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The impact of the higher education sector on the UK economy

Summary Report for Universities UK

August 2023

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Introduction

London Economics were commissioned to assess the **impact of the UK higher education sector on the UK economy, focusing on the 2021-22 academic year**.

There are almost 300 higher education providers in the UK, ranging from large internationally renowned universities that conduct state-of-the-art research to smaller specialist providers that cater for specific gaps in the market. In the 2021-22 academic year, UK higher education providers (HEPs) educated approximately **2.9 million students**, of which **1.3 million** were in their first year of their studies¹.

The higher education sector contributes to the UK economy in a myriad of ways. The education and training that these institutions provide increases human capital and productivity across the UK (reflected in graduates' earnings and employment outcomes), while the world-class research conducted by the sector contributes to innovation and long-term economic growth. The UK higher education sector is also a major exporter through its hosting of many international students, whose presence generates substantial impacts throughout the UK economy².

In addition to these longer-term impacts, higher education providers generate significant economic activity through their operating and capital expenditures and large numbers of staff throughout the economy. To capture these impacts, our analysis here estimates the economic footprint of HEPs in terms of the **direct, indirect, and induced economic impacts associated with their expenditures**³. In other words, the estimates presented here focus only on the economic impact associated with the 'physical footprint' of UK HEPs, but do not consider the significant additional economic contributions associated with their teaching and learning activities, their wide-ranging research, or their educational exports in the form of international students coming to study in the UK.

To estimate the impacts associated with higher education providers' expenditures, we made use of financial and staff data for each provider from the Higher Education Statistics Agency (HESA) to calculate the direct impact of the UK higher education sector's⁴ expenditure in 2021-22⁵ in terms of economic output, gross value added (GVA – i.e., the contribution to GDP), and full-time equivalent (FTE) employment – at both the national and

¹ See Higher Education Statistics Agency (2023), '[Higher Education Student Data](#)'.

² For example, see London Economics (2023), '[The benefits and costs of international higher education students to the UK economy](#)'.

³ For a definition of these impacts, as well as further detail on our methodological approach, please refer to the Annexe.

⁴ Based on the coverage of the underlying HESA financial data, in terms of institutional coverage, our analysis includes publicly funded higher education institutions (including universities) as well as alternative providers. See [more information on HESA's data coverage](#).

⁵ In relation to the time period covered by the analysis, it is important to emphasise that HEPs' expenditures in the 2021-22 academic year were significantly impacted by the Covid-19 pandemic. For example, [financial data published by HESA](#) indicate that providers' capital spending was approximately 22% lower in 2021-22 than in 2018-19 (i.e., the last full academic year prior to the onset of the pandemic). The estimates presented here need to be interpreted in that context and with this caveat in mind.

regional level. To estimate the indirect and induced impact associated with these expenditures, we then applied economic multipliers derived from a multi-regional Input-Output analysis.

Total impact on the UK economy

Based on their operational and capital expenditure⁶ (as well as their staff numbers), in 2021-22, the **direct** economic impact of the UK HE sector on the UK economy stood at **£46.1bn** (see Table 1). In addition, this expenditure resulted in significant **indirect** and **induced** effects throughout the wider economy (through the institutions' supply chains as well and their employees' purchases of goods and services throughout the economy), estimated at approximately **£69.5bn**. Combining these effects, the total direct, indirect, and induced economic impact of these activities on the UK economy stood at approximately **£115.7bn**.

Table 1 Total impact of the HE sector's spending on the UK economy in 2021-22

Type of impact	Economic output	GVA	FTE jobs
Direct impact	£46.1bn	£30.6bn	385,500
Indirect and induced impact	£69.5bn	£40.8bn	382,500
Total impact	£115.7bn	£71.3bn	768,000

Note: Totals may not add due to rounding. Economic output and GVA estimates are round to the nearest £100 million, and FTE job estimates are rounded to the nearest 100.

Source: *London Economics' analysis*

In gross value added terms, these impacts stood at **£71.3bn**, including **£30.6bn** of direct impact alongside a further **£40.8bn** of indirect and induced impact.

In terms of the number of FTE jobs supported, in addition to the **385,500** FTE staff that were directly employed by UK higher education providers in 2021-22, the providers' activities supported a further **382,500** FTE jobs throughout the wider economy. The total employment impact associated with higher education providers' operations across the UK was thus estimated to be **768,000**.

While the analysis here focuses exclusively on the economic impact of HEPs' expenditures, when combining this with separate estimates from our recent study on the benefits and costs of international HE students to the UK economy⁷, indicatively, the total impact associated with providers' spending *as well as* the spending of their international students throughout the UK economy stands at approximately **£130.5bn** in economic output terms. This includes **£115.7bn** of impact associated with HEP spending, and **£14.8bn** associated

⁶ We do not include movements in pension provisions or depreciation and amortisation in HEPs' expenditures, as these items constitute 'non-cash' expenditures from an accounting perspective (i.e., they are not accrued as income by providers' employees or their supplying industries).

⁷ Again, see London Economics (2023), ['The benefits and costs of international higher education students to the UK economy'](#).

with the spending of international students who started HE qualifications in the UK in 2021-22⁸.

Impact by region and nation

In addition to the total impact on the UK economy as a whole, Figure 1 shows the impact of the higher education sector's expenditures on each region. In other words, this analysis illustrates the *destination* of impact, i.e., the direct, indirect, and induced impact of higher education providers' expenditures within each region.

The higher education sector makes substantial economic contributions throughout all regions and nations of the UK, with every region accruing an economic benefit of more than £2bn in economic output terms (and more than 19,000 FTE jobs). London and the South East of England experience the largest impact, with **£27.0bn** and **£16.9bn** worth of economic output generated in these regions in 2021-22 respectively (equivalent to **23%** and **15%** of the total impact on the UK of **£115.7bn**). This is followed by Scotland (**£11.0bn, 10%**) and the North West of England (**£10.4bn, 9%**).

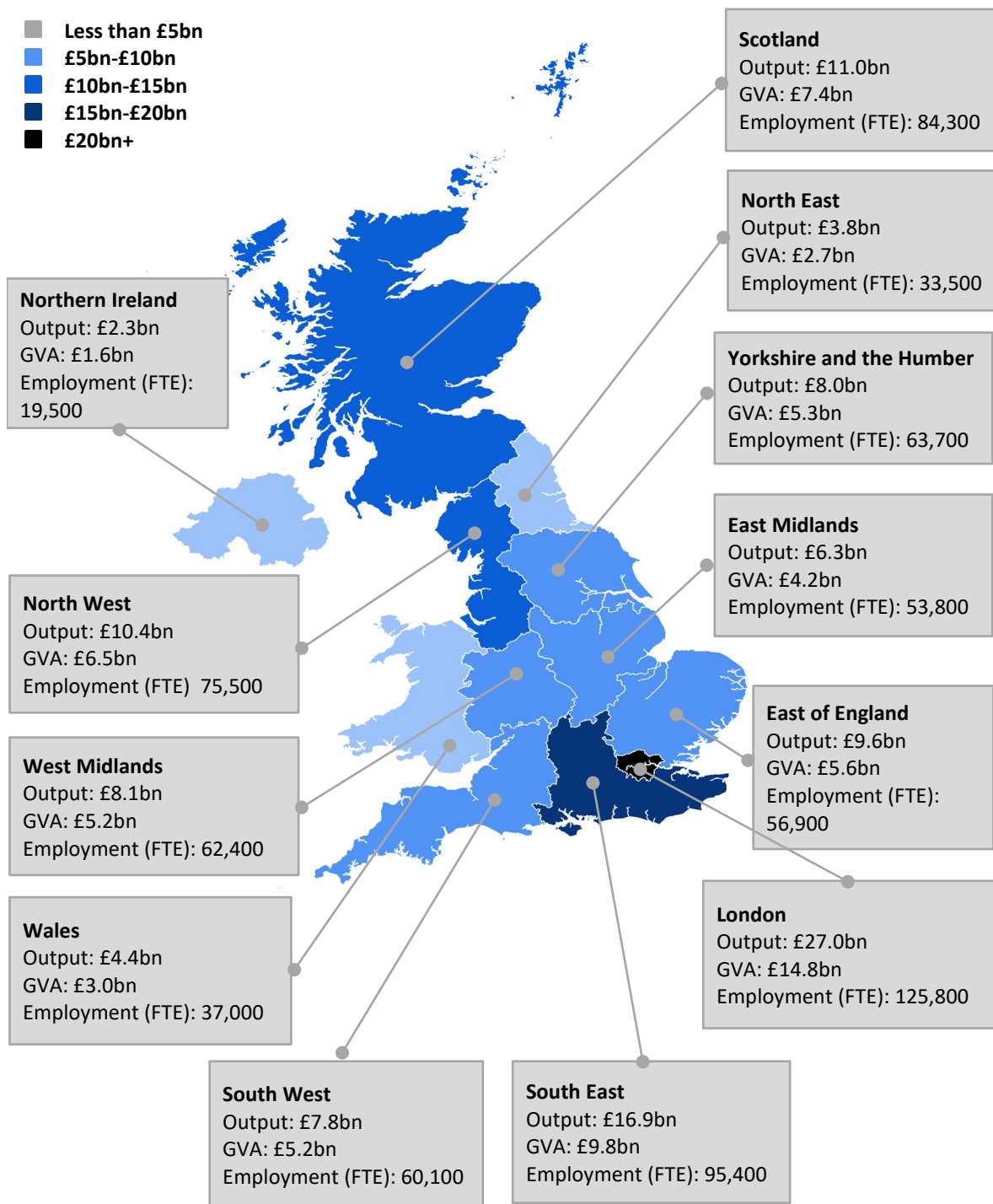
In terms of jobs, as outlined above, the higher education sector's expenditure supported an estimated total of **768,000** FTE jobs throughout the UK in 2021-22. This equates to approximately **2.8%** of all employment across the UK⁹. In terms of the breakdown by region and nation, as with economic output, HEPs' activities support relatively large numbers of jobs in London (**125,800**), the South East (**95,400**), Scotland (**84,300**), and the North West of England (**75,500**). The HE sector supports comparatively lower *absolute* numbers of jobs in other regions and nations. However, Figure 2 illustrates that, in *relative* terms, the HE sector is accountable for large *proportions* of total employment in each region or nation, further evidencing the importance of higher education providers to their local economies (for example, the sector's activities support an estimated **33,500** FTE jobs in the North East, which equates to approximately **3.5%** of all FTE employment in the North East of England).

In addition to this breakdown by region in terms of the *destination* of impact, in Box 1, we present a geographical breakdown of the sector's total impact on the UK economy as a whole by *origin* of this impact, based on the location of HEPs by Combined Authority.

⁸ The impact of international students is based on an original total net impact of **£37.4bn**, which included the direct, indirect, and induced effects of the tuition fee spending, living cost expenditure, and associated visitor spending related to international students in the 2021-22 cohort of first-year students (capturing these expenditures over students' entire study period), net of the public costs of hosting these students in the UK. To avoid double-counting with the impact of providers' expenditures here, from this total, we then exclude the estimated impact of international students' tuition fees (**£22.6bn**), as these are accrued as revenues by HEPs themselves (and, therefore, are expected to already be implicitly included in the impact of the HEPs' expenditures).

⁹ Based on estimated total FTE employment in the UK, using [Office for National Statistics data on total headcount employment by region in 2021](#) and estimated full-time equivalence/employment intensity based on [Office for National Statistics data on mean weekly hours worked among full-time and part-time employees by region and nation in 2021](#).

Figure 1 Total impact of the HE sector in 2021-22, by region or nation of impact

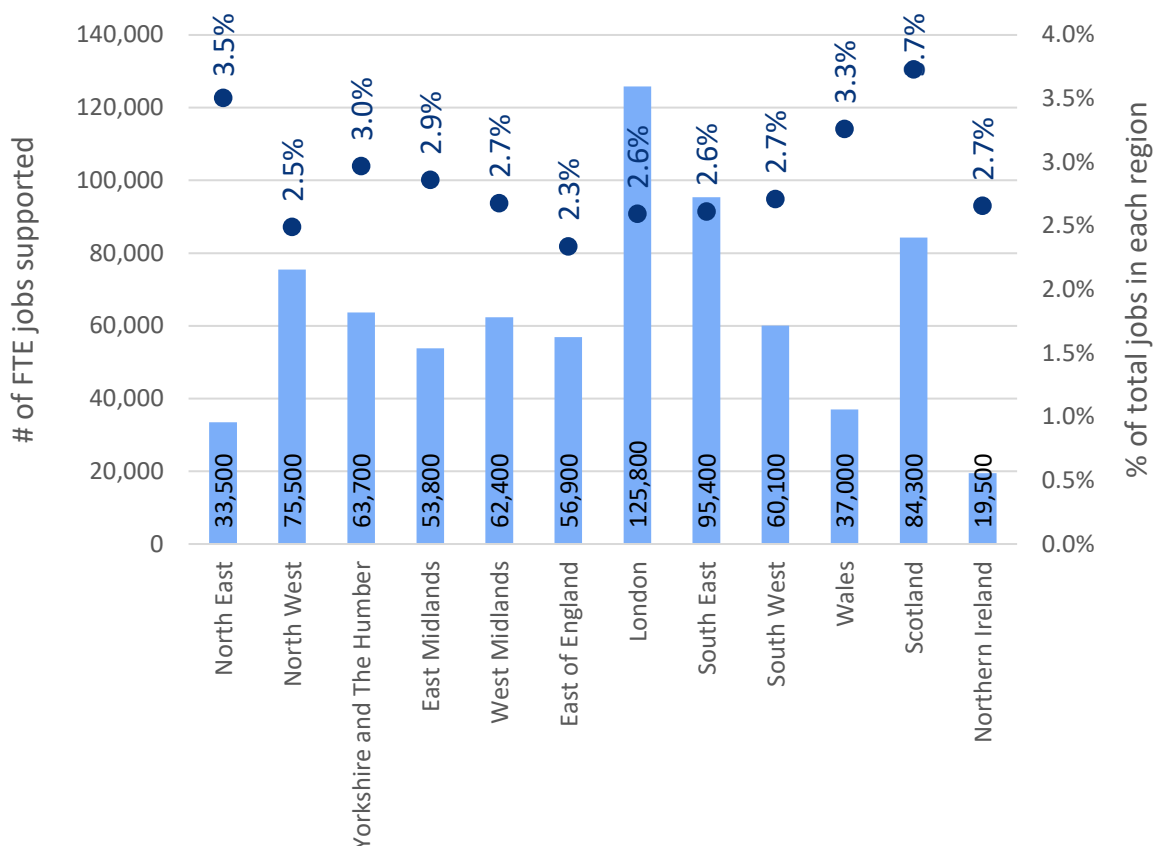


Note: Totals may not add due to rounding. Economic output and GVA estimates are round to the nearest £100 million, and FTE job estimates are rounded to the nearest 100.

The figure provides information on the *destination* of impact, i.e., a breakdown of the estimates by the region or nation in which the impact occurs. For example, the figures for the South East suggest that the activities of the UK higher education sector support a total of approximately **£16.9bn** of economic output, **£9.8bn** of GVA, and **95,400** FTE jobs in the South East of England.

Source: London Economics' analysis

Figure 2 Total impact of the HE sector in 2021-22, by region or nation of impact, in FTE employment terms



Note: Totals may not add due to rounding. FTE job estimates are rounded to the nearest 100.

Source: *London Economics' analysis*

Impact by sector

Table 2 provides a further breakdown of the impact estimates by sector (i.e., the impact of higher education providers' activities on different sectors within the UK economy). In addition to the large impact within the government, health, and education sector itself (£52.8bn of economic output), the activities of UK HEPs are estimated to generate particularly large impacts within the distribution, transport, hotels, and restaurants sector (£15.4bn), the production sector (£12.6bn), the real estate sector (£9.7bn), and the professional and support activities sector (£9.2bn).

Table 2 Total impact of the HE sector in 2021-22, by sector of impact

Sector	Economic output	GVA	FTE jobs
Agriculture	£0.6bn	£0.3bn	6,400
Production	£12.6bn	£5.1bn	39,800
Construction	£2.7bn	£1.1bn	9,200
Distribution, transport, hotels, and restaurants	£15.4bn	£8.9bn	127,800
Information and communication	£3.7bn	£2.1bn	16,000
Financial and insurance	£6.0bn	£3.0bn	15,300
Real estate	£9.7bn	£8.2bn	12,000
Professional and support activities	£9.2bn	£5.4bn	74,700
Government, health & education	£52.8bn	£35.2bn	444,200
Other services	£2.9bn	£2.0bn	22,500
Total	£115.7bn	£71.3bn	768,000

Note: Totals may not add due to rounding. Economic output and GVA estimates are round to the nearest £100 million, and FTE job estimates are rounded to the nearest 100.

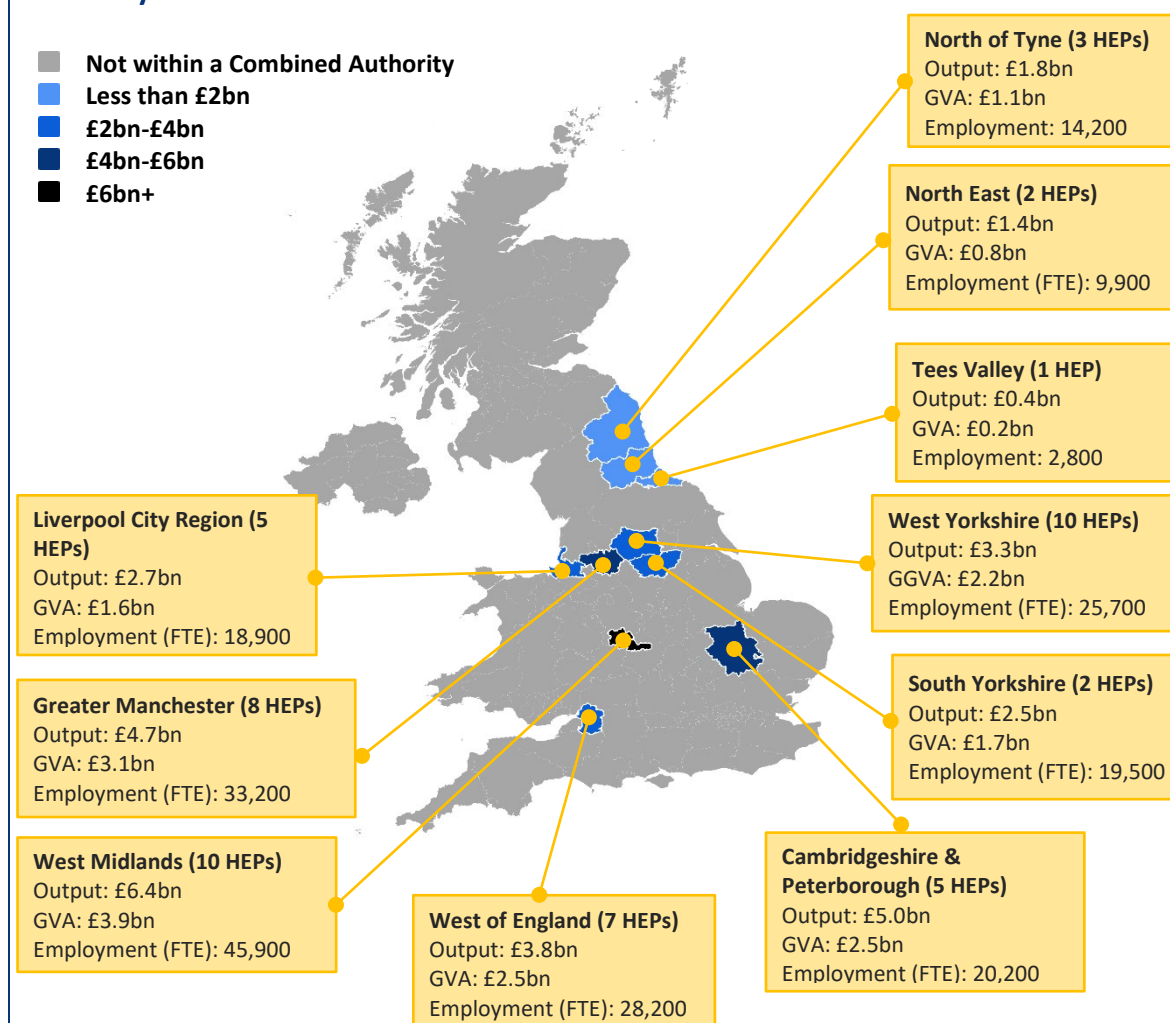
Source: London Economics' analysis

Box 1 Impact of the HE sector by location of provider

In addition to the above impact of higher education providers' activities on each region or nation, the following analysis identifies the impact of HEP expenditure **by location of higher education provider**. In other words, rather than considering the economic impact of HEP spending on different geographical areas (e.g., on each region or nation (i.e., the *destination* of impact)), the results presented here provide information on the **origin of impact based on higher education providers' location**, focusing on the **Combined Authority level**.

Figure 3 shows the impact on the UK economy of HEPs located in each Combined Authority. The largest impact on the UK economic output, GVA, and employment is associated with the 10 HE providers located in the West Midlands Combined Authority, which support a total of approximately **£6.4bn** of economic output, **£3.9bn** of GVA, and **45,900** FTE jobs across the UK.

Figure 3 Total impact of the HE sector in 2021-22 by location of HEP: Combined Authority level



Note: Economic output and GVA estimates are round to the nearest £100 million, and FTE job estimates are rounded to the nearest 100. **Source: London Economics' analysis**

ANNEXE

Annexe 1 Calculation of direct, indirect, and induced impacts

Our analysis estimates the **direct, indirect, and induced impacts** associated with the operational and capital expenditures of the UK higher education sector in the 2021-22 academic year. These direct, indirect, and induced economic impacts of HEP expenditure are defined as follows:

- **Direct effect:** This considers the economic output generated by HEPs themselves, by purchasing goods and services (including labour) from the economies in which they operate.
- **Indirect effect:** HE providers' purchases generate income for their supplying industries, which they in turn spend on their own purchases from suppliers to meet the HEP's demands. This results in a chain reaction of subsequent rounds of spending across industries, often referred to as a 'ripple effect'.
- **Induced effect:** The induced effect is based on higher education providers' status as large employers. The employees of HEPs and of businesses operating in their supply chains 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. Again, this leads to subsequent rounds of wage income spending, i.e., a 'ripple effect' throughout the economy as a whole.

A1.1 Estimating the direct impact

To measure the direct economic impact of the purchases of goods, services, and labour by higher education providers, we used information on each HEP'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 year. This is based on staff and financial data published by HESA¹⁰. We measure the direct impact in terms of **economic output**¹¹, **GVA**¹², and **FTE jobs supported**.

With regards to the financial data used, a number of providers were not included in the published HESA financial data for 2021-22, as they had not yet finalised their financial returns to HESA before the required cut-off date. To fill the resulting gaps for these HEPs, where possible, we instead used information from their published financial statements (where available at the time that the analysis was undertaken). The estimates of impact in

¹⁰ For the relevant financial data, see Higher Education Statistics Agency (2023), '[Higher Education Provider Data: Finance](#)'. For staff data, see Higher Education Statistics Agency (2023), '[Higher Education Staff Data](#)'.

¹¹ Economic output is calculated as operational and capital expenditures combined. For the purpose of the analysis, we exclude depreciation and amortisation costs, as well as 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).

¹² The direct GVA associated with each HEP is calculated as the sum of employment costs, surplus on operations (i.e., total income minus total expenditure), interest payable, and depreciation and amortisation costs. This is equivalent to total income minus 'other operating expenses'.

terms of economic output and GVA thus cover a total of **278 providers** for which the required expenditure information was available, either from HESA or the HEP's separate financial statements.

With regards to staff data, the estimates of impact in employment terms are based on **217¹³ providers** for which the required staff information was available. In this respect, since the 2019-20 academic year, providers have not been required to provide data on their non-academic staff to HESA. Therefore, of the 216 providers that returned staff data to HESA in 2021-22, 87 did not report the number of non-academic staff. For these providers, we instead *estimated* their non-academic staff in 2021-22, by applying the ratio of non-academic staff to academic staff employed by the HEP in 2018-19 (i.e., the last academic year in which it was mandatory to report non-academic staff figures to HESA) to the 2021-22 academic staff figure.

Further note that The Open University operates separately in the four Home Nations of the UK, but the institution's financial and staff data published by HESA is aggregated into a single total figure for the UK. We notionally split The Open University's data to reflect its activities across the four Home Nations (essentially generating four 'stand-alone' institutions). To achieve this, the aggregated financial and staff data for 2021-22 was split across the four Home Nations using the same proportions as those presented in our previous analysis of the economic and social contribution of The Open University¹⁴. This analysis identifies the direct economic impact of the university's expenditure and employment for each Home Nation separately.

A1.2 Estimating indirect and induced impacts

The assessment of the indirect and induced economic impacts associated with the expenditures of higher education providers in the UK is based on **economic multipliers¹⁵** 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-Output tables (for 2019, published

¹³ This includes 216 providers for which staff data were available from published HESA data, and 1 provider whose financial statements instead provided the required staff information.

¹⁴ London Economics (2020), '[The economic and social impact of The Open University in 2018-19](#)'. The analysis was based on the 2018-19 academic year, and our estimation here assumes that the same distribution applied in 2021-22.

¹⁵ Specifically, the analysis makes use of *Type II* multipliers, defined as $[\text{Direct} + \text{indirect} + \text{induced impact}]/[\text{Direct impact}]$.

by the Office for National Statistics¹⁶) with a range of regional-level data¹⁷ to achieve a granular breakdown by sector¹⁸ and region¹⁹.

The multi-regional Input-Output analysis allowed us to derive multipliers by sector and region within the UK economy. To estimate the economic impact of higher education providers' activities, we multiplied the direct economic output, GVA, and FTE staff by the estimated **average economic multipliers associated with organisations in the government, health, and education sector in each region** (assigning relevant multipliers based on the region within which each provider operates). This approach implicitly assumes that the spending patterns of higher education providers reflect the average spending patterns across all organisations operating in the government, health, and education sector within the same region. We thus arrive at the **total economic contribution associated with each provider's activities – in terms of economic output, GVA, and jobs supported – on each region or nation and sector, as well as on the UK economy as a whole.**

For example, to assess the direct, indirect, and induced impacts associated with any given higher education provider located in Yorkshire and the Humber, we multiplied the HEP's direct impact by the average economic multipliers associated with organisations in Yorkshire and the Humber's government, health, and education industry. These multipliers are presented in Table 3, and suggest that every £1 million of operational or capital expenditure incurred by HEPs located in Yorkshire and the Humber generates an **additional £1.31 million** of impact throughout the UK economy, of which **£0.5 million** is generated in Yorkshire and the Humber. In terms of employment, we assume that, for every **1,000** (FTE) staff employed directly by HEPs in Yorkshire and the Humber, an additional **810** staff are supported throughout the UK, of which **350** are located in Yorkshire and the Humber.

¹⁶ See Office for National Statistics (2023), '[UK input-output analytical tables - industry by industry](#)'. 2019 is the latest year for which these Input-Output tables are currently available.

¹⁷ 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](#); [employment by sector and region](#); [gross disposable household income by region](#); [population by region](#); [mean weekly total paid hours worked by industry, for full-time vs. part-time employees](#); [employed residents by region of usual residence and region of workplace](#); and [UK imports into each region and exports by each region, by commodity](#).

¹⁸ 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 broken down into 10 more high-level sector groups (see the sector list included in Table 2).

¹⁹ 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.

Table 3 Assumed economic multipliers associated with the expenditures of higher education providers located in Yorkshire and the Humber

Location of impact	Economic output	GVA	FTE employment
Impact on Yorkshire and the Humber	1.50	1.44	1.35
Impact on the 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*



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