider West Yorkshire region.

Established in 1966 as two Catholic teacher training colleges, Leeds Trinity has evolved and developed over the last 50 years to provide a diverse education offer and become a career-led University, with a strong focus on employability.

And as we continue to grow, we remain committed to widening participation in higher education and to the opportunities this provides for students from all backgrounds to fulfil their potential, guided by our Catholic Mission and values.

We are also proud to be a member of the Leeds Anchor Network and work with some of the region's biggest organisations to make a positive difference for people across the city. This means delivering more for Leeds as an employer, through procurement, service delivery and working collaboratively as a civic partner on social and environmental challenges, such as the climate crisis.

In Summer 2023, we commissioned London Economics to look at the different ways in which Leeds Trinity University contributes to the success of Leeds, West Yorkshire and the UK, and to calculate our economic and social impact during the 2021/22 academic year.

We are proud to make a difference – but this is just the starting point.

At Leeds Trinity, we are investing over £50m as part of our campus masterplan.

This includes transforming our current Main Campus in Horsforth with the addition of new state of the art facilities to support the NHS in addressing skills gaps in Nursing, Allied Health and Life Sciences. The investment in these areas equates to capital spend of approximately £5m for our new modular health building, and upgrades to existing facilities. Investment in our Nursing and Biomedical courses relates to annual salary expenditure of around £1.1m.

Also in the 2024/25 Academic Year, we will open our new high profile Leeds City Campus at No 1 Trevelyan Square, we're excited at the prospect of working even more closely with employers from across the region to help our students develop new skills for the new economy.

Furthermore, we continue to cultivate a research-led culture that will benefit businesses and stakeholders in the region and are taking an increasingly international viewpoint to enhance our offer. Underpinning this approach is our work to embed social justice and create a sustainable environment in all aspects of how and where we work, aligned to the United Nations Sustainable Development Goals (SDGs).

As you will see in this report, Leeds Trinity University is already a highly impactful institution in the region, and with a range of exciting plans in place, our economic and social contribution will increase significantly in the next decade.

Professor Charles Egbu
Vice-Chancellor
Leeds Trinity University

Executive Summary

London Economics were commissioned by Leeds Trinity University to analyse the economic impact associated with the University's activities in the 2021-22 academic year. Rather than just considering the traditional direct, indirect, and induced impacts associated with Leeds Trinity University's **physical footprint** (in terms of the institution's expenditures), this analysis also incorporates the economic impact associated with the University's extensive **teaching and learning activities**.





The aggregate economic impact of Leeds Trinity University

The total economic impact on the UK economy associated with Leeds Trinity University's activities in 2021-22 was estimated at approximately **£657 million** (see Table 1). In terms of the components of this impact, the value of the impact generated by the University's **teaching and learning activities** was estimated at **£554 million (84%)**, while the impact of the **operating and capital expenditures of the University** accounted for **£103 million (16%)**.

The total economic impact associated with Leeds Trinity University's activities in 2021-22 stood at £657 million.

Table 1 Total economic impact of Leeds Trinity University's activities in the UK in 2021-22 (£m)

Type of impact		£m	%
	Students	£264m	40%
	Exchequer	£290m	44%
	Direct impact	£45m	7%
	Indirect and induced impact	£58m	9%
Total economic impact		£657m	100%

Note: All estimates are presented in 2021-22 prices, rounded to the nearest £1m, and may not add up precisely to the totals indicated.

Source: London Economics' analysis

Compared to the University's total operational costs of approximately **£48 million** in 2021-22¹, the total impact of Leeds Trinity University's activities on the UK economy was estimated at **£657 million**, which corresponds to a **benefit to cost ratio of approximately 13.7:1**.²



The impact of Leeds Trinity University's teaching and learning activities

The analysis of the impact of Leeds Trinity University's teaching and learning activities estimates the **enhanced employment and earnings benefits to graduates**, and, separately, the **additional taxation**

¹ This relates to the University's total operating expenditure (including depreciation and movements in pension provisions), excluding capital expenditure.

² The economic impact of Leeds Trinity University's teaching and learning activities includes students studying both on-campus and at the University's franchise partners. In contrast, operational costs were only available for Leeds Trinity University, and not for partner institutions. Therefore, the benefit-to-cost ratio presented here may be an overestimate.

receipts to the public purse associated with higher education qualification attainment at the University³. The analysis is adjusted for the characteristics of the **6,535** UK domiciled students who started a higher education qualification (or Degree Apprenticeship) at Leeds Trinity University in the 2021-22 academic year.

The total economic impact of Leeds Trinity University's teaching and learning activities in 2021-22 stood at £554 million.

Incorporating both the expected costs associated with qualification attainment and the labour market benefits expected to be accrued by students/graduates over their working lives, the analysis suggests that the **net graduate premium** achieved by a representative UK domiciled student in the 2021-22 cohort completing a **full-time first degree** at Leeds Trinity University stands at approximately **£34,000** (in 2021-22 money terms). Separately, taking account of the benefits and costs to the public purse, the analysis indicates that the corresponding **net Exchequer benefit** associated with these students stands at **£47,000**.⁴

The net graduate premiums and net Exchequer benefits were combined with information on the number of students starting qualifications at Leeds Trinity University⁵ in 2021-22, and expected completion rates. The aggregate economic impact generated by the teaching and learning activities associated with the 2021-22 cohort stood at approximately **£554 million** (see Table 2). This is split approximately evenly between the Exchequer and students/graduates: **£264 million (48%)** of the total economic benefit generated is accrued by students/graduates undertaking qualifications at Leeds Trinity University, while the remaining **£290 million (52%)** is accrued by the Exchequer.

Table 2 Aggregate impact of Leeds Trinity University's teaching and learning activities associated with the 2021-22 cohort (£m), by beneficiary, mode, and level of study

Beneficiary and study mode	Study level			
	Undergraduate qualifications	Degree Apprenticeships	Postgraduate qualifications	Total
Students	£209m	£33m	£22m	£264m
Full-time	£204m	-	£8m	£212m
Part-time	£5m	£33m	£14m	£52m
Exchequer	£238m	£25m	£27m	£290m
Full-time	£235m	-	£12m	£248m
Part-time	£2m	£25m	£15m	£42m
Total	£447m	£58m	£50m	£554m
Full-time	£439m	-	£20m	£460m
Part-time	£7m	£58m	£29m	£94m

Note: All estimates are presented in 2021-22 prices, discounted to reflect net present values, and rounded to the nearest £1m. Due to rounding, figures may not add up precisely to the totals indicated.

Source: *London Economics' analysis*

³ The estimation of the net graduate premiums and net Exchequer benefits is based on a detailed econometric analysis of the Labour Force Survey. The analysis considers the impact of higher education qualification attainment on earnings and employment outcomes; however, as no information is specifically available on the particular HEI attended, the analysis is not specific to Leeds Trinity University alumni. Rather, the findings from the analysis are adjusted to reflect the characteristics of the 2021-22 cohort of Leeds Trinity University students (e.g. in terms of mode of study, level of study, subject mix, domicile, gender, average age at enrolment, duration of qualification, and average completion rates).

⁴ The full set of net graduate premiums and net Exchequer benefits for characteristics is presented in Annex A3.2.5.

⁵ Or its franchising partners.



The impact of Leeds Trinity University's expenditure

Leeds Trinity University's physical footprint supports jobs and promotes economic growth throughout the UK. This is captured by the **direct, indirect, and induced impact** associated with its expenditures. The **direct impact** of Leeds Trinity University's physical footprint was based on the operating and capital expenditures of the University. In 2021-22, Leeds Trinity University incurred a total of **£45 million** of expenditure (including **£41 million** of operating expenditure and **£4 million** of capital expenditure)⁶.

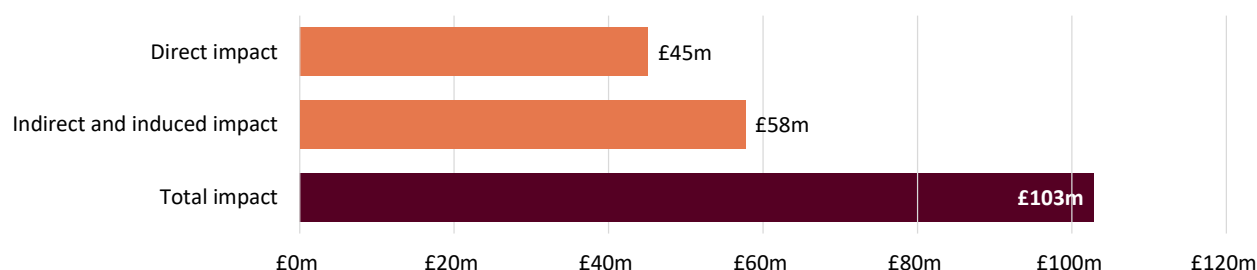
The impact of Leeds Trinity University's expenditure on the UK economy in 2021-22 stood at £103 million.

The direct increase in economic activity resulting from the expenditures of Leeds Trinity University generates additional rounds of spending throughout the economy (through the University's supply chains, and the spending of staff). The total direct, indirect, and induced impacts of these activities was estimated using relevant economic multipliers derived from a (multi-regional) Input-Output model. Using this approach, the analysis estimates that the **total direct, indirect, and induced impact** associated with Leeds Trinity University's expenditures in 2021-22 stood at **£103 million** (see Figure 1).

In terms of **region**, the majority of this impact (**£67 million, 65%**) occurred in **Yorkshire and the Humber**, while the remainder (**£36 million, 35%**) was accrued across the rest of the UK.

In relation to the **sector of impact**, in addition to the impacts occurring in the government, health, and education sector itself (**£50 million, 49%**), there are also large impacts felt within other sectors of the economy, e.g. including the distribution, transport, hotel, and restaurant sector (**£13 million, 13%**), the production sector (**£12 million, 12%**), and the real estate sector (**£8 million, 8%**).

Figure 1 Impact associated with Leeds Trinity University's expenditure in 2021-22 (£m)



Note: All estimates presented in 2021-22 prices, rounded to the nearest £1m, and may not add up precisely to the totals indicated.

Source: London Economics' analysis

In terms of the number of FTE jobs supported, Leeds Trinity University's expenditure supported a total of **915 FTE jobs** across the UK economy in 2021-22, of which **680 (74%)** were based in Yorkshire and the Humber, and the remaining **225 jobs** were located across the rest of the UK⁷.

⁶ The total operational expenditure (excluding capital expenditure) of Leeds Trinity University in 2021-22 stood at **£48 million**. From this, for the purpose of the analysis, we excluded **£3 million** in depreciation costs and **£3 million** in movements in pension provisions, as it is assumed that these are not relevant from a procurement perspective (i.e. these costs are not accounted for as income by other organisations). The figures are rounded to the nearest £1m and may not add up precisely to the totals indicated.

⁷ Totals may not add up precisely due to rounding.

1 Introduction

London Economics were commissioned to assess the **economic impact of Leeds Trinity University to the United Kingdom**, focusing on the 2021-22 academic year. Leeds Trinity University contributes to the UK's national prosperity through a range of activities and channels, and the analysis is split into:

- The economic contribution of Leeds Trinity University's provision of **teaching and learning**; and
- The impact of Leeds Trinity University's **operating and capital expenditures**.

Reflecting these channels of impact, the remainder of this report is structured as follows.

In **Section 2**, we assess the improved labour market earnings and employment outcomes associated with higher education attainment at Leeds Trinity University. Through an assessment of the expected lifetime benefits and costs associated with educational attainment, we estimate the net economic benefits of the University's teaching and learning activity to its graduates and the public purse (through enhanced taxation receipts), focusing on the cohort of **6,535** UK domiciled students who started higher education qualifications at Leeds Trinity University in 2021-22.

The University's substantial physical footprint supports jobs and promotes economic growth throughout the UK economy. **Section 3** presents our estimates of the direct, indirect, and induced economic impacts associated with the operating and capital expenditures incurred by Leeds Trinity University in 2021-22.

Finally, **Section 4** of this report **summarises** our main findings.

2 The impact of Leeds Trinity University's teaching and learning activities

Economic impact analyses of higher education institutions typically only consider the direct, indirect, and induced economic effects of a university's expenditures (generated as a result of an institution's extensive supply chains and expenditure on employing staff), as well as the economic impacts associated with the expenditures of students attending the institution. However, given that one of universities' primary activities is to provide teaching and learning, a simple study of this nature would significantly underestimate the impact of any higher education institution's activities on the UK economy.

In terms of measuring the impact of universities' teaching and learning activities, Atkinson's (2005) report to the Office for National Statistics asserted that the economic value of education and training is essentially the **value placed on that qualification as determined by the labour market**. Based on this approach, in this section of the report, we detail our estimates of the economic impact of the teaching and learning activities undertaken at Leeds Trinity University, by considering the labour market benefits associated with enhanced qualification attainment and skills acquisition – to **both the individual and the public purse**.

2.1 The 2021-22 cohort of UK domiciled Leeds Trinity University students

The analysis of the economic impact of the teaching and learning activities of Leeds Trinity University is based on the **2021-22 cohort of UK domiciled students**. In other words, instead of the University's entire student body of **11,640** students in 2021-22 (*irrespective* of when these individuals may have started their studies), the analysis in this section focuses on the **6,535** UK domiciled⁸ students **starting higher education qualifications (or standalone modules/credits) in the 2021-22 academic year**⁹.

In terms of **level of study** (Figure 2), **84%** (**5,490** students) in this cohort of UK domiciled students were undertaking **first degrees**¹⁰, with a further **500** students (**8%**) undertaking **other postgraduate qualifications** and **300** students (**5%**) enrolled in **postgraduate taught degrees**. An additional **230** students (**3%**) were enrolled in **other undergraduate qualifications**, while the remaining **10** (**0.2%**) were enrolled in **postgraduate research degrees**¹¹.

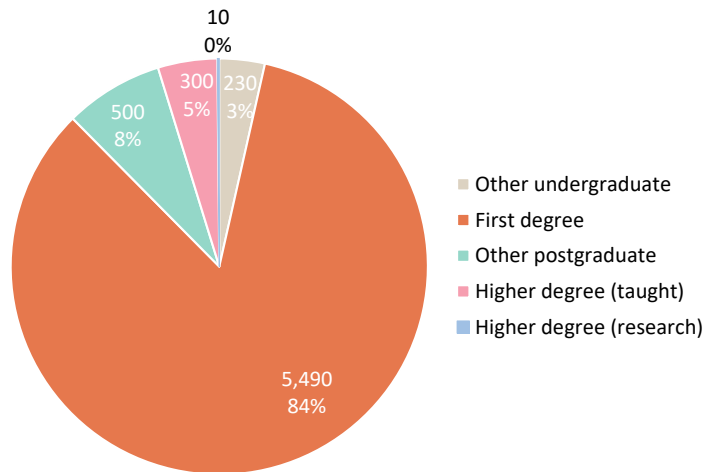
⁸ In addition to these UK domiciled students, there were also 25 international students who started HE qualifications at the University in 2021-22. A proportion of these international students will remain in the UK to work following completion of their studies; similarly, a proportion of UK domiciled students will leave the UK to pursue their careers in other countries. Given the uncertainty in predicting the extent to which this is the case, and the difficulty in assessing the net labour market returns for students not resident in the UK post-graduation, the analysis of teaching and learning focuses on UK domiciled students only. In other words, for the purposes of this analysis, we assume that all UK domiciled students will enter the UK labour market upon graduation, and that non-UK students will leave the UK upon completing their qualifications at Leeds Trinity University.

⁹ We received HESA data on a total of 6,560 first-year students from Leeds Trinity University. Of these, we excluded 5 students who did not have a stated gender, and 25 non-UK domiciled students. Figures may not add up precisely due to rounding to the nearest five students.

¹⁰ Here, the chart includes 300 students in the cohort who were enrolled in Degree Apprenticeships.

¹¹ 'Other undergraduate' learning includes Certificates of Higher Education, Foundation Degrees, and other undergraduate-level diplomas and certificates. 'Other postgraduate' learning includes taught work for credit at postgraduate level, Postgraduate Certificates in Education, and other certificates or qualifications at postgraduate level.

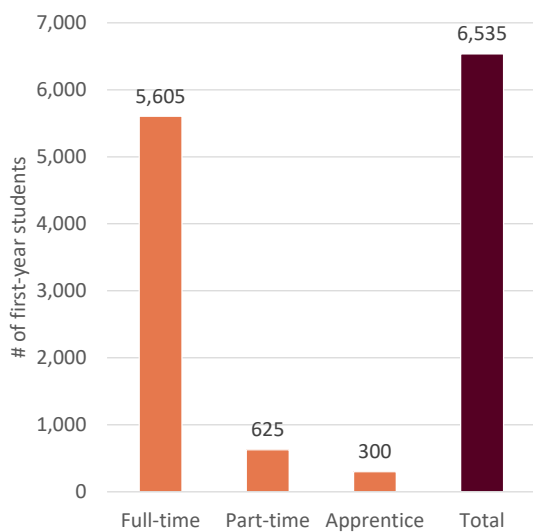
Figure 2 UK domiciled students in the 2021-22 cohort of Leeds Trinity University students, by level of study



Note: All numbers are rounded to the nearest 5, and the total values may not add up due to this rounding. 'Other undergraduate' learning includes Certificates of Higher Education, Foundation Degrees, and other undergraduate-level diplomas and certificates. 'Other postgraduate' learning includes taught work for credit at postgraduate level, Postgraduate Certificates in Education, and other certificates or qualifications at postgraduate level.

Source: London Economics' analysis based on Leeds Trinity University Higher Education Statistics Agency (HESA) data

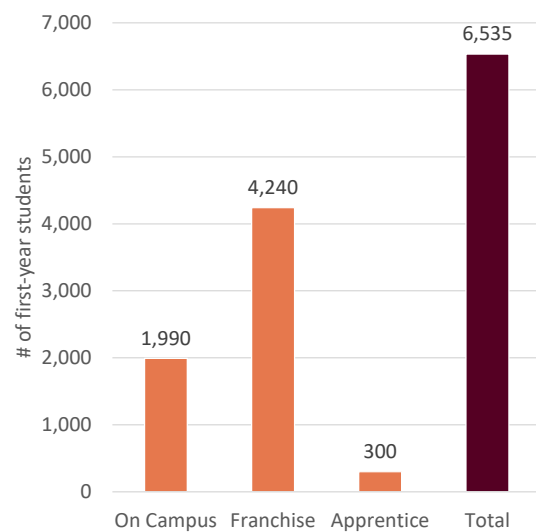
Figure 3 UK domiciled students in the 2021-22 cohort of Leeds Trinity University students, by mode of study



Note: All numbers are rounded to the nearest 5, and the total values may not add up due to this rounding.

Source: London Economics' analysis based on Leeds Trinity University HESA data

Figure 4 UK domiciled students in the 2021-22 cohort of Leeds Trinity University students, by type of provision



Note: All numbers are rounded to the nearest 5, and the total values may not add up due to this rounding.

Source: London Economics' analysis based on Leeds Trinity University HESA data

In relation to **mode of study** (Figure 3), **5,605 (86%)** students in the cohort were undertaking their studies with Leeds Trinity University on a full-time basis. A further **625 (10%)** students were enrolled on a part-time basis, while the remaining **300 (5%)** students were undertaking Degree Apprenticeships¹². As shown in Table 3, most full-time students were undertaking first degrees (**93%** of full-time students), while part-

¹² Whilst Degree Apprentices are classed within HESA data as part-time first degree students, we treat this group separately during our analysis.

time students in the cohort were predominantly enrolled in other postgraduate qualifications (**41%** of part-time students) and other undergraduate qualifications (**33%** of part-time students). All Degree Apprentices were studying at first degree level.

In terms of type of provision (Figure 4), almost **two-thirds (4,240, 65%)** of students in the cohort were undertaking their studies with a franchise partner of Leeds Trinity University. A further **1,990 (30%)** students in the cohort were studying on Leeds Trinity University's campus (i.e. were directly enrolled with Leeds Trinity University), and the remaining **300 (5%)** students were Degree Apprentices.

In terms of domicile (Table 3), over **99% (6,495 out of 6,535)** of students in the cohort were domiciled in England.

Table 3 UK domiciled students in the 2021-22 cohort of Leeds Trinity University students, by level of study, mode, and domicile

Level and mode of study	Domicile				Total
	England	Wales	Scotland	Northern Ireland	
Full time					
Other undergraduate	25	0	0	0	25
First degree	5,175	10	0	5	5,190
Other postgraduate	240	0	0	5	245
Higher degree (taught)	140	5	0	0	145
Higher degree (research)	5	0	0	0	5
Total	5,580	15	5	5	5,605
Part time					
Other undergraduate	205	0	0	0	205
First degree	0	0	0	0	0
Other postgraduate	255	0	0	0	255
Higher degree (taught)	150	5	10	0	160
Higher degree (research)	5	0	0	0	5
Total	615	5	10	0	630
Degree Apprentices					
Other undergraduate	0	0	0	0	0
First degree	300	0	0	0	300
Other postgraduate	0	0	0	0	0
Higher degree (taught)	0	0	0	0	0
Higher degree (research)	0	0	0	0	0
Total	300	0	0	0	300
Total					
Other undergraduate	230	0	0	0	230
First degree	5,475	10	5	5	5,490
Other postgraduate	495	0	0	5	500
Higher degree (taught)	285	5	10	0	300
Higher degree (research)	10	0	0	0	10
Total	6,495	15	15	10	6,535

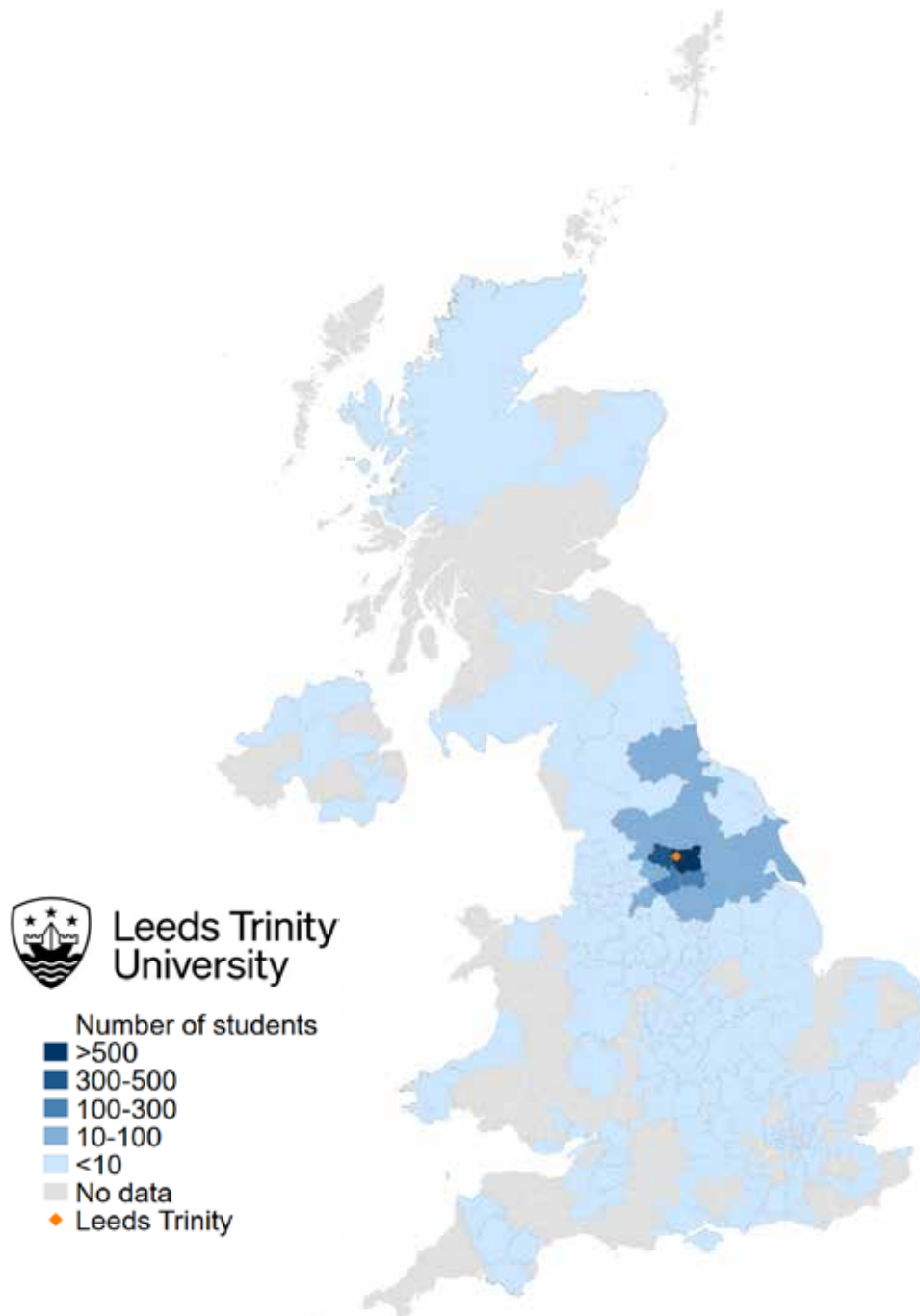
Note: All numbers are rounded to the nearest 5, and the total values may not add up due to this rounding. 'Other undergraduate' learning includes Certificates of Higher Education, Foundation Degrees, and other undergraduate-level diplomas and certificates. 'Other postgraduate' learning includes taught work for credit at postgraduate level, Postgraduate Certificates in Education, and other certificates or qualifications at postgraduate level.

Source: London Economics' analysis based on Leeds Trinity University HESA data

Figure 5 presents the distribution of on-campus students and Degree Apprentices in the 2021-22 Leeds Trinity University cohort (including students at both undergraduate and postgraduate level, where

applicable) by domicile at the Local Authority level. The map illustrates Leeds Trinity University's geographical draw, particularly from **Yorkshire and the Humber**, and specifically from Local Authorities in West Yorkshire (such as Leeds and Bradford).

Figure 5 UK domiciled first-year students in the 2021-22 cohort of on-campus and Degree Apprenticeship students, by Local Authority of domicile



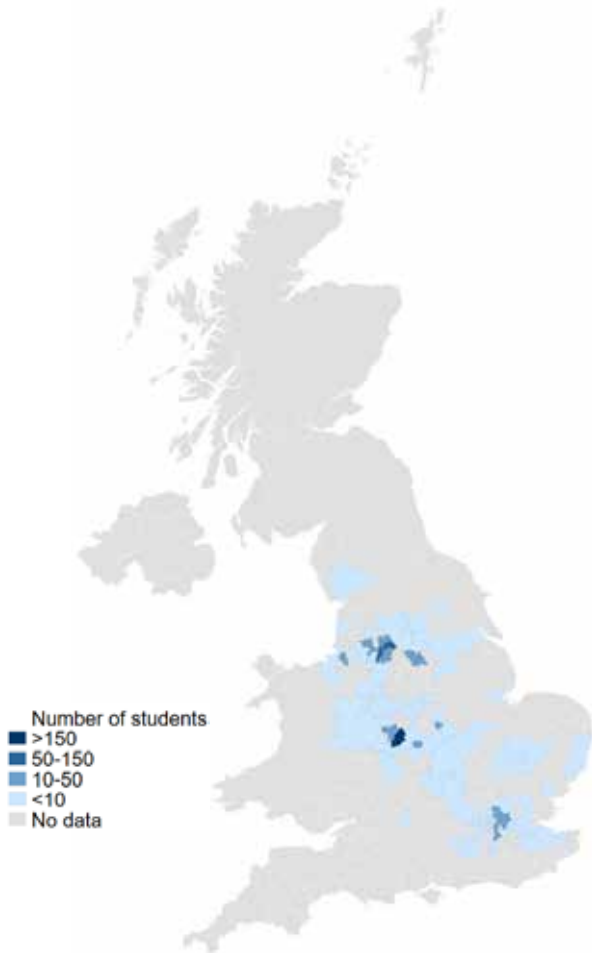
Note: Based on data on 2,298 first-year UK domiciled on-campus and Degree Apprenticeship students from Leeds Trinity University. Students from Guernsey, Jersey, and the Isle of Man or those with an unspecified postcode in the UK (2 students in total) were excluded.

Source: London Economics' analysis based on data from Leeds Trinity University and the Office for National Statistics. Contains National Statistics, OS, Royal Mail, Gridlink, ONS, NISRA, NRS and Ordnance Survey data © Crown copyright and database right 2023

Similarly, Figure 6, Figure 7, Figure 8 and Figure 9 present the distribution of the 2021-22 cohort of Leeds Trinity University students that are undertaking their qualification with a franchise partner (including the

Global Banking School, LD Training Services Limited, Scholars School System, and Waltham International College, respectively). The maps further illustrate the reach of Leeds Trinity University outside of Yorkshire and the Humber, in particular showing a concentration of these franchise students around the **West Midlands**, **London**, the **North West**, and the **East Midlands**.

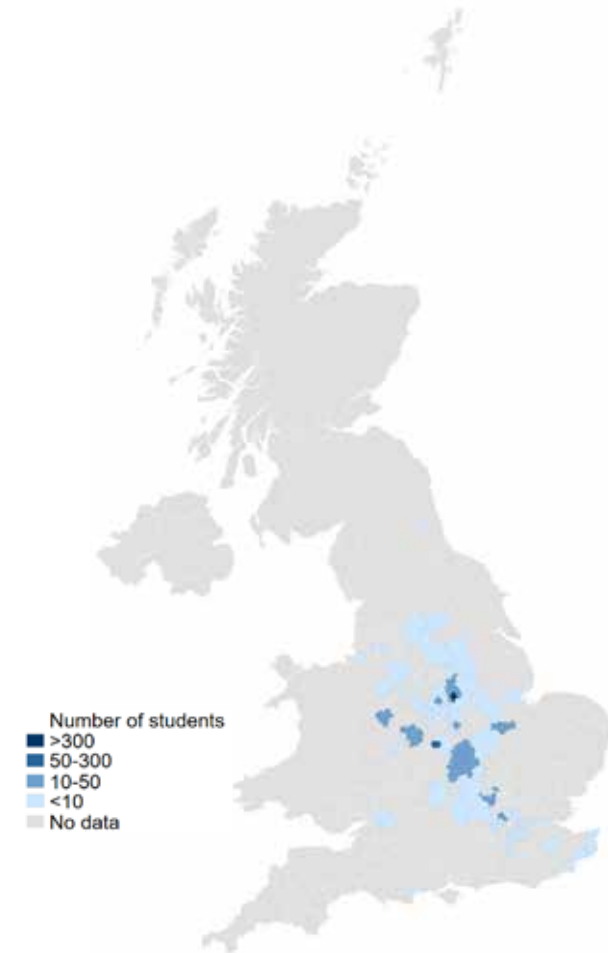
Figure 6 UK domiciled first-year students in the 2021-22 cohort studying at Global Banking School, by Local Authority of domicile



Note: Based on data on 1,179 first-year UK domiciled students enrolled in Leeds Trinity University courses at Global Banking School. Global Banking School offers Leeds Trinity University accredited programmes in London, Manchester, and Birmingham.

Source: *London Economics' analysis based on data from Leeds Trinity University and the Office for National Statistics. Contains National Statistics, OS, Royal Mail, Gridlink, ONS, NISRA, NRS and Ordnance Survey data © Crown copyright and database right 2023*

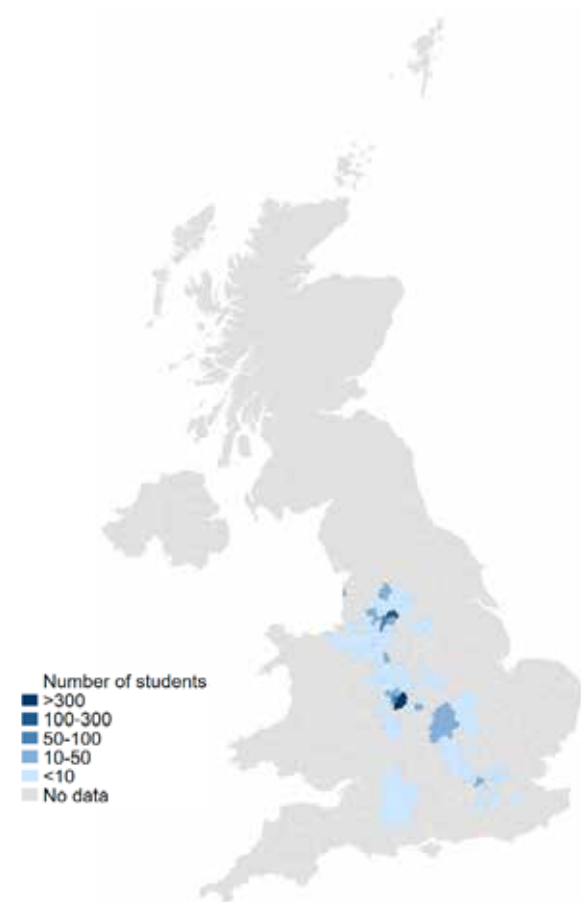
Figure 7 UK domiciled first-year students in the 2021-22 cohort studying LD Training Services Limited, by Local Authority of domicile



Note: Based on data on 1,065 first-year UK domiciled students enrolled in Leeds Trinity University courses at LD Training Services Limited. LD Training Services Limited offers Leeds Trinity University accredited programmes in Dudley and London.

Source: *London Economics' analysis based on data from Leeds Trinity University and the Office for National Statistics. Contains National Statistics, OS, Royal Mail, Gridlink, ONS, NISRA, NRS and Ordnance Survey data © Crown copyright and database right 2023*

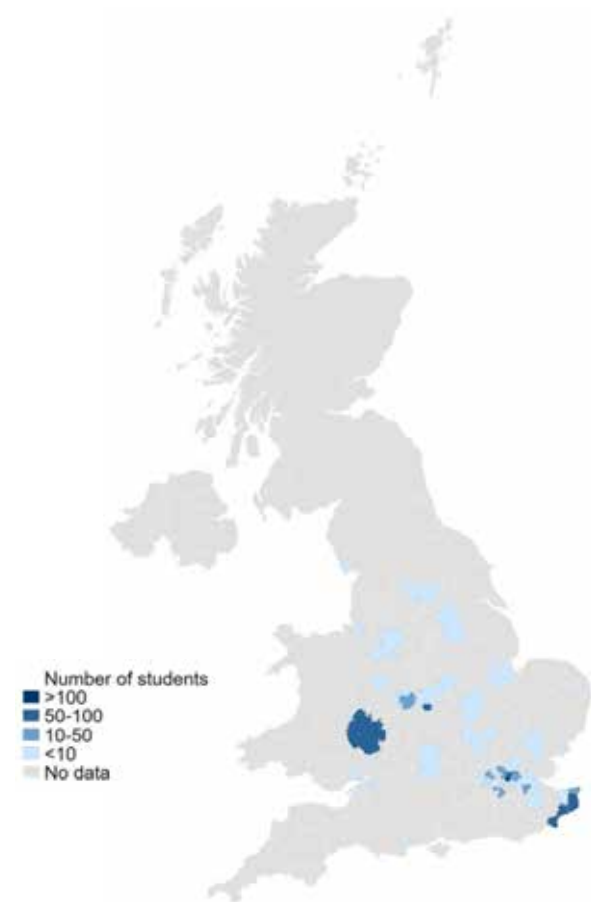
Figure 8 UK domiciled first-year students in the 2021-22 cohort studying at Scholars School System, by local authority of domicile



Note: Based on data on 1,071 first-year UK domiciled students enrolled in Leeds Trinity University courses at Scholars School System. Scholars School System offers Leeds Trinity University accredited programmes in London, Manchester, Bradford, and Birmingham.

Source: London Economics' analysis based on data from Leeds Trinity University and the Office for National Statistics. Contains National Statistics, OS, Royal Mail, Gridlink, ONS, NISRA, NRS and Ordnance Survey data © Crown copyright and database right 2023

Figure 9 UK domiciled first-year students in the 2021-22 cohort studying at Waltham International College, by local authority of domicile



Note: Based on data on 923 first-year UK domiciled students enrolled in Leeds Trinity University courses at Waltham International College. Waltham International College offers Leeds Trinity University accredited programmes in London and Birmingham.

Source: London Economics' analysis based on data from Leeds Trinity University and the Office for National Statistics. Contains National Statistics, OS, Royal Mail, Gridlink, ONS, NISRA, NRS and Ordnance Survey data © Crown copyright and database right 2023



Leeds Trinity - Supporting adult learners in local communities



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The Chapeltown & Harehills Learning Project (CAHLP) provides training and education to adult learners, particularly those who have had negative experiences or who have left learning prematurely. It was founded in 2006 by Leeds Trinity alumna, May Arthurton, who graduated in 2004 with a BA Hons Degree in English and Media.

The Project aims to work with mainstream colleges to close the skills gap for its beneficiaries, and to provide one-to-one and group learning support. Its core values are to empower and enable its students to achieve their educational goals – which is closely aligned to the vision, mission and values of Leeds Trinity.

The University’s Placements team started working with CAHLP in 2019. Since then, it has accommodated a number of undergraduate students for their professional placements, which are designed to support and develop core employability skills, with opportunities for students across all subject areas. Typical work has included providing training to adult learners in the community, supporting with research-based projects, and community support and advice – actively supporting a wide range of individuals from various socio-economic backgrounds and circumstances, including asylum seekers and refugees.

Psychology student Michael Catchpole completed a second-year placement in early 2023, to then be offered an internship supporting a project to prevent clients from experiencing digital isolation, and further paid work. As a person with an impairment, he was also supported by May and CAHLP as an inclusive employer to work predominantly from home.

Other students worked on a Windrush Project, supporting compensation claimants from the West Indian and Caribbean communities.

May Arthurton: “The placements / internships are a win-win for both parties and the students have been of huge support to the community aspect of the organisation, which has recently exploded due to the cost-of-living crisis. The students have supported in a variety of ways including advising clients and distributing vouchers.”

Michael Catchpole: “I have grown as a person and most importantly as a professional massively. The placement/internship first of all opened opportunities into full time employment, both within the CAHLP itself, but also into a teaching position... It has also led to helping me with skills I need for a career in psychology and therapies. I have learned the vital skill of setting boundaries with clients, as working with vulnerable people means that their situations can be difficult, but I must always remain impartial.”



2.2 Adjusting for completion rates

The previous section provided an overview of the number of UK domiciled students *starting* qualifications or modules at Leeds Trinity University in the 2021-22 academic year. However, to aggregate individual-level impacts of Leeds Trinity University's teaching and learning activity, it is necessary to adjust the number of 'starters' to account for **completion rates**.

To achieve this, we used information provided by Leeds Trinity University (for first degree qualifications (including Degree Apprentices)) alongside information from the Office for Students (OfS; for all other qualification levels) on the historical completion outcomes of students from the University – broken down by study mode, study intention, and study completion. In other words, these completion data include the number of students who completed their intended qualification (or module); completed a different (usually lower) qualification; or discontinued their studies without being awarded a qualification (modelled as completion at 'other undergraduate' level (for students who originally enrolled in first degrees or other undergraduate qualifications) or 'other postgraduate' level (for students who originally intended to complete higher degrees or other postgraduate qualifications))¹³.

Table 4 presents the resulting completion rates applied throughout the analysis¹⁴. We assume that, of those students starting a full-time first degree at Leeds Trinity University¹⁵ in 2021-22, **54%** complete the first degree as intended, while the remaining **46%** undertake one or more of the credits/modules associated with their degree before discontinuing their studies (modelled as completion at 'other undergraduate' level). Similarly, at postgraduate level, we assume that of those individuals starting a full-time postgraduate taught degree, **91%** complete the qualification as intended, while the remaining **9%** undertake one or more of the credits/modules associated with the intended degree before dropping out (in this case, modelled as completion at 'other postgraduate' level). In all these cases, **the analysis of the impact of teaching and learning calculates the estimated returns associated with the completed qualification/standalone module(s)**.

¹³ In other words, we assume that students who did not complete their studies at least complete one or several standalone modules associated with their intended qualification, so that these students' completion outcomes were modelled as either completion at 'other undergraduate' or 'other postgraduate' level. As a result, the total assumed completion rates sum up to 100%.

¹⁴ Data provided by Leeds Trinity University is used for first degree qualifications, and is based on 2019-20 and 2020-21 starters. The data was provided separately for on-campus students, franchise students, and Degree Apprentices, and we then calculated weighted average completion rates across these three categories (weighted by the number of relevant UK domiciled students in the 2021-22 Leeds Trinity University cohort in each category).

Office for Students' data is used for all other study levels, and is based on full-time students who started their qualifications at Leeds Trinity University between 2014-15 and 2017-18, and part-time students who started their qualifications between 2012-13 and 2015-16. Within the data (see Office for Students (2023)), completion rates are defined as 'the proportion of students that were observed to have gained a higher education qualification (or were continuing in the study of a qualification) four years and 15 days after they started their course (six years and 15 days for part-time students)'. Where data for a given group of students is not available, we impute completion rates from similar study levels.

¹⁵ Or one of its franchise partners.

Table 4 Assumed completion rates of Leeds Trinity University student entrants

Completion outcome	Study intention				
	Other undergraduate	First degree	Other postgraduate	Higher degree (taught)	Higher degree (research)
Full time students					
Other undergraduate	100%	46%	-	-	-
First degree	-	54%	-	-	-
Other postgraduate	-	-	100%	9%	8%
Higher degree (taught)	-	-	-	91%	-
Higher degree (research)	-	-	-	-	92%
Total	100%	100%	100%	100%	100%
Part time students					
Other undergraduate	100%	n.a.	-	-	-
First degree	-	n.a.	-	-	-
Other postgraduate	-	n.a.	100%	31%	30%
Higher degree (taught)	-	n.a.	-	69%	-
Higher degree (research)	-	n.a.	-	-	70%
Total	100%	n.a.	100%	100%	100%
Degree Apprentices					
Other undergraduate	n.a.	24%	n.a.	n.a.	n.a.
First degree	n.a.	76%	n.a.	n.a.	n.a.
Other postgraduate	n.a.	-	n.a.	n.a.	n.a.
Higher degree (taught)	n.a.	-	n.a.	n.a.	n.a.
Higher degree (research)	n.a.	-	n.a.	n.a.	n.a.
Total	n.a.	100%	n.a.	n.a.	n.a.

Note: Data provided by Leeds Trinity University is used for first degree qualifications, and is based on 2019-20 and 2020-21 starters. The data was provided separately for on-campus students, franchise students, and Degree Apprentices, and we then calculated weighted average completion rates across these three categories (weighted by the number of relevant UK domiciled students in the 2021-22 Leeds Trinity University cohort in each category).

OfS data is used for all other study levels, and is based on full-time 2014-15 to 2017-18 entrants, and part-time 2012-13 to 2015-16 entrants to Leeds Trinity University. These completion rates are defined as 'the proportion of students that were observed to have gained a higher education qualification (or were continuing in the study of a qualification) four years and 15 days after they started their course (six years and 15 days for part-time students)'. Data was not available for part-time higher degree research qualifications, so we impute completion rates from similar study levels instead, by assuming the same part-time to full-time completion rate ratio for higher degree research qualifications as for higher degree taught qualifications.

Source: London Economics' analysis based on information provided by Leeds Trinity University and Office for Students (2023) completion data for Leeds Trinity University.

2.3 Defining the returns to higher education qualifications

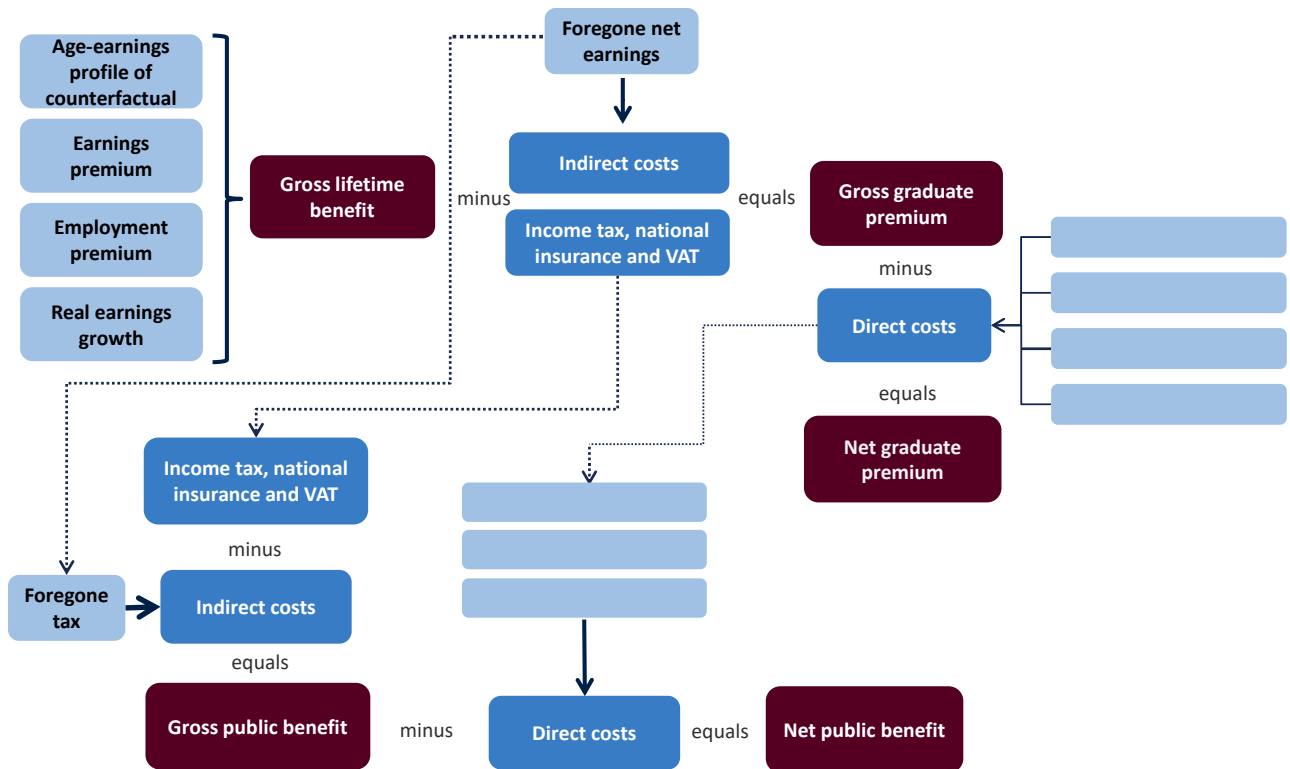
The fundamental objective of the analysis of the impact of Leeds Trinity University's teaching and learning activities is to estimate the **gross and net graduate premium** to the individual and the **gross and net public purse benefit** to the Exchequer associated with higher education qualification attainment, defined as follows:

- The **gross graduate premium** associated with qualification attainment is defined as the **present value of enhanced after-tax earnings** (i.e. after income tax, National Insurance and VAT are removed, and following the deduction of any foregone earnings during study) relative to an individual in possession of the counterfactual qualification;
- The **gross benefit to the public purse** is defined as the **present value of enhanced taxation** (i.e. income tax, National Insurance and VAT, following the deduction of the costs of foregone tax earnings during study) relative to an individual in possession of the counterfactual qualification;
- The **net graduate premium** is defined as the gross graduate premium *minus* the present value of the direct costs associated with qualification attainment; and

- Similarly, the **net benefit to the public purse** is defined as the gross public purse benefit minus the direct Exchequer costs of provision during the period of attainment.

Illustrations of the definitions above are presented in Figure 10 and Figure 11. Figure 10 relates to the graduate premium and Exchequer benefit associated with ‘traditional’ higher education qualifications, whereas Figure 11 outlines the graduate premium and Exchequer benefit associated with employer (part)-funded course. In the context of Leeds Trinity University, these employer-funded courses predominantly include Degree Apprentices, but also those students undertaking a Police Constable Degree Holder Entry Programme qualification (funded by the West Yorkshire Police)¹⁶. These students do not bear any direct costs associated with their studies, as their course is paid for by their employer (part of which is subsidised by the taxpayer). Instead, these students earn whilst they study, which is treated as a direct benefit to the student during study, as well as a direct benefit to the Exchequer in terms of income tax, national insurance and VAT paid.

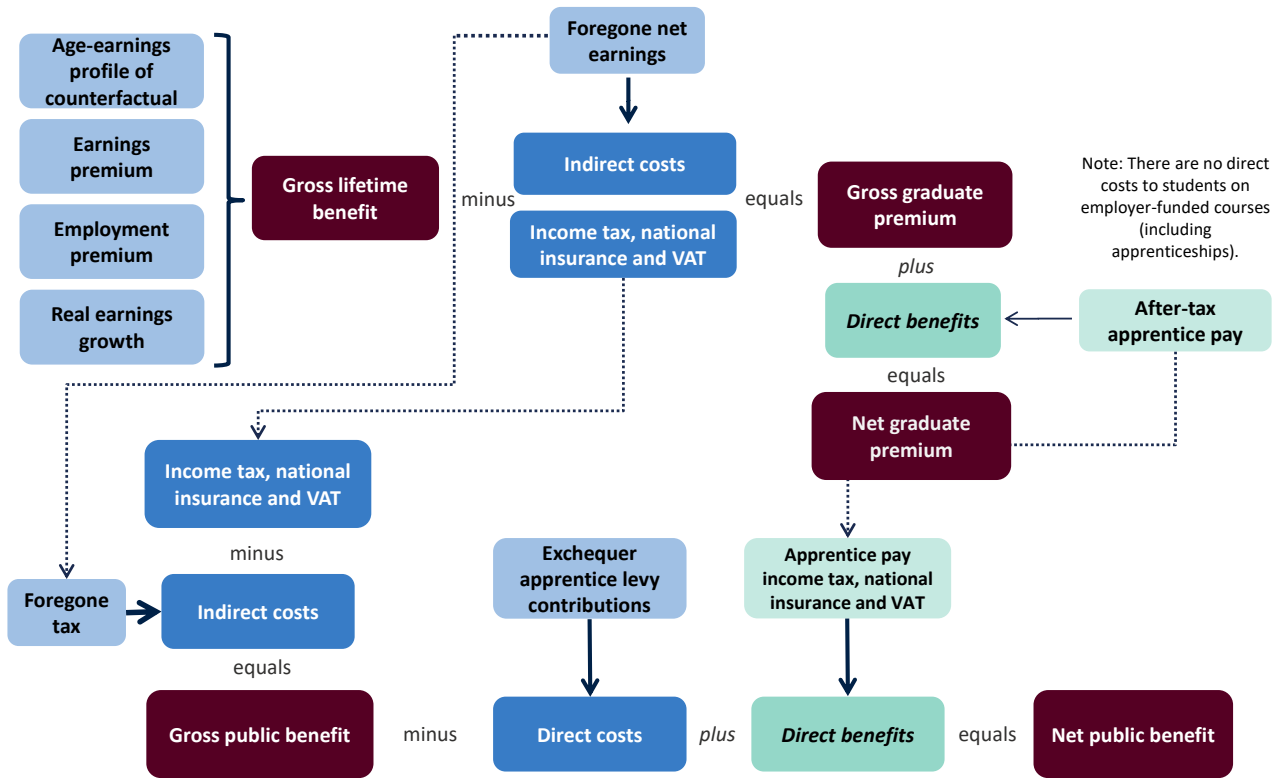
Figure 10 Overview of gross and net graduate premium, and gross and net Exchequer benefit for traditional degrees



Source: London Economics' analysis based on Department for Business, Innovation and Skills (2011)

¹⁶ There are 205 students in the UK domiciled 2021-22 cohort that are studying for this qualification, which is the entire number of part-time other undergraduate students in the cohort. The tuition fees for these students are paid for by West Yorkshire Police.

Figure 11 Overview of gross and net graduate premium, and gross and net Exchequer benefit for employer-funded courses (e.g. Degree Apprenticeships)



Source: London Economics’ analysis



Working with local businesses to develop the workforce



© Leeds Trinity University

A specialist upholstery manufacturer in West Yorkshire employing just over two hundred people turned to the Degree Apprenticeship programme offered by Leeds Trinity University to develop its workforce.

The Degree Apprenticeship is seen as a valuable route to enable an employee to grow within the company, thus aiding staff retention and progression. The company highly valued the opportunity provided by taking on a new member of staff as a degree apprentice to “mould the employee” and contrasted the experience favourably to traditional graduate recruitment.

The need to be able to “fit” the degree apprenticeship into the demands of work and busy personal lives was a paramount factor for apprentices and the employer, who particularly appreciated the flexibility of the University offer and the extent to which work and learning could be integrated. The employer commented: “We’ve been very pleased with the way that the student employees – because that’s what they are at the end of the day, they’re employees – have engaged both with the business and the course”.

Fundamental to successful alignment of the business and the course was the ability of the apprentices to see how learning acquired from the University was relevant and might be applied to their work situation. Real life work-based projects were seen as an important way for the apprentice to apply their new learning to work and were of immediate and ongoing benefit to the company.

The Managing Director of the company sees the strategic use of work-based projects carried out by Degree Apprentices as making a significant contribution to the growth of the company and enhancing reputation and competitiveness – and spoke of their Degree Apprentices providing “an extra resource within the business that we wouldn’t have otherwise had”.

He estimates that a series of projects undertaken by Degree Apprentices has added £1.5 – 2 million in sales and enhanced the reputation of the company due to increased quality and consistency of the product.

The company has increased the number of Degree Apprentices it is taking on as this course is now seen as vital to the company.

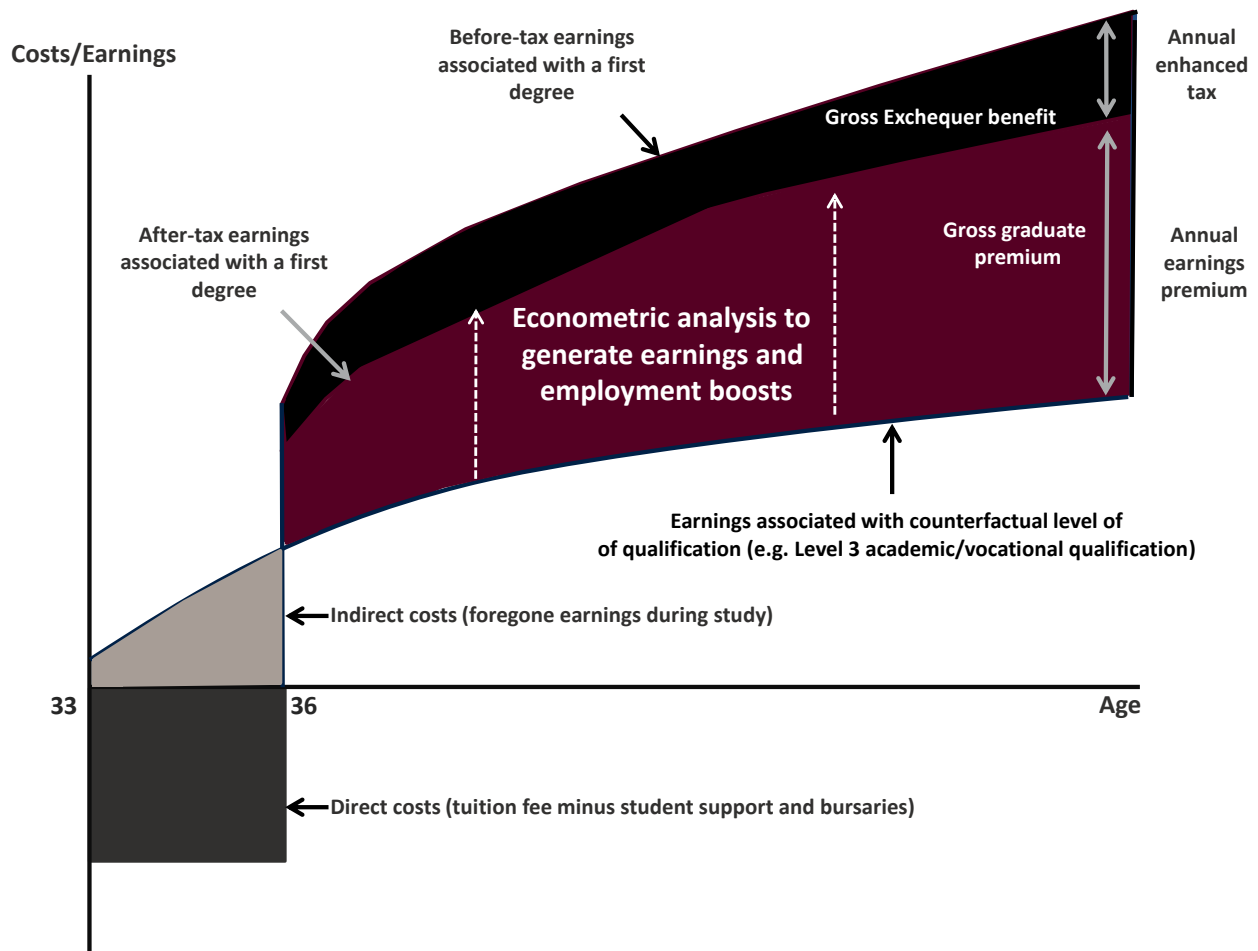


2.4 Estimating the return to higher education qualifications

2.4.1 Estimating the gross graduate premium and gross public purse benefit

To measure the economic benefits to higher education qualifications (again, including Degree Apprenticeships), we estimate the **labour market value associated with particular education qualifications**, rather than simply assessing the labour market outcomes achieved by individuals *in possession* of the qualification. The standard approach to estimating this labour market value is to undertake an **econometric analysis** where the 'treatment' group consists of those individuals in possession of the qualification of interest, and the 'counterfactual' group consists of those individuals with comparable personal and socioeconomic characteristics but with the next highest level of qualification. The rationale for adopting this approach is that the comparison of the earnings and employment outcomes of the treatment group and the counterfactual group 'strips away' (to the greatest extent possible with the relevant data) those other personal and socioeconomic characteristics that might affect labour market earnings and employment (such as gender, age, or sector of employment), leaving just the labour market gains attributable to the qualification itself (see Figure 12 for an illustration of this, for full-time first degrees). The treatment and counterfactual groups, and details of the econometric approach, are presented in Annex A3.2.1 and Annex A3.2.2 respectively.

Figure 12 Estimating the gross graduate premium and gross Exchequer benefit



Note: The analysis assumes that the opportunity costs of foregone earnings associated with higher qualification attainment are applicable to full-time students and Degree Apprentices only. For part-time students, we have assumed that these students are able to combine work with their academic studies and as such, do not incur any opportunity costs in the form of foregone earnings. This illustration is based on an analysis of Leeds Trinity University's student cohort data for 2021-22, where the mean age at enrolment for full-time first degree students stands at 33, and we have assumed that a full-time first degree requires 3 years to complete.

Source: *London Economics*

Throughout the analysis, the assessment of earnings and employment outcomes associated with higher education qualification attainment (at all levels) is undertaken separately by **gender**, reflecting the different labour market outcomes between men and women. Further, the analysis is adjusted for the specific **subject composition** of students studying at Leeds Trinity University, to reflect the fact that there is significant variation in post-graduation labour market outcomes depending on the subject of study. In addition, given the fact that part-time (and some full-time students) undertake and complete higher education qualifications later in life, the analysis applies a '**decay function**' to the returns associated with qualification attainment for some study levels and study modes, to reflect the shorter period of time in the labour market¹⁷.

To estimate the **gross graduate premium**, based on the econometric results, we then estimate the **present value of the enhanced post-tax earnings** of individuals in possession of different higher education qualifications (i.e. after income tax, National Insurance and VAT are removed, and following the deduction

¹⁷ See Annex A3.2.3 for more information.

of foregone earnings) relative to an individual in possession of the counterfactual qualification (see Annex A3.2.4 for more detail).

The **gross benefits to the Exchequer** from the provision of higher education are derived from the enhanced taxation receipts that are associated with a higher likelihood of being employed, as well as the enhanced earnings associated with more highly skilled and productive employees. Based on the analysis of the lifetime earnings and employment benefits associated with higher education qualification attainment and combined with administrative information on the relevant taxation rates and bands (from HM Revenue and Customs)¹⁸, we estimated the **present value of additional income tax, National Insurance and VAT associated with higher education qualification attainment** (by gender, level of study, mode of study, and prior attainment). Again, please refer to Annex A3.2.4 for more detailed information on the calculation of the gross Exchequer benefit.

2.4.2 Estimating the net graduate premium and net public purse benefit

The difference between the gross and net graduate premium relates to **students' direct costs of qualification acquisition**¹⁹:

- For **'traditional' higher education qualifications**, these direct costs refer to the **proportion of the tuition fee paid by the student**²⁰ net of any **tuition fee support** or **maintenance support** provided by the Student Loans Company (SLC, for students from England, Wales, and Northern Ireland) or the Students Awards Agency for Scotland (SAAS, for students from Scotland)²¹, minus any **fee waivers or bursaries** provided by Leeds Trinity University²². In this respect, the student benefit associated with tuition fee loan or maintenance loan support equals the **Resource Accounting and Budgeting charge** (RAB charge)²³, capturing the proportion of the loan that is not repaid.

¹⁸ The analysis makes use of relevant tax rates and thresholds applicable to individuals living in England, Wales, and Northern Ireland.

¹⁹ Note again that the *indirect* costs associated with qualification attainment, in terms of the foregone earnings during the period of study (for full-time students and Degree Apprentices only), are already deducted from the gross graduate premium.

²⁰ We made use of information provided by Leeds Trinity University on total tuition fee income received by the University in the 2021-22 academic year associated with *full-time* students, separately by domicile, study level, and source. This data was then split into three study level categories: undergraduate (including both other undergraduate and first degree students), postgraduate (taught) (also including other postgraduate), and postgraduate (research). To arrive at the fees per *full-time* student, we then divided the total relevant fee income by the underlying number of (first-year and continuing) full-time students in 2021-22 (again by study level). To arrive at the fees per *part-time* student (ensuring that the estimated fees for part-time students accurately reflect the average study intensity amongst part-time students in the 2021-22 cohort), we adjusted the respective full-time rates for the average study intensity amongst part-time students in the cohort. In turn, the average study intensity was estimated separately by qualification level and calculated by dividing the number of part-time students in the cohort in full-time equivalents by the number of students in terms of headcount (again based on HESA data provided by Leeds Trinity University).

²¹ The analysis makes use of *average* levels of support paid per student, separately by study mode, study level (i.e. undergraduate, higher degree (taught) and higher degree (research) (and we assume that no funding is available for students undertaking qualifications at 'other postgraduate' level)), and domicile. Our estimates are based on publications by the SLC on student support for higher education in England, Wales, and Northern Ireland in 2021-22 (see Student Loans Company 2022a, 2022b and 2022c, respectively) and a publication by the Student Awards Agency for Scotland on student support for higher education in Scotland (see Student Awards Agency for Scotland, 2022). To ensure comparability across the different Home Nations, we focus only on core student support in terms of tuition fee grants, tuition fee loans, maintenance grants and maintenance loans (where applicable), but *exclude* any Disabled Students' Allowance and other targeted support. Wherever possible, we focus on the average level of support for students in public providers only, for the most recent cohorts possible, split by domicile (i.e. 'Home' vs. EU). Furthermore, and again wherever possible, we adjusted the average levels of fee and maintenance loans for average loan take-up rates available from the same sources. In addition, the assumed average fee loans or fee grants per student (where applicable) have been capped at the average tuition fees charged per Leeds Trinity University student in 2021-22.

²² Average fee waivers per student were calculated based on information provided by Leeds Trinity University on total expenditure on bursaries by the University in 2021-22. To arrive at the average level of funding per student (per year), we then divided the total funding by the total number of (first-year and continuing) full-time students studying at Leeds Trinity University in 2021-22, assuming that all bursary funding relates to full-time students (of all domiciles and levels) only. We also assume that all bursary funding relates to fee waivers only.

²³ For undergraduate full-time students, we have assumed a RAB charge of 31% associated with tuition fee and maintenance loans for English domiciled students (based on data published by the Department for Education (2022)), which includes the impact on the RAB charge of the Department's recently announced policy changes in response to the Augar Review of Higher Education (for post-2012 English loan borrowers). We have further assumed a RAB charge of approximately 26% for Welsh domiciled students (based on London Economics' modelling of the costs associated with the Welsh higher education funding system, on behalf of the Welsh Government (*unpublished*)); 31% for Scottish domiciled

Given the differing approach to public support funding for students from each of the UK Home Nations, the direct costs incurred by students were assessed separately for students from England, Wales, Scotland, and Northern Ireland.

- For **Degree Apprenticeships**, these students incur the indirect costs of foregone earnings associated with the *counterfactual* level of qualification during their training (which are already accounted for in the above-described gross graduate premium); however, **there are no direct costs incurred by apprentices associated with their training**. Instead, these students *benefit* from receiving apprentice wages during their training, and these net (after-tax) wages constitute a significant benefit component associated with Degree Apprenticeships²⁴.
- For **other employer-funded courses** (all of which are on a part-time basis), there are again no direct costs incurred by students associated with their qualification, and these students also receive wages during their qualification instead (so we assume that these students do *not* incur any opportunity costs in the form of foregone earnings (as for all other part-time students, as it is assumed that these students are also able to combine work with their academic studies)).²⁵

Similarly, the difference between the gross and net Exchequer benefit relates to the **direct costs to the public purse** associated with funding higher education provision:

- For **'traditional' higher education qualifications**, the **direct costs**²⁶ **to the public purse** include the **teaching grant funding** administered by the Office for Students²⁷, the **student support**

students (based on Audit Scotland (2020)); and 26% for Northern Irish students (assumed to be the same as the RAB charge for Welsh domiciled students given the similar loan balance). For undergraduate part-time students, based on the same sources, we have assumed a RAB charge of 33% for English domiciled students (see Annex B in Department for Education (2022); note however that this does *not* take account of the impact of the Department's response to the Augar Review); approximately 36% for Welsh domiciled students; and 0% for Northern Irish domiciled students (given that these students have a very small loan balance). There is currently no student loan funding provided to Scottish domiciled undergraduate part-time students (so no RAB charge assumptions are required).

For the loans for postgraduate taught students from England, Wales, and Northern Ireland, we have assumed a RAB charge of 0% for both full-time and part-time students (based on the Department for Education's (2022) student RAB charge estimates for postgraduate Master's loans for English students (again see Annex B of Department for Education(2022)). For Scottish students at postgraduate taught level, we again assumed a RAB charge of 31% (again based on Audit Scotland (2020); unfortunately, the estimates here did not provide a breakdown of the RAB charge by study level).

Finally, for (full-time and part-time) postgraduate research students, there were no Doctorate loans available for Scottish domiciled or Northern Irish domiciled students. For students from England and Wales, we assumed a RAB charge of 19% (again based on based on Department for Education (2022)).

²⁴ As a result of these in-training benefits, for Degree Apprentices, the estimated 'net' graduate premium (presented in Table 16 in Annex A3.2.5) is consistently *larger* than the estimated 'gross' graduate premium (presented in Table 15 in Annex A3.2.5). To estimate Apprentice pay during training, we make use of the Department for Education's 2021 Apprenticeship Evaluation Learner Survey (Department for Education (2021)), which provides average hourly pay for all Degree Apprentices. To estimate a breakdown by gender, we multiply the Degree Apprentice pay rate by the ratio of overall hourly apprentice pay for men and women relative to the overall average hourly pay for all apprentices (i.e. we assume the same pay distribution by gender across all apprenticeship levels). We then combined these pay rates with the associated average number of hours worked per week and the average number of weeks per year (52.5) to calculate average annual earnings. We then used data on the average age at enrolment and study duration provided by Leeds Trinity University (see Annex A3.2.3 for more details) to estimate annual gross (i.e. pre-tax) Apprentice earnings per student over the total study duration. Lastly, as with earnings post-completion, we then adjusted the estimates to account for OBR average earnings growth forecasts, and applied the relevant income tax and National Insurance employee contribution rates and thresholds, to compute the stream of net (post-tax) apprentice earnings in NPV terms in 2021-22 prices.

²⁵ Given that these students have no direct costs associated with studies, as well as no indirect costs associated with foregone earnings, the estimated 'net' graduate premiums (presented in Table 16 in Annex A3.2.5) equal the estimated 'gross' graduate premiums (presented in Table 15 in Annex A3.2.5) in each instance.

²⁶ Again, any indirect costs to the public purse in terms of foregone income tax, National Insurance and VAT receipts foregone during the period of qualification attainment (applicable to full-time students and Degree Apprentices only) are already incorporated in the gross public purse benefits as described above.

²⁷ This is based on published HESA financial information on the total OFS recurrent teaching grant received by Leeds Trinity University in 2021-22 (see HESA, 2023c), divided by the total number of UK domiciled and *continuing* EU students enrolled with Leeds Trinity University in 2021-22 (excluding any first-year EU students, as well as any non-EU domiciled students and higher degree (research) students (i.e. it is assumed that there is no teaching funding associated with these students)). The inclusion of *continuing* EU students in the calculations was based on the fact that EU domiciled *first-year* students starting HE qualifications in the UK in 2021-22 were subject to the new post-Brexit rules – and, therefore, were generally no longer eligible for public teaching grant funding. In contrast, EU domiciled *continuing* students in 2021-22 were, in general, still eligible for this funding. We again adjusted for the average assumed study intensity among full-time and part-time students, to arrive at separate rates of teaching grant funding by study mode.

provided in the form of fee and maintenance loans/grants (where applicable), and the **interest rate or write-off subsidies** that are associated with maintenance and tuition fee loans (i.e. the RAB charge). Again, the analysis tailors the cost of student support to the student's specific Home Nation of domicile.

- For **Degree Apprenticeships**, in addition to the *indirect* costs of foregone tax revenues during the qualification (associated with the counterfactual, and already accounted for in the *gross* public purse benefit), we deduct the **Exchequer costs of Apprentice Levy funding**.²⁸ In addition, and as a key **Exchequer benefit** during study (rather than a cost), the Exchequer accrues the tax receipts (again including income tax, National Insurance employee and employer contributions, and VAT), associated with the apprentice wages received by students during their training²⁹.
- For **other employer-funded courses**, the direct cost to the public purse relates to the Exchequer costs associated with fully funding these students' tuition. Specifically, in the case of Leeds Trinity University, all employer-funded students that are not Degree Apprentices are undertaking Police Constable Degree Holder Entry Programme qualifications, paid for by West Yorkshire Police. As a result, it is assumed that 100% of the 'tuition fee' income received by Leeds Trinity University for these courses is paid for by the Exchequer.

These direct costs (and additional direct benefits, for Degree Apprentices) associated with qualification attainment to both students and the Exchequer (by qualification level, study mode, and Home Nation domicile) are calculated from start to completion of a student's learning aim. Throughout the analysis, to ensure that the economic impacts are computed in **present value** terms (i.e. in 2021-22 money terms), all benefits and costs occurring at points in the future were **discounted** using the standard HM Treasury Green Book real discount rate of **3.5%** (see HM Treasury, 2022).

Deducting the resulting individual and Exchequer costs from the estimated gross graduate premium and gross public purse benefit³⁰, respectively, we arrive at the estimated **net graduate premium** and **net public purse benefit** per student.

²⁸ The average cost of public Apprentice Levy funding per Degree Apprentice is based on data provided by Leeds Trinity University on the 'total tuition fee income' received relating to employer-funded students. This figure is divided by the number of (first-year and continuing) employer-funded students at Leeds Trinity in 2021-22, to estimate the average funding income associated with employer-funded students. With regards to Degree Apprentices, the Exchequer contributes to this training through either the Apprentice Levy or through co-investing. The Apprentice Levy is a levy placed on employers with an annual pay bill in excess of £3 million (which is topped up by 10% by the government); however, for small employers that do not meet this threshold, as well as for Levy-paying employers that want to invest more in apprenticeship training than they have available in their levy accounts, the Exchequer 'co-invests' 95% of the costs of provision, paid directly to the training provider (so that employers only have to cover the remaining 5% of the costs). It is estimated that 81% of Higher Apprenticeship starts in 2021-22 were funded through the Apprenticeship Levy, and 19% were funded through 'other means' (assumed to involve co-investment by the government) (Department for Education 2023). To determine the average Exchequer contribution to Degree Apprenticeships (in percentage terms), an average of a) the proportion of a Levy-funded Degree Apprenticeship that is funded by the Exchequer and b) the proportion of a Degree Apprenticeship funded from Exchequer co-investing is calculated, weighted by the proportion of all Higher Apprenticeship starts in England in 2021-22 that are funded in either way. This is then applied to the average funding income received by Leeds Trinity University for employer-funded courses, to estimate the average Exchequer contribution to Degree Apprenticeship provision at Leeds Trinity University. For simplicity, the costs associated with the funding received from private employers are not modelled here.

²⁹ See Footnote 24 for more information on the methodological approach for estimating apprentice wages during training.

³⁰ And, for Degree Apprentices, adding the benefits of apprentice pay (and associated tax receipts) during training.



Leeds Trinity - Supporting the NHS on future workforce needs in West Yorkshire



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Leeds Trinity University is a career led university, with a key mission to widen access to higher education for residents in the region and as an Anchor institution, we have a long history of public sector provision including teaching and policing.

Our next stage in our journey to positively impact the region will be supporting the health and care sector. We have co-created three innovative new undergraduate nursing programmes in adult, mental health and learning disabilities nursing, working closely with NHS partners, service users and carers from across the region. These courses have been successfully approved by the Nursing and Midwifery Council (NMC) and will commence in January 2024.

The courses will help to grow the number of nurses in the region and support West Yorkshire in meeting the NHS Long Term Workforce Plan, which addresses the substantial vacancies in health care. Our graduates will go on to register with the NMC and work as nurses, many in our region, to help improve care and outcomes – thereby improving the health of the region, in line with becoming a Marmot City.

We are particularly proud to bring a learning disabilities nursing course into Leeds and Bradford. There are significant vacancies in learning disabilities nationally and creating specialist nurses in the area will help to transform care.

The curriculum is highly innovative, with a large social justice element ensuring we develop nurses who are culturally competent and can advocate for service users and carers. Interprofessional learning is threaded throughout, offering students the opportunity to learn ‘with, from and about’ other professions – preparing them for working in dynamic integrated care systems across the region.

We have invested in high-tech estate and equipment, working with specialist providers to create highfidelity simulated and digitised practice learning opportunities to enable students to practice the complex skills required in a safe environment, thereby boosting confidence and competence.

Professor Malcolm Todd, Provost and Deputy Vice-Chancellor: “This is a pivotal moment for Leeds Trinity as we widen our provision and seek to support the NHS in the Leeds City Region and beyond. As a careerled University with values rooted in care, service and social justice, our new Nursing programmes will equip even more of our graduates with the skills and experience to make a positive contribution to society.”



2.5 Estimated net graduate premium and net Exchequer benefit

Table 5 presents the net graduate premiums and net Exchequer benefits achieved by UK domiciled students³¹ starting qualifications at Leeds Trinity University in the 2021-22 academic year (by study mode, on average across men and women³², and on average across students from all domiciles).

The analysis indicates that the **net graduate premium** achieved by a representative³³ student in the 2021-22 cohort completing a **full-time first degree** at Leeds Trinity University (with a Level 3 academic or vocational qualification as their highest level of prior attainment) is approximately **£34,000** in today's money terms. At postgraduate level, the net (post)graduate premium for a representative³⁴ student completing a full-time postgraduate taught degree at Leeds Trinity University (relative to a first degree) stands at approximately **£56,000**.

The net graduate premium for a representative full-time first degree student stands at £34,000, with an associated net public purse benefit of £47,000.

Table 5 Net graduate premium and net Exchequer benefit per UK domiciled student at Leeds Trinity University, by study level and mode

Level of study	Net graduate premium		Net public purse benefit	
	Full-time Students	Part-time students	Full-time students	Part-time students
Other undergraduate ¹	£46,000	£80,000	£44,000	£59,000
First degree ¹	£34,000	-	£47,000	-
Degree Apprentices ¹	-	£157,000	-	£122,000
Other postgraduate ²	£9,000	£23,000	£20,000	£24,000
Higher degree (taught) ²	£56,000	£85,000	£64,000	£80,000
Higher degree (research) ²	£28,000	-	£75,000	-

Note: All estimates constitute weighted averages across men and women (weighted by the estimated number of student completers in the 2021-22 cohort) and are presented in 2021-22 prices, discounted to reflect net present values, and rounded to the nearest £1,000. We assume that the gross graduate premium / Exchequer benefit associated with any higher education qualification attainment can never be negative – i.e. students will never incur a wage/employment penalty from achieving additional qualifications. In instances where this would be the case, we instead assume a £0 gross graduate premium / Exchequer benefit (while the costs of qualification attainment would still be incurred). Gaps may arise where there are no students in the 2021-22 Leeds Trinity University cohort expected to complete the given qualification (with the given characteristics).

¹ Net graduate premiums and net public purse benefits associated with qualifications at 'other undergraduate' and first degree level (including Degree Apprenticeships) are estimated relative to possession of Level 3 qualifications (see Annex A3.2.1 for further detail). ² Net graduate premiums and net public purse benefits associated with qualifications at 'other postgraduate', higher degree (taught) and higher degree (research) level are estimated relative to the possession of first degrees. *Source: London Economics' analysis*

There are also substantial net graduate premiums associated with Degree Apprentices. The **net graduate premium** achieved by a representative³⁵ student in the 2021-22 cohort completing a **Degree Apprenticeship** at Leeds Trinity University (with a Level 3 academic or vocational qualification as their highest level of prior attainment) is approximately **£157,000** in today's money terms. Compared to full-time first degree students at Leeds Trinity University, Degree Apprentices tend to complete their studies

³¹ The full set of net graduate premiums and net Exchequer benefits (for all study levels, study modes, and prior attainment levels) is presented in Annex A3.2.5.

³² For a breakdown of the results by gender, again see Annex A3.2.5.

³³ The analysis is based on an average age at graduation of 36 for students undertaking full-time first degrees at Leeds Trinity University in the 2021-22 cohort (also see Annex A3.2.3 for further information).

³⁴ This is based on an average age at graduation in the 2021-22 cohort of 33 for full-time higher degree (taught) students.

³⁵ This is based on an average age at graduation in the 2021-22 cohort of 28 for students undertaking Degree Apprenticeships.

earlier in life³⁶ (resulting in more years spent in the labour market post-graduation), thus contributing to relatively larger net graduate premiums for Degree Apprentices compared to full-time first degree students. Furthermore, Degree Apprentices incur no tuition fee costs during their training, and accrue an additional direct benefit during study in terms of apprentice pay, both of which again result in a higher net graduate premium for Degree Apprentices compared to full-time first degree students.

The net graduate premium for a representative Degree Apprenticeship student stands at £157,000, with an associated net public purse benefit of £122,000.

In terms of the benefits to the public purse, the **net Exchequer benefit** for a representative student in the 2021-22 cohort completing a **full-time first degree** at Leeds Trinity University (again with a Level 3 qualification as their highest level of prior attainment) stands at approximately **£47,000** in 2021-22 money terms. The net Exchequer benefits for a representative student completing a **full-time postgraduate taught degree** (relative to a first degree) was estimated at approximately **£64,000**, and the net Exchequer benefits associated with a representative student completing a

full-time postgraduate research degree (relative to a first degree) was estimated at approximately **£75,000**.

Finally, considering the benefits to the public purse of Degree Apprenticeships, the analysis indicates that the net Exchequer benefit associated with a representative Degree Apprentice from England undertaking and completing their qualification at Leeds Trinity University (relative to a Level 3 qualification) was approximately **£118,000**.

2.6 Total impact of the University's teaching and learning activities

Combining the information on the number of UK domiciled students in the 2021-22 Leeds Trinity University cohort, expected completion rates, and the net graduate and public purse benefits associated with the different qualification levels (relative to students' specific prior attainment), the analysis estimates that the **aggregate economic benefit of Leeds Trinity University's teaching and learning activities** associated with the 2021-22 cohort was approximately **£554 million** (see Table 6).

The total economic impact of teaching and learning generated by the 2021-22 cohort of Leeds Trinity University students stands at £554 million.

In terms of the breakdown by beneficiary, **£264 million (48%)** of the total impact is accrued by students, and the remaining **£290 million (52%)** is accrued by the Exchequer. In terms of level of study, **£447 million (81%)** of the estimated economic impact is generated by students undertaking undergraduate qualifications at Leeds Trinity University, compared to **£58 million (10%)** generated by Degree Apprenticeship students, and the remaining **£50 million (9%)** generated by postgraduate students.

³⁶ Again, see Annex A3.2.3 for more information.

Table 6 Aggregate impact of Leeds Trinity University's teaching and learning activities associated with the 2021-22 cohort (£m), by beneficiary, mode, and level of study

Beneficiary and study mode	Study level			
	Undergraduate qualifications	Degree Apprenticeships	Postgraduate qualifications	Total
Students	£209m	£33m	£22m	£264m
Full-time	£204m	-	£8m	£212m
Part-time	£5m	£33m	£14m	£52m
Exchequer	£238m	£25m	£27m	£290m
Full-time	£235m	-	£12m	£248m
Part-time	£2m	£25m	£15m	£42m
Total	£447m	£58m	£50m	£554m
Full-time	£439m	-	£20m	£460m
Part-time	£7m	£58m	£29m	£94m

Note: All estimates are presented in 2021-22 prices, discounted to reflect net present values, and rounded to the nearest £1m. Due to rounding, figures may not add up precisely to the totals indicated.

Source: *London Economics' analysis*

It is important to emphasise that these impacts are associated with the 2021-22 cohort of students only. Depending on the size and composition of subsequent cohorts of Leeds Trinity University students, a comparable estimate of the economic impact associated with teaching and learning activities would be associated with each successive cohort of starters (depending on the prevailing labour market conditions at the time).



Leeds Trinity
University

Leeds Trinity - pioneering research into Addiction Recovery



© Leeds Trinity University

David Best is the world's first Professor of Addiction Recovery, based in the Faculty of Social Sciences and Education at Leeds Trinity University. Professor Best's work, including the development of the REC-CAP (see below), is recognised internationally.

"Whilst generally recognised that addiction is a chronic and relapsing condition, in recent years it has become apparent that the majority of people with a lifelong substance addiction (even to drugs like heroin and cocaine) will eventually achieve stable and abstinent recovery, resulting in a better quality of life, active participation in their communities and some form of 'giving back' to repair the harms they have done.

"We now have a science for how that happens, based on a concept known as 'recovery capital' which refers to the strengths and breadth of internal and external resources a person can call upon to support their recovery journey. For the last 10 years my work has been around how to make measuring recovery capital more accurate and effective and how it can be presented in a form that is engaging, acceptable and meaningful to people on their own recovery journeys

"This has culminated in the development of the REC-CAP (first published in 2017), an online measurement and review tool that has now been completed by around 20,000 people in the UK, United States, Canada and New Zealand. Most people who have completed the REC-CAP are based in recovery residences in the United States.

"This work has allowed us to test who does well and who is at greater risk of drop-out and relapse to use, with the accompanying dangers of offending and returning to prison. In the UK, we are hoping to start a pilot run of the REC-CAP in a number of adult male prisons.

"I have been very fortunate to be able to champion this work across seven states in the US and I was recently presented with a Recovery Innovations award by the National Association of Recovery Residences at its annual conference in Richmond, Virginia. Not only that, but several housing providers offered personal testimonies about how the REC-CAP and the broader model of strengths-based working had transformed their working lives.

"The US will remain at the forefront of innovation and science in this area but the UK drug strategy 'From Harm to Hope' offers a meaningful opportunity for real change, where innovative practice must be matched by a commitment to recovery science, and a new way of addressing a complex and growing challenge to families and communities."



3 The impact of the University's expenditures

In this section, we outline our estimates of the **direct, indirect, and induced impacts** associated with the operational and capital expenditures of Leeds Trinity University. Analyses of these impacts consider universities as economic units creating output within their local economies by purchasing products and services from their suppliers and hiring employees. Specifically, the direct, indirect, and induced economic impacts of a university's expenditures are defined as follows:

- **Direct effect:** This considers the economic output generated by Leeds Trinity University itself, by purchasing goods and services (including labour) from the economy in which it operates.
- **Indirect effect:** Leeds Trinity University's purchases generate income for the supplying industries, which they in turn spend on their own purchases from suppliers to meet Leeds Trinity University's demands. This results in a chain reaction of subsequent rounds of spending across industries, also referred to as a 'ripple effect'.
- **Induced effect:** The employees of Leeds Trinity University and of businesses operating in Leeds Trinity University's supply chain use their wages to buy consumer goods and services within the economy. This in turn generates wage income for employees within the industries producing these goods and services, who then spend their own income on goods and services – leading to a further 'ripple effect' throughout the economy as a whole.

The total of the direct, indirect, and induced effects constitutes the *gross* economic impact of Leeds Trinity University's expenditure. An analysis of the *net* economic impact ideally needs to account for two additional factors potentially reducing the size of any of the above effects:

- **Leakage** into other geographical areas, by taking account of how much of the additional economic activity actually occurs in the area of consideration; and
- **Displacement** of economic activity within the region of analysis, i.e. taking account of the possibility that the economic activity generated might result in the reduction of activity elsewhere within the region³⁷.

The direct, indirect, and induced impacts are measured in terms of monetary economic output, gross value added (GVA)³⁸, and full-time equivalent (FTE) employment supported. In addition to measuring these impacts on the UK economy as a whole, the analysis is broken down by geographic region and sector.

These impacts were estimated using **economic multipliers**³⁹. Derived from a multi-regional Input-Output analysis. The analysis makes use of UK Input-Output tables, which measure the total production output of each industry in the UK economy, and the inter-industry (and intra-industry) flows of goods and services consumed and produced by each sector. In other words, these tables capture the degree to which different sectors within the UK economy are connected, i.e. the extent to which changes in the demand for the output of any one sector impact all other sectors of the economy. To be able to achieve a breakdown of the analysis by region, we then developed a multi-regional Input-Output model, combining UK-level Input-

³⁷ It is important to note that, while the analysis takes account of *leakage* (e.g. adjusting for the extent to which any additional income for supplying industries might be spent on imports of goods and services from outside the UK), the estimated impacts here are *not* adjusted for *displacement* or *additionality* (e.g. the extent to which Leeds Trinity University's expenditures would occur at other institutions if its student numbers were to reduce). Hence, our analysis effectively estimates the direct, indirect, and induced impacts associated with Leeds Trinity University's expenditures in *gross* terms.

³⁸ Gross value added is used in National Accounting to measure the economic contribution of different industries or sectors and is defined as economic output minus intermediate consumption (i.e. the cost of goods and services used in the production process).

³⁹ Specifically, the analysis makes use of *Type II* multipliers, defined as $[\text{Direct} + \text{indirect} + \text{induced impact}] / [\text{Direct impact}]$.

Output tables (for 2019)⁴⁰ with a range of regional-level data (again for 2019)⁴¹ to achieve a granular breakdown by sector⁴² and region⁴³.

3.1 Direct impact of the University's expenditures

To measure the direct economic impact of the purchases of goods, services, and labour by Leeds Trinity University, we used information on the University's operational expenditures (including staff and non-staff spending), capital expenditures, as well as the number of staff employed (in terms of full-time equivalent employees), for the 2021-22 academic year⁴⁴.

Based on this, in terms of monetary economic **output** (measured in terms of expenditure), the direct **economic impact** associated with Leeds Trinity University's expenditures stood at approximately **£45 million** in 2021-22 (see Figure 13). This includes **£27 million** of operating expenditure on staff-related costs, **£14 million** of expenditure on other (non-staff) operating expenses⁴⁵, as well as **£4 million** of capital expenditure incurred in that academic year.

In addition to these total expenditures, we investigated the **geographical breakdown** of Leeds Trinity University's procurement expenditures to demonstrate the breadth of Leeds Trinity University's impact across Yorkshire and the Humber and the rest of the UK. Figure 14 presents the distribution of Leeds Trinity University's procurement expenditures (based on invoice data for 2021-22) by Local Authority. The map illustrates a clear concentration of procurement expenditure in **Yorkshire and the Humber** (approximately **46% of expenditure**). In addition, the University also spends significant amounts on goods and services from suppliers in other regions, including **London (17%)**⁴⁶, the **South East (12%)**, and the **North West (6%)**.

⁴⁰ See Office for National Statistics (2023a).

⁴¹ The fundamental idea of the multi-regional Input-Output analysis is that region i 's demand for region j 's output is related to the friction involved in shipments from one region to another (which we proxy by the distance between the two regions), and that cross-regional trade can be explained by the relative gross value added of the sector in all regions. The multi-regional Input-Output model was derived by combining UK-level Input-Output tables with data on geographical distances between regions; GVA and compensation of employees by sector and region (Office for National Statistics, 2023b); employment by sector and region (Office for National Statistics, 2022a); gross disposable household income by region (Office for National Statistics, 2022b); population by region (Office for National Statistics, 2022c); mean weekly total paid hours worked by industry, for full-time vs. part-time employees (Office for National Statistics, 2022d); employed residents by region of usual residence and region of workplace (Office for National Statistics, 2014); and UK imports into each region and exports by each region, by commodity (Office for National Statistics, 2021).

⁴² In terms of sector breakdown, the original UK Input-Output tables are broken down into 105 relatively granular sectors. However, the wide range of regional-level data required to generate the multi-regional Input-Output model is not available for such a granular sector breakdown. Instead, the multi-regional Input-Output model is therefore broken down into 10 more high-level sector groups (see Annex A3.1 for more information).

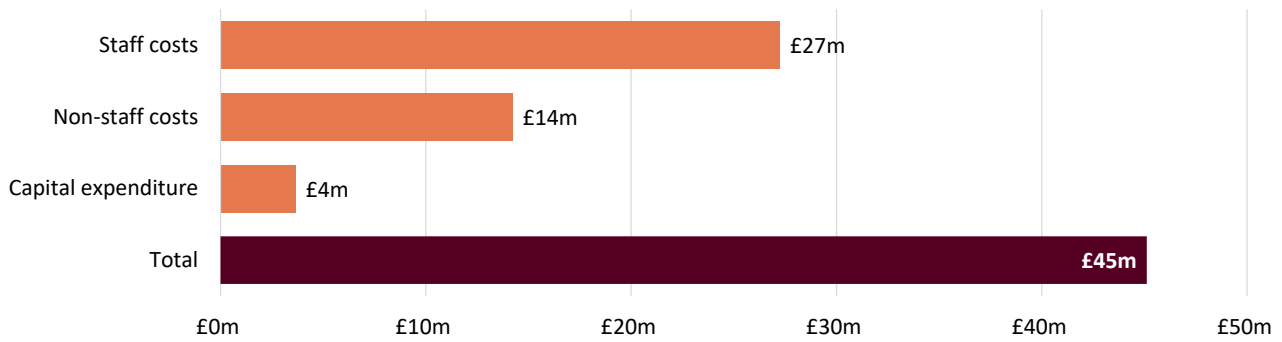
⁴³ While Input-Output analyses are a useful tool to assess the total economic impacts generated by a wide range of activities, it is important to note several key limitations associated with this type of analysis. Input-Output analyses assume that inputs are complements, and that there are constant returns to scale in the production function (i.e., that there are no economies of scale). The interpretation of these assumptions is that the prevailing breakdown of inputs from all sectors (employees, and imports) is a good approximation of the breakdown that would prevail if total demand (and therefore output) were marginally different. In addition, Input-Output analyses do not account for any price effects resulting from a change in demand for a given industry/output.

⁴⁴ Based on staff and financial data published by HESA, and Leeds Trinity University's financial statements.

⁴⁵ The total operational expenditure (excluding capital expenditure) of Leeds Trinity University in 2021-22 stood at **£48 million**. From this, for the purpose of the analysis, we excluded **£3 million** in depreciation costs (from non-staff expenditure) and **£3 million** in movements in pension provisions (from staff expenditure), as it is assumed that these are not relevant from a procurement perspective (i.e. these costs are not accounted for as income by other organisations). This results in total operational expenditure of **£41 million** in 2021-22 included here. Totals may not add up precisely due to rounding.

⁴⁶ It is possible that the data overestimates the level of procurement expenditure occurring in London as compared to other regions, since the invoice data would often reflect suppliers' head office locations, rather than reflecting the location where these activities took place.

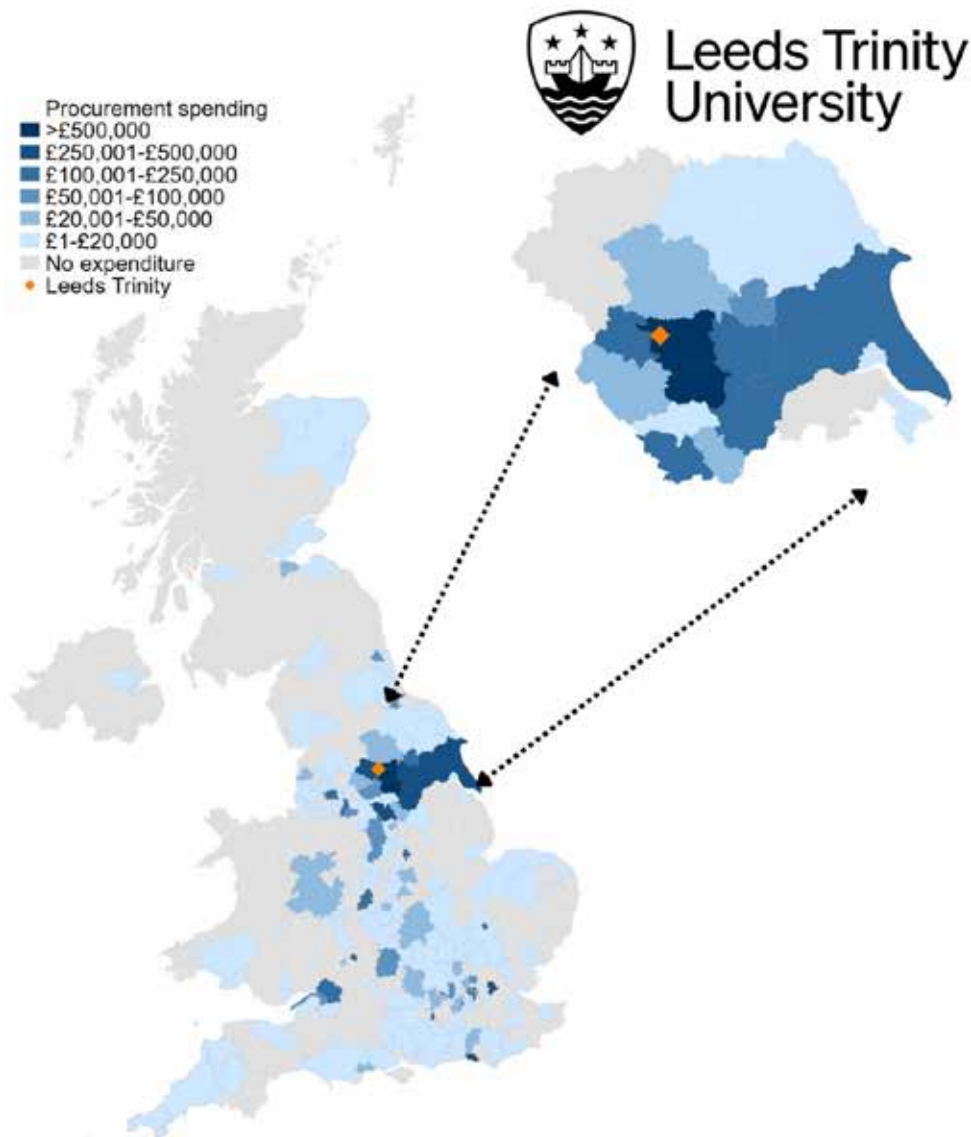
Figure 13 Direct economic impact (in terms of output) of Leeds Trinity University's expenditure in 2021-22, by type of expenditure



Note: We exclude a total of **£3 million** of non-staff costs associated with depreciation, and **£3 million** of staff costs associated with movements in pension provisions, as it is assumed that these are not relevant from a procurement perspective (i.e. these costs are not accounted for as income by other organisations). All estimates are presented in 2021-22 prices and rounded to the nearest £1m.

Source: London Economics' analysis based on HESA (2023a), HESA (2023b) and Leeds Trinity University's financial statements

Figure 14 Distribution of Leeds Trinity University's procurement expenditure in 2021-22, by Local Authority (of invoice address)



Note: We received data on the invoice postcodes associated with £10 million of procurement expenditure by Leeds Trinity University in 2021-22. We excluded a total of 2 expenditure records with negative expenditure levels. We used the February 2022 ONS Postcode Directory to determine the Local Authority for each outward postcode included in the dataset. The data was then matched with the ONS digital vector boundaries for Local Authorities as of May 2021 to generate the map.

Source: London Economics' analysis based Leeds Trinity University data and Office for National Statistics data. Contains National Statistics, OS, Royal Mail, Gridlink, ONS, NISRA, NRS and Ordnance Survey data © Crown copyright and database right 2023



Leeds Trinity - developing climate ambassadors of the future



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The urgency of climate change is clear and changes in the earth’s climate have been taking place at a never been seen before rate; it is vital for young people to understand climate change, be educated about the related social issues and how, as key stakeholders, they can play a role in fighting this global challenge.

However, in 2021, ‘Teach the Future’ surveyed over 7,500 UK teachers and found that 70% felt they have not received adequate training to educate students on climate change.

Underpinned by a recently published sustainability and climate change education framework, and continuing the success of the climate justice project piloted in the 2021/22 academic year, the ‘climate ambassadors’ project supported teachers, leaders and teacher educators to begin to embed climate change and sustainability into the curriculum.

The 12-week project, delivered in approximately 20 primary schools across Leeds and Bradford, enabled children to understand what climate change is through engaging, extracurricular activities that provided the opportunity to add to their knowledge. An aim of this work was to raise aspirations, build knowledge and widen participation, focusing on schools with low social and science capital to make a tangible impact.

Sessions were built on the principles of the Epistemic Insight Initiative, which is designed to allow students

to look at ‘Big Questions’ through the lenses of different subjects, in a multidisciplinary approach. This was then contextualised through the theme of climate justice and sustainability. The school projects culminated in a pupil-led conference held at Leeds Trinity University. Schools shared their learning journeys and responses to the ‘Big Questions’ they had formulated based on climate justice.

240 children regionally had the experience of participating in high-quality climate change education through this project and were able to visit a higher education institution – enhancing their outlook and excitement about further education. Furthermore, the partnerships with the local schools supported 20 local teachers to learn how to embed sustainability into teaching and share best practice and resources to support their future delivery.

The model created forms the basis for effective sustainability and climate change education in schools and will form an integrated part of future teaching on undergraduate and postgraduate teacher education courses at the University.

Moreover, this approach to embedding social justice themes and learning through the climate topic supports Leeds Trinity’s wider mission and strategic commitments to driving the sustainable agenda and contributing towards the UN Sustainable Development Goals, achieving Net Zero targets by 2030 and increasing contribution to the Leeds City Region through partnerships and collaboration.



3.2 Indirect and induced impacts of the University's expenditures

The assessment of the indirect and induced economic impacts associated with the expenditures of Leeds Trinity University is based on **economic multipliers** derived from the above-discussed multi-regional Input-Output model. In particular, we applied the estimated average economic multipliers associated with organisations in Yorkshire and the Humber's government, health, and education sector. This approach asserts that the spending patterns of Leeds Trinity University reflect the average spending patterns across organisations operating in Yorkshire and the Humber's government, health, and education sector.

These multipliers (for Yorkshire and the Humber and the UK as a whole⁴⁷) are presented in Table 7, indicating that every **£1 million** of operational or capital expenditure incurred by Leeds Trinity University generates an *additional* **£1.31 million** of impact throughout the UK economy, of which **£0.50 million** is generated in Yorkshire and the Humber. In terms of employment, we assume that, for every **1,000** (FTE) staff employed directly by Leeds Trinity University, an additional **810** staff are supported throughout the UK, of which **350** are located in Yorkshire and the Humber.

Table 7 Economic multipliers associated with the expenditures of Leeds Trinity University

Location of impact	Output	GVA	FTE employment
Yorkshire and the Humber	1.50	1.44	1.35
Total UK	2.31	2.10	1.81

Note: All multipliers constitute Type II multipliers, defined as [Direct + indirect + induced impact]/[Direct impact].

Source: *London Economics' analysis*

3.3 Adjustments for double-counting and transfers

Before arriving at the total direct, indirect, and induced impact associated with Leeds Trinity University's institutional spending, it is necessary to deduct the University's fee waivers and other bursary spending for UK-domiciled students to avoid double-counting, and to take account of the 'netting out' of the costs and benefits associated with Leeds Trinity University's activities between different agents in the UK economy. Specifically, we deducted **£1.2 million** in Leeds Trinity University fee waivers and other bursary spending for UK-domiciled students⁴⁸, as this was included (as a benefit) in the analysis of Leeds Trinity University's teaching and learning activities (Section 2).

The impact of Leeds Trinity University's expenditure on the UK economy in 2021-22 stood at £103 million.

3.4 Aggregate impact of Leeds Trinity University's spending

Figure 15 presents the estimated total direct, indirect, and induced impacts associated with the expenditures incurred by Leeds Trinity University in 2021-22 (after the above-described adjustment has been made). The aggregate impact of these expenditures was estimated at approximately **£103 million** in economic output terms (see top panel of Figure 15):

⁴⁷ In addition to the impacts on Yorkshire and the Humber and the UK as whole, the analysis estimates a full breakdown across all regions, as well as by sector. These detailed results are presented in Section 3.4.

⁴⁸ Leeds Trinity University's bursary support to UK domiciled students is considered as a benefit to the student in the analysis of the impact of teaching and learning (see Section 2). It was therefore necessary to deduct these bursaries from the direct impact of Leeds Trinity University's spending to correctly take account of the fact that these bursaries are a transfer from Leeds Trinity University to its students, and not an additional benefit to the UK economy.

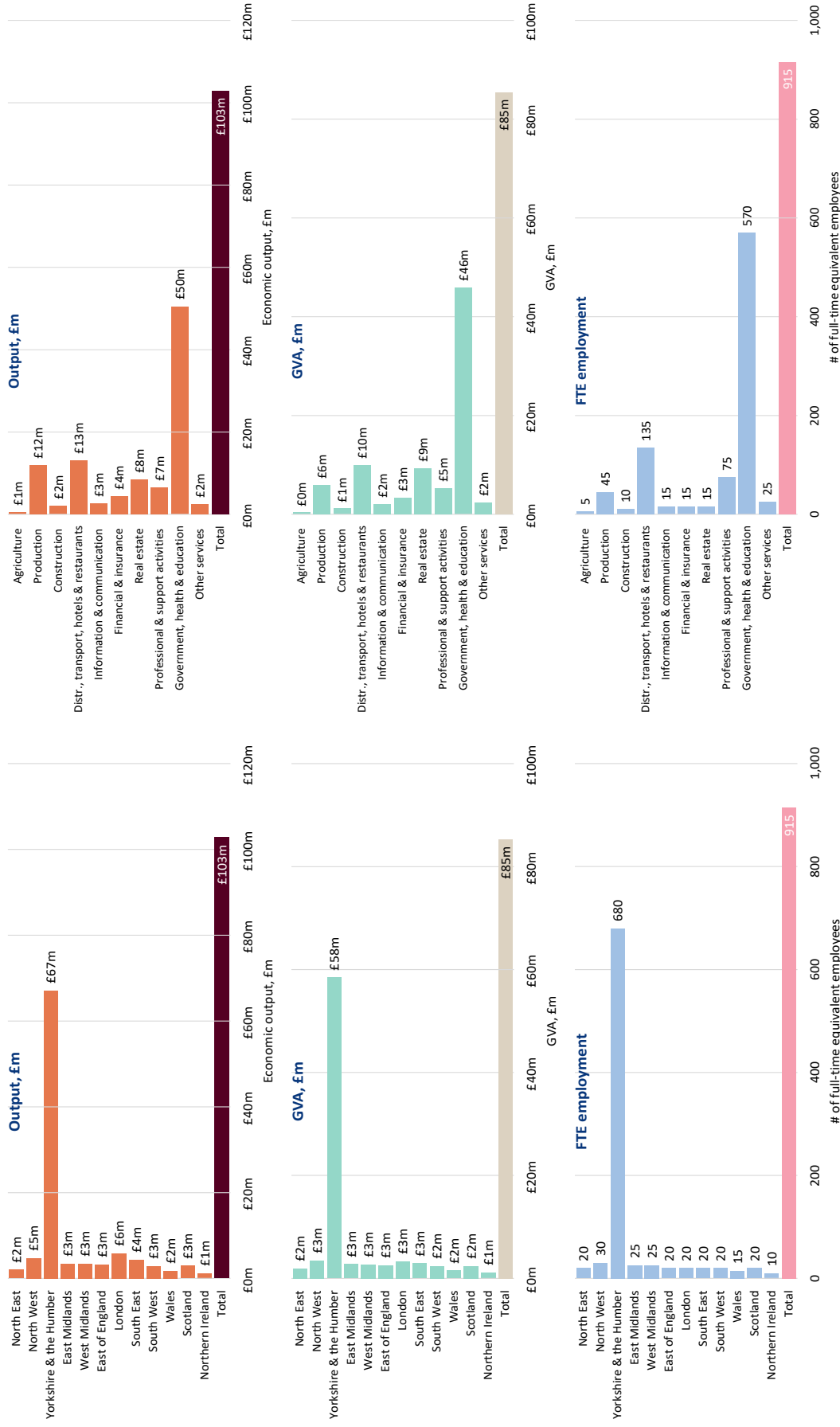
- In terms of region, the majority of this impact (**£67 million, 65%**) was generated in **Yorkshire and the Humber**, with the remaining **£36 million (35%)** occurring in **other regions** across the UK.
- In terms of sector, in addition to the impacts occurring in the **government, health, and education sector** itself (**£50 million, 49%**)⁴⁹, there are also large impacts felt within other sectors, e.g. including the **distribution, transport, hotel, and restaurant sector (£13 million, 13%)**, the **production sector (£12 million, 12%)**, and the **real estate sector (£8 million, 8%)**⁵⁰.

In terms of the number of jobs supported (in FTE), the results indicate that Leeds Trinity University's spending supported a total of **915** FTE jobs across the UK economy in 2021-22 (of which **680** are located in Yorkshire and the Humber). In addition, the impact in terms of gross value added was estimated at **£85 million** across the UK economy as a whole (with **£58 million** generated within Yorkshire and the Humber).

⁴⁹ The size of this impact is driven by the fact that, along with the indirect and induced impacts, it includes the *direct* level of expenditure of Leeds Trinity University (net of the above adjustments to avoid any double-counting).

⁵⁰ Again, for more detail on what industries are included in this high-level sector classification, please refer to Table 9 in Annex A3.1.

Figure 15 Total economic impact associated with Leeds Trinity University's expenditure in 2021-22, by region and sector



Note: Monetary estimates are presented in 2021-22 prices, rounded to the nearest £.1 million, and may not add up precisely to the totals indicated. Employment estimates are rounded to the nearest 5, and again may not add up precisely to the totals indicated. Source: *London Economics' analysis*



Leeds Trinity - Understanding the impact of Lockdown on British Families



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Carmen Clayton is a Professor in Family and Cultural Dynamics at Leeds Trinity University. Together with Senior Lecturer Marie Potter and the University of Leeds' Rafe Clayton, Professor Clayton's recent research has investigated the impact of lockdown for a diverse set of parents and young people.

British Families in Lockdown (BFIL) is a qualitative study led by Leeds Trinity University investigating the day-to-day experiences of British families during the pandemic. This research started in March 2020 during the first national lockdown.

Fifty-six families from a diverse set of socio-economic backgrounds, geographies, religions and cultures participated in semi-structured interviews whilst under lockdown in their homes. Family members shared their detailed, personal stories and experiences of employment, children's schooling, health, well-being, family life, leisure time and technology use during the UK lockdowns.

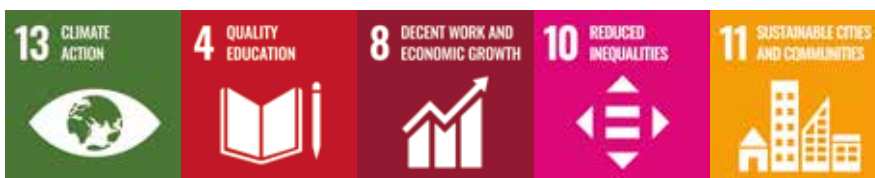
Outside of this study, reported lockdown evidence is overwhelmingly quantitative based, scientific, clinical, anecdotal or journalistic, as such, these qualitative insights help build a more rounded and detailed picture of British family experiences. The study was quick to respond to the pandemic and was one of the few qualitative studies collecting a broad range of data from the UK population from the first lockdown.

By investigating the impact of the national lockdowns on families in a qualitative manner, this study has helped improve policy and professional support responses through multiple publications, reports, and collaborations, making a positive difference to the lives of UK parents and their children. Furthermore, this study may help to empower families should future social restrictions be in place.

A number of UK parliamentary committees have published evidence from the study and other reports have also cited the research, including the charity Save The Children in its briefing report Life Under Lockdown.

From initial analysis, it became clear that lockdown gave families the opportunity to reflect on many aspects of their day-to-day life and the experience has changed outlooks, attitudes and expectations for the majority of participants. Different families have responded in different ways, with some demonstrating more ability to cope than others, and some families being more prepared or adaptable than others. We have identified a number of difficult experiences for families, yet we have also heard about many positive and enriching experiences too.

Professor Clayton: "These dichotomic experiences for UK families are providing questions about modern families and new lines of inquiry into British family lives are emerging."





4 The total economic impact of Leeds Trinity University on the UK economy in 2021-22

The total economic impact on the UK economy associated with Leeds Trinity University's activities in 2021-22 was estimated to be approximately **£657 million** (Table 8). Of this total, the value of Leeds Trinity University's **teaching and learning activities** stood at **£554 million (84%)**, and the impact generated by the **operating and capital spending** of the University stood at **£103 million (16%)**.



Table 8 Total economic impact of Leeds Trinity University's activities in the UK in 2021-22 (£m)

Type of impact		£m	%
	Students	£264m	40%
	Exchequer	£290m	44%
	Total economic impact		
	Direct impact	£45m	7%
	Indirect and induced impact	£58m	9%
	Total economic impact		
		£657m	100%

Note: All estimates are presented in 2021-22 prices, rounded to the nearest £1m, and may not add up precisely to the totals indicated.
Source: London Economics' analysis

Compared to the University's total operational costs of approximately **£48 million** in 2021-22⁵¹, the total impact of Leeds Trinity University's activities on the UK economy was estimated at **£657 million**, which corresponds to a **benefit to cost ratio of approximately 13.7:1**.⁵²

⁵¹ This relates to the University's total operating expenditure (including depreciation and movements in pension provisions), excluding capital expenditure.

⁵² The economic impact of Leeds Trinity University's teaching and learning activities includes students studying both on-campus and at the University's franchise partners. In contrast, operational costs were only available for Leeds Trinity University, and not for partner institutions. Therefore, the benefit-to-cost ratio presented here may be an overestimate.

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Annex 2 Sustainable Development Goals

Leeds Trinity University is committed to its contribution towards achieving the United Nations Sustainable Development Goals, becoming a signatory of the United Nations Sustainable Development Goals (SDG) Accord in August 2023.⁵³ With this in mind, the University's various contributions to the achievement of the Goals is outlined throughout this report. The seventeen Sustainable Development Goals are listed below:

- 1) No poverty
- 2) Zero hunger
- 3) Good health and well-being
- 4) Quality education
- 5) Gender equality
- 6) Clean water and sanitation
- 7) Affordable and clean energy
- 8) Decent work and economic growth
- 9) Industry, innovation and infrastructure
- 10) Reduced inequalities
- 11) Sustainable cities and communities
- 12) Responsible consumption and production
- 13) Climate action
- 14) Life below water
- 15) Life on land
- 16) Peace, justice, and strong institutions
- 17) Partnerships for the goals

⁵³ See Leeds Trinity University (2023).

Annex 3 Technical Annex

A3.1 Industry classifications for multi-regional Input-Output analysis

Table 9 provides an overview of the high-level industry classifications used throughout the multi-regional Input-Output analysis.

Table 9 Industry grouping used as part of the multi-regional Input-Output analysis

Industries included in original UK Input-Output table	High-level industry group [and UK SIC Codes]
Crop And Animal Production, Hunting And Related Service Activities	Agriculture [1-3]
Forestry And Logging	
Fishing And Aquaculture	
Mining Of Coal And Lignite	Production [5-39]
Extraction Of Crude Petroleum And Natural Gas & Mining Of Metal Ores	
Other Mining And Quarrying	
Mining Support Service Activities	
Processing and preserving of meat and production of meat products	
Processing and preserving of fish, crustaceans, molluscs, fruit and vegetables	
Manufacture of vegetable and animal oils and fats	
Manufacture of dairy products	
Manufacture of grain mill products, starches and starch products	
Manufacture of bakery and farinaceous products	
Manufacture of other food products	
Manufacture of prepared animal feeds	
Manufacture of alcoholic beverages & Tobacco Products	
Manufacture of soft drinks; production of mineral waters and other bottled waters	
Manufacture Of Textiles	
Manufacture Of Wearing Apparel	
Manufacture Of Leather And Related Products	
Manufacture Of Wood & Products Of Wood & Cork, Except Furniture; Manuf. Of Articles Of Straw	
Manufacture Of Paper And Paper Products	
Printing And Reproduction Of Recorded Media	
Manufacture Of Coke And Refined Petroleum Products	
Manufacture of paints, varnishes and similar coatings, printing ink and mastics	
Manufacture of soap & detergents, cleaning & polishing, perfumes & toilet preparations	
Manufacture of other chemical products	
Manufacture of industrial gases, inorganics and fertilisers (inorganic chemicals) - 20.11/13/15	
Manufacture of petrochemicals - 20.14/16/17/60	
Manufacture of dyestuffs, agro-chemicals - 20.12/20	
Manufacture Of Basic Pharmaceutical Products And Pharmaceutical Preparations	
Manufacture Of Rubber And Plastic Products	
Manufacture of cement, lime, plaster and articles of concrete, cement and plaster	
Manufacture of glass, refractory, clay, porcelain, ceramic, stone products - 23.1-4/7-9	
Manufacture of basic iron and steel	
Manufacture of other basic metals and casting	
Manufacture of weapons and ammunition	
Manufacture of fabricated metal products, excluding weapons & ammunition - 25.1-3/5-9	
Manufacture Of Computer, Electronic And Optical Products	
Manufacture Of Electrical Equipment	
Manufacture Of Machinery And Equipment N.E.C.	
Manufacture Of Motor Vehicles, Trailers And Semi-Trailers	
Building of ships and boats	
Manufacture of air and spacecraft and related machinery	
Manufacture of other transport equipment - 30.2/4/9	
Manufacture Of Furniture	
Other Manufacturing	

Industries included in original UK Input-Output table	High-level industry group [and UK SIC Codes]	
Repair and maintenance of ships and boats		
Repair and maintenance of aircraft and spacecraft		
Rest of repair; Installation - 33.11-14/17/19/20		
Electric power generation, transmission and distribution		
Manufacture of gas; distribution of gaseous fuels through mains; steam and aircon supply		
Water Collection, Treatment And Supply		
Sewerage		
Waste Collection, Treatment And Disposal Activities; Materials Recovery		
Remediation Activities And Other Waste Management Services		
Construction		Construction [41-43]
Wholesale And Retail Trade And Repair Of Motor Vehicles And Motorcycles		Distribution, transport, hotels and restaurants [45-56]
Wholesale Trade, Except Of Motor Vehicles And Motorcycles		
Retail Trade, Except Of Motor Vehicles And Motorcycles		
Rail transport		
Land transport services and transport services via pipelines, excluding rail transport		
Water Transport		
Air Transport		
Warehousing And Support Activities For Transportation		
Postal And Courier Activities		
Accommodation		
Food And Beverage Service Activities	Information and communication [58-63]	
Publishing Activities		
Motion Picture, Video & TV Programme Production, Sound Recording & Music Publishing Activities & Programming And Broadcasting Activities		
Telecommunications		
Computer Programming, Consultancy And Related Activities		
Information Service Activities		
Financial Service Activities, Except Insurance And Pension Funding	Financial and insurance [64-66]	
Insurance, reinsurance and pension funding services, except compulsory social security		
Activities Auxiliary To Financial Services And Insurance Activities	Real estate [68.1-2-68.3]	
Real estate services on a fee or contract basis		
Owner-Occupiers' Housing	Professional and support activities [69.1-82]	
Buying and selling, renting and operating of own or leased real estate, excluding imputed rent		
Legal activities		
Accounting, bookkeeping and auditing activities; tax consultancy		
Activities Of Head Offices; Management Consultancy Activities		
Architectural And Engineering Activities; Technical Testing And Analysis		
Scientific Research And Development		
Advertising And Market Research		
Other Professional, Scientific And Technical Activities		
Veterinary Activities		
Rental And Leasing Activities		
Employment Activities		
Travel Agency, Tour Operator And Other Reservation Service And Related Activities		
Security And Investigation Activities		
Services To Buildings And Landscape Activities		
Office Administrative, Office Support And Other Business Support Activities		
Public Administration And Defence; Compulsory Social Security		Government, health & education [84-88]
Education	Other services [90-97]	
Human Health Activities		
Residential Care & Social Work Activities		
Creative, Arts And Entertainment Activities		
Libraries, Archives, Museums And Other Cultural Activities		
Gambling And Betting Activities		
Sports Activities And Amusement And Recreation Activities		
Activities Of Membership Organisations		
Repair Of Computers And Personal And Household Goods		
Other Personal Service Activities		
Activities Of Households As Employers Of Domestic Personnel		

Note: 'N.E.C.' = not elsewhere classified. *Source: London Economics' analysis, based on Office for National Statistics (2023a) and UK SIC Codes (see Office for National Statistics, 2022e).*

A3.2 Impact of Leeds Trinity University's teaching and learning activities

A3.2.1 Qualifications and counterfactuals considered in the econometric analysis

Our econometric analysis of the earnings and employment returns to higher education qualifications (described in more detail in Annex A3.2.2) considered **five different higher education qualification groups** (i.e. five **'treatment' groups** for HE qualifications):

- **Three at postgraduate level** (higher degree (research), higher degree (taught) and 'other' postgraduate qualifications⁵⁴); and
- **Two at undergraduate level** (first degrees (including Degree Apprenticeship qualifications)⁵⁵ and 'other' undergraduate qualifications⁵⁶);

Table 10 presents these different undergraduate and postgraduate qualifications (i.e. treatment groups) considered in the analysis, along with the associated **counterfactual group** used for the marginal returns analysis in each case. As outlined in Section 2.4.1, we compare the earnings of the group of individuals in possession of each higher education qualification to the relevant counterfactual group, to ensure that we assess the economic benefit associated with the qualification itself (rather than the economic returns generated by the specific characteristics of the individual in possession of the qualification). This is a common approach in the literature and allows us to control for other personal, regional, or socioeconomic characteristics that might influence *both* the determinants of qualification attainment as well as earnings/employment.

For the analysis of marginal labour market returns, postgraduate qualification holders are compared to first degree holders, while for individuals holding first degrees (including Degree Apprenticeship qualifications) or 'other undergraduate' level qualifications, the counterfactual group consists of individuals holding any (academic or vocational) qualification at Regulated Qualifications Framework (RQF) Level 3 as their highest qualification^{57, 58}.

⁵⁴ 'Other' postgraduate relates to Labour Force Survey variables HIQUAL8, HIQUAL11, HIQUAL15 and HIQUAL22 value labels 'Postgraduate Certificate in Education', 'Other postgraduate degree or professional qualification' and 'Don't know', for individuals who selected 'Higher degree' (other than Masters or Doctorate degree).

⁵⁵ Degree Apprenticeship students are included within the first degree group throughout the econometric analysis, as these students gain a first degree qualification at the end of their studies, and therefore are assumed to gain the same marginal earnings and employment returns as 'traditional' first degree students.

⁵⁶ 'Other' undergraduate relates to Labour Force Survey variables HIQUAL8, HIQUAL11, HIQUAL15 and HIQUAL22 value labels 'other degree', 'diploma in higher education', 'other higher education below degree'. Interviewers are instructed to use 'other higher education below degree' only if the respondent states that they have 'something from higher education but they do not know what it is'. It is therefore not possible to provide examples of typical qualifications that would normally fall under this category. The response option serves the purpose of confirming that higher education qualifications have been achieved but that the respondent is unaware of the actual qualification title itself.

⁵⁷ Historically (and looking across all UK higher education institutions), students starting first degrees or other undergraduate qualifications are in possession of 2 or more GCE 'A' Levels as their highest level of prior attainment. However, this is no longer the case, especially for more career-focused HE institutions such as Leeds Trinity University (where many students are *not* in possession of 'A' levels upon entry).

⁵⁸ In terms of prior attainment for HE students, note that for a large proportion of students in the 2021-22 Leeds Trinity University cohort of UK domiciled students (around 57%), previous attainment levels were specified as 'Mature student admitted on basis of previous experience and/or admissions test', 'Other qualification level not known', or 'Not known'. For these students, we imputed their prior attainment level using a group-wise imputation approach based on the most common prior attainment among students in the cohort undertaking qualifications at the same level, separately by study mode.

Table 10 Treatment and comparison groups used to assess the marginal earnings and employment returns to HE qualifications

Treatment group – highest qualification	Comparison group - highest qualification
HE qualifications	
Higher degree (research)	First degree
Higher degree (taught)	First degree
Other postgraduate	First degree
First degree	RQF Level 3 (academic or vocational) qualifications
Other undergraduate	RQF Level 3 (academic or vocational) qualifications
Other	
RQF Level 3 (academic or vocational) qualifications	5 GCSEs grade A*-C

Source: *London Economics*

In addition, we also included a separate specification comparing the earnings associated with RQF Level 3 qualifications to possession of 5 or more GCSEs at grades A*-C (or equivalent). This additional analysis was undertaken to provide an indication of the fact that the academic ‘distance travelled’ by a (small) proportion of students in the 2021-22 Leeds Trinity University cohort is **greater** than might be the case compared to those in possession of levels of prior attainment ‘traditionally’ associated with higher education entry. Similarly, for other students within the cohort, the academic ‘distance travelled’ is **lower** than the traditional prior attainment level (e.g. a small proportion of students intending to undertake a first degree had previously already completed a sub-degree level (i.e. ‘other undergraduate’) qualification).

In instances where the level of prior attainment for students at Leeds Trinity University was higher or lower than the ‘traditional’ counterfactual qualifications outlined in Table 10, the analysis used a **‘stepwise’ calculation of additional lifetime earnings**. For example, to calculate the earnings and employment returns for a student **in possession of an ‘other undergraduate’ qualification undertaking a first degree (or Degree Apprenticeship) at Leeds Trinity University**, we *deducted* the returns to undertaking an ‘other undergraduate’ qualification (relative to the possession of an RQF Level 3 qualification) from the returns to undertaking a first degree (again relative to the possession of an RQF Level 3 qualification). Similarly, to calculate the returns for a student **in possession of 5 GCSEs A*-C (or equivalent) undertaking a first degree or Degree Apprenticeship at Leeds Trinity University**, we *added* the returns to achieving an RQF Level 3 qualification (relative to the possession of 5 GCSEs A*-C) to the returns to undertaking a first degree (relative to the possession of an RQF Level 3 qualification)⁵⁹.

A3.2.2 Marginal earnings and employment returns to higher education qualifications

Marginal earnings returns

To estimate the impact of qualification attainment on earnings, using information from the Labour Force Survey (LFS), we estimated a standard **Ordinary Least Squares** linear regression model, where the dependent variable is the natural logarithm of hourly earnings, and the independent variables include the full range of qualifications held alongside a range of personal, regional, and job-related characteristics that might be expected to influence earnings. In this model specification, we included

⁵⁹ In some instances, this stepwise calculation would result in *negative* lifetime returns to achieving higher education qualifications. As this seems illogical and unlikely in reality, any negative returns in these instances were set to zero. Hence, the analysis implicitly assumes that all calculated gross returns (*before* the deduction of any foregone earnings or other costs) can only be greater than or equal to zero (i.e. there can be no wage or employment *penalty* associated with any higher education qualification attainment, irrespective of the level of prior education attainment).

individuals who were employed on either a full-time or a part-time basis. This approach has been used widely in the academic literature.

The basic specification of the model was as follows:

$$\ln(\omega_i) = \alpha + \beta X_i + \epsilon_i \quad \text{for } i = 1 \text{ to } n$$

where $\ln(\omega_i)$ represents the natural logarithm of hourly earnings, ϵ_i represents an error term, α represents a constant term, i is an individual LFS respondent, and X_i provides the independent variables included in the analysis, as follows:

- Highest qualification held;
- Age;
- Age squared;
- Ethnic origin;
- Disability status;
- Region of work;
- Marital status;
- Number of dependent children under the age of 16;
- Full-time / part-time employment;
- Temporary or permanent contract;
- Public or private sector employment;
- Workplace size; and
- Yearly Dummies.

Using the above specification, we estimated earnings returns in aggregate and **for men and women separately**. Further, to analyse the benefits associated with different education qualifications over the lifetime of individuals holding these qualifications, the regressions were **estimated separately across a range of specific age bands** for the working age population, depending on the qualification considered. The estimated marginal earnings returns also take account of the specific subject mix of UK domiciled students in the 2021-22 Leeds Trinity University cohort.⁶⁰ As a result, the estimated marginal wage returns **adjust for the specific subject composition of Leeds Trinity University's student cohort**, where possible.⁶¹ In addition, as outlined in Annex A3.2.1, the marginal wage returns for first degrees also reflect the specific prior level of attainment of students in the 2021-22 Leeds Trinity University cohort (i.e. where the analysis is adjusted for the proportions of students in possession of RQF Level 3 qualifications as their highest prior attainment on entry).

⁶⁰ This subject mix adjustment was made by applying weights in the LFS regressions reflecting the proportion of students in the cohort enrolled in each subject area. The HESA Common Aggregation Hierarchy (CAH) was used to classify subject areas for HE qualification holders. The following subject groups were distinguished: (1) Medicine & dentistry, (2) Subjects allied to medicine, (3) Biological and sports sciences, (4) Psychology, (5) Veterinary science, (6) Agriculture, food & related subjects, (7) Physical sciences, (8) General & others in sciences, (9) Mathematical sciences, (10) Engineering & technology, (11) Computer science, (13) Architecture, building & planning, (14) Humanities & liberal arts (non-specific), (15) Social sciences, (16) Law, (17) Business & management, (19) Language & area studies, (20) Historical, philosophical & religious studies, (22) Education and teaching, (23) Combined & general studies, (24) Media, journalism and communications, (25) Design, and creative and performing arts, and (26) Geography, earth and environmental studies.

⁶¹ Note that the LFS data did not include information on subject for students undertaking 'other undergraduate' qualifications. Therefore, the subject mix adjustment factors for other undergraduate qualifications were instead based on the subject-level returns to first degrees, weighted by the number of students in the cohort undertaking other undergraduate qualifications in each subject, and multiplied by the overall ratio of the marginal earnings returns to other undergraduate qualifications relative to first degrees (across all subjects).

Further note that the analysis of earnings premiums was undertaken at a national (UK-wide) level. However, to adjust for differences across the Home Nations, these UK-wide earnings premiums were then combined with the relevant differential direct costs facing the individual and/or the public purse for students domiciled in the different Home Nations.

To estimate the impact of HE qualifications on labour market outcomes using this methodology, we used information from **pooled Quarterly UK Labour Force Surveys between 2010 and 2022**.

The resulting estimates of the marginal wage returns to the different qualifications of interest are presented in Table 11. In the earnings regressions, the coefficients provide an indication of the additional effect on hourly earnings associated with possession of the respective qualification relative to the counterfactual level of qualification. To take an example, the analysis suggests that men aged between 31 and 35 in possession of a first degree (or Degree Apprenticeship) achieve a **36.6%** hourly earnings premium compared to comparable men holding only an academic or vocational Level 3 qualification as their highest level of attainment. The comparable estimate for women aged between 31 and 35 stands at **36.8%**.

Table 11 Marginal earnings returns to HE qualifications (weighted across subjects), in % (following exponentiation), by gender and age band

Qualification level (vs. counterfactual)	Age band									
	16-20	21-25	26-30	31-35	36-40	41-45	46-50	51-55	56-60	61-65
Level 3 (vs. 5+GCSEs) ¹		5.7%	5.8%	5.9%	6.4%	4.8%			4.2%	
Other undergraduate (vs. Level 3) ²				17.4%	20.3%	27.3%	25.2%	23.0%	28.4%	35.4%
First degree (vs. Level 3) ²		12.2%	21.9%	36.6%	41.2%	42.3%	46.5%	41.1%	38.8%	44.5%
Other postgraduate (vs. first degrees) ³		9.5%	6.5%			-5.4%	-5.6%	-6.9%	-7.7%	-14.8%
Higher degree (taught) (vs. first degrees) ³			8.5%	7.6%	11.2%	17.6%	18.9%	12.2%	17.4%	28.8%
Higher degree (research) (vs. first degrees) ³		45.2%	6.8%	19.0%	20.4%	11.3%	31.0%	23.9%		17.0%
Women										
Level 3 (vs. 5+GCSEs) ¹							-3.1%			
Other undergraduate (vs. Level 3) ²		3.7%	9.0%	13.7%	26.6%	25.5%	26.2%	25.5%	26.5%	28.5%
First degree (vs. Level 3) ²		14.6%	27.3%	36.8%	44.8%	43.2%	45.2%	46.1%	43.6%	35.3%
Other postgraduate (vs. first degrees) ³		8.8%	4.1%	8.2%	8.0%	8.4%	9.4%	11.4%	12.6%	11.0%
Higher degree (taught) (vs. first degrees) ³		6.9%	4.7%	12.7%	18.1%	20.9%	29.4%	26.7%	34.7%	20.8%
Higher degree (research) (vs. first degrees) ³		38.7%	13.5%	30.6%	41.3%	36.6%	31.9%	15.0%	33.4%	42.8%

Note: Regression coefficients have been exponentiated to reflect percentage wage returns. In cases where the estimated coefficients are not statistically significantly different from zero (at the 10% level), the coefficient is assumed to be zero; these are displayed as gaps in the table.

¹ Returns to holding RQF Level 3 qualifications are estimated relative to 5 GCSEs at A*-C (or equivalent).

² Returns to other undergraduate qualifications and first degrees are estimated relative to individuals holding a Level 3 (academic or vocational) qualification as their highest qualification.

³ Returns to higher degree (taught), higher degree (research), and 'other' postgraduate qualifications are estimated relative to first degrees.

Source: London Economics' analysis of pooled Quarterly Labour Force Survey data for 2010Q1-2022Q4

Marginal employment returns

To estimate the impact of qualification attainment on employment, we adopted a **probit model** to assess the likelihood of different qualification holders being in employment or otherwise. The basic specification defines an individual's labour market outcome to be either in employment (working for payment or profit for more than 1 hour in the reference week (using the standard International

Labour Organisation definition) or not in employment (being either unemployed or economically inactive)). The specification of the probit model was as follows:

$$\text{Probit}(EMPNOT_i) = \alpha + \gamma Z_i + \epsilon_i \quad \text{for } i = 1 \text{ to } n^{62}$$

The dependent variable adopted represents the binary variable $EMPNOT_i$, which is coded 1 if the individual is in employment and 0 otherwise.⁶³ We specified the model to contain a constant term (α) as well as a number of standard independent variables, including the qualifications held by an individual (represented by Z_i in the above equation), as follows:

- Highest qualification held;
- Age;
- Age squared;
- Ethnic origin;
- Disability status;
- Region of usual residence;
- Marital status;
- Number of dependent children under the age of 16; and
- Yearly Dummies.

Again, ϵ_i represents an error term. Similar to the methodology for estimating earnings returns, the described probit model was estimated in aggregate and **separately for men and women**, with the analysis further split by respective **age bands**, and adjusted for the specific **subject mix** of students in the 2021-22 cohort of UK domiciled students attending Leeds Trinity University. Further, and again similar to the analysis of earnings returns, employment returns were estimated at the national (i.e. UK-wide) level.

The resulting estimated marginal employment returns to HE qualifications (adjusted for Leeds Trinity University's specific subject mix) are presented in Table 12. In the employment regressions, the relevant coefficients provide estimates of the impact of the qualification on the probability of being in employment (expressed in percentage points). Again, to take an example, the analysis estimates that a man aged between 31 and 35 in possession of a first degree (or Degree Apprenticeship) is **2.3 percentage points** more likely to be in employment than a man of similar age holding only a Level 3 qualification as his highest level of education. The corresponding estimate for women stands at **5.4 percentage points**.

⁶² Where i is again an individual LFS respondent.

⁶³ The probit function reflects the cumulative distribution function of the standard normal distribution.

Table 12 Marginal employment returns to HE qualifications (weighted across subjects), in percentage points, by gender and age band

Qualification level (vs. counterfactual)	Age band									
	16-20	21-25	26-30	31-35	36-40	41-45	46-50	51-55	56-60	61-65
Men										
Level 3 (vs. 5+GCSEs) ¹	-3.8	2.8	4.2	2.2		1.8	1.5	2.2	3.6	
Other undergraduate (vs. Level 3) ²				1.8		2.0		1.8		
First degree (vs. Level 3) ²	8.4	-3.1	2.0	2.3	3.6	1.9	1.8			
Other postgraduate (vs. first degrees) ³		6.9	1.9	1.5				2.6		-9.5
Higher degree (taught) (vs. first degrees) ³		-5.4	-3.0		1.0					
Higher degree (research) (vs. first degrees) ³				1.6	1.8	2.6	-4.0	6.1		7.4
Women										
Level 3 (vs. 5+GCSEs) ¹	3.0	5.2	4.2	3.7	5.2	4.0	5.4	5.8	6.6	6.2
Other undergraduate (vs. Level 3) ²		3.0		3.8	4.4	2.9	3.1	2.6		
First degree (vs. Level 3) ²	17.8		5.5	5.4	4.3	4.1	3.7	2.2		
Other postgraduate (vs. first degrees) ³		3.8		2.3		3.7	2.8	2.7	3.2	
Higher degree (taught) (vs. first degrees) ³		-4.9	-3.0				2.7	4.5	4.8	3.9
Higher degree (research) (vs. first degrees) ³			2.8	4.6		4.0		10.6		25.8

Note: In cases where the estimated coefficients are not statistically significantly different from zero (at the 10% level), the coefficient is assumed to be zero; these are displayed as gaps in the table.

¹ Returns to holding RQF Level 3 qualifications are estimated relative to 5 GCSEs at A*-C (or equivalent).

² Returns to other undergraduate qualifications and first degrees are estimated relative to individuals holding a Level 3 (academic or vocational) qualification as their highest qualification.

³ Returns to higher degree (taught), higher degree (research), and 'other' postgraduate qualifications are estimated relative to first degrees.

Source: London Economics' analysis of pooled Quarterly Labour Force Survey data for 2010Q1-2022Q4

A3.2.3 'Age-decay' function

Many existing economic analyses considering the lifetime benefits associated with higher education qualifications to date (e.g. Walker and Zhu, 2013) have focused on the returns associated with the 'traditional path' of higher education qualification attainment – i.e. progression directly from secondary level education and completion of a three or four year undergraduate degree from the age of 18 onwards (completing by the age of 21 or 22). These analyses assume that there are **direct costs** (tuition fees etc.), as well as an **opportunity cost** (the foregone earnings while undertaking the qualification full-time) associated with qualification attainment. More importantly, these analyses make the implicit assumption that any and all of the estimated earnings and/or employment benefit achieved accrues to the individual.

However, **the labour market outcomes associated with the attainment of higher education qualifications fundamentally differ based on the age that the qualification is attained**. In particular, in the case of Leeds Trinity University, the University's full-time students often undertake higher education qualifications later in life than 'typical' higher education students across the UK; similarly, part-time students also undertake their qualifications relatively late. For example, the estimated average age of enrolment among students in the 2021-22 cohort completing first degrees with Leeds Trinity University on a full-time basis is **33**, and **25** for corresponding part-time students. Typically, we would expect part-time students to undertake higher education qualifications several years later than the 'standard' full-time undergraduate. However, the unique nature of Leeds Trinity University's student cohort often results in a higher average age of enrolment for full-time students.

Table 13 presents the assumed average age at enrolment, study duration, and age at completion for students in the 2021-22 Leeds Trinity University cohort⁶⁴.

Table 13 Average age at enrolment, study duration, and age at completion for students in the 2021-22 Leeds Trinity University cohort

Qualification level	Full-time students			Part-time students		
	Age at enrolment	Duration (years)	Age at completion	Age at enrolment	Duration (years)	Age at completion
Other undergraduate	33	1	34	26	2	28
First degree	33	3	36	25	3	28
Other postgraduate	26	1	27	31	3	34
Higher degree (taught)	32	1	33	28	2	30
Higher degree (research)	29	3	32	48	4	52

Note: All values have been rounded to the nearest integer.

Source: London Economics' analysis based on Leeds Trinity University data and assumptions

Given these characteristics, we adjust the methodology when estimating the returns to later full-time and part-time education attainment at Leeds Trinity University, through the use of an **'age-decay' function**. This approach assumes that possession of a particular education qualification is associated with a certain earnings or employment premium, and that this entire labour market benefit accrues to the individual *if* the qualification is attained before the age of **28** (for undergraduate qualifications) or **33** (for postgraduate qualifications).

However, as the age of attainment increases, it is expected that a declining proportion of the potential value of the estimated earnings and employment benefit accrues to the individual.⁶⁵ This calibration ensures that those individuals completing qualifications at a relatively older age will see relatively lower earnings and employment benefits associated with qualification attainment. In contrast, those individuals attaining qualifications earlier in their working life will see a greater economic benefit.

Table 14 presents the assumed age-decay adjustment factors that we apply to the marginal earnings and employment returns to full-time and part-time students undertaking qualifications at Leeds Trinity University in the 2021-22 cohort. To take an example, for full-time higher degree (taught) students, we assume that because of the late attainment (at age **33** (on average)), these students recoup only **86%** of the corresponding earnings and employment premiums from that age (of attainment).

⁶⁴ The assumed average age at enrolment is based on the number of individuals in the cohort assumed to *complete* a given HE qualification/module at Leeds Trinity University (based on the assumption that some students might only complete several standalone credits/modules associated with the intended qualification (see Section 2.2 for more information)). In particular, the age at enrolment per qualification (based on the HESA data provided by Leeds Trinity University) is calculated as the weighted average age at enrolment across students in the 2021-22 cohort expected to *complete* the given qualification (weighted by the number of students starting different qualification aims and completing each given qualification, separately by study mode).

The assumed average duration of study for full-time students (by qualification level) is based on separate information provided by Leeds Trinity University, and supplemented by standard assumptions on the typical length of courses at each qualification level where required. For part-time students, study durations were calculated by multiplying the assumed full-time ratio by the ratio of the estimated average study intensity among full-time students relative to part-time students where required. Note that the assumed 3-year duration for part-time first degrees is based on the training duration for Degree Apprenticeships at Leeds Trinity University, all of which are categorised as part-time first degree students in the table.

⁶⁵ E.g. Callender et al. (2011) suggest that the evidence points to decreasing employment returns with age at qualification: older graduates are less likely to be employed than younger graduates three and a half years after graduation; however, there are no differences in the likelihood of graduates undertaking part-time and full-time study being employed according to their age or motivations to study.

Note that the application of the ‘age-decay’ function implies that, for *most* HE qualification levels at Leeds Trinity University, the estimated employment and earnings returns for part-time students are higher than the returns for comparable full-time students. These differences contrast with the (relatively limited) wider economic literature on the returns to part-time study⁶⁶, but reflect the unique nature of Leeds Trinity University’s student cohort.

⁶⁶ In general, these studies suggest that the economic returns to studying part-time are lower than the economic returns associated with studying full-time. This is in part because part-time students are often already employed when undertaking their studies, so the marginal (or additional) impact of the higher education qualification is lower. For instance, six months after graduation, graduates undertaking part-time study were three percentage points more likely to be employed than graduates undertaking full-time study, and less than half as likely (3% compared to 7%) to be unemployed. See Callender et al. (2011).

According to the same study, the salaries of graduates from part-time study grow at a slower pace compared with their full-time peers. Part-time graduates are less likely to see their salaries increase and are more likely to see their salaries stagnate between 6 months and 42 months after graduation: specifically, during this period, 78% of part-time graduates and 88% of full-time graduates saw their salaries rise, while 16% of part-time and 8% of full-time graduates experienced no change in salaries, and 6% of part-time and only 2% of former full-time students saw a drop in their salaries.

Table 14 Assumed age decay adjustment factors for students in the 2021-22 Leeds Trinity University cohort

Age	Other UG	First degree	Other PG	Higher degree (taught)	Higher degree (research)
18	100%	100%	100%	100%	100%
19	100%	100%	100%	100%	100%
20	100%	100%	100%	100%	100%
21	100%	100%	100%	100%	100%
22	100%	100%	100%	100%	100%
23	100%	100%	100%	100%	100%
24	98%	98%	100%	100%	100%
25	95%	95%	100%	100%	100%
26	93%	93%	100%	100%	100%
27	90%	90%	100%	100%	100%
28	88%	88%	100%	100%	100%
29	85%	85%	97%	97%	97%
30	83%	83%	94%	94%	94%
31	80%	80%	91%	91%	91%
32	78%	78%	89%	89%	89%
33	75%	75%	86%	86%	86%
34	73%	73%	83%	83%	83%
35	70%	70%	80%	80%	80%
36	68%	68%	77%	77%	77%
37	65%	65%	74%	74%	74%
38	63%	63%	71%	71%	71%
39	60%	60%	69%	69%	69%
40	58%	58%	66%	66%	66%
41	55%	55%	63%	63%	63%
42	53%	53%	60%	60%	60%
43	50%	50%	57%	57%	57%
44	48%	48%	54%	54%	54%
45	45%	45%	51%	51%	51%
46	42%	42%	49%	49%	49%
47	40%	40%	46%	46%	46%
48	37%	37%	43%	43%	43%
49	35%	35%	40%	40%	40%
50	32%	32%	37%	37%	37%
51	30%	30%	34%	34%	34%
52	27%	27%	31%	31%	31%
53	25%	25%	29%	29%	29%
54	22%	22%	26%	26%	26%
55	20%	20%	23%	23%	23%
56	17%	17%	20%	20%	20%
57	15%	15%	17%	17%	17%
58	12%	12%	14%	14%	14%
59	10%	10%	11%	11%	11%
60	7%	7%	9%	9%	9%
61	5%	5%	6%	6%	6%
62	2%	2%	3%	3%	3%
63	0%	0%	0%	0%	0%
64	0%	0%	0%	0%	0%
65	0%	0%	0%	0%	0%

Note: Shaded areas indicate relevant average graduation/completion age per full-time / part-time student at each level of study at Leeds Trinity University: ■ Full-time students ■ Part-time students

Source: London Economics' analysis based on Leeds Trinity University HESA data

A3.2.4 Estimating the gross graduate premium and gross public purse benefit

The gross graduate premium associated with qualification attainment is defined as the **present value of enhanced post-tax earnings** (i.e. after income tax, National Insurance and VAT are removed, and following the deduction of foregone earnings) relative to an individual in possession of the counterfactual qualification. To estimate the value of the gross graduate premium, it is

necessary to extend the econometric analysis (presented in Annex A3.2.2) by undertaking the following elements of analysis (separately by qualification level, gender, and study mode):

1. We estimated the employment-adjusted **annual earnings** achieved by individuals in the counterfactual groups (e.g., Level 3 qualifications or first degrees).
2. We inflated these baseline or counterfactual earnings using the marginal earnings premiums and employment premiums (presented in Table 11 and Table 12 in Annex A3.2.2), adjusted to reflect late attainment (as outlined in Annex A3.2.3), to produce **annual age-earnings** profiles associated with the possession of each particular qualification.
3. We adjusted these age-earnings profiles to account for the fact that earnings would be expected to increase in real terms over time (at an assumed rate of **1.6%** per annum (based on average earnings growth rate forecasts estimated by the Office for Budget Responsibility (2022a and 2023b)⁶⁷).
4. Based on the earnings profiles generated by qualification holders, and income tax and National Insurance rates and allowances for the relevant academic year⁶⁸, we computed the future stream of net earnings (i.e. post-tax)⁶⁹. Using similar assumptions, we further calculated the stream of (employment-adjusted) foregone earnings (based on earnings in the relevant counterfactual group⁷⁰) during the period of study, again net of tax, for full-time students (and Degree Apprentices⁷¹) only.
5. We calculated the **discounted** stream of additional (employment-adjusted) future earnings compared to the relevant counterfactual group (using a standard discount rate of **3.5%** as presented in HM Treasury Green Book (HM Treasury, 2022)), and the discounted stream of foregone earnings during qualification attainment (for full-time students and Degree Apprentices), to generate a present value figure. We thus arrive at the **gross graduate premium** (or equivalent for other qualifications).
6. The **discounted** stream of enhanced taxation revenues minus the tax income foregone during students' qualification attainment (where relevant) derived in element 4 provides an estimate of the **gross public benefit** associated with HE qualifications.

Note that the gross graduate premium and gross public benefit for students undertaking qualifications at a level equivalent to or lower than the highest qualification that they are already in possession of was assumed to be zero. For example, it is assumed that a student in possession of a taught postgraduate degree undertaking an additional postgraduate qualification at Leeds Trinity University will not accrue any wage or employment benefits from this additional qualification

⁶⁷ Specifically, we make use of the Office for Budget Responsibility's short-term forecasts (for 2021-22 to 2027-28; see Office for Budget Responsibility (2023)) and long-term forecasts (for 2028-29 to 2072-73; see Office for Budget Responsibility (2022a)) of nominal average earnings growth. The assumed 1.6% rate captures the average annual growth rate in real earnings over the total period (adjusted from nominal to real terms based on projected Consumer Price Index (CPI) inflation over the same period (and based on the same sources)).

⁶⁸ i.e. 2021-22. Note that the analysis assumes fiscal neutrality, i.e. it is asserted that, in subsequent years, the earnings tax and National Insurance income bands grow at the same rate of annual earnings growth of 1.6%.

⁶⁹ The tax adjustment also takes account of increased VAT revenues for HMG, by assuming that individuals consume 94.3% of their annual income, and that 50% of their consumption is subject to VAT at a rate of 20%. The assumed proportion of income consumed is based on forecasts of the household savings rate published by the Office for Budget Responsibility (2022b), while the proportion of consumption subject to VAT is based on VAT estimates provided by the Office for Budget Responsibility (no date).

⁷⁰ The foregone earnings calculations are based on the baseline or counterfactual earnings associated with either a Level 3 (academic or vocational) qualification or first degrees. Specifically, as outlined in Annex A3.2.1, some students in the 2021-22 Leeds Trinity University cohort were in possession of other levels of prior attainment. To accommodate this, as a simplifying assumption, the foregone earnings for students previously in possession of other undergraduate qualifications (other than first degrees) are based on the earnings associated with possession of a Level 3 qualification as the highest qualification (adjusted for the age at enrolment and completion associated with the relevant HE qualification obtained). In addition, the estimated foregone earnings for students previously in possession of postgraduate qualifications are based on the level of earnings associated with first degrees.

⁷¹ For Degree Apprentices, we separately take account of the benefits of the apprentice pay that these learners incur during their training; for more information, see Section 2.4.2.

attainment (while still incurring the costs of foregone earnings during the period of study, if they studied on a full-time basis).

Further note that the analysis of gross graduate premiums and public purse benefits was undertaken at a **national** (UK-wide) level. To adjust for differences across the Home Nations, these UK-wide premiums were then combined with the relevant differential student support costs facing the individual and/or the Exchequer for students domiciled in the different Home Nations and studying in England.

The resulting gross graduate premiums/gross learner benefits and gross public purse benefits per student (by study mode, level of study, gender, and prior attainment) are presented in Table 15.

A3.2.5 Net graduate premium and net public benefit

Table 16 provides detailed information on the net graduate premiums and net public benefits for UK domiciled students associated with higher education qualifications offered by Leeds Trinity University, based on the 2021-22 cohort. The table provides detailed information on the net graduate premiums/net Exchequer benefits by study level, prior attainment, gender, and study mode.⁷²

⁷² In terms of gender, it is important to note that the economic benefits associated with qualification attainment - expressed in *monetary terms* - are often lower for women than men, predominantly as a result of the increased likelihood of spending time out of the active labour force. However, reflecting the wider economic literature, the *marginal benefits* associated with qualification attainment - expressed as either the *percentage increase* in hourly earnings or enhanced probability of employment - are often greater for women than for men (see Annex A3.2.2).

Table 15 Gross graduate premiums and Exchequer benefits per student associated with HE qualification attainment at Leeds Trinity University, by study mode, level, gender, and prior attainment

Level of study	Previous qualification and gender													
	GCSE		Level 3		Other undergraduate		First degree		Other postgraduate		Higher degree (taught)		Higher degree (research)	
	Men	Women	Men	Women	Men	Women	Men	Women	Men	Women	Men	Women	Men	Women
Gross graduate premiums														
Full time students														
Other undergraduate	£82,000	£47,000	£64,000	£38,000										
First degree	£82,000	£44,000	£61,000	£34,000	£115,000	£11,000	£30,000	£20,000	£82,000					
Other postgraduate														
Higher degree (taught)				£164,000			£67,000	£54,000						
Higher degree (research)							£77,000	£31,000						£51,000
Part time students														
Other undergraduate	£126,000	£75,000	£101,000	£60,000										
First degree														
Other postgraduate	£133,000	£129,000		£119,000	£34,000	£70,000	£38,000	£0						
Higher degree (taught)				£194,000		£136,000	£94,000	£89,000	£115,000	£47,000				
Higher degree (research)														£1,000
Higher degree (research)														£5,000
Degree Apprenticeships														
First degree	£160,000	£88,000	£129,000	£70,000	£30,000	£10,000	£55,000	£61,000	£55,000	£61,000	£55,000	£61,000	£55,000	£5,000
Gross Exchequer benefits														
Full time students														
Other undergraduate	£77,000	£43,000	£61,000	£37,000	£12,000	£3,000								
First degree	£91,000	£55,000	£73,000	£48,000	£9,000	£12,000								
Other postgraduate														
Higher degree (taught)				£140,000		£98,000	£61,000	£70,000	£97,000	£27,000	£10,000	£9,000	£10,000	£10,000
Higher degree (research)							£82,000	£75,000						£12,000
Part time students														
Other undergraduate	£106,000	£59,000	£86,000	£49,000	£0	£0	£0	£0	£0	£0	£0	£0	£0	£0
First degree														
Other postgraduate	£110,000	£104,000		£97,000	£26,000	£58,000	£31,000	£0	£0	£0	£0	£0	£0	£0
Higher degree (taught)				£159,000		£112,000	£77,000	£93,000	£118,000	£39,000	£0	£0	£0	£0
Higher degree (research)														£2,000
Higher degree (research)														£1,000
Degree Apprenticeships														
First degree	£159,000	£91,000	£132,000	£78,000	£48,000	£30,000	£25,000	£30,000	£25,000	£30,000	£25,000	£30,000	£25,000	£25,000

Note: All values are rounded to the nearest £1,000. Gaps may arise where there are no students in the 2021-22 Leeds Trinity University cohort expected to complete the given qualification (with the given characteristics). Grey shading indicates instances where the level of study at Leeds Trinity University is equal to or lower than the level of previous attainment. In these instances, the analysis implicitly assumes that all calculated gross returns (before the deduction of any foregone earnings or other costs) can only be larger than or equal to zero (i.e. there can be no wage or employment penalty associated with any higher education qualification attainment). Hence, each grey-shaded cell displays only the assumed underlying foregone earnings. Source: *London Economics' analysis*

Table 16 Net graduate premiums and Exchequer benefits per student associated with HE qualification attainment at Leeds Trinity University, by study mode, level, gender, and prior attainment

Level of study	Previous qualification and gender													
	GCSE		Level 3		Other undergraduate		First degree		Other postgraduate		Higher degree (taught)		Higher degree (research)	
	Men	Women	Men	Women	Men	Women	Men	Women	Men	Women	Men	Women	Men	Women
Net graduate premiums														
Full time students														
Other undergraduate	£78,000	£43,000	£60,000	£34,000	£17,000	£17,000	£0	£0	£0	£0	£0	£0	£0	£0
First degree	£69,000	£31,000	£48,000	£21,000	£28,000	£24,000	£28,000	£22,000	£27,000	£28,000	£27,000	£28,000	£28,000	£28,000
Other postgraduate							£22,000	£22,000	£27,000	£28,000	£27,000	£28,000	£28,000	£28,000
Higher degree (taught)							£47,000	£60,000	£75,000	£18,000	£35,000	£35,000	£35,000	£28,000
Higher degree (research)							£16,000	£63,000	£66,000	£66,000	£66,000	£66,000	£66,000	£28,000
Part time students														
Other undergraduate	£126,000	£75,000	£101,000	£60,000	£0	£0	£0	£0	£0	£0	£0	£0	£0	£0
First degree														
Other postgraduate	£127,000	£123,000		£112,000	£27,000	£63,000	£31,000	£31,000	£7,000	£7,000	£7,000	£7,000	£7,000	£7,000
Higher degree (taught)				£186,000	£82,000	£86,000	£86,000	£108,000	£40,000	£7,000	£7,000	£7,000	£7,000	£7,000
Higher degree (research)														
Degree Apprenticeships														
First degree	£221,000	£146,000	£190,000	£127,000	£90,000	£67,000	£2,000	£2,000	£2,000	£2,000	£2,000	£2,000	£2,000	£2,000
Net Exchequer benefits														
Full time students														
Other undergraduate	£72,000	£39,000	£57,000	£33,000	£17,000	£8,000	£8,000	£8,000	£8,000	£8,000	£8,000	£8,000	£8,000	£8,000
First degree	£78,000	£42,000	£60,000	£35,000	£4,000	£1,000	£1,000	£1,000	£1,000	£1,000	£1,000	£1,000	£1,000	£1,000
Other postgraduate							£31,000	£31,000	£10,000	£10,000	£10,000	£10,000	£10,000	£10,000
Higher degree (taught)							£70,000	£61,000	£97,000	£27,000	£17,000	£17,000	£17,000	£10,000
Higher degree (research)							£74,000	£81,000	£13,000	£13,000	£13,000	£13,000	£13,000	£10,000
Part time students														
Other undergraduate	£99,000	£52,000	£79,000	£42,000	£7,000	£7,000	£7,000	£7,000	£7,000	£7,000	£7,000	£7,000	£7,000	£7,000
First degree														
Other postgraduate	£110,000	£104,000		£97,000	£25,000	£57,000	£31,000	£31,000	£0	£0	£0	£0	£0	£0
Higher degree (taught)				£158,000	£92,000	£112,000	£77,000	£77,000	£118,000	£38,000	£0	£0	£0	£0
Higher degree (research)														
Degree Apprenticeship														
First degree	£179,000	£108,000	£152,000	£95,000	£68,000	£47,000	£8,000	£8,000	£8,000	£8,000	£8,000	£8,000	£8,000	£8,000

Note: All values are rounded to the nearest £1,000. Gaps may arise where there are no students in the 2021-22 Leeds Trinity University cohort expected to complete the given qualification (with the given characteristics). Grey shading indicates instances where the level of study at Leeds Trinity University is equal to or lower than the level of previous attainment. In these instances, the analysis implicitly assumes that all calculated net returns (before the deduction of any foregone earnings or other costs) can only be larger or equal to zero (i.e. there can be no wage or employment penalty associated with any higher education qualification attainment). Hence, each grey-shaded cell displays only the assumed underlying direct or indirect costs associated with qualification attainment. **Source: London Economics' analysis**



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